

Metric and Imperial Thread Size Chart for CNC Parts

Thread callouts decide drill sizes, wall thickness and whether a tapped hole is strong enough. This chart covers the metric and imperial threads we cut most often, with the tapping and clearance drill for each.

Metric coarse threads

Size	Pitch (mm)	Tapping drill (mm)	Close clearance (mm)
M2	0.40	1.60	2.20
M2.5	0.45	2.05	2.70
M3	0.50	2.50	3.20
M4	0.70	3.30	4.30
M5	0.80	4.20	5.30
M6	1.00	5.00	6.40
M8	1.25	6.80	8.40
M10	1.50	8.50	10.50
M12	1.75	10.20	13.00

Metric fine threads

Size	Pitch (mm)	Tapping drill (mm)
M3 x 0.35	0.35	2.65
M4 x 0.5	0.50	3.50
M5 x 0.5	0.50	4.50
M6 x 0.75	0.75	5.25
M8 x 1.0	1.00	7.00
M10 x 1.25	1.25	8.75

Imperial threads

Size	Threads per inch	Tapping drill (mm)
1/4-20 UNC	20	5.10
5/16-18 UNC	18	6.60
3/8-16 UNC	16	8.00
1/4-28 UNF	28	5.40
5/16-24 UNF	24	7.00
3/8-24 UNF	24	8.50

Notes

- Rule of thumb for a tapped hole in steel: keep at least two times the thread diameter of material around the hole.
- For aluminium and brass, use a coarser thread or add a thread insert for repeated assembly.
- Blind tapped holes should be deeper than the thread length by at least half the diameter for the tap to clear chips.

Frequently asked questions

What tapping drill do I use for an M3 thread?

Use a 2.5 mm tapping drill for an M3 x 0.50 coarse thread, and a 3.2 mm hole for close clearance. For M3 x 0.35 fine, the tapping drill is 2.65 mm.

How much material should surround a tapped hole?

As a rule keep at least two times the thread diameter of material around a tapped hole in steel, and more in softer materials such as aluminium or brass.

Can you tap threads in aluminium without stripping?

Yes. We use form taps or add a thread insert for parts that will be assembled repeatedly, which keeps the thread strong in soft aluminium.

Do you machine both metric and imperial threads?

Yes. We cut metric coarse and fine and UNC and UNF threads as standard. List the thread callout on the drawing and we confirm the drill sizes with the quote.