

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)



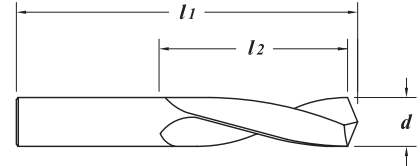
Series 1510

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

Recommended for titanium, inconel, hastalloy, waspalloy, 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 58



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"	7.15	6.84	6.53	6.22
19075	.0635	#52	1.613	1-3/4"	11/16"	7.26	6.94	6.63	6.31
19080	.0670	#51	1.702	1-3/4"	11/16"	7.37	7.05	6.73	6.41
19085	.0700	#50	1.778	1-3/4"	11/16"	7.56	7.23	6.90	6.57
19090	.0730	#49	1.854	1-3/4"	11/16"	7.73	7.39	7.06	6.72
19095	.0760	#48	1.930	1-3/4"	11/16"	7.99	7.65	7.30	6.95
19100	.0781	5/64"	1.984	1-3/4"	11/16"	8.29	7.93	7.57	7.21
19105	.0785	#47	1.994	1-3/4"	3/4"	8.57	8.20	7.82	7.45
19115	.0787		2.000	45	19	8.71	8.33	7.95	7.57
19120	.0810	#46	2.057	1-3/4"	3/4"	8.84	8.46	8.07	7.69
19125	.0820	#45	2.083	1-3/4"	3/4"	9.10	8.70	8.31	7.91
19130	.0860	#44	2.184	1-3/4"	3/4"	9.41	9.00	8.59	8.18
19135	.0890	#43	2.261	1-3/4"	3/4"	9.68	9.26	8.84	8.42
19140	.0935	#42	2.375	1-3/4"	3/4"	9.81	9.38	8.96	8.53
19145	.0938	3/32"	2.383	1-3/4"	3/4"	10.04	9.60	9.17	8.73
19150	.0960	#41	2.438	1-13/16"	13/16"	10.12	9.68	9.24	8.80
19155	.0980	#40	2.489	1-13/16"	13/16"	10.26	9.81	9.37	8.92
19160	.0984		2.500	46	21	10.33	9.88	9.43	8.98
19165	.0995	#39	2.527	1-13/16"	13/16"	10.37	9.92	9.47	9.02
19170	.1015	#38	2.578	1-13/16"	13/16"	10.47	10.01	9.56	9.10
19175	.1040	#37	2.642	1-13/16"	13/16"	10.56	10.10	9.64	9.18
19180	.1065	#36	2.705	1-13/16"	13/16"	10.64	10.18	9.71	9.25
19185	.1094	7/64"	2.779	1-13/16"	13/16"	10.68	10.22	9.75	9.29
19190	.1100	#35	2.794	1-7/8"	7/8"	10.75	10.29	9.82	9.35
19195	.1110	#34	2.819	1-7/8"	7/8"	10.88	10.41	9.93	9.46
19200	.1130	#33	2.870	1-7/8"	7/8"	10.96	10.48	10.01	9.53
19205	.1160	#32	2.946	1-7/8"	7/8"	11.04	10.56	10.08	9.60
19210	.1181		3.000	48	22	11.14	10.66	10.17	9.69
19215	.1200	#31	3.048	1-7/8"	7/8"	11.26	10.77	10.28	9.79
19220	.1250	1/8"	3.175	1-7/8"	7/8"	11.37	10.88	10.38	9.89
19225	.1285	#30	3.264	1-15/16"	15/16"	11.67	11.17	10.66	10.15
19230	.1360	#29	3.454	1-15/16"	15/16"	11.98	11.46	10.94	10.42
19235	.1378		3.500	49	24	12.36	11.83	11.29	10.75
19240	.1405	#28	3.569	1-15/16"	15/16"	12.52	11.98	11.43	10.89
19245	.1406	9/64"	3.571	1-15/16"	15/16"	12.66	12.11	11.56	11.01
19250	.1440	#27	3.658	2-1/16"	1"	13.78	13.18	12.58	11.98
19255	.1470	#26	3.734	2-1/16"	1"	13.92	13.31	12.71	12.10
19260	.1495	#25	3.797	2-1/16"	1"	14.10	13.49	12.87	12.26
19265	.1520	#24	3.861	2-1/16"	1"	14.12	13.51	12.89	12.28
19270	.1540	#23	3.912	2-1/16"	1"	14.21	13.60	12.98	12.36
19275	.1562	5/32"	3.967	2-1/16"	1"	14.31	13.68	13.06	12.44
19280	.1570	#22	3.988	2-1/8"	1-1/16"	15.19	14.53	13.87	13.21
19285	.1575		4.000	54	27	15.40	14.73	14.06	13.39

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"	15.58	14.91	14.23	13.55
19295	.1610	#20	4.089	2-1/8"	1-1/16"	15.71	15.03	14.34	13.66
19300	.1660	#19	4.216	2-1/8"	1-1/16"	16.34	15.63	14.92	14.21
19305	.1695	#18	4.305	2-1/8"	1-1/16"	16.54	15.82	15.10	14.38
19310	.1719	11/64"	4.366	2-1/8"	1-1/16"	16.86	16.13	15.39	14.66
19315	.1730	#17	4.394	2-3/16"	1-1/8"	17.11	16.37	15.62	14.88
19320	.1770	#16	4.496	2-3/16"	1-1/8"	17.30	16.54	15.79	15.04
19325	.1772		4.500	56	29	17.39	16.63	15.88	15.12
19330	.1800	#15	4.572	2-3/16"	1-1/8"	17.47	16.71	15.95	15.19
19335	.1820	#14	4.623	2-3/16"	1-1/8"	17.86	17.08	16.31	15.53
19340	.1850	#13	4.700	2-3/16"	1-1/8"	18.00	17.22	16.43	15.65
19345	.1875	3/16"	4.763	2-3/16"	1-1/8"	18.07	17.28	16.50	15.71
19350	.1890	#12	4.801	2-1/4"	1-3/16"	18.66	17.85	17.04	16.23
19355	.1910	#11	4.851	2-1/4"	1-3/16"	18.88	18.06	17.24	16.42
19360	.1935	#10	4.915	2-1/4"	1-3/16"	19.75	18.89	18.03	17.17
19365	.1960	#9	4.978	2-1/4"	1-3/16"	20.26	19.38	18.50	17.62
19370	.1969		5.000	57	30	20.37	19.48	18.60	17.71
19375	.1990	#8	5.055	2-1/4"	1-3/16"	20.53	19.64	18.74	17.85
19380	.2010	#7	5.105	2-1/4"	1-3/16"	21.13	20.21	19.29	18.37
19385	.2031	13/64"	5.159	2-1/4"	1-3/16"	21.28	20.35	19.43	18.50
19390	.2040	#6	5.182	2-3/8"	1-1/4"	21.71	20.77	19.82	18.88
19395	.2055	#5	5.220	2-3/8"	1-1/4"	22.15	21.19	20.22	19.26
19400	.2090	#4	5.309	2-3/8"	1-1/4"	22.56	21.58	20.60	19.62
19405	.2130	#3	5.410	2-3/8"	1-1/4"	22.95	21.96	20.96	19.96
19410	.2165		5.500	60	32	23.12	22.11	21.11	20.10
19415	.2188	7/32"	5.558	2-3/8"	1-1/4"	23.30	22.29	21.27	20.26
19420	.2210	#2	5.613	2-7/16"	1-5/16"	23.84	22.80	21.77	20.73
19425	.2280	#1	5.791	2-7/16"	1-5/16"	24.01	22.97	21.92	20.88
19430	.2340	A	5.944	2-7/16"	1-5/16"	24.06	23.01	21.97	20.92
19435	.2344	15/64"	5.954	2-7/16"	1-5/16"	24.10	23.06	22.01	20.96
19440	.2362		6.000	64	35	24.17	23.12	22.07	21.02
19445	.2380	B	6.045	2-1/2"	1-3/8"	24.28	23.22	22.17	21.11
19450	.2420	C	6.147	2-1/2"	1-3/8"	24.45	23.39	22.32	21.26
19455	.2460	D	6.248	2-1/2"	1-3/8"	24.66	23.58	22.51	21.44
19460	.2500	1/4" / E	6.350	2-1/2"	1-3/8"	24.79	23.72	22.64	21.56
19465	.2559		6.500	67	37	25.40	24.30	23.19	22.09
19470	.2570	F	6.528	2-5/8"	1-7/16"	25.93	24.81	23.68	22.55
19475	.2610	G	6.629	2-5/8"	1-7/16"	26.46	25.31	24.16	23.01
19480	.2656	17/64"	6.746	2-5/8"	1-7/16"	27.00	25.83	24.65	23.48
19485	.2660	H	6.756	2-11/16"	1-1/2"	27.77	26.57	25.36	24.15
19490	.2720	I	6.909	2-11/16"	1-1/2"	28.09	26.87	25.65	24.43
19495	.2756		7.000	68	38	28.32	27.09	25.86	24.63
19500	.2770	J	7.036	2-11/16"	1-1/2"	28.58	27.34	26.09	24.85
19505	.2810	K	7.137	2-11/16"	1-1/2"	28.83	27.58	26.32	25.07
19510	.2812	9/32"	7.142	2-11/16"	1-1/2"	28.98	27.72	26.46	25.20
19515	.2900	L	7.366	2-3/4"	1-9/16"	30.05	28.74	27.44	26.13
19520	.2950	M	7.493	2-3/4"	1-9/16"	32.17	30.77	29.37	27.97
19525	.2953		7.500	70	40	32.17	30.77	29.37	27.97
19530	.2969	19/64"	7.541	2-3/4"	1-9/16"	32.34	30.93	29.53	28.12
19535	.3020	N	7.671	2-15/16"	1-5/8"	34.06	32.58	31.10	29.62
19540	.3125	5/16"	7.938	2-15/16"	1-5/8"	34.19	32.70	31.22	29.73
19545	.3150		8.000	75	43	36.69	35.09	33.50	31.90
19550	.3160	O	8.026	2-15/16"	1-11/16"	36.69	35.09	33.50	31.90
19555	.3230	P	8.204	2-15/16"	1-11/16"	37.01	35.40	33.79	32.18
19560	.3281	21/64"	8.334	2-15/16"	1-11/16"	37.23	35.61	33.99	32.37
19565	.3320	Q	8.433	3"	1-11/16"	38.09	36.43	34.78	33.12
19570	.3346		8.500	76	43	38.46	36.78	35.11	33.44

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"	39.65	37.93	36.20	34.48
19580	.3438	11/32"	8.733	3"	1-11/16"	41.26	39.47	37.67	35.88
19585	.3480	S	8.839	3-1/16"	1-3/4"	41.83	40.01	38.19	36.37
19590	.3543		9.000	78	44	42.08	40.25	38.42	36.59
19595	.3580	T	9.093	3-1/16"	1-3/4"	42.24	40.40	38.57	36.73
19600	.3594	23/64"	9.129	3-1/16"	1-3/4"	42.53	40.68	38.83	36.98
19605	.3680	U	9.347	3-1/8"	1-13/16"	46.58	44.55	42.53	40.50
19615	.3750	3/8"	9.525	3-1/8"	1-13/16"	47.38	45.32	43.26	41.20
19620	.3770	V	9.576	3-1/4"	1-7/8"	48.30	46.20	44.10	42.00
19625	.3860	W	9.804	3-1/4"	1-7/8"	49.31	47.17	45.02	42.88
19630	.3906	25/64"	9.921	3-1/4"	1-7/8"	50.06	47.88	45.71	43.53
19635	.3937		10.000	84	49	51.85	49.60	47.34	45.09
19640	.3970	X	10.084	3-5/16"	1-15/16"	53.36	51.04	48.72	46.40
19645	.4040	Y	10.262	3-5/16"	1-15/16"	53.79	51.45	49.11	46.77
19650	.4062	13/32"	10.317	3-5/16"	1-15/16"	55.74	53.32	50.89	48.47
19655	.4130	Z	10.490	3-3/8"	2"	56.34	53.89	51.44	48.99
19660	.4134		10.500	86	51	56.34	53.89	51.44	48.99
19665	.4219	27/64"	10.716	3-3/8"	2"	56.96	54.48	52.01	49.53
19670	.4331		11.000	87	52	61.87	59.18	56.49	53.80
19675	.4375	7/16"	11.113	3-7/16"	2-1/16"	61.87	59.18	56.49	53.80
19685	.4531	29/64"	11.509	3-9/16"	2-1/8"	67.09	64.17	61.26	58.34
19690	.4688	15/32"	11.908	3-5/8"	2-1/8"	70.97	67.88	64.80	61.71
19695	.4724		12.000	94	56	71.22	68.12	65.03	61.93
19700	.4844	31/64"	12.304	3-11/16"	2-3/16"	71.78	68.66	65.54	62.42
19705	.4921		12.500	95	56	72.58	69.42	66.27	63.11
19710	.5000	1/2"	12.700	3-3/4"	2-1/4"	73.11	69.93	66.75	63.57
19720	.5156	33/64"	13.096	4-1/4"	2-3/8"	98.24	93.97	89.70	85.43
19725	.5312	17/32"	13.492	4-1/4"	2-3/8"	100.80	96.42	92.03	87.65
19730	.5315		13.500	107	60	103.39	98.89	94.40	89.90
19735	.5469	35/64"	13.891	4-1/4"	2-3/8"	105.94	101.33	96.73	92.12
19740	.5512		14.000	107	60	108.53	103.81	99.09	94.37
19745	.5625	9/16"	14.287	4-1/2"	2-1/2"	118.34	113.19	108.05	102.90
19755	.5781	37/64"	14.683	4-1/2"	2-1/2"	123.28	117.92	112.56	107.20
19760	.5906		15.000	115	65	125.79	120.32	114.85	109.38
19765	.5938	19/32"	15.082	4-1/2"	2-1/2"	126.51	121.01	115.51	110.01
19770	.6094	39/64"	15.478	4-1/2"	2-1/2"	127.21	121.68	116.15	110.62
19775	.6102		15.500	115	65	127.94	122.38	116.81	111.25
19780	.6250	5/8"	15.875	4-1/2"	2-1/2"	128.65	123.06	117.46	111.87
19785	.6299		16.000	115	65	132.08	126.34	120.59	114.85