



REFERENCE

Tap Drill Sizes for Forming Taps

Inch

Tap Size	Drill Size	Decimal Equivalent	Percentage of Thread	Tap Size	Drill Size	Decimal Equivalent	Percentage of Thread	Tap Size	Drill Size	Decimal Equivalent	Percentage of Thread
0 – 80	1.35mm	0.0531	75	5 – 44	2.90mm	0.1142	70	1/4 – 28	5.90mm	0.2323	75
1 – 64	1.65mm	0.0650	75	6 – 32	3.10mm	0.1220	75	1/4 – 28	A	0.2340	65
1 – 72	1.65mm	0.0650	75	6 – 32	1/8	0.1250	60	1/4 – 28	15/64	0.2344	60
1 – 72	1.70mm	0.0669	65	6 – 40	1/8	0.1250	75	5/16 – 18	7.20mm	0.2835	75
1 – 72	51	0.0670	60	6 – 40	3.20mm	0.1260	70	5/16 – 18	7.25mm	0.2854	70
2 – 56	1.95mm	0.0768	75	8 – 32	25	0.1495	75	5/16 – 18	7.30mm	0.2874	65
2 – 56	5/64	0.0781	65	8 – 32	3.75mm	0.1476	70	5/16 – 18	L	0.2900	60
2 – 56	47	0.0785	60	8 – 32	3.80mm	0.1496	65	5/16 – 24	7.40mm	0.2913	75
2 – 64	5/64	0.0781	75	8 – 36	25	0.1495	75	5/16 – 24	7.50mm	0.2953	60
2 – 64	47	0.0785	70	8 – 36	3.80mm	0.1496	70	3/8 – 16	8.75mm	0.3445	70
2 – 64	2.00mm	0.0787	65	8 – 36	24	0.1520	60	3/8 – 16	8.80mm	0.3465	65
3 – 48	2.25mm	0.0886	75	10 – 24	4.25mm	0.1673	75	3/8 – 24	9.00mm	0.3443	70
3 – 48	43	0.0890	70	10 – 24	18	0.1695	70	3/8 – 24	T	0.3580	60
3 – 48	2.30mm	0.0906	60	10 – 24	11/64	0.1719	65	7/16 – 14	Y	0.4040	65
3 – 56	43	0.0890	75	10 – 32	17	0.1730	75	7/16 – 20	10.50mm	0.4134	70
3 – 56	2.30mm	0.0906	65	10 – 32	16	0.1770	60	1/2 – 13	11.80mm	0.4646	65
4 – 40	2.50mm	0.0984	75	12 – 24	10	0.1935	75	1/2 – 20	12.00mm	0.4724	75
4 – 40	39	0.0995	70	12 – 24	9	0.1960	70	9/16 – 12	13.20mm	0.5197	75
4 – 40	38	0.1015	60	12 – 24	5.00mm	0.1968	65	9/16 – 18	13.50mm	0.5315	75
4 – 48	38	0.1015	70	12 – 24	8	0.1990	60	5/8 – 11	37/64	0.5781	75
4 – 48	2.60mm	0.1024	65	12 – 28	5.00mm	0.1968	75	5/8 – 11	14.75mm	0.5807	70
5 – 40	34	0.1110	75	12 – 28	8	0.1990	70	5/8 – 18	19/32	0.5937	75
5 – 40	33	0.1130	70	12 – 28	7	0.2010	60	5/8 – 18	15.25mm	0.6004	65
5 – 40	2.90mm	0.1142	60	1/4 – 20	5.70mm	0.2244	75	3/4 – 10	45/64	0.7031	65
5 – 44	33	0.1130	75	1/4 – 20	1	0.2280	65	3/4 – 16	23/32	0.7187	70

Metric

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

Tap Drill Size = Basic Tap O.D. — $\frac{(0.0068 \times \% \text{ of Thread Desired})}{\text{Threads Per Inch}}$

(EXAMPLE 1/4-20 Tap with 65% Thread) = 0.250 — $\frac{(0.0068 \times 65)}{20} = 0.228 \text{ Dia.}$

Practical Formula – Metric Sizes

To Establish Tap Drill Sizes for Metric Size Roll Forming Taps

Tap Drill Size = 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 — $\frac{(65 \times 1.25)}{147.06} = 7.45 \text{mm Dia.}$

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.