

## Drill sizes

Drill size	Diameter (in)	Diameter (mm)
80	0.0135	0.34
79	0.0145	0.37
1 / 64	0.0156	0.40
78	0.0160	0.41
77	0.0180	0.46
76	0.0200	0.51
75	0.0210	0.53
74	0.0225	0.57
73	0.0240	0.61
72	0.0250	0.64
71	0.0260	0.66
70	0.0280	0.71
69	0.0290	0.74
68	0.0310	0.79
1 / 32	0.0313	0.79
67	0.0320	0.81
66	0.0330	0.84
65	0.0350	0.89
64	0.0360	0.91
63	0.0370	0.94
62	0.0380	0.97
61	0.0390	0.99
60	0.0400	1.02
59	0.0410	1.04
58	0.0420	1.07
57	0.0430	1.09
56	0.0465	1.18
3 / 64	0.0469	1.19
55	0.0520	1.32
54	0.0550	1.40
53	0.0595	1.51
1 / 16	0.0625	1.59
52	0.0635	1.61
51	0.0670	1.70
50	0.0700	1.78
49	0.0730	1.85
48	0.0760	1.93
5 / 64	0.0781	1.98
47	0.0785	1.99
46	0.0810	2.06
45	0.0820	2.08
44	0.0860	2.18
43	0.0890	2.26
42	0.0935	2.37
3 / 32	0.0938	2.38
41	0.0960	2.44
40	0.0980	2.49
39	0.0995	2.53
38	0.1015	2.58
37	0.1040	2.64
36	0.1065	2.71
7 / 64	0.1094	2.78
35	0.1100	2.79
34	0.1110	2.82
33	0.1130	2.87
32	0.1160	2.95
31	0.1200	3.05
1 / 8	0.1250	3.18
30	0.1285	3.26
29	0.1360	3.45
28	0.1400	3.56
9 / 64	0.1406	3.57
27	0.1440	3.66
26	0.1470	3.73
25	0.1500	3.81
24	0.1520	3.86
23	0.1540	3.91
5 / 32	0.1563	3.97
22	0.1570	3.99

Drill size	Diameter (in)	Diameter (mm)
21	0.1590	4.04
20	0.1610	4.09
19	0.1660	4.22
18	0.1700	4.32
11 / 64	0.1719	4.37
17	0.1730	4.39
16	0.1770	4.50
15	0.1800	4.57
14	0.1820	4.62
13	0.1850	4.70
3 / 16	0.1875	4.76
12	0.1890	4.80
11	0.1910	4.85
10	0.1930	4.90
9	0.1960	4.98
8	0.1990	5.05
7	0.2010	5.11
13 / 64	0.2031	5.16
6	0.2040	5.18
5	0.2050	5.21
4	0.2090	5.31
3	0.2130	5.41
7 / 32	0.2188	5.56
2	0.2210	5.61
1	0.2280	5.79
A	0.2340	5.94
15 / 64	0.2344	5.95
B	0.2380	6.05
C	0.2420	6.15
D	0.2460	6.25
E	0.2500	6.35
1 / 4	0.2500	6.35
F	0.2570	6.53
G	0.2610	6.63
17 / 64	0.2656	6.75
H	0.2660	6.76
I	0.2720	6.91
J	0.2770	7.04
K	0.2810	7.14
9 / 32	0.2813	7.14
L	0.2900	7.37
M	0.2950	7.49
19 / 64	0.2969	7.54
N	0.3020	7.67
5 / 16	0.3125	7.94
O	0.3160	8.03
P	0.3230	8.20
21 / 64	0.3281	8.33
Q	0.3320	8.43
R	0.3390	8.61
11 / 32	0.3438	8.73
S	0.3480	8.84
T	0.3580	9.09
23 / 64	0.3594	9.13
U	0.3680	9.35
3 / 8	0.3750	9.53
V	0.3770	9.58
W	0.3860	9.80
25 / 64	0.3906	9.92
X	0.3970	10.08
Y	0.4040	10.26
13 / 32	0.4063	10.32
Z	0.4130	10.49
27 / 64	0.4219	10.72
7 / 16	0.4375	11.11
29 / 64	0.4531	11.51
15 / 32	0.4688	11.91
31 / 64	0.4844	12.30
1 / 2	0.5000	12.70

### Coarse threads

Size	Major diameter (in)	Tap drill (75% to 69% thread)	Clearance drill (tightest)
0-80	0.0600	56, $\frac{3}{64}$	52
1-64	0.0730	53	49
2-56	0.0860	51, 50	44
3-48	0.0990	$\frac{5}{64}$	39
4-40	0.1120	44, 43	33
5-40	0.1250	40, 39	$\frac{1}{8}$
6-32	0.1380	36	28
8-32	0.1640	29	19
10-24	0.1900	26	11
12-24	0.2160	$\frac{11}{64}$ , 17	2
$\frac{1}{4}$ -20	0.2500	9, 8, 7	$\frac{1}{4}$ , E
$\frac{5}{16}$ -18	0.3125	F	$\frac{5}{16}$
$\frac{3}{8}$ -16	0.3750	$\frac{5}{16}$	$\frac{3}{8}$
$\frac{7}{16}$ -14	0.4375	U	$\frac{7}{16}$
$\frac{1}{2}$ -13	0.5000	$\frac{27}{64}$	$\frac{1}{2}$

### Fine threads

Size	Major diameter (in)	Tap drill (75% to 69% thread)	Clearance drill (tightest)
10-32	0.1900	$\frac{5}{32}$ , 22, 21	11
12-28	0.2160	15	2
$\frac{1}{4}$ -28	0.2500	3	$\frac{1}{4}$ , E
$\frac{5}{16}$ -24	0.3125	I	$\frac{5}{16}$
$\frac{3}{8}$ -24	0.3750	Q	$\frac{3}{8}$
$\frac{7}{16}$ -20	0.4375	W	$\frac{7}{16}$
$\frac{1}{2}$ -20	0.5000	$\frac{29}{64}$	$\frac{1}{2}$

### Metric threads

Size	Major diameter (in)	Tap drill (75% thread)	Clearance drill (tightest)
M2.5×0.45	0.0984	46	39
M3×0.5	0.1181	40	31
M4×0.7	0.1575	30	21
M5×0.8	0.1969	19	8
M6×1.0	0.2362	9	B
M8×1.0	0.3150	J	O
M8×1.25	0.3150	$\frac{17}{64}$	O
M10×1.0	0.3937	T	X
M10×1.25	0.3937	$\frac{11}{32}$	X
M10×1.5	0.3937	Q	X
M12×1.25	0.4724	$\frac{27}{64}$	$\frac{31}{64}$
M12×1.5	0.4724	Z	$\frac{31}{64}$
M12×1.75	0.4724	Y	$\frac{31}{64}$

### Screw formulae

Screw size :	$D_{\text{major}} = 0.130N + 0.060$
75% thread :	$D_{\text{minor}} = D_{\text{major}} - \frac{5\sqrt{3}}{8}P = D_{\text{major}} - 1.08253P$
69% thread :	$D_{\text{tap}} = D_{\text{major}} - P$
50% thread :	$D_{\text{tap}} = D_{\text{major}} - \frac{3\sqrt{3}}{8}P = D_{\text{major}} - 0.64952P$