

Tap Drill Sizes for Forming Taps

INCH

Tap Size	Drill Size	Decimal Equivalent	Percentage of Thread
0-80	1.35 mm	0.0531	75
1-64	1.65 mm	0.0650	75
1-72	1.65 mm	0.0650	75
1-72	1.70 mm	0.0669	65
1-72	51	0.0670	60
2-56	1.95 mm	0.0768	75
2-56	5/64	0.0781	65
2-56	47	0.0785	60
2-64	5/64	0.0781	75
2-64	47	0.0785	70
2-64	2.00 mm	0.0787	65
3-48	2.25 mm	0.0886	75
3-48	43	0.0890	70
3-48	2.30 mm	0.0906	60
3-56	43	0.0890	75
3-56	2.30 mm	0.0906	65
4-40	2.50 mm	0.0984	75
4-40	39	0.0995	70
4-40	38	0.1015	60
4-48	38	0.1015	70
4-48	2.60 mm	0.1024	65
5-40	34	0.1110	75
5-40	33	0.1130	70
5-40	2.90 mm	0.1142	60
5-44	33	0.1130	75
5-44	2.90 mm	0.1142	70
6-32	3.10 mm	0.1220	75
6-32	1/8	0.1250	60
6-40	1/8	0.1250	75
6-40	3.20 mm	0.1260	70
8-32	25	0.1495	75
8-32	3.75 mm	0.1476	70
8-32	3.80 mm	0.1496	65
8-36	25	0.1495	75
8-36	3.80 mm	0.1496	70
8-36	24	0.1520	60
10-24	4.25 mm	0.1673	75
10-24	18	0.1695	70
10-24	11/64	0.1719	65
10-32	17	0.1730	75
10-32	16	0.1770	60
12-24	10	0.1935	75
12-24	9	0.1960	70
12-24	5.00 mm	0.1968	65
12-24	8	0.1990	60
12-28	5.00 mm	0.1968	75
12-28	8	0.1990	70
12-28	7	0.2010	60
1/4-20	5.70 mm	0.2244	75
1/4-20	1	0.2280	65
1/4-28	5.90 mm	0.2323	75
1/4-28	A	0.2340	65
1/4-28	15/64	0.2344	60
5/16-18	7.20 mm	0.2835	75
5/16-18	7.25 mm	0.2854	70
5/16-18	7.30 mm	0.2874	65
5/16-18	L	0.2900	60
5/16-24	7.40 mm	0.2913	75
5/16-24	7.50 mm	0.2953	60
3/8-16	8.75 mm	0.3445	70
3/8-16	8.80 mm	0.3465	65
3/8-24	9.00 mm	0.3543	70
3/8-24	T	0.3580	60
7/16-14	Y	0.4040	65
7/16-20	10.50 mm	0.4134	70
1/2-13	11.80 mm	0.4646	65
1/2-20	12.00 mm	0.4724	75
9/16-12	13.20 mm	0.5197	75
9/16-18	13.50 mm	0.5315	75
5/8-11	37/64	0.5781	75
5/8-11	14.75 mm	0.5807	70
5/8-18	19/32	0.5937	75
5/8-18	15.25 mm	0.6004	65
3/4-10	45/64	0.7031	65
3/4-16	23/32	0.7187	70

METRIC

Tap Size	Drill Size	Decimal Equivalent	Percentage of Thread
M3 x 0.5	7/64	0.1094	65
M3.5 x 0.6	3.20mm	0.1260	75
M4 x 0.7	27	0.1440	70
M4.5 x 0.75	4.10mm	0.1614	80
M5 x 0.8	4.60mm	0.1811	75
M6 x 1	5.50mm	0.2165	75
M7 x 1	6.50mm	0.2559	75
M8 x 1.25	L	0.2900	75
M8 x 1	7.50mm	0.2953	75
M10 x 1.5	9.20mm	0.3622	75
M10 x 1.25	U	0.3680	75
M12 x 1.75	7/16	0.4375	75
M12 x 1.25	*0.447	0.4470	75
M14 x 2	13.00mm	0.5118	75
M14 x 1.5	13.20mm	0.5197	75
M16 x 2	15.00mm	0.5906	75
M16 x 1.5	15.25mm	0.6004	75
M18 x 2.5	16.75mm	0.6594	75
M18 x 1.5	17.25mm	0.6791	75
M20 x 2.5	47/64	0.7344	80
M20 x 1.5	*0.757	0.7570	75

* Non-standard drill sizes - reaming of the hole may be necessary.

PRACTICAL FORMULA - INCH SIZES

TO ESTABLISH TAP DRILL SIZES FOR INCH SIZE ROLL FORMING TAPS

$$\text{TAP DRILL SIZE} = \text{Basic Tap O.D.} - \frac{(.0068 \times \% \text{ of Thread Desired})}{\text{Threads Per Inch}}$$

(EXAMPLE 1/4-20 Tap with 65% Thread) = .250 - $\frac{(.0068 \times 65)}{20}$ = .228 Dia.

PRACTICAL FORMULA - METRIC SIZES

TO ESTABLISH TAP DRILL SIZES FOR METRIC SIZE ROLL FORMING TAPS

$$\text{TAP DRILL SIZE} = \text{Basic Tap O.D. (mm)} - \frac{(\% \text{ of Thread Desired} \times \text{mm Pitch})}{147.06}$$

(EXAMPLE M8 x 1.25 Tap with 65% Thread) = 8 - $\frac{(65 \times 1.25)}{147.06}$ = 7.45 mm Dia.

APPLICATION

Forming Taps cold form threads in ductile materials such as brass, copper, aluminum and leaded steels as well as series 301 to 347 stainless steels. Thread size can be maintained closely since taps have no cutting edges. Unusually smooth threads can be formed throughout the full depth of the holes.