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How to replace the print fan (XL multi-tool)

help.prusa3d.com/g934709

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STEP 1 Introduction

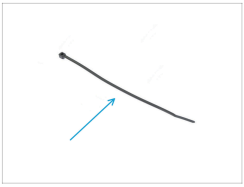
- This guide will take you through the replacement of the **print fan** on the **Original Prusa XL Multi-tool version**.

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

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

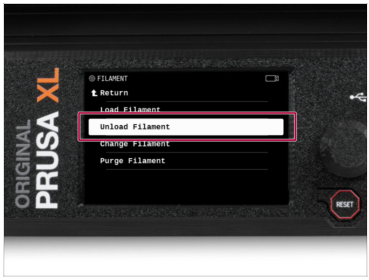
Note that you have to be logged in to have access to the spare parts section.

STEP 2 Tools necessary for this guide

- **For this guide, please prepare:**
- T10 Torx key / screwdriver
- 2.5 mm Allen key
- Side cutters
- Zip tie

STEP 3 Unloading filament



The following step is necessary only if you have filament loaded in the nextruder.

- Unload the filament from the hotend. On the screen, navigate to Filament → Unload Filament.
- Cool down the printer to room temperature. On the screen, navigate to Preheat → Cooldown.

⚠ Wait for the printer to fully cool down to room temperature before proceeding further.

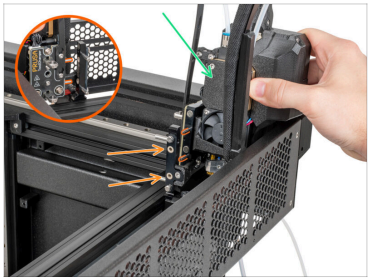
STEP 4 Protecting the heatbed

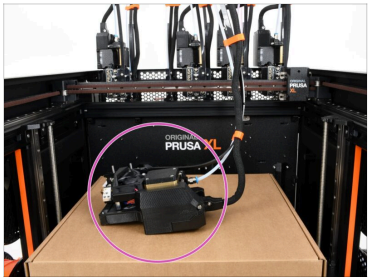
- Before you proceed, it is recommended to protect the heatbed.
- Make sure the heatbed is cooled down to ambient temperature. Place the empty cardboard box approximately to the front center part of the heatbed.

STEP 5 Preparing the printer

- On the printer screen, navigate to *Control* → *Pick/Park Tool* → *Park Current Tool* → *Pick/Park Tool* → *Park Current Tool* → *Park Current Tool*.
- Turn the power switch OFF (symbol "O").
- From the rear side of the printer, unplug the PSU cable.

STEP 6 Undocking the nextruder

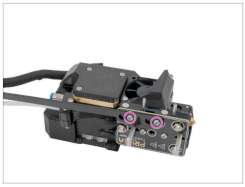


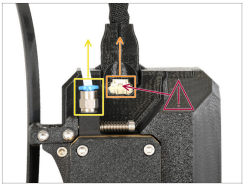


- Hold the nextruder firmly.
- Remove the nextruder by pulling it outwards from the metal inserts.

  ⓘ Although a small resistance is expected, as the metal inserts are magnetic, **use a moderate force**.
- Carefully place the nextruder on the cardboard box.

STEP 7 Disconnecting the nextruder





- With the Torx T10 screwdriver, loosen the two M3x8rT screws from the black nylon flexible plate, and unhook it from the tool. Do not remove the screws completely.

ⓘ There are two versions of the main dwarf cable connector. One with two M3x10 screws, one without.

- If your main dwarf cable is secured to the toolhead with two M3x10 screws, remove them before proceeding.

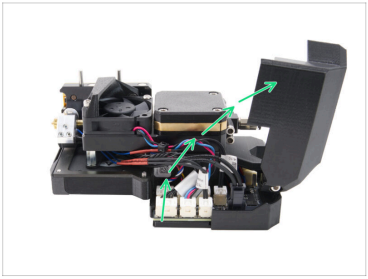
- Push in the blue collar on top of the fitting. Pull out the PTFE tube while pushing in the blue collar.

ⓘ The color of the collar on top of the fitting may differ.

⚠ **Press the safety latch before trying to pull the main dwarf cable out!**

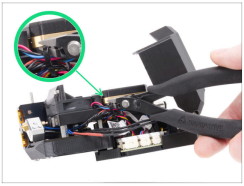
- Disconnect the main dwarf cable by **pressing the safety latch** and pulling the cable out.
- Move the disconnected nextruder to an appropriate work area where you have all the necessary tools available.

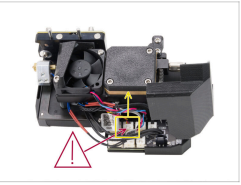
STEP 8 Accessing the dwarf board

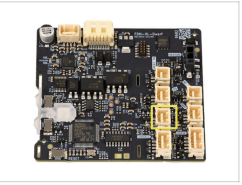


- Loosen the M3x12 screw on the dwarf-cover-door.
- Open the dwarf cover door and slightly tighten the M3x12 screw again to keep the dwarf-cover-door in place.

STEP 9 Unplugging the print fan







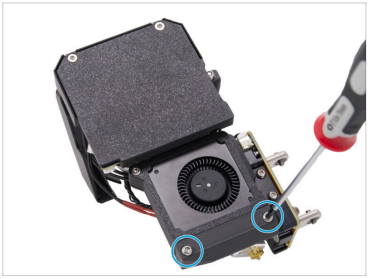
- Carefully cut the zip tie.

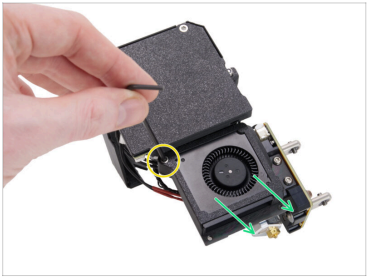
Avoid cutting any cables when cutting the zip tie!

Press the safety latch before pulling the print fan cable out of the dwarf board!

- Press the safety latch and pull the cable out to disconnect the black/yellow/red print fan cable from the dwarf board.

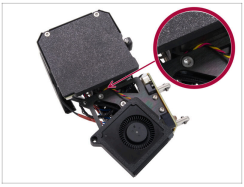
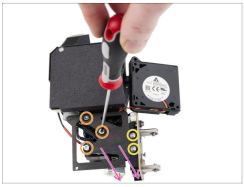
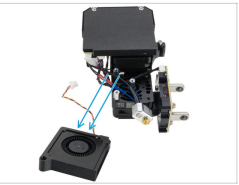
STEP 10 Accessing the print fan





- Remove the fan shroud by unscrewing two bottom M3x14rT screws using the T10 Torx key/screwdriver.
- Remove the M3x12 screw using the 2.5mm Allen key.
- Once the screws are removed, slowly pull the print fan (nested in the printed fan-cover) away from the nextruder.

STEP 11 Removing the print fan

- Check the print fan cable, as there is a slight chance it might be pinched by the nextruder plate.

⚠ **In case the cable is pinched, do not try to pull it out.** You risk damaging the cable. Lift the print fan gently and remove the nextruder plate as described below.

- **If the cable is not pinched**, flip the hotend fan and remove the nextruder plate by using a T10 Torx key/screwdriver to unscrew these:
  - Two M3x8rT screws on the side.
  - Three M3x6bT screws connecting the nextruder plate to the heatsink.
- Remove the nextruder plate.

ⓘ Keep all the screws at hand, we will be re-attaching the nextruder plate soon.

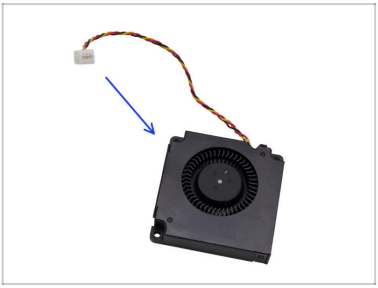
- Remove the print fan.

STEP 12 Removing the print fan cover

- Carefully pull the print fan cable out of the fan cover ridge.
- Remove the print fan from the fan cover. Keep the cover aside, we will use it again very soon.

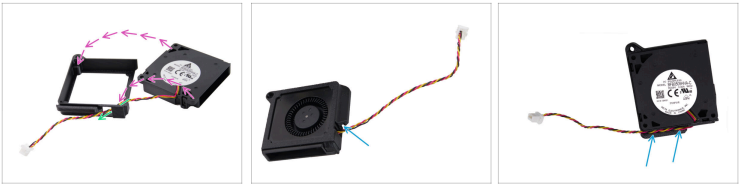
ⓘ We recommend disposing of the old print fan immediately to reduce the risk of mistaking it for the new one.

STEP 13 New print fan - preparation



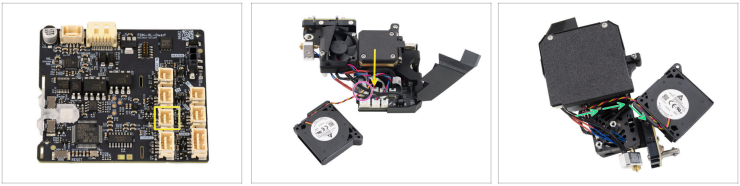
- **For the following steps, please prepare:**
- Print fan (1x)

STEP 14 Inserting the print fan into the fan-cover



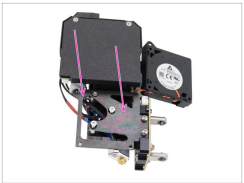
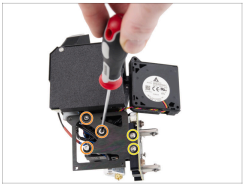
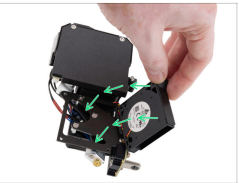
- Thread the print fan cable through the hole in the fan-cover.
- Align the print fan so it fits directly in the fan-cover.
- Insert the print fan into the fan-cover.
- Once inserted, flip the print fan and push the print fan cable through the ridge in the fan-cover.

STEP 15 Connecting the new print fan



- Connect the print fan to the empty slot in the Buddy board. Make sure that the safety latch clicks in and the cable is connected properly.
- Make sure to lead the new print fan cable under the hotend cables.
- Flip the nextruder around. Lead the connected cable and position the print fan as shown in the photo.

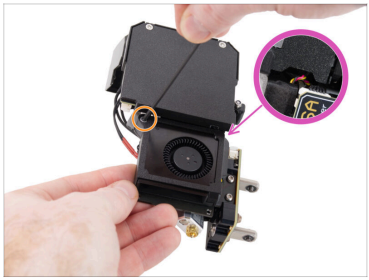
STEP 16 Reattaching the the new print fan

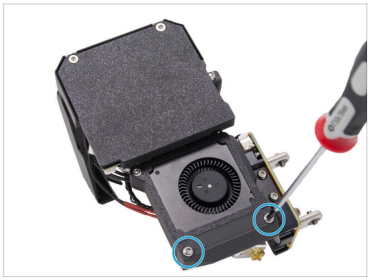




- Place the nextruder plate back in the same position and use the T10 Torx key/screwdriver to re-attach the plate with these screws:
  - Two M3x8rT screws on the side.
  - Three M3x6bT screws connecting the nextruder plate to the heatsink.
- With the nextruder plate secured in place, flip the print fan so that the hole in the top left corner aligns with the hole in the plate.

ⓘ Make sure that the print fan is positioned as shown in the photo; With the stick facing the nextruder plate.

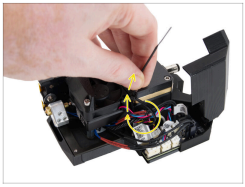
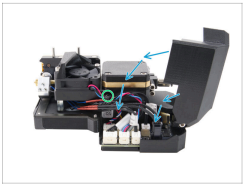
STEP 17 Securing the new print fan





- With the new print fan in place, secure it by tightening the M3x12 screw using the 2,5mm Allen key.
- Make sure that the print fan cable is not pinched and is led through the groove in the plastic.
- Use the T10 Torx key/screwdriver to reattach the fan cover by screwing in the two M3x14rT screws.

STEP 18 Covering the dwarf board

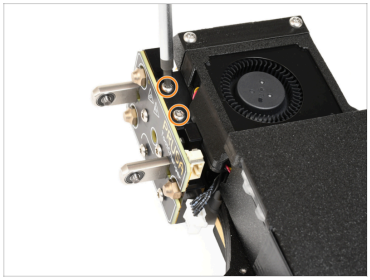
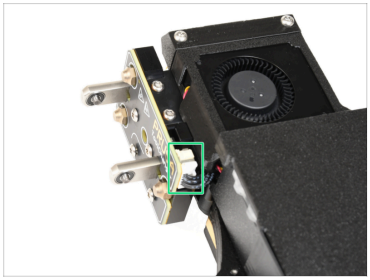




- **Wrap one zip tie around all the cables except the thermistor and heater cables.** Tighten the zip tie just enough to keep the cables in place.

⚠ **Be careful not to tighten the zip tie too much**, as this can damage the cables.

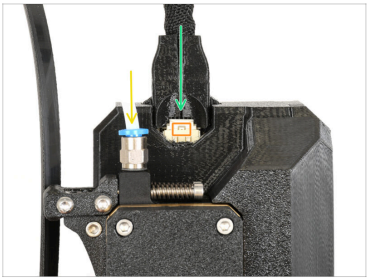
- Close the printed dwarf board cover on the nextruder. Make sure not to pinch any cables.
- Secure the dwarf board cover with an M3x12 screw, and use the T10 Torx key/screwdriver to tighten it.
- Cut the remaining part of the zip tie off with the pliers.

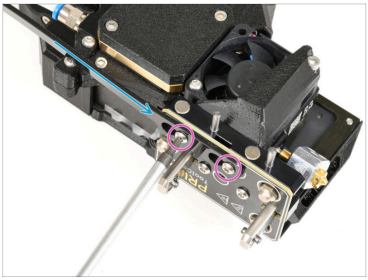
STEP 19 Securing the toolchanger and the hotend

- Secure the toolchanger with two M3x8rt screws.
- Connect the toolchanger cable.

STEP 20 Connecting the nextruder



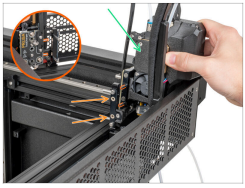
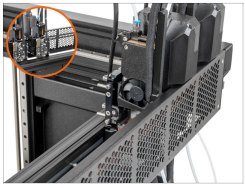
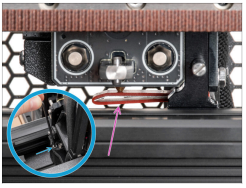


- Insert the PTFE tube into the festo connector as far as possible. Slighty tug on the PTFE tube to make sure it's firmly secured.
- Plug the dwarf extruder cable into the dwarf board.
- Slide the black flexible nylon plate onto the two M3x8rT screws in the cheese board.

⚠ Make sure the black flexible nylon plate is not twisted.

- Tighten the two M3x8rT screws with a Torx T10 key.

STEP 21 Docking the tool

- Carefully turn the printer so that the front side is facing towards you.
- Take the nextruder and carefully place it next to the dock.
- Place the two metal inserts through the white holes in the dock. The magnets will help you dock the nextruder.
- Check that the nozzle seal lightly touches the nozzle. Note that the nozzle seal type might differ.
- Using the 2.5 mm Allen key, tighten or untighten the M3x30 screw to calibrate the height of the nozzle seal.
- The correct position of the Nozzle seal is when the Nozzle seal is not bent and it is touching the nozzle.

STEP 22 Testing the printer

- From the rear side of the printer, plug in the PSU cable.
- Turn the power switch ON (symbol "I").
- Run the tests from the Control Calibration & Tests menu Fan test.→ Calibration & Tests menu Fan test.→ Fan test.

STEP 23 Well done!

- Good job, you have successfully replaced the print fan on your Original Prusa XL multi-tool printer.

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