

Suggested hole sizes for tapping screws

Table 1 Suggested Hole Sizes for Thread Rolling Tapping Screws and Types D, F, G and T Thread Cutting Tapping Screws

Nominal Screw Size	Hole Diameter			Closest Drill Size to Mean Hole Diameter	
	Max	Mean	Min	Drill Size	Drill Dia.
2 - 56	0.078	0.076	0.074	48	0.076
2-64		0.077			
3 - 48	0.090	0.087	0.084	44	0.086
3-56		0.089			
4 - 40	0.100	0.097	0.094	41	0.096
4-48		0.100			
5-40	0.113	0.110	0.107	35	0.110
5-44		0.112			
6-32	0.123	0.119	0.115	31	0.120
6-40		0.124			
8-32	0.150	0.146	0.141	20	0.147
8-36		0.148			
10 - 24	0.170	0.165	0.160	19	0.166
10-32	0.177	0.172	0.167		
12-24	0.198	0.192	0.186	11	0.191
12-28		0.196			
1/4 - 20	0.228	0.221	0.214	2	0.221
1/4-28		0.230			
5/16 - 18	0.289	0.281	0.273	K	0.281
5/16-24		0.290			
3/8 - 16	0.349	0.339	0.329	R	0.339
3/8 - 24		0.353			
7/16 - 14	0.409	0.397	0.385	X	0.397
7/16-20		0.411			
1/2 - 13	0.471	0.457	0.443	29/64	0.4531
1/2 - 20		0.475			

Table 2 Suggested Hole Sizes for Types AB, B, and BP Thread Forming Tapping Screws and Types BF and BT Thread Cutting Tapping Screws

Nominal Screw Size	Hole Diameter			Closest Drill Size to Mean Hole Diameter	
	Max	Mean	Min	Drill Size	Drill Dia.
0-48	0.049	0.046	0.043	56	0.0465
1-42	.063	.059	.055	53	.0595
2 - 32	.077	.072	.067	49	.073
3-28	.090	.084	.078	45	.082
4-24	.103	.096	.089	41	.096
5-20	.114	.107	.100	36	.1065
6-20	.124	.116	.108	32	.116
7-19	.138	.129	.120	30	.1285
8 - 18	.148	.138	.128	29	.136
10-16	.170	.159	.148	21	.159
12-14	.194	.182	.169	14	.182
1/4-14	.226	.211	.196	4	.209
5/16-12	.289	.270	.251	1	.272
3/8-12	.356	.333	.310	0	.332
7/16-10	.413	.386	.359	w	.386
1/2 - 10	.480	.449	A18	29/64	A531

Formula

Mean Hole Dia = 0.98 x mean of thread major and minor diameters. Tolerance is plus and minus 7 percent of mean hole dia.

Note

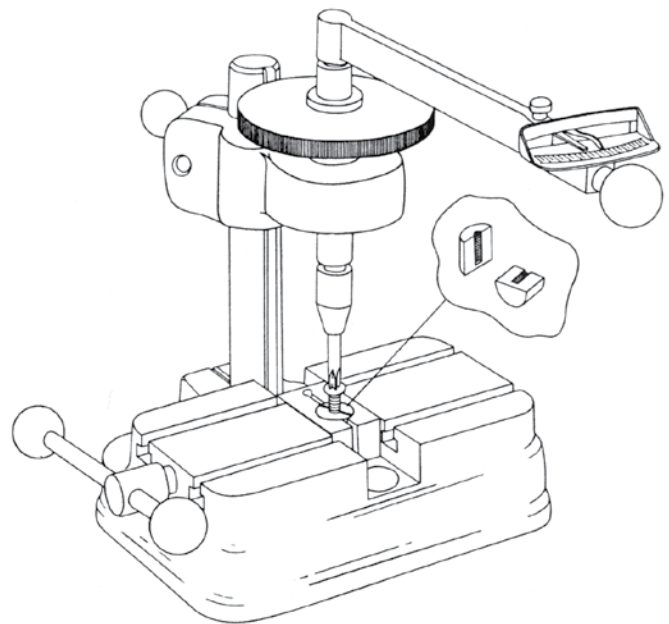
As a general practice, tapping torque should equal approximately 70% of the fasteners torsional strength.

Formula

Mean Hole Dia = 1.015 x basic thread pitch diameter. Tolerance is plus and minus 3 percent of mean hole dia. No tolerances or drill sizes are given for tapping screws with fine threads except for the No. 10 size. Use of fine thread tapping screws is not encouraged.

Torsional Strength Requirements For Tapping Screws

Nominal Screw Size	Minimum Torsional Strength, lb-in.			
	Types AB, B, BF, HP and BT	Types C, D, F, G and T		
		Coarse Thread	Fine Thread	
2	4	5	6	
3	9	9	10	
4	13	13	15	
5	18	18	20	
6	24	23	27	
7	30	-	-	
8	39	42	47	
10	56	56	74	
12	88	93	108	
1/4	142	140	179	
5/16	290	306	370	
3/8	590	580	710	
7/16	620	700	820	
1/2	1020	1075	1285	



Typical Torsional Strength Test Fixture