caribou3d

05. Assembly of the z-Axis

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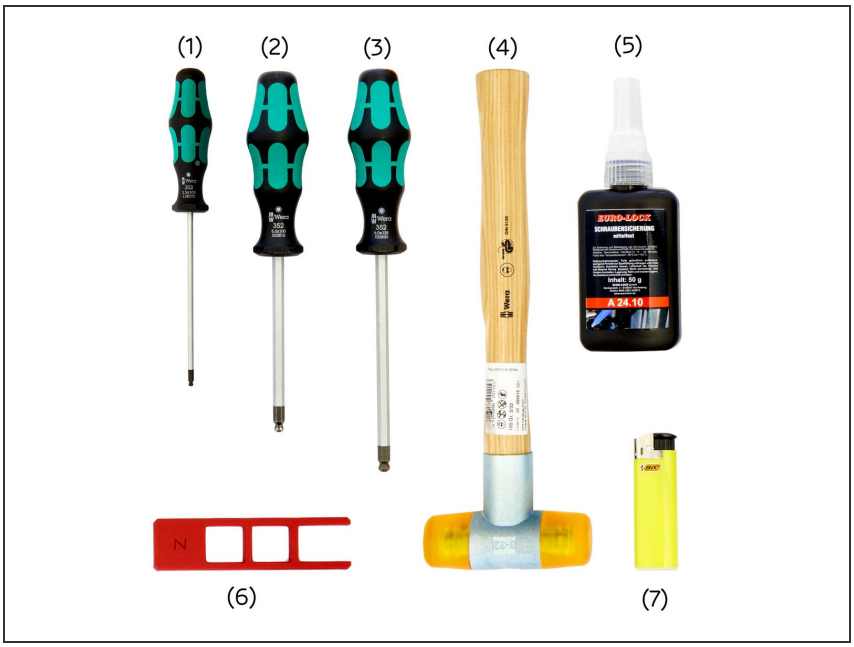
Step 1 — Required Tools



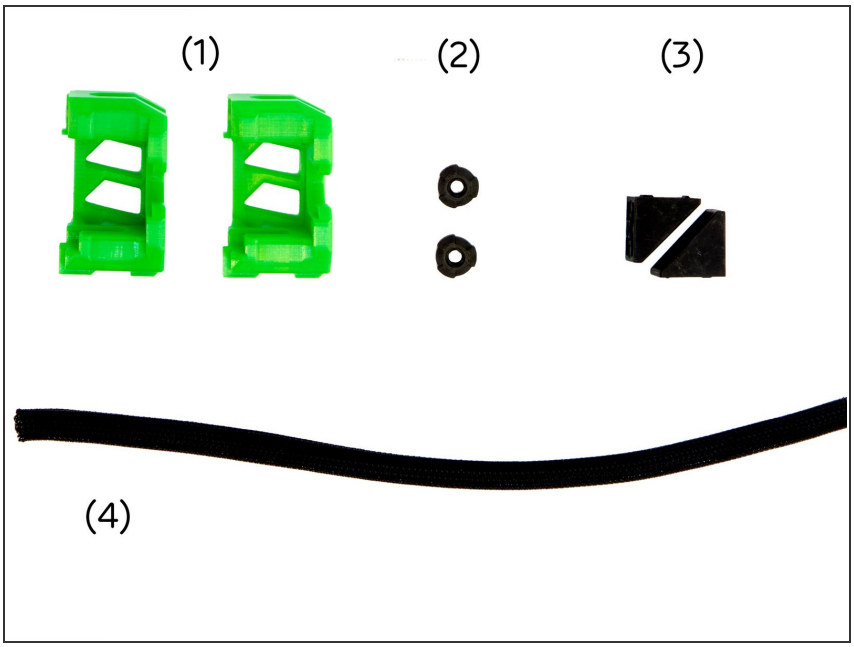
- (1) 2.5x100mm Hexagon Ballpoint Screwdriver
- (2) 5.0x100mm Hexagon Ballpoint Screwdriver
- (3) 6.0x125mm Hexagon Ballpoint Screwdriver
- (4) Soft-faced Hammer with Cellidor Head Sections
- (5) Screw Lock
- (6) Z-Alignment Tool
- (7) Lighter

Step 2 — Required Parts (1 / 2)

You will need different aluminum profiles, stepper motors and rods depending on your 3D printer model.

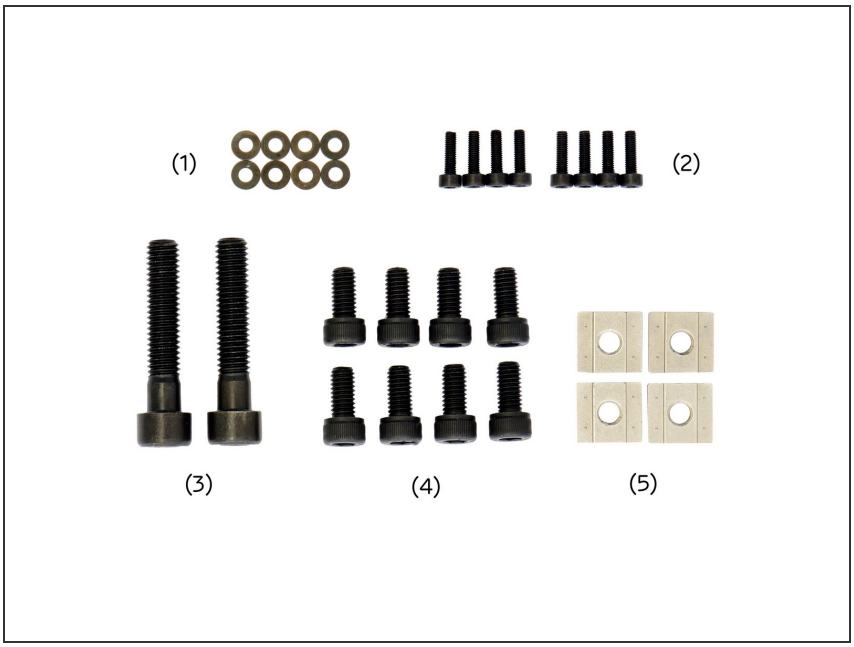
- For a Caribou 220 you will need:
  - (1) **2x** 320mm z-Aluminium Extrusion (2) **2x** 320mm z-Axis Stepper Motor 1.8° (3) **2x** 322mm z-Rod
- For a Caribou 320 you will need:
  - (1) **2x** 420mm z-Aluminium Extrusion **2x** 420mm z-Axis Stepper Motor 1.8° (3) **2x** 422mm z-Rod
- For a Caribou 420 you will need:
  - (1) **2x** 520mm z-Aluminium Extrusion(2) **2x** 520mm z-Axis Stepper Motor 1.8° (3) **2x** 522mm z-Rod

Step 3 — Required Parts (2 / 2)



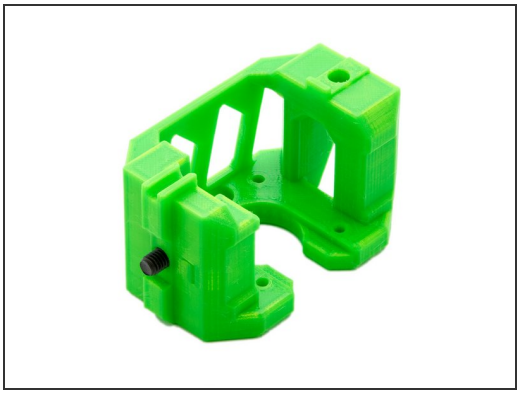
- (1) z-Motorholders, left and right
- (2) **2x** Screw Covers
- (3) **2x** Corner Brackets
- (4) 1m Techflex Cable Tube (Diameter 3,2mm)

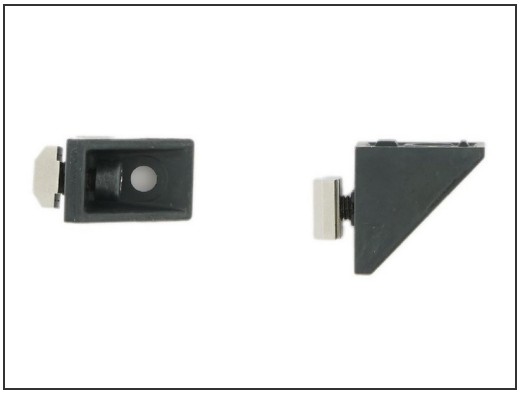
Step 4 — Required Screws



- (1) **8x** Black Washers
- (2) **8x** M3x10mm Hexagon Socket Head Cap Screws
- (3) **8x** M6x12mm Hexagon Socket Head Cap Screws
- (4) **2x** M8x40mm Hexagon Socket Head Cap Screws
- (5) **4x** T-Nuts

Step 5 — Preparing the z-Motor Holders and the Corner Brackets





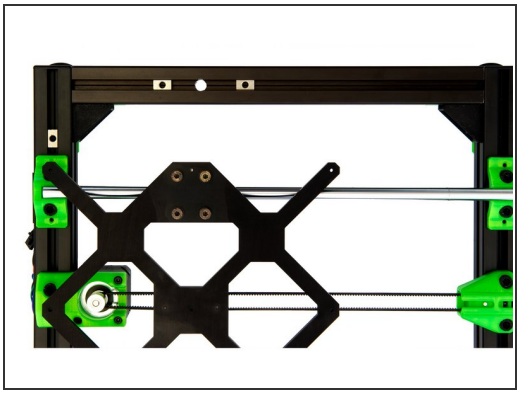
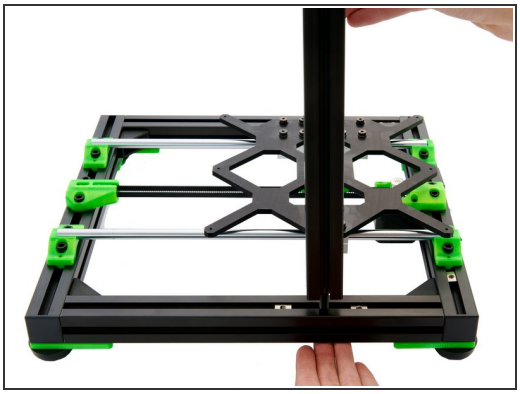
- Insert a **M6x12mm Hexagon Socket Head Cap Screw** into the inside of the z-motorholder and screw a **T-Nut** to it *loosely* from the outside.

  ⓘ Repeat this step for the second z-motorholder.

- Place a **M6x12mm Hexagon Socket Head Cap Screw** in one of the two holes of the corner bracket and screw a **T-Nut** *loosely* onto it.

  ⓘ Repeat this step for the second corner bracket.

Step 6 — Installing the Z-Axis (1 / 4)

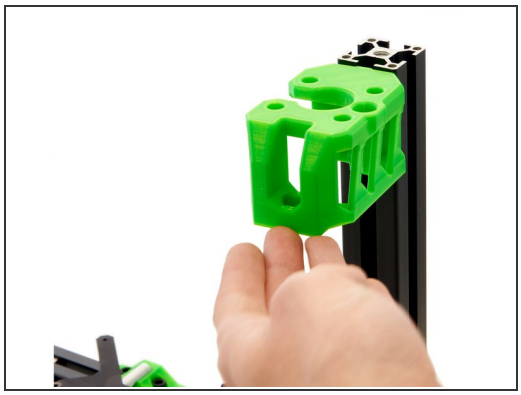
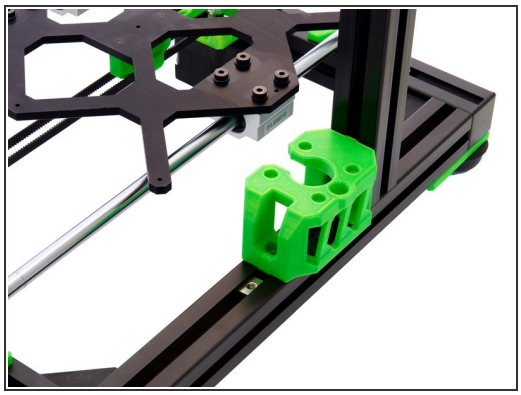
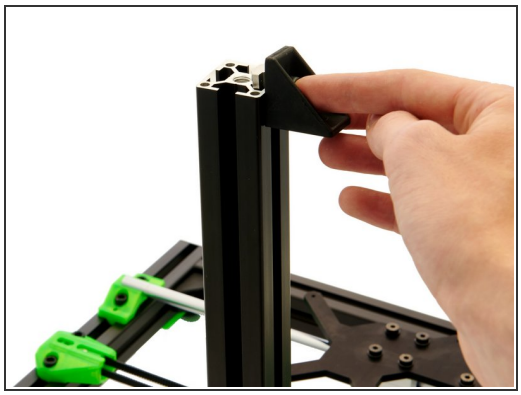




ⓘ Align the **T-Nuts** and the y-carriage (see Fig. 1). Make sure that there is one **T-Nut** in front of the hole and one behind it in each of the y-aluminum extrusions.

- Place your z-extrusion over the hole in the y-extrusion and fix it from below with a **M8x40mm Hexagon Socket Head Cap Screw**.

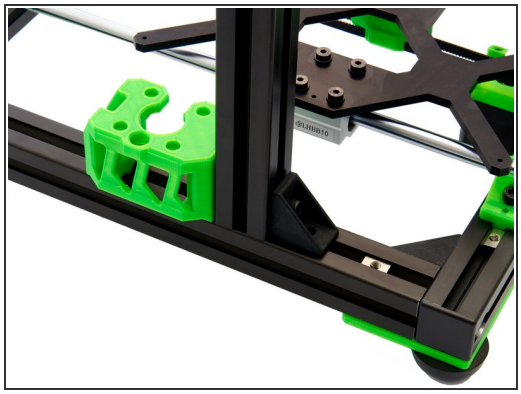
  ⚠ After tightening, loosen the **M8x40mm Hexagon Socket Head Cap Screw** just enough so that the profile can still be moved easily in all directions.

Step 7 — Installing the Z-Axis (2 / 4)

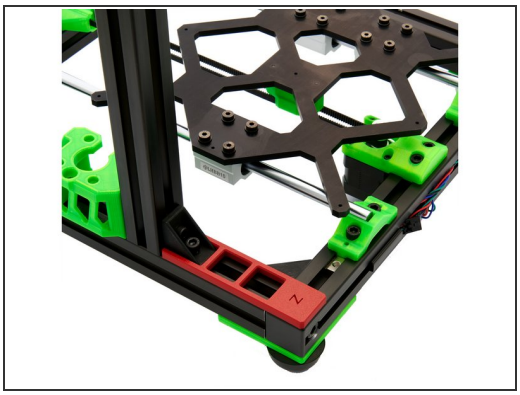
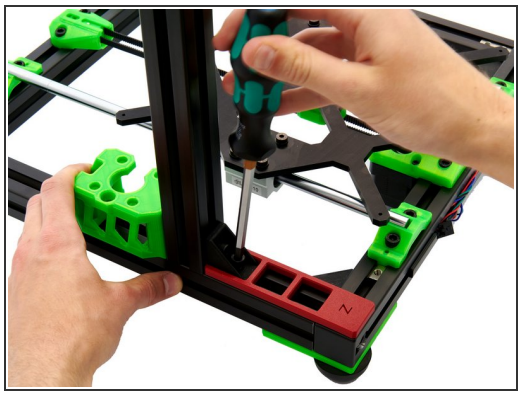
- Slide the z-motorholder (the opening must face inwards) into the front slot of the z-extrusion. Then, press the z-motorholder onto the y-extrusion so that it rests straight on it.
- Slide a corner bracket into the rear slot of the z-extrusion.

Step 8 — Installing the Z-Axis (3 / 4)



- Press the z-extrusion onto the surface of the y-extrusion so that the corner angle rests squarely on it.
- Now, tighten the previously attached **M6x12mm Hexagon Socket Head Cap Screw** to the z-motorholder and the corner bracket.

Step 9 — Installing the Z-Axis (4 / 4)

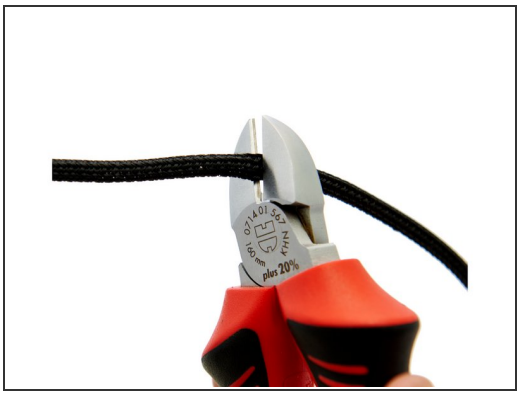
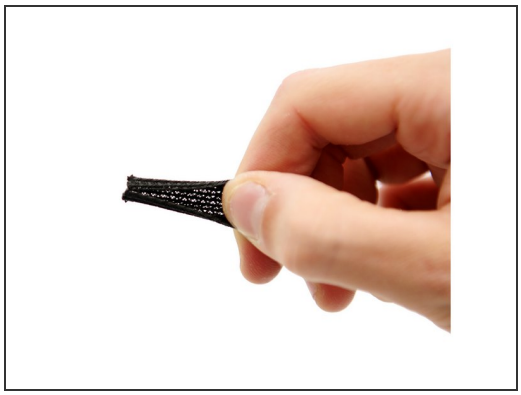
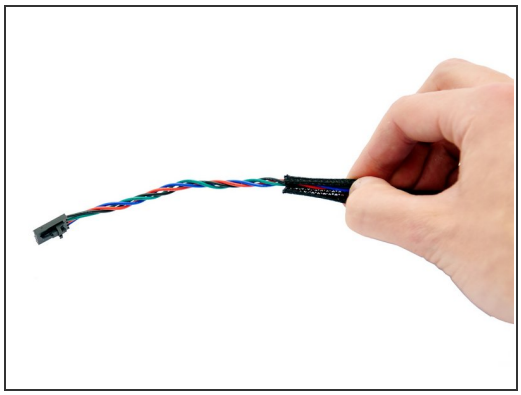




- Position the **2x T-Nuts** on the y-extrusion under the opening of the z-motorholder and under the hole in the corner bracket.
- Take **2x M6x12mm Hexagon Socket Head Cap Screws** and screw them *loosely* into the **2x T-Nuts**.
- Place the z-alignment tool on the rear part of the x-extrusion and push the z-extrusion against it until it touches the tool.
- Now, fasten both the **M6x12mm Hexagon Socket Head Cap Screw** attaching the corner bracket, and the **M8x40mm Hexagon Socket Head Cap Screw**.

ⓘ The M6x12mm Hexagon Socket Head Cap Screw on the z-motorholder remains loose for the time being.

- Repeat steps 6 and 7 for the other side of the frame.

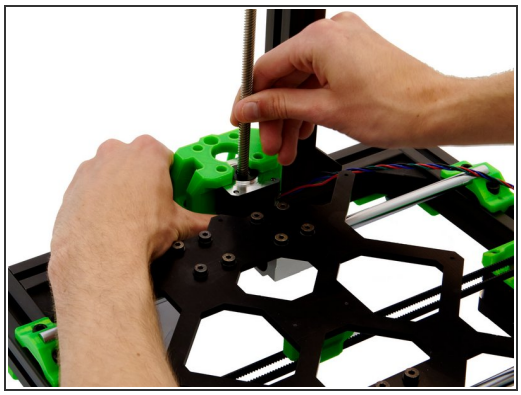
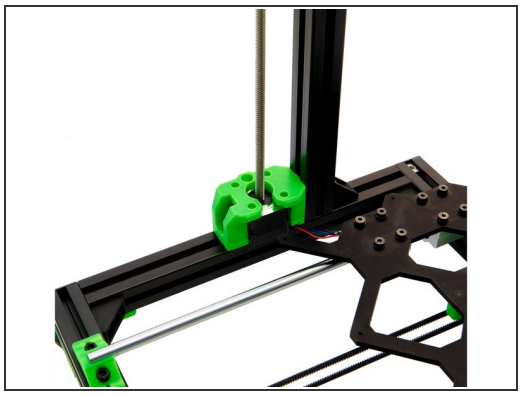
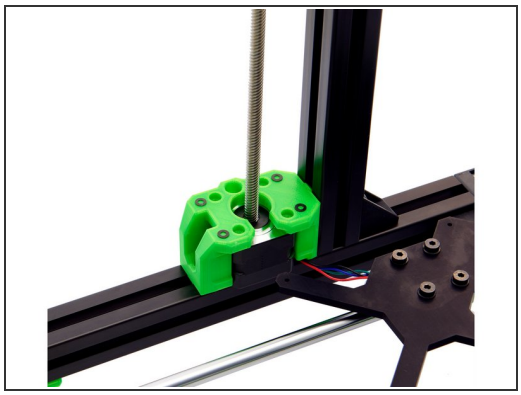
Step 10 — Preparing the z-Stepper Motors

First, you have to distinguish between right and left z-stepper motor. The right z-stepper motor comes with a *long* cable and the left one with a *short* cable.

- Cut 15cm and 60cm from your Techflex tube. The remaining 25cm are used in manual 10.
- The two ends of the Techflex tube are briefly heated with a lighter.
- Now, push the motor cable of the left z-stepper motor through the 15cm Techflex hose and the motor cable of the right z-stepper motor through the 60cm Techflex tube.

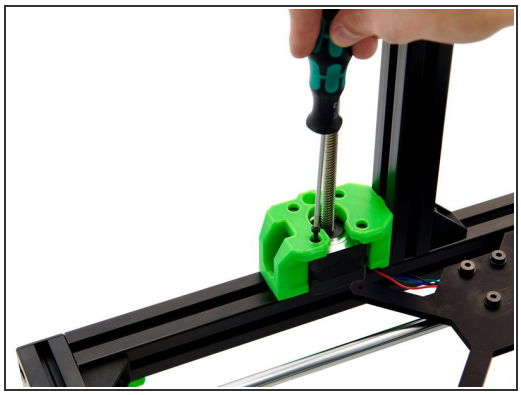
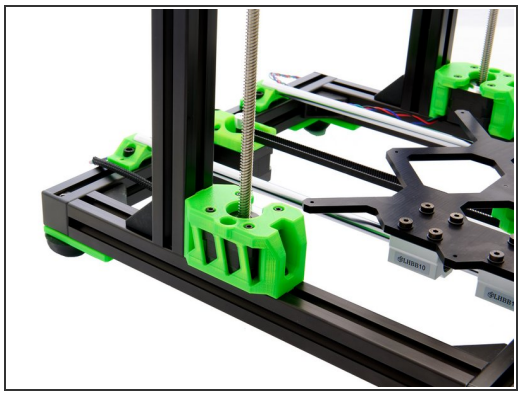
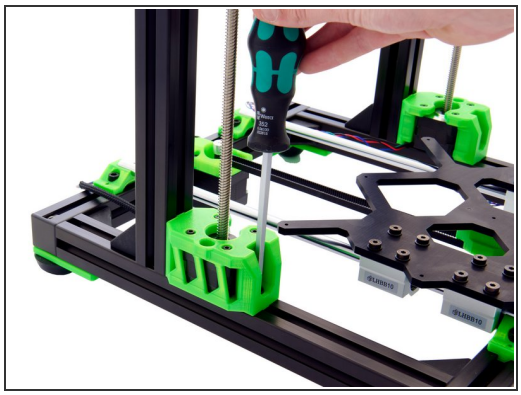
Step 11 — Installing the z-Stepper Motors (1 / 2)

First, remove the POM nuts from the two z-stepper motors and set them aside. They will later be needed for the construction of the x-axis.

- Place the z-stepper motor next to the z-motorholder. The cable should be aligned towards the rear of the frame.
- Carefully slide the z-stepper motor into the z-motorholder and make sure that the cables are not pinched.
- Press the z-stepper motor up from below until it snaps in.
- Place **4x M3 Washers** in the z-motor mount.

Step 12 — Installing the z-Stepper Motors (2 / 2)

- Screw the z-stepper motor to the z-motorholder using **4x M3x10mm Hexagon Socket Head Cap Screws**.

⚠ Make sure that the z-stepper motor is completely straight.

- Now, push the Techflex tube surrounding the cables attached to the z-stepper motor as far into the z-motorholder as possible.
- Tighten the **M6x12mm Socket Head Cap Screw** in the z-motorholder on the y-axis.

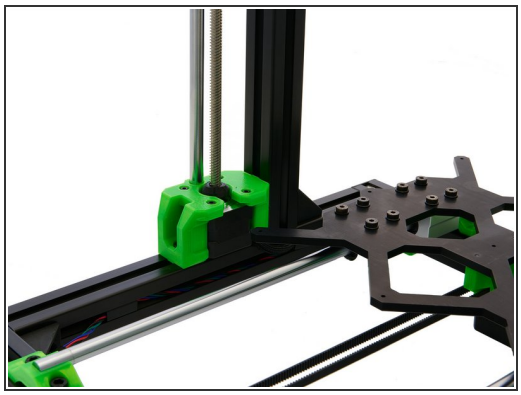
Step 13 — Installing the z-Rods



- Place a z-rod in the hole next to the z-stepper motor on the z-motorholder . Carefully tap the z-rod *straight* into place.

Step 14 — Installing the z-Screw Cover



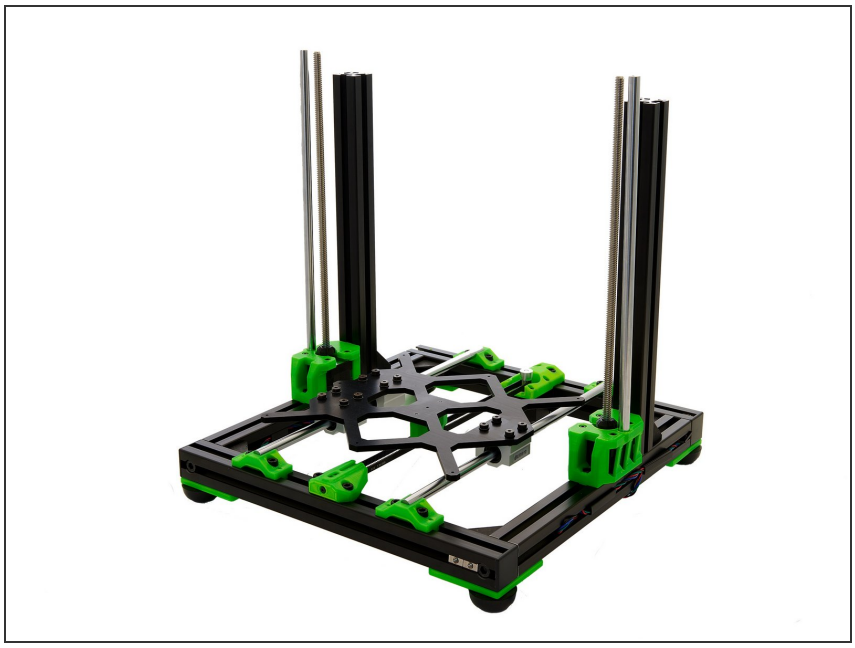


- Turn the screw cover onto the z-stepper motor until it is almost at the bottom of the spindle.
- At the very bottom, put a drop of Screw Lock on the spindle and turn the z-screw cover above it. A gap of 1mm should remain between the bottom of the z-screw cover and the top of the motor.

⚠ Regularly check whether the screw cover is properly seated. It must *not* rest directly on the motor which will otherwise be blocked.

- Repeat steps 7 to 14 for the other side of the frame.

Step 15



ⓘ The z-axis is now fully installed.

ⓘ Continue with instructions 06. Assembly of the Einsy Box.