

Drilling Feed & Speed Chart for

Polyimide PCB Material Back Panel Format

(Panel Thickness > 0.150-inch)

Recommended Tycom Drill Series: Series 100, 150, 475, 480, 490, 580

(Note: Chart is based on 120K RPM Spindle Capability. Please use maximum spindle speed if listed RPM is unattainable)

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Max Hits	Chipload	SFM
	<i>(inch)</i>	<i>(Inches/min)</i>	<i>(k-rpm)</i>	<i>(inches/min)</i>	<i>(inches)</i>		<i>(mils/rev)</i>	
0.25mm	0.0098	39	120	800	-0.012	350	0.33	308
#87	0.0100	43	120	800	-0.012	350	0.35	314
#86	0.0105	46	120	800	-0.012	350	0.38	330
#85	0.0110	49	120	900	-0.013	350	0.41	345
#84	0.0115	49	116	900	-0.013	350	0.43	350
0.30mm	0.0118	52	113	1000	-0.013	500	0.46	350
#83	0.0120	54	111	1000	-0.013	500	0.48	350
#82	0.0125	55	107	1000	-0.013	500	0.52	350
#81	0.0130	60	103	1000	-0.013	500	0.58	350
#80	0.0135	60	99	1000	-0.013	500	0.61	350
0.35mm	0.0138	61	97	1000	-0.013	500	0.63	350
#79	0.0145	61	92	1000	-0.013	500	0.67	350
1/64	0.0156	62	86	1000	-0.014	500	0.72	350
0.40mm	0.0158	63	85	1000	-0.014	500	0.74	350
#78	0.0160	65	84	1000	-0.014	500	0.77	350
0.45mm	0.0177	63	76	1000	-0.014	500	0.83	350
#77	0.0180	65	74	1000	-0.014	500	0.87	350
0.50mm	0.0197	68	68	1000	-0.015	500	1.00	350
#76	0.0200	70	67	1000	-0.015	500	1.04	350
#75	0.0210	71	64	1000	-0.015	500	1.12	350
0.55mm	0.0217	73	62	1000	-0.015	500	1.18	350
#74	0.0225	75	59	1000	-0.015	500	1.27	350
0.60mm	0.0236	77	57	1000	-0.016	500	1.34	350
#73	0.0240	78	56	1000	-0.016	500	1.40	350
#72	0.0250	81	54	1000	-0.016	500	1.50	350
0.65mm	0.0256	82	52	1000	-0.016	500	1.57	350
#71	0.0260	83	51	1000	-0.016	500	1.63	350
0.70mm	0.0276	87	48	1000	-0.016	500	1.81	350
#70	0.0280	88	48	1000	-0.017	500	1.82	350
#69	0.0292	90	46	1000	-0.017	500	1.96	350
0.75mm	0.0295	91	45	1000	-0.017	500	2.02	350
#68	0.0310	92	43	1000	-0.017	500	2.14	350
1/32	0.0312	93	43	1000	-0.017	500	2.16	350
0.80mm	0.0315	94	42	1000	-0.017	500	2.24	350
#67	0.0320	95	42	1000	-0.017	500	2.26	350
#66	0.0330	97	41	1000	-0.018	500	2.37	350

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
	(inch)	(Inches/min)	(k-rpm)	(inches/min)	(inches)		(mils/rev)	
0.85mm	0.0335	98	40	1000	-0.018	500	2.45	350
#65	0.0350	95	38	1000	-0.018	500	2.50	350
0.90mm	0.0354	95	38	1000	-0.018	500	2.50	350
#64	0.0360	93	37	1000	-0.018	500	2.51	350
#63	0.0370	90	36	1000	-0.019	500	2.50	350
0.95mm	0.0374	90	36	1000	-0.019	500	2.50	350
#62	0.0380	88	35	1000	-0.019	500	2.51	350
#61	0.0390	85	34	1000	-0.019	500	2.50	350
1.00mm	0.0394	85	34	1000	-0.019	500	2.50	350
#60	0.0400	83	33	1000	-0.019	500	2.52	350
#59	0.0410	83	33	1000	-0.020	500	2.52	350
1.05mm	0.0413	80	32	1000	-0.020	500	2.50	350
#58	0.0420	80	32	1000	-0.020	500	2.50	350
#57	0.0430	78	31	1000	-0.020	500	2.52	350
1.10mm	0.0433	78	31	1000	-0.020	500	2.52	350
1.15mm	0.0453	75	30	1000	-0.021	500	2.50	350
#56	0.0465	73	29	1000	-0.021	500	2.52	350
3/64	0.0469	70	28	1000	-0.021	500	2.50	350
1.20mm	0.0472	70	28	1000	-0.021	500	2.50	350
1.25mm	0.0492	68	27	1000	-0.021	500	2.52	350
1.30mm	0.0512	65	26	1000	-0.022	500	2.50	350
#55	0.0520	65	26	1000	-0.022	500	2.50	350
1.35mm	0.0531	63	25	1000	-0.022	500	2.52	350
#54	0.0550	60	24	1000	-0.023	500	2.50	350
1.40mm	0.0551	60	24	1000	-0.023	500	2.50	350
1.45mm	0.0571	58	23	1000	-0.023	500	2.52	350
1.50mm	0.0591	58	23	1000	-0.024	500	2.52	350
#53	0.0595	55	22	1000	-0.024	500	2.50	350
1.55mm	0.0610	55	22	1000	-0.024	500	2.50	350
1/16	0.0625	53	21	1000	-0.025	500	2.52	350
1.60mm	0.0630	53	21	1000	-0.025	500	2.52	350
#52	0.0635	53	21	1000	-0.025	500	2.52	350
1.65mm	0.0650	53	21	1000	-0.025	500	2.52	350
1.70mm	0.0669	50	20	1000	-0.026	500	2.50	350
#51	0.0670	50	20	1000	-0.026	500	2.50	350
1.75mm	0.0689	50	20	1000	-0.026	500	2.50	361
#50	0.0700	50	20	1000	-0.026	500	2.50	366
1.80mm	0.0709	50	20	1000	-0.027	350	2.50	371
1.85mm	0.0728	50	20	1000	-0.027	350	2.50	381
#49	0.0730	50	20	1000	-0.027	350	2.50	382
1.90mm	0.0748	50	20	1000	-0.027	350	2.50	391
#48	0.0760	50	20	1000	-0.028	350	2.50	398
1.95mm	0.0768	50	20	1000	-0.028	350	2.50	402
5/64	0.0781	50	20	1000	-0.028	350	2.50	409
#47	0.0785	50	20	1000	-0.028	350	2.50	411
2.00mm	0.0787	50	20	1000	-0.028	350	2.50	412
2.05mm	0.0807	50	20	1000	-0.029	350	2.50	422
#46	0.0810	50	20	1000	-0.029	350	2.50	424

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
	(inch)	(Inches/min)	(k-rpm)	(inches/min)	(inches)		(mils/rev)	
#45	0.0820	50	20	1000	-0.029	350	2.50	429
2.10mm	0.0827	50	20	1000	-0.029	350	2.50	433
2.15mm	0.0846	50	20	1000	-0.030	350	2.50	443
#44	0.0860	50	20	1000	-0.030	350	2.50	450
2.20mm	0.0866	50	20	1000	-0.030	350	2.50	453
2.25mm	0.0886	50	20	1000	-0.031	350	2.50	464
#43	0.0890	50	20	1000	-0.031	350	2.50	466
2.30mm	0.0906	50	20	1000	-0.031	350	2.50	474
2.35mm	0.0925	50	20	1000	-0.032	350	2.50	484
#42	0.0935	50	20	1000	-0.032	350	2.50	489
3/32	0.0938	50	20	1000	-0.032	350	2.50	491
2.40mm	0.0945	50	20	1000	-0.032	350	2.50	495
#41	0.0960	50	20	1000	-0.032	350	2.50	502
2.45mm	0.0965	50	20	1000	-0.033	350	2.50	505
#40	0.0980	50	20	1000	-0.033	350	2.50	513
2.50mm	0.0984	50	20	1000	-0.033	350	2.50	515
#39	0.0995	50	20	1000	-0.033	350	2.50	521
2.55mm	0.1004	50	20	1000	-0.033	350	2.50	525
#38	0.1015	50	20	1000	-0.034	350	2.50	531
2.60mm	0.1024	50	20	1000	-0.034	350	2.50	536
#37	0.1040	50	20	1000	-0.034	350	2.50	544
2.65mm	0.1043	50	20	1000	-0.034	350	2.50	546
2.70mm	0.1063	50	20	1000	-0.035	350	2.50	556
#36	0.1065	50	20	1000	-0.035	350	2.50	557
2.75mm	0.1083	50	20	1000	-0.035	350	2.50	567
7/64	0.1094	50	20	1000	-0.036	350	2.50	573
#35	0.1100	50	20	1000	-0.036	350	2.50	576
2.80mm	0.1102	50	20	1000	-0.036	350	2.50	577
#34	0.1110	50	20	1000	-0.036	350	2.50	581
2.85mm	0.1122	50	20	1000	-0.036	350	2.50	587
#33	0.1130	50	20	1000	-0.036	350	2.50	591
2.90mm	0.1142	50	20	1000	-0.037	350	2.50	598
#32	0.1160	50	20	1000	-0.037	350	2.50	607
2.95mm	0.1161	50	20	1000	-0.037	350	2.50	608
3.00mm	0.1181	50	20	1000	-0.038	350	2.50	618
#31	0.1200	50	20	1000	-0.038	350	2.50	628
3.05mm	0.1201	50	20	1000	-0.038	350	2.50	629
3.10mm	0.1220	50	20	1000	-0.038	350	2.50	638
3.15mm	0.1240	50	20	1000	-0.039	350	2.50	649
1/8	0.1250	50	20	1000	-0.039	350	2.50	654
3.20mm	0.1260	40	20	1000	-0.018	250	2.00	659
3.25mm	0.1280	40	20	1000	-0.018	250	2.00	670
#30	0.1285	40	20	1000	-0.019	250	2.00	672
3.30mm	0.1299	40	20	1000	-0.019	250	2.00	680
3.35mm	0.1319	40	20	1000	-0.019	250	2.00	690
3.40mm	0.1339	40	20	1000	-0.019	250	2.00	701
3.45mm	0.1358	40	20	1000	-0.019	250	2.00	711
#29	0.1360	40	20	1000	-0.019	250	2.00	712

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
	(inch)	(Inches/min)	(k-rpm)	(inches/min)	(inches)		(mils/rev)	
3.50mm	0.1378	40	20	1000	-0.019	250	2.00	721
3.55mm	0.1398	40	20	1000	-0.019	250	2.00	732
#28	0.1405	40	20	1000	-0.019	250	2.00	735
9/64	0.1406	40	20	1000	-0.019	250	2.00	736
3.60mm	0.1417	40	20	1000	-0.019	250	2.00	742
3.65mm	0.1437	40	20	1000	-0.020	250	2.00	752
#27	0.1440	40	20	1000	-0.020	250	2.00	754
3.70mm	0.1457	40	20	1000	-0.020	250	2.00	762
#26	0.1470	40	20	1000	-0.020	250	2.00	769
3.75mm	0.1476	40	20	1000	-0.020	250	2.00	772
#25	0.1495	40	20	1000	-0.020	250	2.00	782
3.80mm	0.1496	40	20	1000	-0.020	250	2.00	783
3.85mm	0.1516	40	20	1000	-0.020	250	2.00	793
#24	0.1520	40	20	1000	-0.020	250	2.00	795
3.90mm	0.1535	40	20	1000	-0.020	250	2.00	803
#23	0.1540	40	20	1000	-0.020	250	2.00	806
3.95	0.1555	40	20	1000	-0.020	250	2.00	814
5/32	0.1562	30	20	1000	-0.020	250	1.50	817
#22	0.1570	30	20	1000	-0.020	250	1.50	822
4.00mm	0.1575	30	20	1000	-0.020	200	1.50	824
#21	0.1590	30	20	1000	-0.021	200	1.50	832
4.05mm	0.1594	30	20	1000	-0.021	200	1.50	834
#20	0.1610	30	20	1000	-0.021	200	1.50	843
4.10mm	0.1614	30	20	1000	-0.021	200	1.50	845
4.15mm	0.1634	30	20	1000	-0.021	200	1.50	855
4.20mm	0.1654	30	20	1000	-0.021	200	1.50	866
#19	0.1660	30	20	1000	-0.021	200	1.50	869
4.25mm	0.1673	30	20	1000	-0.021	200	1.50	876
4.30mm	0.1693	30	20	1000	-0.021	200	1.50	886
#18	0.1695	30	20	1000	-0.021	200	1.50	887
4.35mm	0.1713	30	20	1000	-0.021	200	1.50	896
11/64	0.1719	30	20	1000	-0.021	200	1.50	900
#17	0.1730	30	20	1000	-0.021	200	1.50	905
4.40mm	0.1732	30	20	1000	-0.021	200	1.50	906
4.45mm	0.1752	30	20	1000	-0.022	200	1.50	917
#16	0.1770	30	20	1000	-0.022	200	1.50	926
4.50mm	0.1772	30	20	1000	-0.022	200	1.50	927
4.55mm	0.1792	30	20	1000	-0.022	200	1.50	938
#15	0.1800	30	20	1000	-0.022	200	1.50	942
4.60mm	0.1811	30	20	1000	-0.022	200	1.50	948
#14	0.1820	30	20	1000	-0.022	200	1.50	952
4.65mm	0.1831	30	20	1000	-0.022	200	1.50	958
#13	0.1850	30	20	1000	-0.022	200	1.50	968
4.70mm	0.1850	30	20	1000	-0.022	200	1.50	968
4.75mm	0.1870	30	20	1000	-0.022	200	1.50	979
3/16	0.1875	30	20	1000	-0.022	200	1.50	981
4.80mm	0.1890	25	20	1000	-0.023	200	1.25	989
#12	0.1890	25	20	1000	-0.023	200	1.25	989

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
4.85mm	0.1909	25	20	1000	-0.023	200	1.25	999
#11	0.1910	25	20	1000	-0.023	200	1.25	1000
4.90mm	0.1929	25	20	1000	-0.023	200	1.25	1010
#10	0.1935	25	20	1000	-0.023	200	1.25	1013
4.95mm	0.1949	25	20	1000	-0.023	200	1.25	1020
#9	0.1960	25	20	1000	-0.023	200	1.25	1026
5.00mm	0.1968	25	20	1000	-0.023	200	1.25	1030
5.05mm	0.1988	25	20	1000	-0.023	200	1.25	1040
#8	0.1990	25	20	1000	-0.023	200	1.25	1041
5.10mm	0.2008	25	20	1000	-0.023	200	1.25	1051
#7	0.2010	23	20	1000	-0.023	150	1.15	1052
5.15mm	0.2028	23	20	1000	-0.023	150	1.15	1061
13/64	0.2031	23	20	1000	-0.023	150	1.15	1063
#6	0.2040	23	20	1000	-0.024	150	1.15	1068
5.20mm	0.2047	23	20	1000	-0.024	150	1.15	1071
#5	0.2055	23	20	1000	-0.024	150	1.15	1075
5.25mm	0.2067	23	20	1000	-0.024	150	1.15	1082
5.30mm	0.2087	23	20	1000	-0.024	150	1.15	1092
#4	0.2090	23	20	1000	-0.024	150	1.15	1094
5.35mm	0.2106	23	20	1000	-0.024	150	1.15	1102
5.40mm	0.2126	23	20	1000	-0.024	150	1.15	1113
#3	0.2130	23	20	1000	-0.024	150	1.15	1115
5.45mm	0.2146	23	20	1000	-0.024	150	1.15	1123
5.50mm	0.2165	23	20	1000	-0.024	150	1.15	1133
5.55mm	0.2185	23	20	1000	-0.024	150	1.15	1143
7/32	0.2188	23	20	1000	-0.024	150	1.15	1145
5.60mm	0.2205	23	20	1000	-0.025	150	1.15	1154
#2	0.2210	23	20	1000	-0.025	150	1.15	1157
5.65mm	0.2224	23	20	1000	-0.025	150	1.15	1164
5.70mm	0.2244	23	20	1000	-0.025	150	1.15	1174
5.75mm	0.2264	23	20	1000	-0.025	150	1.15	1185
#1	0.2280	23	20	1000	-0.025	150	1.15	1193
5.80mm	0.2283	23	20	1000	-0.025	150	1.15	1195
5.85mm	0.2302	23	20	1000	-0.025	150	1.15	1205
5.90mm	0.2323	23	20	1000	-0.025	150	1.15	1216
A	0.2340	23	20	1000	-0.025	100	1.15	1225
5.95mm	0.2343	23	20	1000	-0.026	100	1.15	1226
15/64	0.2344	23	20	1000	-0.026	100	1.15	1227
6.00mm	0.2362	23	20	1000	-0.026	100	1.15	1236
B	0.2380	23	20	1000	-0.026	100	1.15	1246
6.05mm	0.2382	23	20	1000	-0.026	100	1.15	1247
6.10mm	0.2402	23	20	1000	-0.026	100	1.15	1257
C	0.2420	23	20	1000	-0.026	100	1.15	1266
6.15mm	0.2421	23	20	1000	-0.026	100	1.15	1267
6.20mm	0.2441	23	20	1000	-0.026	100	1.15	1277
D	0.2460	23	20	1000	-0.026	100	1.15	1287
6.25mm	0.2461	23	20	1000	-0.026	100	1.15	1288
6.30mm	0.2480	23	20	1000	-0.026	100	1.15	1298
6.35mm	0.2500	23	20	1000	-0.027	100	1.15	1308
6.40mm	0.2520	23	20	1000	-0.027	100	1.15	1319

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6.50mm	0.2559	23	20	1000	-0.027	100	1.15	1339
F	0.2570	23	20	1000	-0.027	100	1.15	1345
6.60mm	0.2598	23	20	1000	-0.027	100	1.15	1360

In some cases, there may be an opportunity to increase the chipload based on the application's robustness. Variables such as machine technology and condition, stack support materials, and Tycom design selection may allow the increased throughput with higher chiploads. Multiply the recommended chipload by 1.15 to reach the higher chipload.

If the application is not as robust due to heavy glass, high copper content, tight annular ring requirements, or similar, multiply the recommended chipload by 0.85.

