

Tap Drill & Thread Height Chart

This chart displays a variety of UN Thread sizes, their likely Tap Drills and the resulting Theoretical Thread Height Percentage. This percentage is theoretical as holes are often drilled slightly oversized.

Typically, tap drills are selected to result in a 60% - 75% thread height. There is negligible increased strength in threads with more than 60% thread height and larger tap drills are preferred

Thread Size	Major Diameter	Threads per Inch (TPI)	Tap Drill Range	Tap Drill	Tap Drill Decimal	Theoretical % of Thread
0-80	0.0600	80	0.0465 - 0.0514	3/64	0.0469	80.7%
1-64	0.0730	64	0.0561 - 0.0623	53	0.0595	66.5%
1-72	0.0730	72	0.0580 - 0.0635	53	0.0595	74.8%
				1/16	0.0625	58.2%
				52	0.0635	52.7%
2-56	0.0860	56	0.0667 - 0.0737	51	0.0670	81.9%
				50	0.0700	69.0%
				49	0.0730	56.0%
2-64	0.0860	64	0.0691 - 0.0753	50	0.0700	78.8%
				49	0.0730	64.0%
3-48	0.0990	48	0.0764 - 0.0845	48	0.0760	85.0%
				5/64	0.0781	77.2%
				47	0.0785	75.8%
				2mm	0.0787	75.0%
				46	0.0810	66.5%
				45	0.0820	62.8%
3-56	0.0990	56	0.0797 - 0.0865	46	0.0810	77.6%
				45	0.0820	73.3%
				44	0.0860	56.0%
4-40	0.1120	40	0.0849 - 0.0939	44	0.0860	80.1%
				43	0.0890	70.8%
				42	0.0935	57.0%
				3/32	0.0937	56.4%
4-48	0.1120	48	0.0894 - 0.0968	42	0.0935	68.4%
				3/32	0.0937	67.6%
				41	0.0960	59.1%
5-40	0.1250	40	0.0979 - 0.1062	40	0.0980	83.1%
				39	0.0995	78.5%
				38	0.1015	72.4%
				37	0.1040	64.7%
5-44	0.1250	44	0.1004 - 0.1079	38	0.1015	79.6%
				37	0.1040	71.1%
				36	0.1065	62.7%
6-32	0.1380	32	0.1040 - 0.1140	37	0.1040	83.8%
				36	0.1065	77.6%
				7/64	0.1094	70.5%
				35	0.1100	69.0%
				34	0.1110	66.5%
				33	0.1130	61.6%
6-40	0.1380	40	0.1110 - 0.1186	34	0.1110	83.1%
				33	0.1130	77.0%
				32	0.1160	67.7%
				3mm	0.1181	61.3%
8-32	0.1640	32	0.1300 - 0.1389	29	0.1360	69.0%
8-36	0.1640	36	0.1340 - 0.1416	29	0.1360	77.6%
				28	0.1405	65.1%
				9/64	0.1406	64.8%
10-24	0.1900	24	0.1450 - 0.1555	26	0.1470	79.4%
				25	0.1495	74.8%
				24	0.1520	70.2%
				23	0.1540	66.5%
10-28	0.1900	28	0.1510 - 0.1600	24	0.1520	81.9%
				23	0.1540	77.6%
				5/32	0.1562	72.9%

Thread Size	Major Diameter	Threads per Inch (TPI)	Tap Drill Range	Tap Drill	Tap Drill Decimal	Theoretical % of Thread
10-32	0.1900	32	0.1560 - 0.1640	22	0.1570	71.1%
				4mm	0.1575	70.1%
				5/32	0.1562	83.3%
				22	0.1570	81.3%
				4mm	0.1575	80.1%
10-36	0.1900	36	0.1600 - 0.1660	21	0.1590	76.4%
				20	0.1610	71.4%
				20	0.1610	80.4%
				19	0.1660	66.5%
				19	0.1660	73.9%
10-40	0.1900	40	0.1630 - 0.1690	18	0.1695	75.8%
10-48	0.1900	48	0.1670 - 0.1720	11/64	0.1719	66.9%
10-56	0.1900	56	0.1710 - 0.1750	11/64	0.1719	78.0%
				17	0.1730	73.3%
12-24	0.2160	24	0.1710 - 0.1807	11/64	0.1719	81.5%
				17	0.1730	79.4%
				16	0.1770	72.1%
				15	0.1800	66.5%
				15	0.1800	84.1%
12-28	0.2160	28	0.1770 - 0.1857	15	0.1800	77.6%
				14	0.1820	73.3%
				13	0.1850	66.8%
				13	0.1850	83.8%
12-32	0.2160	32	0.1820 - 0.1895	14	0.1820	83.8%
				13	0.1850	76.4%
				3/16	0.1875	70.2%
				12	0.1890	66.5%
12-36	0.2160	36	0.1860 - 0.1920	3/16	0.1875	79.0%
				12	0.1890	74.8%
				11	0.1910	69.3%
12-40	0.2160	40	0.1890 - 0.1950	12	0.1890	83.1%
				11	0.1910	77.0%
				10	0.1935	69.3%
12-48	0.2160	48	0.1930 - 0.1980	10	0.1935	83.1%
				9	0.1960	73.9%
				5mm	0.1968	70.9%
12-56	0.2160	56	0.1970 - 0.2010	8	0.1990	73.3%
				7	0.2010	64.7%
1/4-20	0.2500	20	0.1960 - 0.2067	9	0.1960	83.1%
				5mm	0.1968	81.9%
				8	0.1990	78.5%
				7	0.2010	75.4%
				13/64	0.2031	72.2%
				6	0.2040	70.8%
1/4-24	0.2500	24	0.2050 - 0.2150	5	0.2055	68.5%
				5	0.2055	82.2%
				4	0.2090	75.8%
1/4-27	0.2500	27	0.2100 - 0.2190	3	0.2130	68.4%
				3	0.2130	76.9%
				7/32	0.2187	65.1%
1/4-28	0.2500	28	0.2110 - 0.2190	3	0.2130	79.8%
				7/32	0.2187	67.5%
1/4-32	0.2500	32	0.2160 - 0.2229	7/32	0.2187	77.1%
				2	0.2210	71.4%
				1	0.2280	54.2%
1/4-36	0.2500	36	0.2200 - 0.2260	2	0.2210	80.4%
1/4-40	0.2500	40	0.2230 - 0.2290	1	0.2280	67.7%
1/4-48	0.2500	48	0.2270 - 0.2320	1	0.2280	81.3%
1/4-56	0.2500	56	0.2310 - 0.2350	A	0.2340	69.0%
				15/64	0.2344	67.3%
5/16-18	0.3125	18	0.2520 - 0.2630	F	0.2570	76.9%
				G	0.2610	71.4%
5/16-20	0.3125	20	0.2580 - 0.2680	G	0.2610	79.3%
				17/64	0.2656	72.2%
				H	0.2660	71.6%
5/16-24	0.3125	24	0.2670 - 0.2754	I	0.2720	74.8%
				7mm	0.2756	68.2%
5/16-27	0.3125	27	0.2720 - 0.2810	I	0.2720	84.2%
				7mm	0.2756	76.7%

Thread Size	Major Diameter	Threads per Inch (TPI)	Tap Drill Range	Tap Drill	Tap Drill Decimal	Theoretical % of Thread
5/16-28	0.3125	28	0.2740 - 0.2807	J	0.2770	73.8%
				K	0.2810	65.5%
				7mm	0.2756	79.5%
5/16-32	0.3125	32	0.2790 - 0.2847	J	0.2770	76.5%
				K	0.2810	77.6%
				9/32	0.2812	77.1%
5/16-36	0.3125	36	0.2820 - 0.2890	Special		
5/16-40	0.3125	40	0.2850 - 0.2910	L	0.2900	69.3%
5/16-48	0.3125	48	0.2900 - 0.2950	L	0.2900	83.1%
				M	0.2950	64.7%
				5/16	0.3125	77.0%
3/8-16	0.3750	16	0.3070 - 0.3182	8mm	0.3150	73.9%
				O	0.3160	72.7%
				3/8-18	0.3150	83.1%
3/8-18	0.3750	18	0.3150 - 0.3280	O	0.3160	81.8%
				P	0.3230	72.1%
				3/8-20	0.3230	80.1%
3/8-20	0.3750	20	0.3210 - 0.3297	P	0.3230	72.2%
				21/64	0.3281	
				3/8-24	0.3320	79.4%
3/8-24	0.3750	24	0.3300 - 0.3372	Q	0.3320	
3/8-27	0.3750	27	0.3350 - 0.3440	R	0.3390	74.8%
				11/32	0.3437	65.1%
				3/8-28	0.3390	77.6%
3/8-28	0.3750	28	0.3360 - 0.3426	R	0.3390	
3/8-32	0.3750	32	0.3410 - 0.3469	11/32	0.3437	77.1%
3/8-36	0.3750	36	0.3450 - 0.3520	S	0.3480	74.8%
3/8-40	0.3750	40	0.3480 - 0.3540	S	0.3480	83.1%
7/16-14	0.4375	14	0.3600 - 0.3717	U	0.3680	74.9%
7/16-16	0.4375	16	0.3700 - 0.3800	3/8	0.3750	77.0%
				V	0.3770	74.5%
				7/16-18	0.3770	83.8%
7/16-18	0.4375	18	0.3770 - 0.3900	V	0.3770	71.4%
				W	0.3860	
				7/16-20	0.3860	79.3%
7/16-20	0.4375	20	0.3830 - 0.3916	W	0.3860	72.2%
				25/64	0.3906	
				7/16-24	0.3937	80.9%
7/16-24	0.4375	24	0.3920 - 0.4020	10mm	0.3937	74.8%
				X	0.3970	
				7/16-27	0.3970	84.2%
7/16-27	0.4375	27	0.3970 - 0.4060	X	0.3970	69.6%
				Y	0.4040	
				7/16-28	0.4040	72.2%
7/16-28	0.4375	28	0.3990 - 0.4051	Y	0.4040	
7/16-32	0.4375	32	0.4040 - 0.4094	Y	0.4040	82.5%
				13/32	0.4062	77.1%
				1/2-12	0.4130	80.4%
1/2-12	0.5000	12	0.4100 - 0.4223	Z	0.4130	
1/2-13	0.5000	13	0.4170 - 0.4284	27/64	0.4219	72.1%
				27/64	0.4219	78.2%
				1/2-14	0.4331	72.1%
1/2-14	0.5000	14	0.4230 - 0.4380	11mm	0.4331	67.4%
				7/16	0.4375	
				1/2-16	0.4331	82.4%
1/2-16	0.5000	16	0.4320 - 0.4419	11mm	0.4331	77.0%
				7/16	0.4375	
				1/2-18	0.4400 - 0.4530	
1/2-18	0.5000	18	0.4400 - 0.4530	Special		
1/2-20	0.5000	20	0.4460 - 0.4537	29/64	0.4531	72.2%
1/2-24	0.5000	24	0.4550 - 0.4650	Special		
1/2-27	0.5000	27	0.4600 - 0.4690	15/32	0.4687	65.1%
1/2-28	0.5000	28	0.4610 - 0.4676	Special		
1/2-32	0.5000	32	0.4660 - 0.4719	15/32	0.4687	77.1%
9/16-12	0.5625	12	0.4720 - 0.4843	12mm	0.4724	83.2%
9/16-14	0.5625	14	0.4850 - 0.5010	1/2	0.5000	67.4%
9/16-16	0.5625	16	0.4950 - 0.5040	1/2	0.5000	77.0%
9/16-18	0.5625	18	0.5020 - 0.5106	Special		
9/16-20	0.5625	20	0.5080 - 0.5162	13mm	0.5118	78.1%
				33/64	0.5156	72.2%
				9/16-24	0.5170 - 0.5244	
9/16-24	0.5625	24	0.5170 - 0.5244	Special		
9/16-27	0.5625	27	0.5220 - 0.5310	Special		
9/16-28	0.5625	28	0.5240 - 0.5301	Special		
9/16-32	0.5625	32	0.5290 - 0.5344	17/32	0.5312	77.1%
5/8-11	0.6250	11	0.5270 - 0.5391	17/32	0.5312	79.4%
5/8-12	0.6250	12	0.5350 - 0.5463	Special		
5/8-14	0.6250	14	0.5480 - 0.5640	14mm	0.5512	79.5%
				9/16	0.5625	67.4%
				5/8-16	0.5625	77.0%
5/8-16	0.6250	16	0.5570 - 0.5662	9/16		
5/8-18	0.6250	18	0.5650 - 0.5730	Special		

Thread Size	Major Diameter	Threads per Inch (TPI)	Tap Drill Range	Tap Drill	Tap Drill Decimal	Theoretical % of Thread
5/8-20	0.6250	20	0.5710 - 0.5787	37/64	0.5781	72.2%
5/8-24	0.6250	24	0.5800 - 0.5869	Special		
5/8-27	0.6250	27	0.5850 - 0.5940	15mm	0.5906	71.5%
				19/32	0.5937	65.1%
5/8-28	0.6250	28	0.5860 - 0.5926	15mm	0.5906	74.1%
5/8-32	0.6250	32	0.5910 - 0.5969	19/32	0.5937	77.1%
11/16-12	0.6875	12	0.5970 - 0.6085	Special		
11/16-16	0.6875	16	0.6200 - 0.6284	5/8	0.6250	77.0%
11/16-20	0.6875	20	0.6330 - 0.6412	41/64	0.6406	72.2%
11/16-24	0.6875	24	0.6420 - 0.6494	Special		
11/16-28	0.6875	28	0.6490 - 0.6551	Special		
11/16-32	0.6875	32	0.6540 - 0.6594	21/32	0.6562	77.1%
3/4-10	0.7500	10	0.6420 - 0.6545	Special		
3/4-12	0.7500	12	0.6600 - 0.6707	17mm	0.6693	74.5%
3/4-14	0.7500	14	0.6730 - 0.6880	11/16	0.6875	67.4%
3/4-16	0.7500	16	0.6820 - 0.6908	11/16	0.6875	77.0%
3/4-18	0.7500	18	0.6900 - 0.7030	Special		
3/4-20	0.7500	20	0.6960 - 0.7037	45/64	0.7031	72.2%
3/4-24	0.7500	24	0.7050 - 0.7150	18mm	0.7087	76.3%
3/4-28	0.7500	28	0.7110 - 0.7176	Special		
3/4-32	0.7500	32	0.7160 - 0.7219	23/32	0.7187	77.1%
13/16-12	0.8125	12	0.7220 - 0.7329	Special		
13/16-16	0.8125	16	0.7450 - 0.7533	19mm	0.7480	79.4%
				3/4	0.7500	77.0%
13/16-20	0.8125	20	0.7580 - 0.7662	49/64	0.7656	72.2%
13/16-28	0.8125	28	0.7740 - 0.7801	Special		
13/16-32	0.8125	32	0.7790 - 0.7844	25/32	0.7812	77.1%
7/8-9	0.8750	9	0.7550 - 0.7681	49/64	0.7656	75.8%
7/8-10	0.8750	10	0.7670 - 0.7880	25/32	0.7812	72.2%
				20mm	0.7874	67.4%
7/8-12	0.8750	12	0.7850 - 0.7948	Special		
7/8-14	0.8750	14	0.7980 - 0.8068	Special		
7/8-16	0.8750	16	0.8070 - 0.8158	13/16	0.8125	77.0%
7/8-18	0.8750	18	0.8150 - 0.8280	21mm	0.8268	66.8%
7/8-20	0.8750	20	0.8210 - 0.8287	21mm	0.8268	74.2%
				53/64	0.8281	72.2%
7/8-24	0.8750	24	0.8300 - 0.8400	Special		
7/8-27	0.8750	27	0.8350 - 0.8440	27/32	0.8437	65.1%
7/8-28	0.8750	28	0.8360 - 0.8426	Special		
7/8-32	0.8750	32	0.8410 - 0.8469	27/32	0.8437	77.1%
15/16-12	0.9375	12	0.8470 - 0.8575	Special		
15/16-16	0.9375	16	0.8700 - 0.8783	7/8	0.8750	77.0%
15/16-20	0.9375	20	0.8830 - 0.8912	57/64	0.8906	72.2%
15/16-28	0.9375	28	0.8990 - 0.9051	Special		
15/16-32	0.9375	32	0.9040 - 0.9094	23mm	0.9055	78.8%
				29/32	0.9062	77.1%
1-8	1.0000	8	0.8650 - 0.8797	22mm	0.8661	82.5%
				7/8	0.8750	77.0%
1-10	1.0000	10	0.8920 - 0.9130	23mm	0.9055	72.7%
				29/32	0.9062	72.2%
1-12	1.0000	12	0.9100 - 0.9198	Special		
1-14	1.0000	14	0.9230 - 0.9315	Special		
1-16	1.0000	16	0.9320 - 0.9408	15/16	0.9375	77.0%
1-18	1.0000	18	0.9400 - 0.9530	24mm	0.9449	76.4%
1-20	1.0000	20	0.9460 - 0.9537	61/64	0.9531	72.2%
1-24	1.0000	24	0.9550 - 0.9650	Special		
1-27	1.0000	27	0.9600 - 0.9690	31/32	0.9687	65.1%
1-28	1.0000	28	0.9610 - 0.9676	Special		
1-32	1.0000	32	0.9660 - 0.9719	31/32	0.9687	77.1%