

Drilling Feed & Speed Chart for *Polyimide PCB Material*

Recommended Tycom Drill Series: **Series 100, 150, 450, 460, 475, 480, 580**

(Note: Chart is based on 80K 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
	(inch)	(Inches/min)	(k-rpm)	(inches/min)	(inches)		(mils/rev)	
0.10mm	0.0040	14	80	200	-0.011	200	0.18	84
0.13mm	0.0050	16	80	300	-0.011	250	0.20	105
0.15mm	0.0059	17	80	300	-0.011	250	0.21	124
#96	0.0063	18	80	400	-0.011	300	0.23	132
#95	0.0067	18	80	400	-0.012	300	0.23	140
#94	0.0071	20	80	500	-0.012	300	0.25	149
#93	0.0075	22	80	500	-0.012	300	0.28	157
#92	0.0079	24	80	500	-0.012	400	0.30	165
#91	0.0083	26	80	600	-0.012	400	0.33	174
#90	0.0087	28	80	600	-0.012	400	0.35	182
#89	0.0091	30	80	700	-0.012	400	0.38	190
#88	0.0095	32	80	700	-0.012	500	0.40	199
0.25mm	0.0098	33	80	800	-0.012	500	0.41	205
#87	0.0100	34	80	800	-0.012	500	0.43	209
#86	0.0105	36	80	800	-0.012	500	0.45	220
#85	0.0110	38	80	900	-0.013	500	0.48	230
#84	0.0115	40	80	900	-0.013	500	0.50	241
0.30mm	0.0118	43	80	1000	-0.013	750	0.54	247
#83	0.0120	46	80	1000	-0.013	750	0.58	251
#82	0.0125	49	80	1000	-0.013	750	0.61	262
#81	0.0130	54	80	1000	-0.013	750	0.68	272
#80	0.0135	58	80	1000	-0.013	750	0.73	283
0.35mm	0.0138	59	80	1000	-0.013	750	0.74	289
#79	0.0145	62	80	1000	-0.013	750	0.78	304
1/64	0.0156	68	80	1000	-0.014	750	0.85	327
0.40mm	0.0158	70	80	1000	-0.014	750	0.88	331
#78	0.0160	72	80	1000	-0.014	750	0.90	335
0.45mm	0.0177	74	76	1000	-0.014	750	0.97	350
#77	0.0180	76	74	1000	-0.014	750	1.03	350
0.50mm	0.0197	80	68	1000	-0.015	750	1.18	350
#76	0.0200	82	67	1000	-0.015	750	1.22	350
#75	0.0210	84	64	1000	-0.015	750	1.31	350
0.55mm	0.0217	86	62	1000	-0.015	750	1.39	350
#74	0.0225	88	59	1000	-0.015	750	1.49	350
0.60mm	0.0236	90	57	1000	-0.016	750	1.58	350
#73	0.0240	92	56	1000	-0.016	750	1.64	350

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
	(inch)	(Inches/min)	(k-rpm)	(inches/min)	(inches)		(mils/rev)	
#72	0.0250	95	54	1000	-0.016	750	1.76	350
0.65mm	0.0256	96	52	1000	-0.016	750	1.85	350
#71	0.0260	98	51	1000	-0.016	750	1.92	350
0.70mm	0.0276	102	48	1000	-0.016	750	2.13	350
#70	0.0280	103	48	1000	-0.017	750	2.15	350
#69	0.0292	104	46	1000	-0.017	750	2.26	350
0.75mm	0.0295	105	45	1000	-0.017	750	2.33	350
#68	0.0310	108	43	1000	-0.017	750	2.50	350
1/32	0.0312	108	43	1000	-0.017	750	2.50	350
0.80mm	0.0315	105	42	1000	-0.017	750	2.50	350
#67	0.0320	105	42	1000	-0.017	750	2.50	350
#66	0.0330	103	41	1000	-0.018	750	2.50	350
0.85mm	0.0335	100	40	1000	-0.018	750	2.50	350
#65	0.0350	95	38	1000	-0.018	750	2.50	350
0.90mm	0.0354	95	38	1000	-0.018	750	2.50	350
#64	0.0360	93	37	1000	-0.018	750	2.50	350
#63	0.0370	90	36	1000	-0.019	750	2.50	350
0.95mm	0.0374	90	36	1000	-0.019	750	2.50	350
#62	0.0380	88	35	1000	-0.019	750	2.50	350
#61	0.0390	85	34	1000	-0.019	750	2.50	350
1.00mm	0.0394	85	34	1000	-0.019	750	2.50	350
#60	0.0400	83	33	1000	-0.019	750	2.50	350
#59	0.0410	83	33	1000	-0.020	750	2.50	350
1.05mm	0.0413	80	32	1000	-0.020	750	2.50	350
#58	0.0420	80	32	1000	-0.020	750	2.50	350
#57	0.0430	78	31	1000	-0.020	750	2.50	350
1.10mm	0.0433	78	31	1000	-0.020	750	2.50	350
1.15mm	0.0453	75	30	1000	-0.021	750	2.50	350
#56	0.0465	73	29	1000	-0.021	750	2.50	350
3/64	0.0469	70	28	1000	-0.021	750	2.50	350
1.20mm	0.0472	70	28	1000	-0.021	750	2.50	350
1.25mm	0.0492	68	27	1000	-0.021	750	2.50	350
1.30mm	0.0512	65	26	1000	-0.022	750	2.50	350
#55	0.0520	65	26	1000	-0.022	750	2.50	350
1.35mm	0.0531	63	25	1000	-0.022	750	2.50	350
#54	0.0550	60	24	1000	-0.023	750	2.50	350
1.40mm	0.0551	60	24	1000	-0.023	750	2.50	350
1.45mm	0.0571	58	23	1000	-0.023	750	2.50	350
1.50mm	0.0591	58	23	1000	-0.024	750	2.50	350
#53	0.0595	55	22	1000	-0.024	750	2.50	350
1.55mm	0.0610	55	22	1000	-0.024	750	2.50	350
1/16	0.0625	53	21	1000	-0.025	750	2.50	350
1.60mm	0.0630	53	21	1000	-0.025	750	2.50	350
#52	0.0635	53	21	1000	-0.025	750	2.50	350
1.65mm	0.0650	53	21	1000	-0.025	750	2.50	350
1.70mm	0.0669	50	20	1000	-0.026	750	2.50	350
#51	0.0670	50	20	1000	-0.026	750	2.50	350
1.75mm	0.0689	50	20	1000	-0.026	750	2.50	361

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
	(inch)	(Inches/min)	(k-rpm)	(inches/min)	(inches)		(mils/rev)	
#50	0.0700	50	20	1000	-0.026	750	2.50	366
1.80mm	0.0709	50	20	1000	-0.027	500	2.50	371
1.85mm	0.0728	50	20	1000	-0.027	500	2.50	381
#49	0.0730	50	20	1000	-0.027	500	2.50	382
1.90mm	0.0748	50	20	1000	-0.027	500	2.50	391
#48	0.0760	50	20	1000	-0.028	500	2.50	398
1.95mm	0.0768	50	20	1000	-0.028	500	2.50	402
5/64	0.0781	50	20	1000	-0.028	500	2.50	409
#47	0.0785	50	20	1000	-0.028	500	2.50	411
2.00mm	0.0787	50	20	1000	-0.028	500	2.50	412
2.05mm	0.0807	50	20	1000	-0.029	500	2.50	422
#46	0.0810	50	20	1000	-0.029	500	2.50	424
#45	0.0820	50	20	1000	-0.029	500	2.50	429
2.10mm	0.0827	50	20	1000	-0.029	500	2.50	433
2.15mm	0.0846	50	20	1000	-0.030	500	2.50	443
#44	0.0860	50	20	1000	-0.030	500	2.50	450
2.20mm	0.0866	50	20	1000	-0.030	500	2.50	453
2.25mm	0.0886	50	20	1000	-0.031	500	2.50	464
#43	0.0890	50	20	1000	-0.031	500	2.50	466
2.30mm	0.0906	50	20	1000	-0.031	500	2.50	474
2.35mm	0.0925	50	20	1000	-0.032	500	2.50	484
#42	0.0935	50	20	1000	-0.032	500	2.50	489
3/32	0.0938	50	20	1000	-0.032	500	2.50	491
2.40mm	0.0945	50	20	1000	-0.032	500	2.50	495
#41	0.0960	50	20	1000	-0.032	500	2.50	502
2.45mm	0.0965	50	20	1000	-0.033	500	2.50	505
#40	0.0980	50	20	1000	-0.033	500	2.50	513
2.50mm	0.0984	50	20	1000	-0.033	500	2.50	515
#39	0.0995	50	20	1000	-0.033	500	2.50	521
2.55mm	0.1004	50	20	1000	-0.033	500	2.50	525
#38	0.1015	50	20	1000	-0.034	500	2.50	531
2.60mm	0.1024	50	20	1000	-0.034	500	2.50	536
#37	0.1040	50	20	1000	-0.034	500	2.50	544
2.65mm	0.1043	50	20	1000	-0.034	500	2.50	546
2.70mm	0.1063	50	20	1000	-0.035	500	2.50	556
#36	0.1065	50	20	1000	-0.035	500	2.50	557
2.75mm	0.1083	50	20	1000	-0.035	500	2.50	567
7/64	0.1094	50	20	1000	-0.036	500	2.50	573
#35	0.1100	50	20	1000	-0.036	500	2.50	576
2.80mm	0.1102	50	20	1000	-0.036	500	2.50	577
#34	0.1110	50	20	1000	-0.036	500	2.50	581
2.85mm	0.1122	50	20	1000	-0.036	500	2.50	587
#33	0.1130	50	20	1000	-0.036	500	2.50	591
2.90mm	0.1142	50	20	1000	-0.037	500	2.50	598
#32	0.1160	50	20	1000	-0.037	500	2.50	607
2.95mm	0.1161	50	20	1000	-0.037	500	2.50	608
3.00mm	0.1181	50	20	1000	-0.038	500	2.50	618
#31	0.1200	50	20	1000	-0.038	500	2.50	628

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
	(inch)	(Inches/min)	(k-rpm)	(inches/min)	(inches)		(mils/rev)	
3.05mm	0.1201	50	20	1000	-0.038	500	2.50	629
3.10mm	0.1220	50	20	1000	-0.038	500	2.50	638
3.15mm	0.1240	50	20	1000	-0.039	500	2.50	649
1/8	0.1250	50	20	1000	-0.039	500	2.50	654
3.20mm	0.1260	40	20	1000	-0.018	400	2.00	659
3.25mm	0.1280	40	20	1000	-0.018	400	2.00	670
#30	0.1285	40	20	1000	-0.019	400	2.00	672
3.30mm	0.1299	40	20	1000	-0.019	400	2.00	680
3.35mm	0.1319	40	20	1000	-0.019	400	2.00	690
3.40mm	0.1339	40	20	1000	-0.019	400	2.00	701
3.45mm	0.1358	40	20	1000	-0.019	400	2.00	711
#29	0.1360	40	20	1000	-0.019	400	2.00	712
3.50mm	0.1378	40	20	1000	-0.019	400	2.00	721
3.55mm	0.1398	40	20	1000	-0.019	400	2.00	732
#28	0.1405	40	20	1000	-0.019	400	2.00	735
9/64	0.1406	40	20	1000	-0.019	400	2.00	736
3.60mm	0.1417	40	20	1000	-0.019	400	2.00	742
3.65mm	0.1437	40	20	1000	-0.020	400	2.00	752
#27	0.1440	40	20	1000	-0.020	400	2.00	754
3.70mm	0.1457	40	20	1000	-0.020	400	2.00	762
#26	0.1470	40	20	1000	-0.020	400	2.00	769
3.75mm	0.1476	40	20	1000	-0.020	400	2.00	772
#25	0.1495	40	20	1000	-0.020	400	2.00	782
3.80mm	0.1496	40	20	1000	-0.020	400	2.00	783
3.85mm	0.1516	40	20	1000	-0.020	400	2.00	793
#24	0.1520	40	20	1000	-0.020	400	2.00	795
3.90mm	0.1535	40	20	1000	-0.020	400	2.00	803
#23	0.1540	40	20	1000	-0.020	400	2.00	806
3.95	0.1555	40	20	1000	-0.020	400	2.00	814
5/32	0.1562	30	20	1000	-0.020	400	1.50	817
#22	0.1570	30	20	1000	-0.020	400	1.50	822
4.00mm	0.1575	30	20	1000	-0.020	300	1.50	824
#21	0.1590	30	20	1000	-0.021	300	1.50	832
4.05mm	0.1594	30	20	1000	-0.021	300	1.50	834
#20	0.1610	30	20	1000	-0.021	300	1.50	843
4.10mm	0.1614	30	20	1000	-0.021	300	1.50	845
4.15mm	0.1634	30	20	1000	-0.021	300	1.50	855
4.20mm	0.1654	30	20	1000	-0.021	300	1.50	866
#19	0.1660	30	20	1000	-0.021	300	1.50	869
4.25mm	0.1673	30	20	1000	-0.021	300	1.50	876
4.30mm	0.1693	30	20	1000	-0.021	300	1.50	886
#18	0.1695	30	20	1000	-0.021	300	1.50	887
4.35mm	0.1713	30	20	1000	-0.021	300	1.50	896
11/64	0.1719	30	20	1000	-0.021	300	1.50	900
#17	0.1730	30	20	1000	-0.021	300	1.50	905
4.40mm	0.1732	30	20	1000	-0.021	300	1.50	906
4.45mm	0.1752	30	20	1000	-0.022	300	1.50	917
#16	0.1770	30	20	1000	-0.022	300	1.50	926

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
	(inch)	(Inches/min)	(k-rpm)	(inches/min)	(inches)		(mils/rev)	
4.50mm	0.1772	30	20	1000	-0.022	300	1.50	927
4.55mm	0.1792	30	20	1000	-0.022	300	1.50	938
#15	0.1800	30	20	1000	-0.022	300	1.50	942
4.60mm	0.1811	30	20	1000	-0.022	300	1.50	948
#14	0.1820	30	20	1000	-0.022	300	1.50	952
4.65mm	0.1831	30	20	1000	-0.022	300	1.50	958
#13	0.1850	30	20	1000	-0.022	300	1.50	968
4.70mm	0.1850	30	20	1000	-0.022	300	1.50	968
4.75mm	0.1870	30	20	1000	-0.022	300	1.50	979
3/16	0.1875	30	20	1000	-0.022	300	1.50	981
4.80mm	0.1890	25	20	1000	-0.023	300	1.25	989
#12	0.1890	25	20	1000	-0.023	300	1.25	989
4.85mm	0.1909	25	20	1000	-0.023	300	1.25	999
#11	0.1910	25	20	1000	-0.023	300	1.25	1000
4.90mm	0.1929	25	20	1000	-0.023	300	1.25	1010
#10	0.1935	25	20	1000	-0.023	300	1.25	1013
4.95mm	0.1949	25	20	1000	-0.023	300	1.25	1020
#9	0.1960	25	20	1000	-0.023	300	1.25	1026
5.00mm	0.1968	25	20	1000	-0.023	300	1.25	1030
5.05mm	0.1988	25	20	1000	-0.023	300	1.25	1040
#8	0.1990	25	20	1000	-0.023	300	1.25	1041
5.10mm	0.2008	25	20	1000	-0.023	300	1.25	1051
#7	0.2010	23	20	1000	-0.023	250	1.15	1052
5.15mm	0.2028	23	20	1000	-0.023	250	1.15	1061
13/64	0.2031	23	20	1000	-0.023	250	1.15	1063
#6	0.2040	23	20	1000	-0.024	250	1.15	1068
5.20mm	0.2047	23	20	1000	-0.024	250	1.15	1071
#5	0.2055	23	20	1000	-0.024	250	1.15	1075
5.25mm	0.2067	23	20	1000	-0.024	250	1.15	1082
5.30mm	0.2087	23	20	1000	-0.024	250	1.15	1092
#4	0.2090	23	20	1000	-0.024	250	1.15	1094
5.35mm	0.2106	23	20	1000	-0.024	250	1.15	1102
5.40mm	0.2126	23	20	1000	-0.024	250	1.15	1113
#3	0.2130	23	20	1000	-0.024	250	1.15	1115
5.45mm	0.2146	23	20	1000	-0.024	250	1.15	1123
5.50mm	0.2165	23	20	1000	-0.024	250	1.15	1133
5.55mm	0.2185	23	20	1000	-0.024	250	1.15	1143
7/32	0.2188	23	20	1000	-0.024	250	1.15	1145
5.60mm	0.2205	23	20	1000	-0.025	250	1.15	1154
#2	0.2210	23	20	1000	-0.025	250	1.15	1157
5.65mm	0.2224	23	20	1000	-0.025	250	1.15	1164
5.70mm	0.2244	23	20	1000	-0.025	250	1.15	1174
5.75mm	0.2264	23	20	1000	-0.025	250	1.15	1185
#1	0.2280	23	20	1000	-0.025	200	1.15	1193
5.80mm	0.2283	23	20	1000	-0.025	200	1.15	1195
5.85mm	0.2302	23	20	1000	-0.025	200	1.15	1205
5.90mm	0.2323	23	20	1000	-0.025	200	1.15	1216
A	0.2340	23	20	1000	-0.025	150	1.15	1225

Size	Diameter	Feed	Speed	Retract	Z-Axis Offset	Hits	Chipload	SFM
	(inch)	(Inches/min)	(k-rpm)	(inches/min)	(inches)		(mils/rev)	
5.95mm	0.2343	23	20	1000	-0.026	150	1.15	1226
15/64	0.2344	23	20	1000	-0.026	150	1.15	1227
6.00mm	0.2362	23	20	1000	-0.026	150	1.15	1236
B	0.2380	23	20	1000	-0.026	150	1.15	1246
6.05mm	0.2382	23	20	1000	-0.026	150	1.15	1247
6.10mm	0.2402	23	20	1000	-0.026	150	1.15	1257
C	0.2420	23	20	1000	-0.026	150	1.15	1266
6.15mm	0.2421	23	20	1000	-0.026	150	1.15	1267
6.20mm	0.2441	23	20	1000	-0.026	150	1.15	1277
D	0.2460	23	20	1000	-0.026	150	1.15	1287
6.25mm	0.2461	23	20	1000	-0.026	150	1.15	1288
6.30mm	0.2480	23	20	1000	-0.026	150	1.15	1298
6.35mm	0.2500	23	20	1000	-0.027	150	1.15	1308
6.40mm	0.2520	23	20	1000	-0.027	150	1.15	1319
6.50mm	0.2559	23	20	1000	-0.027	150	1.15	1339
F	0.2570	23	20	1000	-0.027	150	1.15	1345
6.60mm	0.2598	23	20	1000	-0.027	150	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.

