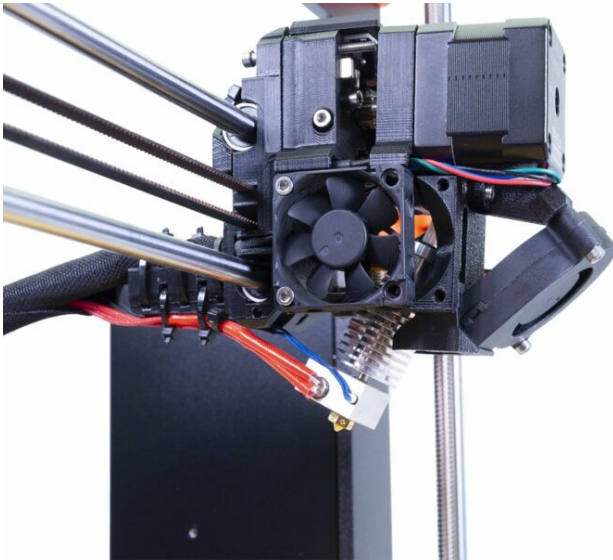


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How to replace a hotend PTFE tube (MK3S+/MK3S/MK2.5S/MMU2S)



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STEP 2 Tools necessary for this guide



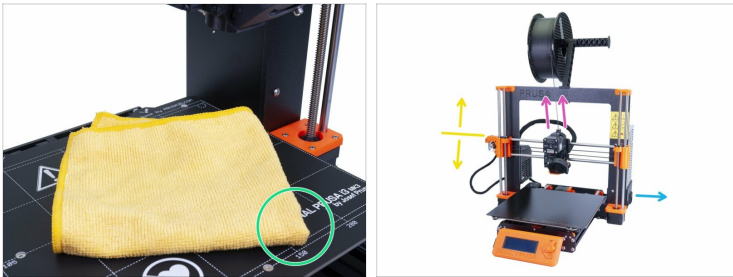
◆ **Please prepare the following tools for this chapter:**

- ◆ 2.5mm Allen key for M3 screws
- ◆ Needle-nose pliers for zip ties (optional)

ⓘ Pliers are not needed, but in some scenarios, you might need them to cut the zip ties.

ⓘ Apart from the mentioned tools, it is recommended getting a bowl or a small box for the screws and parts you will remove during the disassembly, you will need them later.

STEP 3 Protecting the heatbed



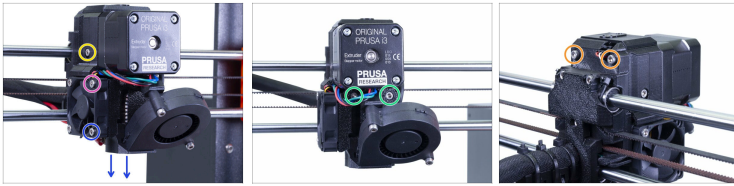
⚠ Before you start it is recommended to protect the heatbed!

◆ Use any cloth or piece of fabric, which is thick enough and cover the heatbed. This will ensure you won't damage (scratch) the surface during the disassembly.







⚠ Make sure that:

- ◆ the filament is unloaded from the hotend
(*remove also the spool and the spool holder*)
- ◆ the printer is properly cooled down
- ◆ the printer is unplugged from the socket
- ◆ X-axis with the extruder is slightly above the middle of the height (Z-axis) of the printer.

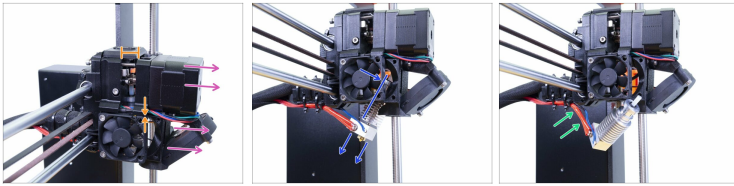
STEP 4 Partial disassembly of the extruder










In this guide, we won't disassemble the extruder completely. Thanks to the new design it is enough to release the screws and move the plastic parts slightly apart.

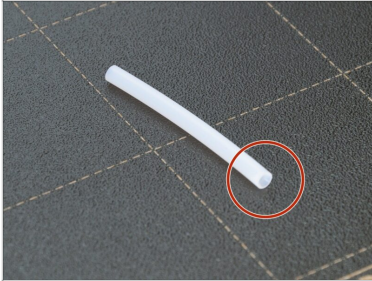
-  Release and remove the M3x14 screw from the hotend fan.
-  **Release the M3x40 idler screw from the left side of the extruder.**
-  Release and remove the M3x20 (M3x18) screw from the hotend fan. Note that the fan-shroud might fall off.
-  Leave the other two screws holding the hotend fan in place. No need to remove them.
-  Release both screws, but don't remove them. We will use them to hold the extruder parts together.
-  Release both screws, but don't remove them. Just make sure they won't block the motor from moving.

STEP 5 Partial disassembly of the extruder



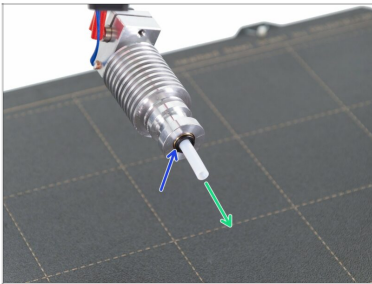
-  **Before you move any parts, make sure there is enough slack in the extruder motor cable!!!**
-  If not, you have to cut the zip ties on the textile sleeve, open the box with electronics and make sure the motor cable is free to move.
-  Move the extruder apart carefully. You can use slight side-to-side wiggling if needed. Start by pulling the motor, and then remove the lower part with the print fan.
-  Create a gap similar to the picture. Align the printed part holding the motor with the edge of the fan frame.
-  Reach for the hotend and incline its upper part towards the motor, it should slide out.
-  If the hotend is still stuck inside, release the screws more and increase the gap between the printed parts.
-  **BE EXTRA CAUTIOUS** with the hotend cables!!! You can break them! Use a small force to pull the hotend out. Don't bend the cables.

STEP 6 Preparing the necessary parts



- ◆ For the following steps, please prepare:
 - ◆ PTFE tube for MK3S/MK2.5S /MMU2S (1x)

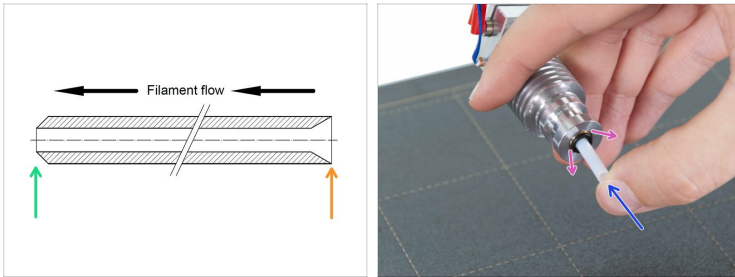
STEP 7 Removing the old PTFE tube



- ⚠ **No need to place the hotend in the horizontal position like in the picture. It is better to leave the hotend next to the extruder.**
- ◆ Press the black plastic collet.
- ◆ Remove the PTFE tube from the hotend.
- ⚠ **Throw this old tube immediately to the nearest trash bin to avoid installing it back by accident ;)**

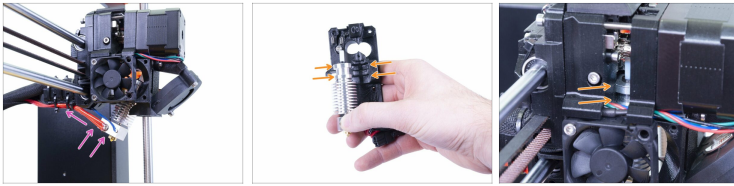
How to replace a hotend PTFE tube
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STEP 8 Assembling the new PTFE tube



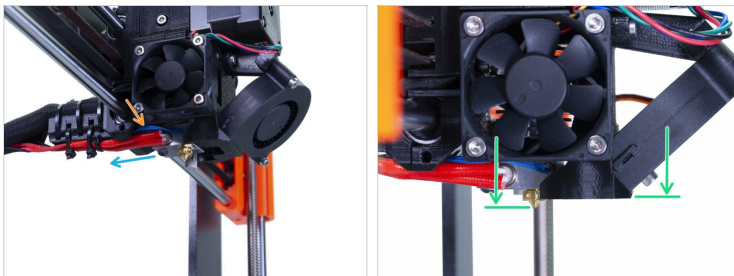
- Now it is time to insert the new PTFE tube. Note, that each end of the tube is different.
- One end of the tube has **"rounded" outer edge**. This end must be **inside the hotend**.
- Look at the other end, where the tube is drilled inside, the shape of the **edge is "conical"**. This is the side, where filament enters the tube. This part must be **outside the hotend**.
- Push the PTFE tube in. Slide the tube all the way in and hold it!
- Using the other hand pull the collet out and only then release the tube!!! **THIS IS CRUCIAL** for the hotend to work properly.
- After you finish inserting the new PTFE tube, check all the parts are properly tightened and nothing got loose during the process.

STEP 9 Reassembly of the extruder



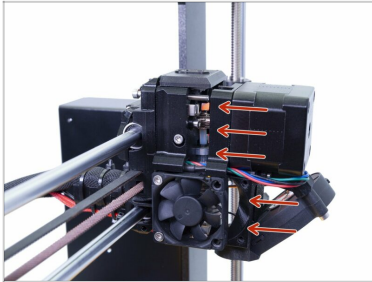
- Place the hotend back inside the extruder. Ensure the orientation is the same as in the picture with cables on the left side.
- IT IS CRUCIAL** to ensure the hotend fits to the extruder-body!!! The printed part is shaped according to the hotend. See the second and the third picture!

STEP 10 Reassembly of the extruder



- Check once again the correct position of the hotend.** Look from below the extruder. The heater block should be oriented, like in the picture.
- Make sure the thermistor cable is guided **above** the thick heater cables.
- Take a look from the side of the extruder. The nozzle should be slightly below the printed fan-shroud.

STEP 11 Reassembly of the extruder



⚠ Carefully and slowly push all the parts together. **In case of any significant resistance STOP immediately and check, which part is blocking the movement .**

STEP 12 Reassembly of the extruder



- 🟠 Tighten both screws, but ensure **no cable is pinched** on both sides of the extruder.
- 🟢 Similar for the front side. Tighten both screws. **Ensure no cable is pinched.**
- 🟣 Put back the M3x14 screw and tighten it.
- 🟠 If you have removed the fan-shroud, put it back in. Then fix it in place with the M3x20 (M3x18) screw.
- 🟡 Secure the M3x40 idler screw so its head is roughly flush with the printed part.

How to replace a hotend PTFE tube
(MK3S+/MK3S/MK2.5S/MMU2S)

STEP 13 It is done!



- ◆ Great job! You've just changed the PTFE tube in the extruder.
- ◆ Heat up the printer and try it out ;)
