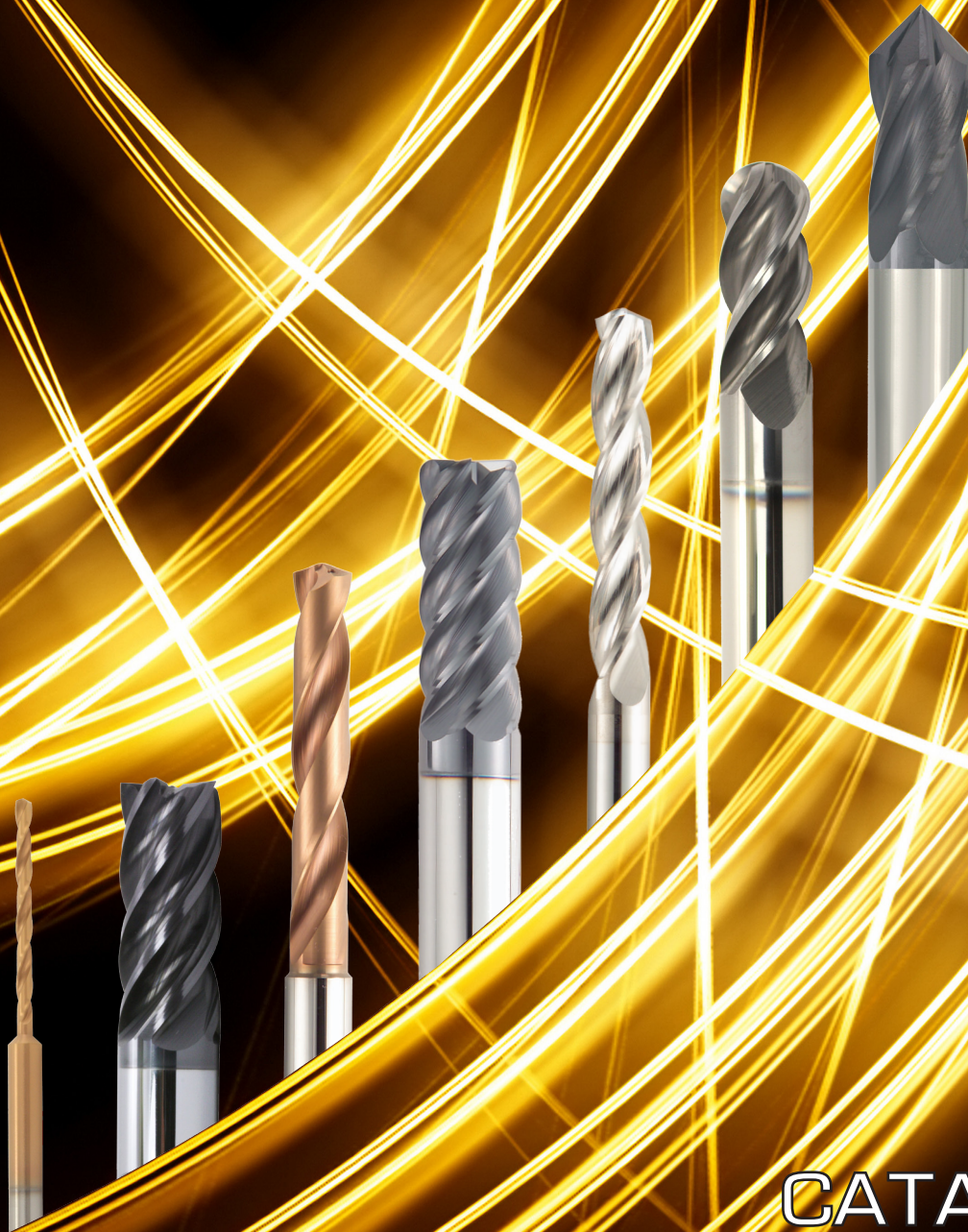


**HIGH PERFORMANCE  
SOLID CARBIDE  
CUTTING TOOLS**



**GARR TOOL<sup>®</sup>**

**CATALOG 12**  
*HIGH PERFORMANCE  
DRILLS*

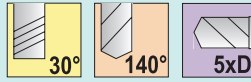
# 1180 - 3 Flute

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### TOLERANCES

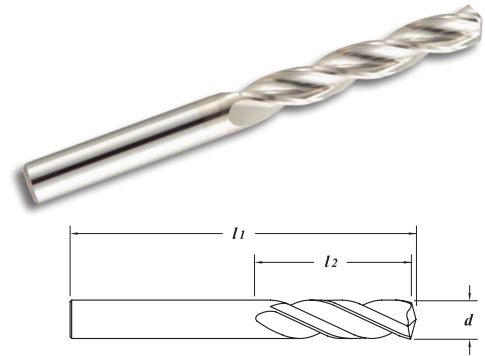
$d$	+0.000" -0.005" (+0.000 -0.127mm)
$l_1$	+0.125" -0.125" (+3.175 -3.175mm)
$l_2$	+0.125" -0.125" (+3.175 -3.175mm)

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



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



EDP#	$d$ † Diameter		$l_1$ Overall Length	$l_2$ Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric							
70166	.1575	4.000	65	24	45.14	43.18	41.21	39.25	
70191	.1772	4.500	65	25	47.69	45.62	43.54	41.47	
70211	.1875	3/16"	4.763	2-3/4"	1-1/4"	48.94	46.82	44.69	42.56
70216	.1890	#12	4.801	2-3/4"	1-1/4"	50.76	48.55	46.35	44.14
70221	.1910	#11	4.851	2-3/4"	1-1/4"	51.07	48.85	46.63	44.41
70226	.1935	#10	4.914	2-3/4"	1-1/4"	51.39	49.16	46.92	44.69
70231	.1969		5.000	75	32	52.03	49.76	47.50	45.24
70236	.1990	#8	5.055	3"	1-5/16"	52.28	50.01	47.73	45.46
70241	.2010	#7	5.105	3"	1-5/16"	52.49	50.20	47.92	45.64
70246	.2031	13/64"	5.159	3"	1-5/16"	52.87	50.57	48.27	45.97
70251	.2040	#6	5.182	3"	1-3/8"	53.22	50.91	48.59	46.28
70256	.2055	#5	5.220	3"	1-3/8"	53.57	51.24	48.91	46.58
70261	.2090	#4	5.309	3"	1-3/8"	53.88	51.54	49.19	46.85
70266	.2130	#3	5.410	3"	1-3/8"	54.22	51.87	49.51	47.15
70271	.2165		5.500	75	35	54.54	52.17	49.80	47.43
70276	.2188	7/32"	5.558	3"	1-3/8"	54.87	52.48	50.10	47.71
70281	.2210	#2	5.613	3"	1-3/8"	55.97	53.54	51.10	48.67
70286	.2280	#1	5.791	3"	1-3/8"	56.24	53.79	51.35	48.90
70296	.2344	15/64"	5.954	3-1/4"	1-1/2"	57.37	54.88	52.38	49.89
70301	.2362		6.000	82	38	57.53	55.03	52.53	50.03
70306	.2380	B	6.045	3-1/4"	1-5/8"	57.68	55.18	52.67	50.16
70311	.2420	C	6.147	3-1/4"	1-5/8"	58.06	55.54	53.01	50.49
70316	.2460	D	6.248	3-1/4"	1-5/8"	58.42	55.88	53.34	50.80
70321	.2500	1/4" / E	6.350	3-1/4"	1-5/8"	58.72	56.17	53.61	51.06
70326	.2559		6.500	82	41	62.65	59.93	57.20	54.48
70331	.2570	F	6.528	3-1/4"	1-11/16"	63.60	60.83	58.07	55.30
70336	.2610	G	6.629	3-1/2"	1-11/16"	64.57	61.77	58.96	56.15
70341	.2656	17/64"	6.746	3-1/2"	1-11/16"	65.53	62.68	59.83	56.98
70346	.2660	H	6.756	3-1/2"	1-11/16"	66.53	63.64	60.74	57.85
70351	.2720	I	6.909	3-1/2"	1-11/16"	67.47	64.54	61.60	58.67
70356	.2756		7.000	88	43	68.43	65.45	62.48	59.50
70361	.2770	J	7.036	3-1/2"	1-11/16"	69.40	66.39	63.37	60.35
70371	.2812	9/32"	7.142	3-1/2"	1-3/4"	71.36	68.26	65.15	62.05
70376	.2900	L	7.366	3-1/2"	1-3/4"	72.24	69.10	65.96	62.82
70381	.2953		7.500	95	44	73.20	70.02	66.83	63.65
70386	.2969	19/64"	7.541	3-3/4"	1-7/8"	73.83	70.62	67.41	64.20
70391	.3020	N	7.671	3-3/4"	1-7/8"	76.52	73.19	69.87	66.54
70396	.3125	5/16"	7.938	3-3/4"	1-7/8"	76.72	73.38	70.05	66.71
70401	.3150		8.000	95	48	80.96	77.44	73.92	70.40

EDP#	$d^+$ Diameter		$l_1$ Overall Length	$l_2$ Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric							
70406	.3160	O	8.026	3-3/4"	1-7/8"	80.96	77.44	73.92	70.40
70411	.3230	P	8.204	3-3/4"	2-3/32"	81.22	77.69	74.16	70.63
70416	.3281	21/64"	8.334	4"	2-3/32"	81.91	78.35	74.79	71.23
70421	.3320	Q	8.433	4"	2-3/32"	83.42	79.79	76.17	72.54
70426	.3346		8.500	100	53	83.98	80.33	76.68	73.03
70431	.3390	R	8.611	4"	2-3/32"	86.08	82.34	78.59	74.85
70436	.3438	11/32"	8.733	4"	2-3/16"	88.90	85.03	81.17	77.30
70441	.3480	S	8.839	4"	2-3/16"	94.01	89.93	85.84	81.75
70446	.3543		9.000	100	55	94.53	90.42	86.31	82.20
70451	.3580	T	9.093	4-1/4"	2-9/32"	99.60	95.27	90.94	86.61
70456	.3594	23/64"	9.129	4-1/4"	2-9/32"	100.13	95.78	91.42	87.07
70461	.3680	U	9.347	4-1/4"	2-9/32"	109.42	104.67	99.91	95.15
70466	.3740		9.500	108	58	110.39	105.59	100.79	95.99
70471	.3750	3/8"	9.525	4-1/4"	2-3/8"	111.39	106.55	101.70	96.86
70476	.3770	V	9.576	4-1/4"	2-3/8"	114.34	109.37	104.40	99.43
70481	.3860	W	9.804	4-1/2"	2-3/8"	116.17	111.12	106.07	101.02
70486	.3906	25/64"	9.921	4-1/2"	2-3/8"	117.46	112.35	107.25	102.14
70491	.3937		10.000	114	60	120.65	115.40	110.16	104.91
70496	.3970	X	10.084	4-1/2"	2-1/2"	123.18	117.82	112.47	107.11
70501	.4040	Y	10.262	4-1/2"	2-9/16"	126.58	121.08	115.57	110.07
70506	.4062	13/32"	10.317	4-1/2"	2-9/16"	127.57	122.02	116.48	110.93
70511	.4134		10.500	114	67	128.64	123.05	117.45	111.86
70516	.4219	27/64"	10.716	4-1/2"	2-11/16"	129.71	124.07	118.43	112.79
70521	.4331		11.000	114	68	138.39	132.37	126.36	120.34
70526	.4375	7/16"	11.113	4-3/4"	2-13/16"	138.90	132.86	126.82	120.78
70531	.4528		11.500	120	70	147.71	141.28	134.86	128.44
70536	.4531	29/64"	11.509	4-3/4"	2-7/8"	147.71	141.28	134.86	128.44
70541	.4688	15/32"	11.909	4-3/4"	2-7/8"	154.61	147.88	141.16	134.44
70546	.4724		12.000	120	73	155.01	148.27	141.53	134.79
70551	.4844	31/64"	12.304	5-5/16"	3"	157.76	150.90	144.04	137.18
70556	.4921		12.500	135	75	159.51	152.57	145.64	138.70
70561	.5000	1/2"	12.700	5-3/8"	3-1/16"	159.82	152.87	145.92	138.97
70566	.5118		13.000	136	78	179.86	172.04	164.22	156.40
70571	.5156	33/64"	13.096	5-3/8"	3-1/8"	183.71	175.73	167.74	159.75
70576	.5312	17/32"	13.492	5-11/16"	3-5/16"	187.68	179.52	171.36	163.20
70581	.5469	35/64"	13.891	5-13/16"	3-3/8"	195.32	186.82	178.33	169.84
70586	.5512		14.000	148	86	199.19	190.53	181.87	173.21
70591	.5625	9/16"	14.287	5-15/16"	3-1/2"	214.13	204.82	195.51	186.20
70596	.5781	37/64"	14.683	6"	3-1/2"	221.41	211.78	202.16	192.53
70601	.5906		15.000	152	90	225.26	215.47	205.67	195.88
70606	.5938	19/32"	15.082	6"	3-9/16"	226.34	216.50	206.66	196.82
70611	.6094	39/64"	15.478	6-3/16"	3-11/16"	245.36	234.70	224.03	213.36
70616	.6250	5/8"	15.875	6-5/16"	3-3/4"	247.50	236.74	225.98	215.22
70621	.6299		16.000	160	95	252.68	241.69	230.71	219.72

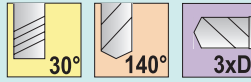
# 1550H - 2 Flute

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### TOLERANCES

$d_1$	+0.000" -0.004" (+0.00 -0.10mm)
$d_2$	[h6] +0.000" -0.003" (+0.00 -0.08mm)

**NEW SERIES**



0.792mm - 1.450mm  
(.0312" - .0571")

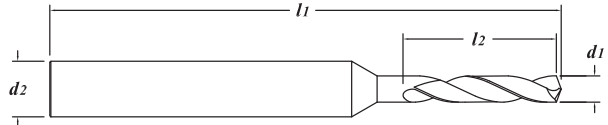
## Balinit® HELICA Coated

High performance solid submicron grain carbide drill on 3mm or 1/8" diameter shank  
30° helix for better chip evacuation

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



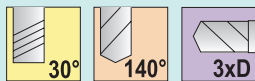
EDP#	$d_1$ † Diameter		$d_2$ Shank Diameter	$l_1$ Overall Length	$l_2$ Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric								
00100	.0312"	1/32"	0.792	1/8"	2"	5/32"	38.82	37.14	35.45	33.76
00102	.0315"		0.800	3.0	50	4.0	38.18	36.52	34.86	33.20
00104	.0319"		0.810	3.0	50	4.0	38.18	36.52	34.86	33.20
00106	.0320"	#67	0.812	1/8"	2"	11/64"	38.82	37.14	35.45	33.76
00108	.0323"		0.820	3.0	50	4.5	38.18	36.52	34.86	33.20
00110	.0327"		0.830	3.0	50	4.5	38.18	36.52	34.86	33.20
00112	.0330"	#66	0.838	1/8"	2"	11/64"	38.82	37.14	35.45	33.76
00114	.0331"		0.840	3.0	50	4.5	38.18	36.52	34.86	33.20
00116	.0335"		0.850	3.0	50	4.5	38.18	36.52	34.86	33.20
00118	.0339"		0.860	3.0	50	4.5	38.18	36.52	34.86	33.20
00120	.0343"		0.870	3.0	50	4.5	38.18	36.52	34.86	33.20
00122	.0346"		0.880	3.0	50	4.5	38.18	36.52	34.86	33.20
00124	.0350"	#65	0.890	3.0	50	4.5	38.18	36.52	34.86	33.20
00126	.0354"		0.900	3.0	50	4.5	38.18	36.52	34.86	33.20
00128	.0358"		0.910	3.0	50	5.0	38.18	36.52	34.86	33.20
00130	.0360"	#64	0.914	1/8"	2"	3/16"	38.82	37.14	35.45	33.76
00132	.0362"		0.920	3.0	50	5.0	38.18	36.52	34.86	33.20
00134	.0366"		0.930	3.0	50	5.0	38.18	36.52	34.86	33.20
00136	.0370"	#63	0.940	3.0	50	5.0	38.18	36.52	34.86	33.20
00138	.0374"		0.950	3.0	50	5.0	38.18	36.52	34.86	33.20
00140	.0378"		0.960	3.0	50	5.0	38.18	36.52	34.86	33.20
00142	.0380"	#62	0.965	1/8"	2"	3/16"	38.82	37.14	35.45	33.76
00144	.0382"		0.970	3.0	50	5.0	38.18	36.52	34.86	33.20
00146	.0386"		0.980	3.0	50	5.0	38.18	36.52	34.86	33.20
00148	.0390"	#61	0.990	3.0	50	5.0	38.18	36.52	34.86	33.20
00150	.0394"		1.000	3.0	50	5.0	38.18	36.52	34.86	33.20
00152	.0400"	#60	1.016	1/8"	2"	13/64"	38.46	36.78	35.11	33.44
00154	.0410"	#59	1.041	1/8"	2"	13/64"	38.46	36.78	35.11	33.44
00156	.0413"		1.050	3.0	50	5.5	37.81	36.17	34.52	32.88
00158	.0420"	#58	1.066	1/8"	2"	7/32"	38.46	36.78	35.11	33.44
00160	.0430"	#57	1.092	1/8"	2"	7/32"	38.46	36.78	35.11	33.44
00162	.0433"		1.100	3.0	50	5.5	37.81	36.17	34.52	32.88
00164	.0453"		1.150	3.0	50	6.0	37.81	36.17	34.52	32.88
00166	.0465"	#56	1.181	1/8"	2"	15/64"	38.46	36.78	35.11	33.44
00168	.0469"	3/64"	1.191	1/8"	2"	15/64"	38.46	36.78	35.11	33.44
00170	.0472"		1.200	3.0	50	6.0	37.81	36.17	34.52	32.88
00172	.0492"		1.250	3.0	50	6.5	37.81	36.17	34.52	32.88
00174	.0512"		1.300	3.0	50	6.5	37.44	35.82	34.19	32.56
00176	.0520"	#55	1.320	1/8"	2"	17/64"	38.09	36.43	34.78	33.12
00178	.0531"		1.350	3.0	50	6.5	37.44	35.82	34.19	32.56
00180	.0550"	#54	1.397	1/8"	2"	9/32"	38.09	36.43	34.78	33.12
00182	.0551"		1.400	3.0	50	7.0	37.44	35.82	34.19	32.56
00184	.0571"		1.450	3.0	50	7.0	37.44	35.82	34.19	32.56

EDP#	$d_1$ † Diameter		$d_2$ Shank Diameter	$l_1$ Overall Length	$l_2$ Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric								
00186	.0591"		1.500	3.0	50	7.5	37.44	35.82	34.19	32.56
00188	.0595"	#53	1.511	1/8"	2"	19/64"	38.09	36.43	34.78	33.12
00190	.0610"		1.550	3.0	50	7.5	37.06	35.45	33.84	32.23
00192	.0625"	1/16"	1.587	1/8"	2"	5/16"	37.72	36.08	34.44	32.80
00194	.0630"		1.600	3.0	50	7.5	37.06	35.45	33.84	32.23
00196	.0635"	#52	1.613	1/8"	2"	5/16"	37.72	36.08	34.44	32.80
00198	.0650"		1.650	3.0	50	8.5	37.06	35.45	33.84	32.23
00200	.0669"		1.700	3.0	50	8.5	37.06	35.45	33.84	32.23
00202	.0670"	#51	1.702	1/8"	2"	11/32"	37.72	36.08	34.44	32.80
00204	.0689"		1.750	3.0	50	9.0	37.06	35.45	33.84	32.23
00206	.0700"	#50	1.778	1/8"	2"	23/64"	37.35	35.73	34.10	32.48
00208	.0709"		1.800	3.0	50	9.0	36.70	35.10	33.51	31.91
00210	.0728"		1.850	3.0	50	9.5	36.70	35.10	33.51	31.91
00212	.0730"	#49	1.854	1/8"	2"	3/8"	37.35	35.73	34.10	32.48
00214	.0748"		1.900	3.0	50	9.5	36.70	35.10	33.51	31.91
00216	.0760"	#48	1.930	1/8"	2"	3/8"	37.35	35.73	34.10	32.48
00218	.0768"		1.950	3.0	50	10.0	36.70	35.10	33.51	31.91
00220	.0781"	5/64"	1.983	1/8"	2"	13/32"	37.35	35.73	34.10	32.48
00222	.0785"	#47	1.994	1/8"	2"	13/32"	37.35	35.73	34.10	32.48
00224	.0787"		2.000	3.0	50	10.0	36.70	35.10	33.51	31.91
00226	.0807"		2.050	3.0	50	10.5	36.33	34.75	33.17	31.59
00228	.0810"	#46	2.057	1/8"	2"	27/64"	36.97	35.37	33.76	32.15
00230	.0820"	#45	2.083	1/8"	2"	27/64"	36.97	35.37	33.76	32.15
00232	.0827"		2.100	3.0	50	10.5	36.33	34.75	33.17	31.59
00234	.0846"		2.150	3.0	50	11.0	36.33	34.75	33.17	31.59
00236	.0860"	#44	2.184	1/8"	2"	7/16"	36.97	35.37	33.76	32.15
00238	.0866"		2.200	3.0	50	11.0	36.33	34.75	33.17	31.59
00240	.0886"		2.250	3.0	50	11.5	36.33	34.75	33.17	31.59
00242	.0890"	#43	2.260	1/8"	2"	29/64"	36.97	35.37	33.76	32.15
00244	.0906"		2.300	3.0	50	11.5	35.96	34.40	32.83	31.27
00246	.0925"		2.350	3.0	50	12.0	35.96	34.40	32.83	31.27
00248	.0935"	#42	2.375	1/8"	2"	31/64"	36.60	35.01	33.42	31.83
00250	.0938"	3/32"	2.382	1/8"	2"	31/64"	36.60	35.01	33.42	31.83
00252	.0945"		2.400	3.0	50	12.0	35.96	34.40	32.83	31.27
00254	.0960"	#41	2.438	1/8"	2"	31/64"	36.60	35.01	33.42	31.83
00256	.0965"		2.450	3.0	50	12.5	35.96	34.40	32.83	31.27
00258	.0980"	#40	2.489	1/8"	2"	1/2"	36.60	35.01	33.42	31.83
00260	.0984"		2.500	3.0	50	12.5	35.96	34.40	32.83	31.27
00262	.0995"	#39	2.527	1/8"	2"	1/2"	36.60	35.01	33.42	31.83
00264	.1004"		2.550	3.0	50	13.0	35.63	34.08	32.53	30.98
00266	.1015"	#38	2.578	1/8"	2"	17/32"	36.27	34.69	33.12	31.54
00268	.1024"		2.600	3.0	50	13.0	35.63	34.08	32.53	30.98
00270	.1040"	#37	2.641	1/8"	2"	17/32"	36.27	34.69	33.12	31.54
00272	.1043"		2.650	3.0	50	13.5	35.63	34.08	32.53	30.98
00274	.1063"		2.700	3.0	50	13.5	35.63	34.08	32.53	30.98
00276	.1065"	#36	2.705	1/8"	2"	17/32"	36.27	34.69	33.12	31.54
00278	.1083"		2.750	3.0	50	14.0	35.63	34.08	32.53	30.98
00280	.1094"	7/64"	2.778	1/8"	2"	9/16"	36.27	34.69	33.12	31.54
00282	.1100"	#35	2.794	1/8"	2"	9/16"	36.27	34.69	33.12	31.54
00284	.1102"		2.800	3.0	50	14.0	35.63	34.08	32.53	30.98
00286	.1110"	#34	2.819	1/8"	2"	9/16"	36.27	34.69	33.12	31.54
00288	.1122"		2.850	3.0	50	14.5	35.63	34.08	32.53	30.98
00290	.1130"	#33	2.870	1/8"	2"	19/32"	36.27	34.69	33.12	31.54
00292	.1142"		2.900	3.0	50	14.5	35.63	34.08	32.53	30.98
00294	.1160"	#32	2.946	1/8"	2"	19/32"	36.27	34.69	33.12	31.54
00296	.1161"		2.950	3.0	50	15.0	35.63	34.08	32.53	30.98
00298	.1181"		3.000	3.0	50	15.0	33.47	32.01	30.56	29.10
00300	.1200"	#31	3.048	1/8"	2"	5/8"	36.27	34.69	33.12	31.54
00302	.1250"	1/8"	3.175	1/8"	2"	5/8"	34.11	32.63	31.14	29.66

# 1580HD - 2 Flute

Technical information: page 256-257

3.000mm - 6.350mm  
(.1181" - .2500")



### TOLERANCES

$d1^*$	3mm - 6mm	+016 +004mm (+.0063" +.0015")
	> 6mm - 10mm	+021 +006mm (+.0082" +.0023")
	> 10mm - 18mm	+025 +007mm (+.0098" +.0027")
	> 18mm - 20mm	+029 +008mm (+.0114" +.0031")
$d2$	6mm	+000 -008mm (+.0000" -.0030")
	8mm - 10mm	+000 -009mm (+.0000" -.0035")
	12mm - 18mm	+000 -011mm (+.0000" -.0040")
	20mm	+000 -013mm (+.0000" -.0050")

## 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

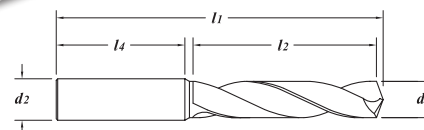
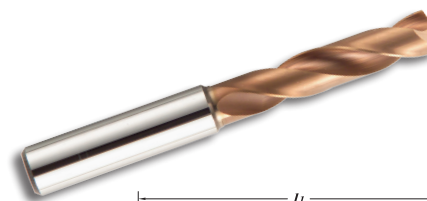
30° helix for better chip evacuation

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



*\* Note - These drills are made to a plus/plus tolerance on the drill diameter. If you are in need of a minus tolerance drill, please refer to our other 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								
20085	.1181"	3.000	6.0	62	20	36	58.48	55.94	53.39	50.85
20095	.1220"	3.100	6.0	62	20	36	58.48	55.94	53.39	50.85
20105	.1248"	3.170	6.0	62	20	36	58.48	55.94	53.39	50.85
20115	.1260"	3.200	6.0	62	20	36	58.48	55.94	53.39	50.85
20125	.1280"	3.250	6.0	62	20	36	58.48	55.94	53.39	50.85
20135	.1299"	3.300	6.0	62	20	36	58.48	55.94	53.39	50.85
20145	.1339"	3.400	6.0	62	20	36	58.48	55.94	53.39	50.85
20155	.1378"	3.500	6.0	62	20	36	57.74	55.23	52.72	50.21
20165	.1417"	3.600	6.0	62	20	36	57.74	55.23	52.72	50.21
20175	.1457"	3.700	6.0	62	20	36	57.74	55.23	52.72	50.21
20185	.1476"	3.750	6.0	62	20	36	57.74	55.23	52.72	50.21
20195	.1496"	3.800	6.0	66	24	36	57.74	55.23	52.72	50.21
20205	.1535"	3.900	6.0	66	24	36	57.74	55.23	52.72	50.21
20215	.1575"	4.000	6.0	66	24	36	57.02	54.54	52.06	49.58
20225	.1614"	4.100	6.0	66	24	36	57.02	54.54	52.06	49.58
20235	.1654"	4.200	6.0	66	24	36	57.02	54.54	52.06	49.58
20245	.1673"	4.250	6.0	66	24	36	57.02	54.54	52.06	49.58
20255	.1693"	4.300	6.0	66	24	36	57.02	54.54	52.06	49.58
20265	.1732"	4.400	6.0	66	24	36	57.02	54.54	52.06	49.58
20275	.1772"	4.500	6.0	66	24	36	56.27	53.82	51.38	48.93
20285	.1811"	4.600	6.0	66	24	36	56.27	53.82	51.38	48.93
20295	.1831"	4.650	6.0	66	24	36	56.27	53.82	51.38	48.93
20305	.1850"	4.700	6.0	66	24	36	56.27	53.82	51.38	48.93
20315	.1870"	4.750	6.0	66	24	36	56.27	53.82	51.38	48.93
20325	.1890"	4.800	6.0	66	28	36	56.27	53.82	51.38	48.93
20335	.1929"	4.900	6.0	66	28	36	56.27	53.82	51.38	48.93
20345	.1969"	5.000	6.0	66	28	36	55.55	53.13	50.72	48.30
20355	.2008"	5.100	6.0	66	28	36	55.55	53.13	50.72	48.30
20365	.2027"	5.150	6.0	66	28	36	55.55	53.13	50.72	48.30
20375	.2047"	5.200	6.0	66	28	36	55.55	53.13	50.72	48.30
20385	.2087"	5.300	6.0	66	28	36	55.55	53.13	50.72	48.30
20395	.2165"	5.500	6.0	66	28	36	54.79	52.40	50.02	47.64
20405	.2185"	5.550	6.0	66	28	36	54.79	52.40	50.02	47.64
20408	.2205"	5.600	6.0	66	28	36	54.79	52.40	50.02	47.64
20412	.2244"	5.700	6.0	66	28	36	54.79	52.40	50.02	47.64
20415	.2283"	5.800	6.0	66	28	36	54.79	52.40	50.02	47.64
20425	.2323"	5.900	6.0	66	28	36	54.79	52.40	50.02	47.64
20435	.2342"	5.950	6.0	66	28	36	54.79	52.40	50.02	47.64
20445	.2362"	6.000	6.0	66	28	36	54.06	51.71	49.36	47.01
20448	.2402"	6.100	8.0	79	34	36	77.34	73.98	70.61	67.25
20452	.2441"	6.200	8.0	79	34	36	77.34	73.98	70.61	67.25
20454	.2480"	6.300	8.0	79	34	36	77.34	73.98	70.61	67.25
20455	.2500"	6.350	8.0	79	34	36	77.34	73.98	70.61	67.25

# 1580HD - 2 Flute (continued)

6.400mm - 12.000mm  
(.2520" - .4724")

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								
20462	.2520"	6.400	8.0	79	34	36	77.34	73.98	70.61	67.25
20465	.2559"	6.500	8.0	79	34	36	76.60	73.27	69.94	66.61
20468	.2571"	6.530	8.0	79	34	36	76.60	73.27	69.94	66.61
20472	.2598"	6.600	8.0	79	34	36	76.60	73.27	69.94	66.61
20473	.2638"	6.700	8.0	79	34	36	76.60	73.27	69.94	66.61
20475	.2657"	6.750	8.0	79	34	36	76.60	73.27	69.94	66.61
20485	.2677"	6.800	8.0	79	34	36	76.60	73.27	69.94	66.61
20495	.2717"	6.900	8.0	79	34	36	76.60	73.27	69.94	66.61
20505	.2756"	7.000	8.0	79	34	36	75.89	72.59	69.29	65.99
20515	.2795"	7.100	8.0	79	41	36	75.89	72.59	69.29	65.99
20525	.2815"	7.150	8.0	79	41	36	75.89	72.59	69.29	65.99
20535	.2835"	7.200	8.0	79	41	36	75.89	72.59	69.29	65.99
20542	.2874"	7.300	8.0	79	41	36	75.89	72.59	69.29	65.99
20545	.2913"	7.400	8.0	79	41	36	75.89	72.59	69.29	65.99
20555	.2953"	7.500	8.0	79	41	36	75.11	71.84	68.58	65.31
20565	.2972"	7.550	8.0	79	41	36	75.11	71.84	68.58	65.31
20575	.2992"	7.600	8.0	79	41	36	75.11	71.84	68.58	65.31
20585	.3031"	7.700	8.0	79	41	36	75.11	71.84	68.58	65.31
20595	.3071"	7.800	8.0	79	41	36	75.11	71.84	68.58	65.31
20605	.3130"	7.950	8.0	79	41	36	75.11	71.84	68.58	65.31
20615	.3150"	8.000	8.0	79	41	36	74.38	71.15	67.91	64.68
20622	.3189"	8.100	10.0	89	47	40	107.90	103.21	98.52	93.83
20625	.3228"	8.200	10.0	89	47	40	107.90	103.21	98.52	93.83
20635	.3268"	8.300	10.0	89	47	40	107.90	103.21	98.52	93.83
20645	.3287"	8.350	10.0	89	47	40	107.90	103.21	98.52	93.83
20652	.3307"	8.400	10.0	89	47	40	107.90	103.21	98.52	93.83
20655	.3346"	8.500	10.0	89	47	40	106.80	102.16	97.51	92.87
20665	.3386"	8.600	10.0	89	47	40	106.80	102.16	97.51	92.87
20675	.3425"	8.700	10.0	89	47	40	106.80	102.16	97.51	92.87
20685	.3445"	8.750	10.0	89	47	40	106.80	102.16	97.51	92.87
20695	.3465"	8.800	10.0	89	47	40	106.80	102.16	97.51	92.87
20705	.3504"	8.900	10.0	89	47	40	106.80	102.16	97.51	92.87
20715	.3543"	9.000	10.0	89	47	40	105.70	101.10	96.51	91.91
20725	.3583"	9.100	10.0	89	47	40	105.70	101.10	96.51	91.91
20735	.3602"	9.150	10.0	89	47	40	105.70	101.10	96.51	91.91
20745	.3622"	9.200	10.0	89	47	40	105.70	101.10	96.51	91.91
20755	.3661"	9.300	10.0	89	47	40	105.70	101.10	96.51	91.91
20762	.3701"	9.400	10.0	89	47	40	105.70	101.10	96.51	91.91
20765	.3740"	9.500	10.0	89	47	40	104.58	100.03	95.49	90.94
20775	.3760"	9.550	10.0	89	47	40	104.58	100.03	95.49	90.94
20778	.3780"	9.600	10.0	89	47	40	104.58	100.03	95.49	90.94
20782	.3819"	9.700	10.0	89	47	40	104.58	100.03	95.49	90.94
20785	.3858"	9.800	10.0	89	47	40	104.58	100.03	95.49	90.94
20795	.3898"	9.900	10.0	89	47	40	104.58	100.03	95.49	90.94
20805	.3937"	10.000	10.0	89	47	40	103.49	98.99	94.49	89.99
20812	.3976"	10.100	12.0	102	55	45	140.59	134.48	128.36	122.25
20815	.4016"	10.200	12.0	102	55	45	140.59	134.48	128.36	122.25
20825	.4055"	10.300	12.0	102	55	45	140.59	134.48	128.36	122.25
20835	.4134"	10.500	12.0	102	55	45	139.12	133.07	127.02	120.97
20842	.4173"	10.600	12.0	102	55	45	139.12	133.07	127.02	120.97
20845	.4213"	10.700	12.0	102	55	45	139.12	133.07	127.02	120.97
20855	.4252"	10.800	12.0	102	55	45	139.12	133.07	127.02	120.97
20865	.4331"	11.000	12.0	102	55	45	137.61	131.63	125.64	119.66
20875	.4370"	11.100	12.0	102	55	45	137.61	131.63	125.64	119.66
20885	.4409"	11.200	12.0	102	55	45	137.61	131.63	125.64	119.66
20892	.4488"	11.400	12.0	102	55	45	137.61	131.63	125.64	119.66
20895	.4528"	11.500	12.0	102	55	45	136.15	130.23	124.31	118.39
20905	.4606"	11.700	12.0	102	55	45	136.15	130.23	124.31	118.39
20915	.4685"	11.900	12.0	102	55	45	136.15	130.23	124.31	118.39
20925	.4724"	12.000	12.0	102	55	45	134.64	128.79	122.93	117.08

continued →

# 1580HD - 2 Flute (continued)

12.100mm - 20.000mm  
(.4764" - .7874")

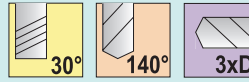
EDP#	<i>d1</i> Diameter		<i>d2</i> Shank Diameter	<i>l1</i> Overall Length	<i>l2</i> Flute Length	<i>l4</i> Shank Length	1-11	12-24	25-49	50-100
	Decimal	Metric								
20935	.4764"	12.100	14.0	107	60	45	174.77	167.17	159.57	151.97
20941	.4803"	12.200	14.0	107	60	45	174.77	167.17	159.57	151.97
20945	.4842"	12.300	14.0	107	60	45	174.77	167.17	159.57	151.97
20951	.4882"	12.400	14.0	107	60	45	174.77	167.17	159.57	151.97
20955	.4921"	12.500	14.0	107	60	45	173.27	165.74	158.20	150.67
20961	.4961"	12.600	14.0	107	60	45	173.27	165.74	158.20	150.67
20965	.5000"	12.700	14.0	107	60	45	173.27	165.74	158.20	150.67
20975	.5039"	12.800	14.0	107	60	45	173.27	165.74	158.20	150.67
20978	.5051"	12.830	14.0	107	60	45	173.27	165.74	158.20	150.67
20981	.5079"	12.900	14.0	107	60	45	173.27	165.74	158.20	150.67
20982	.5098"	12.950	14.0	107	60	45	173.27	165.74	158.20	150.67
20985	.5118"	13.000	14.0	107	60	45	171.81	164.34	156.87	149.40
20995	.5157"	13.100	14.0	107	60	45	171.81	164.34	156.87	149.40
20998	.5236"	13.300	14.0	107	60	45	171.81	164.34	156.87	149.40
21005	.5315"	13.500	14.0	107	60	45	170.32	162.91	155.51	148.10
21015	.5394"	13.700	14.0	107	60	45	170.32	162.91	155.51	148.10
21025	.5433"	13.800	14.0	107	60	45	170.32	162.91	155.51	148.10
21035	.5512"	14.000	14.0	107	60	45	168.84	161.50	154.16	146.82
21045	.5551"	14.100	16.0	115	65	48	206.59	197.60	188.62	179.64
21053	.5591"	14.200	16.0	115	65	48	206.59	197.60	188.62	179.64
21055	.5610"	14.250	16.0	115	65	48	206.59	197.60	188.62	179.64
21065	.5630"	14.300	16.0	115	65	48	206.59	197.60	188.62	179.64
21075	.5709"	14.500	16.0	115	65	48	205.08	196.16	187.25	178.33
21085	.5787"	14.700	16.0	115	65	48	205.08	196.16	187.25	178.33
21095	.5827"	14.800	16.0	115	65	48	205.08	196.16	187.25	178.33
21105	.5906"	15.000	16.0	115	65	48	203.61	194.76	185.90	177.05
21115	.5945"	15.100	16.0	115	65	48	203.61	194.76	185.90	177.05
21125	.6102"	15.500	16.0	115	65	48	202.16	193.37	184.58	175.79
21135	.6181"	15.700	16.0	115	65	48	202.16	193.37	184.58	175.79
21145	.6220"	15.800	16.0	115	65	48	202.16	193.37	184.58	175.79
21155	.6299"	16.000	16.0	115	65	48	200.69	191.96	183.24	174.51
21159	.6331"	16.080	18.0	123	73	48	278.16	266.07	253.97	241.88
21161	.6339"	16.100	18.0	123	73	48	278.16	266.07	253.97	241.88
21163	.6378"	16.200	18.0	123	73	48	278.16	266.07	253.97	241.88
21165	.6398"	16.250	18.0	123	73	48	278.16	266.07	253.97	241.88
21175	.6496"	16.500	18.0	123	73	48	275.23	263.26	251.30	239.33
21185	.6555"	16.650	18.0	123	73	48	275.23	263.26	251.30	239.33
21195	.6693"	17.000	18.0	123	73	48	272.23	260.39	248.56	236.72
21205	.6713"	17.050	18.0	123	73	48	272.23	260.39	248.56	236.72
21215	.6870"	17.450	18.0	123	73	48	272.23	260.39	248.56	236.72
21225	.6890"	17.500	18.0	123	73	48	269.33	257.62	245.91	234.20
21235	.7027"	17.850	18.0	123	73	48	269.33	257.62	245.91	234.20
21245	.7087"	18.000	18.0	123	73	48	266.37	254.79	243.21	231.63
21255	.7185"	18.250	20.0	131	79	50	376.57	360.20	343.82	327.45
21265	.7283"	18.500	20.0	131	79	50	373.65	357.40	341.16	324.91
21275	.7342"	18.650	20.0	131	79	50	373.65	357.40	341.16	324.91
21285	.7480"	19.000	20.0	131	79	50	370.68	354.56	338.45	322.33
21295	.7500"	19.050	20.0	131	79	50	370.68	354.56	338.45	322.33
21297	.7520"	19.100	20.0	131	79	50	370.68	354.56	338.45	322.33
21298	.7539"	19.150	20.0	131	79	50	370.68	354.56	338.45	322.33
21299	.7559"	19.200	20.0	131	79	50	370.68	354.56	338.45	322.33
21300	.7579"	19.250	20.0	131	79	50	370.68	354.56	338.45	322.33
21303	.7590"	19.280	20.0	131	79	50	370.68	354.56	338.45	322.33
21304	.7598"	19.300	20.0	131	79	50	370.68	354.56	338.45	322.33
21305	.7638"	19.400	20.0	131	79	50	370.68	354.56	338.45	322.33
21315	.7677"	19.500	20.0	131	79	50	367.76	351.77	335.78	319.79
21323	.7795"	19.800	20.0	131	79	50	367.76	351.77	335.78	319.79
21325	.7815"	19.850	20.0	131	79	50	367.76	351.77	335.78	319.79
21335	.7874"	20.000	20.0	131	79	50	364.78	348.92	333.06	317.20

**TOLERANCES**

<i>d</i>	+.0000"-.0005" (+.0000-.0127mm)	
<i>l1</i>	≤ 1/8"	+ .125"-.062" (+3.175-1.588mm)
	> 1/8"	+ .125"-.125" (+3.175-3.175mm)
<i>l2</i>	≤ 1/8"	+ .125"-.062" (+3.175-1.588mm)
	> 1/8"	+ .125"-.125" (+3.175-3.175mm)

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**1580H - 2 Flute**

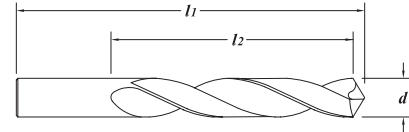


.1181" - .2165"  
(3.000mm - 5.500mm)

**HIGH PERFORMANCE DRILLS**

**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



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							
20301	.1181	3.000	46	16	33.06	31.63	30.19	28.75	
20306	.1200	#31	3.048	1-13/16"	5/8"	33.40	31.94	30.49	29.04
20311	.1250	1/8"	3.175	1-15/16"	11/16"	33.70	32.23	30.77	29.30
20316	.1285	#30	3.264	1-15/16"	11/16"	33.99	32.52	31.04	29.56
20321	.1360	#29	3.454	2-1/16"	3/4"	34.33	32.84	31.34	29.85
20326	.1378		3.500	52	19	34.66	33.15	31.65	30.14
20331	.1405	#28	3.569	2-1/16"	3/4"	34.98	33.46	31.94	30.42
20336	.1406	9/64"	3.571	2-1/16"	3/4"	35.28	33.75	32.21	30.68
20341	.1440	#27	3.658	2-1/16"	3/4"	35.60	34.06	32.51	30.96
20346	.1470	#26	3.734	2-3/16"	13/16"	35.88	34.32	32.76	31.20
20351	.1495	#25	3.797	2-3/16"	13/16"	36.25	34.67	33.10	31.52
20356	.1520	#24	3.861	2-3/16"	13/16"	36.54	34.95	33.36	31.77
20361	.1540	#23	3.912	2-3/16"	13/16"	36.86	35.26	33.65	32.05
20366	.1562	5/32"	3.967	2-3/16"	13/16"	37.15	35.53	33.92	32.30
20371	.1570	#22	3.988	2-3/16"	13/16"	37.49	35.86	34.23	32.60
20376	.1575		4.000	56	21	37.79	36.15	34.50	32.86
20381	.1590	#21	4.039	2-3/16"	13/16"	38.12	36.47	34.81	33.15
20386	.1610	#20	4.089	2-3/16"	13/16"	38.44	36.77	35.10	33.43
20391	.1660	#19	4.216	2-9/32"	15/16"	38.78	37.09	35.41	33.72
20396	.1695	#18	4.305	2-9/32"	15/16"	39.08	37.38	35.68	33.98
20401	.1719	11/64"	4.366	2-9/32"	15/16"	39.41	37.70	35.98	34.27
20406	.1730	#17	4.394	2-9/32"	15/16"	39.73	38.01	36.28	34.55
20411	.1770	#16	4.496	2-9/32"	15/16"	40.00	38.26	36.52	34.78
20416	.1772		4.500	58	24	40.34	38.59	36.83	35.08
20421	.1800	#15	4.572	2-9/32"	15/16"	40.62	38.85	37.09	35.32
20426	.1820	#14	4.623	2-9/32"	15/16"	41.00	39.22	37.43	35.65
20431	.1850	#13	4.700	2-9/32"	15/16"	41.29	39.49	37.70	35.90
20436	.1875	3/16"	4.763	2-13/32"	1"	41.62	39.81	38.00	36.19
20441	.1890	#12	4.801	2-13/32"	1"	41.93	40.11	38.28	36.46
20446	.1910	#11	4.851	2-13/32"	1"	42.31	40.47	38.63	36.79
20451	.1935	#10	4.915	2-13/32"	1"	42.56	40.71	38.86	37.01
20456	.1960	#9	4.978	2-13/32"	1"	42.87	41.01	39.14	37.28
20461	.1969		5.000	61	25	43.10	41.23	39.35	37.48
20466	.1990	#8	5.055	2-13/32"	1"	43.52	41.62	39.73	37.84
20471	.2010	#7	5.105	2-13/32"	1"	43.63	41.73	39.84	37.94
20476	.2031	13/64"	5.159	2-13/32"	1"	43.93	42.02	40.11	38.20
20481	.2040	#6	5.182	2-13/32"	1"	44.23	42.31	40.38	38.46
20486	.2055	#5	5.220	2-13/32"	1"	44.54	42.60	40.67	38.73
20491	.2090	#4	5.309	2-13/32"	1"	44.82	42.87	40.92	38.97
20496	.2130	#3	5.410	2-5/8"	1-3/32"	45.11	43.15	41.19	39.23
20501	.2165		5.500	67	28	45.40	43.43	41.45	39.48

continued →

# 1580H - 2 Flute (continued)

.2188" - .4528"  
(5.558mm - 11.500mm)

EDP#	$d^{\dagger}$ Diameter		$l_1$ Overall Length	$l_2$ Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric							
20506	.2188	7/32"	5.558	2-5/8"	1-3/32"	45.78	43.79	41.80	39.81
20511	.2210	#2	5.613	2-5/8"	1-3/32"	46.12	44.11	42.11	40.10
20516	.2280	#1	5.791	2-5/8"	1-3/32"	46.46	44.44	42.42	40.40
20521	.2340	A	5.944	2-5/8"	1-3/32"	46.78	44.75	42.71	40.68
20526	.2344	15/64"	5.954	2-5/8"	1-3/32"	47.14	45.09	43.04	40.99
20531	.2362		6.000	67	28	47.46	45.40	43.33	41.27
20536	.2380	B	6.045	2-3/4"	1-7/32"	47.78	45.71	43.63	41.55
20541	.2420	C	6.147	2-3/4"	1-7/32"	48.16	46.07	43.97	41.88
20546	.2460	D	6.248	2-3/4"	1-7/32"	48.44	46.33	44.23	42.12
20551	.2500	1/4" / E	6.350	2-3/4"	1-7/32"	48.85	46.73	44.60	42.48
20556	.2559		6.500	70	31	49.63	47.48	45.32	43.16
20561	.2570	F	6.528	2-3/4"	1-7/32"	50.42	48.22	46.03	43.84
20566	.2610	G	6.629	2-3/4"	1-7/32"	51.19	48.96	46.74	44.51
20571	.2656	17/64"	6.746	2-15/16"	1-11/32"	51.96	49.70	47.44	45.18
20576	.2660	H	6.756	2-15/16"	1-11/32"	52.73	50.44	48.14	45.85
20581	.2720	I	6.909	2-15/16"	1-11/32"	53.51	51.18	48.86	46.53
20586	.2756		7.000	75	34	54.29	51.93	49.57	47.21
20591	.2770	J	7.036	2-15/16"	1-11/32"	55.04	52.65	50.25	47.86
20596	.2810	K	7.137	2-15/16"	1-11/32"	55.83	53.41	50.98	48.55
20601	.2812	9/32"	7.142	2-15/16"	1-11/32"	56.61	54.15	51.69	49.23
20606	.2900	L	7.366	2-15/16"	1-11/32"	57.39	54.89	52.40	49.90
20611	.2950	M	7.493	2-15/16"	1-11/32"	58.49	55.95	53.40	50.86
20616	.2953		7.500	75	34	58.49	55.95	53.40	50.86
20621	.2969	19/64"	7.541	3-3/32"	1-15/32"	59.01	56.44	53.88	51.31
20626	.3020	N	7.671	3-3/32"	1-15/32"	61.65	58.97	56.29	53.61
20631	.3125	5/16"	7.938	3-3/32"	1-15/32"	61.87	59.18	56.49	53.80
20636	.3150		8.000	79	37	65.67	62.81	59.96	57.10
20641	.3160	O	8.026	3-3/32"	1-15/32"	65.67	62.81	59.96	57.10
20646	.3230	P	8.204	3-3/32"	1-15/32"	66.14	63.26	60.39	57.51
20651	.3281	21/64"	8.334	3-3/32"	1-15/32"	67.37	64.44	61.51	58.58
20656	.3320	Q	8.433	3-3/32"	1-15/32"	68.57	65.59	62.61	59.63
20661	.3346		8.500	79	37	68.86	65.87	62.87	59.88
20666	.3390	R	8.611	3-5/16"	1-9/16"	70.71	67.64	64.56	61.49
20671	.3438	11/32"	8.733	3-5/16"	1-9/16"	72.27	69.12	65.98	62.84
20676	.3480	S	8.839	3-5/16"	1-9/16"	74.66	71.41	68.17	64.92
20681	.3543		9.000	84	40	76.56	73.23	69.90	66.57
20686	.3580	T	9.093	3-5/16"	1-9/16"	79.56	76.10	72.64	69.18
20691	.3594	23/64"	9.129	3-5/16"	1-9/16"	80.05	76.57	73.09	69.61
20696	.3680	U	9.347	3-5/16"	1-9/16"	84.21	80.55	76.89	73.23
20701	.3740		9.500	84	40	84.90	81.21	77.52	73.83
20706	.3750	3/8"	9.525	3-1/2"	1-11/16"	85.42	81.71	77.99	74.28
20711	.3770	V	9.576	3-1/2"	1-11/16"	88.70	84.84	80.99	77.13
20716	.3860	W	9.804	3-1/2"	1-11/16"	90.25	86.33	82.40	78.48
20721	.3906	25/64"	9.921	3-1/2"	1-11/16"	91.39	87.42	83.44	79.47
20726	.3937		10.000	89	43	94.15	90.06	85.96	81.87
20731	.3970	X	10.084	3-1/2"	1-11/16"	96.46	92.27	88.07	83.88
20736	.4040	Y	10.262	3-1/2"	1-11/16"	97.11	92.88	88.66	84.44
20741	.4062	13/32"	10.317	3-1/2"	1-11/16"	100.10	95.74	91.39	87.04
20746	.4130	Z	10.490	3-1/2"	1-11/16"	101.03	96.64	92.24	87.85
20751	.4134		10.500	89	43	101.03	96.64	92.24	87.85
20756	.4219	27/64"	10.716	3-3/4"	1-13/16"	101.98	97.55	93.11	88.68
20761	.4331		11.000	95	46	109.47	104.71	99.95	95.19
20766	.4375	7/16"	11.113	3-3/4"	1-13/16"	109.47	104.71	99.95	95.19
20771	.4528		11.500	95	46	117.51	112.40	107.29	102.18

EDP#	$d^{\dagger}$ Diameter		$l_1$ Overall Length	$l_2$ Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric							
20776	.4531	29/64"	11.509	3-3/4"	1-13/16"	117.51	112.40	107.29	102.18
20781	.4688	15/32"	11.908	4"	1-15/16"	123.45	118.09	112.72	107.35
20786	.4724		12.000	102	49	123.82	118.44	113.05	107.67
20791	.4844	31/64"	12.304	4"	1-15/16"	124.67	119.25	113.83	108.41
20796	.4921		12.500	102	49	125.91	120.44	114.96	109.49
20801	.5000	1/2"	12.700	4"	1-15/16"	126.72	121.21	115.70	110.19
20806	.5118		13.000	107	53	140.66	134.54	128.43	122.31
20811	.5156	33/64"	13.096	4-7/32"	2-3/32"	143.97	137.71	131.45	125.19
20816	.5312	17/32"	13.492	4-7/32"	2-3/32"	147.29	140.89	134.48	128.08
20821	.5315		13.500	110	56	150.60	144.06	137.51	130.96
20826	.5469	35/64"	13.891	4-5/16"	2-7/32"	153.92	147.22	140.53	133.84
20831	.5512		14.000	110	56	157.25	150.41	143.58	136.74
20836	.5625	9/16"	14.288	4-9/16"	2-15/32"	169.91	162.53	155.14	147.75
20841	.5709		14.500	116	63	173.10	165.57	158.05	150.52
20846	.5781	37/64"	14.684	4-15/16"	2-9/16"	176.19	168.53	160.87	153.21
20851	.5906		15.000	125	65	179.45	171.64	163.84	156.04
20856	.5938	19/32"	15.083	4-15/16"	2-9/16"	180.42	172.58	164.73	156.89
20861	.6094	39/64"	15.479	5-1/16"	2-13/16"	181.33	173.45	165.56	157.68
20866	.6102		15.500	129	71	182.28	174.35	166.43	158.50
20871	.6250	5/8"	15.875	5-1/4"	3-1/8"	183.18	175.22	167.25	159.29
20876	.6299		16.000	133	79	187.61	179.45	171.30	163.14

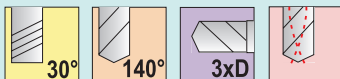
# 1580KH - 2 Flute

Technical information: page 256-257

**TOLERANCES**

<i>d</i>	+0.000" -0.005" (+0.000 -0.127mm)	
<i>l1</i>	≤ 1/8"	+0.125" -0.062" (+3.175 -1.588mm)
	> 1/8"	+0.125" -0.125" (+3.175 -3.175mm)
<i>l2</i>	≤ 1/8"	+0.125" -0.062" (+3.175 -1.588mm)
	> 1/8"	+0.125" -0.125" (+3.175 -3.175mm)

.1575" - .2756"  
(4.000mm - 7.000mm)

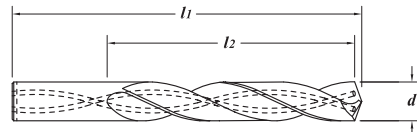


## Balinit® HELICA Coated

- 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



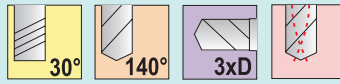
EDP#	<i>d</i> <sup>†</sup> Diameter		<i>l1</i> Overall Length	<i>l2</i> Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric							
22085	.1575	4.000	56	21	52.47	50.19	47.91	45.63	
22090	.1590	#21	4.039	2-3/16"	13/16"	52.96	50.66	48.35	46.05
22095	.1610	#20	4.089	2-3/16"	13/16"	53.39	51.07	48.75	46.43
22100	.1660	#19	4.216	2-9/32"	15/16"	53.85	51.51	49.17	46.83
22105	.1695	#18	4.305	2-9/32"	15/16"	54.28	51.92	49.56	47.20
22110	.1719	11/64"	4.366	2-9/32"	15/16"	54.73	52.35	49.97	47.59
22115	.1730	#17	4.394	2-9/32"	15/16"	55.17	52.77	50.37	47.97
22120	.1770	#16	4.496	2-9/32"	15/16"	55.56	53.14	50.73	48.31
22125	.1772		4.500	58	24	56.04	53.60	51.17	48.73
22130	.1800	#15	4.572	2-9/32"	15/16"	56.41	53.96	51.50	49.05
22135	.1820	#14	4.623	2-9/32"	15/16"	56.95	54.47	52.00	49.52
22140	.1850	#13	4.699	2-9/32"	15/16"	57.34	54.85	52.35	49.86
22145	.1875	3/16"	4.763	2-13/32"	1"	57.81	55.30	52.78	50.27
22150	.1890	#12	4.801	2-13/32"	1"	58.21	55.68	53.15	50.62
22155	.1910	#11	4.851	2-13/32"	1"	58.75	56.20	53.64	51.09
22160	.1935	#10	4.915	2-13/32"	1"	59.10	56.53	53.96	51.39
22165	.1960	#9	4.978	2-13/32"	1"	59.54	56.95	54.36	51.77
22170	.1969		5.000	61	25	59.87	57.27	54.66	52.06
22175	.1990	#8	5.055	2-13/32"	1"	60.42	57.79	55.17	52.54
22180	.2010	#7	5.105	2-13/32"	1"	60.59	57.96	55.32	52.69
22185	.2031	13/64"	5.159	2-13/32"	1"	61.01	58.36	55.70	53.05
22190	.2040	#6	5.182	2-13/32"	1"	61.42	58.75	56.08	53.41
22195	.2055	#5	5.220	2-13/32"	1"	61.86	59.17	56.48	53.79
22200	.2090	#4	5.309	2-13/32"	1"	62.25	59.54	56.84	54.13
22205	.2130	#3	5.410	2-5/8"	1-3/32"	62.66	59.94	57.21	54.49
22210	.2165		5.500	67	28	63.05	60.31	57.57	54.83
22215	.2188	7/32"	5.558	2-5/8"	1-3/32"	63.60	60.83	58.07	55.30
22220	.2210	#2	5.613	2-5/8"	1-3/32"	64.04	61.26	58.47	55.69
22225	.2280	#1	5.791	2-5/8"	1-3/32"	64.53	61.72	58.92	56.11
22230	.2340	A	5.944	2-5/8"	1-3/32"	64.98	62.15	59.33	56.50
22235	.2344	15/64"	5.954	2-5/8"	1-3/32"	65.47	62.62	59.78	56.93
22240	.2362		6.000	67	28	65.93	63.06	60.20	57.33
22245	.2380	B	6.045	2-3/4"	1-7/32"	66.37	63.48	60.60	57.71
22250	.2420	C	6.147	2-3/4"	1-7/32"	66.91	64.00	61.09	58.18
22255	.2460	D	6.248	2-3/4"	1-7/32"	67.29	64.36	61.44	58.51
22260	.2500	1/4" / E	6.350	2-3/4"	1-7/32"	67.85	64.90	61.95	59.00
22265	.2559		6.500	70	31	68.95	65.96	62.96	59.96
22270	.2570	F	6.528	2-3/4"	1-7/32"	70.01	66.97	63.92	60.88
22275	.2610	G	6.629	2-3/4"	1-7/32"	71.08	67.99	64.90	61.81
22280	.2656	17/64"	6.746	2-15/16"	1-11/32"	72.17	69.04	65.90	62.76
22285	.2660	H	6.756	2-15/16"	1-11/32"	73.24	70.06	66.87	63.69
22290	.2720	I	6.909	2-15/16"	1-11/32"	74.31	71.08	67.85	64.62
22295	.2756		7.000	75	34	75.39	72.12	68.84	65.56

EDP#	$d^{\dagger}$ Diameter		$l_1$ Overall Length	$l_2$ Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric							
22300	.2770	J	7.036	2-15/16"	1-11/32"	76.44	73.12	69.79	66.47
22305	.2810	K	7.137	2-15/16"	1-11/32"	77.57	74.20	70.82	67.45
22310	.2812	9/32"	7.142	2-15/16"	1-11/32"	78.64	75.22	71.80	68.38
22315	.2900	L	7.366	2-15/16"	1-11/32"	79.70	76.23	72.77	69.30
22320	.2950	M	7.493	2-15/16"	1-11/32"	81.24	77.70	74.17	70.64
22325	.2953		7.500	75	34	81.24	77.70	74.17	70.64
22330	.2969	19/64"	7.541	3-3/32"	1-15/32"	81.94	78.38	74.81	71.25
22335	.3020	N	7.671	3-3/32"	1-15/32"	85.63	81.91	78.18	74.46
22340	.3125	5/16"	7.938	3-3/32"	1-15/32"	85.93	82.19	78.46	74.72
22345	.3150		8.000	79	37	87.55	83.74	79.94	76.13
22350	.3160	O	8.026	3-3/32"	1-15/32"	87.55	83.74	79.94	76.13
22355	.3230	P	8.204	3-3/32"	1-15/32"	88.18	84.35	80.51	76.68
22360	.3281	21/64"	8.334	3-3/32"	1-15/32"	89.83	85.92	82.02	78.11
22365	.3320	Q	8.433	3-3/32"	1-15/32"	91.44	87.46	83.49	79.51
22370	.3346		8.500	79	37	91.82	87.82	83.83	79.84
22375	.3390	R	8.611	3-5/16"	1-9/16"	94.28	90.18	86.08	81.98
22380	.3438	11/32"	8.733	3-5/16"	1-9/16"	96.35	92.16	87.97	83.78
22385	.3480	S	8.839	3-5/16"	1-9/16"	99.53	95.21	90.88	86.55
22390	.3543		9.000	84	40	102.07	97.64	93.20	88.76
22395	.3580	T	9.093	3-5/16"	1-9/16"	106.09	101.48	96.86	92.25
22400	.3594	23/64"	9.129	3-5/16"	1-9/16"	106.73	102.09	97.45	92.81
22405	.3680	U	9.347	3-5/16"	1-9/16"	112.30	107.42	102.53	97.65
22410	.3740		9.500	84	40	113.21	108.28	103.36	98.44
22415	.3750	3/8"	9.525	3-1/2"	1-11/16"	113.90	108.94	103.99	99.04
22420	.3770	V	9.576	3-1/2"	1-11/16"	118.27	113.12	107.98	102.84
22425	.3860	W	9.804	3-1/2"	1-11/16"	120.34	115.10	109.87	104.64
22430	.3906	25/64"	9.921	3-1/2"	1-11/16"	121.84	116.55	111.25	105.95
22435	.3937		10.000	89	43	122.28	116.96	111.65	106.33
22440	.3970	X	10.084	3-1/2"	1-11/16"	125.27	119.82	114.38	108.93
22445	.4040	Y	10.262	3-1/2"	1-11/16"	126.13	120.65	115.16	109.68
22450	.4062	13/32"	10.317	3-1/2"	1-11/16"	130.01	124.36	118.70	113.05
22455	.4130	Z	10.490	3-1/2"	1-11/16"	131.20	125.50	119.79	114.09
22460	.4134		10.500	89	43	131.20	125.50	119.79	114.09
22465	.4219	27/64"	10.716	3-3/4"	1-13/16"	132.43	126.68	120.92	115.16
22470	.4331		11.000	95	46	142.15	135.97	129.79	123.61
22475	.4375	7/16"	11.113	3-3/4"	1-13/16"	142.15	135.97	129.79	123.61
22480	.4528		11.500	95	46	152.61	145.97	139.34	132.70
22485	.4531	29/64"	11.509	3-3/4"	1-13/16"	152.61	145.97	139.34	132.70
22490	.4688	15/32"	11.908	4"	1-15/16"	160.32	153.35	146.38	139.41
22495	.4724		12.000	102	49	160.82	153.82	146.83	139.84
22500	.4844	31/64"	12.304	4"	1-15/16"	173.14	165.62	158.09	150.56
22505	.4921		12.500	102	49	182.49	174.56	166.62	158.69
22510	.5000	1/2"	12.700	4"	1-15/16"	183.64	175.66	167.67	159.69
22515	.5118		13.000	107	53	203.86	195.00	186.13	177.27
22520	.5156	33/64"	13.096	4-7/32"	2-3/32"	208.67	199.60	190.52	181.45
22525	.5312	17/32"	13.492	4-7/32"	2-3/32"	213.46	204.18	194.90	185.62
22530	.5315		13.500	110	56	218.29	208.80	199.31	189.82
22535	.5469	35/64"	13.891	4-5/16"	2-7/32"	223.05	213.36	203.66	193.96
22540	.5512		14.000	110	56	227.90	217.99	208.08	198.17
22545	.5625	9/16"	14.288	4-9/16"	2-15/32"	246.25	235.54	224.84	214.13
22550	.5709		14.500	116	63	250.90	239.99	229.08	218.17
22555	.5781	37/64"	14.684	4-15/16"	2-9/16"	255.38	244.28	233.17	222.07
22560	.5906		15.000	125	65	260.07	248.77	237.46	226.15
22565	.5938	19/32"	15.083	4-15/16"	2-9/16"	261.49	250.12	238.75	227.38
22570	.6094	39/64"	15.479	5-1/16"	2-13/16"	262.80	251.37	239.95	228.52
22575	.6102		15.500	129	71	264.17	252.68	241.20	229.71
22580	.6250	5/8"	15.875	5-1/4"	3-1/8"	265.47	253.92	242.38	230.84
22585	.6299		16.000	133	79	271.89	260.07	248.25	236.43

# 1580KD - 2 Flute

Technical information: page 256-257

4.000mm - 7.500mm  
(.1575" - .2953")



TOLERANCES		
d1 *	3mm - 6mm	+0.16 +.004mm (+.0063" +.0015")
	> 6mm - 10mm	+0.21 +.006mm (+.0082" +.0023")
	> 10mm - 18mm	+0.25 +.007mm (+.0098" +.0027")
	> 18mm - 20mm	+0.29 +.008mm (+.0114" +.0031")
d2	6mm	+0.00 - .008mm (+.0000" - .0030")
	8mm - 10mm	+0.00 - .009mm (+.0000" - .0035")
	12mm - 18mm	+0.00 - .011mm (+.0000" - .0040")
	20mm	+0.00 - .013mm (+.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

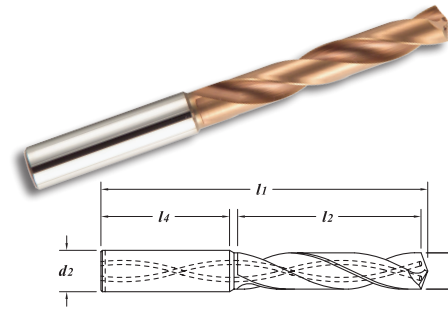
30° helix for better chip evacuation

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



\* Note - These drills are made to a plus/plus tolerance on the drill diameter. If you are in need of a minus tolerance drill, please refer to our other 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								
28135	.1575"	4.000	6.0	66	24	36	72.28	69.14	65.99	62.85
28145	.1614"	4.100	6.0	66	24	36	72.28	69.14	65.99	62.85
28155	.1654"	4.200	6.0	66	24	36	72.28	69.14	65.99	62.85
28165	.1673"	4.250	6.0	66	24	36	72.28	69.14	65.99	62.85
28175	.1693"	4.300	6.0	66	24	36	72.28	69.14	65.99	62.85
28185	.1732"	4.400	6.0	66	24	36	72.28	69.14	65.99	62.85
28195	.1772"	4.500	6.0	66	24	36	71.53	68.42	65.31	62.20
28205	.1811"	4.600	6.0	66	24	36	71.53	68.42	65.31	62.20
28215	.1831"	4.650	6.0	66	24	36	71.53	68.42	65.31	62.20
28225	.1850"	4.700	6.0	66	24	36	71.53	68.42	65.31	62.20
28235	.1870"	4.750	6.0	66	24	36	71.53	68.42	65.31	62.20
28245	.1890"	4.800	6.0	66	28	36	71.53	68.42	65.31	62.20
28255	.1929"	4.900	6.0	66	28	36	71.53	68.42	65.31	62.20
28265	.1969"	5.000	6.0	66	28	36	70.81	67.73	64.65	61.57
28275	.2008"	5.100	6.0	66	28	36	70.81	67.73	64.65	61.57
28285	.2027"	5.150	6.0	66	28	36	70.81	67.73	64.65	61.57
28295	.2047"	5.200	6.0	66	28	36	70.81	67.73	64.65	61.57
28305	.2087"	5.300	6.0	66	28	36	70.81	67.73	64.65	61.57
28315	.2165"	5.500	6.0	66	28	36	70.07	67.02	63.98	60.93
28325	.2185"	5.550	6.0	66	28	36	70.07	67.02	63.98	60.93
28335	.2205"	5.600	6.0	66	28	36	70.07	67.02	63.98	60.93
28345	.2243"	5.700	6.0	66	28	36	70.07	67.02	63.98	60.93
28355	.2283"	5.800	6.0	66	28	36	70.07	67.02	63.98	60.93
28365	.2323"	5.900	6.0	66	28	36	70.07	67.02	63.98	60.93
28375	.2342"	5.950	6.0	66	28	36	70.07	67.02	63.98	60.93
28385	.2362"	6.000	6.0	66	28	36	69.33	66.32	63.30	60.29
28395	.2402"	6.100	8.0	79	34	36	99.56	95.23	90.90	86.57
28405	.2441"	6.200	8.0	79	34	36	99.56	95.23	90.90	86.57
28415	.2480"	6.300	8.0	79	34	36	99.56	95.23	90.90	86.57
28425	.2500"	6.350	8.0	79	34	36	99.56	95.23	90.90	86.57
28435	.2520"	6.400	8.0	79	34	36	99.56	95.23	90.90	86.57
28445	.2559"	6.500	8.0	79	34	36	98.81	94.51	90.22	85.92
28446	.2571"	6.530	8.0	79	34	36	98.81	94.51	90.22	85.92
28455	.2598"	6.600	8.0	79	34	36	98.81	94.51	90.22	85.92
28461	.2638"	6.700	8.0	79	34	36	98.81	94.51	90.22	85.92
28465	.2657"	6.750	8.0	79	34	36	98.81	94.51	90.22	85.92
28475	.2677"	6.800	8.0	79	34	36	98.81	94.51	90.22	85.92
28485	.2717"	6.900	8.0	79	34	36	98.81	94.51	90.22	85.92
28495	.2756"	7.000	8.0	79	34	36	98.10	93.83	89.57	85.30
28505	.2795"	7.100	8.0	79	41	36	98.10	93.83	89.57	85.30
28515	.2815"	7.150	8.0	79	41	36	98.10	93.83	89.57	85.30
28525	.2835"	7.200	8.0	79	41	36	98.10	93.83	89.57	85.30
28535	.2874"	7.300	8.0	79	41	36	98.10	93.83	89.57	85.30
28545	.2913"	7.400	8.0	79	41	36	98.10	93.83	89.57	85.30
28555	.2953"	7.500	8.0	79	41	36	97.32	93.09	88.86	84.63

# 1580KD - 2 Flute (continued)

7.550mm - 12.950mm  
(.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"	7.550	8.0	79	41	36	97.32	93.09	88.86	84.63
28575	.2992"	7.600	8.0	79	41	36	97.32	93.09	88.86	84.63
28585	.3031"	7.700	8.0	79	41	36	97.32	93.09	88.86	84.63
28595	.3071"	7.800	8.0	79	41	36	97.32	93.09	88.86	84.63
28605	.3130"	7.950	8.0	79	41	36	97.32	93.09	88.86	84.63
28615	.3150"	8.000	8.0	79	41	36	96.60	92.40	88.20	84.00
28625	.3189"	8.100	10.0	89	47	40	134.57	128.72	122.87	117.02
28635	.3228"	8.200	10.0	89	47	40	134.57	128.72	122.87	117.02
28645	.3268"	8.300	10.0	89	47	40	134.57	128.72	122.87	117.02
28655	.3287"	8.350	10.0	89	47	40	134.57	128.72	122.87	117.02
28665	.3307"	8.400	10.0	89	47	40	134.57	128.72	122.87	117.02
28675	.3346"	8.500	10.0	89	47	40	133.48	127.68	121.87	116.07
28685	.3386"	8.600	10.0	89	47	40	133.48	127.68	121.87	116.07
28695	.3425"	8.700	10.0	89	47	40	133.48	127.68	121.87	116.07
28725	.3445"	8.750	10.0	89	47	40	133.48	127.68	121.87	116.07
28735	.3465"	8.800	10.0	89	47	40	133.48	127.68	121.87	116.07
28745	.3504"	8.900	10.0	89	47	40	133.48	127.68	121.87	116.07
28755	.3543"	9.000	10.0	89	47	40	132.39	126.63	120.88	115.12
28765	.3583"	9.100	10.0	89	47	40	132.39	126.63	120.88	115.12
28775	.3602"	9.150	10.0	89	47	40	132.39	126.63	120.88	115.12
28815	.3622"	9.200	10.0	89	47	40	132.39	126.63	120.88	115.12
28825	.3661"	9.300	10.0	89	47	40	132.39	126.63	120.88	115.12
28845	.3701"	9.400	10.0	89	47	40	132.39	126.63	120.88	115.12
28855	.3740"	9.500	10.0	89	47	40	131.27	125.57	119.86	114.15
28875	.3760"	9.550	10.0	89	47	40	131.27	125.57	119.86	114.15
28878	.3780"	9.600	10.0	89	47	40	131.27	125.57	119.86	114.15
28882	.3819"	9.700	10.0	89	47	40	131.27	125.57	119.86	114.15
28885	.3858"	9.800	10.0	89	47	40	131.27	125.57	119.86	114.15
28895	.3898"	9.900	10.0	89	47	40	131.27	125.57	119.86	114.15
28905	.3937"	10.000	10.0	89	47	40	130.17	124.51	118.85	113.19
28925	.3976"	10.100	12.0	102	55	45	174.48	166.89	159.31	151.72
28935	.4016"	10.200	12.0	102	55	45	174.48	166.89	159.31	151.72
28945	.4055"	10.300	12.0	102	55	45	174.48	166.89	159.31	151.72
28955	.4134"	10.500	12.0	102	55	45	173.01	165.48	157.96	150.44
28965	.4173"	10.600	12.0	102	55	45	173.01	165.48	157.96	150.44
28975	.4213"	10.700	12.0	102	55	45	173.01	165.48	157.96	150.44
28985	.4252"	10.800	12.0	102	55	45	173.01	165.48	157.96	150.44
28995	.4331"	11.000	12.0	102	55	45	171.53	164.08	156.62	149.16
29005	.4370"	11.100	12.0	102	55	45	171.53	164.08	156.62	149.16
29015	.4409"	11.200	12.0	102	55	45	171.53	164.08	156.62	149.16
29025	.4488"	11.400	12.0	102	55	45	171.53	164.08	156.62	149.16
29035	.4528"	11.500	12.0	102	55	45	170.06	162.67	155.27	147.88
29045	.4606"	11.700	12.0	102	55	45	170.06	162.67	155.27	147.88
29055	.4685"	11.900	12.0	102	55	45	170.06	162.67	155.27	147.88
29065	.4724"	12.000	12.0	102	55	45	168.54	161.22	153.89	146.56
29075	.4764"	12.100	14.0	107	60	45	241.34	230.85	220.35	209.86
29085	.4803"	12.200	14.0	107	60	45	241.34	230.85	220.35	209.86
29095	.4842"	12.300	14.0	107	60	45	241.34	230.85	220.35	209.86
29105	.4882"	12.400	14.0	107	60	45	241.34	230.85	220.35	209.86
29115	.4921"	12.500	14.0	107	60	45	239.84	229.42	218.99	208.56
29125	.4961"	12.600	14.0	107	60	45	239.84	229.42	218.99	208.56
29135	.5000"	12.700	14.0	107	60	45	239.84	229.42	218.99	208.56
29145	.5039"	12.800	14.0	107	60	45	239.84	229.42	218.99	208.56
29148	.5051"	12.830	14.0	107	60	45	239.84	229.42	218.99	208.56
29155	.5079"	12.900	14.0	107	60	45	239.84	229.42	218.99	208.56
29161	.5098"	12.950	14.0	107	60	45	239.84	229.42	218.99	208.56

continued →

# 1580KD - 2 Flute (continued)

13.000mm - 20.000mm  
(.5118" - .7874")

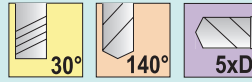
EDP#	<i>d1</i> Diameter		<i>d2</i> Shank Diameter	<i>l1</i> Overall Length	<i>l2</i> Flute Length	<i>l4</i> Shank Length	1-11	12-24	25-49	50-100
	Decimal	Metric								
29165	.5118"	13.000	14.0	107	60	45	238.37	228.01	217.64	207.28
29175	.5157"	13.100	14.0	107	60	45	238.37	228.01	217.64	207.28
29181	.5236"	13.300	14.0	107	60	45	238.37	228.01	217.64	207.28
29185	.5315"	13.500	14.0	107	60	45	236.89	226.59	216.29	205.99
29195	.5394"	13.700	14.0	107	60	45	236.89	226.59	216.29	205.99
29205	.5433"	13.800	14.0	107	60	45	236.89	226.59	216.29	205.99
29215	.5512"	14.000	14.0	107	60	45	235.42	225.18	214.95	204.71
29225	.5551"	14.100	16.0	115	65	48	293.66	280.90	268.13	255.36
29235	.5591"	14.200	16.0	115	65	48	293.66	280.90	268.13	255.36
29245	.5610"	14.250	16.0	115	65	48	293.66	280.90	268.13	255.36
29255	.5630"	14.300	16.0	115	65	48	293.66	280.90	268.13	255.36
29265	.5709"	14.500	16.0	115	65	48	292.16	279.46	266.75	254.05
29275	.5787"	14.700	16.0	115	65	48	292.16	279.46	266.75	254.05
29285	.5827"	14.800	16.0	115	65	48	292.16	279.46	266.75	254.05
29305	.5906"	15.000	16.0	115	65	48	290.67	278.04	265.40	252.76
29315	.5945"	15.100	16.0	115	65	48	290.67	278.04	265.40	252.76
29325	.6102"	15.500	16.0	115	65	48	289.21	276.64	264.06	251.49
29335	.6181"	15.700	16.0	115	65	48	289.21	276.64	264.06	251.49
29345	.6220"	15.800	16.0	115	65	48	289.21	276.64	264.06	251.49
29355	.6299"	16.000	16.0	115	65	48	287.75	275.24	262.73	250.22
29363	.6331"	16.080	18.0	123	73	48	375.60	359.27	342.94	326.61
29365	.6339"	16.100	18.0	123	73	48	375.60	359.27	342.94	326.61
29371	.6378"	16.200	18.0	123	73	48	375.60	359.27	342.94	326.61
29375	.6398"	16.250	18.0	123	73	48	375.60	359.27	342.94	326.61
29385	.6496"	16.500	18.0	123	73	48	372.68	356.48	340.27	324.07
29395	.6555"	16.650	18.0	123	73	48	372.68	356.48	340.27	324.07
29405	.6693"	17.000	18.0	123	73	48	369.68	353.61	337.53	321.46
29415	.6713"	17.050	18.0	123	73	48	369.68	353.61	337.53	321.46
29425	.6870"	17.450	18.0	123	73	48	369.68	353.61	337.53	321.46
29435	.6890"	17.500	18.0	123	73	48	366.78	350.83	334.89	318.94
29445	.7027"	17.850	18.0	123	73	48	366.78	350.83	334.89	318.94
29455	.7087"	18.000	18.0	123	73	48	363.83	348.01	332.19	316.37
29465	.7185"	18.250	20.0	131	79	50	492.46	471.05	449.64	428.23
29475	.7283"	18.500	20.0	131	79	50	489.53	468.25	446.96	425.68
29485	.7342"	18.650	20.0	131	79	50	489.53	468.25	446.96	425.68
29495	.7480"	19.000	20.0	131	79	50	486.57	465.41	444.26	423.10
29505	.7500"	19.050	20.0	131	79	50	486.57	465.41	444.26	423.10
29515	.7520"	19.100	20.0	131	79	50	486.57	465.41	444.26	423.10
29525	.7539"	19.150	20.0	131	79	50	486.57	465.41	444.26	423.10
29535	.7559"	19.200	20.0	131	79	50	486.57	465.41	444.26	423.10
29545	.7579"	19.250	20.0	131	79	50	486.57	465.41	444.26	423.10
29546	.7590"	19.280	20.0	131	79	50	486.57	465.41	444.26	423.10
29551	.7598"	19.300	20.0	131	79	50	486.57	465.41	444.26	423.10
29555	.7638"	19.400	20.0	131	79	50	486.57	465.41	444.26	423.10
29565	.7677"	19.500	20.0	131	79	50	483.64	462.62	441.59	420.56
29585	.7795"	19.800	20.0	131	79	50	483.64	462.62	441.59	420.56
29595	.7815"	19.850	20.0	131	79	50	483.64	462.62	441.59	420.56
29605	.7874"	20.000	20.0	131	79	50	480.67	459.77	438.87	417.97

**TOLERANCES**

$d_1$	+0.000" -0.004" (+.000 -0.10mm)
$d_2$	[h6] +0.000" -0.003" (+.000 -0.08mm)

Technical information: page 254-255

**1250H - 2 Flute**



**NEW SERIES**

0.792mm - 1.450mm  
(.0312" - .0571")

**HIGH PERFORMANCE DRILLS**

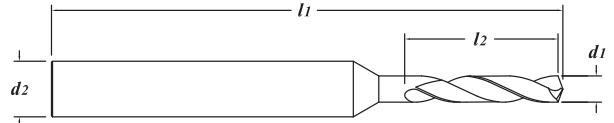
**Balinit® HELICA Coated**

High performance solid submicron grain carbide drill on 3mm or 1/8" diameter shank  
30° helix for better chip evacuation

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#	$d_1$ †		$d_2$	$l_1$	$l_2$	1-11	12-24	25-49	50-100	
	Decimal	Diameter Metric								Shank Diameter
00304	.0312"	1/32"	0.792	1/8"	2"	15/64"	40.22	38.47	36.72	34.97
00306	.0315"		0.800	3.0	50	6.0	39.66	37.94	36.21	34.49
00308	.0319"		0.810	3.0	50	6.0	39.66	37.94	36.21	34.49
00310	.0320"	#67	0.812	1/8"	2"	15/64"	40.22	38.47	36.72	34.97
00312	.0323"		0.820	3.0	50	6.0	39.66	37.94	36.21	34.49
00314	.0327"		0.830	3.0	50	6.0	39.66	37.94	36.21	34.49
00316	.0330"	#66	0.838	1/8"	2"	15/64"	40.22	38.47	36.72	34.97
00318	.0331"		0.840	3.0	50	6.0	39.66	37.94	36.21	34.49
00320	.0335"		0.850	3.0	50	6.0	39.66	37.94	36.21	34.49
00322	.0339"		0.860	3.0	50	6.5	39.66	37.94	36.21	34.49
00324	.0343"		0.870	3.0	50	6.5	39.66	37.94	36.21	34.49
00326	.0346"		0.880	3.0	50	6.5	39.66	37.94	36.21	34.49
00328	.0350"	#65	0.890	3.0	50	6.5	39.66	37.94	36.21	34.49
00330	.0354"		0.900	3.0	50	6.5	39.66	37.94	36.21	34.49
00332	.0358"		0.910	3.0	50	6.5	39.66	37.94	36.21	34.49
00334	.0360"	#64	0.914	1/8"	2"	1/4"	40.22	38.47	36.72	34.97
00336	.0362"		0.920	3.0	50	6.5	39.66	37.94	36.21	34.49
00338	.0366"		0.930	3.0	50	6.5	39.66	37.94	36.21	34.49
00340	.0370"	#63	0.940	3.0	50	7.0	39.66	37.94	36.21	34.49
00342	.0374"		0.950	3.0	50	7.0	39.66	37.94	36.21	34.49
00344	.0378"		0.960	3.0	50	7.0	39.66	37.94	36.21	34.49
00346	.0380"	#62	0.965	1/8"	2"	17/64"	40.22	38.47	36.72	34.97
00348	.0382"		0.970	3.0	50	7.0	39.66	37.94	36.21	34.49
00350	.0386"		0.980	3.0	50	7.0	39.66	37.94	36.21	34.49
00352	.0390"	#61	0.990	3.0	50	7.0	39.66	37.94	36.21	34.49
00354	.0394"		1.000	3.0	50	7.0	39.66	37.94	36.21	34.49
00356	.0400"	#60	1.016	1/8"	2"	9/32"	39.85	38.12	36.38	34.65
00358	.0410"	#59	1.041	1/8"	2"	9/32"	39.85	38.12	36.38	34.65
00360	.0413"		1.050	3.0	50	7.5	39.33	37.62	35.91	34.20
00362	.0420"	#58	1.066	1/8"	2"	5/16"	39.85	38.12	36.38	34.65
00364	.0430"	#57	1.092	1/8"	2"	5/16"	39.85	38.12	36.38	34.65
00366	.0433"		1.100	3.0	50	8.0	39.33	37.62	35.91	34.20
00368	.0453"		1.150	3.0	50	8.0	39.33	37.62	35.91	34.20
00370	.0465"	#56	1.181	1/8"	2"	11/32"	39.85	38.12	36.38	34.65
00372	.0469"	3/64"	1.191	1/8"	2"	11/32"	39.85	38.12	36.38	34.65
00374	.0472"		1.200	3.0	50	9.0	39.33	37.62	35.91	34.20
00376	.0492"		1.250	3.0	50	9.0	39.33	37.62	35.91	34.20
00378	.0512"		1.300	3.0	50	9.0	38.92	37.22	35.53	33.84
00380	.0520"	#55	1.320	1/8"	2"	3/8"	39.48	37.76	36.05	34.33
00382	.0531"		1.350	3.0	50	9.5	38.92	37.22	35.53	33.84
00384	.0550"	#54	1.397	1/8"	2"	3/8"	39.48	37.76	36.05	34.33
00386	.0551"		1.400	3.0	50	10.0	38.92	37.22	35.53	33.84
00388	.0571"		1.450	3.0	50	10.5	38.92	37.22	35.53	33.84

continued →

# 1250H - 2 Flute (continued)

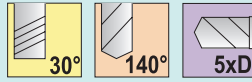
1.500mm - 3.175mm  
(.0591" - .1250")

EDP#	$d_1$ † Diameter		$d_2$ Shank Diameter	$l_1$ Overall Length	$l_2$ Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric							
00390	.0591"	1.500	3.0	50	10.5	38.92	37.22	35.53	33.84
00392	.0595"	#53 1.511	1/8"	2"	7/16"	39.48	37.76	36.05	34.33
00394	.0610"	1.550	3.0	50	11.0	38.55	36.87	35.20	33.52
00396	.0625"	1/16" 1.587	1/8"	2"	7/16"	39.11	37.41	35.71	34.01
00398	.0630"	1.600	3.0	50	11.0	38.55	36.87	35.20	33.52
00400	.0635"	#52 1.613	1/8"	2"	15/32"	39.11	37.41	35.71	34.01
00402	.0650"	1.650	3.0	50	11.5	38.55	36.87	35.20	33.52
00404	.0669"	1.700	3.0	50	11.5	38.55	36.87	35.20	33.52
00406	.0670"	#51 1.702	1/8"	2"	15/32"	39.11	37.41	35.71	34.01
00408	.0689"	1.750	3.0	50	12.0	38.55	36.87	35.20	33.52
00410	.0700"	#50 1.778	1/8"	2"	1/2"	38.73	37.05	35.36	33.68
00412	.0709"	1.800	3.0	50	13.0	38.18	36.52	34.86	33.20
00414	.0728"	1.850	3.0	50	13.0	38.18	36.52	34.86	33.20
00416	.0730"	#49 1.854	1/8"	2"	1/2"	38.73	37.05	35.36	33.68
00418	.0748"	1.900	3.0	50	13.5	38.18	36.52	34.86	33.20
00420	.0760"	#48 1.930	1/8"	2"	17/32"	38.73	37.05	35.36	33.68
00422	.0768"	1.950	3.0	50	14.0	38.18	36.52	34.86	33.20
00424	.0781"	5/64" 1.983	1/8"	2"	9/16"	38.73	37.05	35.36	33.68
00426	.0785"	#47 1.994	1/8"	2"	9/16"	38.73	37.05	35.36	33.68
00428	.0787"	2.000	3.0	50	14.0	38.18	36.52	34.86	33.20
00430	.0807"	2.050	3.0	50	14.0	37.81	36.17	34.52	32.88
00432	.0810"	#46 2.057	1/8"	2"	9/16"	38.39	36.72	35.05	33.38
00434	.0820"	#45 2.083	1/8"	2"	9/16"	38.39	36.72	35.05	33.38
00436	.0827"	2.100	3.0	50	14.5	37.81	36.17	34.52	32.88
00438	.0846"	2.150	3.0	50	14.5	37.81	36.17	34.52	32.88
00440	.0860"	#44 2.184	1/8"	2"	19/32"	38.39	36.72	35.05	33.38
00442	.0866"	2.200	3.0	50	15.5	37.81	36.17	34.52	32.88
00444	.0886"	2.250	3.0	50	15.5	37.81	36.17	34.52	32.88
00446	.0890"	#43 2.260	1/8"	2"	5/8"	38.39	36.72	35.05	33.38
00448	.0906"	2.300	3.0	50	16.0	37.44	35.82	34.19	32.56
00450	.0925"	2.350	3.0	50	16.0	37.44	35.82	34.19	32.56
00452	.0935"	#42 2.375	1/8"	2"	21/32"	38.00	36.34	34.69	33.04
00454	.0938"	3/32" 2.382	1/8"	2"	21/32"	38.00	36.34	34.69	33.04
00456	.0945"	2.400	3.0	50	17.0	37.44	35.82	34.19	32.56
00458	.0960"	#41 2.438	1/8"	2"	43/64"	38.00	36.34	34.69	33.04
00460	.0965"	2.450	3.0	50	17.0	37.44	35.82	34.19	32.56
00462	.0980"	#40 2.489	1/8"	2"	11/16"	38.00	36.34	34.69	33.04
00464	.0984"	2.500	3.0	50	17.5	37.44	35.82	34.19	32.56
00466	.0995"	#39 2.527	1/8"	2"	11/16"	38.00	36.34	34.69	33.04
00468	.1004"	2.550	3.0	50	17.5	37.11	35.50	33.88	32.27
00470	.1015"	#38 2.578	1/8"	2"	45/64"	37.66	36.03	34.39	32.75
00472	.1024"	2.600	3.0	50	18.0	37.11	35.50	33.88	32.27
00474	.1040"	#37 2.641	1/8"	2"	23/32"	37.66	36.03	34.39	32.75
00476	.1043"	2.650	3.0	50	18.5	37.11	35.50	33.88	32.27
00478	.1063"	2.700	3.0	50	19.0	37.11	35.50	33.88	32.27
00480	.1065"	#36 2.705	1/8"	2"	3/4"	37.66	36.03	34.39	32.75
00482	.1083"	2.750	3.0	50	19.5	37.11	35.50	33.88	32.27
00484	.1094"	7/64" 2.778	1/8"	2"	49/64"	37.66	36.03	34.39	32.75
00486	.1100"	#35 2.794	1/8"	2"	49/64"	37.66	36.03	34.39	32.75
00488	.1102"	2.800	3.0	50	19.5	37.11	35.50	33.88	32.27
00490	.1110"	#34 2.819	1/8"	2"	25/32"	37.66	36.03	34.39	32.75
00492	.1122"	2.850	3.0	50	20.0	37.11	35.50	33.88	32.27
00494	.1130"	#33 2.870	1/8"	2"	51/64"	37.66	36.03	34.39	32.75
00496	.1142"	2.900	3.0	50	20.0	37.11	35.50	33.88	32.27
00498	.1160"	#32 2.946	1/8"	2"	13/16"	37.66	36.03	34.39	32.75
00500	.1161"	2.950	3.0	50	21.0	37.11	35.50	33.88	32.27
00502	.1181"	3.000	3.0	50	21.0	34.94	33.42	31.90	30.38
00504	.1200"	#31 3.048	1/8"	2"	7/8"	37.66	36.03	34.39	32.75
00506	.1250"	1/8" 3.175	1/8"	2"	7/8"	35.50	33.96	32.41	30.87

**TOLERANCES**

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

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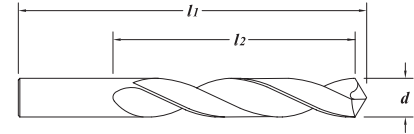
**1280H - 2 Flute**

.1181" - .2165"  
(3.000mm - 5.500mm)

**HIGH PERFORMANCE DRILLS**

**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



EDP#	<i>d</i> <sup>†</sup> Diameter		<i>l<sub>1</sub></i> Overall Length	<i>l<sub>2</sub></i> Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
21301	.1181	3.000	50	19	34.55	33.04	31.54	30.04
21306	.1200	#31	2"	3/4"	34.82	33.31	31.79	30.28
21311	.1250	1/8"	2"	3/4"	35.10	33.57	32.05	30.52
21316	.1285	#30	2-1/4"	3/4"	35.42	33.88	32.34	30.80
21321	.1360	#29	2-1/4"	7/8"	35.68	34.13	32.58	31.03
21326	.1378	3.500	57	22	35.96	34.40	32.83	31.27
21331	.1405	#28	2-1/4"	7/8"	36.25	34.67	33.10	31.52
21336	.1406	9/64"	2-1/4"	7/8"	36.56	34.97	33.38	31.79
21341	.1440	#27	2-1/4"	7/8"	36.80	35.20	33.60	32.00
21346	.1470	#26	2-1/4"	7/8"	37.11	35.50	33.88	32.27
21351	.1495	#25	2-1/4"	15/16"	37.40	35.77	34.15	32.52
21356	.1520	#24	2-1/4"	15/16"	37.66	36.03	34.39	32.75
21361	.1540	#23	2-1/4"	15/16"	37.97	36.32	34.67	33.02
21366	.1562	5/32"	2-1/2"	15/16"	38.25	36.59	34.92	33.26
21371	.1570	#22	2-1/2"	15/16"	38.53	36.85	35.18	33.50
21376	.1575	4.000	65	24	38.81	37.13	35.44	33.75
21381	.1590	#21	2-1/2"	15/16"	39.09	37.39	35.69	33.99
21386	.1610	#20	2-1/2"	15/16"	39.40	37.69	35.97	34.26
21391	.1660	#19	2-1/2"	1"	39.68	37.95	36.23	34.50
21396	.1695	#18	2-1/2"	1"	39.95	38.21	36.48	34.74
21401	.1719	11/64"	2-1/2"	1"	40.24	38.49	36.74	34.99
21406	.1730	#17	2-1/2"	1"	40.50	38.74	36.98	35.22
21411	.1770	#16	2-1/2"	1"	40.81	39.04	37.26	35.49
21416	.1772	4.500	65	25	41.11	39.33	37.54	35.75
21421	.1800	#15	2-3/4"	1"	41.37	39.57	37.77	35.97
21426	.1820	#14	2-3/4"	1"	41.64	39.83	38.02	36.21
21431	.1850	#13	2-3/4"	1-1/4"	41.95	40.13	38.30	36.48
21436	.1875	3/16"	2-3/4"	1-1/4"	42.25	40.41	38.58	36.74
21441	.1890	#12	2-3/4"	1-1/4"	42.52	40.67	38.82	36.97
21446	.1910	#11	2-3/4"	1-1/4"	42.78	40.92	39.06	37.20
21451	.1935	#10	2-3/4"	1-1/4"	43.09	41.22	39.34	37.47
21456	.1960	#9	4.978	3"	43.36	41.47	39.59	37.70
21461	.1969	5.000	75	33	43.65	41.76	39.86	37.96
21466	.1990	#8	5.055	3"	43.88	41.98	40.07	38.16
21471	.2010	#7	5.105	3"	44.07	42.15	40.24	38.32
21476	.2031	13/64"	5.159	3"	44.40	42.47	40.54	38.61
21481	.2040	#6	5.182	3"	44.72	42.78	40.83	38.89
21486	.2055	#5	5.220	3"	45.03	43.08	41.12	39.16
21491	.2090	#4	5.309	3"	45.32	43.35	41.38	39.41
21496	.2130	#3	5.410	3"	45.63	43.65	41.66	39.68
21501	.2165	5.500	75	35	45.92	43.92	41.93	39.93

continued →

# 1280H - 2 Flute (continued)

.2188" - .4528"  
(5.558mm - 11.500mm)

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"	5.558	3"	1-3/8"	46.21	44.20	42.19	40.18
21511	.2210	#2	5.613	3"	1-3/8"	47.20	45.14	43.09	41.04
21516	.2280	#1	5.791	3"	1-3/8"	47.44	45.38	43.31	41.25
21521	.2340	A	5.944	3-1/4"	1-1/2"	48.15	46.06	43.96	41.87
21526	.2344	15/64"	5.954	3-1/4"	1-1/2"	48.28	46.18	44.08	41.98
21531	.2362		6.000	80	38	48.43	46.32	44.22	42.11
21536	.2380	B	6.045	3-1/4"	1-5/8"	48.56	46.45	44.34	42.23
21541	.2420	C	6.147	3-1/4"	1-5/8"	48.90	46.77	44.65	42.52
21546	.2460	D	6.248	3-1/4"	1-5/8"	49.21	47.07	44.93	42.79
21551	.2500	1/4" / E	6.350	3-1/4"	1-5/8"	49.48	47.33	45.18	43.03
21556	.2559		6.500	80	41	50.36	48.17	45.98	43.79
21561	.2570	F	6.528	3-1/4"	1-11/16"	51.22	48.99	46.77	44.54
21566	.2610	G	6.629	3-1/2"	1-11/16"	52.11	49.84	47.58	45.31
21571	.2656	17/64"	6.746	3-1/2"	1-11/16"	52.96	50.66	48.35	46.05
21576	.2660	H	6.756	3-1/2"	1-11/16"	53.87	51.52	49.18	46.84
21581	.2720	I	6.909	3-1/2"	1-11/16"	54.72	52.34	49.96	47.58
21586	.2756		7.000	88	43	55.57	53.15	50.74	48.32
21591	.2770	J	7.036	3-1/2"	1-11/16"	56.44	53.99	51.53	49.08
21596	.2810	K	7.137	3-1/2"	1-3/4"	57.34	54.85	52.35	49.86
21601	.2812	9/32"	7.142	3-1/2"	1-3/4"	58.20	55.67	53.14	50.61
21606	.2900	L	7.366	3-1/2"	1-3/4"	59.01	56.44	53.88	51.31
21611	.2950	M	7.493	3-3/4"	1-3/4"	59.86	57.26	54.65	52.05
21616	.2953		7.500	95	44	59.86	57.26	54.65	52.05
21621	.2969	19/64"	7.541	3-3/4"	1-7/8"	60.44	57.82	55.19	52.56
21626	.3020	N	7.671	3-3/4"	1-7/8"	62.85	60.12	57.38	54.65
21631	.3125	5/16"	7.938	3-3/4"	1-7/8"	63.03	60.29	57.55	54.81
21636	.3150		8.000	95	48	66.85	63.94	61.04	58.13
21641	.3160	O	8.026	3-3/4"	1-7/8"	66.85	63.94	61.04	58.13
21646	.3230	P	8.204	3-3/4"	2-3/32"	67.09	64.17	61.26	58.34
21651	.3281	21/64"	8.334	4"	2-3/32"	67.71	64.77	61.82	58.88
21656	.3320	Q	8.433	4"	2-3/32"	69.06	66.06	63.05	60.05
21661	.3346		8.500	100	53	69.56	66.54	63.51	60.49
21666	.3390	R	8.611	4"	2-3/32"	71.47	68.37	65.26	62.15
21671	.3438	11/32"	8.733	4"	2-3/16"	73.98	70.76	67.55	64.33
21676	.3480	S	8.839	4"	2-3/16"	76.88	73.54	70.19	66.85
21681	.3543		9.000	100	56	77.33	73.96	70.60	67.24
21686	.3580	T	9.093	4-1/4"	2-9/32"	80.39	76.89	73.40	69.90
21691	.3594	23/64"	9.129	4-1/4"	2-9/32"	80.86	77.34	73.83	70.31
21696	.3680	U	9.347	4-1/4"	2-9/32"	89.22	85.34	81.46	77.58
21701	.3740		9.500	105	58	90.09	86.17	82.26	78.34
21706	.3750	3/8"	9.525	4-1/4"	2-3/8"	91.00	87.04	83.09	79.13
21711	.3770	V	9.576	4-1/4"	2-3/8"	93.22	89.17	85.11	81.06
21716	.3860	W	9.804	4-1/2"	2-3/8"	94.88	90.75	86.63	82.50
21721	.3906	25/64"	9.921	4-1/2"	2-3/8"	96.03	91.85	87.68	83.50
21726	.3937		10.000	115	60	98.91	94.61	90.31	86.01
21731	.3970	X	10.084	4-1/2"	2-1/2"	101.19	96.79	92.39	87.99
21736	.4040	Y	10.262	4-1/2"	2-9/16"	104.24	99.70	95.17	90.64
21741	.4062	13/32"	10.317	4-1/2"	2-9/16"	105.14	100.57	96.00	91.43
21746	.4130	Z	10.490	4-1/2"	2-5/8"	106.10	101.49	96.87	92.26
21751	.4134		10.500	115	67	106.10	101.49	96.87	92.26
21756	.4219	27/64"	10.716	4-1/2"	2-11/16"	107.05	102.40	97.74	93.09
21761	.4331		11.000	115	68	114.87	109.88	104.88	99.89
21766	.4375	7/16"	11.113	4-3/4"	2-13/16"	115.32	110.31	105.29	100.28
21771	.4528		11.500	120	71	123.25	117.89	112.53	107.17

# 1280H - 2 Flute (continued)

.4531" - .6299"  
(11.509mm - 16.000mm)

HIGH PERFORMANCE  
DRILLS

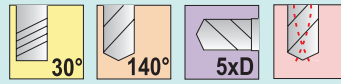
EDP#	$d^{\dagger}$ Diameter		$l_1$ Overall Length	$l_2$ Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric							
21776	.4531	29/64"	11.509	4-3/4"	2-7/8"	123.25	117.89	112.53	107.17
21781	.4688	15/32"	11.908	4-3/4"	2-7/8"	129.44	123.82	118.19	112.56
21786	.4724		12.000	120	73	129.84	124.19	118.55	112.90
21791	.4844	31/64"	12.304	5-5/16"	3"	131.27	125.57	119.86	114.15
21796	.4921		12.500	135	76	132.84	127.06	121.29	115.51
21801	.5000	1/2"	12.700	5-3/8"	3-1/16"	133.11	127.33	121.54	115.75
21806	.5118		13.000	135	78	148.06	141.63	135.19	128.75
21811	.5156	33/64"	13.096	5-3/8"	3-1/8"	151.54	144.95	138.36	131.77
21816	.5312	17/32"	13.492	5-11/16"	3-5/16"	155.09	148.35	141.60	134.86
21821	.5315		13.500	145	84	158.52	151.62	144.73	137.84
21826	.5469	35/64"	13.891	5-13/16"	3-3/8"	161.97	154.92	147.88	140.84
21831	.5512		14.000	145	86	165.47	158.28	151.08	143.89
21836	.5625	9/16"	14.288	5-15/16"	3-1/2"	178.89	171.12	163.34	155.56
21841	.5709		14.500	150	89	182.18	174.26	166.34	158.42
21846	.5781	37/64"	14.684	6"	3-1/2"	185.45	177.39	169.32	161.26
21851	.5906		15.000	150	90	188.92	180.71	172.49	164.28
21856	.5938	19/32"	15.083	6"	3-9/16"	189.90	181.64	173.39	165.13
21861	.6094	39/64"	15.479	6-3/16"	3-11/16"	205.80	196.86	187.91	178.96
21866	.6102		15.500	160	94	206.75	197.76	188.77	179.78
21871	.6250	5/8"	15.875	6-5/16"	3-3/4"	207.71	198.68	189.65	180.62
21876	.6299		16.000	160	95	212.37	203.14	193.90	184.67

# 1280KH - 2 Flute

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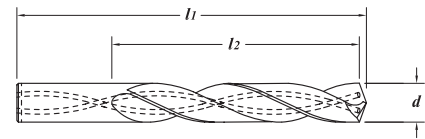
TOLERANCES	
<i>d</i>	+0.000" -0.005" (+0.000 -0.127mm)
<i>l1</i>	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)
<i>l2</i>	≤ 1/8" +.125" -0.062" (+3.175 -1.588mm)
	> 1/8" +.125" -0.125" (+3.175 -3.175mm)

.1575" - .2756"  
(4.000mm - 7.000mm)



## 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



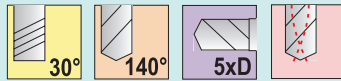
EDP#	<i>d</i> † Diameter		<i>l1</i> Overall Length	<i>l2</i> Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
25441	.1575	4.000	65	24	54.67	52.29	49.92	47.54
25446	.1590	#21 4.039	2-1/2"	15/16"	55.04	52.65	50.25	47.86
25451	.1610	#20 4.089	2-1/2"	15/16"	55.46	53.05	50.64	48.23
25456	.1660	#19 4.216	2-1/2"	1"	55.89	53.46	51.03	48.60
25461	.1695	#18 4.305	2-1/2"	1"	56.28	53.83	51.39	48.94
25466	.1719	11/64" 4.366	2-1/2"	1"	56.68	54.22	51.75	49.29
25471	.1730	#17 4.394	2-1/2"	1"	57.05	54.57	52.09	49.61
25476	.1770	#16 4.496	2-1/2"	1"	57.48	54.98	52.48	49.98
25481	.1772	4.500	65	25	57.90	55.39	52.87	50.35
25486	.1800	#15 4.572	2-3/4"	1"	58.27	55.74	53.20	50.67
25491	.1820	#14 4.623	2-3/4"	1"	58.66	56.11	53.56	51.01
25496	.1850	#13 4.699	2-3/4"	1-1/4"	59.08	56.51	53.94	51.37
25501	.1875	3/16" 4.763	2-3/4"	1-1/4"	59.51	56.93	54.34	51.75
25506	.1890	#12 4.801	2-3/4"	1-1/4"	59.88	57.28	54.67	52.07
25511	.1910	#11 4.851	2-3/4"	1-1/4"	60.27	57.65	55.03	52.41
25516	.1935	#10 4.915	2-3/4"	1-1/4"	60.71	58.07	55.43	52.79
25521	.1960	#9 4.978	3"	1-5/16"	61.07	58.41	55.76	53.10
25526	.1969	5.000	75	33	61.48	58.81	56.13	53.46
25531	.1990	#8 5.055	3"	1-5/16"	61.80	59.11	56.43	53.74
25536	.2010	#7 5.105	3"	1-5/16"	62.08	59.38	56.68	53.98
25541	.2031	13/64" 5.159	3"	1-5/16"	62.53	59.81	57.09	54.37
25546	.2040	#6 5.182	3"	1-3/8"	62.99	60.25	57.51	54.77
25551	.2055	#5 5.220	3"	1-3/8"	63.41	60.65	57.90	55.14
25556	.2090	#4 5.309	3"	1-3/8"	63.84	61.06	58.29	55.51
25561	.2130	#3 5.410	3"	1-3/8"	64.26	61.47	58.67	55.88
25566	.2165	5.500	75	35	64.65	61.84	59.03	56.22
25571	.2188	7/32" 5.558	3"	1-3/8"	64.80	61.99	59.17	56.35
25576	.2210	#2 5.613	3"	1-3/8"	65.90	63.03	60.17	57.30
25581	.2280	#1 5.791	3"	1-3/8"	66.14	63.26	60.39	57.51
25586	.2340	A 5.944	3-1/4"	1-1/2"	74.23	71.01	67.78	64.55
25591	.2344	15/64" 5.954	3-1/4"	1-1/2"	74.36	71.13	67.89	64.66
25596	.2362	6.000	80	38	74.55	71.31	68.07	64.83
25601	.2380	B 6.045	3-1/4"	1-5/8"	76.98	73.63	70.29	66.94
25606	.2420	C 6.147	3-1/4"	1-5/8"	77.35	73.99	70.62	67.26
25611	.2460	D 6.248	3-1/4"	1-5/8"	77.69	74.32	70.94	67.56
25616	.2500	1/4" / E 6.350	3-1/4"	1-5/8"	78.02	74.62	71.23	67.84
25621	.2559	6.500	80	41	78.98	75.55	72.11	68.68
25626	.2570	F 6.528	3-1/4"	1-11/16"	80.81	77.30	73.78	70.27
25631	.2610	G 6.629	3-1/2"	1-11/16"	81.80	78.24	74.69	71.13
25636	.2656	17/64" 6.746	3-1/2"	1-11/16"	82.75	79.16	75.56	71.96
25641	.2660	H 6.756	3-1/2"	1-11/16"	83.74	80.10	76.46	72.82
25646	.2720	I 6.909	3-1/2"	1-11/16"	83.84	80.19	76.55	72.90
25651	.2756	7.000	88	43	84.79	81.10	77.42	73.73

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	7.036	3-1/2"	1-11/16"	89.08	85.21	81.33	77.46
25661	.2810	K	7.137	3-1/2"	1-3/4"	90.07	86.15	82.24	78.32
25666	.2812	9/32"	7.142	3-1/2"	1-3/4"	91.05	87.09	83.13	79.17
25671	.2900	L	7.366	3-1/2"	1-3/4"	91.45	87.47	83.50	79.52
25676	.2950	M	7.493	3-3/4"	1-3/4"	91.99	87.99	83.99	79.99
25681	.2953		7.500	95	44	91.99	87.99	83.99	79.99
25686	.2969	19/64"	7.541	3-3/4"	1-7/8"	98.27	94.00	89.72	85.45
25691	.3020	N	7.671	3-3/4"	1-7/8"	100.49	96.12	91.75	87.38
25696	.3125	5/16"	7.938	3-3/4"	1-7/8"	100.71	96.33	91.95	87.57
25701	.3150		8.000	95	48	104.95	100.39	95.82	91.26
25706	.3160	O	8.026	3-3/4"	1-7/8"	105.90	101.30	96.69	92.09
25711	.3230	P	8.204	3-3/4"	2-3/32"	106.18	101.56	96.95	92.33
25716	.3281	21/64"	8.334	4"	2-3/32"	106.88	102.23	97.59	92.94
25721	.3320	Q	8.433	4"	2-3/32"	107.49	102.82	98.14	93.47
25726	.3346		8.500	100	53	108.05	103.36	98.66	93.96
25731	.3390	R	8.611	4"	2-3/32"	112.79	107.89	102.98	98.08
25736	.3438	11/32"	8.733	4"	2-3/16"	115.59	110.56	105.54	100.51
25741	.3480	S	8.839	4"	2-3/16"	118.20	113.06	107.92	102.78
25746	.3543		9.000	100	56	118.69	113.53	108.37	103.21
25751	.3580	T	9.093	4-1/4"	2-9/32"	120.95	115.69	110.43	105.17
25756	.3594	23/64"	9.129	4-1/4"	2-9/32"	121.39	116.12	110.84	105.56
25761	.3680	U	9.347	4-1/4"	2-9/32"	128.66	123.07	117.47	111.88
25766	.3740		9.500	105	58	129.31	123.68	118.06	112.44
25771	.3750	3/8"	9.525	4-1/4"	2-3/8"	132.50	126.74	120.98	115.22
25776	.3770	V	9.576	4-1/4"	2-3/8"	132.94	127.16	121.38	115.60
25781	.3860	W	9.804	4-1/2"	2-3/8"	134.40	128.56	122.71	116.87
25786	.3906	25/64"	9.921	4-1/2"	2-3/8"	135.41	129.53	123.64	117.75
25791	.3937		10.000	115	60	136.64	130.70	124.76	118.82
25796	.3970	X	10.084	4-1/2"	2-1/2"	142.80	136.59	130.38	124.17
25801	.4040	Y	10.262	4-1/2"	2-9/16"	143.43	137.19	130.96	124.72
25806	.4062	13/32"	10.317	4-1/2"	2-9/16"	146.18	139.82	133.47	127.11
25811	.4130	Z	10.490	4-1/2"	2-5/8"	148.49	142.03	135.58	129.12
25816	.4134		10.500	115	67	148.49	142.03	135.58	129.12
25821	.4219	27/64"	10.716	4-1/2"	2-11/16"	150.59	144.05	137.50	130.95
25826	.4331		11.000	115	68	156.00	149.22	142.43	135.65
25831	.4375	7/16"	11.113	4-3/4"	2-13/16"	159.16	152.24	145.32	138.40
25836	.4528		11.500	120	71	164.84	157.67	150.51	143.34
25841	.4531	29/64"	11.509	4-3/4"	2-7/8"	170.48	163.06	155.65	148.24
25846	.4688	15/32"	11.908	4-3/4"	2-7/8"	174.37	166.79	159.21	151.63
25851	.4724		12.000	120	73	178.12	170.38	162.63	154.89
25856	.4844	31/64"	12.304	5-5/16"	3"	190.08	181.82	173.55	165.29
25861	.4921		12.500	135	76	204.02	195.15	186.28	177.41
25866	.5000	1/2"	12.700	5-3/8"	3-1/16"	205.95	197.00	188.04	179.09
25871	.5118		13.000	135	78	233.58	223.42	213.27	203.11
25876	.5156	33/64"	13.096	5-3/8"	3-1/8"	243.44	232.86	222.27	211.69
25881	.5312	17/32"	13.492	5-11/16"	3-5/16"	247.38	236.62	225.87	215.11
25886	.5315		13.500	145	84	251.19	240.27	229.35	218.43
25891	.5469	35/64"	13.891	5-13/16"	3-3/8"	264.96	253.44	241.92	230.40
25896	.5512		14.000	145	86	268.85	257.16	245.47	233.78
25901	.5625	9/16"	14.288	5-15/16"	3-1/2"	291.39	278.72	266.05	253.38
25906	.5709		14.500	150	89	293.69	280.92	268.15	255.38
25911	.5781	37/64"	14.684	6"	3-1/2"	294.48	281.68	268.87	256.07
25916	.5906		15.000	150	90	298.32	285.35	272.38	259.41
25921	.5938	19/32"	15.083	6"	3-9/16"	306.08	292.78	279.47	266.16
25926	.6094	39/64"	15.479	6-3/16"	3-11/16"	344.47	329.49	314.52	299.54
25931	.6102		15.500	160	94	345.43	330.41	315.39	300.37
25936	.6250	5/8"	15.875	6-5/16"	3-3/4"	354.95	339.52	324.08	308.65
25941	.6299		16.000	160	95	359.61	343.97	328.34	312.70

# 1280KD - 2 Flute

Technical information: page 256-257

4.000mm - 7.500mm  
(.1575" - .2953")



TOLERANCES		
$d_1$ *	3mm - 6mm	+0.016 +0.004mm (+0.00063" +0.00015")
	> 6mm - 10mm	+0.021 +0.006mm (+0.00082" +0.00023")
	> 10mm - 18mm	+0.025 +0.007mm (+0.00098" +0.00027")
	> 18mm - 20mm	+0.029 +0.008mm (+0.00114" +0.00031")
$d_2$	6mm	+0.000 -0.008mm (+0.00000" -0.00030")
	8mm - 10mm	+0.000 -0.009mm (+0.00000" -0.00035")
	12mm - 18mm	+0.000 -0.011mm (+0.00000" -0.00040")
	20mm	+0.000 -0.013mm (+0.00000" -0.00050")

## 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

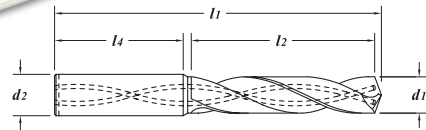
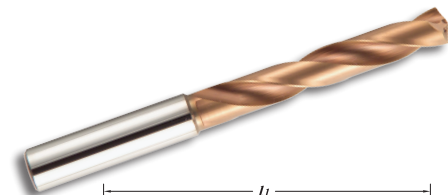
30° helix for better chip evacuation

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



\* Note - These drills are made to a plus/plus tolerance on the drill diameter. If you are in need of a minus tolerance drill, please refer to our other high performance drills.

EDP#	$d_1$ Diameter		$d_2$ Shank Diameter	$l_1$ Overall Length	$l_2$ Flute Length	$l_4$ Shank Length	1-11	12-24	25-49	50-100
	Decimal	Metric								
25205	.1575"	4.000	6.0	74	36	36	90.70	86.76	82.81	78.87
25215	.1614"	4.100	6.0	74	36	36	90.70	86.76	82.81	78.87
25225	.1654"	4.200	6.0	74	36	36	90.70	86.76	82.81	78.87
25235	.1673"	4.250	6.0	74	36	36	90.70	86.76	82.81	78.87
25245	.1693"	4.300	6.0	74	36	36	90.70	86.76	82.81	78.87
25255	.1732"	4.400	6.0	74	36	36	90.70	86.76	82.81	78.87
25265	.1772"	4.500	6.0	74	36	36	89.93	86.02	82.11	78.20
25275	.1811"	4.600	6.0	74	36	36	89.93	86.02	82.11	78.20
25285	.1831"	4.650	6.0	74	36	36	89.93	86.02	82.11	78.20
25295	.1850"	4.700	6.0	74	36	36	89.93	86.02	82.11	78.20
25305	.1870"	4.750	6.0	74	36	36	89.93	86.02	82.11	78.20
25315	.1890"	4.800	6.0	82	44	36	89.93	86.02	82.11	78.20
25325	.1929"	4.900	6.0	82	44	36	89.93	86.02	82.11	78.20
25335	.1969"	5.000	6.0	82	44	36	89.19	85.32	81.44	77.56
25345	.2008"	5.100	6.0	82	44	36	89.19	85.32	81.44	77.56
25355	.2027"	5.150	6.0	82	44	36	89.19	85.32	81.44	77.56
25365	.2047"	5.200	6.0	82	44	36	89.19	85.32	81.44	77.56
25375	.2087"	5.300	6.0	82	44	36	89.19	85.32	81.44	77.56
25385	.2165"	5.500	6.0	82	44	36	85.51	81.80	78.08	74.36
25395	.2185"	5.550	6.0	82	44	36	85.51	81.80	78.08	74.36
25397	.2205"	5.600	6.0	82	44	36	85.51	81.80	78.08	74.36
25400	.2243"	5.700	6.0	82	44	36	85.51	81.80	78.08	74.36
25405	.2283"	5.800	6.0	82	44	36	85.51	81.80	78.08	74.36
25415	.2323"	5.900	6.0	82	44	36	85.51	81.80	78.08	74.36
25425	.2342"	5.950	6.0	82	44	36	85.51	81.80	78.08	74.36
25435	.2362"	6.000	6.0	82	44	36	81.83	78.28	74.72	71.16
25437	.2402"	6.100	8.0	91	53	36	125.41	119.96	114.50	109.05
25440	.2441"	6.200	8.0	91	53	36	125.41	119.96	114.50	109.05
25443	.2480"	6.300	8.0	91	53	36	125.41	119.96	114.50	109.05
25445	.2500"	6.350	8.0	91	53	36	125.41	119.96	114.50	109.05
25450	.2520"	6.400	8.0	91	53	36	122.82	117.48	112.14	106.80
25455	.2559"	6.500	8.0	91	53	36	122.82	117.48	112.14	106.80
25457	.2571"	6.530	8.0	91	53	36	122.82	117.48	112.14	106.80
25460	.2598"	6.600	8.0	91	53	36	122.82	117.48	112.14	106.80
25463	.2638"	6.700	8.0	91	53	36	122.82	117.48	112.14	106.80
25465	.2657"	6.750	8.0	91	53	36	122.82	117.48	112.14	106.80
25475	.2677"	6.800	8.0	91	53	36	122.82	117.48	112.14	106.80
25485	.2717"	6.900	8.0	91	53	36	122.82	117.48	112.14	106.80
25495	.2756"	7.000	8.0	91	53	36	120.23	115.01	109.78	104.55
25505	.2795"	7.100	8.0	91	53	36	120.23	115.01	109.78	104.55
25515	.2815"	7.150	8.0	91	53	36	120.23	115.01	109.78	104.55
25525	.2835"	7.200	8.0	91	53	36	120.23	115.01	109.78	104.55
25530	.2874"	7.300	8.0	91	53	36	120.23	115.01	109.78	104.55
25535	.2913"	7.400	8.0	91	53	36	120.23	115.01	109.78	104.55
25545	.2953"	7.500	8.0	91	53	36	117.65	112.53	107.42	102.30

# 1280KD - 2 Flute (continued)

7.550mm - 12.950mm  
(.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"	7.550	8.0	91	53	36	117.65	112.53	107.42	102.30
25565	.2992"	7.600	8.0	91	53	36	117.65	112.53	107.42	102.30
25575	.3031"	7.700	8.0	91	53	36	117.65	112.53	107.42	102.30
25585	.3071"	7.800	8.0	91	53	36	117.65	112.53	107.42	102.30
25595	.3130"	7.950	8.0	91	53	36	117.65	112.53	107.42	102.30
25605	.3150"	8.000	8.0	91	53	36	115.09	110.09	105.08	100.08
25610	.3189"	8.100	10.0	103	61	40	160.02	153.07	146.11	139.15
25615	.3228"	8.200	10.0	103	61	40	160.02	153.07	146.11	139.15
25625	.3268"	8.300	10.0	103	61	40	160.02	153.07	146.11	139.15
25635	.3287"	8.350	10.0	103	61	40	160.02	153.07	146.11	139.15
25640	.3307"	8.400	10.0	103	61	40	157.09	150.26	143.43	136.60
25645	.3346"	8.500	10.0	103	61	40	157.09	150.26	143.43	136.60
25655	.3386"	8.600	10.0	103	61	40	157.09	150.26	143.43	136.60
25665	.3425"	8.700	10.0	103	61	40	157.09	150.26	143.43	136.60
25675	.3445"	8.750	10.0	103	61	40	157.09	150.26	143.43	136.60
25685	.3465"	8.800	10.0	103	61	40	157.09	150.26	143.43	136.60
25695	.3504"	8.900	10.0	103	61	40	157.09	150.26	143.43	136.60
25705	.3543"	9.000	10.0	103	61	40	154.15	147.44	140.74	134.04
25715	.3583"	9.100	10.0	103	61	40	154.15	147.44	140.74	134.04
25725	.3602"	9.150	10.0	103	61	40	154.15	147.44	140.74	134.04
25735	.3622"	9.200	10.0	103	61	40	154.15	147.44	140.74	134.04
25745	.3661"	9.300	10.0	103	61	40	154.15	147.44	140.74	134.04
25750	.3701"	9.400	10.0	103	61	40	151.19	144.62	138.04	131.47
25755	.3740"	9.500	10.0	103	61	40	151.19	144.62	138.04	131.47
25765	.3760"	9.550	10.0	103	61	40	151.19	144.62	138.04	131.47
25767	.3780"	9.600	10.0	103	61	40	151.19	144.62	138.04	131.47
25770	.3819"	9.700	10.0	103	61	40	151.19	144.62	138.04	131.47
25775	.3858"	9.800	10.0	103	61	40	151.19	144.62	138.04	131.47
25785	.3898"	9.900	10.0	103	61	40	151.19	144.62	138.04	131.47
25795	.3937"	10.000	10.0	103	61	40	148.26	141.81	135.37	128.92
25800	.3976"	10.100	12.0	118	71	45	205.95	197.00	188.04	179.09
25805	.4016"	10.200	12.0	118	71	45	205.95	197.00	188.04	179.09
25815	.4055"	10.300	12.0	118	71	45	205.95	197.00	188.04	179.09
25825	.4134"	10.500	12.0	118	71	45	202.26	193.47	184.67	175.88
25830	.4173"	10.600	12.0	118	71	45	202.26	193.47	184.67	175.88
25835	.4213"	10.700	12.0	118	71	45	202.26	193.47	184.67	175.88
25845	.4252"	10.800	12.0	118	71	45	202.26	193.47	184.67	175.88
25855	.4331"	11.000	12.0	118	71	45	198.56	189.93	181.29	172.66
25865	.4370"	11.100	12.0	118	71	45	198.56	189.93	181.29	172.66
25875	.4409"	11.200	12.0	118	71	45	198.56	189.93	181.29	172.66
25880	.4488"	11.400	12.0	118	71	45	194.91	186.44	177.96	169.49
25885	.4528"	11.500	12.0	118	71	45	194.91	186.44	177.96	169.49
25895	.4606"	11.700	12.0	118	71	45	194.91	186.44	177.96	169.49
25905	.4685"	11.900	12.0	118	71	45	194.91	186.44	177.96	169.49
25915	.4724"	12.000	12.0	118	71	45	191.21	182.90	174.58	166.27
25925	.4764"	12.100	14.0	124	77	45	296.87	283.97	271.06	258.15
25930	.4803"	12.200	14.0	124	77	45	296.87	283.97	271.06	258.15
25935	.4842"	12.300	14.0	124	77	45	296.87	283.97	271.06	258.15
25940	.4882"	12.400	14.0	124	77	45	293.22	280.47	267.72	254.97
25945	.4921"	12.500	14.0	124	77	45	293.22	280.47	267.72	254.97
25950	.4961"	12.600	14.0	124	77	45	293.22	280.47	267.72	254.97
25955	.5000"	12.700	14.0	124	77	45	293.22	280.47	267.72	254.97
25960	.5039"	12.800	14.0	124	77	45	293.22	280.47	267.72	254.97
25961	.5051"	12.830	14.0	124	77	45	293.22	280.47	267.72	254.97
25963	.5079"	12.900	14.0	124	77	45	293.22	280.47	267.72	254.97
25964	.5098"	12.950	14.0	124	77	45	293.22	280.47	267.72	254.97

continued →

# 1280KD - 2 Flute (continued)

13.000mm - 20.000mm  
(.5118" - .7874")

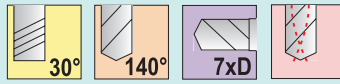
HIGH PERFORMANCE  
DRILLS

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								
25965	.5118"	13.000	14.0	124	77	45	289.54	276.95	264.36	251.77
25975	.5157"	13.100	14.0	124	77	45	289.54	276.95	264.36	251.77
25981	.5236"	13.300	14.0	124	77	45	289.54	276.95	264.36	251.77
25985	.5315"	13.500	14.0	124	77	45	285.82	273.39	260.97	248.54
25995	.5394"	13.700	14.0	124	77	45	285.82	273.39	260.97	248.54
26005	.5433"	13.800	14.0	124	77	45	285.82	273.39	260.97	248.54
26015	.5512"	14.000	14.0	124	77	45	282.14	269.87	257.61	245.34
26025	.5551"	14.100	16.0	133	83	48	391.35	374.33	357.32	340.30
26027	.5591"	14.200	16.0	133	83	48	391.35	374.33	357.32	340.30
26035	.5610"	14.250	16.0	133	83	48	391.35	374.33	357.32	340.30
26045	.5630"	14.300	16.0	133	83	48	391.35	374.33	357.32	340.30
26055	.5709"	14.500	16.0	133	83	48	387.29	370.45	353.61	336.77
26065	.5787"	14.700	16.0	133	83	48	387.29	370.45	353.61	336.77
26067	.5827"	14.800	16.0	133	83	48	387.29	370.45	353.61	336.77
26075	.5906"	15.000	16.0	133	83	48	383.26	366.60	349.93	333.27
26085	.5945"	15.100	16.0	133	83	48	383.26	366.60	349.93	333.27
26095	.6102"	15.500	16.0	133	83	48	379.18	362.69	346.21	329.72
26105	.6181"	15.700	16.0	133	83	48	379.18	362.69	346.21	329.72
26107	.6220"	15.800	16.0	133	83	48	379.18	362.69	346.21	329.72
26115	.6299"	16.000	16.0	133	83	48	375.14	358.83	342.52	326.21
26118	.6331"	16.080	18.0	143	93	48	475.78	455.09	434.41	413.72
26119	.6339"	16.100	18.0	143	93	48	475.78	455.09	434.41	413.72
26123	.6378"	16.200	18.0	143	93	48	475.78	455.09	434.41	413.72
26125	.6398"	16.250	18.0	143	93	48	475.78	455.09	434.41	413.72
26135	.6496"	16.500	18.0	143	93	48	468.37	448.01	427.64	407.28
26145	.6555"	16.650	18.0	143	93	48	468.37	448.01	427.64	407.28
26155	.6693"	17.000	18.0	143	93	48	460.85	440.81	420.78	400.74
26165	.6713"	17.050	18.0	143	93	48	460.85	440.81	420.78	400.74
26175	.6870"	17.450	18.0	143	93	48	460.85	440.81	420.78	400.74
26185	.6890"	17.500	18.0	143	93	48	453.50	433.79	414.07	394.35
26195	.7027"	17.850	18.0	143	93	48	453.50	433.79	414.07	394.35
26205	.7087"	18.000	18.0	143	93	48	446.00	426.61	407.22	387.83
26215	.7185"	18.250	20.0	153	101	50	571.92	547.05	522.19	497.32
26225	.7283"	18.500	20.0	153	101	50	564.35	539.81	515.28	490.74
26235	.7342"	18.650	20.0	153	101	50	564.35	539.81	515.28	490.74
26245	.7480"	19.000	20.0	153	101	50	557.01	532.80	508.58	484.36
26255	.7500"	19.050	20.0	153	101	50	557.01	532.80	508.58	484.36
26256	.7520"	19.100	20.0	153	101	50	557.01	532.80	508.58	484.36
26257	.7539"	19.150	20.0	153	101	50	557.01	532.80	508.58	484.36
26258	.7559"	19.200	20.0	153	101	50	557.01	532.80	508.58	484.36
26259	.7579"	19.250	20.0	153	101	50	557.01	532.80	508.58	484.36
26260	.7590"	19.280	20.0	153	101	50	557.01	532.80	508.58	484.36
26261	.7598"	19.300	20.0	153	101	50	557.01	532.80	508.58	484.36
26265	.7638"	19.400	20.0	153	101	50	557.01	532.80	508.58	484.36
26275	.7677"	19.500	20.0	153	101	50	549.03	525.16	501.29	477.42
26281	.7795"	19.800	20.0	153	101	50	549.03	525.16	501.29	477.42
26285	.7815"	19.850	20.0	153	101	50	549.03	525.16	501.29	477.42
26295	.7874"	20.000	20.0	153	101	50	541.35	517.81	494.28	470.74

**TOLERANCES**

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

Technical information: page 256-257



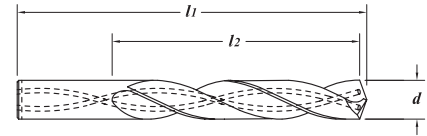
**1880KH - 2 Flute**

.1575" - .2756"  
(4.000mm - 7.000mm)

**HIGH PERFORMANCE DRILLS**

**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



EDP#	d † Diameter		l <sub>1</sub> Overall Length	l <sub>2</sub> Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric						
26441	.1575	4.000	75	38	58.79	56.23	53.68	51.12
26446	.1590	#21	4.039	3"	59.18	56.61	54.03	51.46
26451	.1610	#20	4.089	3"	59.65	57.06	54.46	51.87
26456	.1660	#19	4.216	3"	60.10	57.49	54.87	52.26
26461	.1695	#18	4.305	3-1/2"	60.50	57.87	55.24	52.61
26466	.1719	11/64"	4.366	3-1/2"	60.94	58.29	55.64	52.99
26471	.1730	#17	4.394	3-1/2"	61.34	58.67	56.01	53.34
26476	.1770	#16	4.496	3-1/2"	61.81	59.13	56.44	53.75
26481	.1772		4.500	88	62.26	59.55	56.85	54.14
26486	.1800	#15	4.572	3-1/2"	62.66	59.94	57.21	54.49
26491	.1820	#14	4.623	3-1/2"	63.07	60.32	57.58	54.84
26496	.1850	#13	4.699	3-1/2"	63.51	60.75	57.99	55.23
26501	.1875	3/16"	4.763	4"	64.00	61.22	58.43	55.65
26506	.1890	#12	4.801	4"	64.39	61.59	58.79	55.99
26511	.1910	#11	4.851	4"	64.80	61.99	59.17	56.35
26516	.1935	#10	4.915	4"	65.26	62.43	59.59	56.75
26521	.1960	#9	4.978	4"	65.65	62.80	59.94	57.09
26526	.1969		5.000	100	66.10	63.23	60.35	57.48
26531	.1990	#8	5.055	4"	66.45	63.56	60.67	57.78
26536	.2010	#7	5.105	4"	66.75	63.84	60.94	58.04
26541	.2031	13/64"	5.159	4"	67.24	64.32	61.39	58.47
26546	.2040	#6	5.182	4"	67.74	64.79	61.85	58.90
26551	.2055	#5	5.220	4"	68.18	65.22	62.25	59.29
26556	.2090	#4	5.309	4"	68.64	65.66	62.67	59.69
26561	.2130	#3	5.410	4"	69.10	66.10	63.09	60.09
26566	.2165		5.500	100	69.53	66.51	63.48	60.46
26571	.2188	7/32"	5.558	4"	69.93	66.89	63.85	60.81
26576	.2210	#2	5.613	4"	71.05	67.96	64.87	61.78
26581	.2280	#1	5.791	4-1/8"	81.40	77.86	74.32	70.78
26586	.2340	A	5.944	4-1/8"	85.94	82.20	78.47	74.73
26591	.2344	15/64"	5.954	4-1/8"	86.07	82.32	78.58	74.84
26596	.2362		6.000	105	86.25	82.50	78.75	75.00
26601	.2380	B	6.045	4-1/8"	90.01	86.10	82.18	78.27
26606	.2420	C	6.147	4-1/4"	90.37	86.44	82.51	78.58
26611	.2460	D	6.248	4-1/4"	90.71	86.77	82.82	78.88
26616	.2500	1/4" / E	6.350	4-1/4"	91.02	87.07	83.11	79.15
26621	.2559		6.500	105	91.99	87.99	83.99	79.99
26626	.2570	F	6.528	4-3/8"	95.52	91.37	87.21	83.06
26631	.2610	G	6.629	4-3/8"	96.51	92.31	88.12	83.92
26636	.2656	17/64"	6.746	4-3/8"	97.44	93.20	88.97	84.73
26641	.2660	H	6.756	4-3/8"	98.45	94.17	89.89	85.61
26646	.2720	I	6.909	4-3/8"	98.56	94.27	89.99	85.70
26651	.2756		7.000	110	99.49	95.16	90.84	86.51

continued →

# 1880KH - 2 Flute (continued)

.2770" - .6299"  
(7.036mm - 16.000mm)

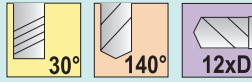
EDP#	$d^{\dagger}$ Diameter		$l_1$ Overall Length	$l_2$ Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric							
26656	.2770	J	7.036	4-3/8"	2-3/8"	104.51	99.97	95.42	90.88
26661	.2810	K	7.137	4-7/16"	2-7/16"	105.51	100.93	96.34	91.75
26666	.2812	9/32"	7.142	4-7/16"	2-7/16"	106.49	101.86	97.23	92.60
26671	.2900	L	7.366	4-7/16"	2-7/16"	106.89	102.25	97.60	92.95
26676	.2950	M	7.493	4-7/16"	2-7/16"	107.42	102.75	98.08	93.41
26681	.2953		7.500	115	66	107.42	102.75	98.08	93.41
26686	.2969	19/64"	7.541	4-9/16"	2-9/16"	115.97	110.92	105.88	100.84
26691	.3020	N	7.671	4-9/16"	2-9/16"	118.21	113.07	107.93	102.79
26696	.3125	5/16"	7.938	4-11/16"	2-9/16"	118.42	113.27	108.12	102.97
26701	.3150		8.000	120	69	122.67	117.34	112.00	106.67
26706	.3160	O	8.026	4-11/16"	2-11/16"	124.74	119.32	113.89	108.47
26711	.3230	P	8.204	4-11/16"	2-11/16"	125.01	119.57	114.14	108.70
26716	.3281	21/64"	8.334	4-11/16"	2-11/16"	125.71	120.24	114.78	109.31
26721	.3320	Q	8.433	4-15/16"	2-15/16"	126.32	120.82	115.33	109.84
26726	.3346		8.500	125	75	126.87	121.35	115.84	110.32
26731	.3390	R	8.611	4-15/16"	2-15/16"	132.87	127.09	121.32	115.54
26736	.3438	11/32"	8.733	4-15/16"	2-15/16"	135.69	129.79	123.89	117.99
26741	.3480	S	8.839	5"	3"	138.26	132.25	126.24	120.23
26746	.3543		9.000	125	77	138.78	132.75	126.71	120.68
26751	.3580	T	9.093	5"	3"	152.28	145.66	139.04	132.42
26756	.3594	23/64"	9.129	5"	3"	152.82	146.18	139.53	132.89
26761	.3680	U	9.347	5"	3"	161.69	154.66	147.63	140.60
26766	.3740		9.500	130	80	162.70	155.63	148.55	141.48
26771	.3750	3/8"	9.525	5-1/8"	3-1/8"	167.00	159.74	152.48	145.22
26776	.3770	V	9.576	5-1/8"	3-1/8"	169.63	162.25	154.88	147.50
26781	.3860	W	9.804	5-1/8"	3-1/8"	170.21	162.81	155.41	148.01
26786	.3906	25/64"	9.921	5-1/4"	3-1/4"	171.25	163.80	156.36	148.91
26791	.3937		10.000	135	83	174.60	167.01	159.42	151.83
26796	.3970	X	10.084	5-1/4"	3-1/4"	180.41	172.57	164.72	156.88
26801	.4040	Y	10.262	5-3/8"	3-3/8"	183.99	175.99	167.99	159.99
26806	.4062	13/32"	10.317	5-3/8"	3-3/8"	185.04	176.99	168.95	160.90
26811	.4130	Z	10.490	5-3/8"	3-3/8"	188.09	179.92	171.74	163.56
26816	.4134		10.500	135	86	188.09	179.92	171.74	163.56
26821	.4219	27/64"	10.716	5-7/16"	3-7/16"	190.44	182.16	173.88	165.60
26826	.4331		11.000	135	88	197.81	189.21	180.61	172.01
26831	.4375	7/16"	11.113	5-7/16"	3-7/16"	202.04	193.26	184.47	175.69
26836	.4528		11.500	140	91	209.22	200.12	191.03	181.93
26841	.4531	29/64"	11.509	5-9/16"	3-13/16"	215.75	206.37	196.99	187.61
26846	.4688	15/32"	11.908	5-9/16"	3-13/16"	221.15	211.53	201.92	192.30
26851	.4724		12.000	140	98	226.84	216.98	207.11	197.25
26856	.4844	31/64"	12.304	5-9/16"	3-13/16"	232.73	222.61	212.49	202.37
26861	.4921		12.500	150	102	234.01	223.84	213.66	203.49
26866	.5000	1/2"	12.700	6"	4"	234.86	224.65	214.44	204.23
26871	.5118		13.000	150	102	245.88	235.19	224.50	213.81
26876	.5156	33/64"	13.096	6"	4"	256.22	245.08	233.94	222.80
26881	.5312	17/32"	13.492	6-1/8"	4-1/8"	260.38	249.06	237.74	226.42
26886	.5315		13.500	155	105	264.42	252.92	241.43	229.93
26891	.5469	35/64"	13.891	6-1/8"	4-1/8"	278.90	266.77	254.65	242.52
26896	.5512		14.000	155	105	283.00	270.70	258.39	246.09
26901	.5625	9/16"	14.288	6-1/4"	4-3/8"	306.74	293.40	280.07	266.73
26906	.5709		14.500	160	109	309.17	295.72	282.28	268.84
26911	.5781	37/64"	14.684	6-1/4"	4-3/8"	309.99	296.52	283.04	269.56
26916	.5906		15.000	160	112	314.02	300.37	286.71	273.06
26921	.5938	19/32"	15.083	6-3/8"	4-3/8"	322.17	308.17	294.16	280.15
26926	.6094	39/64"	15.479	6-7/16"	4-7/16"	362.56	346.80	331.03	315.27
26931	.6102		15.500	165	113	363.57	347.77	331.96	316.15
26936	.6250	5/8"	15.875	6-9/16"	4-9/16"	373.64	357.39	341.15	324.90
26941	.6299		16.000	165	117	378.53	362.08	345.62	329.16

**TOLERANCES**

$d_1$	+0.0000" -0.0004" (+0.000 -0.010mm)
$d_2$	[h6] +0.0000" -0.0003" (+0.000 -0.008mm)

Technical information: page 254-255

**1850H - 2 Flute**



**NEW SERIES**

0.792mm - 1.450mm  
(.0312" - .0571")

**HIGH PERFORMANCE DRILLS**

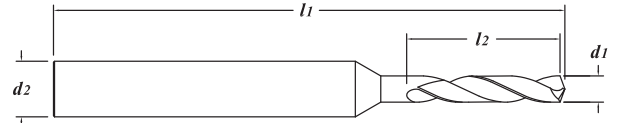
**Balinit® HELICA Coated**

High performance solid submicron grain carbide drill on 3mm or 1/8" diameter shank  
30° helix for better chip evacuation

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#	$d_1$ †		$d_2$	$l_1$	$l_2$	1-11	12-24	25-49	50-100	
	Decimal	Diameter Metric								Shank Diameter
00510	.0312"	1/32"	0.792	1/8"	2"	7/16"	44.47	42.54	40.60	38.67
00512	.0315"		0.800	3.0	50	12.0	43.85	41.94	40.04	38.13
00514	.0319"		0.810	3.0	50	12.0	43.85	41.94	40.04	38.13
00516	.0320"	#67	0.812	1/8"	2"	7/16"	44.47	42.54	40.60	38.67
00518	.0323"		0.820	3.0	50	12.0	43.85	41.94	40.04	38.13
00520	.0327"		0.830	3.0	50	12.0	43.85	41.94	40.04	38.13
00522	.0330"	#66	0.838	1/8"	2"	7/16"	44.47	42.54	40.60	38.67
00524	.0331"		0.840	3.0	50	12.0	43.85	41.94	40.04	38.13
00526	.0335"		0.850	3.0	50	12.0	43.85	41.94	40.04	38.13
00528	.0339"		0.860	3.0	50	13.0	43.85	41.94	40.04	38.13
00530	.0343"		0.870	3.0	50	13.0	43.85	41.94	40.04	38.13
00532	.0346"		0.880	3.0	50	13.0	43.85	41.94	40.04	38.13
00534	.0350"	#65	0.890	3.0	50	13.0	43.85	41.94	40.04	38.13
00536	.0354"		0.900	3.0	50	13.0	43.85	41.94	40.04	38.13
00538	.0358"		0.910	3.0	50	13.0	43.85	41.94	40.04	38.13
00540	.0360"	#64	0.914	1/8"	2"	1/2"	44.47	42.54	40.60	38.67
00542	.0362"		0.920	3.0	50	13.0	43.85	41.94	40.04	38.13
00544	.0366"		0.930	3.0	50	13.0	43.85	41.94	40.04	38.13
00546	.0370"	#63	0.940	3.0	50	14.0	43.85	41.94	40.04	38.13
00548	.0374"		0.950	3.0	50	14.0	43.85	41.94	40.04	38.13
00550	.0378"		0.960	3.0	50	14.0	43.85	41.94	40.04	38.13
00552	.0380"	#62	0.965	1/8"	2"	9/16"	44.47	42.54	40.60	38.67
00554	.0382"		0.970	3.0	50	14.0	43.85	41.94	40.04	38.13
00556	.0386"		0.980	3.0	50	14.0	43.85	41.94	40.04	38.13
00558	.0390"	#61	0.990	3.0	50	14.0	43.85	41.94	40.04	38.13
00560	.0394"		1.000	3.0	50	14.0	43.85	41.94	40.04	38.13
00562	.0400"	#60	1.016	1/8"	2"	9/16"	44.06	42.14	40.23	38.31
00564	.0410"	#59	1.041	1/8"	2"	9/16"	44.06	42.14	40.23	38.31
00566	.0413"		1.050	3.0	50	15.0	43.49	41.60	39.71	37.82
00568	.0420"	#58	1.066	1/8"	2"	9/16"	44.06	42.14	40.23	38.31
00570	.0430"	#57	1.092	1/8"	2"	9/16"	44.06	42.14	40.23	38.31
00572	.0433"		1.100	3.0	50	16.0	43.49	41.60	39.71	37.82
00574	.0453"		1.150	3.0	50	16.0	43.49	41.60	39.71	37.82
00576	.0465"	#56	1.181	1/8"	2"	5/8"	44.06	42.14	40.23	38.31
00578	.0469"	3/64"	1.191	1/8"	2"	5/8"	44.06	42.14	40.23	38.31
00580	.0472"		1.200	3.0	50	18.0	43.49	41.60	39.71	37.82
00582	.0492"		1.250	3.0	50	18.0	43.49	41.60	39.71	37.82
00584	.0512"		1.300	3.0	50	18.0	43.02	41.15	39.28	37.41
00586	.0520"	#55	1.320	1/8"	2"	3/4"	43.64	41.75	39.85	37.95
00588	.0531"		1.350	3.0	50	19.0	43.02	41.15	39.28	37.41
00590	.0550"	#54	1.397	1/8"	2"	3/4"	43.64	41.75	39.85	37.95
00592	.0551"		1.400	3.0	65	20.0	45.00	43.04	41.09	39.13
00594	.0571"		1.450	3.0	65	21.0	45.00	43.04	41.09	39.13

continued →

# 1850H - 2 Flute (continued)

1.500mm - 3.175mm  
(.0591" - .1250")

HIGH PERFORMANCE  
DRILLS

EDP#	$d_1$ † Diameter		$d_2$ Shank Diameter	$l_1$ Overall Length	$l_2$ Flute Length	1-11	12-24	25-49	50-100
	Decimal	Metric							
00596	.0591"	1.500	3.0	65	21.0	45.00	43.04	41.09	39.13
00598	.0595"	#53 1.511	1/8"	2-1/2"	13/16"	45.64	43.66	41.67	39.69
00600	.0610"	1.550	3.0	65	22.0	44.61	42.67	40.73	38.79
00602	.0625"	1/16" 1.587	1/8"	2-1/2"	13/16"	45.24	43.27	41.31	39.34
00604	.0630"	1.600	3.0	65	22.0	44.61	42.67	40.73	38.79
00606	.0635"	#52 1.613	1/8"	2-1/2"	7/8"	45.24	43.27	41.31	39.34
00608	.0650"	1.650	3.0	65	23.0	44.61	42.67	40.73	38.79
00610	.0669"	1.700	3.0	65	23.0	44.61	42.67	40.73	38.79
00612	.0670"	#51 1.702	1/8"	2-1/2"	7/8"	45.24	43.27	41.31	39.34
00614	.0689"	1.750	3.0	65	24.0	44.61	42.67	40.73	38.79
00616	.0700"	#50 1.778	1/8"	2-1/2"	1"	44.79	42.85	40.90	38.95
00618	.0709"	1.800	3.0	65	26.0	44.18	42.26	40.34	38.42
00620	.0728"	1.850	3.0	65	26.0	44.18	42.26	40.34	38.42
00622	.0730"	#49 1.854	1/8"	2-1/2"	1"	44.79	42.85	40.90	38.95
00624	.0748"	1.900	3.0	65	27.0	44.18	42.26	40.34	38.42
00626	.0760"	#48 1.930	1/8"	2-1/2"	1-1/8"	47.20	45.14	43.09	41.04
00628	.0768"	1.950	3.0	65	28.0	46.55	44.53	42.50	40.48
00630	.0781"	5/64" 1.983	1/8"	2-1/2"	1-1/8"	47.20	45.14	43.09	41.04
00632	.0785"	#47 1.994	1/8"	2-1/2"	1-1/8"	47.20	45.14	43.09	41.04
00634	.0787"	2.000	3.0	65	28.0	46.55	44.53	42.50	40.48
00636	.0807"	2.050	3.0	65	28.0	46.12	44.11	42.11	40.10
00638	.0810"	#46 2.057	1/8"	2-1/2"	1-1/8"	46.81	44.77	42.74	40.70
00640	.0820"	#45 2.083	1/8"	2-1/2"	1-1/8"	46.81	44.77	42.74	40.70
00642	.0827"	2.100	3.0	65	29.0	46.12	44.11	42.11	40.10
00644	.0846"	2.150	3.0	65	29.0	46.12	44.11	42.11	40.10
00646	.0860"	#44 2.184	1/8"	2-1/2"	1-3/16"	46.81	44.77	42.74	40.70
00648	.0866"	2.200	3.0	65	31.0	46.12	44.11	42.11	40.10
00650	.0886"	2.250	3.0	65	31.0	46.12	44.11	42.11	40.10
00652	.0890"	#43 2.260	1/8"	2-1/2"	1-1/4"	46.81	44.77	42.74	40.70
00654	.0906"	2.300	3.0	65	32.0	45.69	43.70	41.72	39.73
00656	.0925"	2.350	3.0	65	32.0	45.69	43.70	41.72	39.73
00658	.0935"	#42 2.375	1/8"	3"	1-5/16"	46.35	44.33	42.32	40.30
00660	.0938"	3/32" 2.382	1/8"	3"	1-5/16"	46.35	44.33	42.32	40.30
00662	.0945"	2.400	3.0	75	34.0	45.69	43.70	41.72	39.73
00664	.0960"	#41 2.438	1/8"	3"	1-11/32"	46.35	44.33	42.32	40.30
00666	.0965"	2.450	3.0	75	34.0	45.69	43.70	41.72	39.73
00668	.0980"	#40 2.489	1/8"	3"	1-3/8"	46.35	44.33	42.32	40.30
00670	.0984"	2.500	3.0	75	35.0	45.69	43.70	41.72	39.73
00672	.0995"	#39 2.527	1/8"	3"	1-3/8"	46.35	44.33	42.32	40.30
00674	.1004"	2.550	3.0	75	35.0	45.30	43.33	41.36	39.39
00676	.1015"	#38 2.578	1/8"	3"	1-13/32"	45.95	43.96	41.96	39.96
00678	.1024"	2.600	3.0	75	36.0	45.30	43.33	41.36	39.39
00680	.1040"	#37 2.641	1/8"	3"	1-7/16"	45.95	43.96	41.96	39.96
00682	.1043"	2.650	3.0	75	37.0	45.30	43.33	41.36	39.39
00684	.1063"	2.700	3.0	75	38.0	45.30	43.33	41.36	39.39
00686	.1065"	#36 2.705	1/8"	3"	1-1/2"	45.95	43.96	41.96	39.96
00688	.1083"	2.750	3.0	75	39.0	45.30	43.33	41.36	39.39
00690	.1094"	7/64" 2.778	1/8"	3"	1-9/16"	45.95	43.96	41.96	39.96
00692	.1100"	#35 2.794	1/8"	3"	1-9/16"	45.95	43.96	41.96	39.96
00694	.1102"	2.800	3.0	75	39.0	45.30	43.33	41.36	39.39
00696	.1110"	#34 2.819	1/8"	3"	1-5/8"	45.95	43.96	41.96	39.96
00698	.1122"	2.850	3.0	75	40.0	45.30	43.33	41.36	39.39
00700	.1130"	#33 2.870	1/8"	3"	1-5/8"	45.95	43.96	41.96	39.96
00702	.1142"	2.900	3.0	75	40.0	45.30	43.33	41.36	39.39
00704	.1160"	#32 2.946	1/8"	3"	1-5/8"	45.95	43.96	41.96	39.96
00706	.1161"	2.950	3.0	75	42.0	45.30	43.33	41.36	39.39
00708	.1181"	3.000	3.0	75	42.0	42.73	40.88	39.02	37.16
00710	.1200"	#31 3.048	1/8"	3"	1-3/4"	45.95	43.96	41.96	39.96
00712	.1250"	1/8" 3.175	1/8"	3"	1-3/4"	43.40	41.51	39.63	37.74