

## Aramid PCB Material

Recommended Drill Series: 100, 150, 430, 460, 480, 560, 580

Drill Size	Diameter (inch)	Feed (inch/min)	Speed (k-rpm)	Retract (inch/min)	Z-Axis Offset (inches)	Max Hits	Chipload (mm/rev)	SFM
0.10mm	0.0040	46	160	200	-0.011	1000	0.29	167
0.13mm	0.0050	50	160	300	-0.011	1000	0.31	209
0.15mm	0.0059	54	160	300	-0.011	1000	0.34	247
#96	0.0063	58	160	400	-0.011	1000	0.36	264
#95	0.0067	62	160	400	-0.012	1000	0.39	281
#94	0.0071	66	160	500	-0.012	1000	0.41	297
#93	0.0075	70	160	500	-0.012	1000	0.44	314
#92	0.0079	74	160	500	-0.012	1000	0.46	331
#91	0.0083	76	157	600	-0.012	1200	0.48	340
#90	0.0087	78	149	600	-0.012	1200	0.52	340
#89	0.0091	80	143	700	-0.012	1200	0.56	340
#88	0.0095	82	137	700	-0.012	1200	0.60	340
0.25mm	0.0098	84	133	800	-0.012	1200	0.63	340
#87	0.0100	86	130	800	-0.012	1200	0.66	340
#86	0.0105	88	124	800	-0.012	1500	0.71	340
#85	0.0110	90	118	900	-0.013	1500	0.76	340
#84	0.0115	95	113	900	-0.013	1500	0.84	340
0.30mm	0.0118	98	110	1000	-0.013	1500	0.89	340
#83	0.0120	100	108	1000	-0.013	1500	0.93	340
#82	0.0125	102	104	1000	-0.013	1500	0.98	340
#81	0.0130	104	100	1000	-0.013	1500	1.04	340
#80	0.0135	106	96	1000	-0.013	1500	1.10	340
0.35mm	0.0138	108	94	1000	-0.013	1500	1.15	340
#79	0.0145	109	90	1000	-0.013	1500	1.21	340
1/64	0.0156	107	83	1000	-0.014	1500	1.29	340
0.40mm	0.0158	107	82	1000	-0.014	1500	1.30	340
#78	0.0160	107	81	1000	-0.014	1500	1.32	340
0.45mm	0.0177	105	73	1000	-0.014	1500	1.44	340
#77	0.0180	105	72	1000	-0.014	1500	1.46	340
0.50mm	0.0197	98	66	1000	-0.015	1500	1.48	340
#76	0.0200	96	65	1000	-0.015	1500	1.48	340
#75	0.0210	93	62	1000	-0.015	1500	1.50	340
0.55mm	0.0217	90	60	1000	-0.015	1500	1.50	340
#74	0.0225	87	58	1000	-0.015	1500	1.50	340
0.60mm	0.0236	82	55	1000	-0.016	1500	1.49	340
#73	0.0240	81	54	1000	-0.016	1500	1.50	340
#72	0.0250	78	52	1000	-0.016	1500	1.50	340
0.65mm	0.0256	76	51	1000	-0.016	1500	1.50	340
#71	0.0260	75	50	1000	-0.016	1500	1.50	340
0.70mm	0.0276	71	47	1000	-0.016	1500	1.50	340
#70	0.0280	69	46	1000	-0.017	1500	1.50	340
#69	0.0292	66	44	1000	-0.017	1500	1.50	340
0.75mm	0.0295	66	44	1000	-0.017	1500	1.50	340
#68	0.0310	63	42	1000	-0.017	1500	1.50	340
1/32	0.0312	63	42	1000	-0.017	1500	1.50	340
0.80mm	0.0315	61	41	1000	-0.017	1500	1.50	340
#67	0.0320	61	41	1000	-0.017	1500	1.50	340
#66	0.0330	59	39	1000	-0.018	1500	1.50	340
0.85mm	0.0335	59	39	1000	-0.018	1500	1.50	340
#65	0.0350	56	37	1000	-0.018	1500	1.50	340
0.90mm	0.0354	56	37	1000	-0.018	1500	1.50	340
#64	0.0360	54	36	1000	-0.018	1500	1.50	340
#63	0.0370	53	35	1000	-0.019	1500	1.50	340
0.95mm	0.0374	51	34	1000	-0.019	1500	1.50	340
#62	0.0380	51	34	1000	-0.019	1500	1.50	340
#61	0.0390	49	33	1000	-0.019	1500	1.50	340
1.00mm	0.0394	49	33	1000	-0.019	1500	1.50	340
#60	0.0400	48	32	1000	-0.019	1500	1.50	340
#59	0.0410	48	32	1000	-0.020	1500	1.50	340
1.05mm	0.0413	46	31	1000	-0.020	1500	1.50	340
#58	0.0420	46	31	1000	-0.020	1500	1.50	340
#57	0.0430	45	30	1000	-0.020	1500	1.50	340
1.10mm	0.0433	45	30	1000	-0.020	1500	1.50	340
1.15mm	0.0453	43	29	1000	-0.021	1500	1.50	340

Note: This information is based on 160K RPM Spindle Capability. Please use maximum spindle speed if listed RPM is unattainable

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Drill Size	Diameter (inch)	Feed (inch/min)	Speed (k-rpm)	Retract (inch/min)	Z-Axis Offset (inches)	Max Hits	Chipload (mm/rev)	SFM
#56	0.0465	42	28	1000	-0.021	1500	1.50	340
3/64	0.0469	42	28	1000	-0.021	1500	1.50	340
1.20mm	0.0472	42	28	1000	-0.021	1500	1.50	340
1.25mm	0.0492	39	26	1000	-0.021	1500	1.50	340
1.30mm	0.0512	38	25	1000	-0.022	1500	1.50	340
#55	0.0520	38	25	1000	-0.022	1500	1.50	340
1.35mm	0.0531	36	24	1000	-0.022	1500	1.50	340
#54	0.0550	36	24	1000	-0.023	1500	1.50	340
1.40mm	0.0551	36	24	1000	-0.023	1500	1.50	340
1.45mm	0.0571	35	23	1000	-0.023	1500	1.50	340
1.50mm	0.0591	33	22	1000	-0.024	1500	1.50	340
#53	0.0595	33	22	1000	-0.024	1500	1.50	340
1.55mm	0.0610	32	21	1000	-0.024	1500	1.50	340
1/16	0.0625	32	21	1000	-0.025	1500	1.50	340
1.60mm	0.0630	32	21	1000	-0.025	1500	1.50	340
#52	0.0635	32	21	1000	-0.025	1500	1.50	340
1.65mm	0.0650	30	20	1000	-0.025	1500	1.50	340
1.70mm	0.0669	30	20	1000	-0.026	1500	1.50	350
#51	0.0670	30	20	1000	-0.026	1500	1.50	351
1.75mm	0.0689	30	20	1000	-0.026	1500	1.50	361
#50	0.0700	30	20	1000	-0.026	1500	1.50	366
1.80mm	0.0709	30	20	1000	-0.027	1500	1.50	371
1.85mm	0.0728	30	20	1000	-0.027	1500	1.50	381
#49	0.0730	30	20	1000	-0.027	1500	1.50	382
1.90mm	0.0748	30	20	1000	-0.027	1500	1.50	391
#48	0.0760	30	20	1000	-0.028	1500	1.50	398
1.95mm	0.0768	30	20	1000	-0.028	1500	1.50	402
5/64	0.0781	30	20	1000	-0.028	1500	1.50	409
#47	0.0785	30	20	1000	-0.028	1200	1.50	411
2.00mm	0.0787	30	20	1000	-0.028	1200	1.50	412
2.05mm	0.0807	30	20	1000	-0.029	1200	1.50	422
#46	0.0810	30	20	1000	-0.029	1200	1.50	424
#45	0.0820	30	20	1000	-0.029	1200	1.50	429
2.10mm	0.0827	30	20	1000	-0.029	1200	1.50	433
2.15mm	0.0846	30	20	1000	-0.030	1200	1.50	443
#44	0.0860	30	20	1000	-0.030	1200	1.50	450
2.20mm	0.0866	30	20	1000	-0.030	1200	1.50	453
2.25mm	0.0886	30	20	1000	-0.031	1200	1.50	464
#43	0.0890	30	20	1000	-0.031	1200	1.50	466
2.30mm	0.0906	30	20	1000	-0.031	1200	1.50	474
2.35mm	0.0925	30	20	1000	-0.032	1200	1.50	484
#42	0.0935	30	20	1000	-0.032	1200	1.50	489
3/32	0.0938	30	20	1000	-0.032	1200	1.50	491
2.40mm	0.0945	30	20	1000	-0.032	1200	1.50	495
#41	0.0960	30	20	1000	-0.032	1200	1.50	502
2.45mm	0.0965	30	20	1000	-0.033	1200	1.50	505
#40	0.0980	30	20	1000	-0.033	1200	1.50	513
2.50mm	0.0984	30	20	1000	-0.033	1200	1.50	515
#39	0.0995	30	20	1000	-0.033	1200	1.50	521
2.55mm	0.1004	30	20	1000	-0.033	1200	1.50	525
#38	0.1015	30	20	1000	-0.034	1200	1.50	531
2.60mm	0.1024	30	20	1000	-0.034	1200	1.50	536
#37	0.1040	30	20	1000	-0.034	1200	1.50	544
2.65mm	0.1043	30	20	1000	-0.034	1200	1.50	546
2.70mm	0.1063	30	20	1000	-0.035	1200	1.50	556
#36	0.1065	30	20	1000	-0.035	1200	1.50	557
2.75mm	0.1083	30	20	1000	-0.035	1200	1.50	567
7/64	0.1094	30	20	1000	-0.036	1200	1.50	573
#35	0.1100	30	20	1000	-0.036	1200	1.50	576
2.80mm	0.1102	30	20	1000	-0.036	1200	1.50	577
#34	0.1110	30	20	1000	-0.036	1200	1.50	581
2.85mm	0.1122	30	20	1000	-0.036	1200	1.50	587
#33	0.1130	30	20	1000	-0.036	1200	1.50	591
2.90mm	0.1142	30	20	1000	-0.037	1200	1.50	598
#32	0.1160	30	20	1000	-0.037	1200	1.50	607
2.95mm	0.1161	30	20	1000	-0.037	1200	1.50	608
3.00mm	0.1181	30	20	1000	-0.038	1200	1.50	618
#31	0.1200	30	20	1000	-0.038	1200	1.50	628
3.05mm	0.1201	30	20	1000	-0.038	1200	1.50	629
3.10mm	0.1220	30	20	1000	-0.038	1200	1.50	638
3.15mm	0.1240	30	20	1000	-0.039	1200	1.50	649
1/8	0.1250	30	20	1000	-0.039	1200	1.50	654

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Drill Size	Diameter (inch)	Feed (inch/min)	Speed (k-rpm)	Retract (inch/min)	Z-Axis Offset (inches)	Max Hits	Chipload (mm/rev)	SFM
3.20mm	0.1260	30	20	1000	-0.018	1000	1.50	659
3.25mm	0.1280	30	20	1000	-0.018	1000	1.50	670
#30	0.1285	30	20	1000	-0.019	1000	1.50	672
3.30mm	0.1299	30	20	1000	-0.019	1000	1.50	680
3.35mm	0.1319	30	20	1000	-0.019	1000	1.50	690
3.40mm	0.1339	30	20	1000	-0.019	1000	1.50	701
3.45mm	0.1358	30	20	1000	-0.019	1000	1.50	711
#29	0.1360	30	20	1000	-0.019	1000	1.50	712
3.50mm	0.1378	30	20	1000	-0.019	1000	1.50	721
3.55mm	0.1398	30	20	1000	-0.019	1000	1.50	732
#28	0.1405	30	20	1000	-0.019	1000	1.50	735
9/64	0.1406	30	20	1000	-0.019	1000	1.50	736
3.60mm	0.1417	30	20	1000	-0.019	1000	1.50	742
3.65mm	0.1437	30	20	1000	-0.020	1000	1.50	752
#27	0.1440	30	20	1000	-0.020	1000	1.50	754
3.70mm	0.1457	30	20	1000	-0.020	1000	1.50	762
#26	0.1470	30	20	1000	-0.020	1000	1.50	769
3.75mm	0.1476	30	20	1000	-0.020	1000	1.50	772
#25	0.1495	30	20	1000	-0.020	1000	1.50	782
3.80mm	0.1496	30	20	1000	-0.020	1000	1.50	783
3.85mm	0.1516	30	20	1000	-0.020	1000	1.50	793
#24	0.1520	30	20	1000	-0.020	1000	1.50	795
3.90mm	0.1535	30	20	1000	-0.020	1000	1.50	803
#23	0.1540	30	20	1000	-0.020	1000	1.50	806
3.95	0.1555	30	20	1000	-0.020	1000	1.50	814
5/32	0.1562	30	20	1000	-0.020	1000	1.50	817
#22	0.1570	30	20	1000	-0.020	1000	1.50	822
4.00mm	0.1575	30	20	1000	-0.020	1000	1.50	824
#21	0.1590	30	20	1000	-0.021	800	1.50	832
4.05mm	0.1594	30	20	1000	-0.021	800	1.50	834
#20	0.1610	30	20	1000	-0.021	800	1.50	843
4.10mm	0.1614	30	20	1000	-0.021	800	1.50	845
4.15mm	0.1634	30	20	1000	-0.021	800	1.50	855
4.20mm	0.1654	30	20	1000	-0.021	800	1.50	866
#19	0.1660	30	20	1000	-0.021	800	1.50	869
4.25mm	0.1673	30	20	1000	-0.021	800	1.50	876
4.30mm	0.1693	30	20	1000	-0.021	800	1.50	886
#18	0.1695	30	20	1000	-0.021	800	1.50	887
4.35mm	0.1713	30	20	1000	-0.021	800	1.50	896
11/64	0.1719	30	20	1000	-0.021	800	1.50	900
#17	0.1730	30	20	1000	-0.021	800	1.50	905
4.40mm	0.1732	30	20	1000	-0.021	800	1.50	906
4.45mm	0.1752	30	20	1000	-0.022	800	1.50	917
#16	0.1770	30	20	1000	-0.022	800	1.50	926
4.50mm	0.1772	30	20	1000	-0.022	800	1.50	927
4.55mm	0.1792	30	20	1000	-0.022	800	1.50	938
#15	0.1800	30	20	1000	-0.022	800	1.50	942
4.60mm	0.1811	30	20	1000	-0.022	800	1.50	948
#14	0.1820	30	20	1000	-0.022	800	1.50	952
4.65mm	0.1831	30	20	1000	-0.022	800	1.50	958
#13	0.1850	30	20	1000	-0.022	800	1.50	968
4.70mm	0.1850	30	20	1000	-0.022	800	1.50	968
4.75mm	0.1870	30	20	1000	-0.022	800	1.50	979
3/16	0.1875	30	20	1000	-0.022	800	1.50	981
4.80mm	0.1890	30	20	1000	-0.023	600	1.50	989
#12	0.1890	30	20	1000	-0.023	600	1.50	989
4.85mm	0.1909	30	20	1000	-0.023	600	1.50	999
#11	0.1910	30	20	1000	-0.023	600	1.50	1000
4.90mm	0.1929	30	20	1000	-0.023	600	1.50	1010
#10	0.1935	30	20	1000	-0.023	600	1.50	1013
4.95mm	0.1949	30	20	1000	-0.023	600	1.50	1020
#9	0.1960	30	20	1000	-0.023	600	1.50	1026
5.00mm	0.1968	30	20	1000	-0.023	600	1.50	1030
5.05mm	0.1988	30	20	1000	-0.023	600	1.50	1040
#8	0.1990	30	20	1000	-0.023	600	1.50	1041
5.10mm	0.2008	30	20	1000	-0.023	600	1.50	1051
#7	0.2010	30	20	1000	-0.023	600	1.50	1052
5.15mm	0.2028	30	20	1000	-0.023	600	1.50	1061
13/64	0.2031	30	20	1000	-0.023	600	1.50	1063
#6	0.2040	30	20	1000	-0.024	600	1.50	1068
5.20mm	0.2047	30	20	1000	-0.024	600	1.50	1071
#5	0.2055	30	20	1000	-0.024	600	1.50	1075

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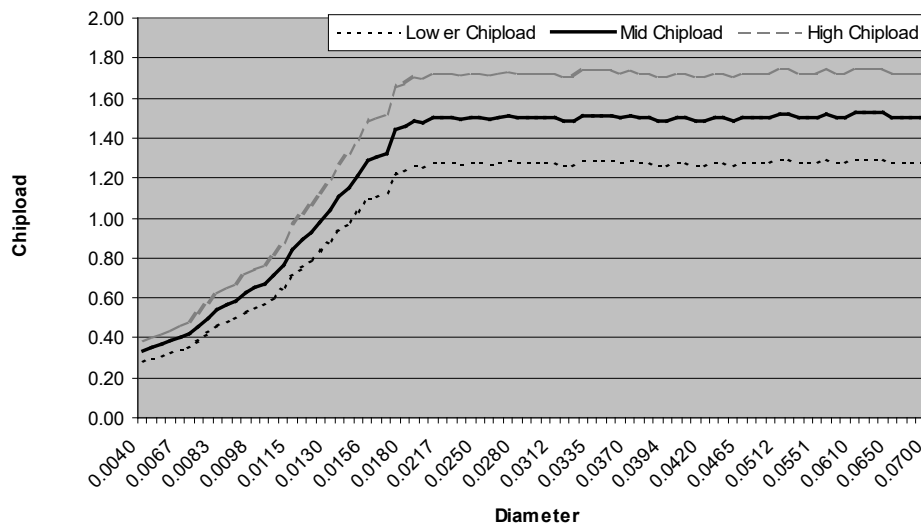
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Drill Size	Diameter (inch)	Feed (inch/min)	Speed (k-rpm)	Retract (inch/min)	Z-Axis Offset (inches)	Max Hits	Chipload (mm/rev)	SFM
5.25mm	0.2067	30	20	1000	-0.024	600	1.50	1082
5.30mm	0.2087	30	20	1000	-0.024	600	1.50	1092
#4	0.2090	30	20	1000	-0.024	600	1.50	1094
5.35mm	0.2106	30	20	1000	-0.024	600	1.50	1102
5.40mm	0.2126	30	20	1000	-0.024	600	1.50	1113
#3	0.2130	30	20	1000	-0.024	600	1.50	1115
5.45mm	0.2146	30	20	1000	-0.024	600	1.50	1123
5.50mm	0.2165	30	20	1000	-0.024	600	1.50	1133
5.55mm	0.2185	30	20	1000	-0.024	600	1.50	1143
7/32	0.2188	30	20	1000	-0.024	600	1.50	1145
5.60mm	0.2205	30	20	1000	-0.025	600	1.50	1154
#2	0.2210	30	20	1000	-0.025	600	1.50	1157
5.65mm	0.2224	30	20	1000	-0.025	600	1.50	1164
5.70mm	0.2244	30	20	1000	-0.025	600	1.50	1174
5.75mm	0.2264	30	20	1000	-0.025	600	1.50	1185
#1	0.2280	30	20	1000	-0.025	600	1.50	1193
5.80mm	0.2283	30	20	1000	-0.025	600	1.50	1195
5.85mm	0.2302	30	20	1000	-0.025	600	1.50	1205
5.90mm	0.2323	30	20	1000	-0.025	600	1.50	1216
A	0.2340	30	20	1000	-0.025	600	1.50	1225
5.95mm	0.2343	30	20	1000	-0.026	600	1.50	1226
15/64	0.2344	30	20	1000	-0.026	600	1.50	1227
6.00mm	0.2362	30	20	1000	-0.026	600	1.50	1236
B	0.2380	30	20	1000	-0.026	600	1.50	1246
6.05mm	0.2382	30	20	1000	-0.026	600	1.50	1247
6.10mm	0.2402	30	20	1000	-0.026	600	1.50	1257
C	0.2420	30	20	1000	-0.026	600	1.50	1266
6.15mm	0.2421	30	20	1000	-0.026	600	1.50	1267
6.20mm	0.2441	30	20	1000	-0.026	600	1.50	1277
D	0.2460	30	20	1000	-0.026	600	1.50	1287
6.25mm	0.2461	30	20	1000	-0.026	600	1.50	1288
6.30mm	0.2480	30	20	1000	-0.026	600	1.50	1298
6.35mm	0.2500	30	20	1000	-0.027	600	1.50	1308
6.40mm	0.2520	30	20	1000	-0.027	600	1.50	1319
6.50mm	0.2559	30	20	1000	-0.027	600	1.50	1339
F	0.2570	30	20	1000	-0.027	600	1.50	1345
6.60mm	0.2598	30	20	1000	-0.027	600	1.50	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 Kyocera 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.

Chiploads for Aramid



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