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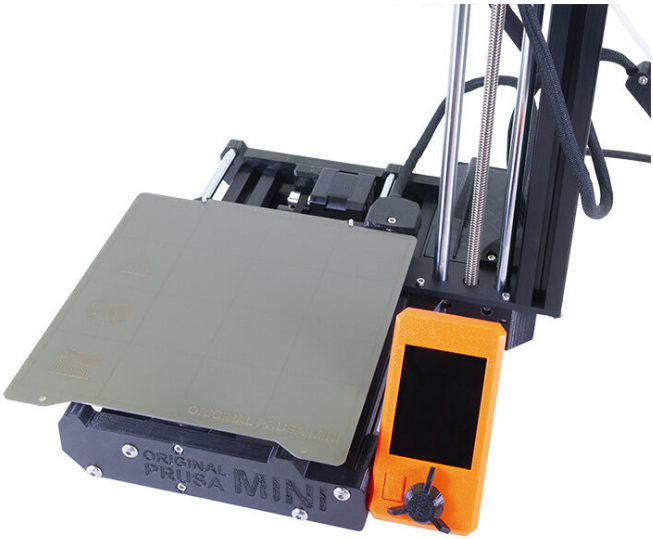
How to replace a heatbed thermistor (MINI/MINI+)



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STEP 1 Introduction

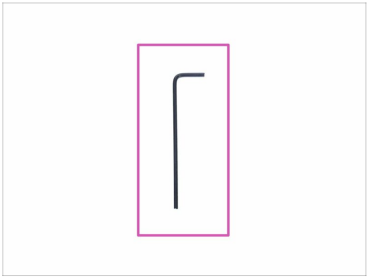
- This guide will take you through the replacement of the **heatbed thermistor** on the **Original Prusa MINI** and **MINI+**.

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

- If the heatbed thermistor is damaged, you will see the **MINTEMP** error message on the display when you preheat the printer.
- Heatbed thermistor replacement set is available in our eshop shop.prusa3d.com

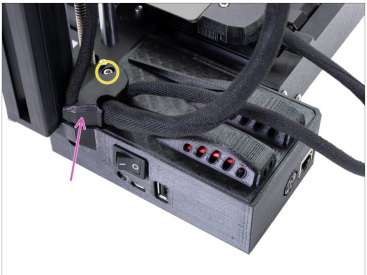
Note that you have to be logged in to have access to the spare parts section.

STEP 2 Tools necessary for this guide



- **For the following steps, please prepare:**
- 2.5mm Allen key
- TX10 Torx key

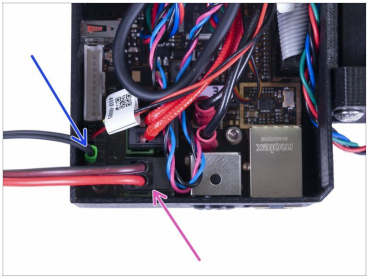
STEP 3 Opening the box with the electronics

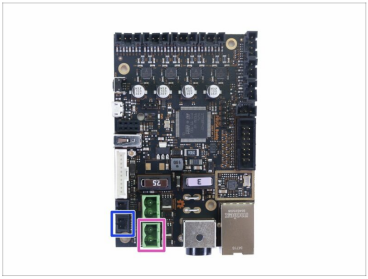


⚠ **Turn the printer off and unplug it from the socket!**

- Release and remove the M3 screw on the box with the electronics.
- Remove the printed cable cover.
- Lift the second electronics cover slightly. Before you remove it completely, pull it first towards the aluminium extrusion to release both pins from the holes.

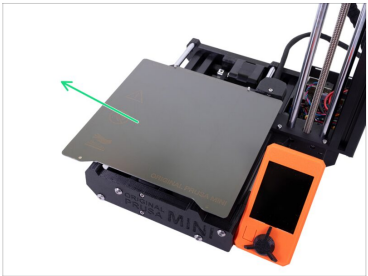
STEP 4 Disconnecting the heatbed





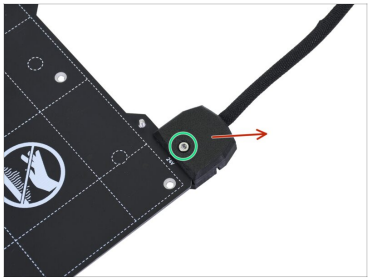
- Disconnect the heatbed cable.
- Disconnect the heatbed thermistor.

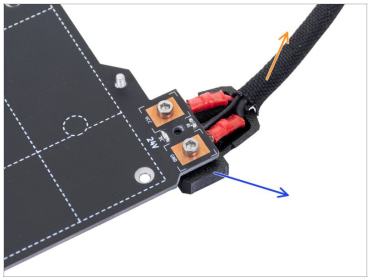
STEP 5 Removing the heatbed



- Remove the steel sheet.
- Release and remove 9 screws on the heatbed by using a Torx TX10 key.
- Remove the heatbed from the printer.

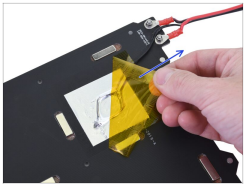
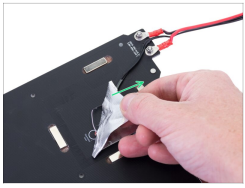
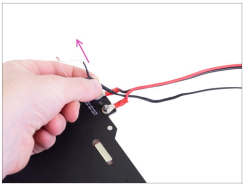
STEP 6 Disassembly the heatbed





- Put the heatbed on the clean surface, far from metal parts (screws, Allen keys, ...). There are magnets on the bottom side of the heatbed.
- Release and remove the M3x12 screw from the MINI-heatbed-cable-cover-top.
- Remove the MINI-heatbed-cable-cover-top.
- Remove the MINI-heatbed-cable-cover-bottom.
- Remove the textile sleeve all the way from the heatbed cable bundle.

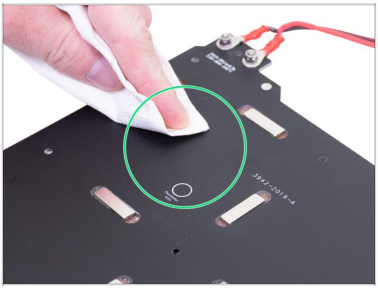
STEP 7 Removing the thermistor

- Turn the heatbed upside down.
- Remove the (yellow) Kapton tape.
- Remove the (silver) aluminium tape.
- Remove the thermistor from the heatbed and cable bundle.

ⓘ Keep the thermistor, for now, we will need to shape the new one according to the old one.

STEP 8 Cleaning the surface



- Use IPA and a paper towel to remove glue residue from the thermistor area.

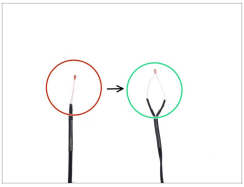
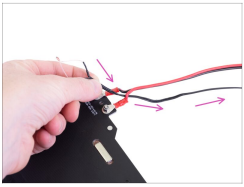
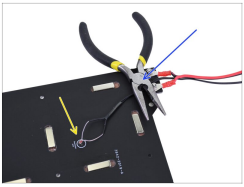
STEP 9 New thermistor - parts preparation

- **For the following steps, please prepare:**
- New thermistor (1x)
- New aluminium tape (1x)
- New polyimide/Kapton tape (1x)

  ⓘ Since we have started shipping the universal size of polyimide/Kapton tape for use on multiple Prusa printers, it is necessary to cut the tape to the required size for your printer.

  - Please, cut the tape in square shape 7 x 7 cm (2.76 x 2.76 inch).

STEP 10 New thermistor installation

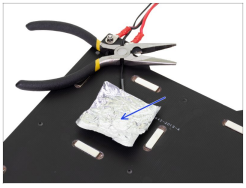
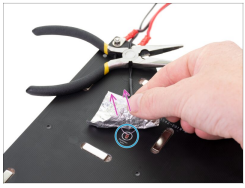
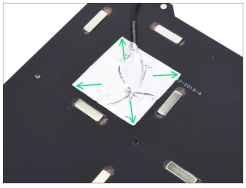




IMPORTANT: we need to adjust the shape of the **new thermistor** to match the old one.

- **The new thermistor** has a pair of straight wires.
- **The old thermistor** is shaped in an "oval".

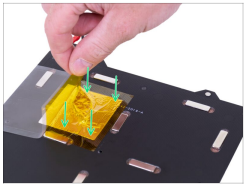
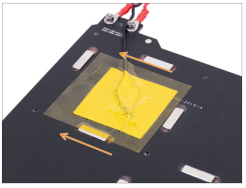
- Guide the thermistor cable through the gap between heatbed cables.
- Lay the **new and properly shaped thermistor** on the heatbed and fix it temporarily using pliers or any other tool.
- Make sure the **tip of the thermistor is in the circle**. If you miss this spot, the printer will read incorrect temperature values.

STEP 11 Fixing the thermistor in place

- Take the silver aluminium tape and carefully peel off the protective film.
- Glue the tape to the heatbed, **BUT ONLY** in the center of the thermistor (inside the oval shape). We need to double-check the correct position.
- Peel or bend the tape slightly, to reveal the tip of the thermistor.
- Ensure again, that the tip is right above the circle. If you miss this spot, the printer will read incorrect values.
- As soon as the correct position is ensured glue the entire tape to the board.

STEP 12 Fixing the thermistor in place

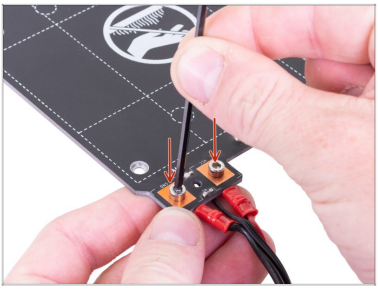




⚠ Now it is time to apply the final "yellow" Kapton tape. **DON'T PEEL OFF the entire tape**, it will curl up!!!

⚠ **Be careful** not to stick the tape over the screw holes.

- The Kapton tape has a bigger area than the silver tape. Make sure the silver tape is overlapped from all sides.
- Peel off about 0.5 cm (0.2 inch) strip of the Kapton tape and glue it to the heatbed, like in the picture. Ensure the tape is properly connected.
- Continue with gluing the tape and stop for a second above the area with the thermistor. Pay great attention to glue the tape everywhere.
- Finish gluing the tape to the heatbed. Double-check the entire surface is properly connected.

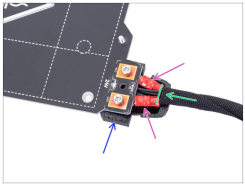
STEP 13 Checking the heatbed cable connection

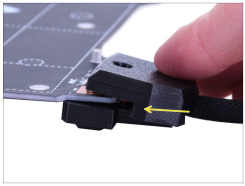


- Make sure the heatbed cable connectors are tightened and do not move freely.

⚠ **Loose screws on the connectors can fatally damage the electronics.**

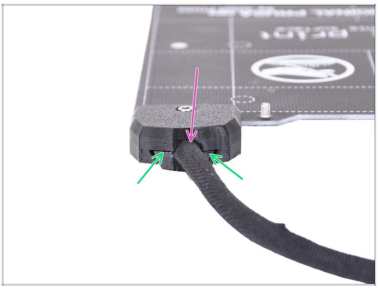
STEP 14 Reassembling the heatbed





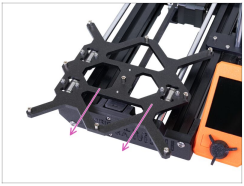
- Turn the heatbed upside down.
- Place the MINI-heatbed-cable-cover-bottom under the connectors like in the picture.
- Wrap the textile sleeve on the heatbed cable bundle all the way to connectors on the heatbed.
- Make sure the connectors fit properly into the cover.
- Take the MINI-heatbed-cable-cover-top and slide it over the screw heads.
- Secure it with the M3x12 screw.

STEP 15 Heatbed cable guiding



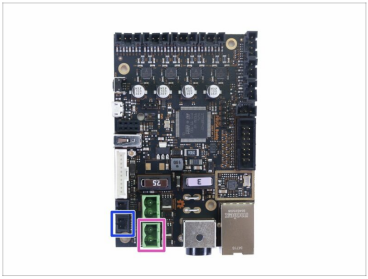
- Make sure the textile sleeve is properly inserted in the covers.
- Make sure there is almost no gap between both covers.

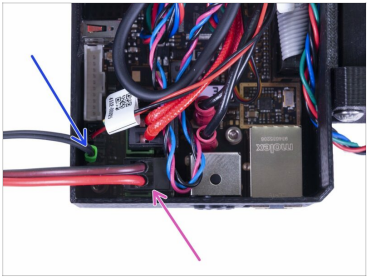
STEP 16 Mounting the heatbed



- Move the Y-carriage all the way to you.
- Place the heatbed on the Y-carriage.
- Align all 9 holes on the heatbed with the heatbed spacers.
- Insert nine M3x4b screws to the holes. **DON'T fully tighten the screws.**
- After all screws are in place, tighten them in the following order:
  - Center screw
  - First four screws (edges)
  - Last four screws (corners)

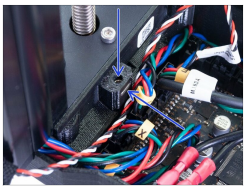
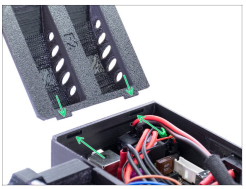
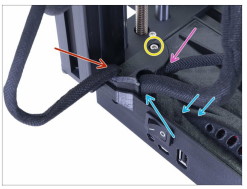
STEP 17 Connecting the heatbed cables





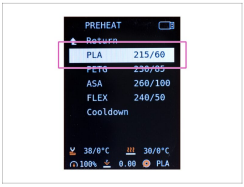
- Connect the heatbed thermistor cable in the lower connector on the Buddy board.
- Connect the heatbed cable in the lower green connector on the Buddy board.

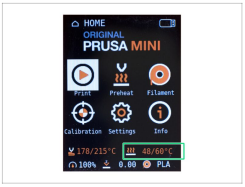
STEP 18 Covering the electronics

- Before covering the electronics, make sure the square nut is correctly positioned in the printed part. The nut must not fall out! This can cause fatal damage to the electronics.
- Insert the cover back in, make sure it is properly seated in the slot. *Note: on an older design, there were holes instead of slots, the assembly procedure is the same.*
- **Place the second cover on the top and arrange the cables:**
  - **Extruder bundle**, ensure the textile sleeve is partially in. Also, it must be tilted away from the printer.
  - **Heatbed bundle**, ensure the textile sleeve is partially inside the box.
  - **Filament sensor cable** (optional), ensure that the textile sleeve wrapped around the cables is partially inside the box.
- Now, tighten the second cover. Check that no cable is pinched.

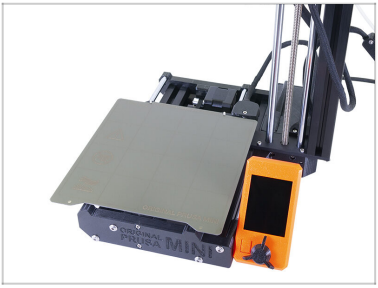
STEP 19 Final check





- Connect the printer and turn it ON.
- Use the knob and navigate to the **Preheat** in the Menu.
- Select **PLA**.
- Navigate back to the **Info screen** and check if the temperature rises.

STEP 20 It's done!



- **Good job!** You just replaced the thermistor on the heatbed.

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