Here are the sizes of drill required to produce the required size for tapping the required thread. For each line the first part is the size of screw followed by the threads per inch or in metric the pitch. For example 4 40 is a size 4 screw with 40 threads per inch. While M 2 0.40 is a metric 2mm with a 0.40mm pitch, the distances between one peak to the next. Depending on what kind of material being tapped the size of hole will vary. When taping by hand use 90% to 50% and when using power tools use 80% through 50%. The most common used size drill is group 2. For sheet brass, sheet nickel, babbitt, white metal, hard rubber use group 1. For mild steel, aluminum, cast iron, and cast brass use group 2. For bronze, tool steel, drop forging, stainless steel, cast steel, nickel, and copper use group 3. This table lists the next available American drill except for the letter drills use the next larger size. Pick the group best suited for you work pick either drill listed. Metric drills have been add as they will become more available.

Size	diam.	group 1		group 2		group 3			
		80%		75%		70%		65%	
00 90	.0470	#64	0.9mm	#64	0.9mm	#63	0.9mm	#62	1.0mm
0 80	.0600	#55	1.2mm	#55	1.2mm	#55	1.2mm	#55	1.3mm
1 72	.0730	#53	1.5mm	#53	1.5mm	1/16	1.5mm	1/16	1.6mm
2 64	.0860	#50	1.8mm	#49	1.8mm	#49	1.8mm	#49	1.8mm
3 56	.0990	#46	2.0mm	#45	2.1mm	#44	2.1mm	#44	2.1mm
4 40	.1120	#44	2.2mm	#43	2.2mm	#43	2.3mm	#42	2.3mm
6 32	.1380	#36	2.7mm	7/64	2.7mm	7/64	2.8mm	#34	2.8mm
8 32	.1640	#29	3.3mm	#29	3.4mm	#29	3.4mm	#28	3.5mm
10 24	.1900	#26	3.7mm	#25	3.8mm	#24	3.9mm	#23	3.9mm
10 32	.1900	#22	4.0mm	#21	4.1mm	#20	4.1mm	#19	4.2mm
12 24	.2160	11/64	4.4mm	#16	4.5mm	#15	4.5mm	#15	4.6mm
12 28	.2160	#15	4.5mm	#14	4.6mm	#13	4.7mm	#13	4.7mm
1/ 4 20	.2500	# 8	5.0mm	# 7	5.1mm	# 6	5.2mm	# 4	5.3mm
1/ 4 28	.2500	# 3	5.4mm	7/32	5.5mm	7/32	5.5mm	7/32	5.6mm
5/16 18	.3125	F	6.5mm	F	6.6mm	G	6.7mm	17/64	6.7mm
5/16 24	.3125	I	6.8mm	I	6.9mm	J	7.0mm	J	7.0mm
3/ 8 16	.3750	5/16	7.9mm	5/16	8.0mm	P	8.1mm	P	8.2mm
3/ 8 24	.3750	Q	8.4mm	R	8.5mm	R	8.6mm	R	8.6mm
7/16 14	.4375	U	9.2mm	U	9.3mm	3/ 8	9.5mm	V	9.6mm
7/16 20	.4375	W	9.8mm	25/64	9.9mm	25/64	10.0mm	X	10.0mm
1/ 2 13	.5000	27/64	10.7mm	7/16	10.8mm	7/16	10.9mm	7/16	11.1mm
1/ 2 20	.5000	29/64	11.4mm	29/64	11.5mm	29/64	11.5mm	15/32	11.6mm
5/ 8 11	.6250	17/32	13.5mm	35/64	13.6mm	35/64	13.8mm	35/64	13.9mm
5/ 8 18	.6250	37/64	14.4mm	37/64	14.5mm	37/64	14.6mm	37/64	14.7mm
M 2 0.40	.0787	1/16	1.6mm	#52	1.6mm	#51	1.6mm	#51	1.7mm
M 2 0.25	.0787	#50	1.7mm	#50	1.8mm	#50	1.8mm	#49	1.8mm
M 3 0.50	.1181	#40	2.5mm	#39	2.5mm	#38	2.5mm	#38	2.6mm
M 3 0.35	.1181	#37	2.6mm	#36	2.7mm	#36	2.7mm	#36	2.7mm
M 4 0.70	.1575	#30	3.3mm	#29	3.3mm	#29	3.4mm	#29	3.4mm
M 4 0.50	.1575	#28	3.5mm	#28	3.5mm	#28	3.5mm	#28	3.6mm
M 5 0.80	.1969	#19	4.2mm	#19	4.2mm	#18	4.3mm	#18	4.3mm
M 5 0.50	.1969	#16	4.5mm	#16	4.5mm	#15	4.5mm	#15	4.6mm
M 6 1.00	.2362	# 9	5.0mm	# 8	5.0mm	# 7	5.1mm	13/64	5.2mm
M 6 0.75	.2362	# 5	5.2mm	# 4	5.3mm	# 4	5.3mm	# 3	5.4mm
M 7 1.00	.2756	A	6.0mm	B	6.0mm	C	6.1mm	C	6.2mm
M 7 0.75	.2756	D	6.2mm	D	6.3mm	1/ 4	6.3mm	1/ 4	6.4mm
M 8 1.25	.3150	17/64	6.7mm	17/64	6.8mm	I	6.9mm	I	6.9mm
M 8 1.00	.3150	J	7.0mm	J	7.0mm	K	7.1mm	K	7.2mm
M 8 0.75	.3150	L	7.2mm	L	7.3mm	L	7.3mm	L	7.4mm
M 10 1.50	.3937	Q	8.4mm	R	8.5mm	R	8.6mm	11/32	8.7mm
M 10 1.25	.3937	11/32	8.7mm	11/32	8.8mm	S	8.9mm	T	8.9mm
M 10 1.00	.3937	T	9.0mm	T	9.0mm	T	9.1mm	23/64	9.2mm
M 10 0.75	.3937	U	9.2mm	U	9.3mm	U	9.3mm	U	9.4mm
M 12 1.75	.4724	Y	10.2mm	Y	10.3mm	Z	10.4mm	Z	10.5mm
M 12 1.50	.4724	Z	10.4mm	Z	10.5mm	27/64	10.6mm	27/64	10.7mm
M 12 1.25	.4724	27/64	10.7mm	7/16	10.8mm	7/16	10.9mm	7/16	10.9mm
M 12 1.00	.4724	7/16	11.0mm	7/16	11.0mm	7/16	11.1mm	7/16	11.2mm

Here are the sizes of drill required to produce the required size for tapping the required thread. For each line the first part is the size of screw followed by the threads per inch or in metric the pitch. For example 4 40 is a size 4 screw with 40 threads per inch. While M 2 0.40 is a metric 2mm with a 0.40mm pitch, the distances between one peak to the next. Depending on what kind of material being tapped the size of hole will vary. When taping by hand use 90% to 50% and when using power tools use 80% through 50%. The most common used size drill is group 2. For sheet brass, sheet nickel, babbitt, white metal, hard rubber use group 1. For mild steel, aluminum, cast iron, and cast brass use group 2. For bronze, tool steel, drop forging, stainless steel, cast steel, nickel, and copper use group 3. This table lists the next available American drill except for the letter drills use the next larger size. Pick the group best suited for you work pick either drill listed. Metric drills have been add as they will become more available. Note letter drills have been substituted for the next larger fractional drill.

Size		diam.	group 1		group 2		group 3			
			80%		75%		70%		65%	
00	90	.0470	#64	0.9mm	#64	0.9mm	#63	0.9mm	#62	1.0mm
0	80	.0600	#55	1.2mm	#55	1.2mm	#55	1.2mm	#55	1.3mm
1	72	.0730	#53	1.5mm	#53	1.5mm	1/16	1.5mm	1/16	1.6mm
2	64	.0860	#50	1.8mm	#49	1.8mm	#49	1.8mm	#49	1.8mm
3	56	.0990	#46	2.0mm	#45	2.1mm	#44	2.1mm	#44	2.1mm
4	40	.1120	#44	2.2mm	#43	2.2mm	#43	2.3mm	#42	2.3mm
6	32	.1380	#36	2.7mm	7/64	2.7mm	7/64	2.8mm	#34	2.8mm
8	32	.1640	#29	3.3mm	#29	3.4mm	#29	3.4mm	#28	3.5mm
10	24	.1900	#26	3.7mm	#25	3.8mm	#24	3.9mm	#23	3.9mm
10	32	.1900	#22	4.0mm	#21	4.1mm	#20	4.1mm	#19	4.2mm
12	24	.2160	11/64	4.4mm	#16	4.5mm	#15	4.5mm	#15	4.6mm
12	28	.2160	#15	4.5mm	#14	4.6mm	#13	4.7mm	#13	4.7mm
1/ 4	20	.2500	# 8	5.0mm	# 7	5.1mm	# 6	5.2mm	# 4	5.3mm
1/ 4	28	.2500	# 3	5.4mm	7/32	5.5mm	7/32	5.5mm	7/32	5.6mm
5/16	18	.3125	17/64	6.5mm	17/64	6.6mm	17/64	6.7mm	17/64	6.7mm
5/16	24	.3125	9/32	6.8mm	9/32	6.9mm	9/32	7.0mm	9/32	7.0mm
3/ 8	16	.3750	5/16	7.9mm	5/16	8.0mm	21/64	8.1mm	21/64	8.2mm
3/ 8	24	.3750	11/32	8.4mm	11/32	8.5mm	11/32	8.6mm	11/32	8.6mm
7/16	14	.4375	3/ 8	9.2mm	3/ 8	9.3mm	3/ 8	9.5mm	25/64	9.6mm
7/16	20	.4375	25/64	9.8mm	25/64	9.9mm	25/64	10.0mm	13/32	10.0mm
1/ 2	13	.5000	27/64	10.7mm	7/16	10.8mm	7/16	10.9mm	7/16	11.1mm
1/ 2	20	.5000	29/64	11.4mm	29/64	11.5mm	29/64	11.5mm	15/32	11.6mm
5/ 8	11	.6250	17/32	13.5mm	35/64	13.6mm	35/64	13.8mm	35/64	13.9mm
5/ 8	18	.6250	37/64	14.4mm	37/64	14.5mm	37/64	14.6mm	37/64	14.7mm
M 2	0.40	.0787	1/16	1.6mm	#52	1.6mm	#51	1.6mm	#51	1.7mm
M 2	0.25	.0787	#50	1.7mm	#50	1.8mm	#50	1.8mm	#49	1.8mm
M 3	0.50	.1181	#40	2.5mm	#39	2.5mm	#38	2.5mm	#38	2.6mm
M 3	0.35	.1181	#37	2.6mm	#36	2.7mm	#36	2.7mm	#36	2.7mm
M 4	0.70	.1575	#30	3.3mm	#29	3.3mm	#29	3.4mm	#29	3.4mm
M 4	0.50	.1575	#28	3.5mm	#28	3.5mm	#28	3.5mm	#28	3.6mm
M 5	0.80	.1969	#19	4.2mm	#19	4.2mm	#18	4.3mm	#18	4.3mm
M 5	0.50	.1969	#16	4.5mm	#16	4.5mm	#15	4.5mm	#15	4.6mm
M 6	1.00	.2362	# 9	5.0mm	# 8	5.0mm	# 7	5.1mm	13/64	5.2mm
M 6	0.75	.2362	# 5	5.2mm	# 4	5.3mm	# 4	5.3mm	# 3	5.4mm
M 7	1.00	.2756	15/64	6.0mm	1/ 4	6.0mm	1/ 4	6.1mm	1/ 4	6.2mm
M 7	0.75	.2756	1/ 4	6.2mm	1/ 4	6.3mm	1/ 4	6.3mm	1/ 4	6.4mm
M 8	1.25	.3150	17/64	6.7mm	17/64	6.8mm	9/32	6.9mm	9/32	6.9mm
M 8	1.00	.3150	9/32	7.0mm	9/32	7.0mm	9/32	7.1mm	9/32	7.2mm
M 8	0.75	.3150	19/64	7.2mm	19/64	7.3mm	19/64	7.3mm	19/64	7.4mm
M 10	1.50	.3937	11/32	8.4mm	11/32	8.5mm	11/32	8.6mm	11/32	8.7mm
M 10	1.25	.3937	11/32	8.7mm	11/32	8.8mm	23/64	8.9mm	23/64	8.9mm
M 10	1.00	.3937	23/64	9.0mm	23/64	9.0mm	23/64	9.1mm	23/64	9.2mm
M 10	0.75	.3937	3/ 8	9.2mm	3/ 8	9.3mm	3/ 8	9.3mm	3/ 8	9.4mm
M 12	1.75	.4724	13/32	10.2mm	13/32	10.3mm	27/64	10.4mm	27/64	10.5mm
M 12	1.50	.4724	27/64	10.4mm	27/64	10.5mm	27/64	10.6mm	27/64	10.7mm
M 12	1.25	.4724	27/64	10.7mm	7/16	10.8mm	7/16	10.9mm	7/16	10.9mm
M 12	1.00	.4724	7/16	11.0mm	7/16	11.0mm	7/16	11.1mm	7/16	11.2mm

This is a table of US and metric drills for comparison. For each entry there is the drill size followed by the US decimal equivalence.

#80	0.0135	#38	0.1015	# 8	0.1990	8.1mm	0.3189	12.1mm	0.4764
#79	0.0145	2.6mm	0.1024	5.1mm	0.2008	8.2mm	0.3228	12.2mm	0.4803
#78	0.0160	#37	0.1040	# 7	0.2010	P	0.3230	12.3mm	0.4843
#77	0.0180	2.7mm	0.1063	13/64	0.2031	8.3mm	0.3268	31/64	0.4844
#76	0.0200	#36	0.1065	# 6	0.2040	21/64	0.3281	12.4mm	0.4882
#75	0.0210	7/64	0.1094	5.2mm	0.2047	8.4mm	0.3307	12.5mm	0.4921
#74	0.0225	#35	0.1100	# 5	0.2055	Q	0.3320	12.6mm	0.4961
#73	0.0240	2.8mm	0.1102	5.3mm	0.2087	8.5mm	0.3346	1/ 2	0.5000
#72	0.0250	#34	0.1110	# 4	0.2090	8.6mm	0.3386	12.7mm	0.5000
#71	0.0260	#33	0.1130	5.4mm	0.2126	R	0.3390	12.8mm	0.5039
#70	0.0280	2.9mm	0.1142	# 3	0.2130	8.7mm	0.3425	12.9mm	0.5079
#69	0.0292	#32	0.1160	5.5mm	0.2165	11/32	0.3438	13.0mm	0.5118
#68	0.0310	3.0mm	0.1181	7/32	0.2188	8.8mm	0.3465	33/64	0.5156
#67	0.0320	#31	0.1200	5.6mm	0.2205	S	0.3480	17/32	0.5313
#66	0.0330	3.1mm	0.1220	# 2	0.2210	8.9mm	0.3504	35/64	0.5469
#65	0.0350	1/ 8	0.1250	5.7mm	0.2244	9.0mm	0.3543	14.0mm	0.5512
#64	0.0360	3.2mm	0.1260	# 1	0.2280	T	0.3580	9/16	0.5625
#63	0.0370	#30	0.1285	5.8mm	0.2283	9.1mm	0.3583	9/16	0.5625
#62	0.0380	3.3mm	0.1299	5.9mm	0.2323	23/64	0.3594	37/64	0.5781
#61	0.0390	3.4mm	0.1339	A	0.2340	9.2mm	0.3622	15.0mm	0.5906
1.0mm	0.0394	#29	0.1360	15/64	0.2344	9.3mm	0.3661	19/32	0.5938
#60	0.0400	3.5mm	0.1378	6.0mm	0.2362	U	0.3680	5/8	0.6250
#59	0.0410	#28	0.1405	B	0.2380	9.4mm	0.3701	16.0mm	0.6299
#58	0.0420	9/64	0.1406	6.1mm	0.2402	9.5mm	0.3740	17.0mm	0.6693
#57	0.0430	3.6mm	0.1417	C	0.2420	3/ 8	0.3750	11/16	0.6875
1.1mm	0.0433	#27	0.1440	6.2mm	0.2441	V	0.3770	18.0mm	0.7087
#56	0.0465	3.7mm	0.1457	D	0.2460	9.6mm	0.3780	19.0mm	0.7480
1.2mm	0.0472	#26	0.1470	6.3mm	0.2480	9.7mm	0.3819	3/4	0.7500
1.3mm	0.0512	#25	0.1495	1/ 4	0.2500	9.8mm	0.3858	49/64	0.7656
#55	0.0520	3.8mm	0.1496	E	0.2500	W	0.3860	19.5mm	0.7677
#54	0.0550	#24	0.1520	6.4mm	0.2520	9.9mm	0.3898	25/32	0.7812
1.4mm	0.0551	3.9mm	0.1535	6.5mm	0.2559	25/64	0.3906	20mm	0.7874
1.5mm	0.0591	#23	0.1540	F	0.2570	10.0mm	0.3937	51/64	0.7969
#53	0.0595	5/32	0.1563	6.6mm	0.2598	X	0.3970	20.5mm	0.8071
1/16	0.0625	#22	0.1570	G	0.2610	10.1mm	0.3976	13/16	0.8125
1.6mm	0.0630	4.0mm	0.1575	6.7mm	0.2638	10.2mm	0.4016	21mm	0.8268
#52	0.0635	#21	0.1590	17/64	0.2656	Y	0.4040	53/64	0.8281
1.7mm	0.0669	#20	0.1610	H	0.2660	10.3mm	0.4055	27/32	0.8438
#51	0.0670	4.1mm	0.1614	6.8mm	0.2677	13/32	0.4063	21.5mm	0.8465
#50	0.0700	4.2mm	0.1654	6.9mm	0.2717	10.4mm	0.4094	55/64	0.8594
1.8mm	0.0709	#19	0.1660	I	0.2720	Z	0.4130	22mm	0.8661
#49	0.0730	4.3mm	0.1693	7.0mm	0.2756	10.5mm	0.4134	7/8	0.8750
1.9mm	0.0748	#18	0.1695	J	0.2770	10.6mm	0.4173	22.5mm	0.8858
#48	0.0760	11/64	0.1719	7.1mm	0.2795	10.7mm	0.4213	57/64	0.8906
5/64	0.0781	#17	0.1730	K	0.2810	27/64	0.4219	23mm	0.9055
#47	0.0785	4.4mm	0.1732	9/32	0.2813	10.8mm	0.4252	29/32	0.9062
2.0mm	0.0787	#16	0.1770	7.2mm	0.2835	10.9mm	0.4291	59/64	0.9219
#46	0.0810	4.5mm	0.1772	7.3mm	0.2874	11.0mm	0.4331	23.5mm	0.9252
#45	0.0820	#15	0.1800	L	0.2900	11.1mm	0.4370	15/16	0.9375
2.1mm	0.0827	4.6mm	0.1811	7.4mm	0.2913	7/16	0.4375	24mm	0.9449
#44	0.0860	#14	0.1820	M	0.2950	11.2mm	0.4409	61/64	0.9531
2.2mm	0.0866	#13	0.1850	7.5mm	0.2953	11.3mm	0.4449	24.5mm	0.9646
#43	0.0890	4.7mm	0.1850	19/64	0.2969	11.4mm	0.4488	31/32	0.9688
2.3mm	0.0906	3/16	0.1875	7.6mm	0.2992	11.5mm	0.4528	25mm	0.9843
#42	0.0935	#12	0.1890	N	0.3020	29/64	0.4531	63/64	0.9844
3/32	0.0938	4.8mm	0.1890	7.7mm	0.3031	11.6mm	0.4567	1	1.0000
2.4mm	0.0945	#11	0.1910	7.8mm	0.3071	11.7mm	0.4606	25.4	1.0000
#41	0.0960	4.9mm	0.1929	7.9mm	0.3110	11.8mm	0.4646		
#40	0.0980	#10	0.1935	5/16	0.3125	11.9mm	0.4685		
2.5mm	0.0984	# 9	0.1960	8.0mm	0.3150	15/32	0.4688		
#39	0.0995	5.0mm	0.1969	O	0.3160	12.0mm	0.4724		