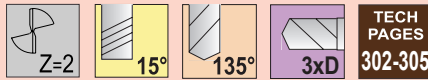


TOLERANCES

<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)

Series 1510

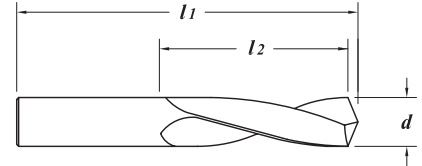
.0625" - .1575"
(1.588mm - 4.000mm)



Recommended for titanium, inconel, hastelloy, waspaly, and stainless steel

Slow Helix

- Solid submicron grain carbide drill
- Heavy web for extra rigidity and added strength
- Thinned point
- Live tooling recommended on lathe processes
- Hardlube Coating - page 62



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							
19070	.0625	1/16"	1.588	1-3/4"	5/8"	7.51	7.18	6.86	6.53
19075	.0635	#52	1.613	1-3/4"	11/16"	7.62	7.29	6.96	6.63
19080	.0670	#51	1.702	1-3/4"	11/16"	7.74	7.40	7.07	6.73
19085	.0700	#50	1.778	1-3/4"	11/16"	7.94	7.59	7.25	6.90
19090	.0730	#49	1.854	1-3/4"	11/16"	8.12	7.77	7.41	7.06
19095	.0760	#48	1.930	1-3/4"	11/16"	8.40	8.03	7.67	7.30
19100	.0781	5/64"	1.984	1-3/4"	11/16"	8.71	8.33	7.95	7.57
19105	.0785	#47	1.994	1-3/4"	3/4"	8.99	8.60	8.21	7.82
19115	.0787		2.000	45	19	9.14	8.75	8.35	7.95
19120	.0810	#46	2.057	1-3/4"	3/4"	9.28	8.88	8.47	8.07
19125	.0820	#45	2.083	1-3/4"	3/4"	9.56	9.14	8.73	8.31
19130	.0860	#44	2.184	1-3/4"	3/4"	9.88	9.45	9.02	8.59
19135	.0890	#43	2.261	1-3/4"	3/4"	10.17	9.72	9.28	8.84
19140	.0935	#42	2.375	1-3/4"	3/4"	10.30	9.86	9.41	8.96
19145	.0938	3/32"	2.383	1-3/4"	3/4"	10.55	10.09	9.63	9.17
19150	.0960	#41	2.438	1-13/16"	13/16"	10.63	10.16	9.70	9.24
19155	.0980	#40	2.489	1-13/16"	13/16"	10.78	10.31	9.84	9.37
19160	.0984		2.500	46	21	10.84	10.37	9.90	9.43
19165	.0995	#39	2.527	1-13/16"	13/16"	10.89	10.42	9.94	9.47
19170	.1015	#38	2.578	1-13/16"	13/16"	10.99	10.52	10.04	9.56
19175	.1040	#37	2.642	1-13/16"	13/16"	11.09	10.60	10.12	9.64
19180	.1065	#36	2.705	1-13/16"	13/16"	11.17	10.68	10.20	9.71
19185	.1094	7/64"	2.779	1-13/16"	13/16"	11.21	10.73	10.24	9.75
19190	.1100	#35	2.794	1-7/8"	7/8"	11.29	10.80	10.31	9.82
19195	.1110	#34	2.819	1-7/8"	7/8"	11.42	10.92	10.43	9.93
19200	.1130	#33	2.870	1-7/8"	7/8"	11.51	11.01	10.51	10.01
19205	.1160	#32	2.946	1-7/8"	7/8"	11.59	11.09	10.58	10.08
19210	.1181		3.000	48	22	11.70	11.19	10.68	10.17
19215	.1200	#31	3.048	1-7/8"	7/8"	11.82	11.31	10.79	10.28
19220	.1250	1/8"	3.175	1-7/8"	7/8"	11.94	11.42	10.90	10.38
19225	.1285	#30	3.264	1-15/16"	15/16"	12.26	11.73	11.19	10.66
19230	.1360	#29	3.454	1-15/16"	15/16"	12.58	12.03	11.49	10.94
19235	.1378		3.500	49	24	12.98	12.42	11.85	11.29
19240	.1405	#28	3.569	1-15/16"	15/16"	13.14	12.57	12.00	11.43
19245	.1406	9/64"	3.571	1-15/16"	15/16"	13.29	12.72	12.14	11.56
19250	.1440	#27	3.658	2-1/16"	1"	14.47	13.84	13.21	12.58
19255	.1470	#26	3.734	2-1/16"	1"	14.62	13.98	13.35	12.71
19260	.1495	#25	3.797	2-1/16"	1"	14.80	14.16	13.51	12.87
19265	.1520	#24	3.861	2-1/16"	1"	14.82	14.18	13.53	12.89
19270	.1540	#23	3.912	2-1/16"	1"	14.93	14.28	13.63	12.98
19275	.1562	5/32"	3.967	2-1/16"	1"	15.02	14.37	13.71	13.06
19280	.1570	#22	3.988	2-1/8"	1-1/16"	15.95	15.26	14.56	13.87
19285	.1575		4.000	54	27	16.17	15.47	14.76	14.06

continued →

Series 1510 (continued)

.1590" - .3346"
(4.039mm - 8.500mm)

EDP#	d^{\dagger} Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric							
19290	.1590	#21	4.039	2-1/8"	1-1/16"	16.36	15.65	14.94	14.23
19295	.1610	#20	4.089	2-1/8"	1-1/16"	16.49	15.77	15.06	14.34
19300	.1660	#19	4.216	2-1/8"	1-1/16"	17.16	16.41	15.67	14.92
19305	.1695	#18	4.305	2-1/8"	1-1/16"	17.37	16.61	15.86	15.10
19310	.1719	11/64"	4.366	2-1/8"	1-1/16"	17.70	16.93	16.16	15.39
19315	.1730	#17	4.394	2-3/16"	1-1/8"	17.96	17.18	16.40	15.62
19320	.1770	#16	4.496	2-3/16"	1-1/8"	18.16	17.37	16.58	15.79
19325	.1772		4.500	56	29	18.26	17.47	16.67	15.88
19330	.1800	#15	4.572	2-3/16"	1-1/8"	18.34	17.55	16.75	15.95
19335	.1820	#14	4.623	2-3/16"	1-1/8"	18.76	17.94	17.13	16.31
19340	.1850	#13	4.700	2-3/16"	1-1/8"	18.89	18.07	17.25	16.43
19345	.1875	3/16"	4.763	2-3/16"	1-1/8"	18.98	18.15	17.33	16.50
19350	.1890	#12	4.801	2-1/4"	1-3/16"	19.60	18.74	17.89	17.04
19355	.1910	#11	4.851	2-1/4"	1-3/16"	19.83	18.96	18.10	17.24
19360	.1935	#10	4.915	2-1/4"	1-3/16"	20.73	19.83	18.93	18.03
19365	.1960	#9	4.978	2-1/4"	1-3/16"	21.28	20.35	19.43	18.50
19370	.1969		5.000	57	30	21.39	20.46	19.53	18.60
19375	.1990	#8	5.055	2-1/4"	1-3/16"	21.55	20.61	19.68	18.74
19380	.2010	#7	5.105	2-1/4"	1-3/16"	22.18	21.22	20.25	19.29
19385	.2031	13/64"	5.159	2-1/4"	1-3/16"	22.34	21.37	20.40	19.43
19390	.2040	#6	5.182	2-3/8"	1-1/4"	22.79	21.80	20.81	19.82
19395	.2055	#5	5.220	2-3/8"	1-1/4"	23.25	22.24	21.23	20.22
19400	.2090	#4	5.309	2-3/8"	1-1/4"	23.69	22.66	21.63	20.60
19405	.2130	#3	5.410	2-3/8"	1-1/4"	24.10	23.06	22.01	20.96
19410	.2165		5.500	60	32	24.28	23.22	22.17	21.11
19415	.2188	7/32"	5.558	2-3/8"	1-1/4"	24.46	23.40	22.33	21.27
19420	.2210	#2	5.613	2-7/16"	1-5/16"	25.04	23.95	22.86	21.77
19425	.2280	#1	5.791	2-7/16"	1-5/16"	25.21	24.11	23.02	21.92
19430	.2340	A	5.944	2-7/16"	1-5/16"	25.27	24.17	23.07	21.97
19435	.2344	15/64"	5.954	2-7/16"	1-5/16"	25.31	24.21	23.11	22.01
19440	.2362		6.000	64	35	25.38	24.28	23.17	22.07
19445	.2380	B	6.045	2-1/2"	1-3/8"	25.50	24.39	23.28	22.17
19450	.2420	C	6.147	2-1/2"	1-3/8"	25.67	24.55	23.44	22.32
19455	.2460	D	6.248	2-1/2"	1-3/8"	25.89	24.76	23.64	22.51
19460	.2500	1/4" / E	6.350	2-1/2"	1-3/8"	26.04	24.90	23.77	22.64
19465	.2559		6.500	67	37	26.67	25.51	24.35	23.19
19470	.2570	F	6.528	2-5/8"	1-7/16"	27.23	26.05	24.86	23.68
19475	.2610	G	6.629	2-5/8"	1-7/16"	27.78	26.58	25.37	24.16
19480	.2656	17/64"	6.746	2-5/8"	1-7/16"	28.35	27.12	25.88	24.65
19485	.2660	H	6.756	2-11/16"	1-1/2"	29.16	27.90	26.63	25.36
19490	.2720	I	6.909	2-11/16"	1-1/2"	29.50	28.22	26.93	25.65
19495	.2756		7.000	68	38	29.74	28.45	27.15	25.86
19500	.2770	J	7.036	2-11/16"	1-1/2"	30.00	28.70	27.39	26.09
19505	.2810	K	7.137	2-11/16"	1-1/2"	30.27	28.95	27.64	26.32
19510	.2812	9/32"	7.142	2-11/16"	1-1/2"	30.43	29.11	27.78	26.46
19515	.2900	L	7.366	2-3/4"	1-9/16"	31.56	30.18	28.81	27.44
19520	.2950	M	7.493	2-3/4"	1-9/16"	33.78	32.31	30.84	29.37
19525	.2953		7.500	70	40	33.78	32.31	30.84	29.37
19530	.2969	19/64"	7.541	2-3/4"	1-9/16"	33.96	32.48	31.01	29.53
19535	.3020	N	7.671	2-15/16"	1-5/8"	35.77	34.21	32.66	31.10
19540	.3125	5/16"	7.938	2-15/16"	1-5/8"	35.90	34.34	32.78	31.22
19545	.3150		8.000	75	43	38.53	36.85	35.18	33.50
19550	.3160	O	8.026	2-15/16"	1-11/16"	38.53	36.85	35.18	33.50
19555	.3230	P	8.204	2-15/16"	1-11/16"	38.86	37.17	35.48	33.79
19560	.3281	21/64"	8.334	2-15/16"	1-11/16"	39.09	37.39	35.69	33.99
19565	.3320	Q	8.433	3"	1-11/16"	40.00	38.26	36.52	34.78
19570	.3346		8.500	76	43	40.38	38.62	36.87	35.11

EDP#	d^+ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100	
	Decimal	Metric							
19575	.3390	R	8.611	3"	1-11/16"	41.63	39.82	38.01	36.20
19580	.3438	11/32"	8.733	3"	1-11/16"	43.32	41.44	39.55	37.67
19585	.3480	S	8.839	3-1/16"	1-3/4"	43.92	42.01	40.10	38.19
19590	.3543		9.000	78	44	44.18	42.26	40.34	38.42
19595	.3580	T	9.093	3-1/16"	1-3/4"	44.36	42.43	40.50	38.57
19600	.3594	23/64"	9.129	3-1/16"	1-3/4"	44.65	42.71	40.77	38.83
19605	.3680	U	9.347	3-1/8"	1-13/16"	48.91	46.78	44.66	42.53
19615	.3750	3/8"	9.525	3-1/8"	1-13/16"	49.75	47.59	45.42	43.26
19620	.3770	V	9.576	3-1/4"	1-7/8"	50.72	48.51	46.31	44.10
19625	.3860	W	9.804	3-1/4"	1-7/8"	51.77	49.52	47.27	45.02
19630	.3906	25/64"	9.921	3-1/4"	1-7/8"	52.57	50.28	48.00	45.71
19635	.3937		10.000	84	49	54.44	52.07	49.71	47.34
19640	.3970	X	10.084	3-5/16"	1-15/16"	56.03	53.59	51.16	48.72
19645	.4040	Y	10.262	3-5/16"	1-15/16"	56.48	54.02	51.57	49.11
19650	.4062	13/32"	10.317	3-5/16"	1-15/16"	58.52	55.98	53.43	50.89
19655	.4130	Z	10.490	3-3/8"	2"	59.16	56.58	54.01	51.44
19660	.4134		10.500	86	51	59.16	56.58	54.01	51.44
19665	.4219	27/64"	10.716	3-3/8"	2"	59.81	57.21	54.61	52.01
19670	.4331		11.000	87	52	64.96	62.14	59.31	56.49
19675	.4375	7/16"	11.113	3-7/16"	2-1/16"	64.96	62.14	59.31	56.49
19685	.4531	29/64"	11.509	3-9/16"	2-1/8"	70.45	67.39	64.32	61.26
19690	.4688	15/32"	11.908	3-5/8"	2-1/8"	74.52	71.28	68.04	64.80
19695	.4724		12.000	94	56	74.78	71.53	68.28	65.03
19700	.4844	31/64"	12.304	3-11/16"	2-3/16"	75.37	72.09	68.82	65.54
19705	.4921		12.500	95	56	76.21	72.90	69.58	66.27
19710	.5000	1/2"	12.700	3-3/4"	2-1/4"	76.76	73.43	70.09	66.75
19720	.5156	33/64"	13.096	4-1/4"	2-3/8"	103.16	98.67	94.19	89.70
19725	.5312	17/32"	13.492	4-1/4"	2-3/8"	105.83	101.23	96.63	92.03
19730	.5315		13.500	107	60	108.56	103.84	99.12	94.40
19735	.5469	35/64"	13.891	4-1/4"	2-3/8"	111.24	106.40	101.57	96.73
19740	.5512		14.000	107	60	113.95	109.00	104.04	99.09
19745	.5625	9/16"	14.287	4-1/2"	2-1/2"	124.26	118.86	113.45	108.05
19755	.5781	37/64"	14.683	4-1/2"	2-1/2"	129.44	123.82	118.19	112.56
19760	.5906		15.000	115	65	132.08	126.34	120.59	114.85
19765	.5938	19/32"	15.082	4-1/2"	2-1/2"	132.84	127.06	121.29	115.51
19770	.6094	39/64"	15.478	4-1/2"	2-1/2"	133.57	127.77	121.96	116.15
19780	.6250	5/8"	15.875	4-1/2"	2-1/2"	135.08	129.21	123.33	117.46
19785	.6299		16.000	115	65	138.68	132.65	126.62	120.59