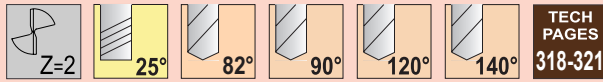


Series 1600

NEW ITEMS

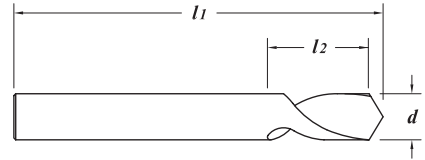
.0787" - .3750"
(2.000mm - 9.525mm)



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)

N/C Spotting

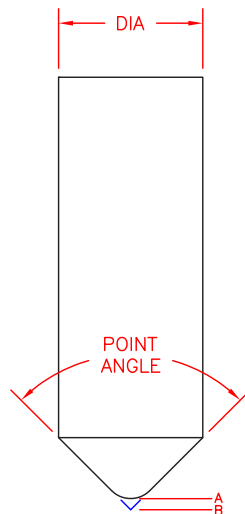
- Solid submicron grain carbide drill
- For spotting to stabilize long drills
- Can be used for chamfering
- Rough, angled or spherical surfaces
- No O.D. clearance
- For locating on true position
- Live tooling recommended on lathe processes



82° EDP#	90° EDP#	120° EDP#	140° EDP#	<i>d</i> †		<i>l1</i>	<i>l2</i>	1-11	12-24	25-49	50-100	
				Decimal	Diameter							Metric
91650	91500	91572	91240	.0787		2.000	50	10	10.29	9.85	9.40	8.95
91652	91505	91575	91245	.0938	3/32"	2.383	2"	3/8"	11.66	11.15	10.65	10.14
-	91507	-	-	.1181		3.000	38	6	12.87	12.31	11.75	11.19
-	91510	91580	91250	.1181		3.000	50	10	13.74	13.15	12.55	11.95
-	91512	-	-	.1181		3.000	75	10	15.94	15.25	14.55	13.86
-	91514	-	-	.1250	1/8"	3.175	1-1/2"	1/4"	12.87	12.31	11.75	11.19
91656	91000	91100	91260	.1250	1/8"	3.175	2"	3/8"	13.74	13.15	12.55	11.95
-	91002	-	-	.1250	1/8"	3.175	3"	3/8"	15.94	15.25	14.55	13.86
91658	91520	91590	91270	.1575		4.000	50	12	15.87	15.18	14.49	13.80
-	91522	-	-	.1875	3/16"	4.763	2"	3/8"	15.87	15.18	14.49	13.80
-	91524	-	-	.1875	3/16"	4.763	2-1/2"	1/2"	16.43	15.72	15.00	14.29
91660	91010	91110	91280	.1875	3/16"	4.763	3"	3/4"	17.97	17.19	16.41	15.63
-	91012	-	-	.1875	3/16"	4.763	4"	3/4"	21.02	20.11	19.19	18.28
-	91014	-	-	.1969		5.000	50	10	17.26	16.51	15.76	15.01
-	91530	91600	91290	.1969		5.000	65	15	18.88	18.06	17.24	16.42
-	91532	-	-	.1969		5.000	75	15	20.34	19.46	18.57	17.69
-	91534	-	-	.2362		6.000	50	12	19.40	18.56	17.71	16.87
91664	91540	91610	91300	.2362		6.000	65	20	19.85	18.99	18.12	17.26
-	91542	-	-	.2362		6.000	75	20	21.33	20.41	19.48	18.55
-	91544	-	-	.2362		6.000	100	20	24.91	23.83	22.74	21.66
-	91546	-	-	.2500	1/4"	6.350	2"	1/2"	19.40	18.56	17.71	16.87
-	91547	-	-	.2500	1/4"	6.350	2-1/2"	5/8"	19.85	18.99	18.12	17.26
91666	91020	91120	91310	.2500	1/4"	6.350	3"	3/4"	21.33	20.41	19.48	18.55
-	91021	-	-	.2500	1/4"	6.350	4"	3/4"	24.91	23.83	22.74	21.66
-	91022	-	-	.2500	1/4"	6.350	6"	3/4"	36.86	35.26	33.65	32.05
-	91023	-	-	.3125	5/16"	7.938	2"	1/2"	23.51	22.48	21.46	20.44
-	91024	-	-	.3125	5/16"	7.938	2-1/2"	5/8"	24.08	23.03	21.99	20.94
91668	91025	91125	91315	.3125	5/16"	7.938	3"	1"	25.81	24.68	23.56	22.44
-	91026	-	-	.3125	5/16"	7.938	4"	1"	30.73	29.39	28.06	26.72
-	91548	-	-	.3150		8.000	50	12	23.51	22.48	21.46	20.44
-	91549	-	-	.3150		8.000	65	16	24.08	23.03	21.99	20.94
91670	91550	91620	91320	.3150		8.000	75	25	25.81	24.68	23.56	22.44
-	91551	-	-	.3150		8.000	100	25	30.73	29.39	28.06	26.72
-	91028	-	-	.3750	3/8"	9.525	2"	1/2"	25.15	24.06	22.96	21.87
-	91029	-	-	.3750	3/8"	9.525	2-1/2"	5/8"	26.07	24.94	23.80	22.67
91672	91030	91130	91330	.3750	3/8"	9.525	3"	1"	27.99	26.77	25.56	24.34
-	91031	-	-	.3750	3/8"	9.525	4"	1"	34.27	32.78	31.29	29.80
-	91032	-	-	.3750	3/8"	9.525	6"	1"	49.86	47.70	45.53	43.36

82° EDP#	90° EDP#	120° EDP#	140° EDP#	d^+ Diameter		l_1 Overall Length	l_2 Flute Length	1-11	12-24	25-49	50-100
				Decimal	Metric						
-	91558	-	-	.3937	10.000	65	16	33.32	31.87	30.42	28.97
-	91559	-	-	.3937	10.000	70	20	34.20	32.71	31.23	29.74
-	91560	91630	91340	.3937	10.000	88	25	38.62	36.94	35.26	33.58
-	91561	-	-	.3937	10.000	100	25	41.95	40.13	38.30	36.48
-	91564	-	-	.4375	7/16"	11.113	2-3/4"	36.96	35.35	33.75	32.14
91676	91565	91635	91345	.4375	7/16"	11.113	4"	43.11	41.24	39.36	37.49
-	91568	-	-	.4724		12.000	65	39.38	37.66	35.95	34.24
-	91569	-	-	.4724		12.000	75	40.08	38.34	36.59	34.85
-	91570	91640	91350	.4724		12.000	100	46.41	44.40	42.38	40.36
-	91038	-	-	.5000	1/2"	12.700	2-1/2"	40.63	38.86	37.10	35.33
-	91039	-	-	.5000	1/2"	12.700	3"	41.23	39.44	37.64	35.85
91680	91040	91140	91360	.5000	1/2"	12.700	4"	48.27	46.17	44.07	41.97
-	91041	-	-	.5000	1/2"	12.700	6"	72.94	69.77	66.60	63.43
-	91050	91170	91370	.5512		14.000	100	83.18	79.56	75.95	72.33
91684	91060	91180	-	.5625	9/16"	14.287	4"	90.70	86.76	82.81	78.87
-	91067	-	-	.6250	5/8"	15.875	3"	86.68	82.91	79.14	75.37
-	91068	-	-	.6250	5/8"	15.875	3-1/2"	87.27	83.48	79.68	75.89
-	91069	-	-	.6250	5/8"	15.875	4"	96.15	91.97	87.79	83.61
91686	91070	91190	91390	.6250	5/8"	15.875	5"	111.29	106.45	101.61	96.77
NEW	-	91077	-	.6299		16.000	75	89.48	85.59	81.70	77.81
-	91078	-	-	.6299		16.000	88	90.14	86.22	82.30	78.38
NEW	-	91079	-	.6299		16.000	100	98.24	93.97	89.70	85.43
91688	91080	91200	91400	.6299		16.000	125	114.26	109.30	104.33	99.36
91690	91090	91210	-	.7087		18.000	125	156.75	149.93	143.12	136.30
-	91148	-	-	.7500	3/4"	19.050	3"	131.42	125.71	119.99	114.28
-	91149	-	-	.7500	3/4"	19.050	4"	136.06	130.14	124.23	118.31
91692	91150	91220	91420	.7500	3/4"	19.050	5"	161.00	154.00	147.00	140.00
NEW	-	91159	-	.7874		20.000	100	152.02	145.41	138.80	132.19
-	91160	91230	91430	.7874		20.000	125	174.32	166.74	159.16	151.58
NEW	-	91161	-	.7874		20.000	150	192.49	184.12	175.75	167.38

DIAMETER	DRILL POINT ANGLE				
	82°	90°	120°	140°	
2mm	.0787	.003	.002	.001	.001
3/32"	.0938	.003	.003	.002	.001
3mm	.1181	.004	.004	.002	.001
1/8"	.1250	.004	.004	.002	.001
4mm	.1575	.005	.005	.003	.002
3/16"	.1875	.006	.006	.003	.002
5mm	.1969	.007	.006	.003	.002
6mm	.2362	.008	.007	.004	.003
1/4"	.2500	.009	.008	.004	.003
5/16"	.3125	.011	.009	.005	.003
8mm	.3150	.011	.009	.005	.003
3/8"	.3750	.013	.011	.006	.004
10mm	.3937	.014	.012	.007	.004
7/16"	.4375	.015	.013	.008	.005
12mm	.4724	.016	.014	.008	.005
1/2"	.5000	.017	.015	.009	.005
14mm	.5512	.019	.017	.010	.006
9/16"	.5625	.019	.017	.010	.006
5/8"	.6250	.022	.019	.011	.007
16mm	.6299	.022	.019	.011	.007
18mm	.7087	.024	.021	.012	.008
3/4"	.7500	.026	.023	.013	.008
20mm	.7874	.027	.024	.014	.009



Garr Tool series 1600 spotting drills are not only useful for starting holes, but also for leaving the desired chamfer when programmed to the correct depth. Because spotting drills do not come to a true point, but have a small "flat" as shown in the figure to the left, the length deviation from the chart must be taken into account to leave the correct chamfer length. This chart gives the distance from the theoretical drill point 'B' to the actual drill point 'A'. These values can be used to compensate for the "flat" on our spotting drills in your calculations.