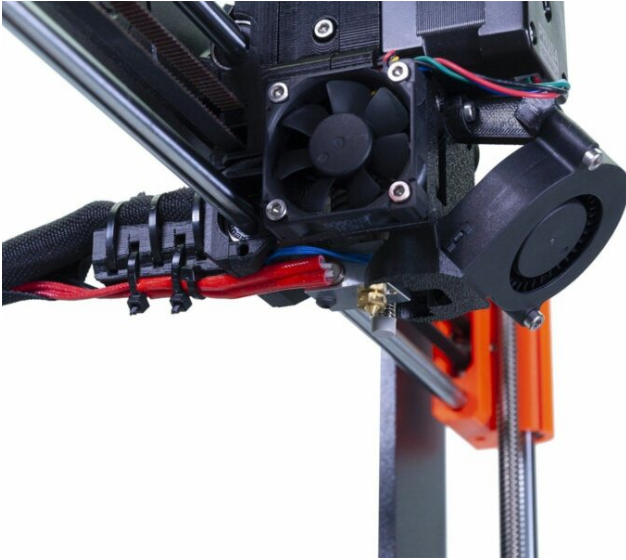


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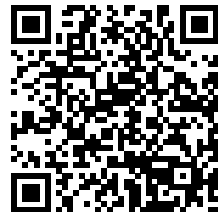


# How to replace a hotend (MK3S/MK3S+)

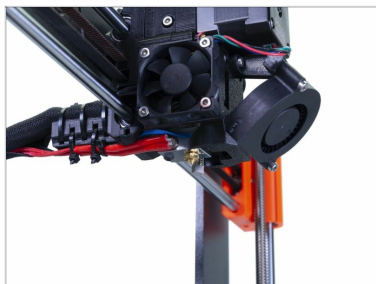


[help.prusa3d.com/g161575](https://help.prusa3d.com/g161575)

Scan the QR code to  
display the latest  
version of this  
chapter.



## STEP 1 Introduction



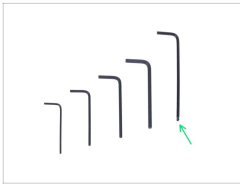
◆ This guide will take you through the replacement of the **hotend** on the **Original Prusa i3 MK3S** and **MK3S+**.

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

◆ All necessary parts are available in our eshop [shop.prusa3d.com](https://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



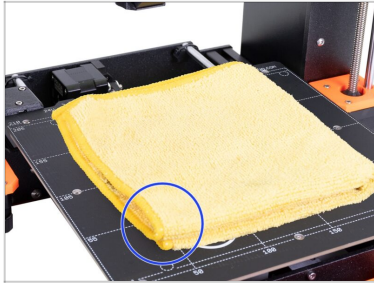
● **For the following steps, please prepare:**

● 2.5 mm Allen key

● Needle-nose pliers

● Cloth or piece of fabric 15x15cm

## STEP 3 Preparing the printer



**⚠ Unload the filament from the extruder!**

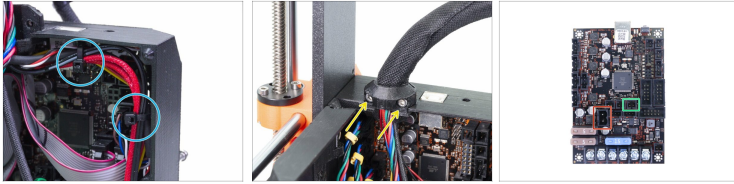
**⚠ Turn the printer off and unplug it!**

**i Before you proceed, it is recommended to protect the heatbed.**

◆ Take off the flexible steel sheet.

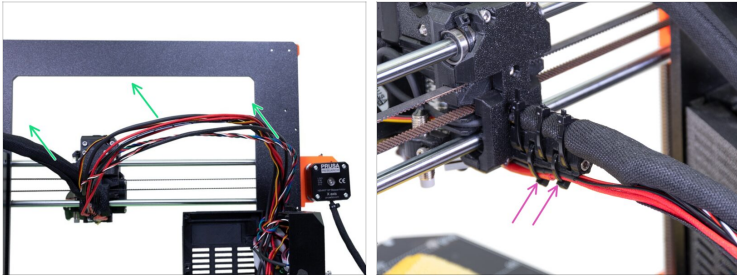
◆ Use any cloth or piece of fabric, which is thick enough and cover the heatbed. This will ensure you won't damage (scratch) the surface during the disassembly.

## STEP 4 Disconnecting the hotend cables



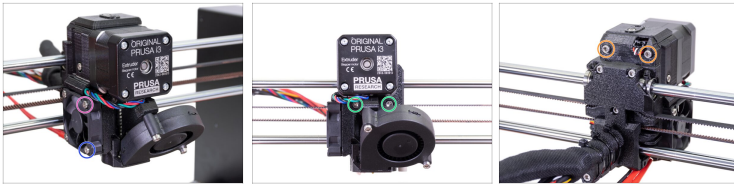
- ◆ Open the Einsky case and cut the two zip ties on the cable bundle. **Avoid cutting the cables!**
- ◆ Release two screws on the cable clip and remove the clip.
- ◆ Disconnect the extruder heater from the Einsky board.
- ◆ Disconnect the extruder thermistor from the Einsky board.

## STEP 5 Removing the hotend



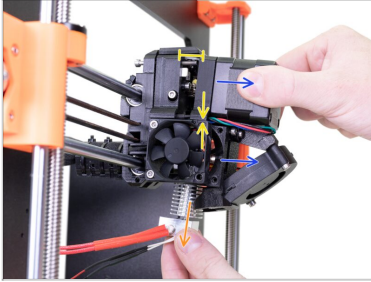
- ◆ Remove the textile sleeve from the cable bundle. Start in the Einsy-base (electronics box) and continue all the way to the extruder.
- ⚠ **Leave the textile sleeve attached to the extruder, no need to remove it entirely.**
- ◆ Cut two zip ties on the bottom side of the cable-holder. **Avoid cutting the cables!**

## STEP 6 Partial disassembly of the extruder



- ◆ Release and remove the M3x14 screw from the hotend fan.
- ◆ 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.

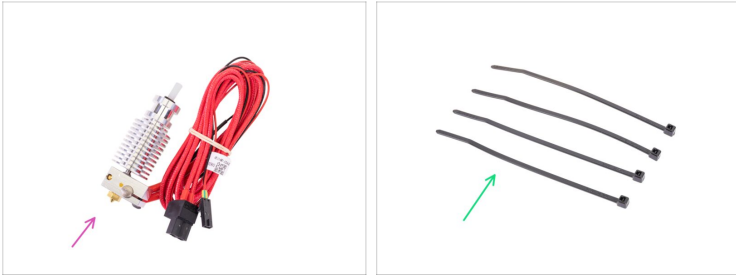
## STEP 7 Partial disassembly of the extruder



**⚠ Before you move any parts, make sure there is enough slack in the extruder motor cable!!!**

- ⬢** Carefully move the extruder apart. First, pull the motor, then 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.
- ⬢** Pull out the hotend from the extruder and remove it from the printer.
- ⓘ** If the hotend is still stuck inside, release the screws more and increase the gap between the printed parts.

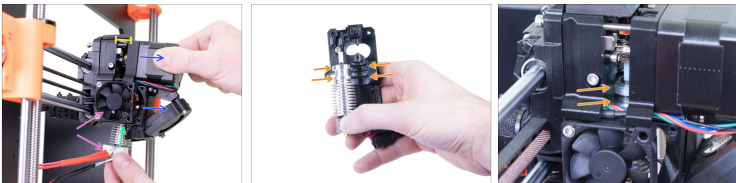
## STEP 8 New hotend - parts preparation



◆ For the following steps, please prepare:

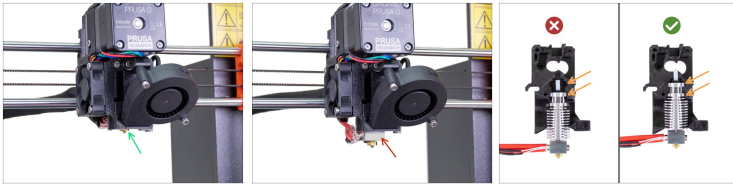
- ◆ New hotend (1x)
- ◆ Zip tie (4x)

## STEP 9 New hotend installation



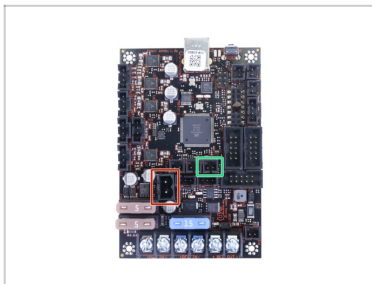
- ◆ Create a gap similar to the picture.
- ◆ Carefully move the extruder apart. First, pull the motor, then the lower part with the print fan.
- ◆ Place the hotend inside the extruder.
- ◆ Ensure the hotend cables are on the same side as the hotend fan.
- ◆ **IT IS CRUCIAL** to ensure the hotend fits to the extruder-body!!! The printed part is shaped according to the hotend. See the second and the third picture!

## STEP 10 Checking the hotend position



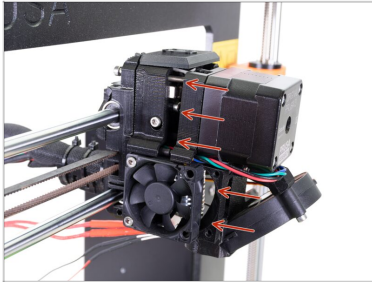
- ◆ Look at the extruder from below and check the hotend position:
  - ◆ **Correct position:** only the tip of the nozzle should be visible.
  - ◆ **Incorrect position:** the heatsink is too low. The heaterblock is below the fan shroud.
    - ◆ Repeat the assembly and make sure that the heatsink is seated in the top notch of the plastic part and both notches of the plastic part are filled.

## STEP 11 Connecting the hotend cables



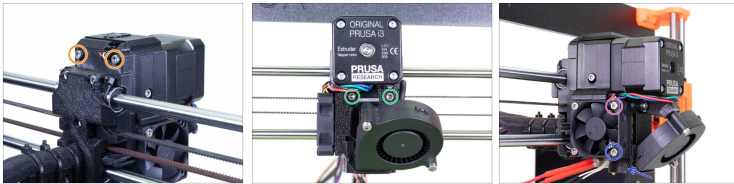
- ◆ Connect the hotend heater (red) cable to the Einsy board.
- ◆ Connect the hotend thermistor (black & red) cable to the Einsy board.

## STEP 12 Reassembly of the extruder



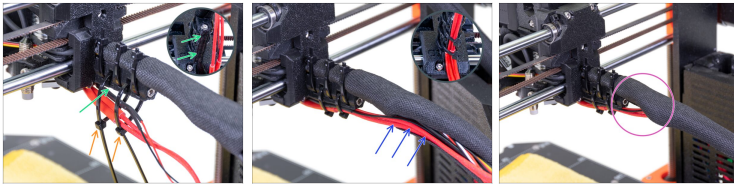
⚠ Carefully and slowly push all the parts together. **In case of any significant resistance STOP immediately and check, which part is blocking the movement .**

## STEP 13 Reassembly of the extruder



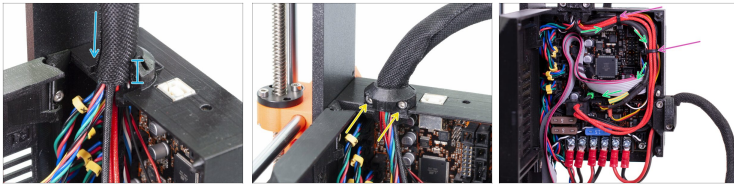
- 🟠 Tighten both screws, but ensure **no cable is pinched** on both sides of the extruder.
- 🟢 Similar for the front side. Tighten both screws. **Ensure no cable is pinched.**
- 🟡 Put back the M3x14 screw and tighten it.
- 🟠 If you have removed the fan-shroud, put it back in. Then fix it in place with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

## STEP 14 Tightening the textile sleeve



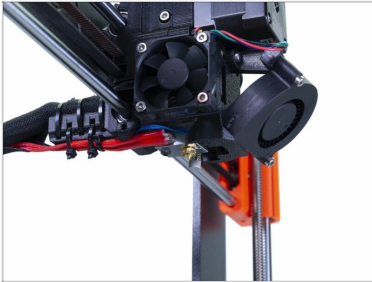
- ◆ Use two zip ties and push them through the upper slots on the cable-holder.
  - ◆ **ATTENTION!** Before tightening the zip ties add the cables from the hotend. Use the channel in the printed part to arrange them properly.
  - ◆ Once the hotend cables are included, tighten the zip ties and cut remaining parts.
  - ◆ Open the textile sleeve and insert the cables from the hotend.
  - ◆ Compare the look of the cable management with the last picture.
- ⚠ **The zip tie arrangement was tested with the injection molded double spool holder (provided in the kit and assembled later on). If you intend to use any other frame mounted type holder, make sure the zip ties won't crash into it, which might result in a print failure.**

## STEP 15 Guiding the textile sleeve



- ◆ Slide the sleeve in the holder at least 3/4 of the holder's height.
- ⚠ Ensure the nylon filament isn't pushing the motor cables and if needed slightly unwrap the sleeve and push the filament up.
- ◆ Use the Extruder-cable-clip and two M3x10 screws to fix the cable bundle in place.
- ◆ Manage all cables in the Einsy base like in the picture. And secure it with two zip ties.
- ◆ Secure the cable bundle with two zip ties.

## STEP 16 It's done!



- ◆ **Great job!** You've just changed the hotend in the extruder.
- ◆ Heat up the printer and try it out ;)
- ⓘ Changing or manipulating the hotend will change the height of the layer. **It is necessary to re-calibrate the first layer.** Follow this article: [First Layer Calibration \(i3\)](#).



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