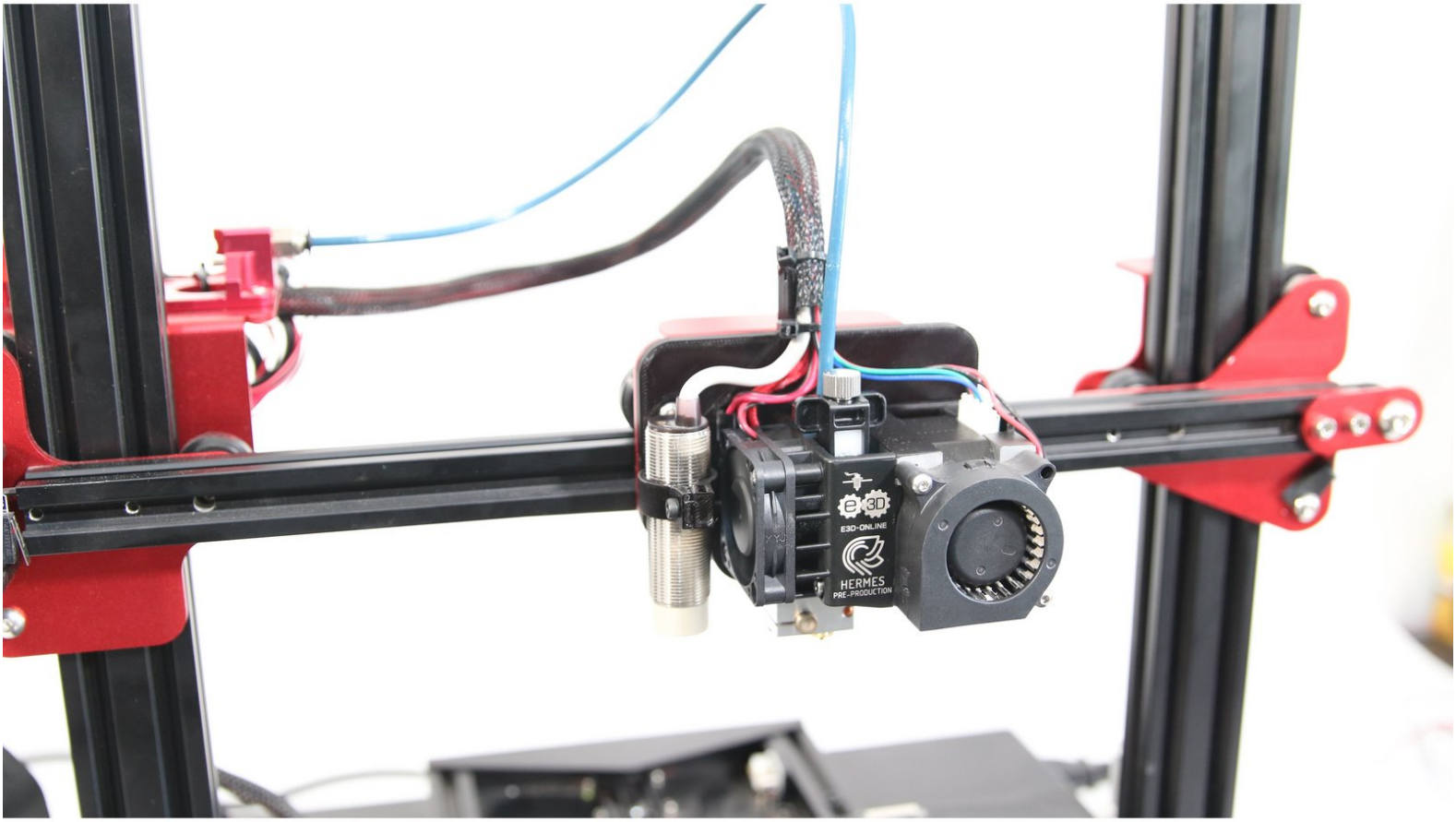
Hemera Creality CR-10S Pro

Written By: Joseph



INTRODUCTION

Purchase your Hemera here: https://e3d-online.com/e3d-hemera-175-ki...

For the printed parts please see:

https://www.myminifactory.com/object/3d-...

Please note that this guide is assuming the use of a fully assembled and hot tightened Hemera unit if you have not yet fully assembled and hot tightened your unit please see: Hemera Assembly Guides

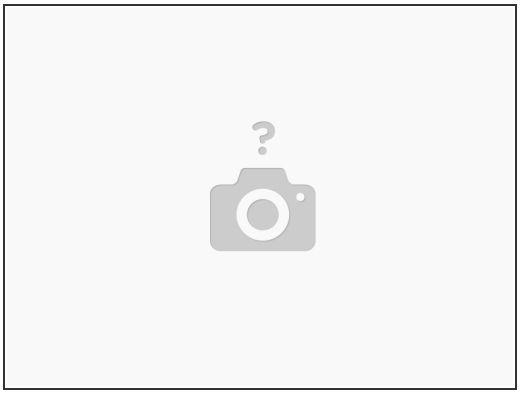
Mounting a Hemera to a Creality CR-10S Pro is easy, and we provide most of the tools you'll need. Please note, though, that you should be very careful of the following safety cautions:

- Be aware of your electronics. Don't work on your printer while it is plugged in or turned on.
- Be aware when you heat up your new hotend not to burn yourself on the heater block nozzle or heater cartridge.
- The standard Hemera is capable of printing up to 285°C, do not exceed these temperatures unless you have replaced the Thermistor cartridge with a PT100, the Aluminium heater block with a Plated copper heater block, and the Brass nozzle for a Plated copper, Hardened steel or Nozzle X.
- Firmware modification is not optional it is a mandatory step,
- Make sure you have ordered and received the correct voltage heater and fan to match the power supply of your printer. All of our current heater cartridges should have the voltage and wattage laser engraved on the cartridge. Taking an ohm reading is the most reliable method of testing what voltage/ wattage you have received.
- Connecting 12v parts to a 24v power supply can result in overheating, component damage, or fire. If you are unsure double check the rating on your power supply.
- Your HotEnd and your printer are your responsibility. We cannot be held responsible for damages caused by the use, misuse or abuse of our products.
- We provide these guides as a reference to show that it is possible to mount a Hemera to a Creality CR10 V2. Users should be mindful that your specific use case may vary and further modifications or additions may be required.

Step 1 — 3D Printed Parts

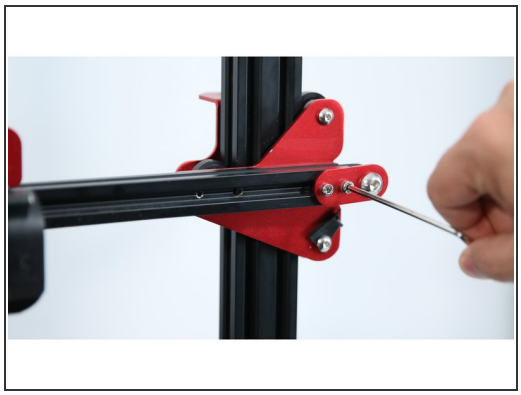
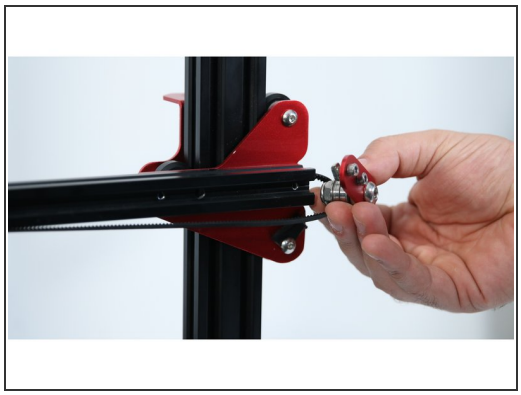
- Mounting Base
- Capacitive or BLTouch sensor mount

Step 2 — Extras you will need



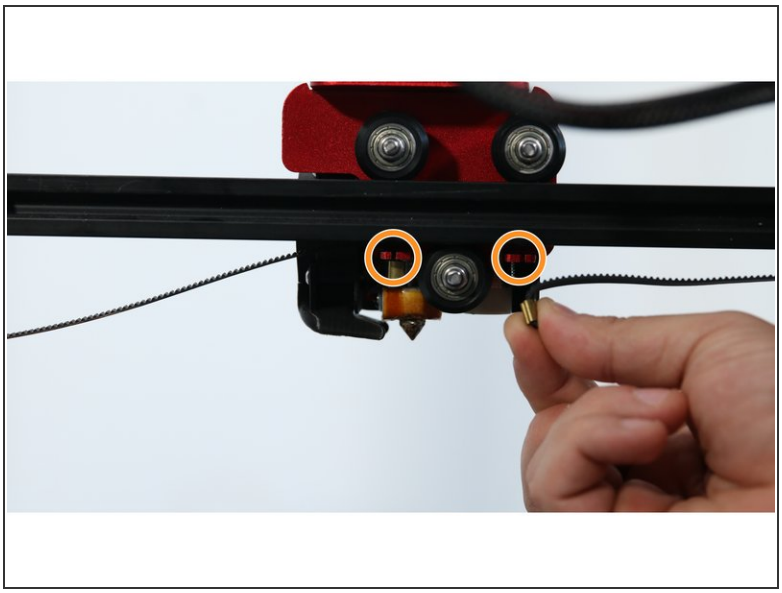
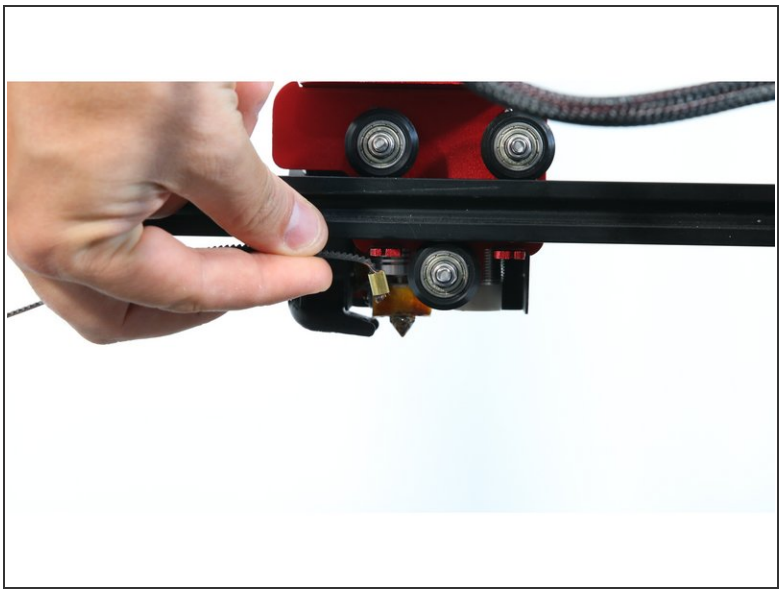
- 2 x M3 Locknuts
- 2 x M3x5 screws
- Cable ties

Step 3 — Disassembly - Belt

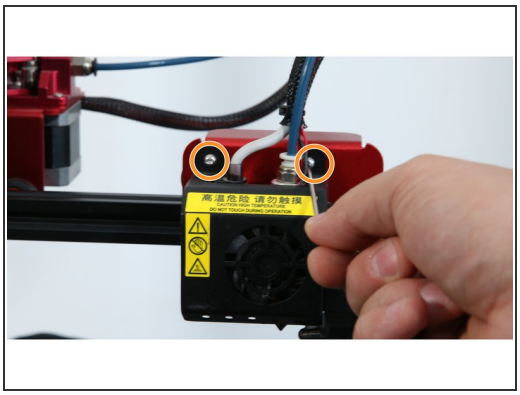
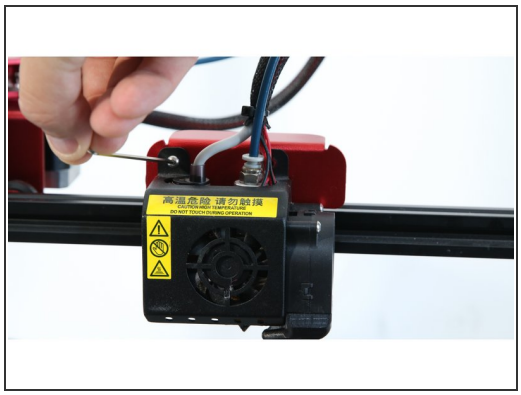
- Locate the two screws holding the X-axis belt idler in place
- Undo both screws slightly until the T-nut becomes a bit loose
- Wiggle the idler until the T-nuts slide out and remove the idler

Step 4 — Disassembly - Belt

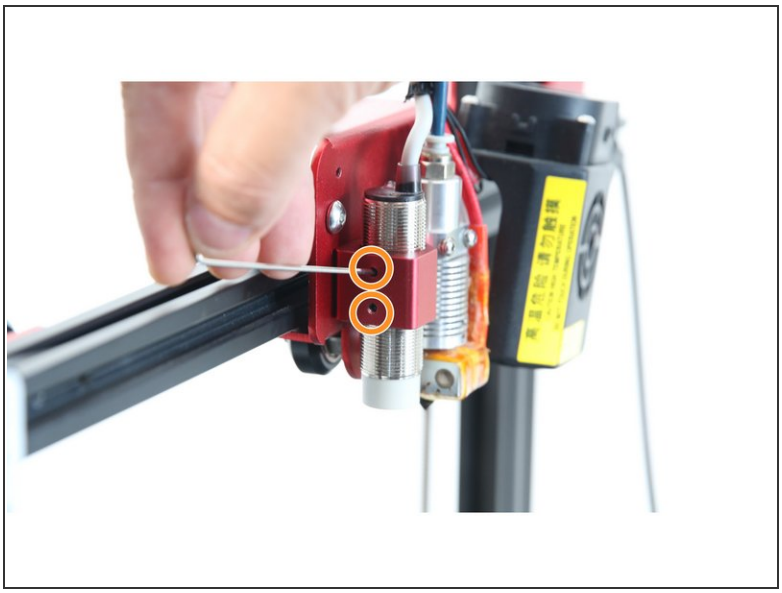
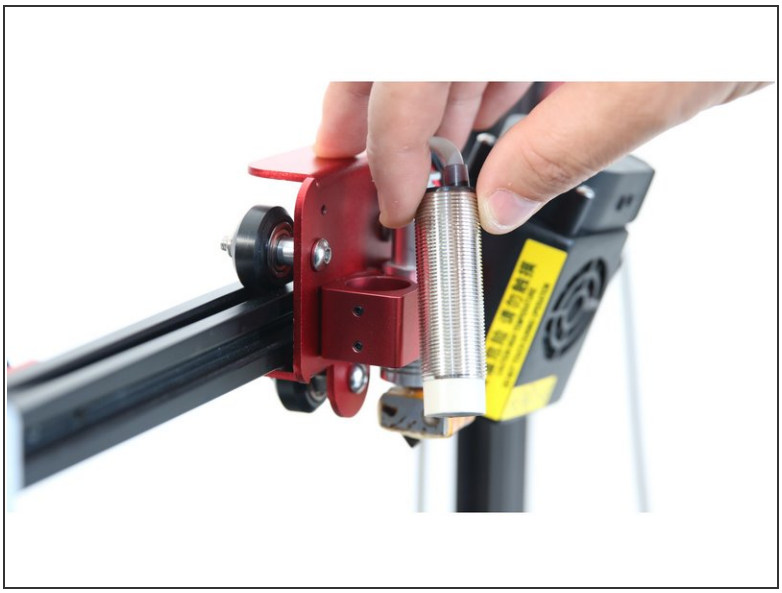
- At the back of the hotend carriage, locate the X-Axis belt ends which are secured in slots
- Pull both ends of the belt outwards

Step 5 — Disassembly - Hotend

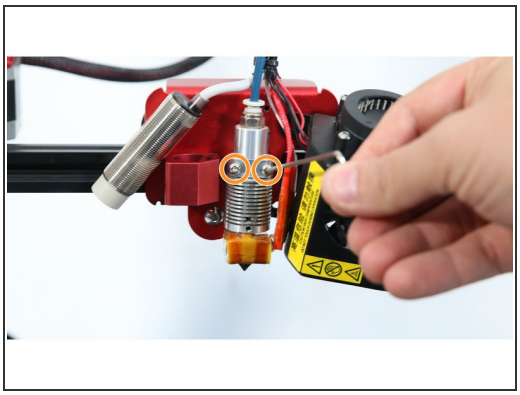
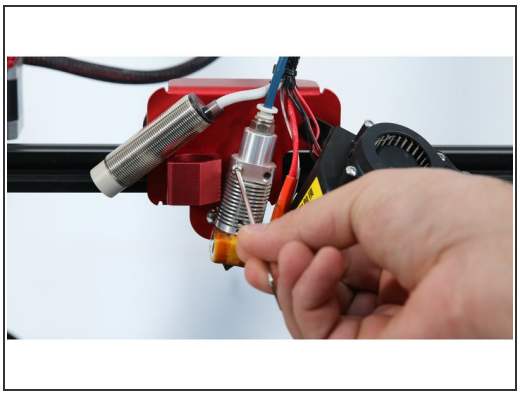
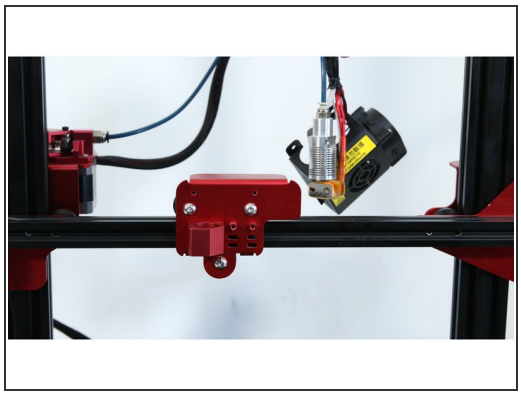

- Locate the two screws in front holding the hotend cover in place
- Remove both screws
- Gently move the hotend cover aside taking care as the fan wires will be attached

Step 6 — Disassembly - Hotend

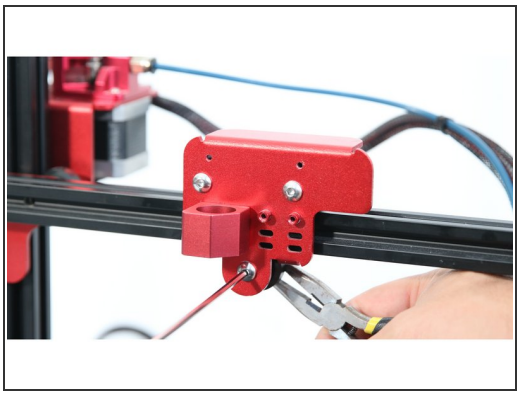
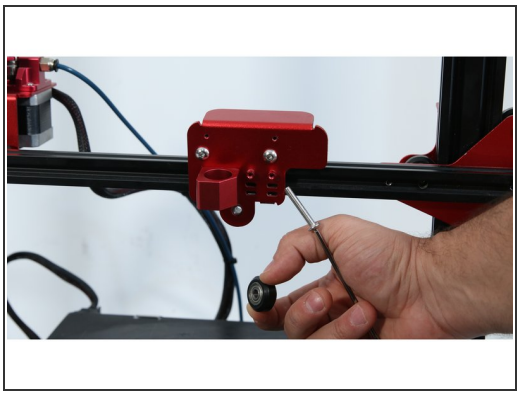
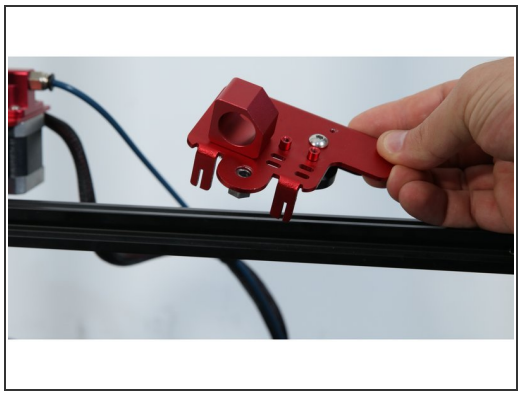
- Loosen the two grub screws holding the bed leveling sensor in place
- Gently pull the sensor upwards out of the bracket

Step 7 — Disassembly - Hotend

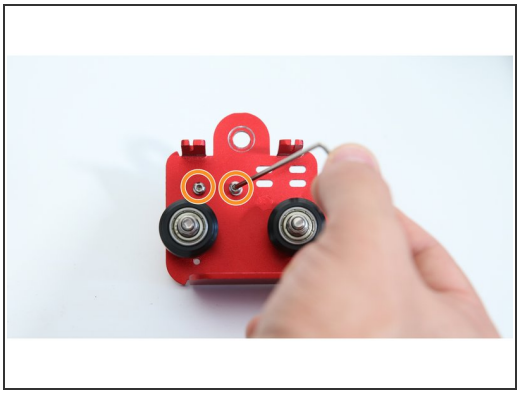
- Undo the two screws holding the hotend in place
- Move the whole wire assembly to the side for the time being

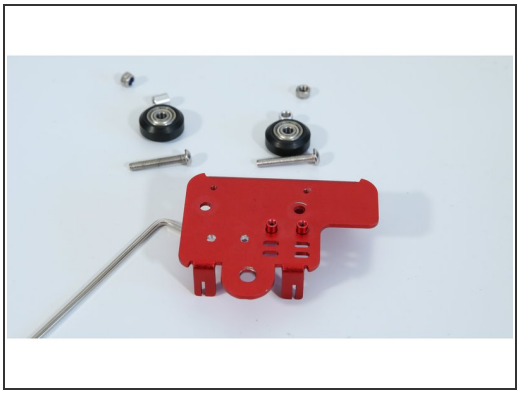
Step 8 — Disassembly - Carriage

- Using a pair of pliers, hold the locknut at the back of the bottom roller on the carriage
- Using an allen key, undo the screw from the front of the carriage holding the roller in place.
- Take off the carriage

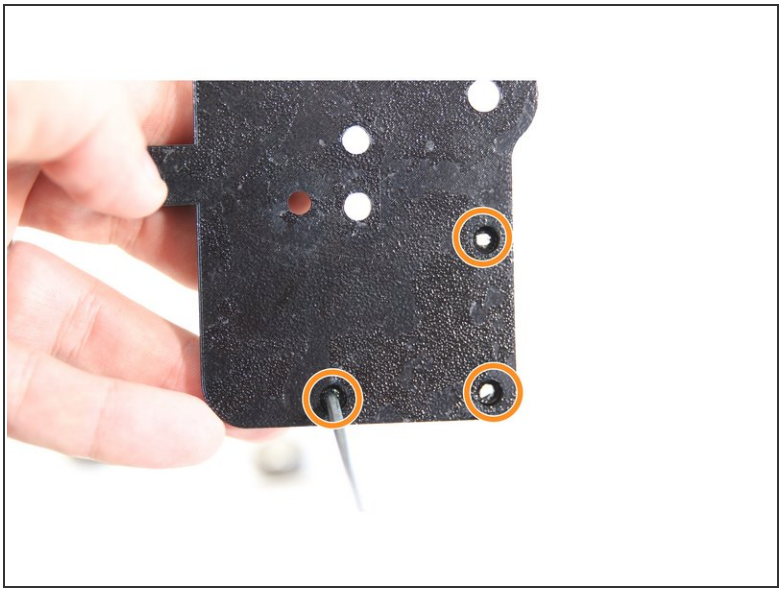
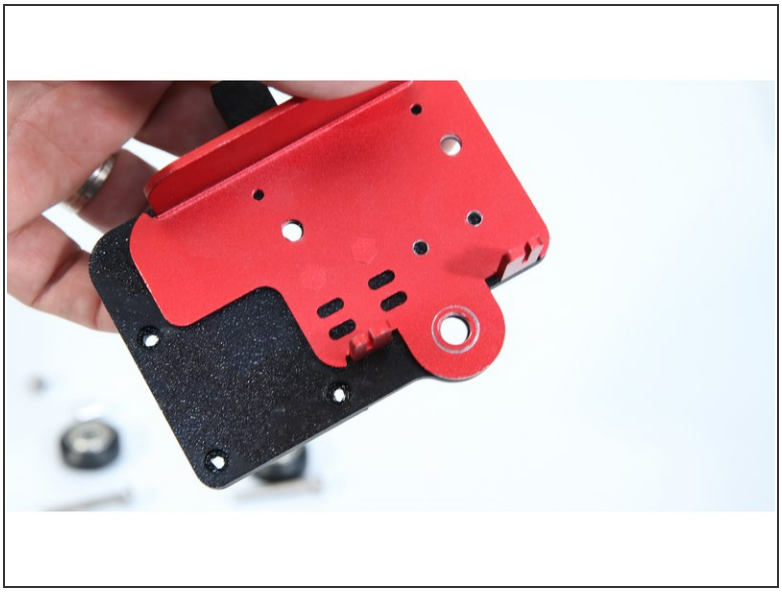
Step 9 — Disassembly - Carriage





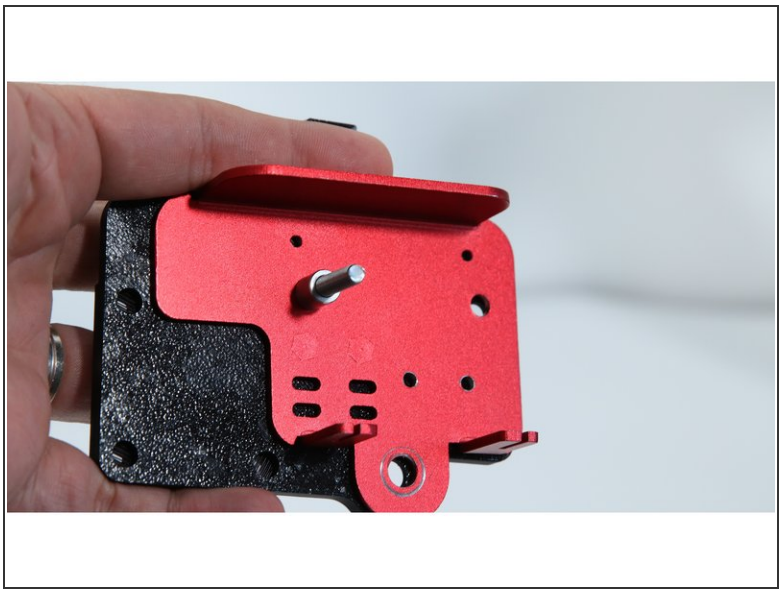
- Undo the two screws holding the bed sensor bracket in place
- Disassemble the two remaining rollers using a pair of pliers for the locknuts and an allen key for the screws
- The carriage mount should now be completely bare

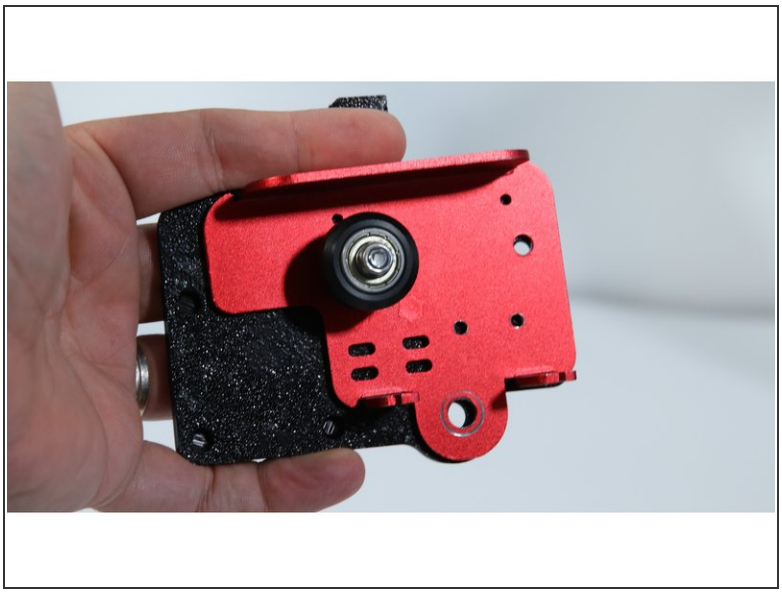
Step 10 — Assembly - Carriage

- Take the 3D printer mount and poke holes through the three mount holes for the Hermes
- Align the 3D printed mount with the carriage as shown in the photo

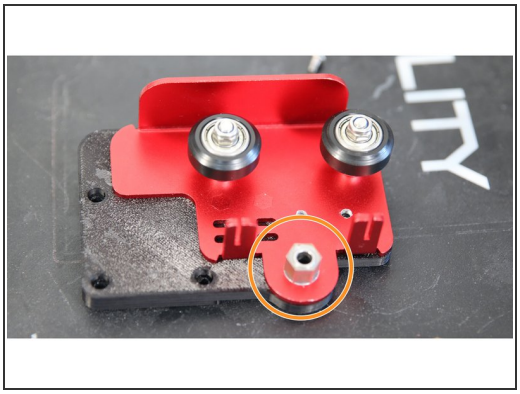
Step 11 — Assembly - Carriage





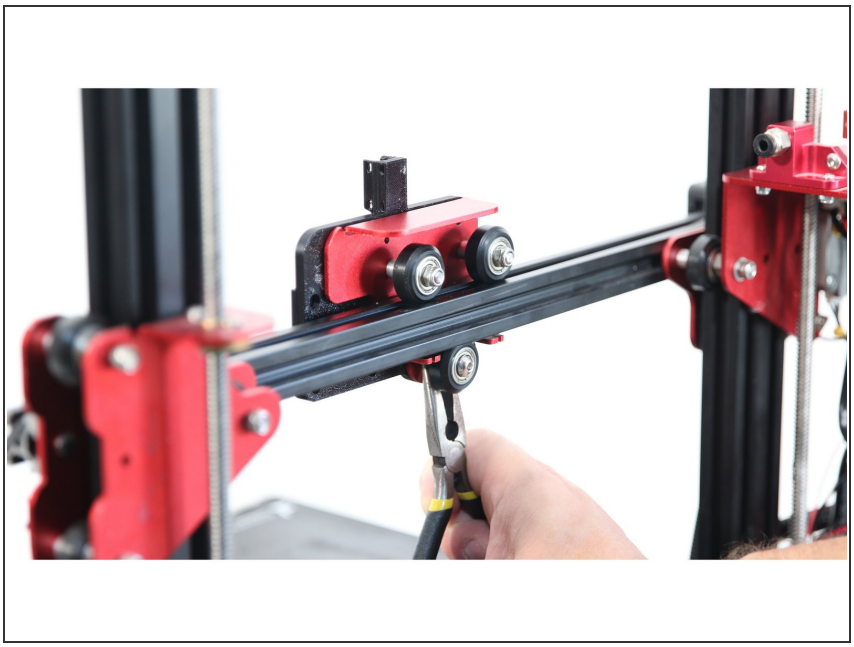
- Reassemble the two top rollers
- The screw goes in from the front
- First insert the sleeve on the back, then the roller and finally the locknut

Step 12 — Assembly - Carriage



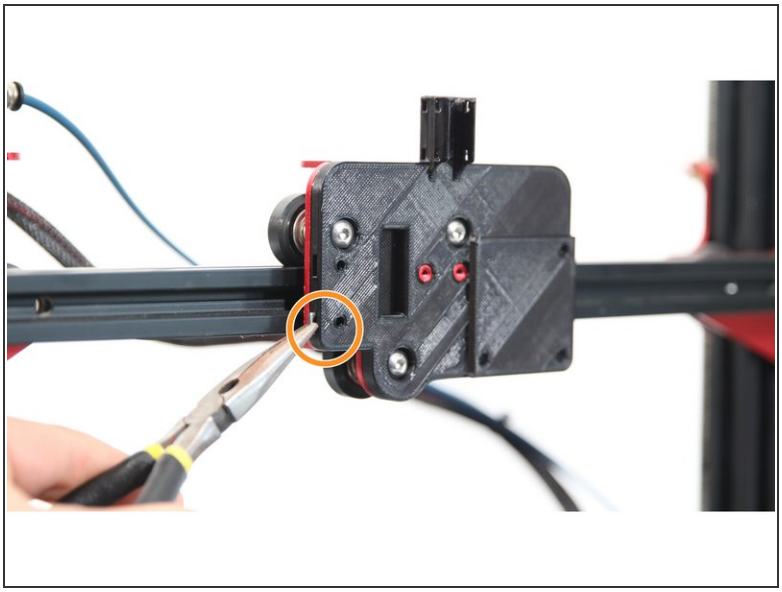
- Place the eccentric nut into the bottom roller's hole. Take note of the rotation of the nut, having the thinner side of the wall to the bottom of the carriage
- Mount the carriage on top of the X-Axis rails
- Insert the screw with the roller through the eccentric nut and tighten from the front using the locknut

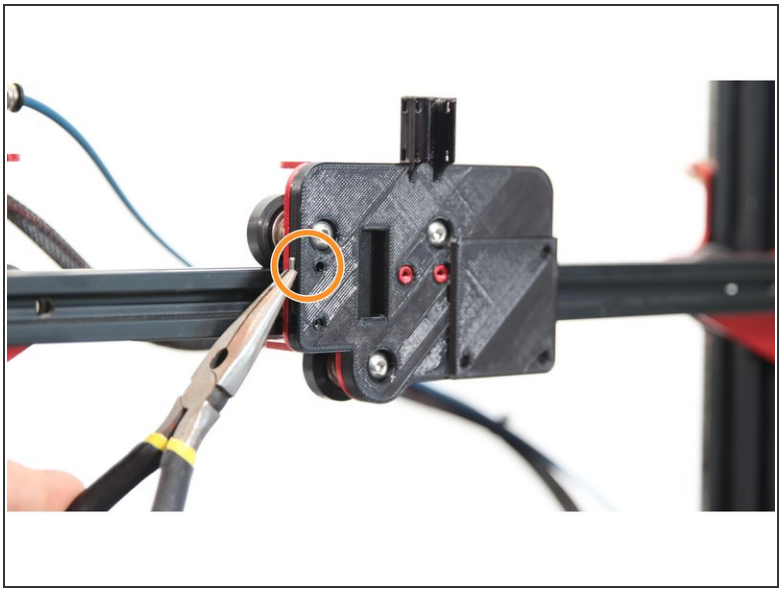
Step 13 — Assembly - Carriage



- Once the carriage is back in place, use a pair of pliers to slowly turn the eccentric nut until there is no wobble left in the carriage

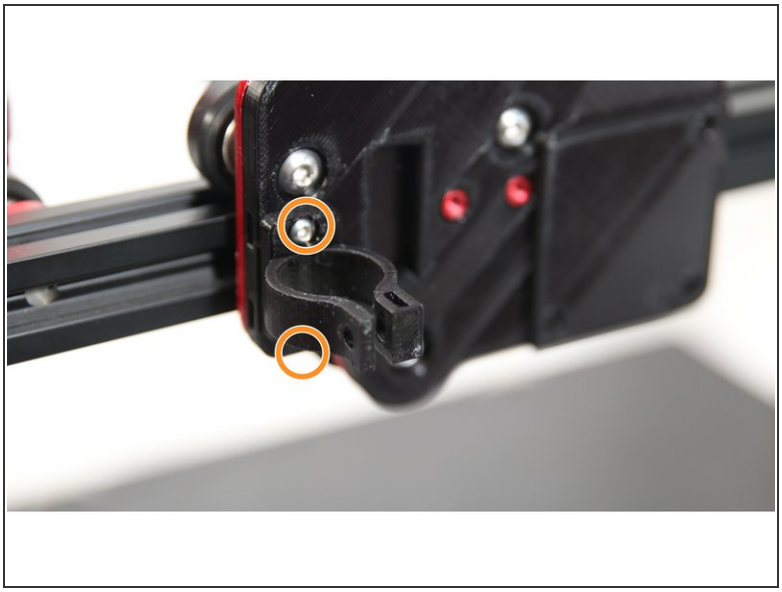
Step 14 — Assembly - Bed Probe





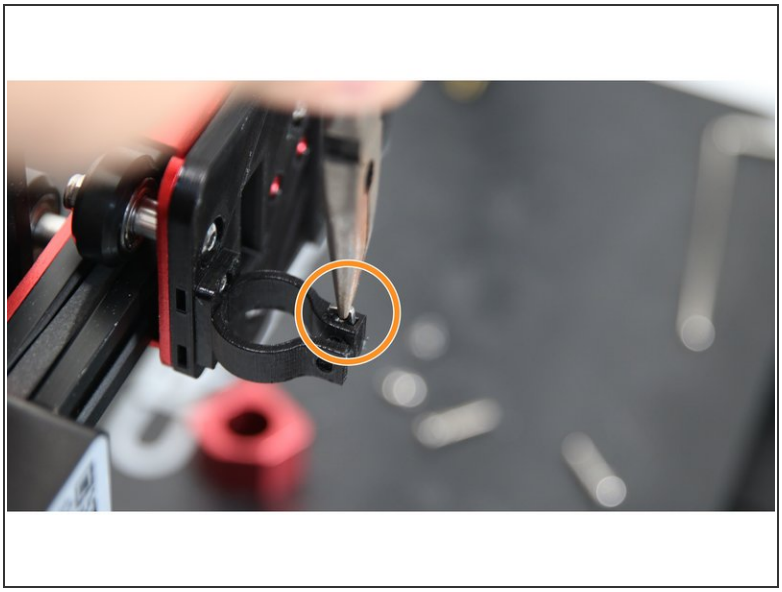
- Insert two M3 square nuts into the side slots on the left of the 3d printed mount
- Push them all the way in to align them with the holes

Step 15 — Assembly - Bed Probe



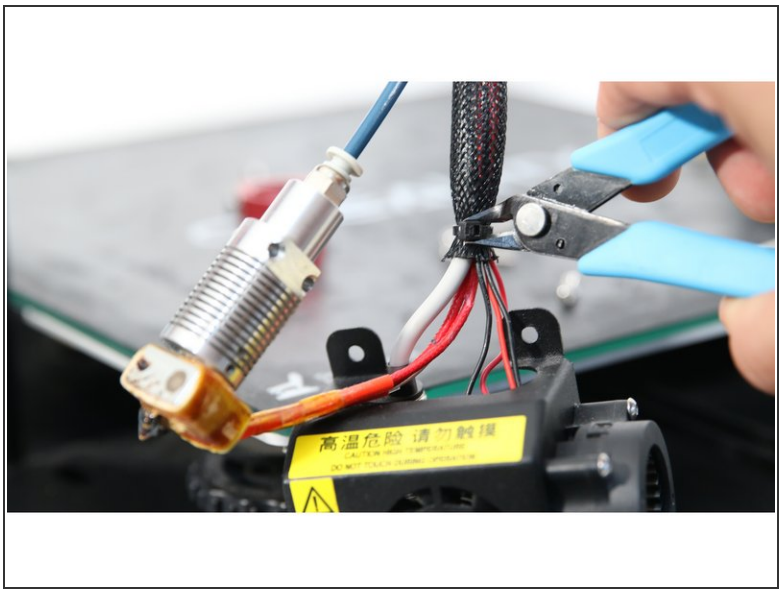
- Both the Capacitive sensor and the BLtouch can be secured using 2 M3x5 screws (Same ones that were used to hold the hotend cover in place) against the two M3 square nuts inserted in the previous step

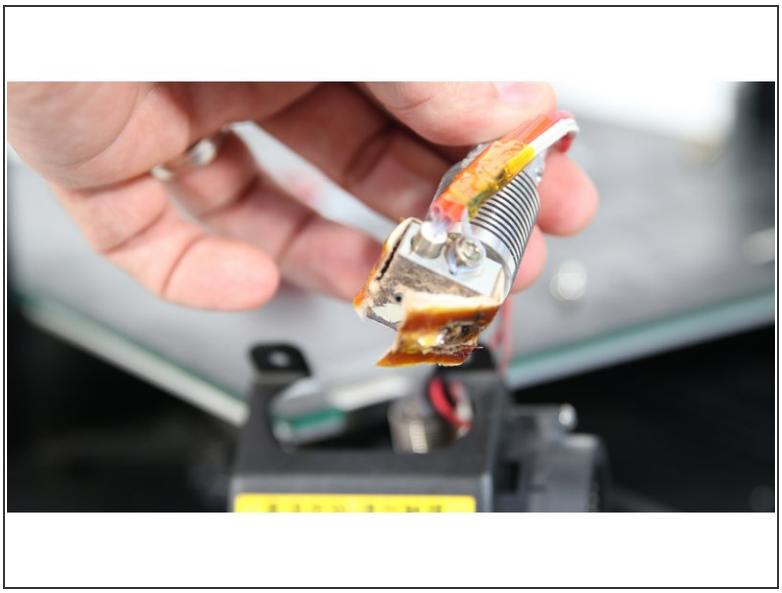
Step 16 — Assembly - Bed Probe



- Insert an M3 square nut into the sensor mount as shown
- Using an M3x12 screw, screw it enough until it goes into the square nut, no need to tighten it yet

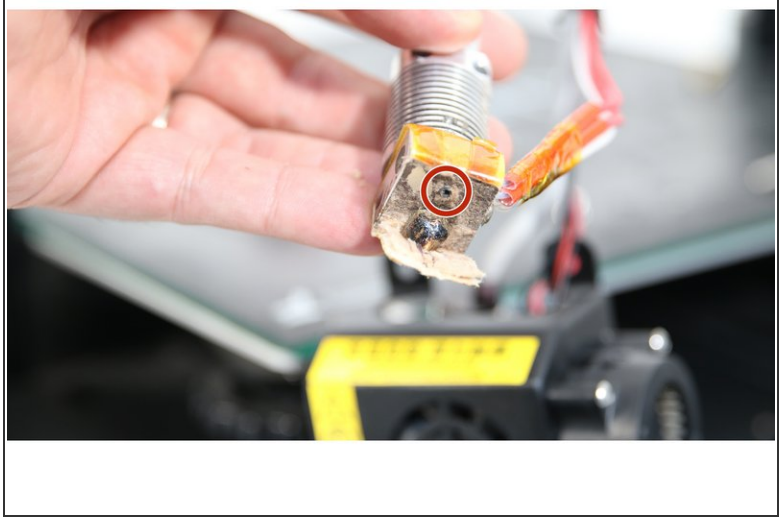
Step 17 — Disassembly - Wiring

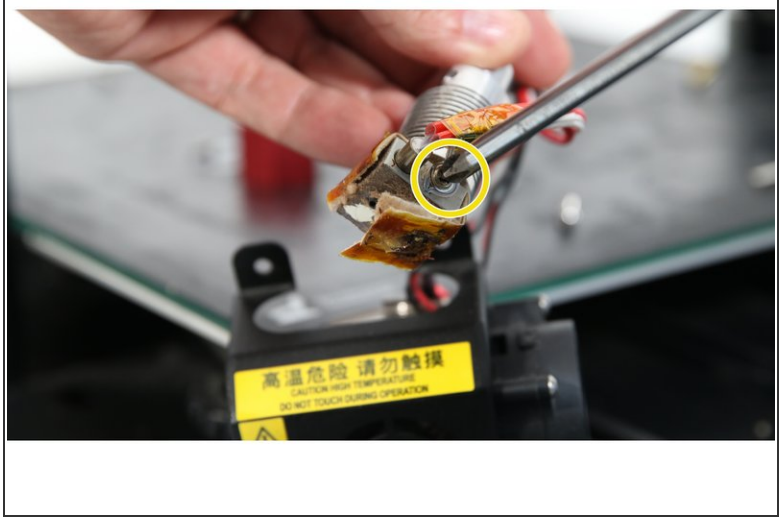




- Take a pair of side cutters and cut all the zip ties securing the wire harness
- Using a blade or some scissors, cut the heat wrap around the hotend and remove it

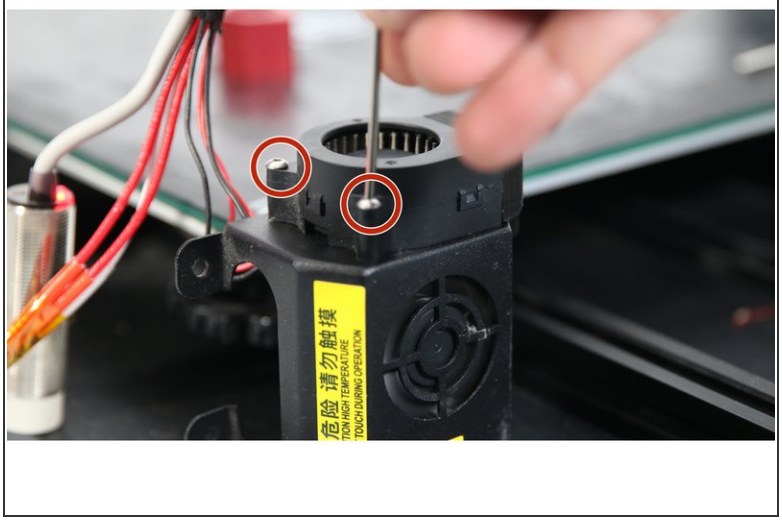
Step 18 — Disassembly - Wiring

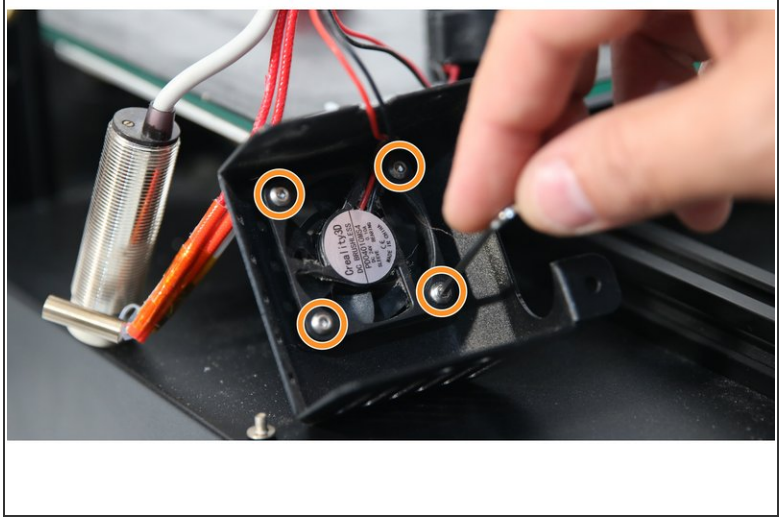




- using an allen key, untighten the grub screw holding the heater cartridge in place
- Take out the heater cartridge
- Using a phillips screw driver, undo the screw holding the thermistor in place
- Take out the thermistor and put the hotend aside

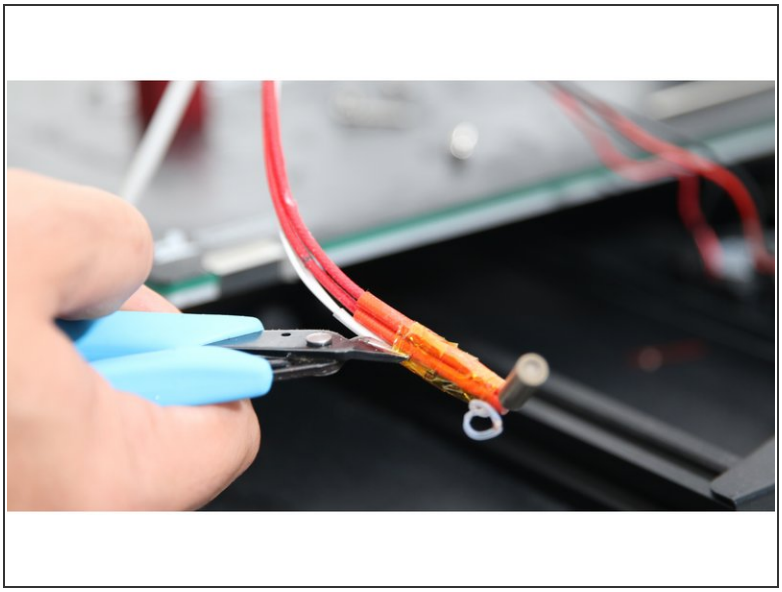
Step 19 — Disassembly - Wiring

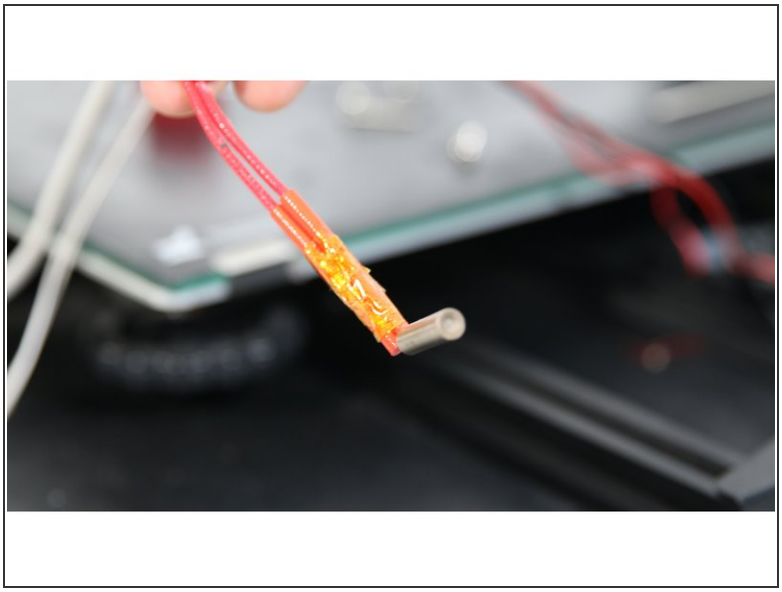




- Remove the blower fan from the hotend cover by undoing the two screws holding it in place
- Remove the hotend fan by removing the 4 screws holding it in place

Step 20 — Disassembly - Wiring

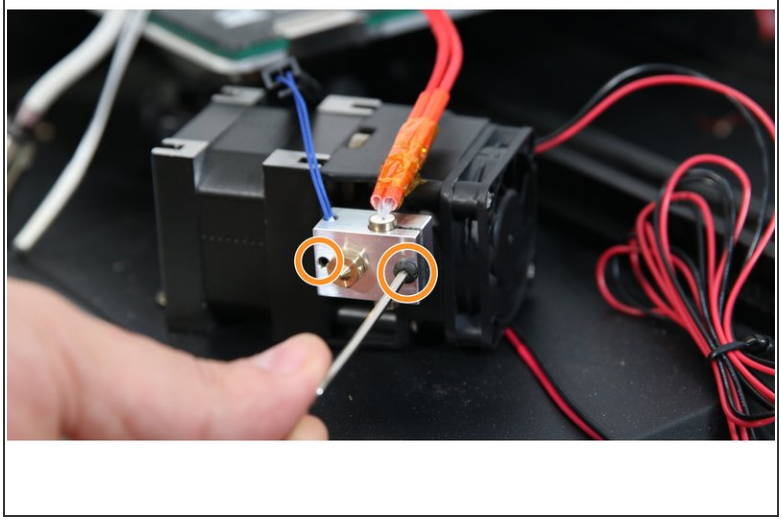


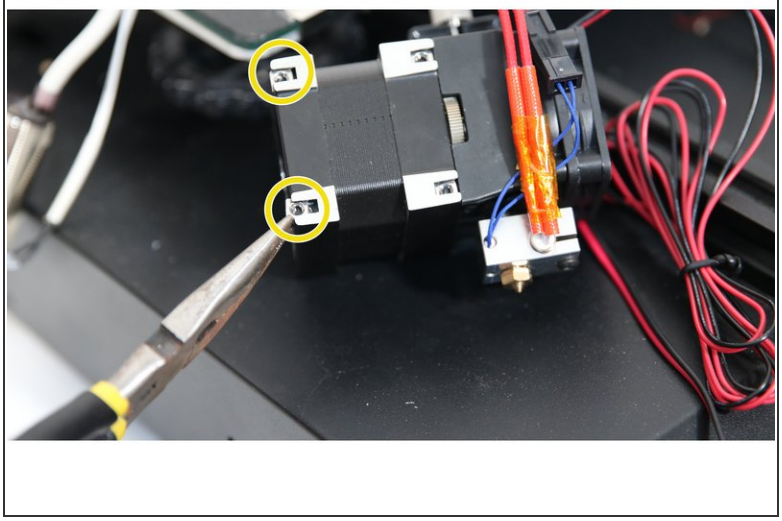


- With a pair of side cutters or blade, cut the insulating tape around the heater cartridge and thermistor wires

⚠ **CAUTION**: make sure you do not damage the heater cartridge wires

Step 21 — Assembly - Hemera

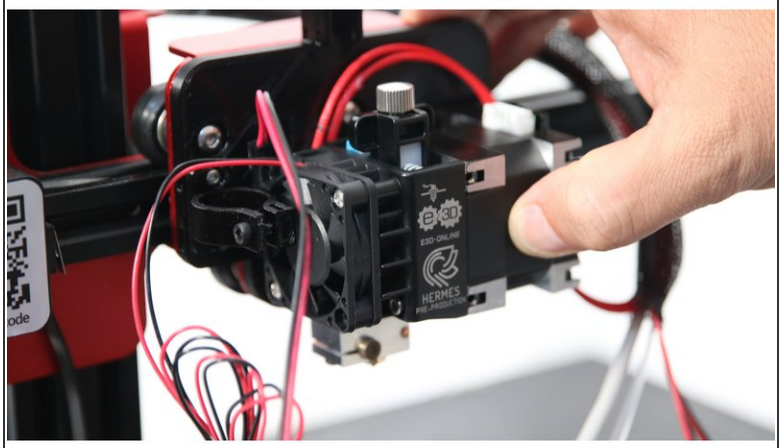


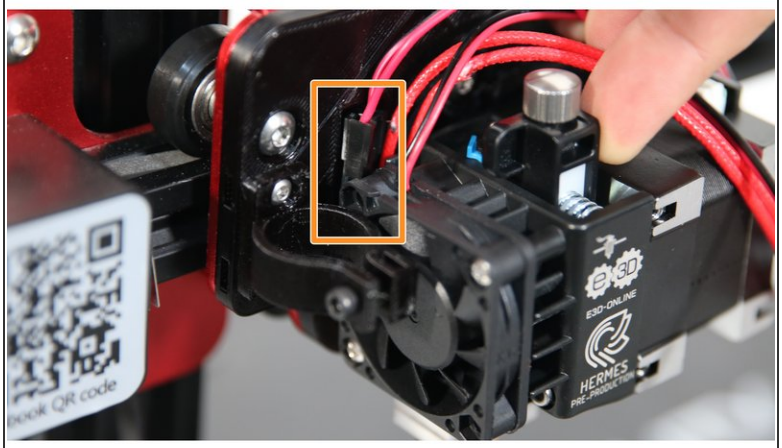


- Insert the heater cartridge into the Hermes heatblock and tighten it with the supplied screw in the kit
- Use the original E3D thermistor supplied in the kit and secure that in place as well using the grub screw supplied in the Hermes kit. Connect the red and black extension cable to the thermistor wire
- Insert 2 M3 square nuts in the back slots of the Hermes as shown

⚠ The image shows the reuse of the stock Creality heater cartridge. Please use the supplied e3d heater cartridge not the stock cartridge as we cannot provide support for the stock creality heater.

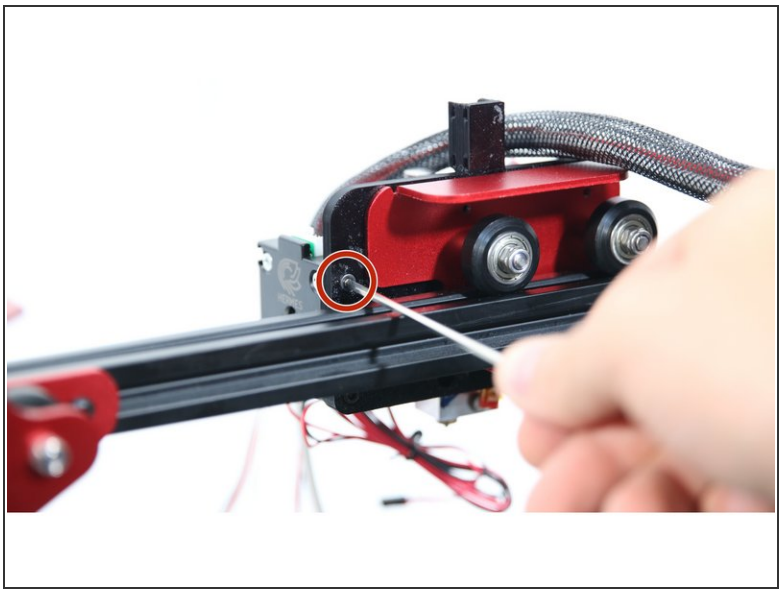
Step 22 — Assembly - Hemera

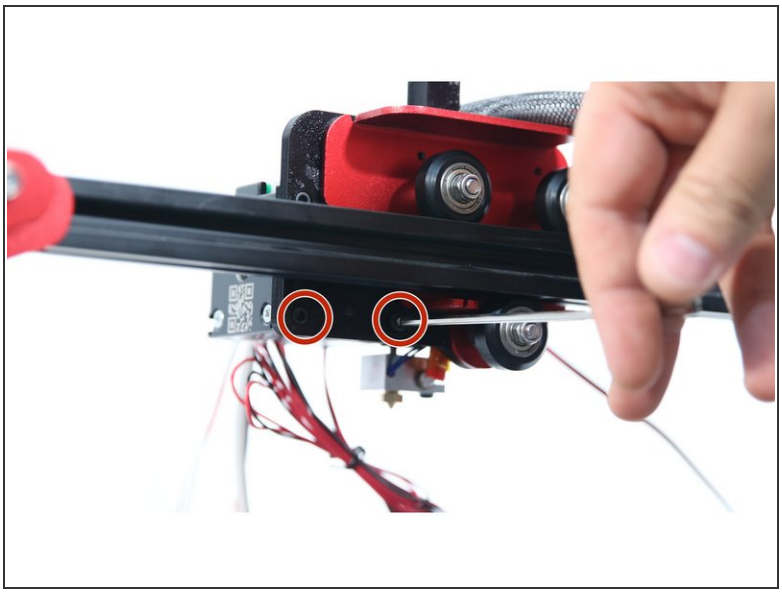




- Align the Hermes extruder with the mount
- The printed mount has an inlet slot where the thermistor connector for the extension cable sits neatly inside. make sure this is set in place

Step 23 — Assembly - Hemera

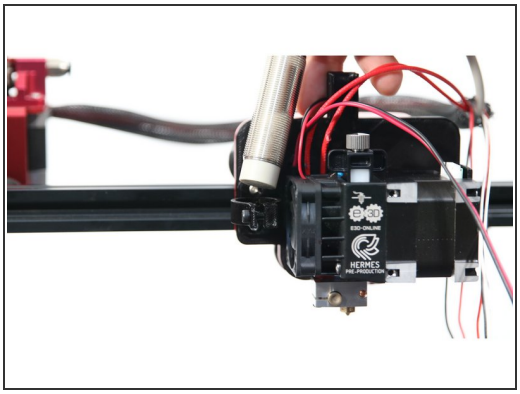


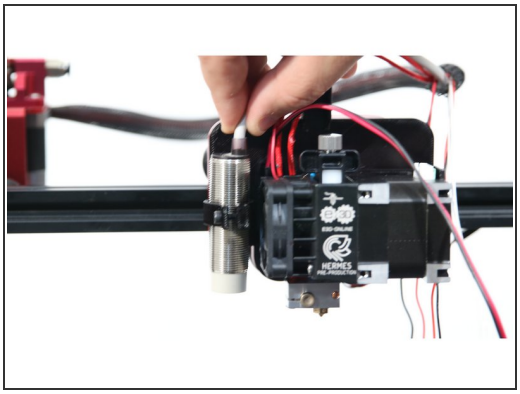


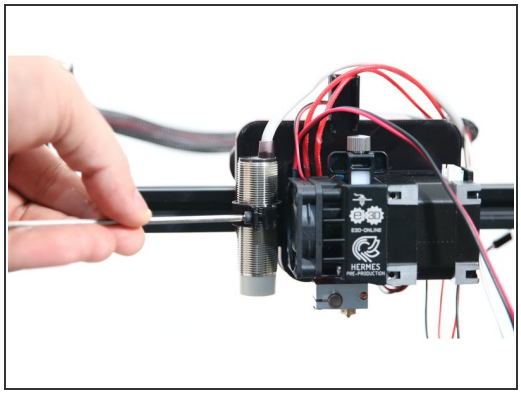
- Using 3 M3x10 screws, secure the Hermes extruder to the back of the printing mounting plate.

⚠ Be aware it is possible to crack the t slots if you use screws that are too long and bottoms out. Our recommendation is to use screws that protrude 3mm +- 0.25mm from the mounting surface to go into the T-Slots. Over tightening also risks snapping the T slot.

Step 24 — Assembly - Bed Probe

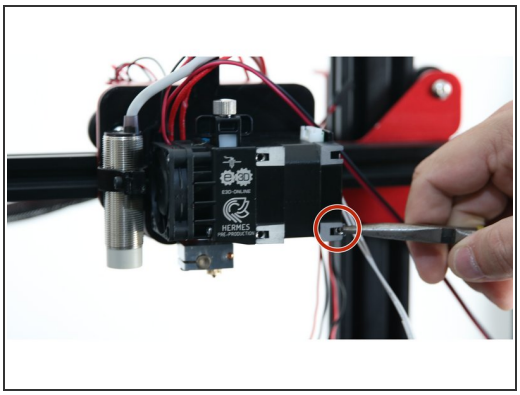
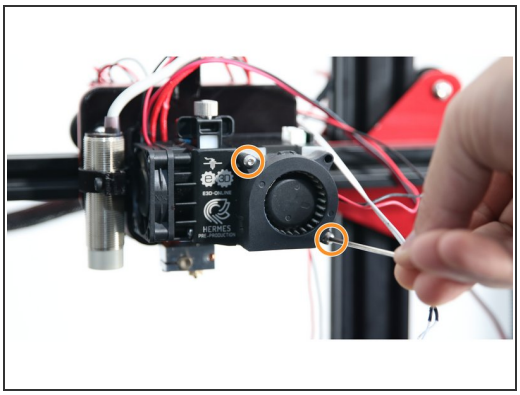
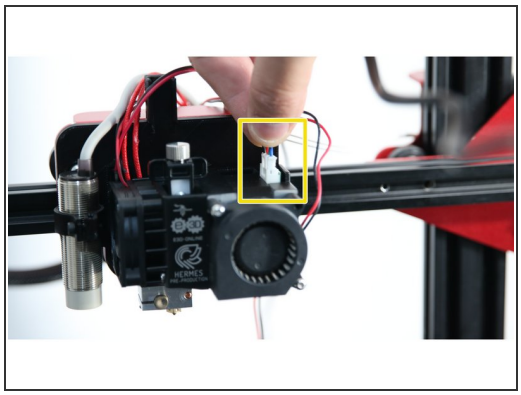






- Insert the Probe into its mounting bracket and gently tighten the screw to hold it in place
- The exact height of the probe should be adjusted once the whole assembly is complete as per manufacturer's instructions

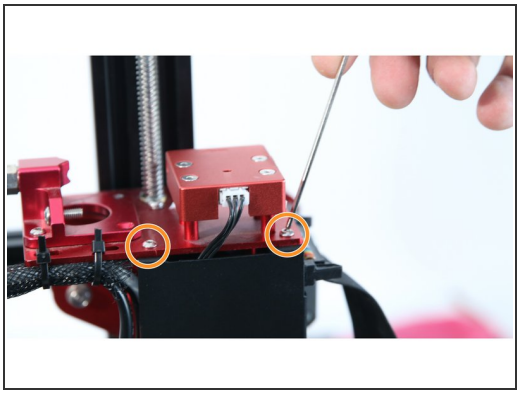
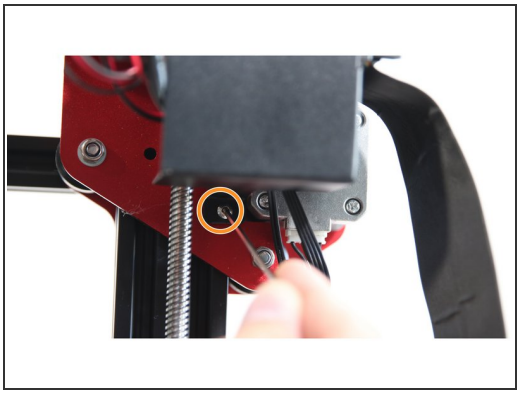
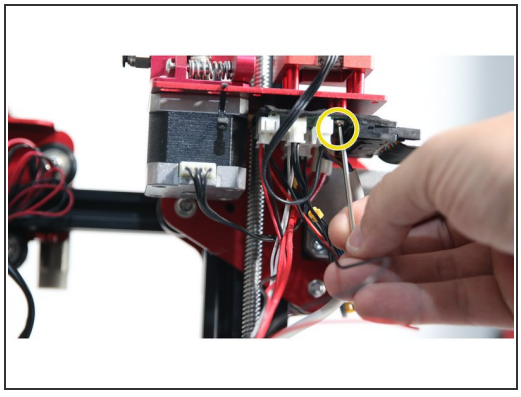
Step 25 — Assembly - Hemera

- Insert an M3 square nut in the bottom right hand slot on the front of the Hermes
- Secure the blower fan by using the same two screws that it was mounted with before
- Plug in the extruder cable provided in the Hermes kit with the white connector side going into the stepper motor

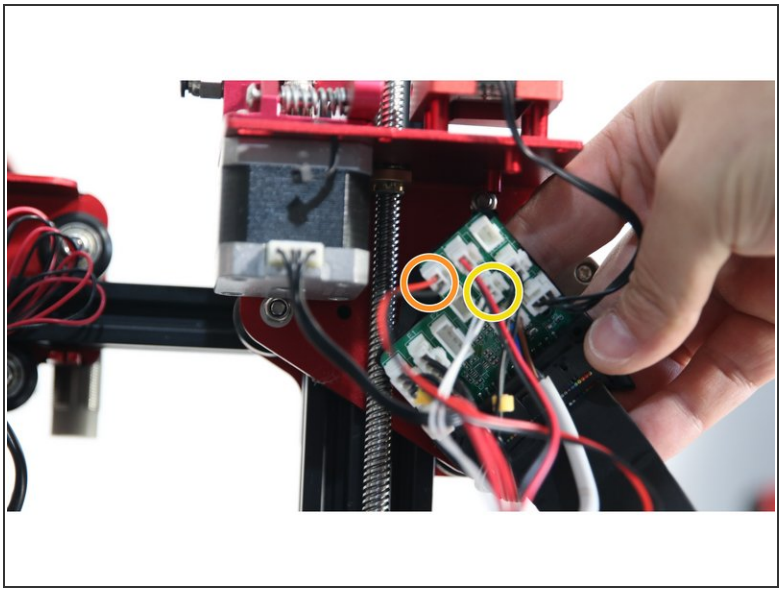
⚠ Be aware it is possible to crack the t slots if you use screws that are too long and bottoms out. Our recommendation is to use screws that protrude 3mm +- 0.25mm from the mounting surface to go into the T-Slots. Over tightening also risks snapping the T slot.

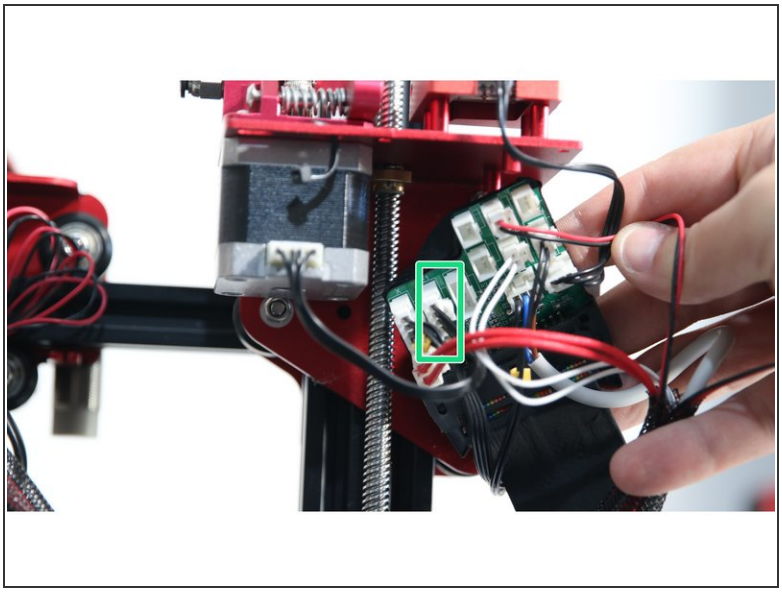
Step 26 — Disassembly - Wiring

- Remove the 3 screws holding the cover to the connector breakout board
- Remove the 2 screws holding the breakout board in place

Step 27 — Disassembly - Wiring



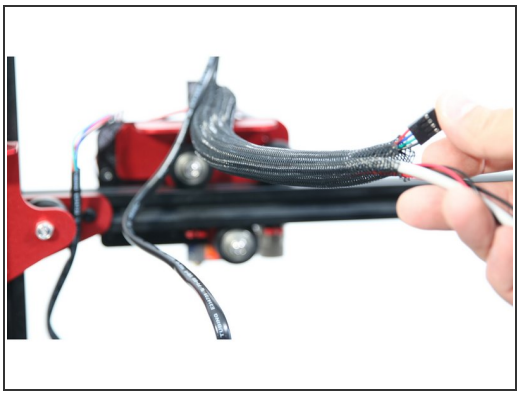
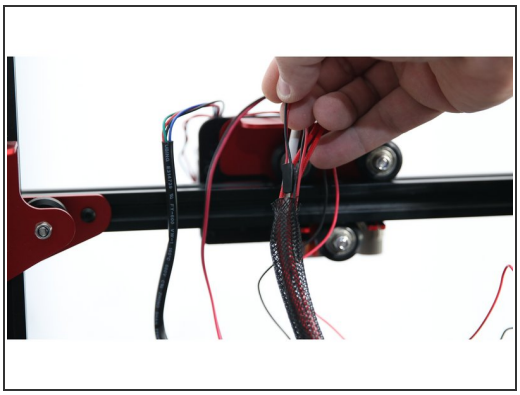
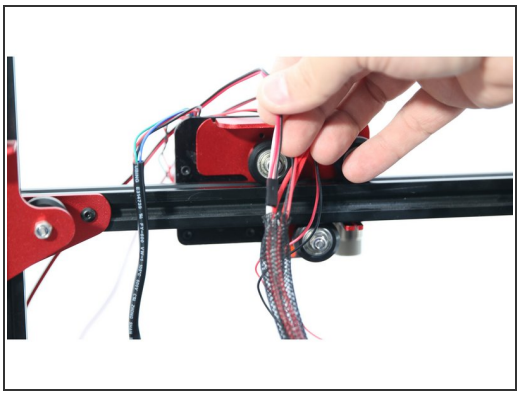


- Unclip the hotend fan connector (marked FAN)
- Unclip the thermistor connector (Marked TH1)
- Unclip the stepper motor cable (Marked E0)

NOTE: remember the orientation of the hotend fan wires

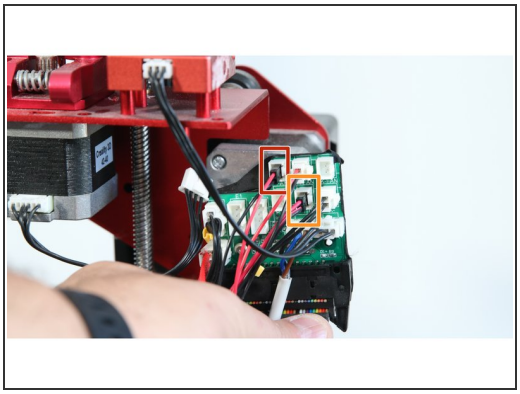
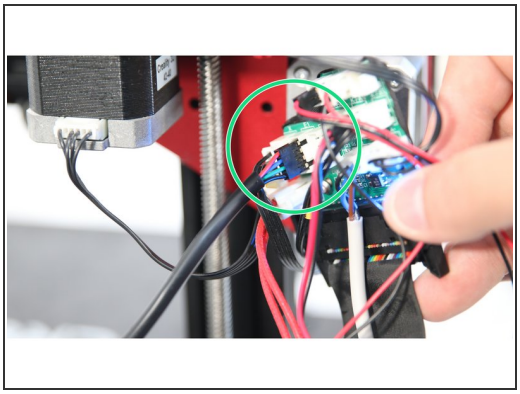
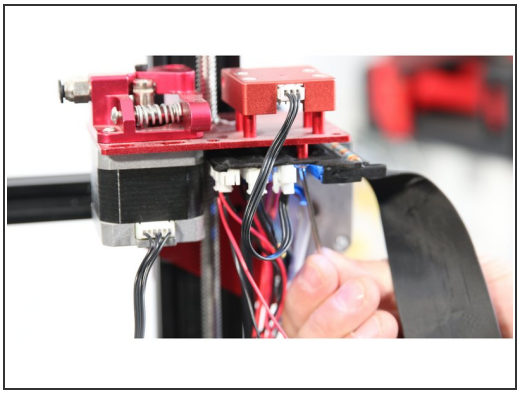
- Pull the fan and thermistor cables out of the sleeve

Step 28 — Assembly - Wiring

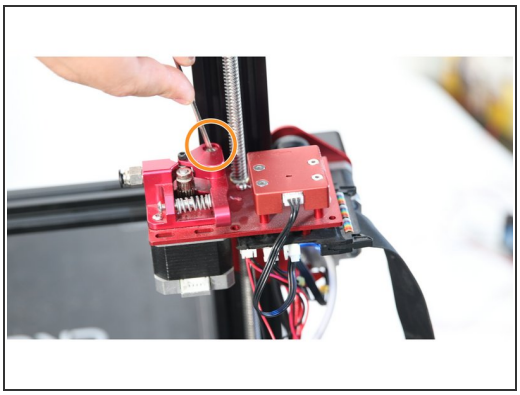
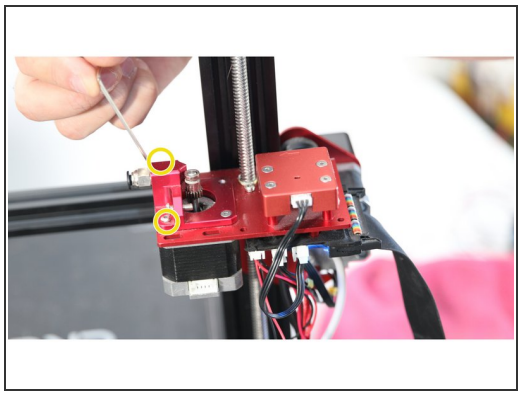
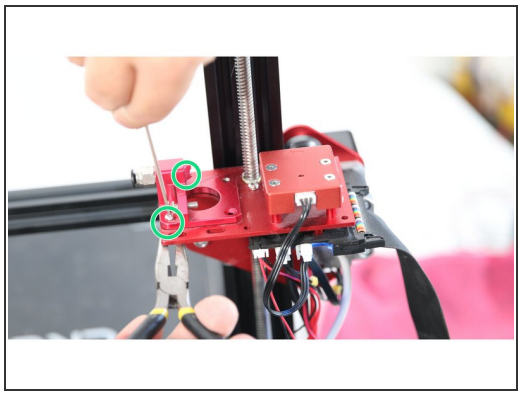
- Compress the cabling sleeve by pushing both ends towards each other in order to widen the sleeve
- Insert the Stepper motor cable, the hotend fan cable and the thermistor cable through the sleeve

Step 29 — Assembly - Wiring

- Connect the fan cable in the FAN slot with the polarity as shown
- Connect the thermistor cable in the TH1 slot (polarity does not matter)
- Connect the stepper motor cable in the E0 slot with the polarity as shown
- Secure the breakout board as was initially with the two screws

Step 30 — Disassembly - Extruder Motor

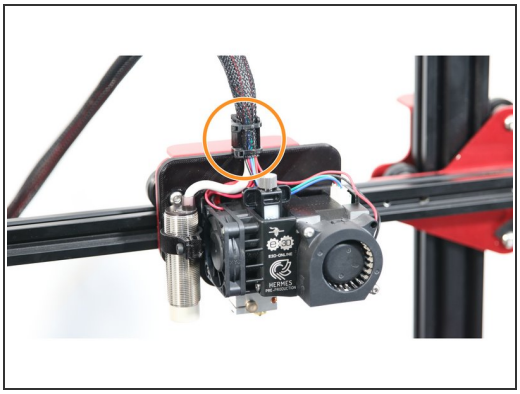
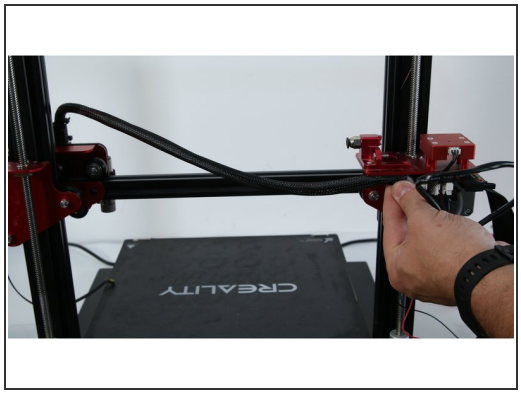




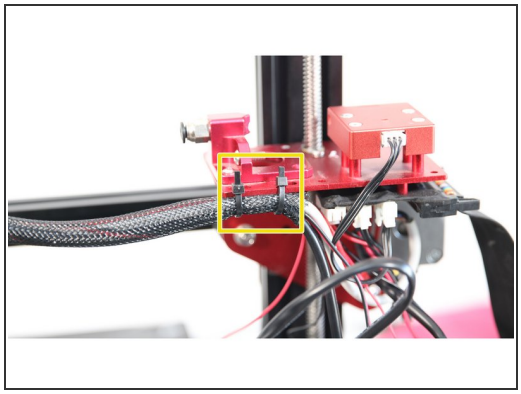
- Remove the screw holding the stepper motor idler in place

NOTE the idler arm is spring loaded

- Remove the rest of the screws holding the stepper motor in place
- Once the stepper motor is removed, re-attach the part with the pneumatic coupler in place using the same screws and x2 M3 locknuts

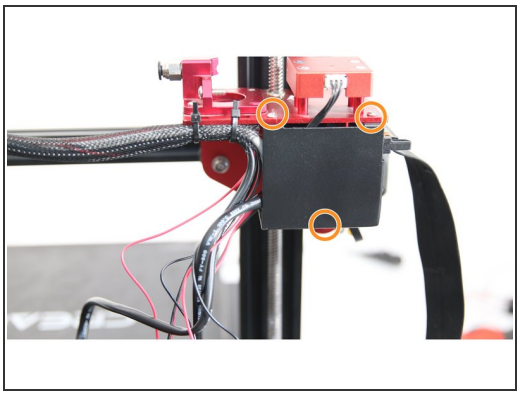
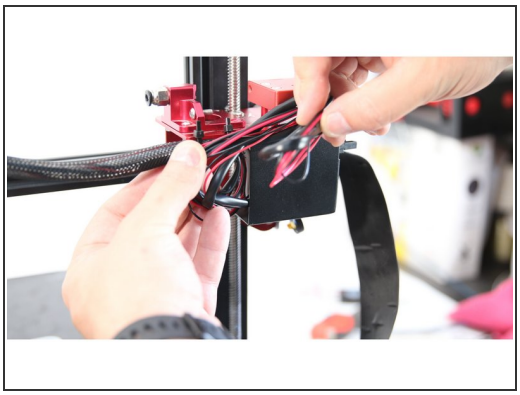
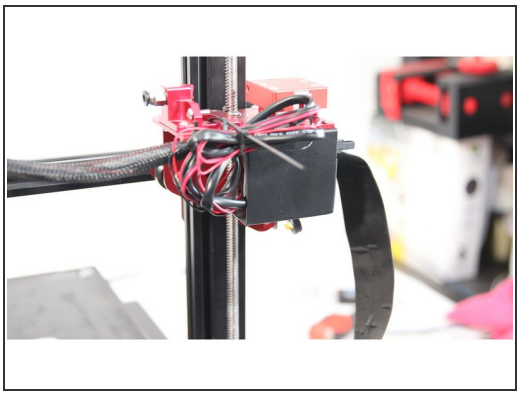
Step 31 — Assembly - Wiring



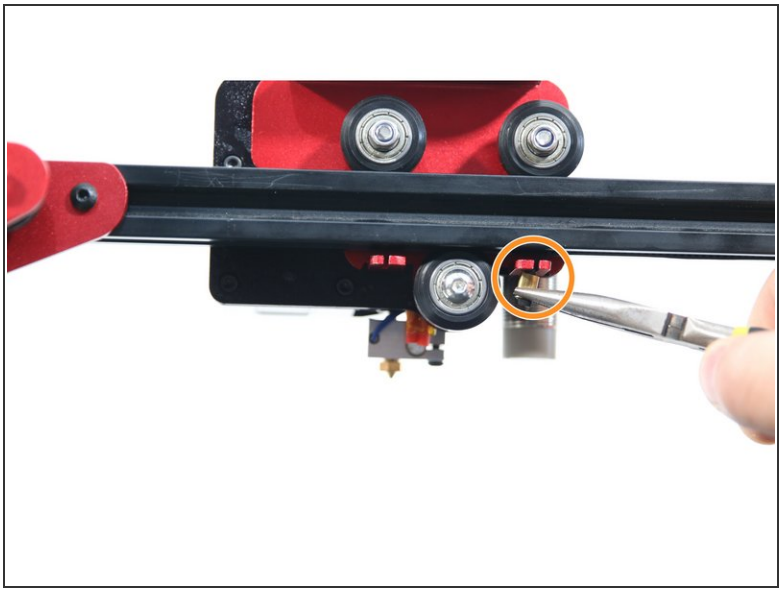
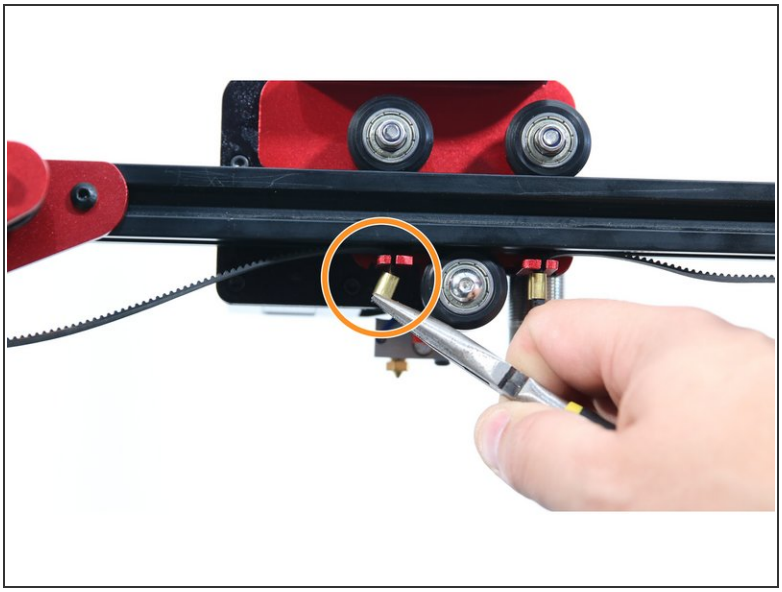
- Secure the wiring along with the sleeve on the Hermes mount with a couple of zip-ties
- Move the hermes all the way to the opposite end of the breakout board and stretch the sleeve along the wires to make sure you have enough slack
- Secure the other end of the sleeve with a couple of zip-ties on the gantry mount next to the breakout board

Step 32 — Assembly - Wiring

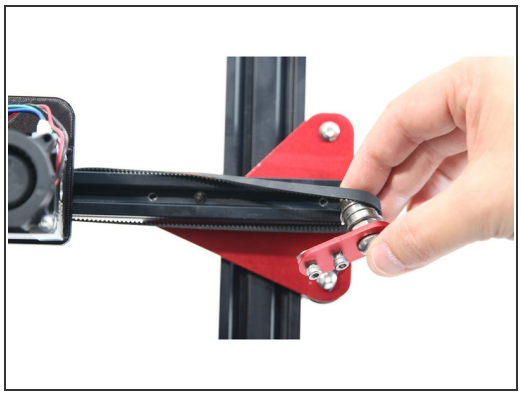
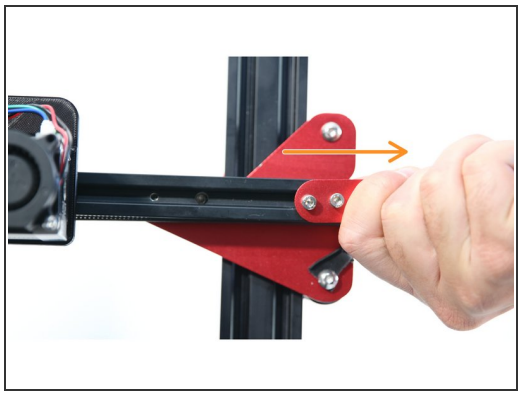
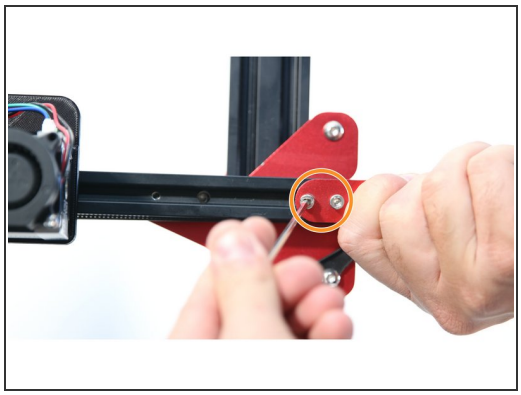
- Put the breakout board cover back using the same three screws
- Carefully collect all the extra cabling and roll it neatly making sure nothing unplugs from the breakout board
- Use a zip-tie to hold it in place

Step 33 — Assembly - Belt

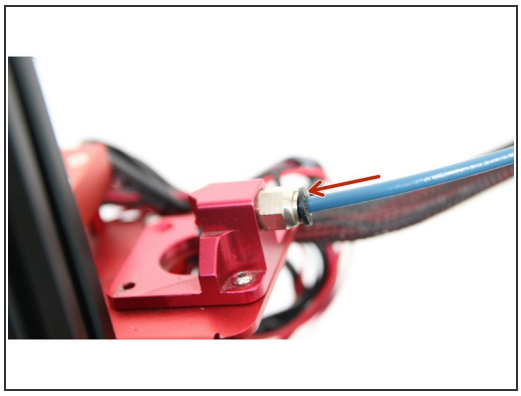
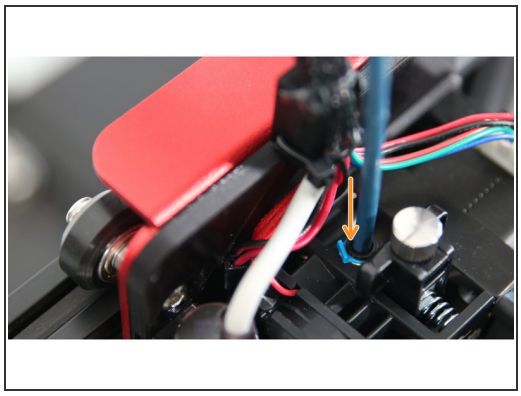
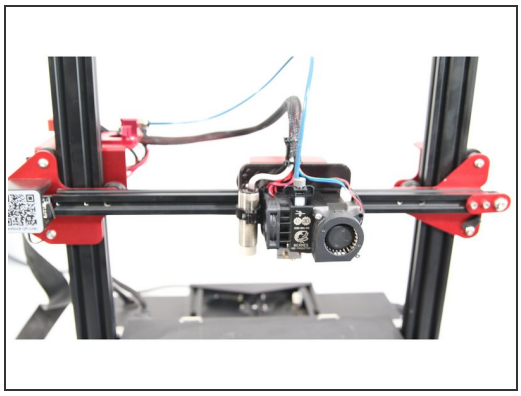
- Move the Hermes back to the middle of the X-Axis
- Re-insert both ends of the X-axis belt into their slots on the carriage

Step 34 — Assembly - Belt

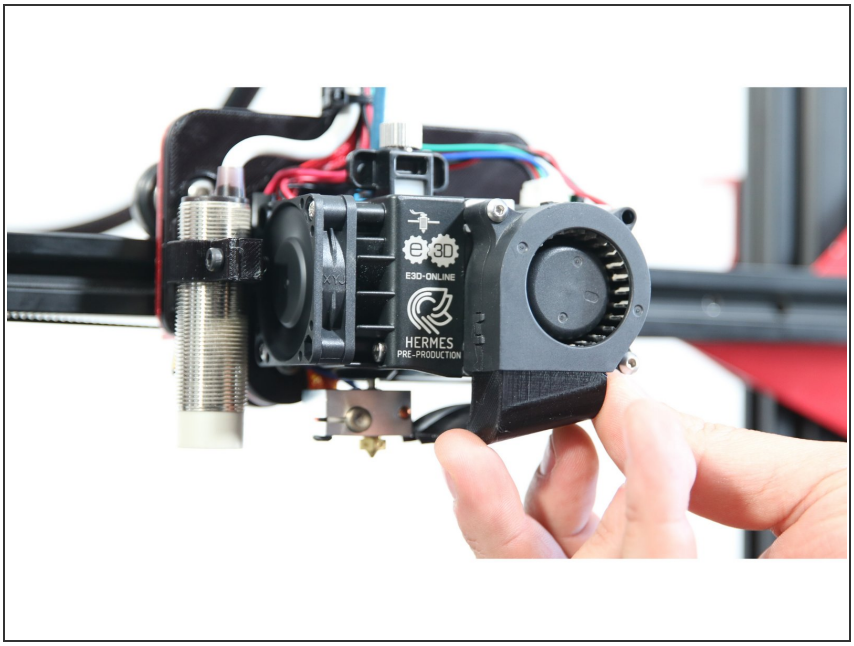
- Locate the idler and isert the bearing part into the belt at the end of the X-axis rail
- Pull the idler in order to create tension on the belt
- Secure the idler into the x-axis rail with the screws and T-nuts

Step 35 — Assembly - PTFE

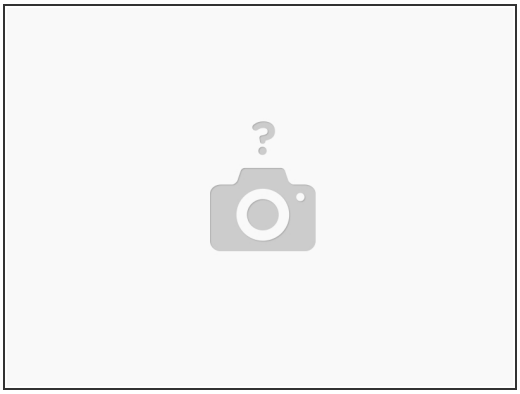
- Insert the original Capricorn PTFE tube into the coupler where the original extruder was
- Insert the other end into the Hermes inlet
- Now you can retain the use of the filament sensor

Step 36 — Assembly - Fan Duct



- Insert the printed part cooling fan duct into the blower
- The ridges on the fan duct will align with the blower fan. glue in place using some super glue or hot glue

Step 37 — Firmware modifications



- For firmware modifications please see: 03 - Hemera Firmware Modifications
- The Nozzle to Probe offset values are X -41, Y 5.