

Workshop cheat sheet: inch threads

Convert, read the pitch, tell American and British threads apart

VÖLKEL

How to convert

Pitch in mm

25.4 ÷ threads per inch

UNC 1/2 x 13: 25.4 ÷ 13 = 1.954 mm

Nominal diameter in mm

Fraction × 25.4

UNF 3/8: 0.375 × 25.4 = 9.525 mm. Fastener threads only.

Unified number size in mm

(0.060 + 0.013 × No.) × 25.4

No. 10: 0.190 in = 4.826 mm

Pipe threads (G, R, NPT)

Don't calculate, use the table

The inch figure is a nominal size. G 1 measures 33.249 mm, not 25.4 mm.

Two thread families

60°	**American** UNC, UNF, UNEF, NPT
55°	**British (Whitworth)** BSW, BSF, G, R, Rp, Rc

Below 1/4 in, only Unified uses numbers (No. 0 to No. 12). Whitworth sticks to fractions, BSW goes down to 1/16 in.

Threads per inch and pitch

TPI	Pitch	Typical for
8	3.175 mm	UNC 1, BSW 1
11	2.309 mm	G 1, UNC 5/8, BSW 5/8
11.5	2.209 mm	NPT 1
12	2.117 mm	BSW 1/2, UNF 1
13	1.954 mm	UNC 1/2
14	1.814 mm	G 1/2, NPT 1/2, UNC 7/16, BSW 7/16
16	1.588 mm	UNC 3/8, BSW 3/8, BSF 1/2
18	1.411 mm	UNC 5/16, NPT 1/4
19	1.337 mm	G 1/4, G 3/8
20	1.270 mm	UNC 1/4, BSW 1/4, UNF 1/2
24	1.058 mm	UNC No. 10, BSW 3/16, UNF 3/8
28	0.907 mm	UNF 1/4, G 1/8, UNEF 1/2

Identify a thread in three steps

1. Measure the major diameter. If it differs clearly from the inch fraction, it is probably a pipe thread.
2. Determine the TPI with a 55° and 60° pitch gauge, or count the threads against the inch scale at the top.
3. Compare both values with the table and check with a thread gauge.

Counting threads with the inch scale: Printed at actual size (no scaling), each section of the scale at the top is exactly 1 inch. Hold the thread against it and count the threads over 1 inch. The 50 mm check line at the bottom confirms that the print is to scale.

Tap drill sizes for all inch threads: VÖLKEL tap drill calculator at voelkel.com



Check line: 50 mm

As of November 2026. Guide values; the relevant thread standards are binding.
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