

T25 Screw Cap Print & Fit Guide

A wall full of exposed star-drive screw heads, gone in an afternoon.

Four Batch Plates

No Supports

Pre-Configured 3MF

Built by MakerX Designs · Virginia Beach, VA · makerxdesigns.com · © 2026

Pegboard, deck boards, cabinet carcasses — anything hung with T25 star drive screws ends up with a grid of dark sockets staring back at you. This cap presses in and sits flush, so the fastener stops being the thing you notice.

In the download

File	What it is
makerx-t25_cap.3mf	Start here. Four ready-made plates — 1, 6, 12 and 24 caps — oriented face-down with the tested profile already loaded.
makerx-t25-cap.STL	A single cap, for your own slicer or your own array.

1 · The screw it is built around

The part	
Overall size	12.5 × 12.5 × 3.5 mm
Fits	T25 star drive (Torx) socket head
How it holds	press-fit boss on the underside, tapered to start
Visible face	plain 12.5 mm disc, 3.5 mm proud
Hardware needed	none — friction only

Screw boxes are not all the same, and that is the one thing to check

T25 names the DRIVER, not the head, and socket depth varies between brands. Print the single-cap plate first and try it on the screws you actually own before committing to a plate of twenty-four. Section 6 covers what to do if the fit is off.

2 • Pick a quantity, then slice

- 1 Open `makerx-t25_cap.3mf` in Creality Print, or any slicer that imports 3MF project files.
- 2 When it asks whether to load the project's print settings, **say yes** — that is the whole point of the 3MF.
- 3 **Choose your plate.** The project carries four: 1, 6, 12 and 24 caps. Slice the one you want rather than duplicating parts by hand.

★ No supports, and the flag in the file does not change that

The profile has the support option switched on, but the slice builds **nothing** — the cap is a flat disc with a boss on top and there is no overhang anywhere on it. Check the G-code preview if you want to see it for yourself: there is no support material in the breakdown. Leave the setting as it ships and ignore it.

3 • What each plate costs

Plate	Print time	Filament
1 cap	5 m 25 s	0.26 g
6 caps	19 m 34 s	1.32 g
12 caps	37 m 28 s	2.58 g
24 caps	1 h 12 m	5.10 g

About 0.21 g a cap on the 24-up plate — roughly eight cents for all twenty-four. This is a use-up-the-end-of-a-spool print.

4 • The profile baked into the 3MF

Quality	
Layer height	0.08 mm
Nozzle	0.4 mm
Walls	2 loops
Top / bottom	5 / 3 layers
Infill	15 % gyroid

Supports & adhesion	
Supports	None generated
Brim	5 mm — and it matters, see below

Material & plate	
Filament	PLA as sliced · PETG for a harder-wearing cap
Nozzle temp	220 °C
Bed temp	60 °C
Sliced on	Creality Hi, 0.4 mm nozzle

Before you hit print	
Brim	present on every cap
Layer height	0.08 mm, not your usual 0.2

5 • Off the plate

The brim is wider than the cap, and that is on purpose

A 12.5 mm disc has almost no footprint. The 5 mm brim is the only thing keeping twenty-four of them from being flicked across the bed by the nozzle, so leave it on when you slice — then take it off like this.

- 1 Let the plate cool fully. At 3.5 mm tall these release on their own once the plate flexes.
- 2 **Peel the brim from each cap.** It comes away as a ring with a fingernail. On the 24-up plate the brims often lift as one connected sheet with the caps still in it — pop them out afterwards.
- 3 Run a thumbnail around the rim to knock off any brim witness left behind. Anything still attached to the edge will stop the cap sitting flat.
- 4 Check the boss on the underside is clean and square. That is the surface doing all the work.

6 • Fitting them

- 1 Drive your screw and **stop when the head seats.** A screw sunk below the surface leaves the cap nothing to grip; one left proud holds the cap off the surface.
- 2 Line the boss up with the star socket and **press straight down with your thumb.** The taper finds the socket for you — no mallet, no tapping.
- 3 If it stands proud, you have missed the socket. Pull it, re-seat it square, and try again.

★ If the fit is loose or too tight, scale it — do not force it

Apply a **uniform scale** in your slicer: try 101 % for a firmer grip, 99 % if it will not start. Scaling all three axes together keeps the boss round and the press-fit behaving; scaling one axis alone ovals it and it will never seat properly.

7 • Getting a better top surface

- **Print on a textured plate.** The visible face of the cap is the face on the bed, so the bed finish IS the finish. A textured PEI sheet gives a matte face that reads like molded hardware; a smooth plate gives a glossy one that shows every imperfection in the sheet.
- **Match the surface, or deliberately do not.** White on white pegboard disappears completely. A contrasting color turns the same screw grid into a deliberate pattern — which is sometimes the better answer.
- **They come back out.** The fit is friction, not glue. Lift one with a fingernail or the corner of a putty knife and it will re-seat as many times as you need — so capping a wall does not mean giving up access to the screws behind it.
- **PETG for anything handled.** PLA is fine on a wall. On a surface people knock into, PETG takes the abuse better and pops back rather than cracking.

Where precision meets the printer

Thanks for printing these. If a wall of screw heads stopped bothering you, that is exactly what they were designed to do.

For years my design world existed entirely behind a screen. As a mechanical engineer I spent countless hours building complex CAD models, but there was always a missing link — the ability to hold an idea in my hands. That changed in January 2026, when I went headfirst into 3D printing. The moment that first layer stuck to the bed, the gap between concept and reality vanished.

Coming from a background where precision is everything, tolerances aren't suggestions to me — they are a religion. I didn't want to print trinkets; I wanted to apply industrial engineering discipline to desktop manufacturing. A press-fit is the purest version of that: there is no fastener and no glue to hide behind, so either the dimension is right or the part falls off the wall. This one was modeled from scratch in SolidWorks and is sitting in my own pegboard.

Three principles behind every print

01**Functional Engineering**

High-utility, real-world solutions rather than purely decorative models. If it doesn't solve a practical problem, it doesn't leave the workstation.

02**Rigorous Tolerances**

Designed in professional CAD with mechanical intent — press-fits that click and assemblies that work straight off the build plate. No sanding, no filing, no guesswork.

03**Bridging the Gap**

Industrial structural integrity at maker speed. Proving a desktop printer can produce parts worthy of real engineering applications is what drives every release.

The workshop

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A **Like** or a **Favorite** on the model page takes a second and genuinely helps. A **Boost** helps more than either — it is what puts a design in front of makers who would never otherwise come across it. And if you **Follow** me, new models and updates land in your feed as they are released. However you choose to support it, thank you — it is what keeps everything here free to download.

Got a screw this cap doesn't suit — a different drive, a deeper socket, a larger head? Leave a comment on the model with the screw and the brand. That is where the next size starts.

Cap them and forget them. — MakerX Designs · makerxdesigns.com · © 2026