Fraction, Decimal and Millimeter

Every 64th of an inch from **1/64 to 1 inch**, with the decimal and metric equivalent.

MARK	FRACTION	DECIMAL	3 PLACE	MM	MARK	FRACTION	DECIMAL	3 PLACE	MM
	1/64	.0156	.016	0.40		33/64	.5156	.516	13.10
	1/32	.0312	.031	0.79		17/32	.5312	.531	13.49
	3/64	.0469	.047	1.19		35/64	.5469	.547	13.89
	1/16	.0625	.062	1.59		9/16	.5625	.562	14.29
	5/64	.0781	.078	1.98		37/64	.5781	.578	14.68
	3/32	.0938	.094	2.38		19/32	.5938	.594	15.08
	7/64	.1094	.109	2.78		39/64	.6094	.609	15.48
	1/8	**.1250**	**.125**	**3.17**		**5/8**	**.6250**	**.625**	**15.88**
	9/64	.1406	.141	3.57		41/64	.6406	.641	16.27
	5/32	.1562	.156	3.97		21/32	.6562	.656	16.67
	11/64	.1719	.172	4.37		43/64	.6719	.672	17.07
	3/16	.1875	.188	4.76		11/16	.6875	.688	17.46
	13/64	.2031	.203	5.16		45/64	.7031	.703	17.86
	7/32	.2188	.219	5.56		23/32	.7188	.719	18.26
	15/64	.2344	.234	5.95		47/64	.7344	.734	18.65
	1/4	**.2500**	**.250**	**6.35**		**3/4**	**.7500**	**.750**	**19.05**
	17/64	.2656	.266	6.75		49/64	.7656	.766	19.45
	9/32	.2812	.281	7.14		25/32	.7812	.781	19.84
	19/64	.2969	.297	7.54		51/64	.7969	.797	20.24
	5/16	.3125	.312	7.94		13/16	.8125	.812	20.64
	21/64	.3281	.328	8.33		53/64	.8281	.828	21.03
	11/32	.3438	.344	8.73		27/32	.8438	.844	21.43
	23/64	.3594	.359	9.13		55/64	.8594	.859	21.83
	3/8	**.3750**	**.375**	**9.52**		**7/8**	**.8750**	**.875**	**22.22**
	25/64	.3906	.391	9.92		57/64	.8906	.891	22.62
	13/32	.4062	.406	10.32		29/32	.9062	.906	23.02
	27/64	.4219	.422	10.72		59/64	.9219	.922	23.42
	7/16	.4375	.438	11.11		15/16	.9375	.938	23.81
	29/64	.4531	.453	11.51		61/64	.9531	.953	24.21
	15/32	.4688	.469	11.91		31/32	.9688	.969	24.61
	31/64	.4844	.484	12.30		63/64	.9844	.984	25.00
	1/2	**.5000**	**.500**	**12.70**		**1**	**1.0000**	**1.000**	**25.40**

Reading it: the mark column matches the line length on a tape or ruler. **Bold rows** are eighths, the marks you use most. Millimeters are exact to two places (1 inch = 25.4 mm exactly).

Inch Tap and Clearance Drills

Unified threads **#0 to 1-1/2"**, coarse and fine, with tap drills for soft and hard metals and the clearance hole for each bolt.

Thread UNC coarse UNF fine

SIZE	THREADS PER INCH	MAJOR DIA.	TAP DRILL · ALUMINUM, BRASS, PLASTIC			TAP DRILL · STEEL, STAINLESS			CLEARANCE HOLE			
			DRILL	INCH	THREAD	DRILL	INCH	THREAD	CLOSE	INCH	FREE	INCH
#0 UNF	80	.0600	3/64	.0469	81%	#55	.0520	49%	#52	.0635	#50	.0700
#1 UNC	64	.0730	#53	.0595	67%	1/16	.0625	52%	#48	.0760	#46	.0810
#1 UNF	72	.0730	#53	.0595	75%	#52	.0635	53%	#48	.0760	#46	.0810
#2 UNC	56	.0860	#50	.0700	69%	#49	.0730	56%	#43	.0890	#41	.0960
#2 UNF	64	.0860	#50	.0700	79%	#48	.0760	49%	#43	.0890	#41	.0960
#3 UNC	48	.0990	#47	.0785	76%	#44	.0860	48%	#37	.1040	#35	.1100
#3 UNF	56	.0990	#45	.0820	73%	#43	.0890	43%	#37	.1040	#35	.1100
#4 UNC	40	.1120	#43	.0890	71%	#41	.0960	49%	#32	.1160	#30	.1285
#4 UNF	48	.1120	#42	.0935	68%	#40	.0980	52%	#32	.1160	#30	.1285
#5 UNC	40	.1250	#38	.1015	72%	7/64	.1094	48%	#30	.1285	#29	.1360
#5 UNF	44	.1250	#37	.1040	71%	#35	.1100	51%	#30	.1285	#29	.1360
#6 UNC	32	.1380	#36	.1065	78%	#32	.1160	54%	#27	.1440	#25	.1495
#6 UNF	40	.1380	#33	.1130	77%	#31	.1200	55%	#27	.1440	#25	.1495
#8 UNC	32	.1640	#29	.1360	69%	#27	.1440	49%	#18	.1695	#16	.1770
#8 UNF	36	.1640	#29	.1360	78%	#26	.1470	47%	#18	.1695	#16	.1770
#10 UNC	24	.1900	#25	.1495	75%	#20	.1610	54%	#9	.1960	#7	.2010
#10 UNF	32	.1900	#21	.1590	76%	#18	.1695	51%	#9	.1960	#7	.2010
#12 UNC	24	.2160	#16	.1770	72%	#12	.1890	50%	#2	.2210	#1	.2280
#12 UNF	28	.2160	#14	.1820	73%	#10	.1935	48%	#2	.2210	#1	.2280
1/4 UNC	20	.2500	#7	.2010	75%	7/32	.2188	48%	F	.2570	H	.2660
1/4 UNF	28	.2500	#3	.2130	80%	#1	.2280	47%	F	.2570	H	.2660
5/16 UNC	18	.3125	F	.2570	77%	J	.2770	49%	P	.3230	Q	.3320
5/16 UNF	24	.3125	I	.2720	75%	9/32	.2812	58%	P	.3230	Q	.3320
3/8 UNC	16	.3750	5/16	.3125	77%	Q	.3320	53%	W	.3860	X	.3970
3/8 UNF	24	.3750	Q	.3320	79%	S	.3480	50%	W	.3860	X	.3970
7/16 UNC	14	.4375	U	.3680	75%	25/64	.3906	51%	29/64	.4531	15/32	.4688
7/16 UNF	20	.4375	25/64	.3906	72%	13/32	.4062	48%	29/64	.4531	15/32	.4688
1/2 UNC	13	.5000	27/64	.4219	78%	29/64	.4531	47%	33/64	.5156	17/32	.5312
1/2 UNF	20	.5000	29/64	.4531	72%	15/32	.4688	48%	33/64	.5156	17/32	.5312
9/16 UNC	12	.5625	31/64	.4844	72%	33/64	.5156	43%	37/64	.5781	19/32	.5938
9/16 UNF	18	.5625	33/64	.5156	65%	17/32	.5312	43%	37/64	.5781	19/32	.5938
5/8 UNC	11	.6250	17/32	.5312	79%	9/16	.5625	53%	41/64	.6406	21/32	.6562
5/8 UNF	18	.6250	37/64	.5781	65%	19/32	.5938	43%	41/64	.6406	21/32	.6562
3/4 UNC	10	.7500	21/32	.6562	72%	11/16	.6875	48%	49/64	.7656	25/32	.7812
3/4 UNF	16	.7500	11/16	.6875	77%	45/64	.7031	58%	49/64	.7656	25/32	.7812
7/8 UNC	9	.8750	49/64	.7656	76%	51/64	.7969	54%	57/64	.8906	29/32	.9062
7/8 UNF	14	.8750	13/16	.8125	67%	53/64	.8281	51%	57/64	.8906	29/32	.9062
1 UNC	8	1.0000	7/8	.8750	77%	59/64	.9219	48%	1 1/64	1.0156	1 1/32	1.0312
1 UNF	12	1.0000	59/64	.9219	72%	61/64	.9531	43%	1 1/64	1.0156	1 1/32	1.0312
1 UNS	14	1.0000	15/16	.9375	67%	61/64	.9531	51%	1 1/64	1.0156	1 1/32	1.0312
1 1/8 UNC	7	1.1250	63/64	.9844	76%	–			–		–	
1 1/8 UNF	12	1.1250	1 3/64	1.0469	72%	–			–		–	
1 1/4 UNC	7	1.2500	1 7/64	1.1094	76%	–			–		–	
1 1/4 UNF	12	1.2500	1 11/64	1.1719	72%	–			–		–	
1 3/8 UNC	6	1.3750	1 7/32	1.2188	72%	–			–		–	
1 3/8 UNF	12	1.3750	1 19/64	1.2969	72%	–			–		–	
1 1/2 UNC	6	1.5000	1 11/32	1.3438	72%	–			–		–	
1 1/2 UNF	12	1.5000	1 27/64	1.4219	72%	–			–		–	

Which column? The standard tap drill gives about 75% thread, strong and easy to tap in soft metals. In steel and stainless, the larger drill (about 50% thread) cuts the tapping force and breaks fewer taps with little loss of strength. **Close** clearance lines parts up tightly; **free** clearance lets bolts slip through holes that are a little off.

Unit Conversions for the Shop

Length, area, volume, weight, pressure, torque, power and temperature. **Multiply** by the number shown.

LENGTH

inches	→ millimeters	× 25.4
inches	→ centimeters	× 2.54
feet	→ meters	× 0.3048
yards	→ meters	× 0.9144
miles	→ kilometers	× 1.60934
millimeters	→ inches	× 0.03937
meters	→ feet	× 3.28084
kilometers	→ miles	× 0.62137

AREA

square inches	→ square centimeters	× 6.4516
square feet	→ square meters	× 0.0929
square yards	→ square meters	× 0.83613
acres	→ square feet	× 43,560
acres	→ hectares	× 0.40469
square meters	→ square feet	× 10.76391

WEIGHT

ounces	→ grams	× 28.34952
pounds	→ kilograms	× 0.45359
kilograms	→ pounds	× 2.20462
short tons	→ pounds	× 2,000
metric tons	→ kilograms	× 1,000
short tons	→ metric tons	× 0.90718

TEMPERATURE

°F → °C	(°F − 32) × 5 ÷ 9
°C → °F	°C × 9 ÷ 5 + 32
Water freezes	32 °F = 0 °C
Room temperature	68 °F = 20 °C
Water boils (sea level)	212 °F = 100 °C

VOLUME

cubic inches	→ cubic centimeters	× 16.38706
cubic feet	→ cubic inches	× 1,728
cubic feet	→ US gallons	× 7.48052
cubic yards	→ cubic feet	× 27
cubic yards	→ cubic meters	× 0.76455
US gallons	→ liters	× 3.78541
US quarts	→ liters	× 0.94635
liters	→ US gallons	× 0.26417
US fluid ounces	→ milliliters	× 29.57353

PRESSURE

psi	→ kilopascals	× 6.89476
psi	→ bars	× 0.06895
bars	→ psi	× 14.50377
kilopascals	→ psi	× 0.14504

TORQUE

foot pounds	→ newton meters	× 1.35582
inch pounds	→ newton meters	× 0.11298
newton meters	→ foot pounds	× 0.73756
foot pounds	→ inch pounds	× 12

POWER AND SPEED

horsepower	→ watts	× 745.7
kilowatts	→ horsepower	× 1.34102
miles per hour	→ kilometers per hour	× 1.60934
feet per minute	→ meters per minute	× 0.3048

Multiply the amount you have by the number shown. Factors marked exact by law: 1 inch = 25.4 mm, 1 foot = 0.3048 m, 1 pound = 0.45359237 kg, 1 US gallon = 231 cubic inches.