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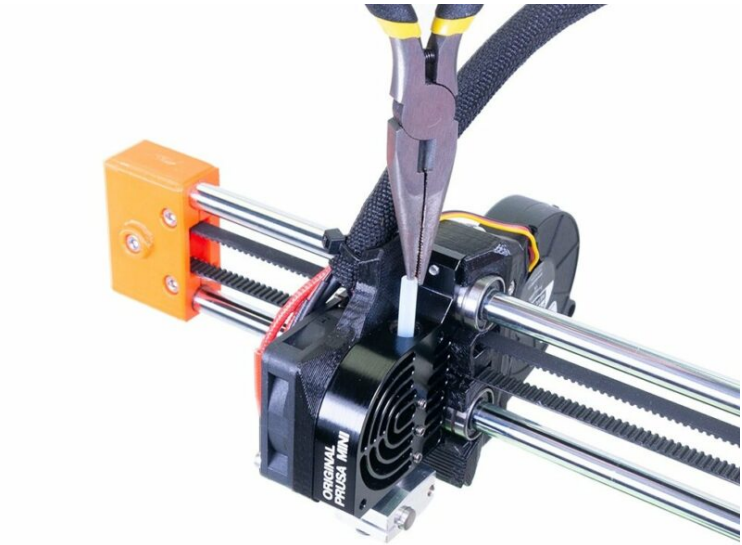
How to replace a hotend PTFE tube (MINI/MINI+)



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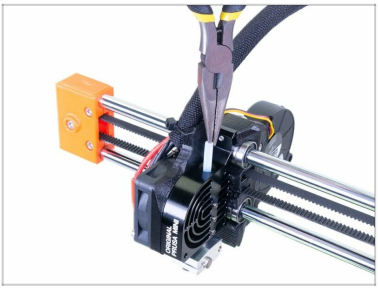
STEP 1 Introduction



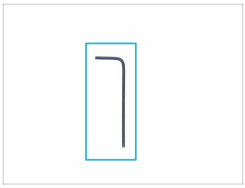
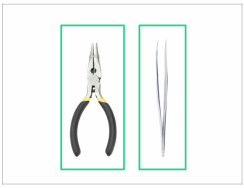
- This guide will take you through the replacement of the **hotend PTFE tube** on the **Original Prusa MINI** and **MINI+**.

  ⓘ Some parts might slightly differ. However, it does not affect the procedure.

- All necessary parts are available in our eshop shop.prusa3d.com

ⓘ Note that you have to be logged in to have access to the spare parts section.

STEP 2 Tools and fasteners necessary for this guide


- 1.5mm Allen key (1x)
- Needle-nose pliers / tweezers (1x)
- Wrench 10 mm (1x)
- Cloth or piece of fabric 15x15 cm (1x)

ⓘ The cloth will be used to protect the heatbed. You can use any similar material.

STEP 3 Prepare the printer

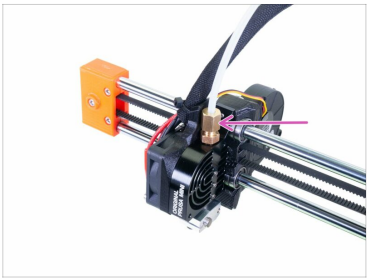
Make sure that:

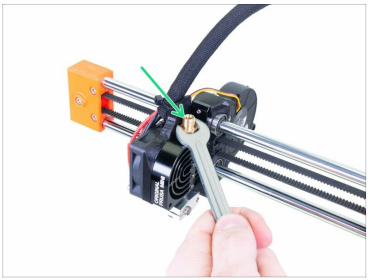
- The filament is unloaded from the printer.
- The print head and heatbed are cooled down to a room temperature!!!
- The printer is turned off and unplugged from a wall outlet.

STEP 4 Additional heatbed protection

- **Before proceeding further, it is recommended to protect the heatbed!**
- Take off the flexible steel sheet.
- Use any piece of thick cloth or fabric to cover the heatbed. This will ensure you won't damage (scratch) the heatbed surface during the disassembly.

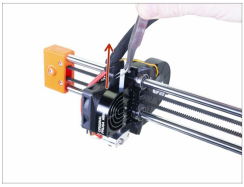
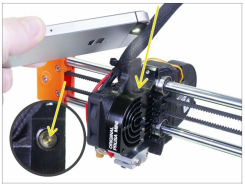
STEP 5 Disassembly of fittings





- Loosen the upper fitting and remove the long PTFE tube from the hotend.
- Release and remove the lower fitting from the heatsink.

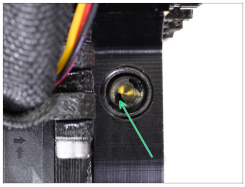
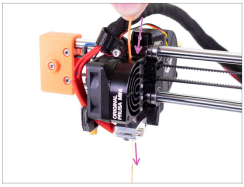
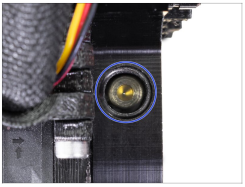
STEP 6 Removing the hotend PTFE tube

- Carefully pull out the old PTFE tube from the heatsink using pliers or tweezers.
- Use your phone LED flash or similar device to shine into the hole from the top of the print head. Take a look inside and check there is no filament in the bottom of the heatbreak. It must be clean and you should see only the metal surface inside. Open the full-size image if needed.

⚠ **A clean print head is essential for successful prints.** Double-check, there is no filament inside!!!

STEP 7 Cleaning the print head

⚠ **WARNING:** Avoid touching the **HOT parts!!!**

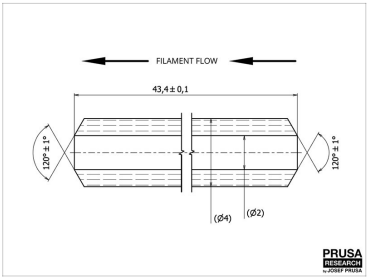
- **If you see any filament residue in the print head, follow these steps to remove it:**
  - Remove the cloth from the heatbed.
  - Plug in the printer and turn it on.
  - Preheat the nozzle. Navigate to the menu **Control > Temperature > Nozzle** and dial it to **230 °C**.
  - Squeeze out the filament residue by inserting a piece of filament through the print head.
  - Pull out the filament and check for any residue in the print head. **The print head must be clean!**

STEP 8 Protecting the heatbed

⚠ **Cool the printer down** and wait at least ten minutes before proceeding to the next step.

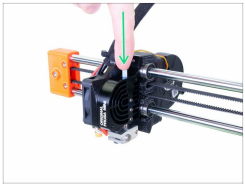
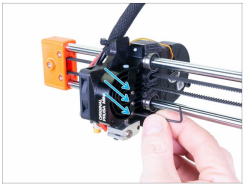
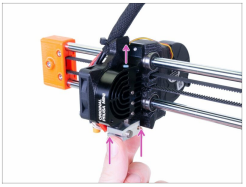
- After the printer has cooled down, protect the heatbed with the cloth.
- Turn off and unplug the printer.

STEP 9 Hotend PTFE tube - parts preparation



- **For the following steps, please prepare:**
  - New hotend PTFE tube (1x)

STEP 10 Hotend PTFE tube installation

- Insert and push the new PTFE tube into the heatbreak all the way down.

ⓘ Orientation of the PTFE tube installation does not matter. Both ends are symmetrical.

- Loosen three screws on the side of the heatsink with 1.5 Allen key.
- Push the nozzle up. You must see the PTFE tube moving up a bit.

STEP 11 Hotend PTFE tube installation

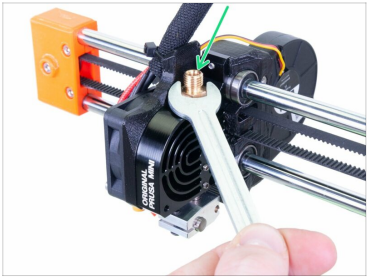
- Mount the "lower" fitting to the top of the heatsink. Screw it all the way, but don't tighten it. As soon as you reach the end of the thread, release it by a full turn (360 °).

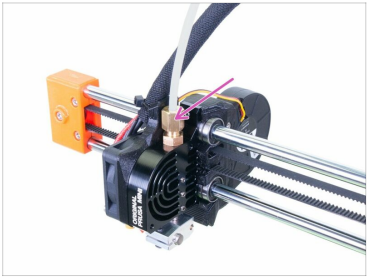
  ⚠ **Pay attention to the correct orientation of the fitting**. Insert the coarse-threaded side into the heatsink.

- Push the heaterblock up against the fitting with a reasonable force. No need to bend the entire axis. This will pre-stress the PTFE tube inside. **Now, it is important to keep the slight upwards pressure.**
- Make sure the heaterblock is aligned with the heatsink. If not, realign it, but keep the pressure.
- While holding the heaterblock from below (pressing the tube inside), tighten all three grub screws.
- Now, you can release the heaterblock. Make sure it doesn't move. If so, the grub screws were not tightened properly. Release them and return to the beginning of this step.

⚠ **It is crucial there is no gap** between the PTFE tube and other parts of the hotend. This is why we are "pre-stressing" it.

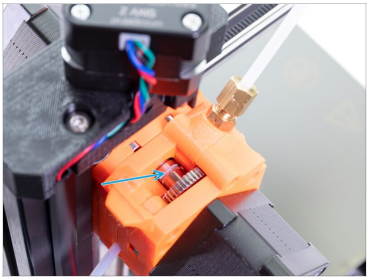
STEP 12 Hotend PTFE tube installation

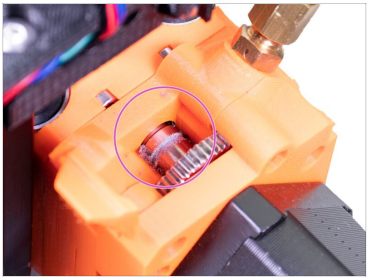




- Finish tightening of the "lower fitting", you should do a full turn to compensate for the turn we did in the previous step.
- Mount and tighten the upper fitting with the long PTFE tube with a wrench. **Do not use excessive force!**

STEP 13 Checking the gear





- Open the inspection door on the extruder and check whether the pulley is clean.
- If there is too much filament residue on the pulley use compressed air to get rid of dust or follow this guide How to access and clean the extruder-pulley - MINI for a more thorough cleaning.

STEP 14 M.I.N.D.A./SuperPINDA sensor height adjustment

- Using your fingers turn the lead screw and move the entire X-axis down. **Stop when the hotend touches the heatbed! Avoid bending the heatbed!**
- Release slightly the screw on the minda-holder so you are able to adjust position of the M.I.N.D.A./SuperPINDA sensor.
- Take a zip tie from the package and place it under the M.I.N.D.A./SuperPINDA sensor. Use the middle part of the zip tie, not the tip.
- Gently press the M.I.N.D.A./SuperPINDA sensor down against the credit card.
- Tighten the screw on the minda-holder. **Do not use an excessive force, you can break the printed part!**
- Rotate the lead screw manually in the opposite direction to move the axis at least 5 mm up.
- Now, please follow the instructions for the First Layer Calibration (MINI/MINI+).
- **...and it's done! Enjoy your printer ;)**

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