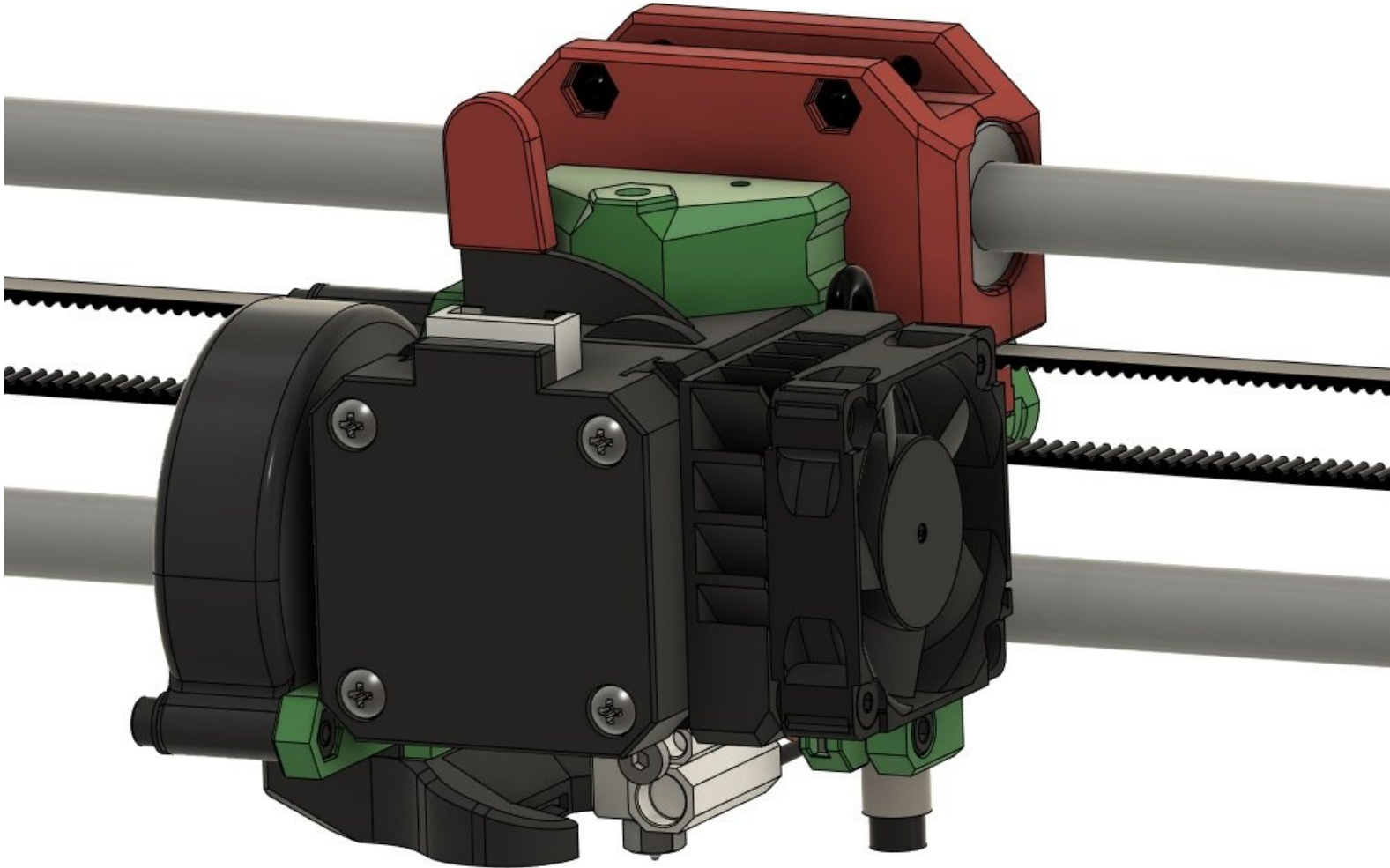


caribou3d

Installing the Bondtech LGX with Copperhead

Written By: Caribou3d



INTRODUCTION

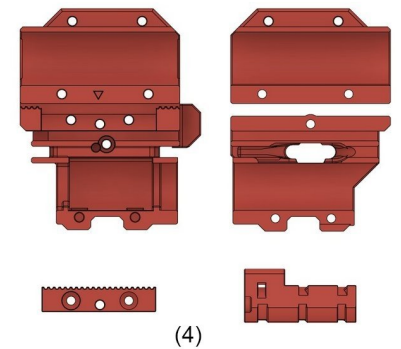
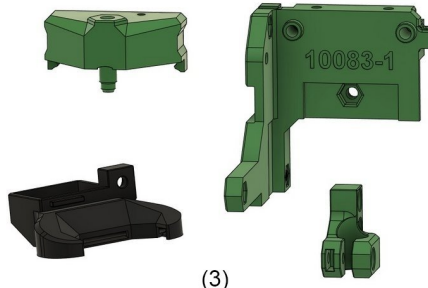
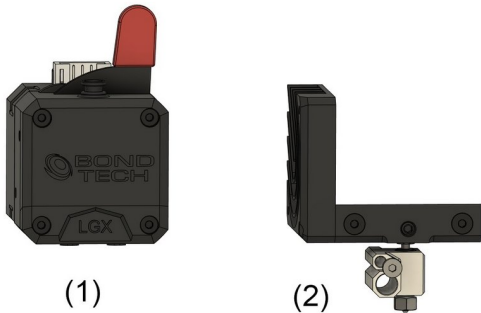
This guide describes the installation of the Bondtech LGX with Copperhead hot end on the Caribou 10mm version. Please note that you will need different firmware on Caribou MK3s and different configuration files on CaribouDuet as well.

Step 1 — Required Tools



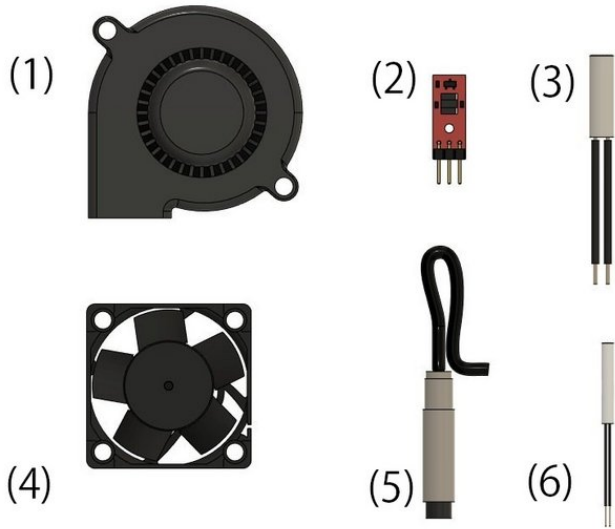
- (1) [2.0x75mm Screwdriver for hexagon socket screws](#)
- (2) [2.5x75mm Screwdriver for hexagon socket screws](#)

Step 2 — Required Extruder and Plastic Parts



- (1) [Bondtech LGX™ Large Gears eXtruder](#)
- (2) [Bondtech LGX™ For Flexibles Set](#) (heatsink, holder for Copperhead, heat break, Copperhead, nozzle)
- (3) [LGX™ Short Plastic Set for FF on Prusa](#) (filament sensor holder, extruder holder, fan shroud, PINDA holder)
- (4) x-carriage, x-carriage back top and bottom, belt holder, x-cable holder

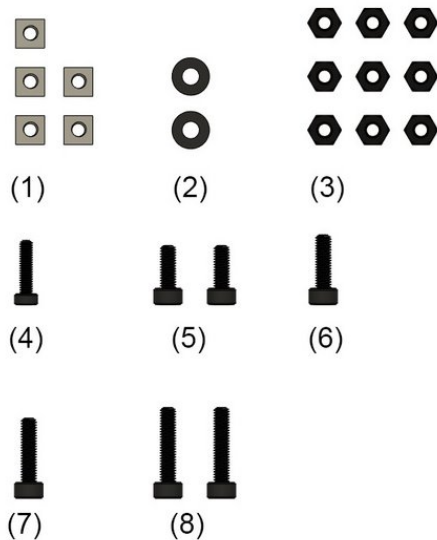
Step 3 — Required Electronic Parts



- (1) [Radial fan](#)
- (2) [Filament sensor + cable \(optional\)](#)
- (3) [Heater](#)
- (4) [Sunon fan](#)
- (5) [PINDA2](#) / [SuperPINDA](#)
- (6) [Thermistor](#)

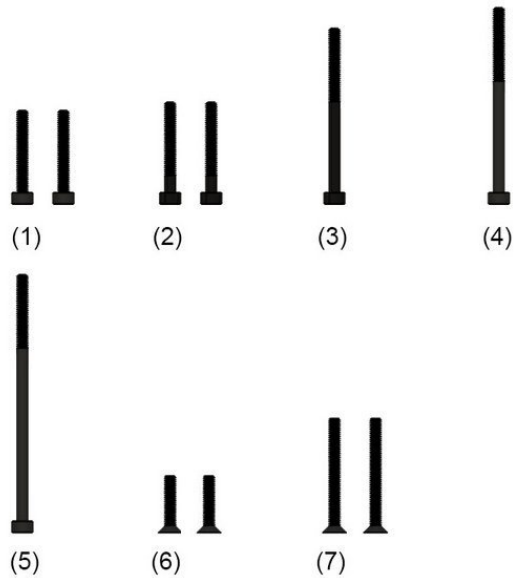
⚠ For the installation you will also need one sachet of [boron nitride paste](#).

Step 4 — Required Screws, Nuts, and Washers (1 / 2)



- (1) **5x** [M3 square nuts](#)
- (2) **2x** [M3 washers](#)
- (3) **9x** [M3 nuts](#)
- (4) [M2.5x10mm low profile hexagon socket head cap screw](#)
- (5) **2x** [M3x8mm hexagon socket head cap screws](#)
- (6) [M3x10mm hexagon socket head cap screw](#)
- (7) [M3x12mm hexagon socket head cap screw](#)
- (8) **2x** [M3x14mm hexagon socket head cap screws](#)


Step 5 — Required Screws, Nuts, and Washers (2 / 2)







- (1) **2x** [M3x20mm hexagon socket head cap screws](#)
- (2) **2x** [M3x22mm hexagon socket head cap screws](#)
- (3) [M3x40mm hexagon socket head cap screw](#)
- (4) [M3x45mm hexagon socket head cap screw](#)
- (5) [M3x60mm hexagon socket head cap screw](#)
- (6) **2x** M3x15mm hex drive flat head screws (silver)
- (7) **2x** M3x28mm hex drive flat head screws

Step 6 — Replacing the Hotend Mount

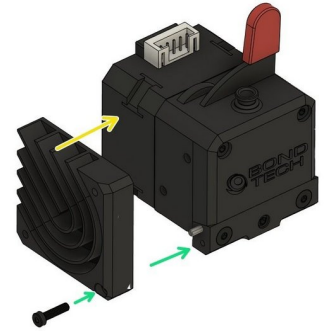
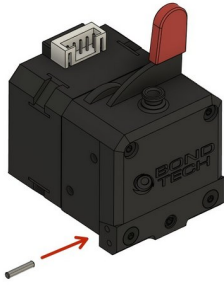


 The LGX comes with the mount for the Mosquito installed. You have to replace it with the mount for the Copperhead.

-  Unscrew **2x M3x28mm hexagon socket head cap screws**.
-  Remove the mount for the Mosquito.
-  Bring the Copperhead mount into position.
-  Use **2x M3x28mm hexagon socket head cap screws** to fasten the mount *slightly*.

 Do not tighten the M3x28mm hexagon socket head cap screws yet.

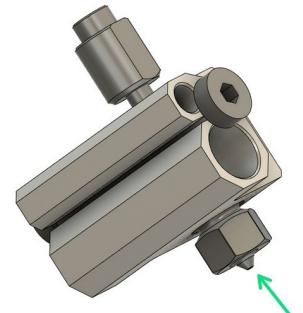
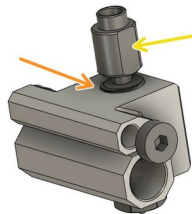
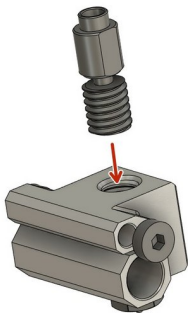
Step 7 — Attaching the Heat Sink



⚠ Before inserting the pin, apply thermal paste onto the entire surface that connects the heat sink and the holder for the Copperhead.

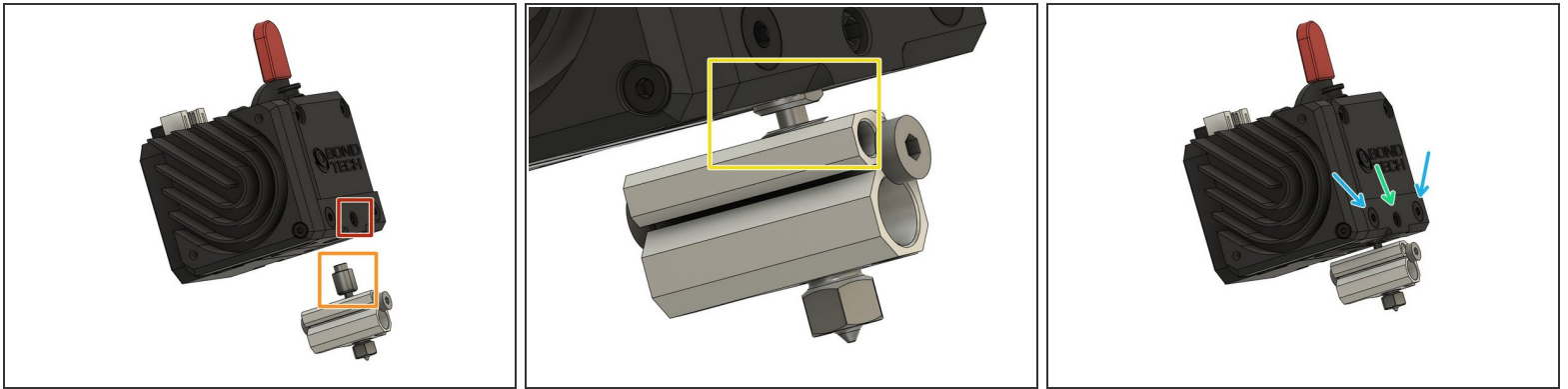
- Insert the 10mm dowel pin on the left side (seen from the front) into the Copperhead holder.
- Align the heatsink as shown. Pay attention to the holes on the back of the heatsink.
- Use a **M2.5x10mm low profile hexagon socket head cap screw** to fasten the heatsink.

Step 8 — Installing the Copperhead (1 / 2)



- Screw the heat break into the Copperhead heat block.
- Screw the heat break almost entirely in.
- Make sure the flat side of the upper part is in the position shown.
- Screw the nozzle into the Copperhead. Fasten lightly so that the heat break is still able to rotate.

Step 9 — Installing the Copperhead (2 / 2)

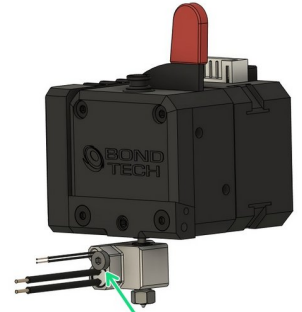
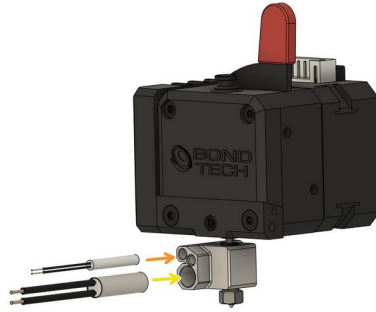
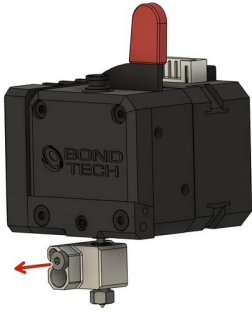


- Loosen the grub screw of the Copperhead holder.

⚠ Apply Boron nitride paste to the upper part of the heat break.

- Align the Copperhead so that the heat break's flat side is front facing.
- Insert the heat break fully into to the heat sink. If the heat break stands out more than about a millimeter, slightly loosen the **M3x28 countersunk screw**.
- Fasten the grub screw.
- Fasten the **2x M3x28mm hexagon socket head cap screws**.

Step 10 — Installing the Heater and Thermistor

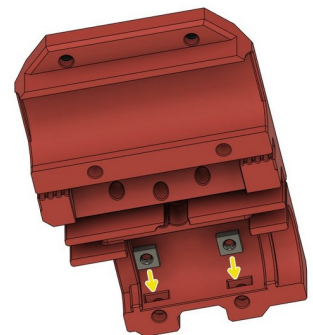
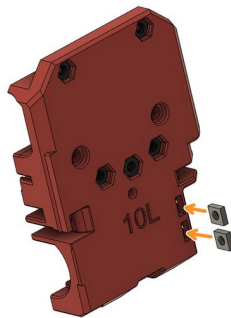
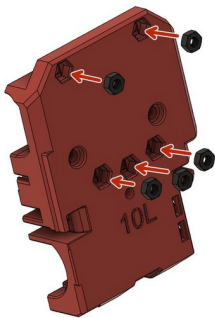


- Remove the **M2.5x5mm low profile hexagon socket head cap screw** on the front of the Copperhead.

⚠ Apply boron nitride paste to the heater cartridge and the thermistor cartridge.

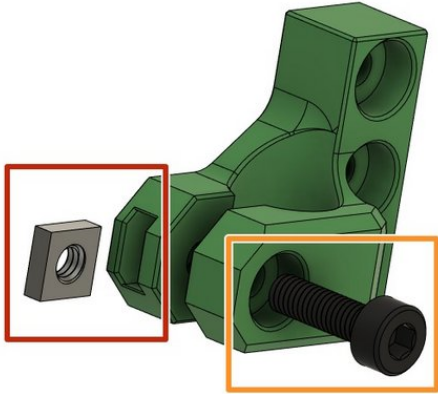
- Insert the thermistor cartridge into the upper hole.
- Insert the thermistor cartridge into the lower hole.
- Fasten the **M2.5x5mm hexagon socket head cap screws** to secure the cartridges.

Step 11 — Preparing the x-Carriage



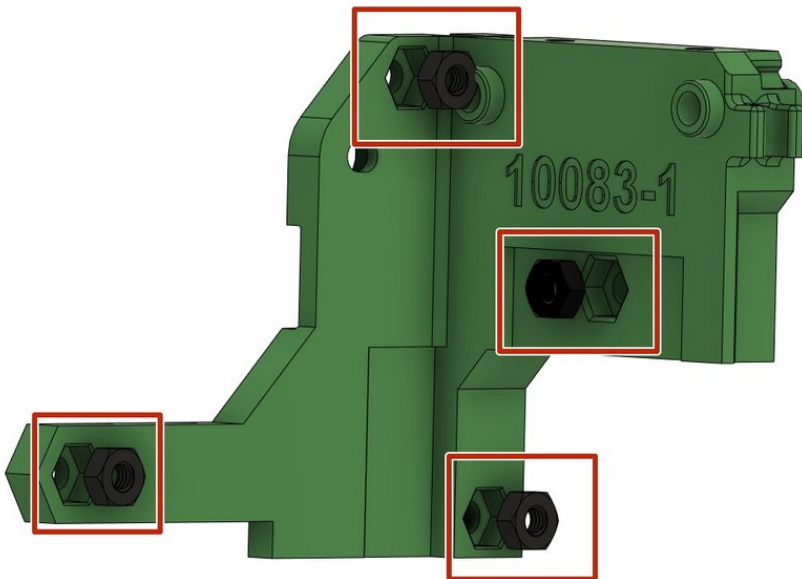
- Insert **5x M3 nut**.
- Insert **2x M3 square nut**.
- Insert **2x M3 square nut**.

Step 12 — Preparing the PINDA Holder



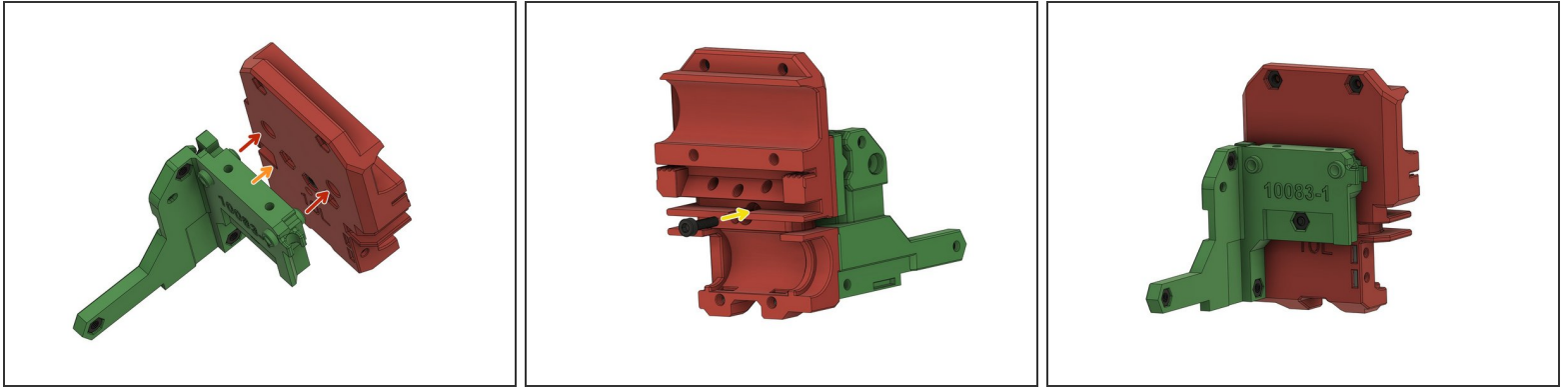
- Insert a **M3 square nut**.
- Insert a **M3x10mm hexagon socket head cap screw** and fasten it *loosely*.

Step 13 — Preparing the LGX Holder



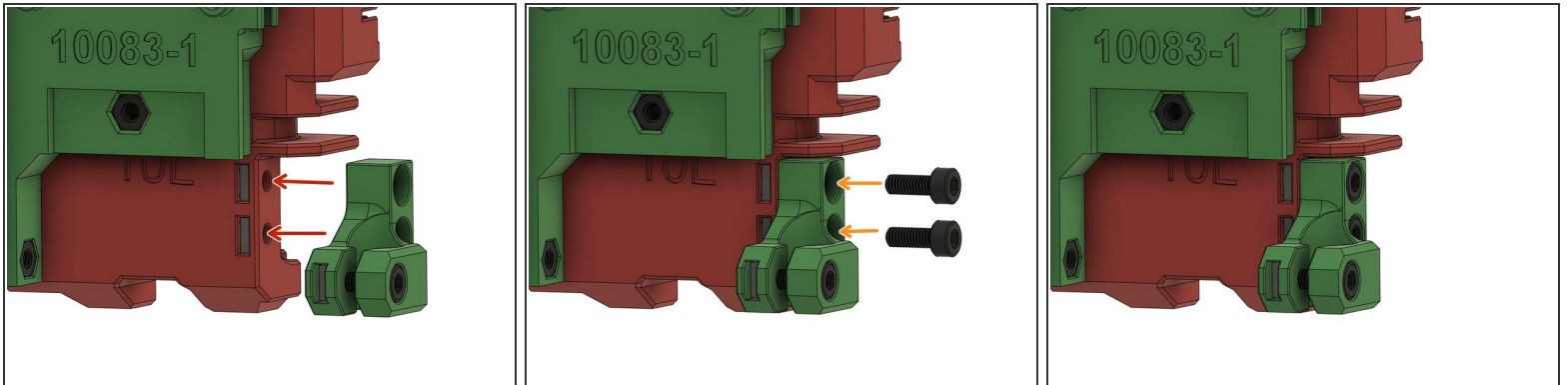
- Insert **4x M3 nut**.

Step 14 — Attaching the Holder to the x-Carriage



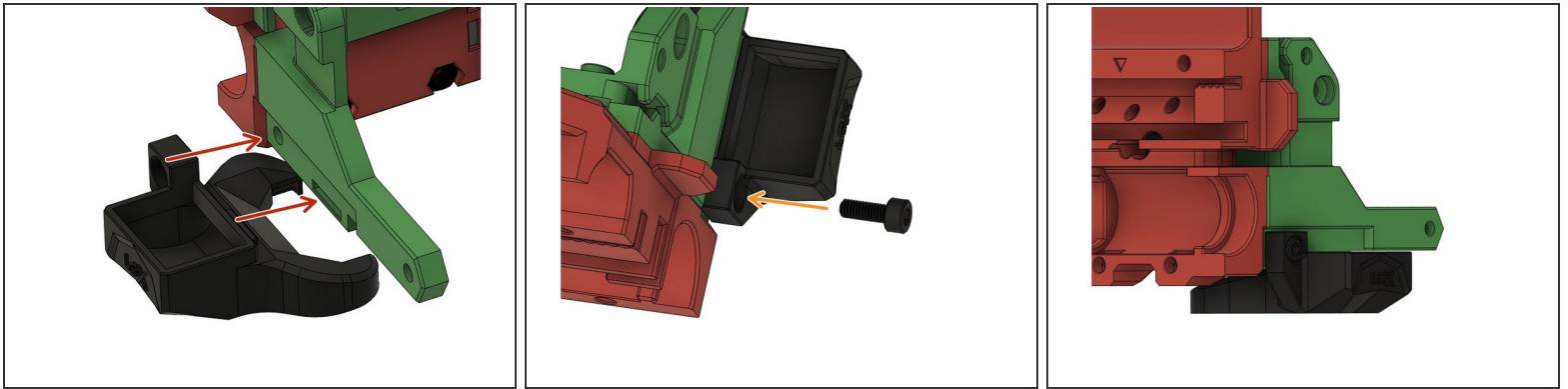
- Align the holes of the holder and the x-carriage.
- Attach the holder to the x-carriage.
- Screw the plastic parts together with **M3x12mm hexagon socket head cap screw**.

Step 15 — Attaching the PINDA Holder



- Align the holes of the PINDA holder with the holes of the x-carriage.
- Use **2x M3x10mm hexagon socket head cap screws** to fasten the holder.

Step 16 — Attaching the Fan Shroud



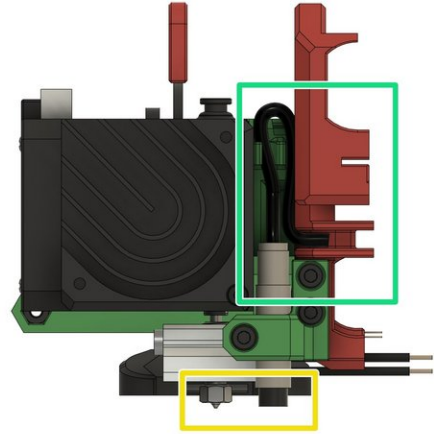
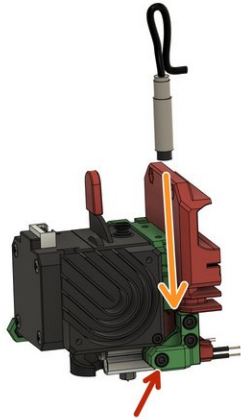
- Align the hole of the shroud and the extruder holder and make sure the tongue and groove are aligned as well.
- Fasten the fan shroud with **M3x8mm hexagon socket head cap screw**.

Step 17 — Attaching the Extruder to the Holder



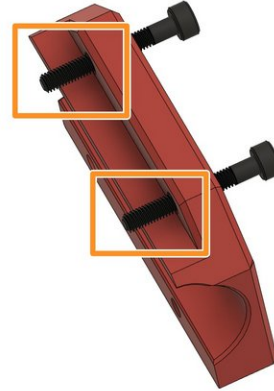
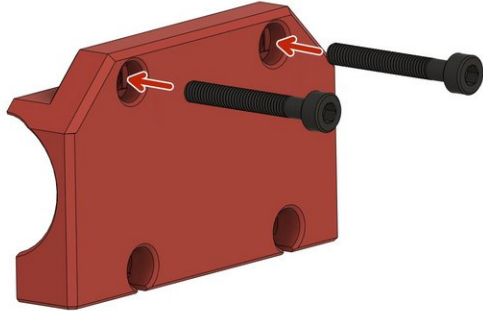
- Remove the **M3x10mm hexagon socket head cap screw**.
- Remove the **M3x28mm hexagon socket head cap screw**.
- Align the upper holes on the front of the extruder with the holes of the holder. Firmly press the extruder onto the holder.
- Secure the extruder in the holder with a **M3x8mm hexagon socket head cap screw**.

Step 18 — Installing the PINDA2 / SuperPinda



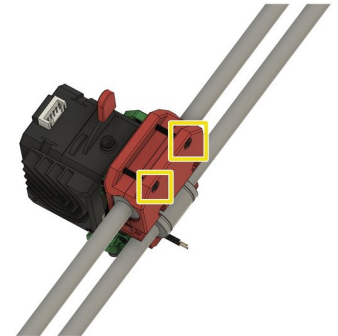
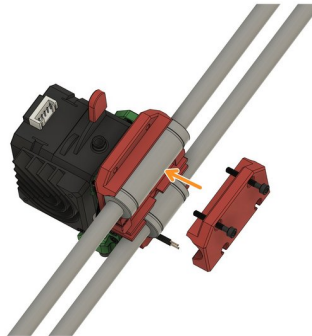
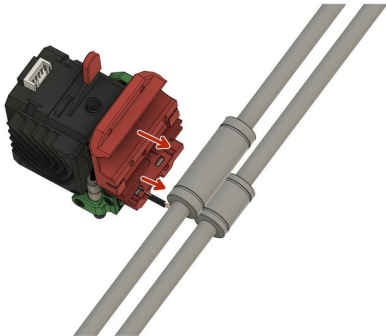
- Loosen the **M3x10mm hexagon socket head cap screw**.
- Insert the PINDA / SuperPINDA probe into the hole.
- Align the tip of the nozzle with the tip of the probe.
- ⓘ Please note that this is not the position for printing. We'll adjust the position later.
- Route both the cable of the extruder fan and the cable of the probe through the chanel. Stick to the path shown in the picture.

Step 19 — Preparing the x-Carriage Back Top Holder



- Insert **2x M3x22mm hexagon socket head cap screws** into the upper holes of the holder.
- Only screw them half the way in for now.

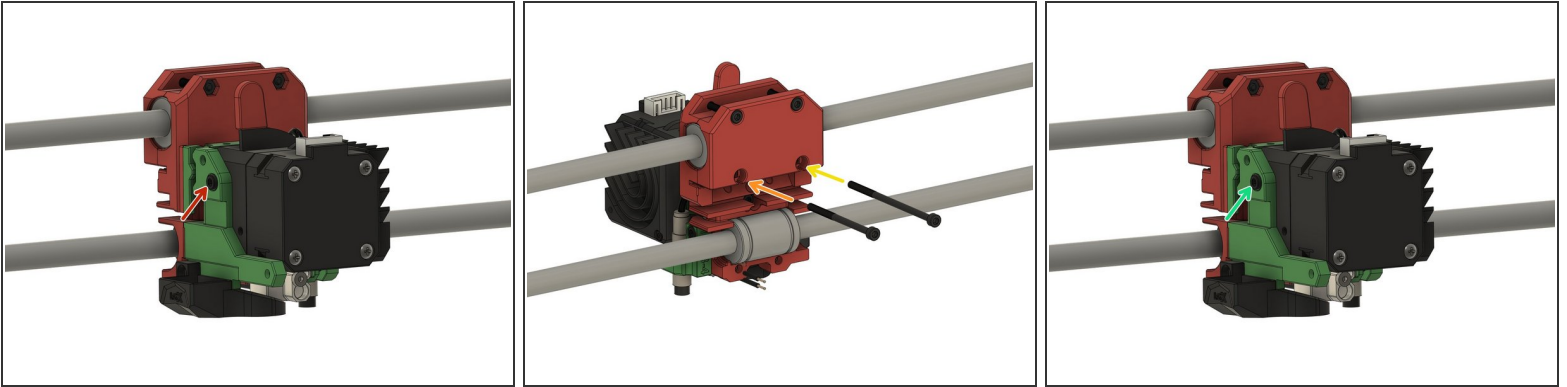
Step 20 — Installing the Extruder on the x-Axis (1 / 2)



- Align the bearings with the x-carriage back.
- Bring the top holder back in position.
- Fasten the **2x M3x22mm hexagon socket head cap screws**.

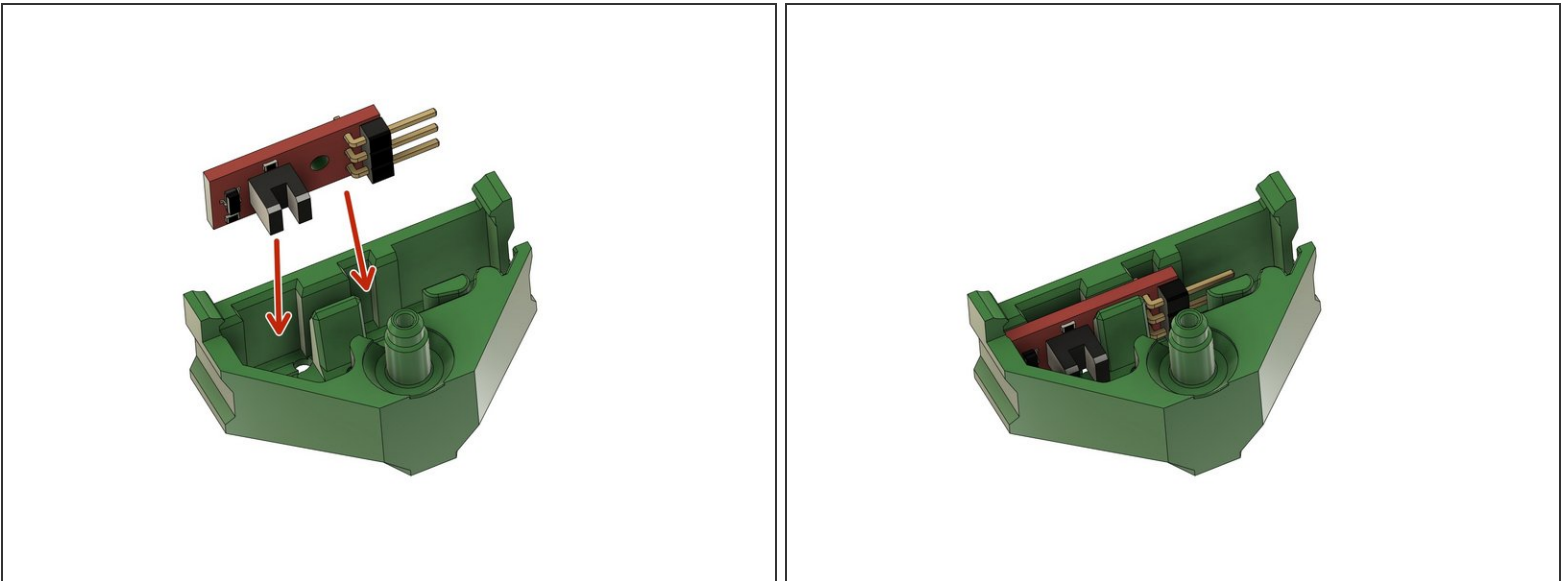
⚠ Do not overtighten the screws.

Step 21 — Installing the Extruder on the x-Axis (2 / 2)



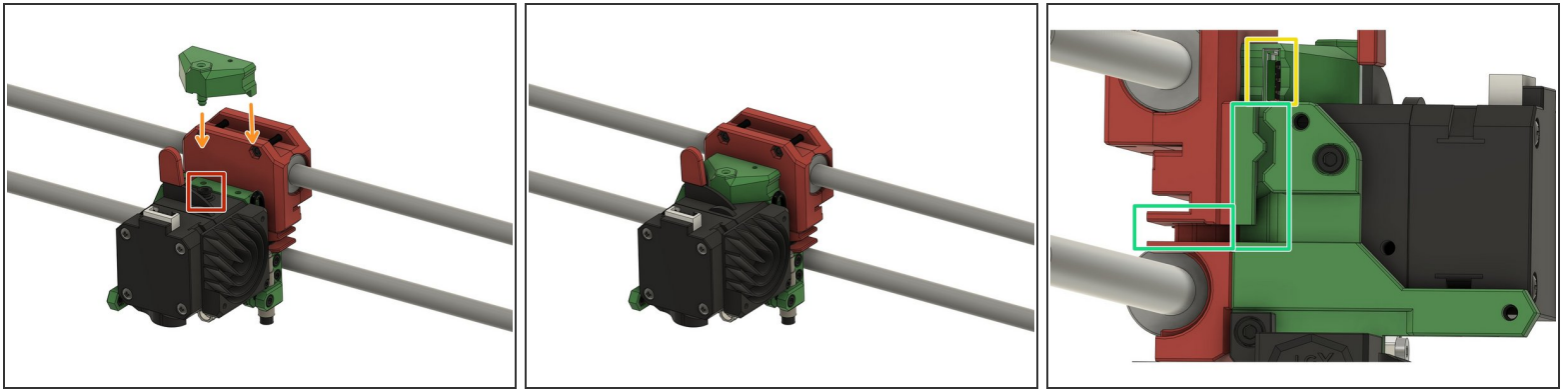
- Slightly loosen the **M3x8mm hexagon socket head cap screw** on the side.
- Use a **M3x45mm hexagon socket head cap screw** and...
- ... a **M3x60mm hexagon socket head cap screw** to fasten the back holder to the extruder.
- Fasten the **M3x8mm hexagon socket head cap screw** once more.

Step 22 — Installation of the Filament Sensor (1 / 2)



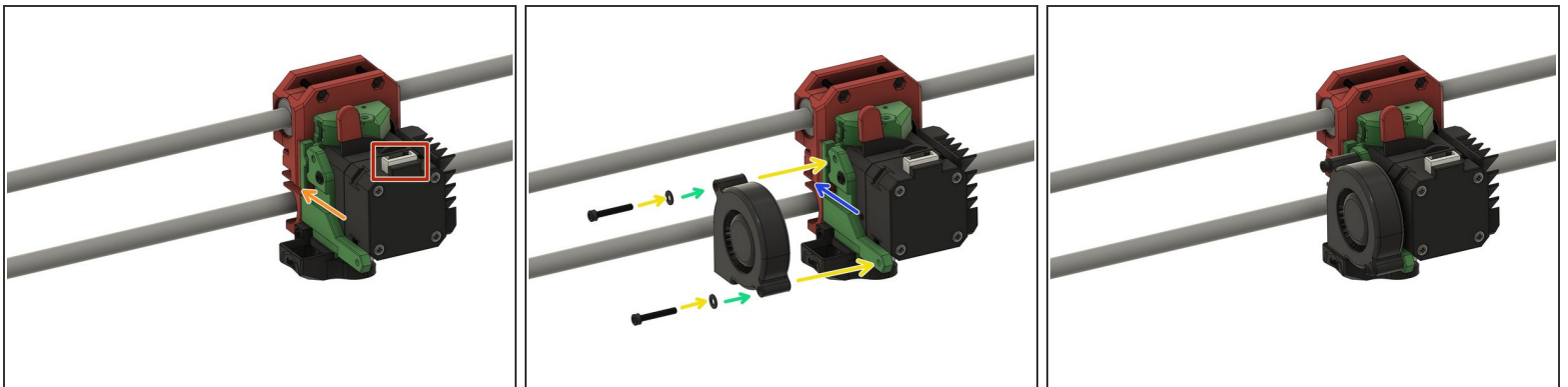
- Insert the filament sensor into the housing.

Step 23 — Installation of the Filament Sensor (2 / 2)



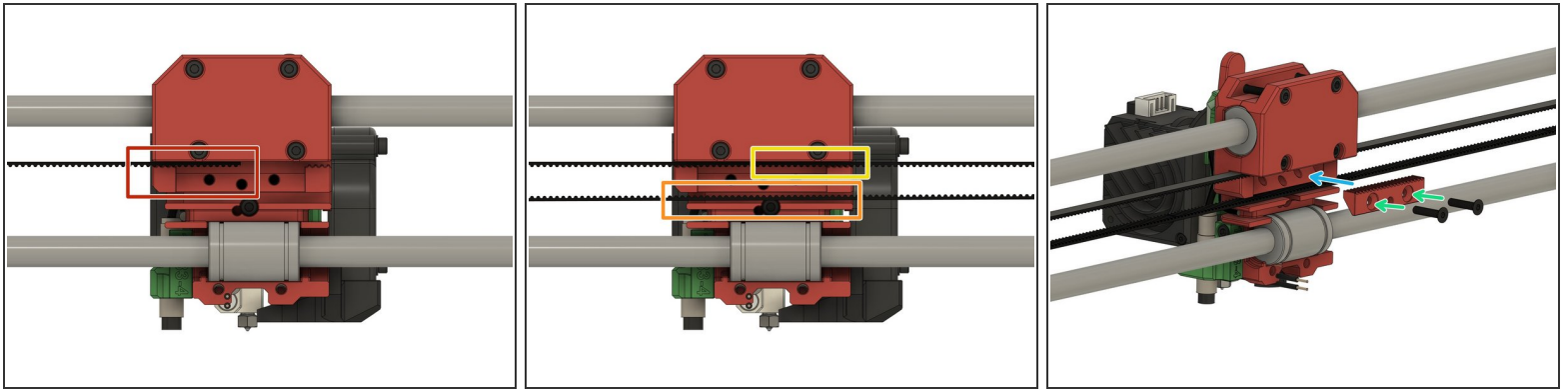
- Remove (pull out) the bowden connector.
- Align the filament sensor housing and clip it into the extruder holder.
- Plug in the cable of the sensor.
- Route the cable through highlighted cable channel.

Step 24 — Attaching the Motor Cable and the Radial Fan



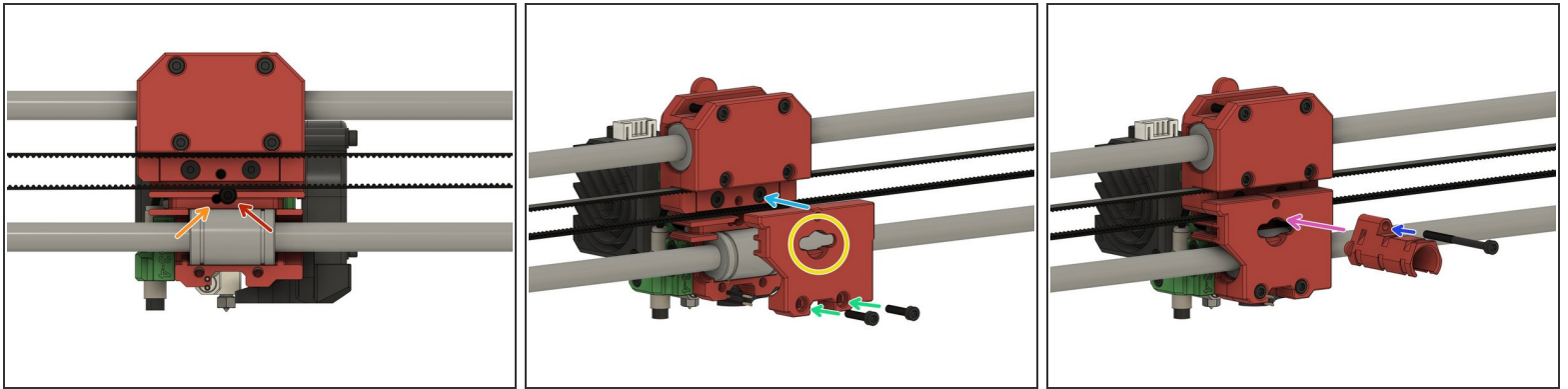
- Plug the connector of the motor cable into the extruder motor.
- Route the cable through the cable channel.
- Use **2x M3 washers** and...
- ...**2x M3x20mm hexagon socket head cap screws** to fasten the radial fan to the extruder holder.
- Route the cable through the cable channel behind the radial fan.

Step 25 — Installing the Belt



- Insert one end of the belt on side into the x-carriage. It should be inserted half way into the x-carriage.
- Route the belt through the x-idler and the x-motor holder (not shown here).
- The belt must run through the lower channel of the x-carriage.
- Cut the belt so that you can insert the other end of the belt into the x-carriage. It should touch the other end of the belt.
- Use **2x M3x14mm hex drive flat head screws** to...
- ...fasten the belt holder into the x-carriage.

Step 26 — Attaching the x-Carriage Back Bottom and the Cable Holder



- Loosen the **M3x12mm hexagon socket head cap screw** and take it out.
- Insert the 2.85mm nylon filament into the hole next to the screw hole.
- Fasten the **M3x12mm hexagon socket head cap screw** to secure the nylon filament in position.
- Route the cables for the fans, the PINDA, the filament sensor cable, and the extruder motor through the hole.
- Use **2x M3x14mm hexagon socket head cap screws** to...
- ...fasten the carriage's back bottom part to the x-carriage.
- Use a **M3x40mm hexagon socket head cap screw** to...
- ...fasten the cable holder to the x-carriage.

Step 27



- Route all cables through the Techflex tube.
- Secure the tube with zip ties to the x-cable holder.
- Plug all connectors to your electronics board.
- Update your firmware.
- Happy Printing!!!