

Pre-hole diameter

Forming taps require bigger pre-hole than standard taps because there are no chip during tapping operations.

A correct pre-tap hole size means that thread percentage is 65-75%.

The higher the thread percentage is, the more resistant the fixation point is, the more important the tapping torque is, the more decreasing the taps life is.

The below mentioned values are given for information only, and can vary depending on taps manufacturers' specifications.

Thread size	Hole size required for 6H tolerance						Hole size required for 6G tolerance					
	75%		65%		55%		75%		65%		55%	
	mm	''	mm	''	mm	''	mm	''	mm	''	mm	''
M1.6 x 0.35	1.46	0.057	1.48	0.058	1.49	0.059	1.47	0.058	1.50	0.059	1.52	0.060
M2 x 0.40	1.83	0.072	1.85	0.073	1.87	0.074	1.86	0.073	1.88	0.074	1.90	0.075
M2.5 x 0.45	2.31	0.091	2.33	0.092	2.36	0.093	2.34	0.092	2.37	0.093	2.39	0.094
M3 x 0.50	2.79	0.110	2.81	0.111	2.84	0.112	2.82	0.111	2.84	0.112	2.87	0.113
M3.5 x 0.60	3.24	0.128	3.27	0.129	3.30	0.130	3.27	0.129	3.30	0.130	3.33	0.131
M4 x 0.70	3.68	0.145	3.72	0.146	3.75	0.148	3.72	0.146	3.75	0.148	3.78	0.149
M5 x 0.80	4.63	0.182	4.67	0.184	4.71	0.185	4.67	0.184	4.71	0.185	4.75	0.187
M6 x 1.00	5.54	0.218	5.59	0.220	5.64	0.222	5.57	0.219	5.62	0.221	5.67	0.223
M8 x 1.00	7.54	0.297	7.59	0.299	7.64	0.301	7.57	0.298	7.62	0.300	7.67	0.302
M8 x 1.25	7.40	0.291	7.46	0.294	7.52	0.296	7.44	0.293	7.50	0.295	7.57	0.298
M10 x 1.50	9.27	0.365	9.35	0.368	9.42	0.371	9.31	0.367	9.39	0.370	9.46	0.372
M12 x 1.50	11.27	0.444	11.35	0.447	11.42	0.450	11.31	0.445	11.39	0.448	11.46	0.451
M12 x 1.75	11.14	0.439	11.23	0.442	11.32	0.446	11.18	0.440	11.25	0.443	11.35	0.447
M14 x 1.50	13.27	0.522	13.35	0.526	13.42	0.528	13.31	0.524	13.39	0.527	13.46	0.530
M16 x 1.50	15.27	0.601	15.35	0.604	15.42	0.607	15.31	0.603	15.39	0.606	15.46	0.609

Always check the hole dimension with a gage. Do not think that the punch will pierce with the theoretical diameter.

In every case the pre-hole size should be adapted to your needs and to your application

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Pre-hole size required for 2B tolerance

Thread size	75%		65%		55%	
	"	mm	"	mm	"	mm
0-80	0,0546	1,39	0,0552	1,40	0,0558	1,42
1-64	0,066	1,68	0,067	1,70	0,068	1,73
1-72	0,067	1,70	0,068	1,73	0,069	1,75
2-56	0,078	1,98	0,079	2,01	0,080	2,03
2-64	0,079	2,01	0,080	2,03	0,081	2,06
3-48	0,090	2,29	0,091	2,31	0,092	2,34
3-56	0,091	2,31	0,092	2,34	0,093	2,36
4-40	0,100	2,54	0,101	2,57	0,103	2,62
4-48	0,103	2,62	0,104	2,64	0,105	2,67
5-40	0,113	2,87	0,114	2,90	0,116	2,95
5-44	0,114	2,90	0,115	2,92	0,117	2,97
6-32	0,124	3,15	0,125	3,18	0,126	3,20
6-40	0,126	3,20	0,127	3,23	0,128	3,25
8-32	0,149	3,78	0,150	3,81	0,152	3,86
8-36	0,151	3,84	0,152	3,86	0,153	3,89
10-24	0,170	4,32	0,172	4,37	0,174	4,42
10-32	0,175	4,45	0,176	4,47	0,178	4,52
12-24	0,196	4,98	0,198	5,03	0,200	5,08
12-28	0,199	5,05	0,201	5,11	0,203	5,16
1/4-20	0,225	5,72	0,227	5,77	0,230	5,84
1/4-28	0,233	5,92	0,235	5,97	0,237	6,02
5/16-18	0,285	7,24	0,287	7,29	0,291	7,39
5/16-24	0,292	7,42	0,294	7,47	0,297	7,54
3/8-16	0,344	8,74	0,347	8,81	0,350	8,89
3/8-24	0,355	9,02	0,356	9,04	0,359	9,12
7/16-14	0,402	10,21	0,405	10,29	0,409	10,39
7/16-20	0,414	10,52	0,416	10,57	0,418	10,62
1/2-13	0,462	11,73	0,466	11,84	0,470	11,94
1/2-20	0,475	12,07	0,477	12,12	0,480	12,19
9/16-12	0,520	13,21	0,524	13,31	0,528	13,41
9/16-18	0,535	13,59	0,537	13,64	0,540	13,72
5/8-18	0,5980	15,19	0,6000	15,24	0,603	15,32

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In every case the pre-hole size should be adapted to your needs and to your application.

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