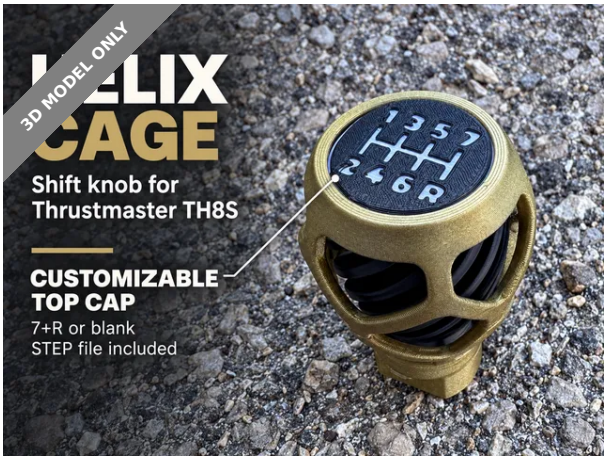

Helix Cage – Organic Lattice Shift Knob for Thrustmaster TH8S

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VIEW IN BROWSER

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Summary

Organic lattice cage over a twisted helical core for the TH8S. Two-colour look without an MMU. 7+R or blank cap.

Hobby & Makers > Automotive

Tags: knob organic gear customizable racing simracing shifter sim thrustmaster lattice helix shift th8s

An open, organic lattice cage wrapped around a twisted helical core, so the core seems to spin through the windows from every angle. It has four printed parts, needs no supports, and gives a two-colour look on a single-colour printer.

It's built around Thrustmaster's official Design piece, so it screws straight onto the official TH8S adapter.

Highlights

- **Official fit**: built on the TH8S Design piece and mounts on the official adapter.
- **Two colours, no MMU**: shells in one colour, core and cap in another. The numbers come from one filament change.

- **No rattle**: the upper shell clamps the cap down, and the two shells lock together with 3 pins and a press-fit seam.
- **Removable**: nothing is glued to the adapter, so you can unscrew the whole knob at any time.
- **No supports**: the window edges are angled on the inside so the overhangs print clean.
- **Make it yours**: a blank cap and STEP files are included.
- **Real-car size**: 48 mm wide and 61 mm tall. Most car shift knobs are 46–51 mm wide.

What you need

- The 4 printed parts:
  - 1 Lower shell
  - 2 Upper shell
  - 3 Core
  - 4 Cap: 7+R or blank
- The official TH8S adapter from Thrustmaster: https://www.printables.com/model/1825116. Print it with Thrustmaster's settings (100 % infill). It isn't included here.
- A little CA (super) glue.
- A pencil.

Printing

The files are already turned the right way up. Load them as they are; no supports needed.

- **1 Lower shell**: upright, 20 % infill. A brim is optional; it helps on a bad day.
- **2 Upper shell**: upside down, 20 % infill.
- **3 Core**: upside down, 25 % infill. The extra infill adds a little weight.
- **4 Cap**: face down. For coloured numbers, change filament at the 1.0 mm layer.

General settings: 0.4 mm nozzle, 0.2 mm layers, PLA.

3MF files:

- They already contain the infill per part, the brim and the filament change.
- In PrusaSlicer, choose **Open as project** to keep them. Open as a project to retain the prepared settings, then select your printer and filament profiles and check the settings before slicing.
- If you use the STLs or another slicer, set these by hand.

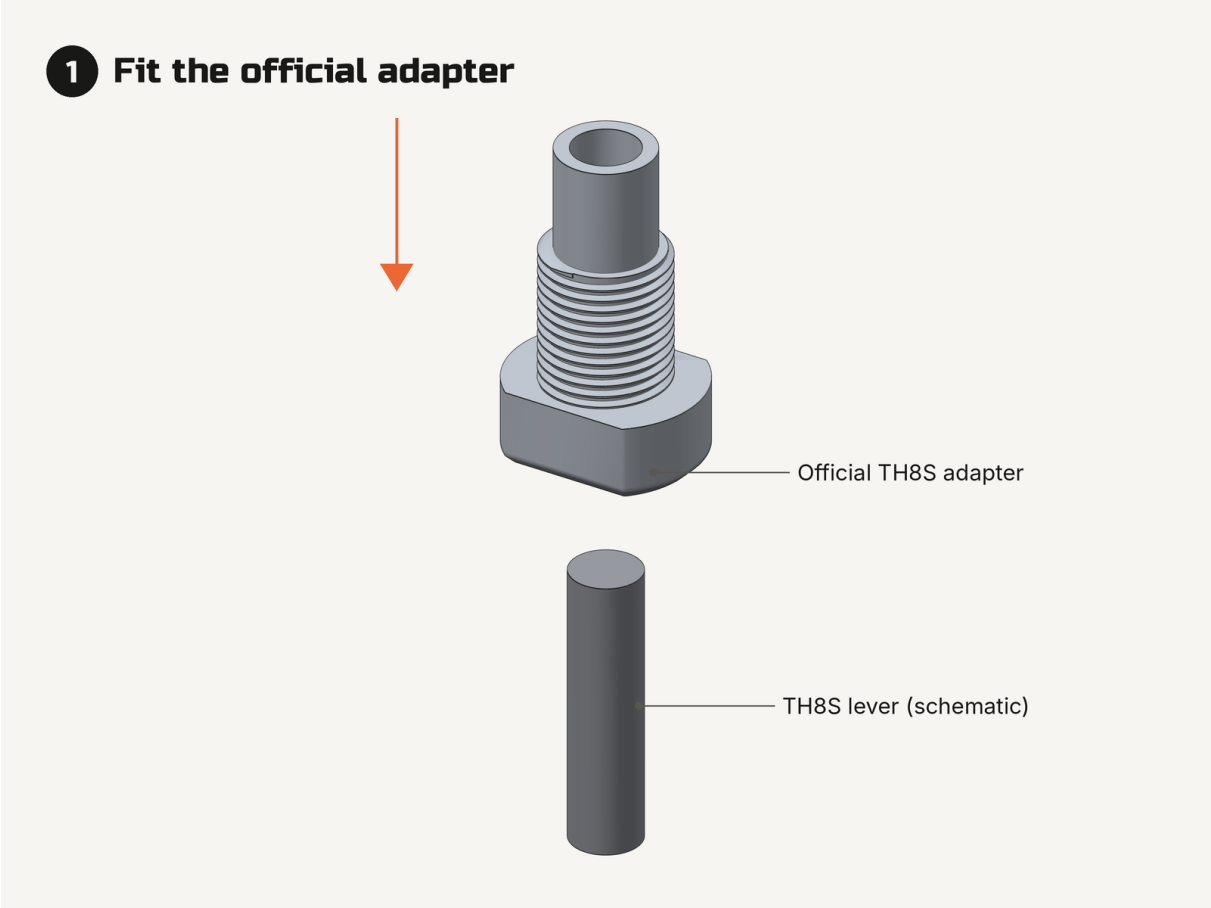
Coloured numbers:

- The numbers are cut 0.8 mm deep into the face of the cap.
- With 0.2 mm layers, put the filament change at the 1.0 mm layer, which is the first layer above 0.8 mm.
- The cap in the photos is black with white numbers.

Assembly

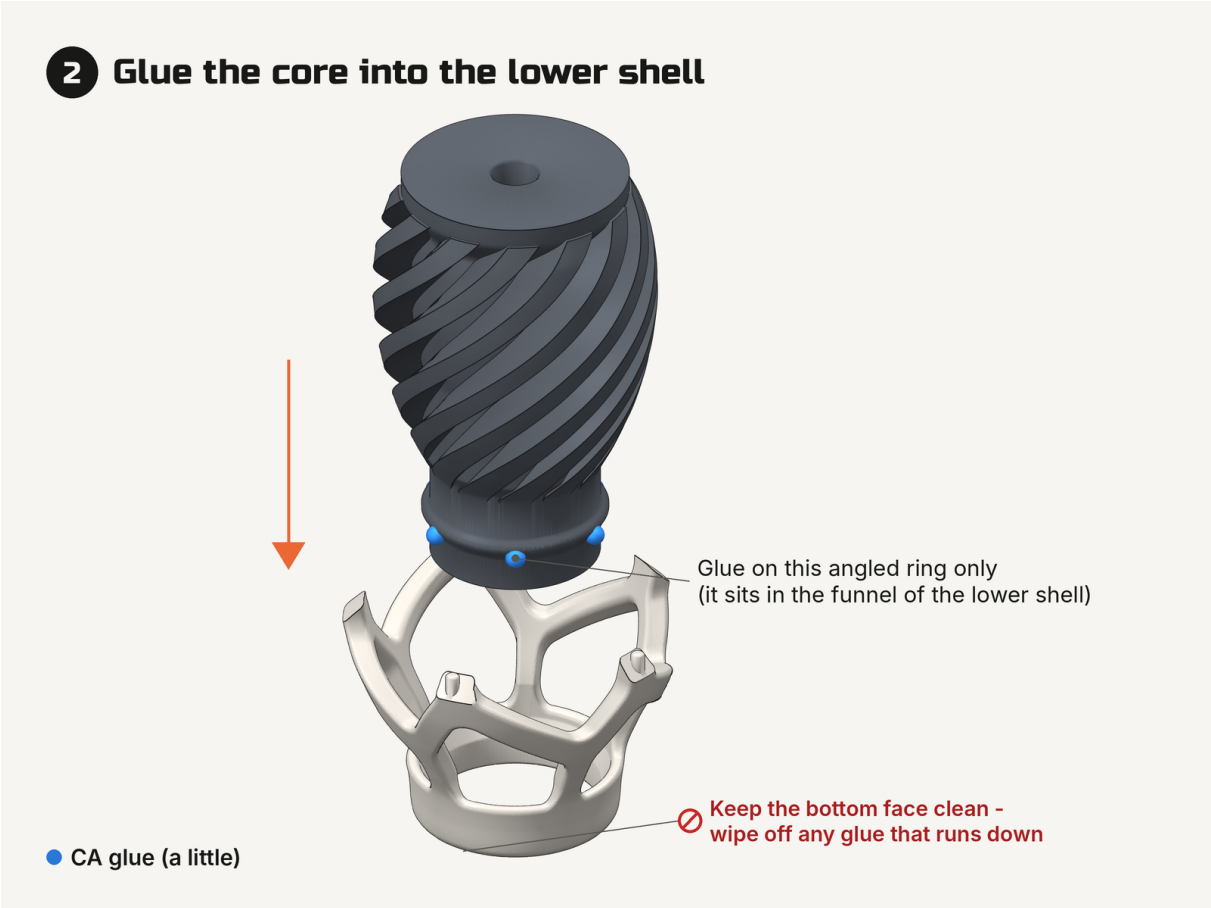
Important: don't glue anything to the adapter. The knob is meant to unscrew whole.

Step 1 – Fit the official adapter



Mount the adapter on the TH8S lever as shown in Thrustmaster's PDF. It fits two ways, 180° apart; either is fine.

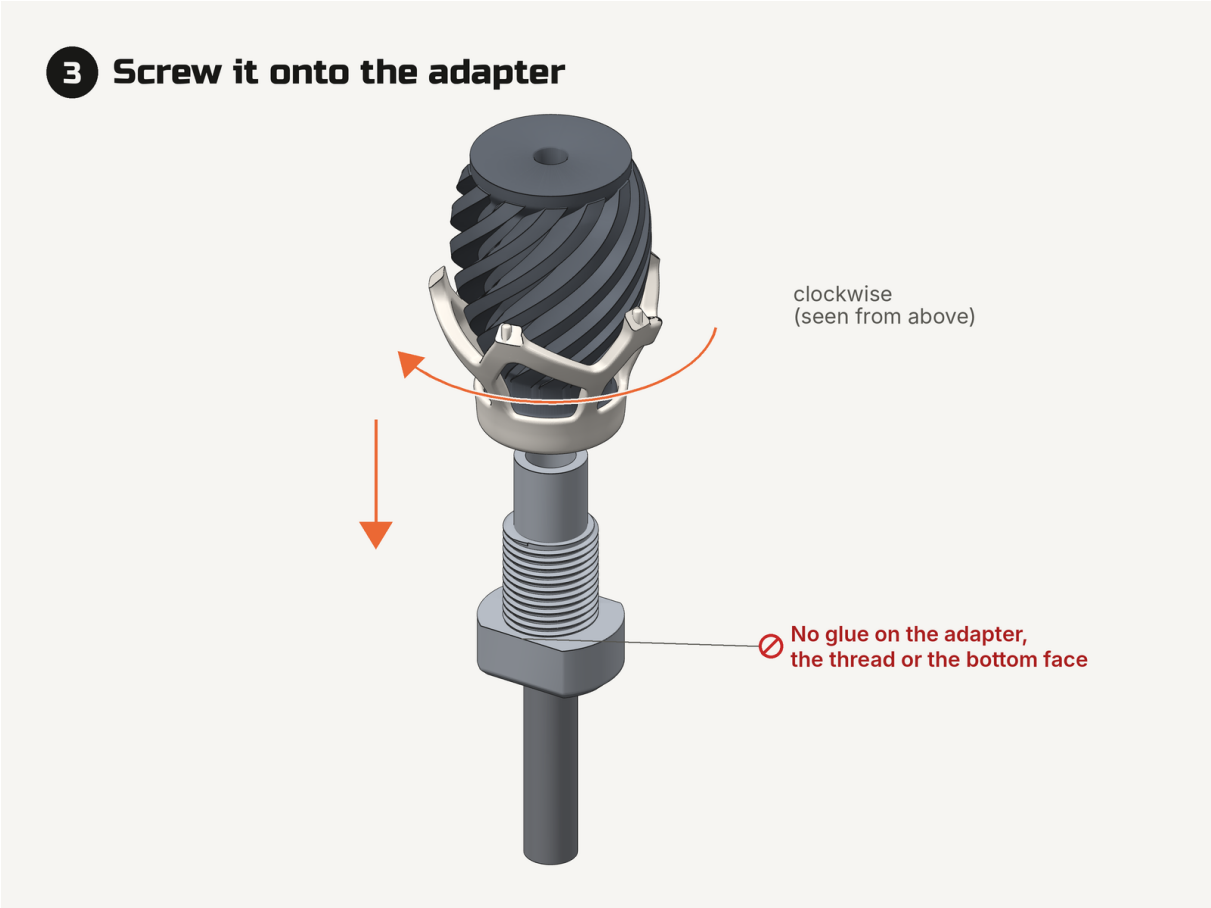
Step 2 – Glue the core into the lower shell (on the table)



1. Do this on the table, not on the shifter.
2. Put 4–6 small drops of CA glue on the angled ring near the bottom of the core.
3. Drop the core into the lower shell and press it down so the ring sits in the shell's funnel.
4. Wipe off any glue that runs down. The bottom face must stay clean.
5. Let it set.

The lower shell can't be fitted once the core is screwed on, and doing this on the table keeps glue away from the adapter.

Step 3 – Screw it onto the adapter

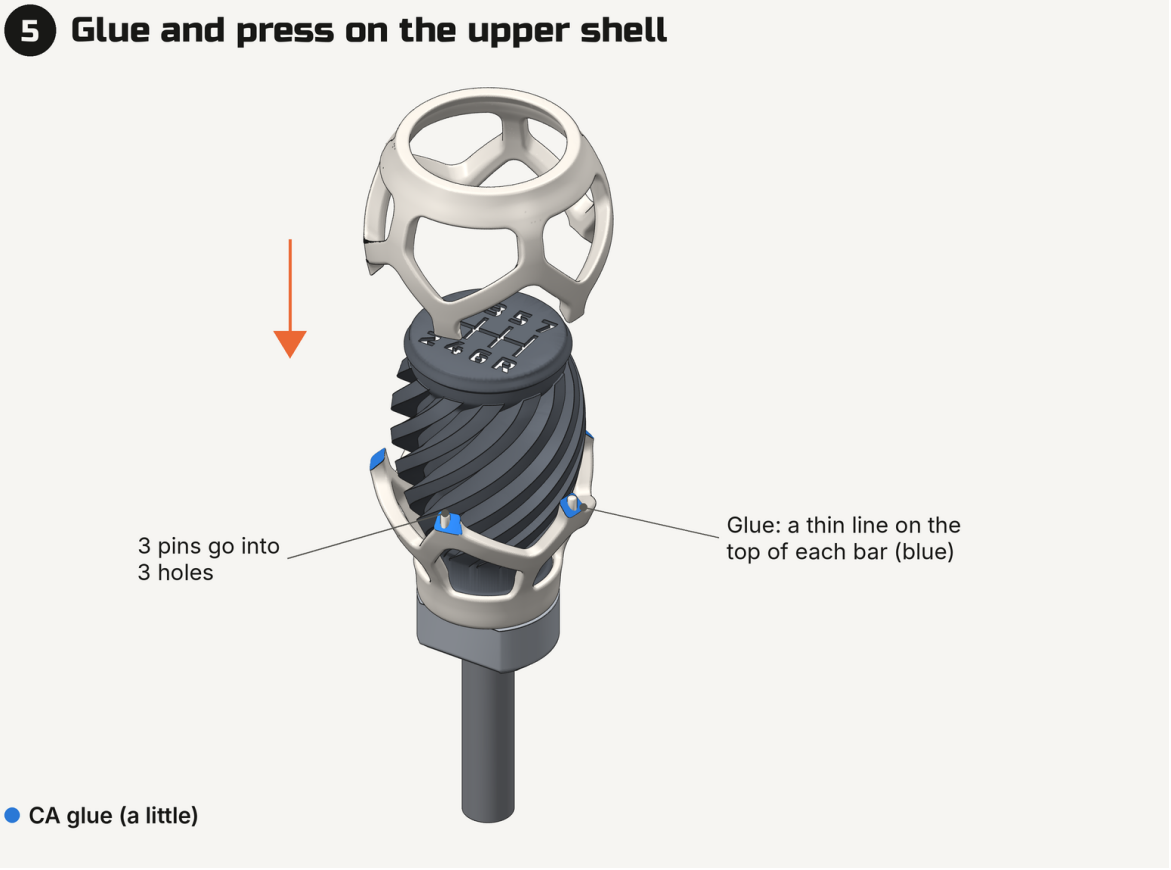


Screw the core and lower shell onto the adapter clockwise, by hand, until the core sits down on the adapter block. Don't use glue here.

Step 4 – Line up the cap and glue it

1. With the knob screwed on, push the cap's pin into the hole.
2. Turn the cap until the 1-3-5-7 row faces forward (away from you) and the pattern matches your gate.
3. Make a pencil mark across the edge of the cap and the core.
4. Lift the cap off.
5. Put a few small drops of glue on the flat ring around the hole. Keep them away from the outer edge, because the angled cone has to stay clean.
6. Put the cap back on, lined up with the mark.

Step 5 – Glue and press on the upper shell



1. Run a thin line of glue along the top of each bar of the lower shell.
2. Lower the upper shell over the cap with its 3 holes on the 3 pins.
3. Press down firmly. The shell touches the cap first, then needs about 0.4 mm more to close the seam.
4. Hold it for 30 seconds.

Step 6 – Done

To take the knob off, unscrew the whole knob anticlockwise. Nothing is glued to the adapter, so it comes off cleanly. It lines up again when you screw it back on the same way.

Make your own cap

Start from **4_Cap_Blank.step**, and keep these unchanged:

- the underside,
- the pin,
- the angled seat.

Design only on the flat face, which is about 29 mm across. For a 0.4 mm nozzle:

- Stay 0.5 mm inside the edge.
- Keep lines at least 0.9 mm wide.
- Keep islands and gaps at least 0.8 mm.

For a two-colour design, engrave it 0.8 mm deep and use a filament change.

Design notes

- **Core**: 12 helical blades with a 155° twist, built around Thrustmaster's Design piece. There's a 2 mm air gap to the cage.
- **Cage**: split along a 45° cone with 3 locating pins, so the seam hides along the bars.
- **Seats**:
  - The core sits in a 30° funnel at the bottom, and the cap in a 30° bezel at the top.
  - The cap stands 0.5 mm proud of its seat, so pressing the upper shell home clamps the whole stack.
- **Overhangs**: window edges that face down while printing are angled to 50° on the inside.
- **Numbers**: set in Russo One, with lines about 1 mm wide so they print cleanly with a 0.4 mm nozzle.
- **Testing**: collisions, the assembly path and the fit on the official adapter were checked in CAD. The knob was then test-printed through several revisions.

Credits

- **Design piece and adapter**: Thrustmaster (official TH8S files), https://www.printables.com/model/1825116.
- **Images**: the last gallery image is an AI-generated colour concept, for inspiration only, not a real print. All other photos show the printed knob, and the diagrams are drawn from the CAD files.

Model files

4_cap_blank.3mf

4_cap_blank.stl

4_cap_7r.3mf

4_cap_blank.step

3_core.3mf

4_cap_7r.stl

4_cap_7r.step

3_core.stl

1-2_shells.3mf

3_core.step

1_lower_shell.stl

2_upper_shell.stl

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