Tap Drill & Clearance Hole Chart

Cutting-tap drill and close / normal clearance holes · UNC, UNF and metric

THREAD	TAP DRILL	CLEARANCE, CLOSE	CLEARANCE, NORMAL
0-80 UNF	3/64" 0.0469"	#52 0.0635"	#50 0.070"
2-56 UNC	#50 0.070"	#43 0.089"	#41 0.096"
2-64 UNF	#50 0.070"	#43 0.089"	#41 0.096"
4-40 UNC	#43 0.089"	#32 0.116"	#30 0.1285"
4-48 UNF	#42 0.0935"	#32 0.116"	#30 0.1285"
6-32 UNC	#36 0.1065"	#27 0.144"	#25 0.1495"
6-40 UNF	#33 0.113"	#27 0.144"	#25 0.1495"
8-32 UNC	#29 0.136"	#18 0.1695"	#15 0.180"
8-36 UNF	#29 0.136"	#18 0.1695"	#15 0.180"
10-24 UNC	#25 0.1495"	#9 0.196"	#5 0.2055"
10-32 UNF	#21 0.159"	#9 0.196"	#5 0.2055"
1/4-20 UNC	#7 0.201"	F 0.257"	17/64" 0.2656"
1/4-28 UNF	#3 0.213"	F 0.257"	17/64" 0.2656"
5/16-18 UNC	F 0.257"	21/64" 0.3281"	11/32" 0.3438"
5/16-24 UNF	I 0.272"	21/64" 0.3281"	11/32" 0.3438"
3/8-16 UNC	5/16" 0.3125"	25/64" 0.3906"	13/32" 0.4063"
3/8-24 UNF	Q 0.332"	25/64" 0.3906"	13/32" 0.4063"
7/16-14 UNC	U 0.368"	29/64" 0.4531"	15/32" 0.4688"
7/16-20 UNF	25/64" 0.3906"	29/64" 0.4531"	15/32" 0.4688"
1/2-13 UNC	27/64" 0.4219"	33/64" 0.5156"	17/32" 0.5313"
1/2-20 UNF	29/64" 0.4531"	33/64" 0.5156"	17/32" 0.5313"
9/16-12 UNC	31/64" 0.4844"	37/64" 0.5781"	19/32" 0.5938"
9/16-18 UNF	33/64" 0.5156"	37/64" 0.5781"	19/32" 0.5938"
5/8-11 UNC	17/32" 0.5313"	41/64" 0.6406"	21/32" 0.6563"
5/8-18 UNF	37/64" 0.5781"	41/64" 0.6406"	21/32" 0.6563"
3/4-10 UNC	21/32" 0.6563"	49/64" 0.7656"	25/32" 0.7813"
3/4-16 UNF	11/16" 0.6875"	49/64" 0.7656"	25/32" 0.7813"

THREAD	TAP DRILL	CLEARANCE, CLOSE	CLEARANCE, NORMAL
7/8-9 UNC	49/64" 0.7656"	57/64" 0.8906"	29/32" 0.9063"
7/8-14 UNF	13/16" 0.8125"	57/64" 0.8906"	29/32" 0.9063"
1-8 UNC	7/8" 0.875"	1-1/64" 1.0156"	1-1/32" 1.0313"
1-12 UNF	59/64" 0.9219"	1-1/64" 1.0156"	1-1/32" 1.0313"

THREAD	TAP DRILL	CLEARANCE, CLOSE	CLEARANCE, NORMAL
M2 x 0.4	1.6 mm 0.063"	2.2 mm	2.4 mm
M2.5 x 0.45	2.05 mm 0.081"	2.7 mm	2.9 mm
M3 x 0.5	2.5 mm 0.098"	3.2 mm	3.4 mm
M4 x 0.7	3.3 mm 0.130"	4.3 mm	4.5 mm
M5 x 0.8	4.2 mm 0.165"	5.3 mm	5.5 mm
M6 x 1.0	5 mm 0.197"	6.4 mm	6.6 mm
M8 x 1.25	6.7 mm 0.264"	8.4 mm	9 mm
M8 x 1.0	7 mm 0.276"	8.4 mm	9 mm
M10 x 1.5	8.5 mm 0.335"	10.5 mm	11 mm
M10 x 1.25	8.7 mm 0.343"	10.5 mm	11 mm
M12 x 1.75	10.2 mm 0.402"	13 mm	13.5 mm
M12 x 1.25	10.8 mm 0.425"	13 mm	13.5 mm
M14 x 2.0	12 mm 0.472"	15 mm	15.5 mm
M16 x 2.0	14 mm 0.551"	17 mm	17.5 mm
M16 x 1.5	14.5 mm 0.571"	17 mm	17.5 mm
M18 x 2.5	15.5 mm 0.610"	19 mm	20 mm
M18 x 1.5	16.5 mm 0.650"	19 mm	20 mm
M20 x 2.5	17.5 mm 0.689"	21 mm	22 mm
M20 x 1.5	18.5 mm 0.728"	21 mm	22 mm

Tap drill: the hole the tap threads, for cutting taps (a forming tap takes a larger drill). Each leaves about 65% to 81% of a full thread; a 55% to 65% thread is enough for most jobs. 10-24: Fastenal lists #26, Champion #25.

Clearance hole: the hole the screw slides through. Close fit keeps parts lined up exactly; normal fit leaves room for holes a little out of line. Inch: a fastener supplier's close and normal fit drills (ASME B18.2.8's normal fit runs larger, 0.281" for 1/4"). Metric: ISO 273 fine and medium series; fine threads take the same holes as coarse.

Sizes are general guidance. The right size changes with the material, the tap and the thread class: check the tap maker's chart for critical work, and test on scrap first.