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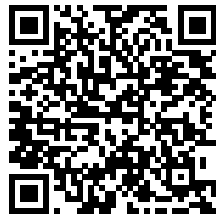
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# How to replace trapezoid nuts (XL)



[help.prusa3d.com/g546887](https://help.prusa3d.com/g546887)

Scan the QR code to  
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chapter.

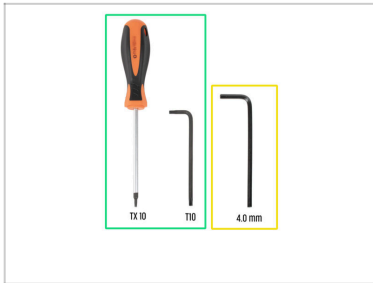


## STEP 1 Introduction



- ◆ This guide will take you through the installation of the **Trapezoid nut** on the **Original Prusa XL**.
- ⓘ The following instructions are compatible with all Original Prusa XL versions.
- ◆ All necessary parts are available in our eshop [prusa3d.com](https://prusa3d.com).
- 📌 Note that you have to be logged in to have access to the spare parts section.
- ⓘ This manual is for both trapezoid nuts on the XL printer. You can choose, which one you want to replace.

## STEP 2 Tools necessary for this chapter



- For this chapter, please prepare:
  - T10 screwdriver / key
  - 4mm Allen key

## STEP 3 Unloading filament



- If you have loaded the filament, unload it from the hotend. On the screen, navigate to *Filament* -> *Unload Filament*.
- ⚠ **WARNING: The hotend and heatbed are very HOT. Do not touch these parts!!!**
- Remove the filament from the hotend. It is necessary to completely remove it from the printer.
- Cooldown the printer. Go to *Preheat* > *Cooldown*.

## STEP 4 Printer preparing



- Auto home your printer. Go to *Control > Auto home*.
- Move the Z-axis 5 cm under the Nextruder. Go to *Control > Move Axis > Move Z*.
- From the rear side, turn the power switch OFF (symbol "O").
- Unplug the power cable.

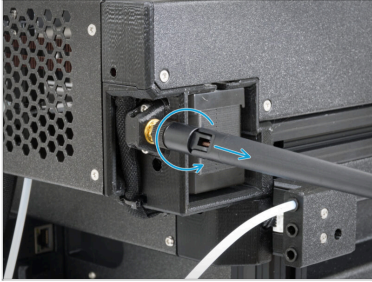
## STEP 5 Spool holder removing



- i Only if you going to replace the trapezoid nut on the left side of the printer.
- ◆ Turn the printer to the left side facing you.
- ◆ Using a 4mm Allen key, unscrew the M5x85 screw and remove the spool holder. Place it nearby. **We'll use it later.**

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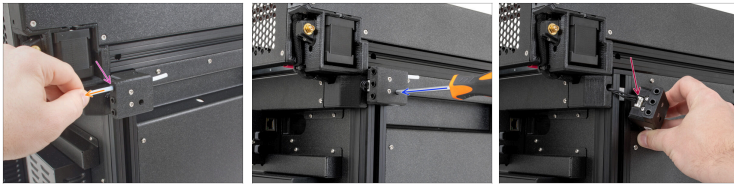
## STEP 6 Uninstalling the Wi-Fi antenna



- ⓘ Only if you going to replace the trapezoid nut on the left side of the printer.
- ⬢ Unscrew the antenna and take it out. Place it nearby. **We'll use it later.**
- ⓘ Only if you have the antenna on the left side of the printer.

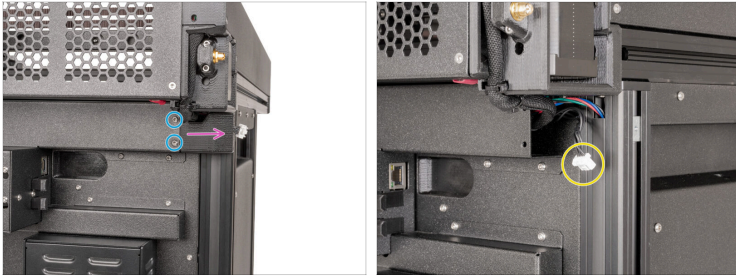


## STEP 7 Detaching the filament sensor



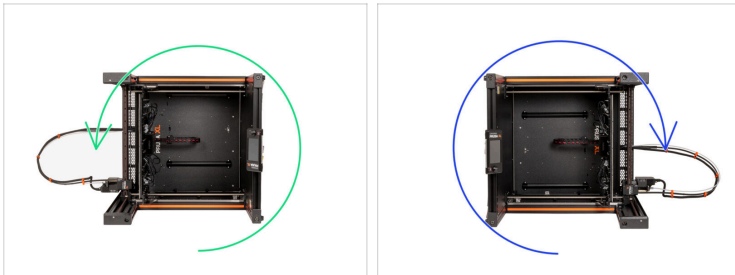
- i** Only if you going to replace the trapezoid nut on the left side of the printer.
- ◆** Gently push the collet to the rear of the filament sensor assembly.
- ◆** Gently pull out the PTFE tube.
- ◆** Detach the filament sensor from the M3nEs nut using a T10 screwdriver.
- ◆** Disconnect the filament sensor cable from the filament sensor assembly and place it nearby. **We'll use it later.**

## STEP 8 Cable cover removing



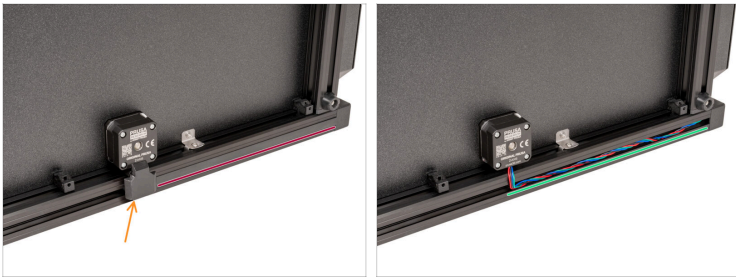
- (i)** Only if you going to replace the trapezoid nut on the left side of the printer.
- ⬛** Turn the printer to the back side facing you.
- ⬢** Using a T10 screwdriver, remove two M3x8rT screws.
- ⬢** Remove the cable cover.
- ⬢** Leave the filament sensor cable free.
- ⬛** The printer is now ready to be turned on the left side.

## STEP 9 Preparing the printer: placing the printer



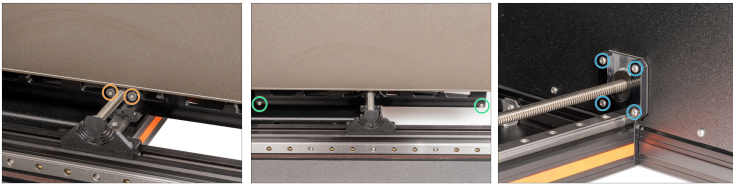
- ◆ Turn the printer to the left side.
- ◆ If you want to replace a Trapezoid nut on the other side, turn the printer to the right side.
- ⓘ The steps are the same for both replacements, go through the manual and replace the left or right trapezoid nut.
- ⚠ **Do not move with the printer till you finish the instalation.**

## STEP 10 Uncovering the Z motor cable



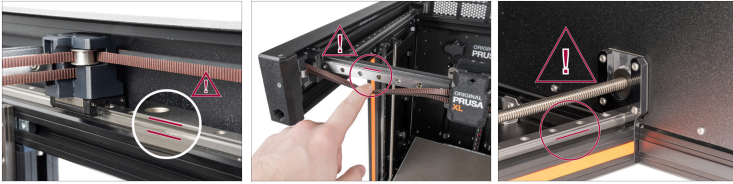
- Take a look at the bottom of the printer and locate:
  - Extrusion cover 243mm
  - Z-motor-cable-bottom-cover
- Remove both covers from the printer.
- The bottom of the printer is ready.

## STEP 11 Releasing the Z motor



- ◆ Using a T10 screwdriver, release and remove two M4x10rT screws. **Do not throw them out! We'll use them later.**
- ◆ Using a T10 screwdriver, remove two M3x12rT screws on a Bed-frame. **Do not throw them out! We'll use them later.**
- ⓘ Move the Bed-frame-mount-fixed (or Bed-frame-mount-rotary) into the middle of the linear rail.
- ◆ Using a T10 screwdriver, remove four M3x8rT screws to release the Z motor. **Do not throw them out! We'll use them later.**

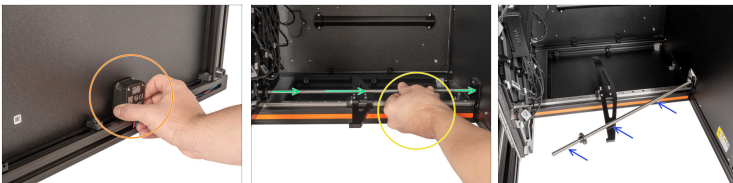
## STEP 12 CAUTION: Lubricant Handling



**⚠ CAUTION: Avoid direct skin contact with the lubricant used for the linear rails in this printer. If a contact occurs, wash your hands immediately. Especially before eating, drinking, or touching your face.**

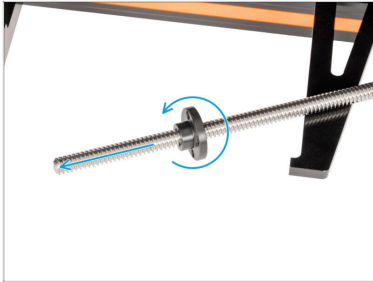
- ◆ Lubricant accumulates mainly in the linear rail channels on the linear sides.

## STEP 13 Pulling out the Z motor



- ◆ Grasp the Z motor with your hand. **Don't pull out yet!**
- ◆ Grasp the threaded rod with your second hand.
- ◆ Gently pull out the motor from the Bed frame.
- ◆ Place the threaded rod on a Bed-frame-mount-fixed.

## STEP 14 Uninstalling the old trapezoid nut



- Manually unscrew counterclockwise the old trapezoid nut.

**⚠** Throw the old trapezoid nut in the trash to avoid confusion.

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## STEP 15 Installing the Trapezoid nut: parts preparation



- For the following steps, please prepare:
  - New trapezoid nut (1x)

## STEP 16 Installing the Trapezoid nut: installing the nut







- ◆ Attach the new trapezoidal nut onto the Z-axis threaded rod, only a few centimeters in.
  - ⚠ **Double-check the correct orientation of the nut! See the picture carefully.**
- ◆ Screw the trapezoid nut at least 6 cm from the top of the Z-motor.

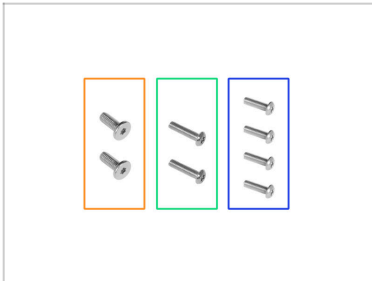


## STEP 17 Installing the Trapezoid nut: Z motor attaching



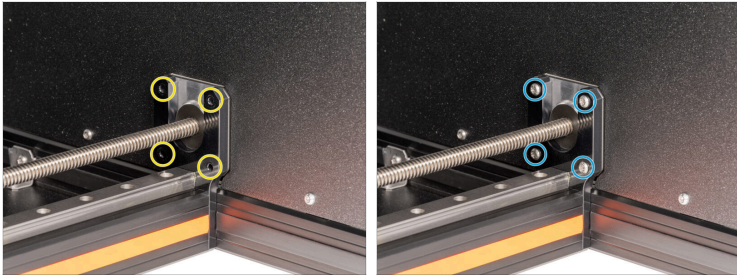
-  **Keep the trapezoid rod in the middle of the hole for the motor to avoid the damage.**
-  With one hand, take the Z motor so that the threaded rod is horizontally in the motor hole.
-  Using the second hand, insert gently the Z motor back through the Bed-frame.
-  Move the Z motor to the left side through the Bed-frame.

## STEP 18 Securing Z motor: parts preparation



-  For the following steps, please prepare:
  -  M4x12rT screws (2x)
  -  M4x10rT screws (2x)
  -  M3x10rT screws (4x)

## STEP 19 Securing the Z motor



- ✦ Insert four M3x10rT screws into the four holes in Z-motor-mount.
- ✦ Tighten the screws with a T10 screwdriver.

## STEP 20 Securing the Trapezoid nut



**Do not move with the Bed-frame! Move only the trapezoid nut.**



From the bottom side of the heatbed:



Line up the threaded rod in the trapezoid nut with the threaded hole in the Bed-frame by turning it clockwise.



From the upper side of the heatbed:



Locate two holes next to the threaded rod.



**Be really careful, you can easily turn the screw and damage the thread in the trapezoid nut.**



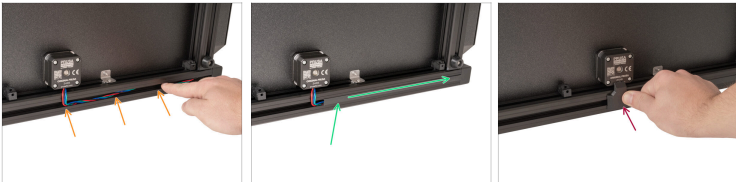
Insert two M4x10rT screws and **gently** tighten them using a T10 screwdriver.

## STEP 21 Securing Bed-frame-mount-fixed



- Manually slide the Bed-frame-mount-rotary to the Bed-frame.
- Secure the Bed-frame-mount-fixed (or Bed-frame-mount-rotary) to the Bed-frame with two M3x12rT screws using a T10 screwdriver.

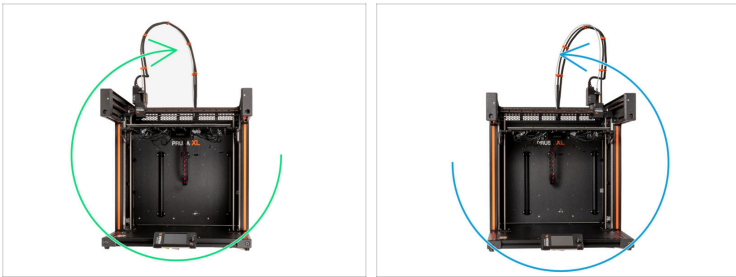
## STEP 22 Covering Z motor



- ⬛ Take a look at the bottom of the printer.
- ⚠ **Be careful, don't pinch any cables!**
- Insert the motor cable in the extrusion. Make sure it goes perpendicular from the motor to the extrusion first.
- Insert the Extrusion cover 243mm. Push and slide it to the right.
- Push the Z-motor-cable-bottom-cover into the frame.

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## STEP 23 Turning the printer



- Turn the printer to the right side on it's feet.
- If you replaced the Trapezoid nut on the other side, turn the printer to the left side on it's feet.

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## STEP 24 Cable cover attaching: parts preparation



- For the following steps, please prepare:
  - Cable cover (1x)
  - M3x10rT (2x)

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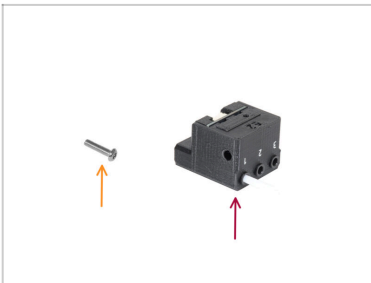
## STEP 25 Cable cover attaching



- Turn the printer to the back side facing you.
- ⚠ **Be careful, don't pinch any cables!**
- ◆ Put the cable cover back in its position.
- ◆ Insert two M3x8rT screws and tighten them using a T10 screwdriver.

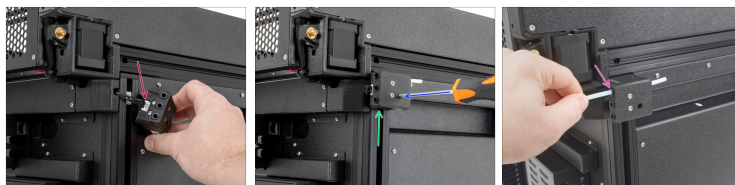
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## STEP 26 Preparing the Filament sensor



- **For the following steps, please prepare:**
- ◆ M3x12rT screw (1x)
- ◆ Filament sensor assembly

## STEP 27 Attaching the filament sensor



- ◆ Connect the filament sensor cable to the filament sensor assembly.
- ◆ Move the filament sensor assembly to the top of the extrusion and align the M3nEs nut so that it aligns with the opening on the filament sensor assembly.
- ◆ Attach the filament sensor to the M3nEs nut using the M3x12rT screw and T10 screwdriver.
- ◆ Insert the PTFE tube from the extruder into to the first collet on the rear of the filament sensor assembly.

## STEP 28 Installing the Wi-Fi antenna: parts preparation

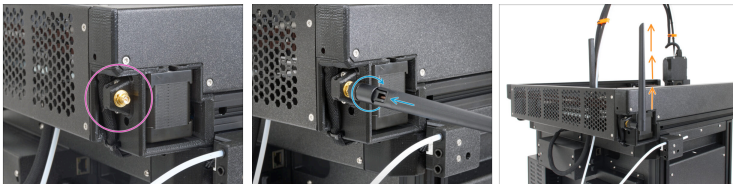


◆ For the following steps, please prepare:

◆ Wi-Fi antenna (1x)

ⓘ The Original Prusa XL is shipped with two versions of the Wi-Fi antenna, each with a different shape. The functionality is the same.

## STEP 29 Installing the Wi-Fi antenna



ⓘ Only if you have the antenna on the left side of the printer.

◆ Locate the Wi-Fi antenna connector on the right rear corner of the printer.

◆ The antenna can be rotated around and bent in two directions.

◆ We recommend pointing the antenna straight upwards.



## STEP 30 Assembling the spool holder: parts preparation



◆ For the following steps, please prepare:

- ◆ Spool-holder-slider (1x)
- ◆ Spool-holder-base (1x)
- ◆ Spool-holder-mount (1x)
- ◆ M5x85 screw (1x)

## STEP 31 Assembling the spool holder



- ◆ Insert the spool-holder-base into the spool-holder-slider. The narrower part of the base should go in first. Push it all the way in.
- ◆ Attach the spool-holder to the spool-holder-mount.
- ◆ Insert the M5x85 screw into the spool holder assembly.

## STEP 32 Mounting the spool holder assembly



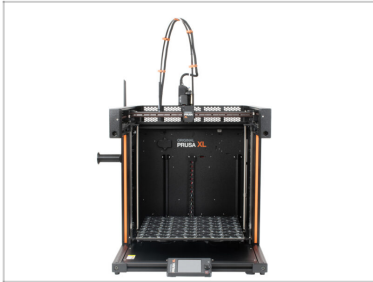
- Turn the printer to the left side facing you.
- Attach the spool holder assembly to the M5nEs nut on the printer. Note that there is a protrusion on the spool-holder-mount, which fits into the groove in the extrusion.

## STEP 33 XYZ calibration



- From the rear side, plug in the power cable.
- Turn the power switch ON (symbol "I").
- Turn the printer's front side facing you.
- On the screen, go to *Control > Auto Home* and let the printer calibrate.

## STEP 34 Good Job!



- Well done, your printer is ready.



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