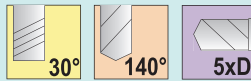


d	+0.000" -0.005" (+0.000 -0.127mm)
l_1	+0.125" -0.125" (+3.175 -3.175mm)
l_2	+0.125" -0.125" (+3.175 -3.175mm)

.1575" - .3150"
(4.00mm - 8.00mm)



ALUMASTAR Coated

High performance solid submicron grain carbide drill

Designed for drilling aluminum and other soft materials

No spot drilling required

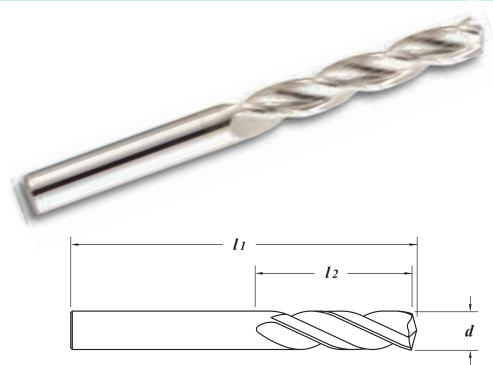
Unique point geometry and coating for higher speeds and feeds

Up to 5x longer tool life than Zrn coated drills

High performance drill point

Live tooling recommended on lathe processes

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						
70166	.1575	4.00	65	24	39.25	37.54	35.84	34.13
70191	.1772	4.50	65	25	41.46	39.67	37.86	36.06
70211	.1875	3/16"	4.76	2-3/4"	42.57	40.72	38.86	37.01
70216	.1890	#12	4.80	2-3/4"	44.14	42.21	40.30	38.38
70221	.1910	#11	4.85	2-3/4"	44.41	42.47	40.55	38.62
70226	.1935	#10	4.91	2-3/4"	44.70	42.75	40.81	38.86
70231	.1969	5.00	75	32	45.24	43.27	41.31	39.34
70236	.1990	#8	5.05	3"	45.46	43.48	41.51	39.53
70241	.2010	#7	5.10	3"	45.64	43.65	41.66	39.69
70246	.2031	13/64"	5.16	3"	45.96	43.96	41.96	39.97
70251	.2040	#6	5.18	3"	46.27	44.26	42.24	40.24
70256	.2055	#5	5.22	3"	46.57	44.54	42.53	40.50
70261	.2090	#4	5.31	3"	46.85	44.81	42.78	40.74
70266	.2130	#3	5.41	3"	47.14	45.09	43.05	41.00
70271	.2165	5.50	75	35	47.42	45.36	43.30	41.24
70276	.2188	7/32"	5.56	3"	47.70	45.64	43.56	41.49
70281	.2210	#2	5.61	3"	48.66	46.55	44.43	42.32
70286	.2280	#1	5.79	3"	48.89	46.77	44.64	42.52
70296	.2344	15/64"	5.95	3-1/4"	49.89	47.72	45.55	43.38
70301	.2362	6.00	82	38	50.02	47.85	45.68	43.50
70306	.2380	B	6.04	3-1/4"	50.16	47.98	45.80	43.62
70311	.2420	C	6.15	3-1/4"	50.48	48.29	46.09	43.90
70316	.2460	D	6.25	3-1/4"	50.79	48.59	46.37	44.17
70321	.2500	1/4" / E	6.35	3-1/4"	51.05	48.84	46.61	44.40
70326	.2559	6.50	82	41	54.48	52.10	49.74	47.37
70331	.2570	F	6.53	3-1/4"	55.31	52.90	50.50	48.09
70336	.2610	G	6.63	3-1/2"	56.15	53.71	51.27	48.83
70341	.2656	17/64"	6.75	3-1/2"	56.98	54.51	52.03	49.55
70346	.2660	H	6.76	3-1/2"	57.86	55.34	52.82	50.30
70351	.2720	I	6.91	3-1/2"	58.68	56.13	53.57	51.02
70356	.2756	7.00	88	43	59.50	56.91	54.33	51.74
70361	.2770	J	7.03	3-1/2"	60.35	57.73	55.10	52.48
70371	.2812	9/32"	7.14	3-1/2"	62.05	59.35	56.65	53.96
70376	.2900	L	7.37	3-1/2"	62.83	60.09	57.37	54.63
70381	.2953	7.50	95	44	63.65	60.88	58.12	55.35
70386	.2969	19/64"	7.54	3-3/4"	64.20	61.41	58.61	55.83
70391	.3020	N	7.67	3-3/4"	66.53	63.64	60.75	57.86
70396	.3125	5/16"	7.94	3-3/4"	66.72	63.81	60.91	58.01
70401	.3150	8.00	95	48	70.41	67.35	64.28	61.22

1180 - 3 Flute (continued)

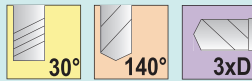
.3160" - .6299"
(8.03mm - 16.00mm)

HIGH PERFORMANCE
DRILLS

EDP#	d^+ Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
70406	.3160	O	8.03	3-3/4"	1-7/8"	70.41	67.35	64.28	61.22
70411	.3230	P	8.20	3-3/4"	2-3/32"	70.64	67.57	64.49	61.42
70416	.3281	21/64"	8.33	4"	2-3/32"	71.23	68.13	65.03	61.94
70421	.3320	Q	8.43	4"	2-3/32"	72.54	69.39	66.23	63.08
70426	.3346		8.50	100	53	73.03	69.86	66.67	63.50
70431	.3390	R	8.61	4"	2-3/32"	74.86	71.60	68.35	65.09
70436	.3438	11/32"	8.73	4"	2-3/16"	77.29	73.93	70.57	67.22
70441	.3480	S	8.84	4"	2-3/16"	81.75	78.20	74.64	71.09
70446	.3543		9.00	100	55	82.20	78.62	75.06	71.48
70451	.3580	T	9.09	4-1/4"	2-9/32"	86.60	82.84	79.07	75.31
70456	.3594	23/64"	9.13	4-1/4"	2-9/32"	87.07	83.28	79.50	75.71
70461	.3680	U	9.35	4-1/4"	2-9/32"	95.15	91.01	86.87	82.74
70466	.3740		9.50	108	58	95.99	91.82	87.64	83.47
70471	.3750	3/8"	9.52	4-1/4"	2-3/8"	96.87	92.65	88.44	84.23
70476	.3770	V	9.57	4-1/4"	2-3/8"	99.42	95.10	90.78	86.46
70481	.3860	W	9.80	4-1/2"	2-3/8"	101.02	96.63	92.23	87.84
70486	.3906	25/64"	9.92	4-1/2"	2-3/8"	102.14	97.70	93.26	88.82
70491	.3937		10.00	114	60	104.92	100.35	95.79	91.23
70496	.3970	X	10.08	4-1/2"	2-1/2"	107.11	102.45	97.79	93.14
70501	.4040	Y	10.26	4-1/2"	2-9/16"	110.06	105.28	100.50	95.71
70506	.4062	13/32"	10.32	4-1/2"	2-9/16"	110.93	106.10	101.28	96.46
70511	.4134		10.50	114	67	111.86	107.00	102.14	97.27
70516	.4219	27/64"	10.72	4-1/2"	2-11/16"	112.80	107.89	102.99	98.08
70521	.4331		11.00	114	68	120.34	115.11	109.88	104.64
70526	.4375	7/16"	11.11	4-3/4"	2-13/16"	120.79	115.53	110.28	105.03
70531	.4528		11.50	120	70	128.44	122.86	117.27	111.69
70536	.4531	29/64"	11.51	4-3/4"	2-7/8"	128.44	122.86	117.27	111.69
70541	.4688	15/32"	11.91	4-3/4"	2-7/8"	134.43	128.59	122.74	116.90
70546	.4724		12.00	120	73	134.79	128.93	123.07	117.21
70551	.4844	31/64"	12.30	5-5/16"	3"	137.19	131.22	125.26	119.29
70556	.4921		12.50	135	75	138.70	132.67	126.64	120.61
70561	.5000	1/2"	12.70	5-3/8"	3-1/16"	138.96	132.92	126.88	120.84
70566	.5118		13.00	136	78	156.41	149.60	142.80	136.00
70571	.5156	33/64"	13.10	5-3/8"	3-1/8"	159.75	152.81	145.86	138.91
70576	.5312	17/32"	13.49	5-11/16"	3-5/16"	163.20	156.10	149.00	141.91
70581	.5469	35/64"	13.89	5-13/16"	3-3/8"	169.84	162.46	155.07	147.69
70586	.5512		14.00	148	86	173.21	165.68	158.15	150.62
70591	.5625	9/16"	14.29	5-15/16"	3-1/2"	186.19	178.10	170.00	161.91
70596	.5781	37/64"	14.68	6"	3-1/2"	192.54	184.16	175.79	167.42
70601	.5906		15.00	152	90	195.88	187.37	178.85	170.33
70606	.5938	19/32"	15.08	6"	3-9/16"	196.83	188.27	179.71	171.15
70611	.6094	39/64"	15.48	6-3/16"	3-11/16"	213.36	204.08	194.80	185.53
70616	.6250	5/8"	15.87	6-5/16"	3-3/4"	215.22	205.86	196.50	187.15
70621	.6299		16.00	160	95	219.72	210.16	200.62	191.06

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)

.1181" - .2280"
(3.00mm - 5.79mm)



Balinit® HARDLUBE Coated

High performance - high penetration solid submicron grain carbide drill

Extended tool life and greater surface finish through faster SFM rates

Up to 50% faster than standard carbide drills

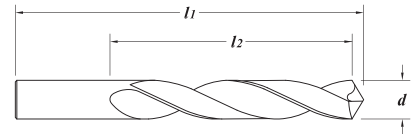
30° helix for better chip evacuation

Honed cutting edge

Recommended to run in high nickel, high temperature alloys, cobalt-based alloys, stainless steels and tool steels

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						
20301	.1181	3.00	46	16	28.76	27.51	26.26	25.00
20306	.1200	#31	3.05	1-13/16"	29.04	27.78	26.51	25.25
20311	.1250	1/8"	3.17	1-15/16"	29.31	28.03	26.76	25.48
20316	.1285	#30	3.26	1-15/16"	29.56	28.27	26.99	25.70
20321	.1360	#29	3.45	2-1/16"	29.85	28.55	27.25	25.96
20326	.1378		3.50	52	30.14	28.83	27.52	26.21
20331	.1405	#28	3.57	2-1/16"	30.41	29.09	27.77	26.45
20336	.1406	9/64"	3.57	2-1/16"	30.68	29.35	28.01	26.68
20341	.1440	#27	3.67	2-1/16"	30.95	29.61	28.26	26.92
20346	.1470	#26	3.73	2-3/16"	31.20	29.85	28.49	27.13
20351	.1495	#25	3.80	2-3/16"	31.52	30.15	28.78	27.41
20356	.1520	#24	3.86	2-3/16"	31.78	30.40	29.02	27.63
20361	.1540	#23	3.91	2-3/16"	32.05	30.66	29.27	27.87
20366	.1562	5/32"	3.97	2-3/16"	32.30	30.90	29.49	28.09
20371	.1570	#22	3.99	2-3/16"	32.60	31.19	29.76	28.35
20376	.1575		4.00	56	32.85	31.43	29.99	28.57
20381	.1590	#21	4.04	2-3/16"	33.16	31.71	30.27	28.83
20386	.1610	#20	4.09	2-3/16"	33.43	31.97	30.52	29.07
20391	.1660	#19	4.22	2-9/32"	33.72	32.25	30.78	29.32
20396	.1695	#18	4.30	2-9/32"	33.98	32.50	31.02	29.55
20401	.1719	11/64"	4.37	2-9/32"	34.27	32.78	31.28	29.80
20406	.1730	#17	4.39	2-9/32"	34.54	33.04	31.53	30.04
20411	.1770	#16	4.49	2-9/32"	34.78	33.27	31.75	30.24
20416	.1772		4.50	58	35.08	33.55	32.03	30.50
20421	.1800	#15	4.57	2-9/32"	35.32	33.78	32.25	30.71
20426	.1820	#14	4.62	2-9/32"	35.65	34.10	32.55	31.00
20431	.1850	#13	4.70	2-9/32"	35.90	34.34	32.78	31.22
20436	.1875	3/16"	4.76	2-13/32"	36.19	34.62	33.04	31.47
20441	.1890	#12	4.80	2-13/32"	36.45	34.87	33.28	31.70
20446	.1910	#11	4.85	2-13/32"	36.78	35.18	33.58	31.99
20451	.1935	#10	4.91	2-13/32"	37.00	35.39	33.79	32.18
20456	.1960	#9	4.98	2-13/32"	37.28	35.66	34.04	32.42
20461	.1969		5.00	61	37.48	35.85	34.23	32.59
20466	.1990	#8	5.05	2-13/32"	37.82	36.18	34.54	32.90
20471	.2010	#7	5.10	2-13/32"	37.94	36.29	34.64	32.99
20476	.2031	13/64"	5.16	2-13/32"	38.20	36.54	34.88	33.22
20481	.2040	#6	5.18	2-13/32"	38.45	36.77	35.11	33.44
20486	.2055	#5	5.22	2-13/32"	38.73	37.04	35.36	33.68
20491	.2090	#4	5.31	2-13/32"	38.98	37.28	35.59	33.89
20496	.2130	#3	5.41	2-5/8"	39.23	37.52	35.82	34.11
20501	.2165		5.50	67	39.48	37.76	36.05	34.33
20506	.2188	7/32"	5.56	2-5/8"	39.81	38.08	36.35	34.62
20511	.2210	#2	5.61	2-5/8"	40.10	38.36	36.62	34.87
20516	.2280	#1	5.79	2-5/8"	40.40	38.65	36.89	35.13

1580H - 2 Flute (continued)

.2340" - .5000"
(5.94mm - 12.70mm)

HIGH PERFORMANCE
DRILLS

EDP#	$d^{\dagger}$		Metric	l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Diameter							
20521	.2340	A	5.94	2-5/8"	1-3/32"	40.67	38.91	37.14	35.37
20526	.2344	15/64"	5.95	2-5/8"	1-3/32"	40.99	39.21	37.42	35.64
20531	.2362		6.00	67	28	41.28	39.48	37.69	35.89
20536	.2380	B	6.04	2-3/4"	1-7/32"	41.55	39.74	37.94	36.13
20541	.2420	C	6.15	2-3/4"	1-7/32"	41.88	40.06	38.24	36.42
20546	.2460	D	6.25	2-3/4"	1-7/32"	42.12	40.29	38.46	36.63
20551	.2500	1/4" / E	6.35	2-3/4"	1-7/32"	42.48	40.63	38.79	36.94
20556	.2559		6.50	70	31	43.16	41.29	39.41	37.53
20561	.2570	F	6.53	2-3/4"	1-7/32"	43.84	41.93	40.02	38.12
20566	.2610	G	6.63	2-3/4"	1-7/32"	44.50	42.57	40.63	38.70
20571	.2656	17/64"	6.75	2-15/16"	1-11/32"	45.19	43.22	41.26	39.29
20576	.2660	H	6.76	2-15/16"	1-11/32"	45.85	43.86	41.87	39.87
20581	.2720	I	6.91	2-15/16"	1-11/32"	46.53	44.50	42.48	40.46
20586	.2756		7.00	75	34	47.21	45.16	43.10	41.05
20591	.2770	J	7.03	2-15/16"	1-11/32"	47.86	45.78	43.70	41.62
20596	.2810	K	7.14	2-15/16"	1-11/32"	48.56	46.45	44.34	42.22
20601	.2812	9/32"	7.14	2-15/16"	1-11/32"	49.22	47.08	44.94	42.81
20606	.2900	L	7.37	2-15/16"	1-11/32"	49.90	47.73	45.56	43.39
20611	.2950	M	7.49	2-15/16"	1-11/32"	50.87	48.65	46.45	44.23
20616	.2953		7.50	75	34	50.87	48.65	46.45	44.23
20621	.2969	19/64"	7.54	3-3/32"	1-15/32"	51.31	49.08	46.85	44.62
20626	.3020	N	7.67	3-3/32"	1-15/32"	53.61	51.28	48.95	46.62
20631	.3125	5/16"	7.94	3-3/32"	1-15/32"	53.80	51.46	49.12	46.78
20636	.3150		8.00	79	37	57.10	54.61	52.14	49.65
20641	.3160	O	8.03	3-3/32"	1-15/32"	57.10	54.61	52.14	49.65
20646	.3230	P	8.20	3-3/32"	1-15/32"	57.51	55.02	52.51	50.01
20651	.3281	21/64"	8.33	3-3/32"	1-15/32"	58.58	56.04	53.49	50.94
20656	.3320	Q	8.43	3-3/32"	1-15/32"	59.63	57.04	54.44	51.85
20661	.3346		8.50	79	37	59.88	57.28	54.67	52.07
20666	.3390	R	8.61	3-5/16"	1-9/16"	61.48	58.81	56.14	53.47
20671	.3438	11/32"	8.73	3-5/16"	1-9/16"	62.84	60.10	57.38	54.64
20676	.3480	S	8.84	3-5/16"	1-9/16"	64.92	62.10	59.27	56.45
20681	.3543		9.00	84	40	66.57	63.68	60.78	57.89
20686	.3580	T	9.09	3-5/16"	1-9/16"	69.19	66.19	63.17	60.16
20691	.3594	23/64"	9.13	3-5/16"	1-9/16"	69.61	66.58	63.55	60.53
20696	.3680	U	9.35	3-5/16"	1-9/16"	73.23	70.04	66.86	63.68
20701	.3740		9.50	84	40	73.83	70.62	67.41	64.20
20706	.3750	3/8"	9.52	3-1/2"	1-11/16"	74.29	71.05	67.83	64.59
20711	.3770	V	9.57	3-1/2"	1-11/16"	77.13	73.78	70.42	67.07
20716	.3860	W	9.80	3-1/2"	1-11/16"	78.48	75.07	71.66	68.24
20721	.3906	25/64"	9.92	3-1/2"	1-11/16"	79.47	76.01	72.56	69.10
20726	.3937		10.00	89	43	81.87	78.31	74.74	71.19
20731	.3970	X	10.08	3-1/2"	1-11/16"	83.88	80.23	76.59	72.94
20736	.4040	Y	10.26	3-1/2"	1-11/16"	84.45	80.78	77.11	73.43
20741	.4062	13/32"	10.32	3-1/2"	1-11/16"	87.05	83.26	79.48	75.69
20746	.4130	Z	10.49	3-1/2"	1-11/16"	87.85	84.03	80.20	76.39
20751	.4134		10.50	89	43	87.85	84.03	80.20	76.39
20756	.4219	27/64"	10.72	3-3/4"	1-13/16"	88.67	84.81	80.96	77.11
20761	.4331		11.00	95	46	95.19	91.05	86.91	82.77
20766	.4375	7/16"	11.11	3-3/4"	1-13/16"	95.19	91.05	86.91	82.77
20771	.4528		11.50	95	46	102.17	97.73	93.29	88.85
20776	.4531	29/64"	11.51	3-3/4"	1-13/16"	102.17	97.73	93.29	88.85
20781	.4688	15/32"	11.91	4"	1-15/16"	107.35	102.68	98.01	93.35
20786	.4724		12.00	102	49	107.67	102.99	98.31	93.63
20791	.4844	31/64"	12.30	4"	1-15/16"	108.41	103.70	98.99	94.27
20796	.4921		12.50	102	49	109.49	104.73	99.96	95.21
20801	.5000	1/2"	12.70	4"	1-15/16"	110.19	105.39	100.61	95.82

continued →

1580H - 2 Flute (continued)

.5118" - .6299"
(13.00mm - 16.00mm)

EDP#	$d^{\dagger}$		l_1	l_2	1-11	12-24	25-49	50-100
	Decimal	Diameter Metric						
20806	.5118	13.00	107	53	122.31	117.00	111.68	106.36
20811	.5156	33/64"	13.10	4-7/32"	125.18	119.75	114.30	108.86
20816	.5312	17/32"	13.49	4-7/32"	128.08	122.51	116.94	111.37
20821	.5315	13.50	110	56	130.97	125.27	119.58	113.88
20826	.5469	35/64"	13.89	4-5/16"	133.84	128.01	122.20	116.38
20831	.5512	14.00	110	56	136.74	130.79	124.85	118.90
20836	.5625	9/16"	14.29	4-9/16"	147.75	141.33	134.91	128.48
20841	.5709	14.50	116	63	150.53	143.99	137.44	130.89
20846	.5781	37/64"	14.68	4-15/16"	153.22	146.56	139.90	133.23
20851	.5906	15.00	125	65	156.04	149.26	142.47	135.69
20856	.5938	19/32"	15.08	4-15/16"	156.89	150.07	143.25	136.43
20861	.6094	39/64"	15.48	5-1/16"	157.68	150.83	143.98	137.11
20866	.6102	15.50	129	71	158.51	151.61	144.73	137.83
20871	.6250	5/8"	15.87	5-1/4"	159.29	152.36	145.43	138.51
20876	.6299	16.00	133	79	163.13	156.04	148.95	141.86

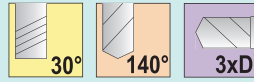


1580HD - 2 Flute

Technical information: page 208-209

3.00mm - 6.35mm
(.1181" - .2500")

**NEW
SERIES**



TOLERANCES

d1	3mm - 6mm	+016 +.004mm (+.00063" +.00015")
	> 6mm - 10mm	+021 +.006mm (+.00082" +.00023")
	> 10mm - 18mm	+025 +.007mm (+.00098" +.00027")
	> 18mm - 20mm	+029 +.008mm (+.00114" +.00031")
d2	6mm	+000 -.008mm (+.00000" -.00030")
	8mm - 10mm	+000 -.009mm (+.00000" -.00035")
	12mm - 18mm	+000 -.011mm (+.00000" -.00040")
	20mm	+000 -.013mm (+.00000" -.00050")

Balinit® HELICA Coated

High performance solid submicron grain carbide drill with reinforced shank

Utilizes DIN standard 6537

Up to 50% faster than standard carbide drills

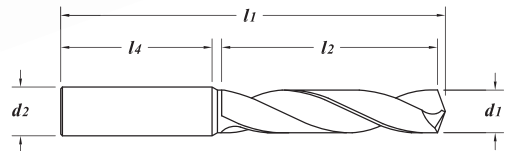
30° helix for better chip evacuation

Honed cutting edge

Recommended to run in high nickel, high temperature alloys, cobalt-based alloys, stainless steels and tool steels

Balinit® HELICA is a multi-layer AlCr-based coating designed exclusively for high performance drilling

Live tooling recommended on lathe processes



EDP#	d1 Diameter		d2 Shank Diameter	l1 Overall Length	l2 Flute Length	l4 Shank Length	1-11	12-24	25-49	50-100
	Decimal	Metric								
20085	.1181"	3.00	6.0	62	20	36	50.86	48.64	46.44	44.22
20095	.1220"	3.10	6.0	62	20	36	50.86	48.64	46.44	44.22
20105	.1248"	3.17	6.0	62	20	36	50.86	48.64	46.44	44.22
20115	.1260"	3.20	6.0	62	20	36	50.86	48.64	46.44	44.22
20125	.1280"	3.25	6.0	62	20	36	50.86	48.64	46.44	44.22
20135	.1299"	3.30	6.0	62	20	36	50.86	48.64	46.44	44.22
20145	.1339"	3.40	6.0	62	20	36	50.86	48.64	46.44	44.22
20155	.1378"	3.50	6.0	62	20	36	50.21	48.03	45.84	43.66
20165	.1417"	3.60	6.0	62	20	36	50.21	48.03	45.84	43.66
20175	.1457"	3.70	6.0	62	20	36	50.21	48.03	45.84	43.66
20185	.1476"	3.75	6.0	62	20	36	50.21	48.03	45.84	43.66
20195	.1496"	3.80	6.0	66	24	36	50.21	48.03	45.84	43.66
20205	.1535"	3.90	6.0	66	24	36	50.21	48.03	45.84	43.66
20215	.1575"	4.00	6.0	66	24	36	49.58	47.42	45.26	43.11
20225	.1614"	4.10	6.0	66	24	36	49.58	47.42	45.26	43.11
20235	.1654"	4.20	6.0	66	24	36	49.58	47.42	45.26	43.11
20245	.1673"	4.25	6.0	66	24	36	49.58	47.42	45.26	43.11
20255	.1693"	4.30	6.0	66	24	36	49.58	47.42	45.26	43.11
20265	.1732"	4.40	6.0	66	24	36	49.58	47.42	45.26	43.11
20275	.1772"	4.50	6.0	66	24	36	48.93	46.80	44.68	42.55
20285	.1811"	4.60	6.0	66	24	36	48.93	46.80	44.68	42.55
20295	.1831"	4.65	6.0	66	24	36	48.93	46.80	44.68	42.55
20305	.1850"	4.70	6.0	66	24	36	48.93	46.80	44.68	42.55
20315	.1870"	4.75	6.0	66	24	36	48.93	46.80	44.68	42.55
20325	.1890"	4.80	6.0	66	28	36	48.93	46.80	44.68	42.55
20335	.1929"	4.90	6.0	66	28	36	48.93	46.80	44.68	42.55
20345	.1969"	5.00	6.0	66	28	36	48.30	46.20	44.10	42.00
20355	.2008"	5.10	6.0	66	28	36	48.30	46.20	44.10	42.00
20365	.2027"	5.15	6.0	66	28	36	48.30	46.20	44.10	42.00
20375	.2047"	5.20	6.0	66	28	36	48.30	46.20	44.10	42.00
20385	.2087"	5.30	6.0	66	28	36	48.30	46.20	44.10	42.00
20395	.2165"	5.50	6.0	66	28	36	47.65	45.58	43.51	41.43
20405	.2185"	5.55	6.0	66	28	36	47.65	45.58	43.51	41.43
20408	.2205"	5.60	6.0	66	28	36	47.65	45.58	43.51	41.43
20412	.2244"	5.70	6.0	66	28	36	47.65	45.58	43.51	41.43
20415	.2283"	5.80	6.0	66	28	36	47.65	45.58	43.51	41.43
20425	.2323"	5.90	6.0	66	28	36	47.65	45.58	43.51	41.43
20435	.2342"	5.95	6.0	66	28	36	47.65	45.58	43.51	41.43
20445	.2362"	6.00	6.0	66	28	36	47.02	44.97	42.93	40.88
20448	.2402"	6.10	8.0	79	34	36	67.25	64.32	61.40	58.48
20452	.2441"	6.20	8.0	79	34	36	67.25	64.32	61.40	58.48
20454	.2480"	6.30	8.0	79	34	36	67.25	64.32	61.40	58.48
20455	.2500"	6.35	8.0	79	34	36	67.25	64.32	61.40	58.48

continued →

1580HD - 2 Flute (continued)

6.40mm - 12.00mm
(.2520" - .4724")

EDP#	d1		d2	l1	l2	l4	1-11	12-24	25-49	50-100
	Decimal	Metric								
20462	.2520"	6.40	8.0	79	34	36	67.25	64.32	61.40	58.48
20465	.2559"	6.50	8.0	79	34	36	66.60	63.71	60.81	57.92
20468	.2571"	6.53	8.0	79	34	36	66.60	63.71	60.81	57.92
20472	.2598"	6.60	8.0	79	34	36	66.60	63.71	60.81	57.92
20473	.2638"	6.70	8.0	79	34	36	66.60	63.71	60.81	57.92
20475	.2657"	6.75	8.0	79	34	36	66.60	63.71	60.81	57.92
20485	.2677"	6.80	8.0	79	34	36	66.60	63.71	60.81	57.92
20495	.2717"	6.90	8.0	79	34	36	66.60	63.71	60.81	57.92
20505	.2756"	7.00	8.0	79	34	36	65.99	63.12	60.25	57.38
20515	.2795"	7.10	8.0	79	41	36	65.99	63.12	60.25	57.38
20525	.2815"	7.15	8.0	79	41	36	65.99	63.12	60.25	57.38
20535	.2835"	7.20	8.0	79	41	36	65.99	63.12	60.25	57.38
20542	.2874"	7.30	8.0	79	41	36	65.99	63.12	60.25	57.38
20545	.2913"	7.40	8.0	79	41	36	65.99	63.12	60.25	57.38
20555	.2953"	7.50	8.0	79	41	36	65.31	62.47	59.63	56.79
20565	.2972"	7.55	8.0	79	41	36	65.31	62.47	59.63	56.79
20575	.2992"	7.60	8.0	79	41	36	65.31	62.47	59.63	56.79
20585	.3031"	7.70	8.0	79	41	36	65.31	62.47	59.63	56.79
20595	.3071"	7.80	8.0	79	41	36	65.31	62.47	59.63	56.79
20605	.3130"	7.95	8.0	79	41	36	65.31	62.47	59.63	56.79
20615	.3150"	8.00	8.0	79	41	36	64.68	61.87	59.05	56.24
20622	.3189"	8.10	10.0	89	47	40	93.83	89.75	85.66	81.59
20625	.3228"	8.20	10.0	89	47	40	93.83	89.75	85.66	81.59
20635	.3268"	8.30	10.0	89	47	40	93.83	89.75	85.66	81.59
20645	.3287"	8.35	10.0	89	47	40	93.83	89.75	85.66	81.59
20652	.3307"	8.40	10.0	89	47	40	93.83	89.75	85.66	81.59
20655	.3346"	8.50	10.0	89	47	40	92.87	88.84	84.79	80.76
20665	.3386"	8.60	10.0	89	47	40	92.87	88.84	84.79	80.76
20675	.3425"	8.70	10.0	89	47	40	92.87	88.84	84.79	80.76
20685	.3445"	8.75	10.0	89	47	40	92.87	88.84	84.79	80.76
20695	.3465"	8.80	10.0	89	47	40	92.87	88.84	84.79	80.76
20705	.3504"	8.90	10.0	89	47	40	92.87	88.84	84.79	80.76
20715	.3543"	9.00	10.0	89	47	40	91.92	87.92	83.92	79.92
20725	.3583"	9.10	10.0	89	47	40	91.92	87.92	83.92	79.92
20735	.3602"	9.15	10.0	89	47	40	91.92	87.92	83.92	79.92
20745	.3622"	9.20	10.0	89	47	40	91.92	87.92	83.92	79.92
20755	.3661"	9.30	10.0	89	47	40	91.92	87.92	83.92	79.92
20762	.3701"	9.40	10.0	89	47	40	91.92	87.92	83.92	79.92
20765	.3740"	9.50	10.0	89	47	40	90.95	87.00	83.04	79.08
20775	.3760"	9.55	10.0	89	47	40	90.95	87.00	83.04	79.08
20778	.3780"	9.60	10.0	89	47	40	90.95	87.00	83.04	79.08
20782	.3819"	9.70	10.0	89	47	40	90.95	87.00	83.04	79.08
20785	.3858"	9.80	10.0	89	47	40	90.95	87.00	83.04	79.08
20795	.3898"	9.90	10.0	89	47	40	90.95	87.00	83.04	79.08
20805	.3937"	10.00	10.0	89	47	40	89.99	86.08	82.17	78.25
20812	.3976"	10.10	12.0	102	55	45	122.24	116.93	111.61	106.30
20815	.4016"	10.20	12.0	102	55	45	122.24	116.93	111.61	106.30
20825	.4055"	10.30	12.0	102	55	45	122.24	116.93	111.61	106.30
20835	.4134"	10.50	12.0	102	55	45	120.96	115.70	110.45	105.19
20842	.4173"	10.60	12.0	102	55	45	120.96	115.70	110.45	105.19
20845	.4213"	10.70	12.0	102	55	45	120.96	115.70	110.45	105.19
20855	.4252"	10.80	12.0	102	55	45	120.96	115.70	110.45	105.19
20865	.4331"	11.00	12.0	102	55	45	119.66	114.46	109.25	104.05
20875	.4370"	11.10	12.0	102	55	45	119.66	114.46	109.25	104.05
20885	.4409"	11.20	12.0	102	55	45	119.66	114.46	109.25	104.05
20892	.4488"	11.40	12.0	102	55	45	119.66	114.46	109.25	104.05
20895	.4528"	11.50	12.0	102	55	45	118.39	113.25	108.10	102.95
20905	.4606"	11.70	12.0	102	55	45	118.39	113.25	108.10	102.95
20915	.4685"	11.90	12.0	102	55	45	118.39	113.25	108.10	102.95
20925	.4724"	12.00	12.0	102	55	45	117.07	111.99	106.89	101.81

1580HD - 2 Flute (continued)

12.10mm - 20.00mm
(.4764" - .7874")

HIGH PERFORMANCE
DRILLS

EDP#	d1 Diameter		d2 Shank Diameter	l1 Overall Length	l2 Flute Length	l4 Shank Length	1-11	12-24	25-49	50-100
	Decimal	Metric								
20935	.4764"	12.10	14.0	107	60	45	151.98	145.37	138.76	132.15
20941	.4803"	12.20	14.0	107	60	45	151.98	145.37	138.76	132.15
20945	.4842"	12.30	14.0	107	60	45	151.98	145.37	138.76	132.15
20951	.4882"	12.40	14.0	107	60	45	151.98	145.37	138.76	132.15
20955	.4921"	12.50	14.0	107	60	45	150.68	144.12	137.57	131.02
20961	.4961"	12.60	14.0	107	60	45	150.68	144.12	137.57	131.02
20965	.5000"	12.70	14.0	107	60	45	150.68	144.12	137.57	131.02
20975	.5039"	12.80	14.0	107	60	45	150.68	144.12	137.57	131.02
20978	.5051"	12.83	14.0	107	60	45	150.68	144.12	137.57	131.02
20981	.5079"	12.90	14.0	107	60	45	150.68	144.12	137.57	131.02
20982	.5098"	12.95	14.0	107	60	45	150.68	144.12	137.57	131.02
20985	.5118"	13.00	14.0	107	60	45	149.40	142.90	136.41	129.91
20995	.5157"	13.10	14.0	107	60	45	149.40	142.90	136.41	129.91
20998	.5236"	13.30	14.0	107	60	45	149.40	142.90	136.41	129.91
21005	.5315"	13.50	14.0	107	60	45	148.10	141.66	135.22	128.78
21015	.5394"	13.70	14.0	107	60	45	148.10	141.66	135.22	128.78
21025	.5433"	13.80	14.0	107	60	45	148.10	141.66	135.22	128.78
21035	.5512"	14.00	14.0	107	60	45	146.82	140.43	134.05	127.67
21045	.5551"	14.10	16.0	115	65	48	179.64	171.83	164.02	156.21
21053	.5591"	14.20	16.0	115	65	48	179.64	171.83	164.02	156.21
21055	.5610"	14.25	16.0	115	65	48	179.64	171.83	164.02	156.21
21065	.5630"	14.30	16.0	115	65	48	179.64	171.83	164.02	156.21
21075	.5709"	14.50	16.0	115	65	48	178.34	170.58	162.83	155.07
21085	.5787"	14.70	16.0	115	65	48	178.34	170.58	162.83	155.07
21095	.5827"	14.80	16.0	115	65	48	178.34	170.58	162.83	155.07
21105	.5906"	15.00	16.0	115	65	48	177.06	169.36	161.67	153.96
21115	.5945"	15.10	16.0	115	65	48	177.06	169.36	161.67	153.96
21125	.6102"	15.50	16.0	115	65	48	175.79	168.15	160.50	152.86
21135	.6181"	15.70	16.0	115	65	48	175.79	168.15	160.50	152.86
21145	.6220"	15.80	16.0	115	65	48	175.79	168.15	160.50	152.86
21155	.6299"	16.00	16.0	115	65	48	174.50	166.91	159.33	151.75
21159	.6331"	16.08	18.0	123	73	48	241.88	231.37	220.84	210.33
21161	.6339"	16.10	18.0	123	73	48	241.88	231.37	220.84	210.33
21163	.6378"	16.20	18.0	123	73	48	241.88	231.37	220.84	210.33
21165	.6398"	16.25	18.0	123	73	48	241.88	231.37	220.84	210.33
21175	.6496"	16.50	18.0	123	73	48	239.34	228.92	218.52	208.11
21185	.6555"	16.65	18.0	123	73	48	239.34	228.92	218.52	208.11
21195	.6693"	17.00	18.0	123	73	48	236.71	226.42	216.13	205.84
21205	.6713"	17.05	18.0	123	73	48	236.71	226.42	216.13	205.84
21215	.6870"	17.45	18.0	123	73	48	236.71	226.42	216.13	205.84
21225	.6890"	17.50	18.0	123	73	48	234.20	224.02	213.83	203.65
21235	.7027"	17.85	18.0	123	73	48	234.20	224.02	213.83	203.65
21245	.7087"	18.00	18.0	123	73	48	231.63	221.56	211.48	201.42
21255	.7185"	18.25	20.0	131	79	50	327.45	313.22	298.98	284.74
21265	.7283"	18.50	20.0	131	79	50	324.91	310.78	296.65	282.53
21275	.7342"	18.65	20.0	131	79	50	324.91	310.78	296.65	282.53
21285	.7480"	19.00	20.0	131	79	50	322.34	308.32	294.31	280.29
21295	.7500"	19.05	20.0	131	79	50	322.34	308.32	294.31	280.29
21297	.7520"	19.10	20.0	131	79	50	322.34	308.32	294.31	280.29
21298	.7539"	19.15	20.0	131	79	50	322.34	308.32	294.31	280.29
21299	.7559"	19.20	20.0	131	79	50	322.34	308.32	294.31	280.29
21300	.7579"	19.25	20.0	131	79	50	322.34	308.32	294.31	280.29
21303	.7590"	19.28	20.0	131	79	50	322.34	308.32	294.31	280.29
21304	.7598"	19.30	20.0	131	79	50	322.34	308.32	294.31	280.29
21305	.7638"	19.40	20.0	131	79	50	322.34	308.32	294.31	280.29
21315	.7677"	19.50	20.0	131	79	50	319.79	305.88	291.98	278.08
21323	.7795"	19.80	20.0	131	79	50	319.79	305.88	291.98	278.08
21325	.7815"	19.85	20.0	131	79	50	319.79	305.88	291.98	278.08
21335	.7874"	20.00	20.0	131	79	50	317.20	303.41	289.62	275.83

1580KD - 2 Flute

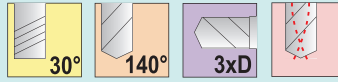
Technical information: page 208-209

TOLERANCES

d1	3mm - 6mm	+016 +004mm (+00063" +00015")
	> 6mm - 10mm	+021 +006mm (+00082" +00023")
	> 10mm - 18mm	+025 +007mm (+00098" +00027")
	> 18mm - 20mm	+029 +008mm (+00114" +00031")
	6mm	+000 -008mm (+00000" -00030")
d2	8mm - 10mm	+000 -009mm (+00000" -00035")
	12mm - 18mm	+000 -011mm (+00000" -00040")
	20mm	+000 -013mm (+00000" -00050")

4.00mm - 7.50mm
(.1575" - .2953")

**NEW
SERIES**



Balinit® HELICA Coated

High performance solid submicron grain carbide drill with reinforced shank

Utilizes DIN standard 6537

Up to 70% faster than standard carbide drills

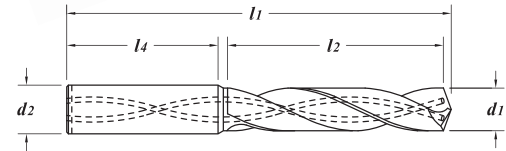
30° helix for better chip evacuation

Honed cutting edge

Recommended to run in high nickel, high temperature alloys, cobalt-based alloys, stainless steels and tool steels

Balinit® HELICA is a multi-layer AlCr-based coating designed exclusively for high performance drilling

Live tooling recommended on lathe processes



EDP#	d1 Diameter		d2 Shank Diameter	l1 Overall Length	l2 Flute Length	l4 Shank Length	1-11	12-24	25-49	50-100
	Decimal	Metric								
28135	.1575"	4.00	6.0	66	24	36	62.85	60.11	57.39	54.65
28145	.1614"	4.10	6.0	66	24	36	62.85	60.11	57.39	54.65
28155	.1654"	4.20	6.0	66	24	36	62.85	60.11	57.39	54.65
28165	.1673"	4.25	6.0	66	24	36	62.85	60.11	57.39	54.65
28175	.1693"	4.30	6.0	66	24	36	62.85	60.11	57.39	54.65
28185	.1732"	4.40	6.0	66	24	36	62.85	60.11	57.39	54.65
28195	.1772"	4.50	6.0	66	24	36	62.20	59.50	56.79	54.09
28205	.1811"	4.60	6.0	66	24	36	62.20	59.50	56.79	54.09
28215	.1831"	4.65	6.0	66	24	36	62.20	59.50	56.79	54.09
28225	.1850"	4.70	6.0	66	24	36	62.20	59.50	56.79	54.09
28235	.1870"	4.75	6.0	66	24	36	62.20	59.50	56.79	54.09
28245	.1890"	4.80	6.0	66	28	36	62.20	59.50	56.79	54.09
28255	.1929"	4.90	6.0	66	28	36	62.20	59.50	56.79	54.09
28265	.1969"	5.00	6.0	66	28	36	61.57	58.90	56.21	53.54
28275	.2008"	5.10	6.0	66	28	36	61.57	58.90	56.21	53.54
28285	.2027"	5.15	6.0	66	28	36	61.57	58.90	56.21	53.54
28295	.2047"	5.20	6.0	66	28	36	61.57	58.90	56.21	53.54
28305	.2087"	5.30	6.0	66	28	36	61.57	58.90	56.21	53.54
28315	.2165"	5.50	6.0	66	28	36	60.92	58.27	55.63	52.98
28325	.2185"	5.55	6.0	66	28	36	60.92	58.27	55.63	52.98
28335	.2205"	5.60	6.0	66	28	36	60.92	58.27	55.63	52.98
28345	.2243"	5.70	6.0	66	28	36	60.92	58.27	55.63	52.98
28355	.2283"	5.80	6.0	66	28	36	60.92	58.27	55.63	52.98
28365	.2323"	5.90	6.0	66	28	36	60.92	58.27	55.63	52.98
28375	.2342"	5.95	6.0	66	28	36	60.92	58.27	55.63	52.98
28385	.2362"	6.00	6.0	66	28	36	60.29	57.67	55.05	52.43
28395	.2402"	6.10	8.0	79	34	36	86.57	82.80	79.04	75.28
28405	.2441"	6.20	8.0	79	34	36	86.57	82.80	79.04	75.28
28415	.2480"	6.30	8.0	79	34	36	86.57	82.80	79.04	75.28
28425	.2500"	6.35	8.0	79	34	36	86.57	82.80	79.04	75.28
28435	.2520"	6.40	8.0	79	34	36	86.57	82.80	79.04	75.28
28445	.2559"	6.50	8.0	79	34	36	85.92	82.19	78.46	74.71
28446	.2571"	6.53	8.0	79	34	36	85.92	82.19	78.46	74.71
28455	.2598"	6.60	8.0	79	34	36	85.92	82.19	78.46	74.71
28461	.2638"	6.70	8.0	79	34	36	85.92	82.19	78.46	74.71
28465	.2657"	6.75	8.0	79	34	36	85.92	82.19	78.46	74.71
28475	.2677"	6.80	8.0	79	34	36	85.92	82.19	78.46	74.71
28485	.2717"	6.90	8.0	79	34	36	85.92	82.19	78.46	74.71
28495	.2756"	7.00	8.0	79	34	36	85.30	81.59	77.89	74.17
28505	.2795"	7.10	8.0	79	41	36	85.30	81.59	77.89	74.17
28515	.2815"	7.15	8.0	79	41	36	85.30	81.59	77.89	74.17
28525	.2835"	7.20	8.0	79	41	36	85.30	81.59	77.89	74.17
28535	.2874"	7.30	8.0	79	41	36	85.30	81.59	77.89	74.17
28545	.2913"	7.40	8.0	79	41	36	85.30	81.59	77.89	74.17
28555	.2953"	7.50	8.0	79	41	36	84.62	80.94	77.26	73.59

1580KD - 2 Flute (continued)

7.55mm - 12.95mm
(.2972" - .5098")

HIGH PERFORMANCE
DRILLS

EDP#	<i>d1</i> Diameter		<i>d2</i> Shank Diameter	<i>l1</i> Overall Length	<i>l2</i> Flute Length	<i>l4</i> Shank Length	1-11	12-24	25-49	50-100
	Decimal	Metric								
28565	.2972"	7.55	8.0	79	41	36	84.62	80.94	77.26	73.59
28575	.2992"	7.60	8.0	79	41	36	84.62	80.94	77.26	73.59
28585	.3031"	7.70	8.0	79	41	36	84.62	80.94	77.26	73.59
28595	.3071"	7.80	8.0	79	41	36	84.62	80.94	77.26	73.59
28605	.3130"	7.95	8.0	79	41	36	84.62	80.94	77.26	73.59
28615	.3150"	8.00	8.0	79	41	36	83.99	80.34	76.69	73.04
28625	.3189"	8.10	10.0	89	47	40	117.03	111.95	106.85	101.76
28635	.3228"	8.20	10.0	89	47	40	117.03	111.95	106.85	101.76
28645	.3268"	8.30	10.0	89	47	40	117.03	111.95	106.85	101.76
28655	.3287"	8.35	10.0	89	47	40	117.03	111.95	106.85	101.76
28665	.3307"	8.40	10.0	89	47	40	117.03	111.95	106.85	101.76
28675	.3346"	8.50	10.0	89	47	40	116.07	111.03	105.98	100.93
28685	.3386"	8.60	10.0	89	47	40	116.07	111.03	105.98	100.93
28695	.3425"	8.70	10.0	89	47	40	116.07	111.03	105.98	100.93
28725	.3445"	8.75	10.0	89	47	40	116.07	111.03	105.98	100.93
28735	.3465"	8.80	10.0	89	47	40	116.07	111.03	105.98	100.93
28745	.3504"	8.90	10.0	89	47	40	116.07	111.03	105.98	100.93
28755	.3543"	9.00	10.0	89	47	40	115.12	110.12	105.10	100.10
28765	.3583"	9.10	10.0	89	47	40	115.12	110.12	105.10	100.10
28775	.3602"	9.15	10.0	89	47	40	115.12	110.12	105.10	100.10
28815	.3622"	9.20	10.0	89	47	40	115.12	110.12	105.10	100.10
28825	.3661"	9.30	10.0	89	47	40	115.12	110.12	105.10	100.10
28845	.3701"	9.40	10.0	89	47	40	115.12	110.12	105.10	100.10
28855	.3740"	9.50	10.0	89	47	40	114.15	109.19	104.23	99.26
28875	.3760"	9.55	10.0	89	47	40	114.15	109.19	104.23	99.26
28878	.3780"	9.60	10.0	89	47	40	114.15	109.19	104.23	99.26
28882	.3819"	9.70	10.0	89	47	40	114.15	109.19	104.23	99.26
28885	.3858"	9.80	10.0	89	47	40	114.15	109.19	104.23	99.26
28895	.3898"	9.90	10.0	89	47	40	114.15	109.19	104.23	99.26
28905	.3937"	10.00	10.0	89	47	40	113.19	108.27	103.36	98.43
28925	.3976"	10.10	12.0	102	55	45	151.73	145.13	138.53	131.93
28935	.4016"	10.20	12.0	102	55	45	151.73	145.13	138.53	131.93
28945	.4055"	10.30	12.0	102	55	45	151.73	145.13	138.53	131.93
28955	.4134"	10.50	12.0	102	55	45	150.45	143.90	137.36	130.82
28965	.4173"	10.60	12.0	102	55	45	150.45	143.90	137.36	130.82
28975	.4213"	10.70	12.0	102	55	45	150.45	143.90	137.36	130.82
28985	.4252"	10.80	12.0	102	55	45	150.45	143.90	137.36	130.82
28995	.4331"	11.00	12.0	102	55	45	149.15	142.66	136.18	129.70
29005	.4370"	11.10	12.0	102	55	45	149.15	142.66	136.18	129.70
29015	.4409"	11.20	12.0	102	55	45	149.15	142.66	136.18	129.70
29025	.4488"	11.40	12.0	102	55	45	149.15	142.66	136.18	129.70
29035	.4528"	11.50	12.0	102	55	45	147.88	141.45	135.02	128.59
29045	.4606"	11.70	12.0	102	55	45	147.88	141.45	135.02	128.59
29055	.4685"	11.90	12.0	102	55	45	147.88	141.45	135.02	128.59
29065	.4724"	12.00	12.0	102	55	45	146.56	140.18	133.82	127.44
29075	.4764"	12.10	14.0	107	60	45	209.86	200.74	191.61	182.49
29085	.4803"	12.20	14.0	107	60	45	209.86	200.74	191.61	182.49
29095	.4842"	12.30	14.0	107	60	45	209.86	200.74	191.61	182.49
29105	.4882"	12.40	14.0	107	60	45	209.86	200.74	191.61	182.49
29115	.4921"	12.50	14.0	107	60	45	208.56	199.49	190.42	181.36
29125	.4961"	12.60	14.0	107	60	45	208.56	199.49	190.42	181.36
29135	.5000"	12.70	14.0	107	60	45	208.56	199.49	190.42	181.36
29145	.5039"	12.80	14.0	107	60	45	208.56	199.49	190.42	181.36
29148	.5051"	12.83	14.0	107	60	45	208.56	199.49	190.42	181.36
29155	.5079"	12.90	14.0	107	60	45	208.56	199.49	190.42	181.36
29161	.5098"	12.95	14.0	107	60	45	208.56	199.49	190.42	181.36

continued →

1580KD - 2 Flute (continued)

13.00mm - 20.00mm
(.5118" - .7874")

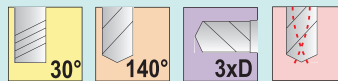
EDP#	<i>d1</i> Diameter		<i>d2</i> Shank Diameter	<i>l1</i> Overall Length	<i>l2</i> Flute Length	<i>l4</i> Shank Length	1-11	12-24	25-49	50-100
	Decimal	Metric								
29165	.5118"	13.00	14.0	107	60	45	207.28	198.27	189.26	180.24
29175	.5157"	13.10	14.0	107	60	45	207.28	198.27	189.26	180.24
29181	.5236"	13.30	14.0	107	60	45	207.28	198.27	189.26	180.24
29185	.5315"	13.50	14.0	107	60	45	205.98	197.03	188.07	179.12
29195	.5394"	13.70	14.0	107	60	45	205.98	197.03	188.07	179.12
29205	.5433"	13.80	14.0	107	60	45	205.98	197.03	188.07	179.12
29215	.5512"	14.00	14.0	107	60	45	204.70	195.80	186.90	178.01
29225	.5551"	14.10	16.0	115	65	48	255.36	244.25	233.16	222.05
29235	.5591"	14.20	16.0	115	65	48	255.36	244.25	233.16	222.05
29245	.5610"	14.25	16.0	115	65	48	255.36	244.25	233.16	222.05
29255	.5630"	14.30	16.0	115	65	48	255.36	244.25	233.16	222.05
29265	.5709"	14.50	16.0	115	65	48	254.04	243.00	231.95	220.91
29275	.5787"	14.70	16.0	115	65	48	254.04	243.00	231.95	220.91
29285	.5827"	14.80	16.0	115	65	48	254.04	243.00	231.95	220.91
29305	.5906"	15.00	16.0	115	65	48	252.76	241.77	230.79	219.79
29315	.5945"	15.10	16.0	115	65	48	252.76	241.77	230.79	219.79
29325	.6102"	15.50	16.0	115	65	48	251.49	240.56	229.62	218.69
29335	.6181"	15.70	16.0	115	65	48	251.49	240.56	229.62	218.69
29345	.6220"	15.80	16.0	115	65	48	251.49	240.56	229.62	218.69
29355	.6299"	16.00	16.0	115	65	48	250.21	239.34	228.46	217.58
29363	.6331"	16.08	18.0	123	73	48	326.61	312.42	298.21	284.01
29365	.6339"	16.10	18.0	123	73	48	326.61	312.42	298.21	284.01
29371	.6378"	16.20	18.0	123	73	48	326.61	312.42	298.21	284.01
29375	.6398"	16.25	18.0	123	73	48	326.61	312.42	298.21	284.01
29385	.6496"	16.50	18.0	123	73	48	324.06	309.97	295.88	281.80
29395	.6555"	16.65	18.0	123	73	48	324.06	309.97	295.88	281.80
29405	.6693"	17.00	18.0	123	73	48	321.46	307.49	293.51	279.53
29415	.6713"	17.05	18.0	123	73	48	321.46	307.49	293.51	279.53
29425	.6870"	17.45	18.0	123	73	48	321.46	307.49	293.51	279.53
29435	.6890"	17.50	18.0	123	73	48	318.94	305.07	291.20	277.34
29445	.7027"	17.85	18.0	123	73	48	318.94	305.07	291.20	277.34
29455	.7087"	18.00	18.0	123	73	48	316.37	302.61	288.86	275.10
29465	.7185"	18.25	20.0	131	79	50	428.22	409.60	390.98	372.37
29475	.7283"	18.50	20.0	131	79	50	425.67	407.16	388.66	370.16
29485	.7342"	18.65	20.0	131	79	50	425.67	407.16	388.66	370.16
29495	.7480"	19.00	20.0	131	79	50	423.09	404.70	386.30	367.91
29505	.7500"	19.05	20.0	131	79	50	423.09	404.70	386.30	367.91
29515	.7520"	19.10	20.0	131	79	50	423.09	404.70	386.30	367.91
29525	.7539"	19.15	20.0	131	79	50	423.09	404.70	386.30	367.91
29535	.7559"	19.20	20.0	131	79	50	423.09	404.70	386.30	367.91
29545	.7579"	19.25	20.0	131	79	50	423.09	404.70	386.30	367.91
29546	.7590"	19.28	20.0	131	79	50	423.09	404.70	386.30	367.91
29551	.7598"	19.30	20.0	131	79	50	423.09	404.70	386.30	367.91
29555	.7638"	19.40	20.0	131	79	50	423.09	404.70	386.30	367.91
29565	.7677"	19.50	20.0	131	79	50	420.54	402.26	383.98	365.70
29585	.7795"	19.80	20.0	131	79	50	420.54	402.26	383.98	365.70
29595	.7815"	19.85	20.0	131	79	50	420.54	402.26	383.98	365.70
29605	.7874"	20.00	20.0	131	79	50	417.97	399.80	381.62	363.45

1580KH - 2 Flute

Technical information: page 208-209

.1575" - .2720"
(4.00mm - 6.91mm)

**NEW
SERIES**



TOLERANCES	
<i>d</i>	+0.000" -0.005" (+0.000 -0.127mm)
<i>h</i>	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)
<i>l₂</i>	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)

Balinit® HELICA Coated

High performance - high penetration solid submicron grain carbide drill

Extended tool life and greater surface finish through faster SFM rates

Up to 70% faster than standard carbide drills

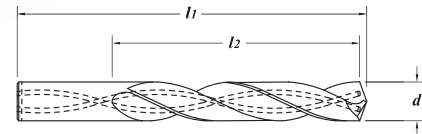
30° helix for better chip evacuation

Honed cutting edge

Recommended to run in high nickel, high temperature alloys, cobalt-based alloys, stainless steels and tool steels

Live tooling recommended on lathe processes

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



HIGH PERFORMANCE
DRILLS

EDP#	<i>d</i> † Diameter		<i>l₁</i> Overall Length	<i>l₂</i> Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
22085	.1575	4.00	56	21	45.62	43.64	41.66	39.68
22090	.1590	#21	4.04	2-3/16"	46.05	44.04	42.05	40.04
22095	.1610	#20	4.09	2-3/16"	46.43	44.41	42.39	40.37
22100	.1660	#19	4.22	2-9/32"	46.82	44.78	42.75	40.72
22105	.1695	#18	4.30	2-9/32"	47.20	45.15	43.09	41.04
22110	.1719	11/64"	4.37	2-9/32"	47.59	45.52	43.45	41.38
22115	.1730	#17	4.39	2-9/32"	47.98	45.88	43.80	41.71
22120	.1770	#16	4.49	2-9/32"	48.31	46.21	44.11	42.01
22125	.1772		4.50	58	48.72	46.60	44.49	42.37
22130	.1800	#15	4.57	2-9/32"	49.05	46.91	44.78	42.65
22135	.1820	#14	4.62	2-9/32"	49.51	47.36	45.21	43.06
22140	.1850	#13	4.70	2-9/32"	49.86	47.69	45.52	43.36
22145	.1875	3/16"	4.76	2-13/32"	50.26	48.08	45.90	43.71
22150	.1890	#12	4.80	2-13/32"	50.63	48.42	46.23	44.02
22155	.1910	#11	4.85	2-13/32"	51.10	48.87	46.65	44.43
22160	.1935	#10	4.91	2-13/32"	51.40	49.16	46.92	44.69
22165	.1960	#9	4.98	2-13/32"	51.77	49.52	47.27	45.02
22170	.1969		5.00	61	52.06	49.80	47.54	45.27
22175	.1990	#8	5.05	2-13/32"	52.54	50.25	47.98	45.69
22180	.2010	#7	5.10	2-13/32"	52.70	50.41	48.11	45.82
22185	.2031	13/64"	5.16	2-13/32"	53.05	50.74	48.43	46.13
22190	.2040	#6	5.18	2-13/32"	53.40	51.08	48.76	46.44
22195	.2055	#5	5.22	2-13/32"	53.79	51.45	49.11	46.77
22200	.2090	#4	5.31	2-13/32"	54.13	51.78	49.42	47.07
22205	.2130	#3	5.41	2-5/8"	54.49	52.11	49.74	47.38
22210	.2165		5.50	67	54.84	52.46	50.07	47.68
22215	.2188	7/32"	5.56	2-5/8"	55.31	52.90	50.50	48.09
22220	.2210	#2	5.61	2-5/8"	55.70	53.28	50.86	48.43
22225	.2280	#1	5.79	2-5/8"	56.11	53.66	51.23	48.79
22230	.2340	A	5.94	2-5/8"	56.50	54.05	51.59	49.13
22235	.2344	15/64"	5.95	2-5/8"	56.93	54.45	51.98	49.50
22240	.2362		6.00	67	57.32	54.83	52.34	49.85
22245	.2380	B	6.04	2-3/4"	57.71	55.20	52.69	50.18
22250	.2420	C	6.15	2-3/4"	58.18	55.65	53.12	50.59
22255	.2460	D	6.25	2-3/4"	58.51	55.96	53.42	50.88
22260	.2500	1/4" / E	6.35	2-3/4"	59.00	56.43	53.87	51.30
22265	.2559		6.50	70	59.96	57.35	54.75	52.14
22270	.2570	F	6.53	2-3/4"	60.88	58.23	55.59	52.94
22275	.2610	G	6.63	2-3/4"	61.81	59.12	56.43	53.75
22280	.2656	17/64"	6.75	2-15/16"	62.75	60.03	57.29	54.57
22285	.2660	H	6.76	2-15/16"	63.69	60.92	58.15	55.38
22290	.2720	I	6.91	2-15/16"	64.62	61.81	59.00	56.19

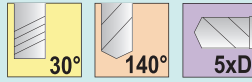
continued →

1580KH - 2 Flute (continued)

.2756" - .6299"
(7.00mm - 16.00mm)

EDP#	$d^{\dagger}$ Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
22295	.2756		7.00	75	34	65.56	62.71	59.86	57.01
22300	.2770	J	7.03	2-15/16"	1-11/32"	66.48	63.59	60.69	57.80
22305	.2810	K	7.14	2-15/16"	1-11/32"	67.44	64.51	61.58	58.65
22310	.2812	9/32"	7.14	2-15/16"	1-11/32"	68.38	65.41	62.43	59.46
22315	.2900	L	7.37	2-15/16"	1-11/32"	69.30	66.28	63.27	60.26
22320	.2950	M	7.49	2-15/16"	1-11/32"	70.65	67.58	64.50	61.43
22325	.2953		7.50	75	34	70.65	67.58	64.50	61.43
22330	.2969	19/64"	7.54	3-3/32"	1-15/32"	71.26	68.16	65.06	61.96
22335	.3020	N	7.67	3-3/32"	1-15/32"	74.46	71.23	67.98	64.75
22340	.3125	5/16"	7.94	3-3/32"	1-15/32"	74.71	71.47	68.21	64.97
22345	.3150		8.00	79	37	76.13	72.82	69.50	66.20
22350	.3160	O	8.03	3-3/32"	1-15/32"	76.13	72.82	69.50	66.20
22355	.3230	P	8.20	3-3/32"	1-15/32"	76.69	73.35	70.02	66.68
22360	.3281	21/64"	8.33	3-3/32"	1-15/32"	78.11	74.71	71.32	67.92
22365	.3320	Q	8.43	3-3/32"	1-15/32"	79.51	76.06	72.59	69.14
22370	.3346		8.50	79	37	79.84	76.37	72.89	69.43
22375	.3390	R	8.61	3-5/16"	1-9/16"	81.98	78.42	74.85	71.29
22380	.3438	11/32"	8.73	3-5/16"	1-9/16"	83.78	80.14	76.49	72.85
22385	.3480	S	8.84	3-5/16"	1-9/16"	86.56	82.79	79.03	75.26
22390	.3543		9.00	84	40	88.75	84.90	81.04	77.18
22395	.3580	T	9.09	3-5/16"	1-9/16"	92.25	88.23	84.23	80.22
22400	.3594	23/64"	9.13	3-5/16"	1-9/16"	92.81	88.77	84.74	80.70
22405	.3680	U	9.35	3-5/16"	1-9/16"	97.65	93.40	89.16	84.91
22410	.3740		9.50	84	40	98.45	94.16	89.89	85.60
22415	.3750	3/8"	9.52	3-1/2"	1-11/16"	99.04	94.73	90.43	86.12
22420	.3770	V	9.57	3-1/2"	1-11/16"	102.85	98.37	93.90	89.43
22425	.3860	W	9.80	3-1/2"	1-11/16"	104.63	100.09	95.53	90.99
22430	.3906	25/64"	9.92	3-1/2"	1-11/16"	105.96	101.35	96.74	92.13
22435	.3937		10.00	89	43	106.33	101.70	97.08	92.46
22440	.3970	X	10.08	3-1/2"	1-11/16"	108.93	104.20	99.46	94.72
22445	.4040	Y	10.26	3-1/2"	1-11/16"	109.68	104.90	100.14	95.37
22450	.4062	13/32"	10.32	3-1/2"	1-11/16"	113.05	108.13	103.22	98.30
22455	.4130	Z	10.49	3-1/2"	1-11/16"	114.09	109.13	104.17	99.21
22460	.4134		10.50	89	43	114.09	109.13	104.17	99.21
22465	.4219	27/64"	10.72	3-3/4"	1-13/16"	115.16	110.16	105.14	100.14
22470	.4331		11.00	95	46	123.61	118.24	112.86	107.49
22475	.4375	7/16"	11.11	3-3/4"	1-13/16"	123.61	118.24	112.86	107.49
22480	.4528		11.50	95	46	132.69	126.92	121.15	115.39
22485	.4531	29/64"	11.51	3-3/4"	1-13/16"	132.69	126.92	121.15	115.39
22490	.4688	15/32"	11.91	4"	1-15/16"	139.42	133.36	127.30	121.23
22495	.4724		12.00	102	49	139.84	133.75	127.68	121.60
22500	.4844	31/64"	12.30	4"	1-15/16"	150.55	144.01	137.46	130.92
22505	.4921		12.50	102	49	158.68	151.79	144.88	137.99
22510	.5000	1/2"	12.70	4"	1-15/16"	159.69	152.74	145.81	138.86
22515	.5118		13.00	107	53	177.27	169.56	161.86	154.15
22520	.5156	33/64"	13.10	4-7/32"	2-3/32"	181.44	173.54	165.66	157.78
22525	.5312	17/32"	13.49	4-7/32"	2-3/32"	185.62	177.55	169.48	161.41
22530	.5315		13.50	110	56	189.81	181.55	173.31	165.06
22535	.5469	35/64"	13.89	4-5/16"	2-7/32"	193.96	185.53	177.09	168.66
22540	.5512		14.00	110	56	198.16	189.55	180.93	172.32
22545	.5625	9/16"	14.29	4-9/16"	2-15/32"	214.14	204.83	195.51	186.20
22550	.5709		14.50	116	63	218.16	208.68	199.19	189.71
22555	.5781	37/64"	14.68	4-15/16"	2-9/16"	222.06	212.41	202.75	193.10
22560	.5906		15.00	125	65	226.15	216.32	206.48	196.65
22565	.5938	19/32"	15.08	4-15/16"	2-9/16"	227.39	217.50	207.62	197.72
22570	.6094	39/64"	15.48	5-1/16"	2-13/16"	228.52	218.59	208.64	198.71
22575	.6102		15.50	129	71	229.72	219.73	209.74	199.75
22580	.6250	5/8"	15.87	5-1/4"	3-1/8"	230.84	220.80	210.77	200.73
22585	.6299		16.00	133	79	236.42	226.15	215.86	205.59

.1181" - .2165"
(3.00mm - 5.50mm)



TOLERANCES		
d	+.0000" - .0005" (+.0000 - .0127mm)	
h	≤ 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)

Balinit® HARDLUBE Coated

High performance - high penetration solid submicron grain carbide drill

Extended tool life and greater surface finish through faster SFM rates

Up to 50% faster than standard carbide drills

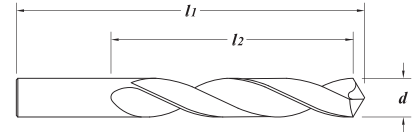
30° helix for better chip evacuation

Honed cutting edge

Recommended to run in high nickel, high temperature alloys, cobalt-based alloys, stainless steels and tool steels

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	Metric						
21301	.1181	3.00	51	19	30.05	28.74	27.44	26.12
21306	.1200	#31	2"	3/4"	30.28	28.96	27.65	26.33
21311	.1250	1/8"	2"	3/4"	30.52	29.19	27.87	26.54
21316	.1285	#30	2-1/4"	3/4"	30.79	29.45	28.12	26.78
21321	.1360	#29	2-1/4"	7/8"	31.02	29.67	28.33	26.98
21326	.1378	3.50	57	22	31.26	29.90	28.55	27.19
21331	.1405	#28	2-1/4"	7/8"	31.52	30.15	28.78	27.41
21336	.1406	9/64"	2-1/4"	7/8"	31.79	30.41	29.03	27.64
21341	.1440	#27	2-1/4"	7/8"	32.00	30.61	29.21	27.83
21346	.1470	#26	2-1/4"	7/8"	32.27	30.87	29.46	28.06
21351	.1495	#25	2-1/4"	15/16"	32.52	31.11	29.69	28.28
21356	.1520	#24	2-1/4"	15/16"	32.75	31.32	29.90	28.48
21361	.1540	#23	2-1/4"	15/16"	33.02	31.58	30.15	28.71
21366	.1562	5/32"	2-1/2"	15/16"	33.26	31.81	30.37	28.92
21371	.1570	#22	2-1/2"	15/16"	33.50	32.04	30.59	29.13
21376	.1575	4.00	64	24	33.75	32.28	30.82	29.35
21381	.1590	#21	2-1/2"	15/16"	33.99	32.51	31.03	29.56
21386	.1610	#20	2-1/2"	15/16"	34.26	32.77	31.28	29.79
21391	.1660	#19	2-1/2"	1"	34.51	33.01	31.50	30.00
21396	.1695	#18	2-1/2"	1"	34.75	33.24	31.72	30.21
21401	.1719	11/64"	2-1/2"	1"	35.00	33.48	31.95	30.43
21406	.1730	#17	2-1/2"	1"	35.22	33.70	32.16	30.63
21411	.1770	#16	2-1/2"	1"	35.48	33.95	32.40	30.86
21416	.1772	4.50	65	25	35.74	34.20	32.64	31.09
21421	.1800	#15	2-3/4"	1"	35.97	34.41	32.84	31.28
21426	.1820	#14	2-3/4"	1"	36.21	34.64	33.06	31.49
21431	.1850	#13	2-3/4"	1-1/4"	36.48	34.89	33.31	31.72
21436	.1875	3/16"	2-3/4"	1-1/4"	36.74	35.14	33.55	31.95
21441	.1890	#12	2-3/4"	1-1/4"	36.97	35.36	33.76	32.15
21446	.1910	#11	2-3/4"	1-1/4"	37.21	35.59	33.98	32.35
21451	.1935	#10	2-3/4"	1-1/4"	37.47	35.84	34.22	32.58
21456	.1960	#9	3"	1-5/16"	37.70	36.06	34.42	32.78
21461	.1969	5.00	76	33	37.96	36.31	34.66	33.01
21466	.1990	#8	3"	1-5/16"	38.16	36.49	34.84	33.18
21471	.2010	#7	3"	1-5/16"	38.32	36.66	35.00	33.32
21476	.2031	13/64"	3"	1-5/16"	38.60	36.93	35.25	33.57
21481	.2040	#6	3"	1-3/8"	38.90	37.20	35.52	33.82
21486	.2055	#5	3"	1-3/8"	39.16	37.45	35.76	34.05
21491	.2090	#4	3"	1-3/8"	39.41	37.69	35.98	34.27
21496	.2130	#3	3"	1-3/8"	39.68	37.95	36.22	34.50
21501	.2165	5.50	76	35	39.93	38.19	36.45	34.72

continued →

1280H - 2 Flute (continued)

.2188" - .4528"
(5.56mm - 11.50mm)

EDP#	$d^{\dagger}$ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
21506	.2188	7/32"	5.56	3"	1-3/8"	40.19	38.44	36.69
21511	.2210	#2	5.61	3"	1-3/8"	41.05	39.26	37.48
21516	.2280	#1	5.79	3"	1-3/8"	41.25	39.46	37.66
21521	.2340	A	5.94	3-1/4"	1-1/2"	41.87	40.05	38.23
21526	.2344	15/64"	5.95	3-1/4"	1-1/2"	41.98	40.15	38.33
21531	.2362		6.00	83	38	42.11	40.28	38.45
21536	.2380	B	6.04	3-1/4"	1-5/8"	42.23	40.39	38.56
21541	.2420	C	6.15	3-1/4"	1-5/8"	42.52	40.66	38.82
21546	.2460	D	6.25	3-1/4"	1-5/8"	42.80	40.93	39.07
21551	.2500	1/4" / E	6.35	3-1/4"	1-5/8"	43.04	41.16	39.29
21556	.2559		6.50	83	41	43.79	41.89	39.99
21561	.2570	F	6.53	3-1/4"	1-11/16"	44.54	42.61	40.67
21566	.2610	G	6.63	3-1/2"	1-11/16"	45.30	43.34	41.36
21571	.2656	17/64"	6.75	3-1/2"	1-11/16"	46.05	44.04	42.05
21576	.2660	H	6.76	3-1/2"	1-11/16"	46.83	44.79	42.75
21581	.2720	I	6.91	3-1/2"	1-11/16"	47.58	45.51	43.44
21586	.2756		7.00	89	43	48.32	46.22	44.12
21591	.2770	J	7.03	3-1/2"	1-11/16"	49.09	46.96	44.82
21596	.2810	K	7.14	3-1/2"	1-3/4"	49.86	47.69	45.52
21601	.2812	9/32"	7.14	3-1/2"	1-3/4"	50.62	48.41	46.22
21606	.2900	L	7.37	3-1/2"	1-3/4"	51.31	49.08	46.85
21611	.2950	M	7.49	3-3/4"	1-3/4"	52.05	49.78	47.53
21616	.2953		7.50	95	44	52.05	49.78	47.53
21621	.2969	19/64"	7.54	3-3/4"	1-7/8"	52.55	50.26	47.99
21626	.3020	N	7.67	3-3/4"	1-7/8"	54.64	52.27	49.89
21631	.3125	5/16"	7.94	3-3/4"	1-7/8"	54.81	52.43	50.04
21636	.3150		8.00	95	48	58.14	55.61	53.08
21641	.3160	O	8.03	3-3/4"	1-7/8"	58.14	55.61	53.08
21646	.3230	P	8.20	3-3/4"	2-3/32"	58.34	55.81	53.27
21651	.3281	21/64"	8.33	4"	2-3/32"	58.87	56.32	53.76
21656	.3320	Q	8.43	4"	2-3/32"	60.05	57.44	54.83
21661	.3346		8.50	102	53	60.50	57.87	55.23
21666	.3390	R	8.61	4"	2-3/32"	62.14	59.44	56.73
21671	.3438	11/32"	8.73	4"	2-3/16"	64.33	61.54	58.74
21676	.3480	S	8.84	4"	2-3/16"	66.84	63.94	61.03
21681	.3543		9.00	102	56	67.24	64.31	61.39
21686	.3580	T	9.09	4-1/4"	2-9/32"	69.90	66.86	63.82
21691	.3594	23/64"	9.13	4-1/4"	2-9/32"	70.31	67.26	64.20
21696	.3680	U	9.35	4-1/4"	2-9/32"	77.58	74.21	70.83
21701	.3740		9.50	108	58	78.34	74.93	71.53
21706	.3750	3/8"	9.52	4-1/4"	2-3/8"	79.12	75.68	72.24
21711	.3770	V	9.57	4-1/4"	2-3/8"	81.07	77.54	74.02
21716	.3860	W	9.80	4-1/2"	2-3/8"	82.50	78.92	75.33
21721	.3906	25/64"	9.92	4-1/2"	2-3/8"	83.50	79.87	76.24
21726	.3937		10.00	114	60	86.01	82.26	78.53
21731	.3970	X	10.08	4-1/2"	2-1/2"	87.99	84.17	80.34
21736	.4040	Y	10.26	4-1/2"	2-9/16"	90.65	86.70	82.76
21741	.4062	13/32"	10.32	4-1/2"	2-9/16"	91.43	87.45	83.48
21746	.4130	Z	10.49	4-1/2"	2-5/8"	92.26	88.24	84.24
21751	.4134		10.50	114	67	92.26	88.24	84.24
21756	.4219	27/64"	10.72	4-1/2"	2-11/16"	93.10	89.06	85.01
21761	.4331		11.00	114	68	99.89	95.54	91.21
21766	.4375	7/16"	11.11	4-3/4"	2-13/16"	100.29	95.93	91.56
21771	.4528		11.50	121	71	107.17	102.51	97.85

1280H - 2 Flute (continued)

.4531" - .6299"
(11.51mm - 16.00mm)

HIGH PERFORMANCE
DRILLS

EDP#	$d^{\dagger}$		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Diameter Metric						
21776	.4531	29/64"	11.51	4-3/4"	2-7/8"	107.17	102.51	97.85
21781	.4688	15/32"	11.91	4-3/4"	2-7/8"	112.57	107.67	102.78
21786	.4724		12.00	121	73	112.89	107.98	103.07
21791	.4844	31/64"	12.30	5-5/16"	3"	114.15	109.19	104.23
21796	.4921		12.50	135	76	115.51	110.49	105.47
21801	.5000	1/2"	12.70	5-3/8"	3-1/16"	115.75	110.72	105.68
21806	.5118		13.00	137	78	128.75	123.16	117.55
21811	.5156	33/64"	13.10	5-3/8"	3-1/8"	131.77	126.04	120.31
21816	.5312	17/32"	13.49	5-11/16"	3-5/16"	134.86	128.99	123.13
21821	.5315		13.50	144	84	137.84	131.85	125.85
21826	.5469	35/64"	13.89	5-13/16"	3-3/8"	140.84	134.71	128.59
21831	.5512		14.00	148	86	143.88	137.62	131.37
21836	.5625	9/16"	14.29	5-15/16"	3-1/2"	155.56	148.80	142.03
21841	.5709		14.50	151	89	158.42	151.54	144.64
21846	.5781	37/64"	14.68	6"	3-1/2"	161.27	154.26	147.25
21851	.5906		15.00	152	90	164.28	157.13	149.99
21856	.5938	19/32"	15.08	6"	3-9/16"	165.13	157.96	150.77
21861	.6094	39/64"	15.48	6-3/16"	3-11/16"	178.95	171.17	163.39
21866	.6102		15.50	157	94	179.78	171.96	164.15
21871	.6250	5/8"	15.87	6-5/16"	3-3/4"	180.62	172.76	164.91
21876	.6299		16.00	160	95	184.66	176.63	168.60

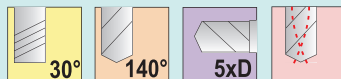
1280KH - 2 Flute

Technical information: page 208-209

TOLERANCES

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)

.1575" - .2756"
(4.00mm - 7.00mm)



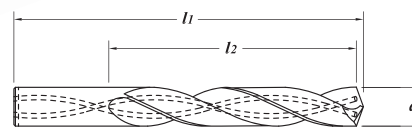
Balinit® HELICA Coated

High performance - high penetration solid submicron grain carbide drill
Coolant through capabilities for high pressure coolant systems
Up to 70% faster than standard carbide drills
30° helix for better chip evacuation
Honed cutting edge

Recommended to run in high nickel, high temperature alloys,
cobalt-based alloys, stainless steels and tool steels

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	Metric						
NEW 25441	.1575	4.00	64	24	47.54	45.47	43.41	41.34
NEW 25446	.1590	#21	2-1/2"	15/16"	47.86	45.78	43.70	41.62
NEW 25451	.1610	#20	2-1/2"	15/16"	48.24	46.13	44.04	41.94
NEW 25456	.1660	#19	2-1/2"	1"	48.59	46.48	44.37	42.26
NEW 25461	.1695	#18	2-1/2"	1"	48.94	46.81	44.69	42.56
NEW 25466	.1719	11/64"	2-1/2"	1"	49.29	47.14	45.00	42.86
NEW 25471	.1730	#17	2-1/2"	1"	49.61	47.46	45.29	43.14
NEW 25476	.1770	#16	2-1/2"	1"	49.98	47.81	45.64	43.46
NEW 25481	.1772	4.50	64	25	50.36	48.16	45.98	43.78
NEW 25486	.1800	#15	2-3/4"	1"	50.68	48.47	46.27	44.06
NEW 25491	.1820	#14	2-3/4"	1"	51.01	48.80	46.57	44.36
NEW 25496	.1850	#13	2-3/4"	1-1/4"	51.37	49.13	46.90	44.67
NEW 25501	.1875	3/16"	2-3/4"	1-1/4"	51.75	49.50	47.25	45.00
NEW 25506	.1890	#12	2-3/4"	1-1/4"	52.07	49.81	47.55	45.28
NEW 25511	.1910	#11	2-3/4"	1-1/4"	52.41	50.13	47.85	45.57
NEW 25516	.1935	#10	2-3/4"	1-1/4"	52.78	50.48	48.19	45.90
NEW 25521	.1960	#9	3"	1-5/16"	53.09	50.78	48.47	46.17
NEW 25526	.1969	5.00	76	33	53.47	51.14	48.82	46.49
NEW 25531	.1990	#8	3"	1-5/16"	53.74	51.40	49.07	46.73
NEW 25536	.2010	#7	3"	1-5/16"	53.98	51.63	49.29	46.94
NEW 25541	.2031	13/64"	3"	1-5/16"	54.37	52.01	49.64	47.28
NEW 25546	.2040	#6	3"	1-3/8"	54.78	52.40	50.01	47.63
NEW 25551	.2055	#5	3"	1-3/8"	55.15	52.75	50.36	47.95
NEW 25556	.2090	#4	3"	1-3/8"	55.50	53.09	50.68	48.27
NEW 25561	.2130	#3	3"	1-3/8"	55.88	53.45	51.02	48.59
NEW 25566	.2165	5.50	76	35	56.22	53.78	51.33	48.89
25571	.2188	7/32"	3"	1-3/8"	56.36	53.90	51.46	49.00
25576	.2210	#2	3"	1-3/8"	57.30	54.81	52.32	49.83
25581	.2280	#1	3"	1-3/8"	57.51	55.02	52.51	50.01
25586	.2340	A	3-1/4"	1-1/2"	64.55	61.74	58.94	56.13
25591	.2344	15/64"	3-1/4"	1-1/2"	64.67	61.86	59.04	56.23
25596	.2362	6.00	83	38	64.82	62.00	59.19	56.37
25601	.2380	B	3-1/4"	1-5/8"	66.94	64.03	61.12	58.21
25606	.2420	C	3-1/4"	1-5/8"	67.27	64.34	61.42	58.49
25611	.2460	D	3-1/4"	1-5/8"	67.56	64.63	61.68	58.75
25616	.2500	1/4" / E	3-1/4"	1-5/8"	67.84	64.89	61.94	58.99
25621	.2559	6.50	83	41	68.67	65.69	62.70	59.72
25626	.2570	F	3-1/4"	1-11/16"	70.26	67.20	64.15	61.10
25631	.2610	G	3-1/2"	1-11/16"	71.13	68.04	64.94	61.85
25636	.2656	17/64"	3-1/2"	1-11/16"	71.95	68.82	65.69	62.57
25641	.2660	H	3-1/2"	1-11/16"	72.81	69.65	66.48	63.32
25646	.2720	I	3-1/2"	1-11/16"	72.89	69.72	66.55	63.39
25651	.2756	7.00	89	43	73.73	70.52	67.32	64.11

1280KH - 2 Flute (continued)

.2770" - .6299"
(7.03mm - 16.00mm)

HIGH PERFORMANCE
DRILLS

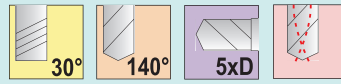
EDP#	$d^{\dagger}$ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
25656	.2770	J	7.03	3-1/2"	1-11/16"	77.47	74.10	70.73
25661	.2810	K	7.14	3-1/2"	1-3/4"	78.31	74.91	71.50
25666	.2812	9/32"	7.14	3-1/2"	1-3/4"	79.16	75.72	72.28
25671	.2900	L	7.37	3-1/2"	1-3/4"	79.52	76.07	72.60
25676	.2950	M	7.49	3-3/4"	1-3/4"	79.99	76.51	73.03
25681	.2953		7.50	95	44	79.99	76.51	73.03
25686	.2969	19/64"	7.54	3-3/4"	1-7/8"	85.45	81.73	78.02
25691	.3020	N	7.67	3-3/4"	1-7/8"	87.38	83.58	79.78
25696	.3125	5/16"	7.94	3-3/4"	1-7/8"	87.57	83.76	79.96
25701	.3150		8.00	95	48	91.27	87.30	83.34
25706	.3160	O	8.03	3-3/4"	1-7/8"	92.09	88.09	84.08
25711	.3230	P	8.20	3-3/4"	2-3/32"	92.33	88.32	84.30
25716	.3281	21/64"	8.33	4"	2-3/32"	92.94	88.90	84.86
25721	.3320	Q	8.43	4"	2-3/32"	93.46	89.40	85.33
25726	.3346		8.50	102	53	93.95	89.87	85.78
25731	.3390	R	8.61	4"	2-3/32"	98.08	93.82	89.55
25736	.3438	11/32"	8.73	4"	2-3/16"	100.52	96.15	91.78
25741	.3480	S	8.84	4"	2-3/16"	102.77	98.30	93.84
25746	.3543		9.00	102	56	103.22	98.73	94.24
25751	.3580	T	9.09	4-1/4"	2-9/32"	105.16	100.59	96.02
25756	.3594	23/64"	9.13	4-1/4"	2-9/32"	105.56	100.97	96.38
25761	.3680	U	9.35	4-1/4"	2-9/32"	111.88	107.02	102.15
25766	.3740		9.50	108	58	112.43	107.55	102.66
25771	.3750	3/8"	9.52	4-1/4"	2-3/8"	115.22	110.21	105.21
25776	.3770	V	9.57	4-1/4"	2-3/8"	115.60	110.57	105.54
25781	.3860	W	9.80	4-1/2"	2-3/8"	116.88	111.79	106.71
25786	.3906	25/64"	9.92	4-1/2"	2-3/8"	117.75	112.63	107.50
25791	.3937		10.00	114	60	118.82	113.65	108.48
25796	.3970	X	10.08	4-1/2"	2-1/2"	124.17	118.77	113.37
25801	.4040	Y	10.26	4-1/2"	2-9/16"	124.72	119.30	113.87
25806	.4062	13/32"	10.32	4-1/2"	2-9/16"	127.11	121.59	116.05
25811	.4130	Z	10.49	4-1/2"	2-5/8"	129.12	123.50	117.88
25816	.4134		10.50	114	67	129.12	123.50	117.88
25821	.4219	27/64"	10.72	4-1/2"	2-11/16"	130.95	125.26	119.56
25826	.4331		11.00	114	68	135.65	129.75	123.85
25831	.4375	7/16"	11.11	4-3/4"	2-13/16"	138.40	132.38	126.37
25836	.4528		11.50	121	71	143.34	137.11	130.87
25841	.4531	29/64"	11.51	4-3/4"	2-7/8"	148.23	141.78	135.35
25846	.4688	15/32"	11.91	4-3/4"	2-7/8"	151.63	145.04	138.44
25851	.4724		12.00	121	73	154.90	148.16	141.43
25856	.4844	31/64"	12.30	5-5/16"	3"	165.29	158.10	150.91
25861	.4921		12.50	135	76	177.41	169.70	161.99
25866	.5000	1/2"	12.70	5-3/8"	3-1/16"	179.09	171.30	163.52
25871	.5118		13.00	137	78	203.11	194.28	185.45
25876	.5156	33/64"	13.10	5-3/8"	3-1/8"	211.69	202.49	193.28
25881	.5312	17/32"	13.49	5-11/16"	3-5/16"	215.11	205.76	196.40
25886	.5315		13.50	144	84	218.42	208.93	199.43
25891	.5469	35/64"	13.89	5-13/16"	3-3/8"	230.40	220.39	210.36
25896	.5512		14.00	148	86	233.78	223.62	213.45
25901	.5625	9/16"	14.29	5-15/16"	3-1/2"	253.39	242.37	231.35
25906	.5709		14.50	151	89	255.38	244.28	233.18
25911	.5781	37/64"	14.68	6"	3-1/2"	256.07	244.93	233.80
25916	.5906		15.00	152	90	259.40	248.12	236.84
25921	.5938	19/32"	15.08	6"	3-9/16"	266.16	254.58	243.02
25926	.6094	39/64"	15.48	6-3/16"	3-11/16"	299.54	286.52	273.49
25931	.6102		15.50	157	94	300.36	287.30	274.25
25936	.6250	5/8"	15.87	6-5/16"	3-3/4"	308.65	295.24	281.81
25941	.6299		16.00	160	95	312.70	299.10	285.50

1280KD - 2 Flute

Technical information: page 208-209

4.00mm - 7.50mm
(.1575" - .2953")

**NEW
SERIES**



TOLERANCES

d1	3mm - 6mm	+0.16 +0.04mm (+.0063" +.0015")
	> 6mm - 10mm	+0.21 +0.06mm (+.0082" +.0023")
	> 10mm - 18mm	+0.25 +0.07mm (+.0098" +.0027")
	> 18mm - 20mm	+0.29 +0.08mm (+.0114" +.0031")
d2	6mm	+0.00 -0.08mm (+.0000" -.0030")
	8mm - 10mm	+0.00 -0.09mm (+.0000" -.0035")
	12mm - 18mm	+0.00 -0.11mm (+.0000" -.0040")
	20mm	+0.00 -0.13mm (+.0000" -.0050")

Balinit® HELICA Coated

High performance solid submicron grain carbide drill with reinforced shank

Utilizes DIN standard 6537

Up to 70% faster than standard carbide drills

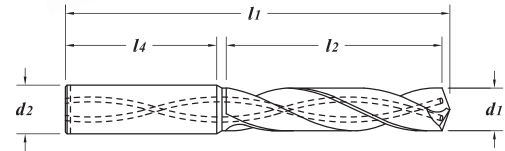
30° helix for better chip evacuation

Honed cutting edge

Recommended to run in high nickel, high temperature alloys, cobalt-based alloys, stainless steels and tool steels

Balinit® HELICA is a multi-layer AlCr-based coating designed exclusively for high performance drilling

Live tooling recommended on lathe processes



EDP#	d1 Diameter		d2 Shank Diameter	l1 Overall Length	l2 Flute Length	l4 Shank Length	1-11	12-24	25-49	50-100
	Decimal	Metric								
25205	.1575"	4.00	6.0	74	36	36	78.86	75.43	72.01	68.58
25215	.1614"	4.10	6.0	74	36	36	78.86	75.43	72.01	68.58
25225	.1654"	4.20	6.0	74	36	36	78.86	75.43	72.01	68.58
25235	.1673"	4.25	6.0	74	36	36	78.86	75.43	72.01	68.58
25245	.1693"	4.30	6.0	74	36	36	78.86	75.43	72.01	68.58
25255	.1732"	4.40	6.0	74	36	36	78.86	75.43	72.01	68.58
25265	.1772"	4.50	6.0	74	36	36	78.20	74.80	71.40	68.00
25275	.1811"	4.60	6.0	74	36	36	78.20	74.80	71.40	68.00
25285	.1831"	4.65	6.0	74	36	36	78.20	74.80	71.40	68.00
25295	.1850"	4.70	6.0	74	36	36	78.20	74.80	71.40	68.00
25305	.1870"	4.75	6.0	74	36	36	78.20	74.80	71.40	68.00
25315	.1890"	4.80	6.0	82	44	36	78.20	74.80	71.40	68.00
25325	.1929"	4.90	6.0	82	44	36	78.20	74.80	71.40	68.00
25335	.1969"	5.00	6.0	82	44	36	77.56	74.19	70.81	67.44
25345	.2008"	5.10	6.0	82	44	36	77.56	74.19	70.81	67.44
25355	.2027"	5.15	6.0	82	44	36	77.56	74.19	70.81	67.44
25365	.2047"	5.20	6.0	82	44	36	77.56	74.19	70.81	67.44
25375	.2087"	5.30	6.0	82	44	36	77.56	74.19	70.81	67.44
25385	.2165"	5.50	6.0	82	44	36	74.36	71.13	67.89	64.66
25395	.2185"	5.55	6.0	82	44	36	74.36	71.13	67.89	64.66
25397	.2205"	5.60	6.0	82	44	36	74.36	71.13	67.89	64.66
25400	.2243"	5.70	6.0	82	44	36	74.36	71.13	67.89	64.66
25405	.2283"	5.80	6.0	82	44	36	74.36	71.13	67.89	64.66
25415	.2323"	5.90	6.0	82	44	36	74.36	71.13	67.89	64.66
25425	.2342"	5.95	6.0	82	44	36	74.36	71.13	67.89	64.66
25435	.2362"	6.00	6.0	82	44	36	71.17	68.07	64.98	61.88
25437	.2402"	6.10	8.0	91	53	36	109.05	104.31	99.57	94.83
25440	.2441"	6.20	8.0	91	53	36	109.05	104.31	99.57	94.83
25443	.2480"	6.30	8.0	91	53	36	109.05	104.31	99.57	94.83
25445	.2500"	6.35	8.0	91	53	36	109.05	104.31	99.57	94.83
25450	.2520"	6.40	8.0	91	53	36	106.81	102.16	97.52	92.87
25455	.2559"	6.50	8.0	91	53	36	106.81	102.16	97.52	92.87
25457	.2571"	6.53	8.0	91	53	36	106.81	102.16	97.52	92.87
25460	.2598"	6.60	8.0	91	53	36	106.81	102.16	97.52	92.87
25463	.2638"	6.70	8.0	91	53	36	106.81	102.16	97.52	92.87
25465	.2657"	6.75	8.0	91	53	36	106.81	102.16	97.52	92.87
25475	.2677"	6.80	8.0	91	53	36	106.81	102.16	97.52	92.87
25485	.2717"	6.90	8.0	91	53	36	106.81	102.16	97.52	92.87
25495	.2756"	7.00	8.0	91	53	36	104.54	100.00	95.45	90.91
25505	.2795"	7.10	8.0	91	53	36	104.54	100.00	95.45	90.91
25515	.2815"	7.15	8.0	91	53	36	104.54	100.00	95.45	90.91
25525	.2835"	7.20	8.0	91	53	36	104.54	100.00	95.45	90.91
25530	.2874"	7.30	8.0	91	53	36	104.54	100.00	95.45	90.91
25535	.2913"	7.40	8.0	91	53	36	104.54	100.00	95.45	90.91
25545	.2953"	7.50	8.0	91	53	36	102.30	97.85	93.41	88.96

1280KD - 2 Flute (continued)

7.55mm - 12.95mm
(.2972" - .5098")

HIGH PERFORMANCE
DRILLS

EDP#	<i>d1</i> Diameter		<i>d2</i> Shank Diameter	<i>l1</i> Overall Length	<i>l2</i> Flute Length	<i>l4</i> Shank Length	1-11	12-24	25-49	50-100
	Decimal	Metric								
25555	.2972"	7.55	8.0	91	53	36	102.30	97.85	93.41	88.96
25565	.2992"	7.60	8.0	91	53	36	102.30	97.85	93.41	88.96
25575	.3031"	7.70	8.0	91	53	36	102.30	97.85	93.41	88.96
25585	.3071"	7.80	8.0	91	53	36	102.30	97.85	93.41	88.96
25595	.3130"	7.95	8.0	91	53	36	102.30	97.85	93.41	88.96
25605	.3150"	8.00	8.0	91	53	36	100.08	95.73	91.37	87.03
25610	.3189"	8.10	10.0	103	61	40	139.15	133.10	127.05	121.00
25615	.3228"	8.20	10.0	103	61	40	139.15	133.10	127.05	121.00
25625	.3268"	8.30	10.0	103	61	40	139.15	133.10	127.05	121.00
25635	.3287"	8.35	10.0	103	61	40	139.15	133.10	127.05	121.00
25640	.3307"	8.40	10.0	103	61	40	136.59	130.66	124.72	118.78
25645	.3346"	8.50	10.0	103	61	40	136.59	130.66	124.72	118.78
25655	.3386"	8.60	10.0	103	61	40	136.59	130.66	124.72	118.78
25665	.3425"	8.70	10.0	103	61	40	136.59	130.66	124.72	118.78
25675	.3445"	8.75	10.0	103	61	40	136.59	130.66	124.72	118.78
25685	.3465"	8.80	10.0	103	61	40	136.59	130.66	124.72	118.78
25695	.3504"	8.90	10.0	103	61	40	136.59	130.66	124.72	118.78
25705	.3543"	9.00	10.0	103	61	40	134.05	128.22	122.39	116.56
25715	.3583"	9.10	10.0	103	61	40	134.05	128.22	122.39	116.56
25725	.3602"	9.15	10.0	103	61	40	134.05	128.22	122.39	116.56
25735	.3622"	9.20	10.0	103	61	40	134.05	128.22	122.39	116.56
25745	.3661"	9.30	10.0	103	61	40	134.05	128.22	122.39	116.56
25750	.3701"	9.40	10.0	103	61	40	131.47	125.75	120.04	114.32
25755	.3740"	9.50	10.0	103	61	40	131.47	125.75	120.04	114.32
25765	.3760"	9.55	10.0	103	61	40	131.47	125.75	120.04	114.32
25767	.3780"	9.60	10.0	103	61	40	131.47	125.75	120.04	114.32
25770	.3819"	9.70	10.0	103	61	40	131.47	125.75	120.04	114.32
25775	.3858"	9.80	10.0	103	61	40	131.47	125.75	120.04	114.32
25785	.3898"	9.90	10.0	103	61	40	131.47	125.75	120.04	114.32
25795	.3937"	10.00	10.0	103	61	40	128.92	123.31	117.71	112.10
25800	.3976"	10.10	12.0	118	71	45	179.09	171.30	163.52	155.73
25805	.4016"	10.20	12.0	118	71	45	179.09	171.30	163.52	155.73
25815	.4055"	10.30	12.0	118	71	45	179.09	171.30	163.52	155.73
25825	.4134"	10.50	12.0	118	71	45	175.88	168.24	160.59	152.94
25830	.4173"	10.60	12.0	118	71	45	175.88	168.24	160.59	152.94
25835	.4213"	10.70	12.0	118	71	45	175.88	168.24	160.59	152.94
25845	.4252"	10.80	12.0	118	71	45	175.88	168.24	160.59	152.94
25855	.4331"	11.00	12.0	118	71	45	172.67	165.16	157.65	150.14
25865	.4370"	11.10	12.0	118	71	45	172.67	165.16	157.65	150.14
25875	.4409"	11.20	12.0	118	71	45	172.67	165.16	157.65	150.14
25880	.4488"	11.40	12.0	118	71	45	169.49	162.12	154.75	147.38
25885	.4528"	11.50	12.0	118	71	45	169.49	162.12	154.75	147.38
25895	.4606"	11.70	12.0	118	71	45	169.49	162.12	154.75	147.38
25905	.4685"	11.90	12.0	118	71	45	169.49	162.12	154.75	147.38
25915	.4724"	12.00	12.0	118	71	45	166.26	159.04	151.81	144.58
25925	.4764"	12.10	14.0	124	77	45	258.16	246.94	235.71	224.48
25930	.4803"	12.20	14.0	124	77	45	258.16	246.94	235.71	224.48
25935	.4842"	12.30	14.0	124	77	45	258.16	246.94	235.71	224.48
25940	.4882"	12.40	14.0	124	77	45	254.97	243.88	232.79	221.71
25945	.4921"	12.50	14.0	124	77	45	254.97	243.88	232.79	221.71
25950	.4961"	12.60	14.0	124	77	45	254.97	243.88	232.79	221.71
25955	.5000"	12.70	14.0	124	77	45	254.97	243.88	232.79	221.71
25960	.5039"	12.80	14.0	124	77	45	254.97	243.88	232.79	221.71
25961	.5051"	12.83	14.0	124	77	45	254.97	243.88	232.79	221.71
25963	.5079"	12.90	14.0	124	77	45	254.97	243.88	232.79	221.71
25964	.5098"	12.95	14.0	124	77	45	254.97	243.88	232.79	221.71

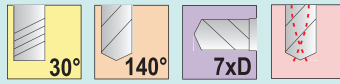
continued →

1280KD - 2 Flute (continued)

13.00mm - 20.00mm
(.5118" - .7874")

EDP#	<i>d1</i> Diameter		<i>d2</i> Shank Diameter	<i>l1</i> Overall Length	<i>l2</i> Flute Length	<i>l4</i> Shank Length	1-11	12-24	25-49	50-100
	Decimal	Metric								
25965	.5118"	13.00	14.0	124	77	45	251.77	240.82	229.88	218.93
25975	.5157"	13.10	14.0	124	77	45	251.77	240.82	229.88	218.93
25981	.5236"	13.30	14.0	124	77	45	251.77	240.82	229.88	218.93
25985	.5315"	13.50	14.0	124	77	45	248.54	237.73	226.93	216.12
25995	.5394"	13.70	14.0	124	77	45	248.54	237.73	226.93	216.12
26005	.5433"	13.80	14.0	124	77	45	248.54	237.73	226.93	216.12
26015	.5512"	14.00	14.0	124	77	45	245.34	234.67	224.01	213.34
26025	.5551"	14.10	16.0	133	83	48	340.30	325.50	310.71	295.91
26027	.5591"	14.20	16.0	133	83	48	340.30	325.50	310.71	295.91
26035	.5610"	14.25	16.0	133	83	48	340.30	325.50	310.71	295.91
26045	.5630"	14.30	16.0	133	83	48	340.30	325.50	310.71	295.91
26055	.5709"	14.50	16.0	133	83	48	336.77	322.13	307.49	292.84
26065	.5787"	14.70	16.0	133	83	48	336.77	322.13	307.49	292.84
26067	.5827"	14.80	16.0	133	83	48	336.77	322.13	307.49	292.84
26075	.5906"	15.00	16.0	133	83	48	333.27	318.78	304.28	289.80
26085	.5945"	15.10	16.0	133	83	48	333.27	318.78	304.28	289.80
26095	.6102"	15.50	16.0	133	83	48	329.71	315.38	301.04	286.71
26105	.6181"	15.70	16.0	133	83	48	329.71	315.38	301.04	286.71
26107	.6220"	15.80	16.0	133	83	48	329.71	315.38	301.04	286.71
26115	.6299"	16.00	16.0	133	83	48	326.21	312.02	297.84	283.66
26118	.6331"	16.08	18.0	143	93	48	413.72	395.73	377.75	359.76
26119	.6339"	16.10	18.0	143	93	48	413.72	395.73	377.75	359.76
26123	.6378"	16.20	18.0	143	93	48	413.72	395.73	377.75	359.76
26125	.6398"	16.25	18.0	143	93	48	413.72	395.73	377.75	359.76
26135	.6496"	16.50	18.0	143	93	48	407.28	389.57	371.86	354.16
26145	.6555"	16.65	18.0	143	93	48	407.28	389.57	371.86	354.16
26155	.6693"	17.00	18.0	143	93	48	400.74	383.32	365.89	348.47
26165	.6713"	17.05	18.0	143	93	48	400.74	383.32	365.89	348.47
26175	.6870"	17.45	18.0	143	93	48	400.74	383.32	365.89	348.47
26185	.6890"	17.50	18.0	143	93	48	394.35	377.20	360.06	342.91
26195	.7027"	17.85	18.0	143	93	48	394.35	377.20	360.06	342.91
26205	.7087"	18.00	18.0	143	93	48	387.83	370.97	354.10	337.24
26215	.7185"	18.25	20.0	153	101	50	497.32	475.70	454.07	432.45
26225	.7283"	18.50	20.0	153	101	50	490.74	469.40	448.07	426.73
26235	.7342"	18.65	20.0	153	101	50	490.74	469.40	448.07	426.73
26245	.7480"	19.00	20.0	153	101	50	484.36	463.30	442.24	421.18
26255	.7500"	19.05	20.0	153	101	50	484.36	463.30	442.24	421.18
26256	.7520"	19.10	20.0	153	101	50	484.36	463.30	442.24	421.18
26257	.7539"	19.15	20.0	153	101	50	484.36	463.30	442.24	421.18
26258	.7559"	19.20	20.0	153	101	50	484.36	463.30	442.24	421.18
26259	.7579"	19.25	20.0	153	101	50	484.36	463.30	442.24	421.18
26260	.7590"	19.28	20.0	153	101	50	484.36	463.30	442.24	421.18
26261	.7598"	19.30	20.0	153	101	50	484.36	463.30	442.24	421.18
26265	.7638"	19.40	20.0	153	101	50	484.36	463.30	442.24	421.18
26275	.7677"	19.50	20.0	153	101	50	477.42	456.66	435.91	415.15
26281	.7795"	19.80	20.0	153	101	50	477.42	456.66	435.91	415.15
26285	.7815"	19.85	20.0	153	101	50	477.42	456.66	435.91	415.15
26295	.7874"	20.00	20.0	153	101	50	470.75	450.28	429.81	409.34

.1575" - .2810"
(4.00mm - 7.14mm)



TOLERANCES		
d	+.0000" -.0005" (+.0000 -.0127mm)	
h	≤ 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)

Balinit® HELICA Coated

High performance - high penetration solid submicron grain carbide drill

Coolant through capabilities

Up to 70% faster than standard carbide drills

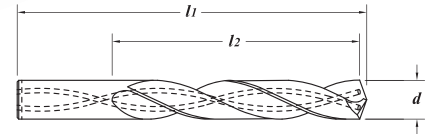
30° helix for better chip evacuation

Honed cutting edge

Recommended to run in high nickel, high temperature alloys,
cobalt-based alloys, stainless steels and tool steels

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				
NEW 26441	.1575	4.00	76	38	51.12	48.89	46.68	44.45
NEW 26446	.1590	#21	4.04	3"	1-1/2"	51.46	49.22	46.99
NEW 26451	.1610	#20	4.09	3"	1-1/2"	51.88	49.62	47.36
NEW 26456	.1660	#19	4.22	3"	1-1/2"	52.25	49.98	47.70
NEW 26461	.1695	#18	4.30	3-1/2"	1-3/4"	52.61	50.33	48.04
NEW 26466	.1719	11/64"	4.37	3-1/2"	1-3/4"	53.00	50.69	48.39
NEW 26471	.1730	#17	4.39	3-1/2"	1-3/4"	53.34	51.02	48.70
NEW 26476	.1770	#16	4.49	3-1/2"	1-3/4"	53.75	51.41	49.08
NEW 26481	.1772		4.50	88	45	54.14	51.79	49.43
NEW 26486	.1800	#15	4.57	3-1/2"	1-3/4"	54.49	52.11	49.74
NEW 26491	.1820	#14	4.62	3-1/2"	1-3/4"	54.85	52.47	50.08
NEW 26496	.1850	#13	4.70	3-1/2"	1-3/4"	55.23	52.83	50.43
NEW 26501	.1875	3/16"	4.76	4"	2"	55.65	53.23	50.81
NEW 26506	.1890	#12	4.80	4"	2"	55.99	53.56	51.13
NEW 26511	.1910	#11	4.85	4"	2"	56.36	53.90	51.46
NEW 26516	.1935	#10	4.91	4"	2"	56.75	54.29	51.81
NEW 26521	.1960	#9	4.98	4"	2"	57.09	54.60	52.12
NEW 26526	.1969		5.00	102	50	57.48	54.98	52.48
NEW 26531	.1990	#8	5.05	4"	2"	57.78	55.27	52.76
NEW 26536	.2010	#7	5.10	4"	2"	58.04	55.52	53.00
NEW 26541	.2031	13/64"	5.16	4"	2"	58.46	55.92	53.37
NEW 26546	.2040	#6	5.18	4"	2"	58.91	56.35	53.78
NEW 26551	.2055	#5	5.22	4"	2"	59.30	56.72	54.14
NEW 26556	.2090	#4	5.31	4"	2"	59.69	57.09	54.50
NEW 26561	.2130	#3	5.41	4"	2"	60.09	57.48	54.87
NEW 26566	.2165		5.50	102	50	60.46	57.82	55.20
26571	.2188	7/32"	5.56	4"	2"	60.82	58.18	55.53
26576	.2210	#2	5.61	4"	2"	61.78	59.09	56.40
26581	.2280	#1	5.79	4-1/8"	2-1/8"	70.78	67.70	64.63
26586	.2340	A	5.94	4-1/8"	2-1/8"	74.72	71.48	68.22
26591	.2344	15/64"	5.95	4-1/8"	2-1/8"	74.85	71.59	68.34
26596	.2362		6.00	105	55	75.00	71.74	68.48
26601	.2380	B	6.04	4-1/8"	2-1/8"	78.27	74.87	71.47
26606	.2420	C	6.15	4-1/4"	2-1/4"	78.58	75.16	71.75
26611	.2460	D	6.25	4-1/4"	2-1/4"	78.87	75.44	72.01
26616	.2500	1/4" / E	6.35	4-1/4"	2-1/4"	79.15	75.71	72.27
26621	.2559		6.50	108	58	79.99	76.51	73.03
26626	.2570	F	6.53	4-3/8"	2-3/8"	83.06	79.46	75.84
26631	.2610	G	6.63	4-3/8"	2-3/8"	83.91	80.26	76.61
26636	.2656	17/64"	6.75	4-3/8"	2-3/8"	84.74	81.06	77.37
26641	.2660	H	6.76	4-3/8"	2-3/8"	85.61	81.89	78.17
26646	.2720	I	6.91	4-3/8"	2-3/8"	85.70	81.97	78.24
26651	.2756		7.00	111	61	86.52	82.75	79.00
26656	.2770	J	7.03	4-3/8"	2-3/8"	90.89	86.93	82.98
26661	.2810	K	7.14	4-7/16"	2-7/16"	91.75	87.76	83.77

continued →

1880KH - 2 Flute (continued)

.2812" - .6299"
(7.14mm - 16.00mm)

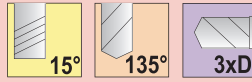
EDP#	$d^{\dagger}$ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
26666	.2812	9/32"	7.14	4-7/16"	2-7/16"	92.59	88.57	84.54
26671	.2900	L	7.37	4-7/16"	2-7/16"	92.96	88.91	84.87
26676	.2950	M	7.49	4-7/16"	2-7/16"	93.42	89.36	85.30
26681	.2953		7.50	116	66	93.42	89.36	85.30
26686	.2969	19/64"	7.54	4-9/16"	2-9/16"	100.85	96.46	92.08
26691	.3020	N	7.67	4-9/16"	2-9/16"	102.78	98.31	93.85
26696	.3125	5/16"	7.94	4-11/16"	2-9/16"	102.98	98.50	94.03
26701	.3150		8.00	119	69	106.67	102.03	97.40
26706	.3160	O	8.03	4-11/16"	2-11/16"	108.46	103.75	99.03
26711	.3230	P	8.20	4-11/16"	2-11/16"	108.69	103.97	99.24
26716	.3281	21/64"	8.33	4-11/16"	2-11/16"	109.30	104.55	99.80
26721	.3320	Q	8.43	4-15/16"	2-15/16"	109.84	105.07	100.30
26726	.3346		8.50	125	75	110.32	105.53	100.73
26731	.3390	R	8.61	4-15/16"	2-15/16"	115.54	110.52	105.50
26736	.3438	11/32"	8.73	4-15/16"	2-15/16"	117.99	112.86	107.72
26741	.3480	S	8.84	5"	3"	120.23	115.00	109.78
26746	.3543		9.00	127	77	120.68	115.43	110.19
26751	.3580	T	9.09	5"	3"	132.42	126.66	120.91
26756	.3594	23/64"	9.13	5"	3"	132.90	127.12	121.35
26761	.3680	U	9.35	5"	3"	140.60	134.48	128.37
26766	.3740		9.50	130	80	141.49	135.34	129.19
26771	.3750	3/8"	9.52	5-1/8"	3-1/8"	145.22	138.90	132.59
26776	.3770	V	9.57	5-1/8"	3-1/8"	147.50	141.09	134.68
26781	.3860	W	9.80	5-1/8"	3-1/8"	148.00	141.56	135.13
26786	.3906	25/64"	9.92	5-1/4"	3-1/4"	148.91	142.43	135.96
26791	.3937		10.00	133	83	151.83	145.23	138.62
26796	.3970	X	10.08	5-1/4"	3-1/4"	156.88	150.06	143.24
26801	.4040	Y	10.26	5-3/8"	3-3/8"	159.99	153.04	146.08
26806	.4062	13/32"	10.32	5-3/8"	3-3/8"	160.90	153.90	146.91
26811	.4130	Z	10.49	5-3/8"	3-3/8"	163.56	156.45	149.33
26816	.4134		10.50	137	86	163.56	156.45	149.33
26821	.4219	27/64"	10.72	5-7/16"	3-7/16"	165.60	158.40	151.20
26826	.4331		11.00	138	88	172.01	164.53	157.05
26831	.4375	7/16"	11.11	5-7/16"	3-7/16"	175.68	168.04	160.40
26836	.4528		11.50	141	91	181.94	174.02	166.12
26841	.4531	29/64"	11.51	5-9/16"	3-13/16"	187.62	179.46	171.30
26846	.4688	15/32"	11.91	5-9/16"	3-13/16"	192.31	183.94	175.58
26851	.4724		12.00	141	98	197.25	188.67	180.10
26856	.4844	31/64"	12.30	5-9/16"	3-13/16"	202.36	193.56	184.77
26861	.4921		12.50	152	102	203.49	194.64	185.80
26866	.5000	1/2"	12.70	6"	4"	204.22	195.34	186.46
26871	.5118		13.00	152	102	213.81	204.52	195.22
26876	.5156	33/64"	13.10	6"	4"	222.80	213.12	203.42
26881	.5312	17/32"	13.49	6-1/8"	4-1/8"	226.43	216.58	206.74
26886	.5315		13.50	156	105	229.93	219.94	209.93
26891	.5469	35/64"	13.89	6-1/8"	4-1/8"	242.53	231.98	221.44
26896	.5512		14.00	156	105	246.08	235.38	224.68
26901	.5625	9/16"	14.29	6-1/4"	4-3/8"	266.73	255.13	243.54
26906	.5709		14.50	159	109	268.83	257.14	245.45
26911	.5781	37/64"	14.68	6-1/4"	4-3/8"	269.55	257.83	246.11
26916	.5906		15.00	162	112	273.06	261.19	249.32
26921	.5938	19/32"	15.08	6-3/8"	4-3/8"	280.16	267.98	255.79
26926	.6094	39/64"	15.48	6-7/16"	4-7/16"	315.28	301.57	287.86
26931	.6102		15.50	164	113	316.15	302.40	288.66
26936	.6250	5/8"	15.87	6-9/16"	4-9/16"	324.90	310.77	296.64
26941	.6299		16.00	167	117	329.16	314.85	300.54



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

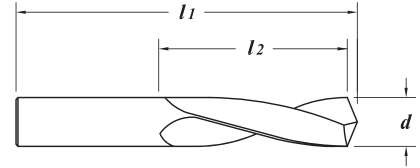
Heavy web for extra rigidity and added strength

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	l ₂	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)

DRILLS

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

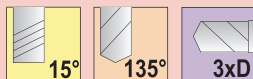
continued →

1510 - 2 Flute (continued)

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

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" -0.005" (+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)

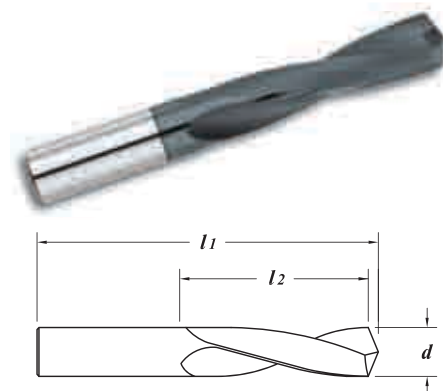
Balinit® HARDLUBE Coated

Solid submicron grain carbide drill
Excellent heat resistance and lubricity
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)

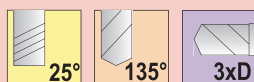
.3390" - .6299"
(8.61mm - 16.00mm)

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

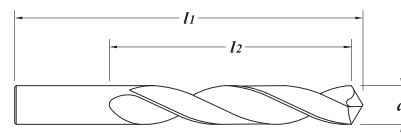
d	+.0000" - .0005" (+.0000 - .0127mm)	
l ₁	≤ 1/8"	+.125" - .062" (+3.175 - 1.588mm)
	> 1/8"	+.125" - .125" (+3.175 - 3.175mm)
l ₂	≤ 1/8"	+.125" - .062" (+3.175 - 1.588mm)
	> 1/8"	+.125" - .125" (+3.175 - 3.175mm)

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

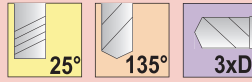
continued →

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	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)

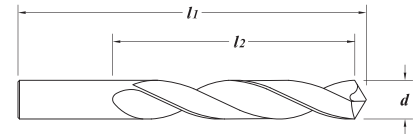
Balinit® HARDLUBE Coated

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		l1 Overall Length	l2 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)

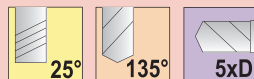
.3390" - .5000"
(8.61mm - 12.70mm)

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)

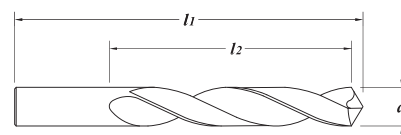


Solid submicron grain carbide drill
No spotting required in most applications
4-facet self-centering point
Adaptability when converting from high-speed steel

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)

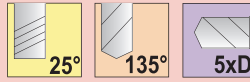
.3390" - .6299"
(8.61mm - 16.00mm)

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

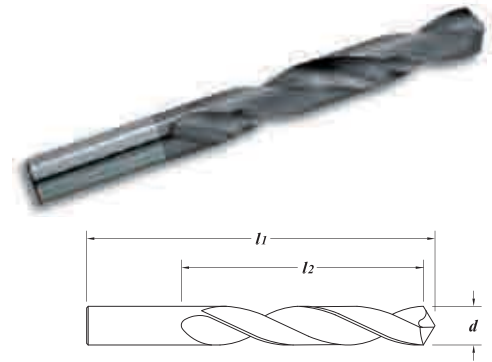
d	+0.000" -0.0005" (+0.000 -0.0127mm)
h	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)
l ₂	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)

.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

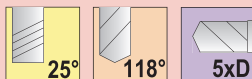
1205H - 2 Flute (continued)

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

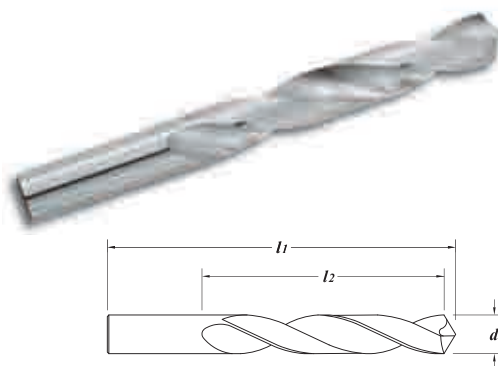
EDP#	d^+ Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
89666	.3390	R	8.61	4"	2-1/2"	38.52	36.85	35.17	33.50
89671	.3438	11/32"	8.73	4"	2-1/2"	39.88	38.15	36.42	34.68
89676	.3480	S	8.84	4"	2-1/2"	41.45	39.66	37.85	36.05
89681	.3543		9.00	101	63	41.69	39.88	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

d	+0.000" -0.005" (+0.000 -0.127mm)	
l_1	$\leq 1/8"$	+0.125" -0.062" (+3.175 -1.588mm)
	$> 1/8"$	+0.125" -0.125" (+3.175 -3.175mm)
l_2	$\leq 1/8"$	+0.125" -0.062" (+3.175 -1.588mm)
	$> 1/8"$	+0.125" -0.125" (+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: $-.0001" - .0004"$ ($-.0025 / -.0100$ mm)



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		Metric	l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal								
56380	.1590	#21	4.04	2-1/2"	1-3/8"	12.86	12.30	11.74	11.19
56385	.1610	#20	4.09	2-1/2"	1-3/8"	12.97	12.41	11.85	11.27
56390	.1660	#19	4.22	2-3/4"	1-5/8"	13.49	12.91	12.31	11.73
56395	.1695	#18	4.30	2-3/4"	1-5/8"	13.66	13.06	12.47	11.88
56400	.1719	11/64"	4.37	2-3/4"	1-5/8"	13.94	13.33	12.72	12.12
56405	.1730	#17	4.39	2-3/4"	1-5/8"	14.13	13.52	12.91	12.29
56410	.1770	#16	4.49	2-3/4"	1-5/8"	14.29	13.67	13.05	12.43
56415	.1772		4.50	70	41	14.36	13.74	13.11	12.49
56420	.1800	#15	4.57	2-3/4"	1-5/8"	14.42	13.80	13.17	12.54
56425	.1820	#14	4.62	2-3/4"	1-5/8"	14.76	14.11	13.48	12.83
56430	.1850	#13	4.70	2-3/4"	1-5/8"	14.86	14.22	13.57	12.93
56435	.1875	3/16"	4.76	2-3/4"	1-5/8"	14.92	14.28	13.62	12.98
56440	.1890	#12	4.80	2-3/4"	1-5/8"	15.41	14.75	14.07	13.41
56445	.1910	#11	4.85	2-3/4"	1-5/8"	15.60	14.92	14.25	13.56
56450	.1935	#10	4.91	2-3/4"	1-5/8"	16.33	15.62	14.90	14.20
56455	.1960	#9	4.98	3"	1-3/4"	16.74	16.02	15.29	14.56
56460	.1969		5.00	76	44	16.84	16.11	15.37	14.64
56465	.1990	#8	5.05	3"	1-3/4"	16.95	16.21	15.48	14.74
56470	.2010	#7	5.10	3"	1-3/4"	17.45	16.69	15.93	15.17
56475	.2031	13/64"	5.16	3"	1-3/4"	17.59	16.82	16.06	15.29
56480	.2040	#6	5.18	3"	1-3/4"	17.94	17.16	16.38	15.60
56485	.2055	#5	5.22	3"	1-3/4"	18.31	17.51	16.72	15.92
56490	.2090	#4	5.31	3"	1-3/4"	18.64	17.83	17.01	16.20
56495	.2130	#3	5.41	3"	1-3/4"	18.96	18.14	17.31	16.48
56500	.2165		5.50	76	44	19.10	18.27	17.44	16.61
56505	.2188	7/32"	5.56	3"	1-3/4"	19.24	18.41	17.57	16.73
56510	.2210	#2	5.61	3"	1-3/4"	19.71	18.86	17.99	17.14
56515	.2280	#1	5.79	3"	1-3/4"	19.83	18.97	18.11	17.24
56520	.2340	A	5.94	3-1/4"	2"	20.06	19.19	18.31	17.44
56525	.2344	15/64"	5.95	3-1/4"	2"	20.11	19.24	18.37	17.49
56530	.2362		6.00	82	50	20.19	19.31	18.43	17.56
56535	.2380	B	6.04	3-1/4"	2"	20.26	19.38	18.50	17.62
56540	.2420	C	6.15	3-1/4"	2"	20.42	19.53	18.64	17.75
56545	.2460	D	6.25	3-1/4"	2"	20.56	19.67	18.77	17.88
56550	.2500	1/4" / E	6.35	3-1/4"	2"	20.71	19.80	18.91	18.00
56555	.2559		6.50	82	50	21.21	20.28	19.36	18.44
56560	.2570	F	6.53	3-1/4"	2"	21.65	20.71	19.77	18.82
56565	.2610	G	6.63	3-1/2"	2-1/8"	22.09	21.13	20.17	19.21
56570	.2656	17/64"	6.75	3-1/2"	2-1/8"	22.54	21.56	20.58	19.59
56575	.2660	H	6.76	3-1/2"	2-1/8"	23.18	22.17	21.16	20.16
56580	.2720	I	6.91	3-1/2"	2-1/8"	23.44	22.42	21.40	20.38
56585	.2756		7.00	88	54	23.63	22.60	21.57	20.55
56590	.2770	J	7.03	3-1/2"	2-1/8"	23.84	22.80	21.77	20.73
56595	.2810	K	7.14	3-1/2"	2-1/8"	24.06	23.00	21.96	20.91
56600	.2812	9/32"	7.14	3-1/2"	2-1/8"	24.19	23.14	22.09	21.04
56605	.2900	L	7.37	3-1/2"	2-1/8"	25.06	23.97	22.88	21.80
56610	.2950	M	7.49	3-3/4"	2-3/8"	26.82	25.66	24.49	23.33
56615	.2953		7.50	95	60	26.82	25.66	24.49	23.33
56620	.2969	19/64"	7.54	3-3/4"	2-3/8"	26.82	25.66	24.49	23.33
56625	.3020	N	7.67	3-3/4"	2-3/8"	28.43	27.20	25.96	24.72
56630	.3125	5/16"	7.94	3-3/4"	2-3/8"	28.54	27.30	26.05	24.81
56635	.3150		8.00	95	60	30.62	29.29	27.96	26.62
56640	.3160	O	8.03	3-3/4"	2-3/8"	30.62	29.29	27.96	26.62
56645	.3230	P	8.20	3-3/4"	2-3/8"	30.62	29.29	27.96	26.62
56650	.3281	21/64"	8.33	4"	2-1/2"	31.08	29.72	28.37	27.02
56655	.3320	Q	8.43	4"	2-1/2"	31.79	30.41	29.03	27.64
56660	.3346		8.50	101	63	32.07	30.68	29.29	27.89

continued →

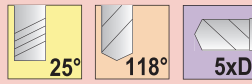
1200 - 2 Flute (continued)

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

DRILLS

EDP#	$d^{\dagger}$		l_1	l_2	1-11	12-24	25-49	50-100	
	Decimal	Diameter							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)

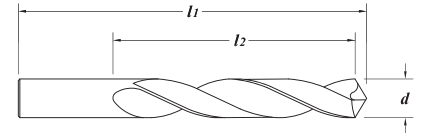


TOLERANCES

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

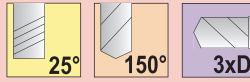
1120 - 3 Flute

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)



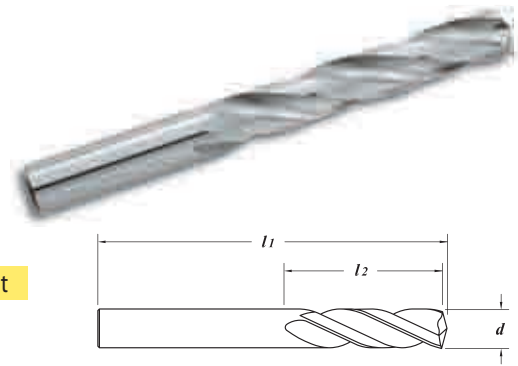
DRILLS

Solid submicron grain carbide drill
Near reamer finishes
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

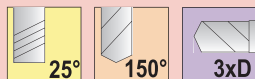
1120 - 3 Flute (continued)

.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)



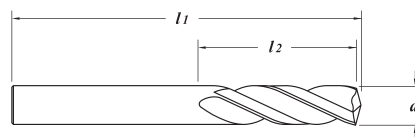
Balinit® HARDLUBE Coated

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

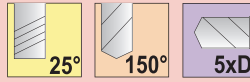
1100 - 3 Flute

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)



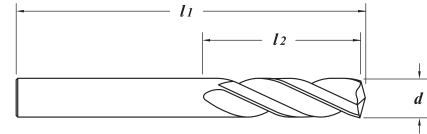
DRILLS

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

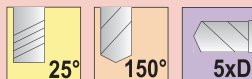
1100 - 3 Flute (continued)

.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)



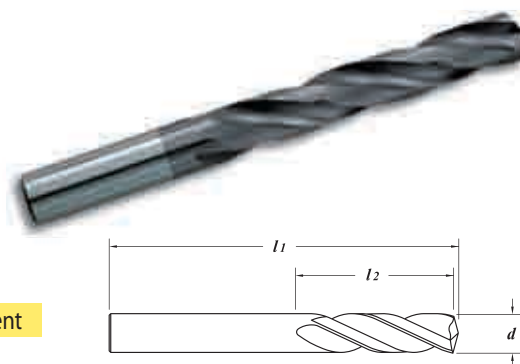
Balinit® HARDLUBE Coated

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)

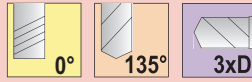
.2188" - .5000"
(5.56mm - 12.70mm)

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

TOLERANCES

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

Solid submicron grain carbide drill

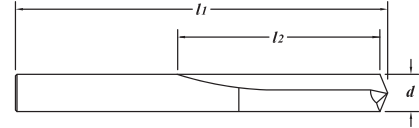
Straight flute design provides excellent rigidity

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	1-11	12-24	25-49	50-100
	Decimal	Diameter	Metric	Overall Length	Flute Length				
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

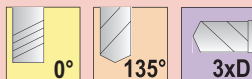
1500 - 2 Flute (continued)

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

EDP#	d^+ Diameter		Metric	l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal								
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)



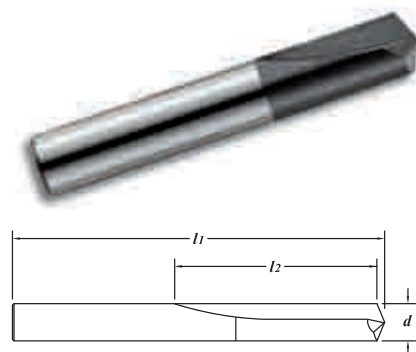
Hard Metal - *Balinit*® HARDLUBE Coated

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 † Diameter		l ₁ Overall Length	l ₂ Flute Length	1-11	12-24	25-49	50-100
	Decimal	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

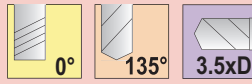
1500H - 2 Flute (continued)

.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	≤ 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)



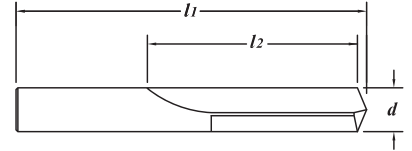
Double Margin

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

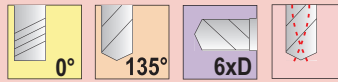
Recommended for fast drilling in aircraft alloys, cast aluminum and high silicon content materials

Live tooling recommended on lathe processes

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



EDP#	$d^{\dagger}$			l_1	l_2				
	Decimal	Diameter	Metric						
57460	.1250	1/8"	3.17	3-1/4"	1-1/4"	14.93	14.29	13.63	12.99
57470	.1575		4.00	86	35	17.06	16.32	15.57	14.83
57480	.1875	3/16"	4.76	3-5/8"	1-5/8"	19.41	18.56	17.72	16.88
57490	.1969		5.00	95	44	20.91	20.01	19.09	18.19
57500	.2362		6.00	101	51	24.02	22.98	21.93	20.89
57510	.2500	1/4"	6.35	4"	2"	24.63	23.56	22.48	21.41
57520	.3125	5/16"	7.94	4-3/8"	2-3/8"	37.55	35.92	34.29	32.66
57530	.3150		8.00	111	60	39.93	38.19	36.45	34.72
57540	.3750	3/8"	9.52	4-3/4"	2-3/4"	49.40	47.25	45.10	42.95
57550	.3937		10.00	124	73	57.02	54.55	52.06	49.59
57560	.4375	7/16"	11.11	5-1/8"	3-1/8"	68.55	65.56	62.59	59.60
57570	.4724		12.00	136	86	77.28	73.92	70.56	67.20
57580	.5000	1/2"	12.70	5-1/2"	3-1/2"	79.25	75.81	72.35	68.91
57590	.5512		14.00	150	100	107.40	102.73	98.06	93.39
57600	.5625	9/16"	14.29	6"	4"	116.51	111.45	106.38	101.32
57610	.5906		15.00	157	106	135.90	129.99	124.08	118.18
57620	.6250	5/8"	15.87	6-3/8"	4-3/8"	139.18	133.13	127.08	121.02
57630	.6299		16.00	164	113	142.38	136.19	130.00	123.80



TOLERANCES

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

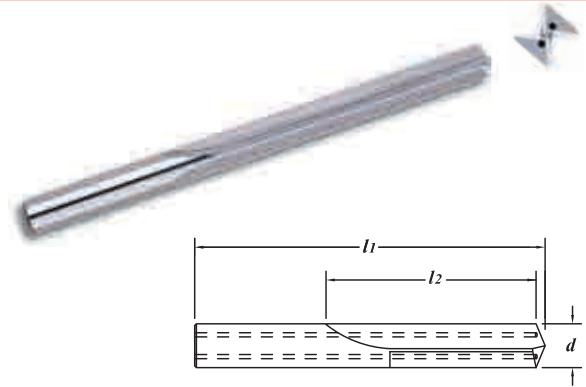
Double Margin

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

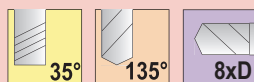
Shank tolerance: $-.0001" - .0004" (-.0025 / -.0100mm)$



EDP#	d †		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal	Diameter Metric						
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	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	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	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	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	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	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

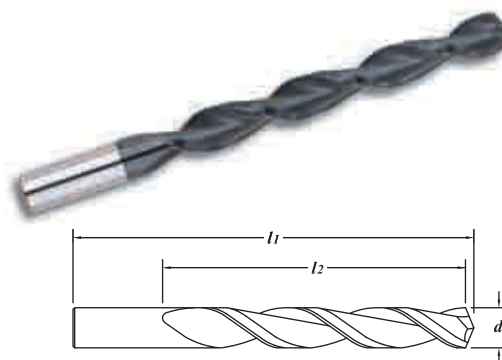
Wide open flutes and high helix remove chips quickly

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

4-facet point

Live tooling recommended on lathe processes

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

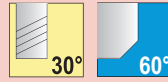


EDP#	d † Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		Metric						
22436	.1875	3/16"	4.76	3-13/16"	2-5/16"	20.59	19.70	18.80	17.91
22441	.1890	#12	4.80	3-13/16"	2-5/16"	21.07	20.16	19.24	18.32
22446	.1910	#11	4.85	3-13/16"	2-5/16"	21.55	20.61	19.68	18.74
22451	.1935	#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

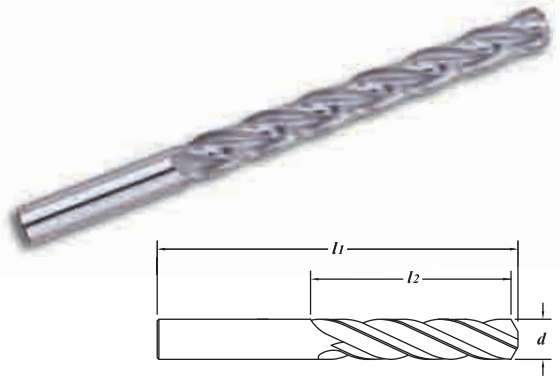


TOLERANCES

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

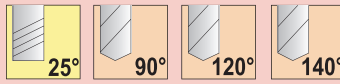
Solid submicron grain carbide drill
 Cored applications only
 Gets to finish diameter when too much material remains for reamer
 60° lead chamfer allows easy follow through from existing hole
 Live tooling recommended on lathe processes
 Shank tolerance: $-0.0001" -0.0004" (-0.0025 / -0.0100\text{mm})$



EDP#	$d^{\dagger}$ Diameter			l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
	Decimal		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

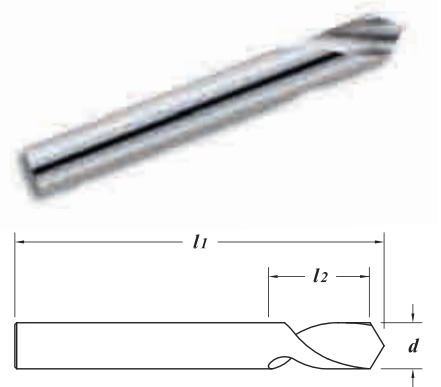
TOLERANCES

d	+0.000" -0.005" (+0.000 -0.127mm)
l_1	+0.125" -0.125" (+3.175 -3.175mm)

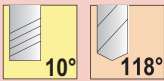


N/C Spotting

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



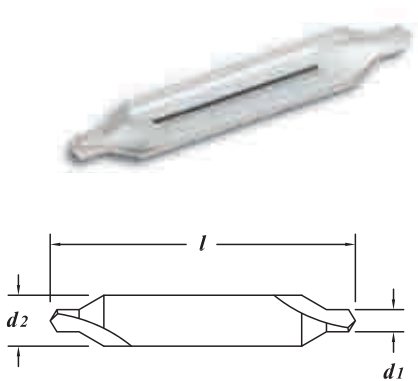
90° EDP#	120° EDP#	NEW 140° EDP#	d † Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
			Decimal	Metric						
91510	91580	91250	.1181	3.00	50	10	10.93	10.45	9.98	9.51
91000	91100	91260	.1250	1/8"	3.17	2"	10.93	10.45	9.98	9.51
91520	91590	91270	.1575	4.00	50	12	14.30	13.68	13.05	12.44
91010	91110	91280	.1875	3/16"	4.76	3"	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	1/4"	6.35	3"	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	3/8"	9.52	3"	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	1/2"	12.70	4"	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	9/16"	14.29	4"	72.23	69.09	65.95	62.81
91070	91190	91390	.6250	5/8"	15.87	5"	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	3/4"	19.05	5"	128.21	122.64	117.06	111.49
91160	91230	91430	.7874	20.00	125	30	138.81	132.78	126.73	120.70



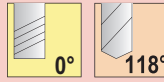
TOLERANCES	
d_1	$+0.003" - .000" (+.0076 - .0000\text{mm})$
d_2	$-.0001" - .0004" (-.0025 - .0102\text{mm})$

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 † Diameter			d_2 Shank Diameter	l Overall Length	1-11	12-24	25-49	50-100
		Decimal		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



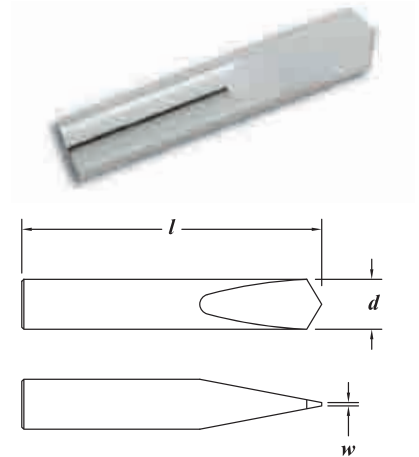
Spade

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: $-.0001" - .0004" (-.0025 / -.0100\text{mm})$



EDP#	$d^{\dagger}$			l	w	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