

# Makertech

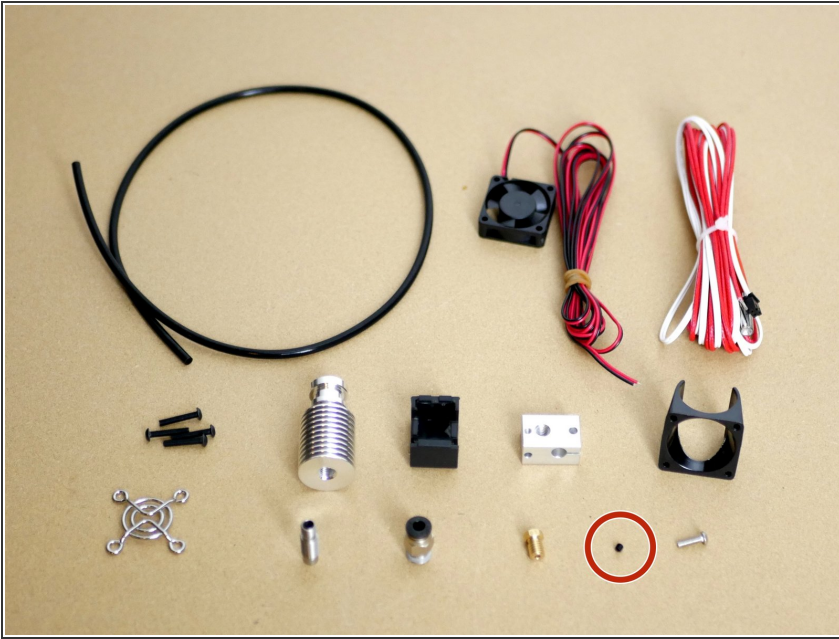
## Stage 04 - Hotend

HotEnd Assembly.

Written By: Makertech

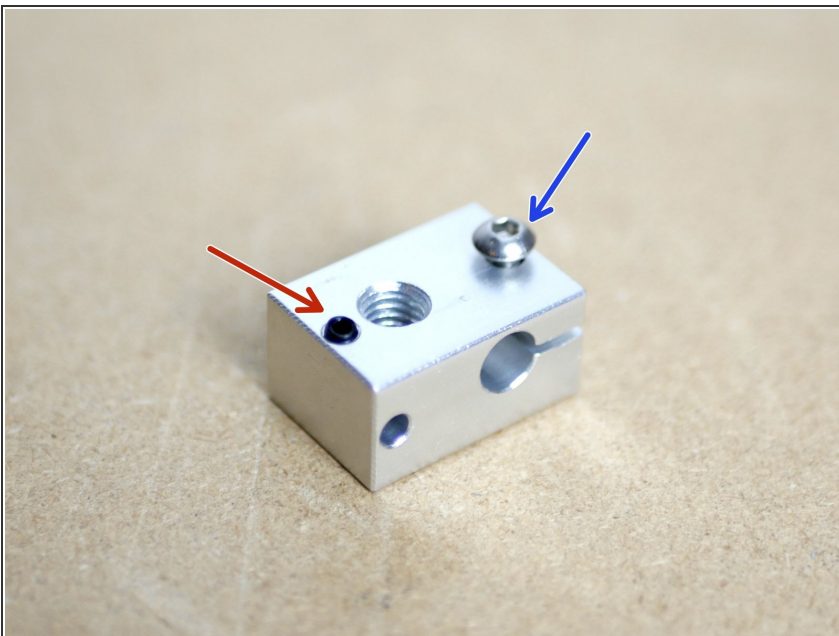


## Step 1 — Hotend Pack Parts



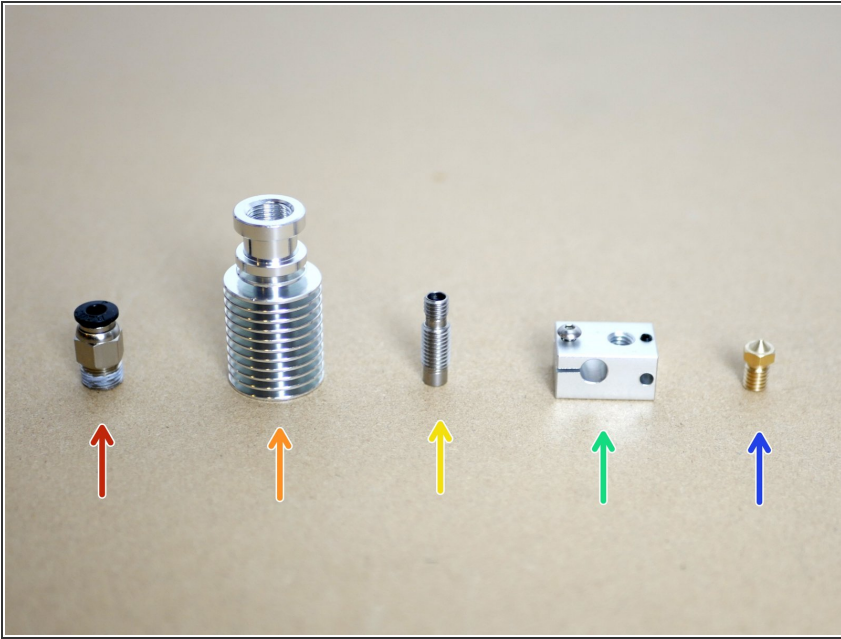
- ❗ Check that you have all of the components photographed from the Hotend bag.
- ⚠ In particular take care when opening the smaller bag, the set screw is small and easy to lose.
  - Set screw
- ★ If you are planning to upgrade to the Dual Switching Extruder we recommend building the second Hotend now also.
- ❗ Make sure you build the second Hotend using the parts from the DSE box. This includes bolts and the braided sleeving.

## Step 2 — Keep the screws safe



- ❗ Thread the set screw and M3 bolt into the heated block like shown to keep them from getting lost.
  - Set Screw
  - Bolt

## Step 3 — The HotEnd



- The Hotend is made up of 5 key components:

- Pneumatic Coupling - 1/8"

- Heat Sink

- Throat

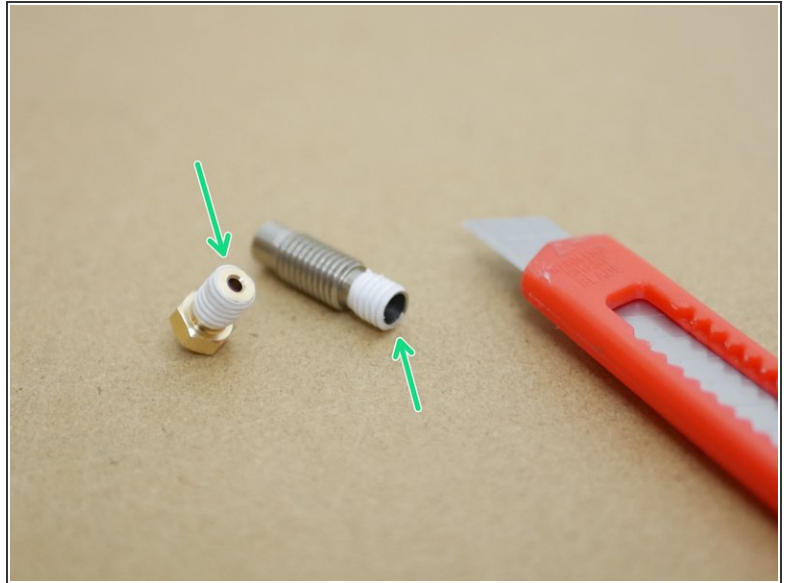
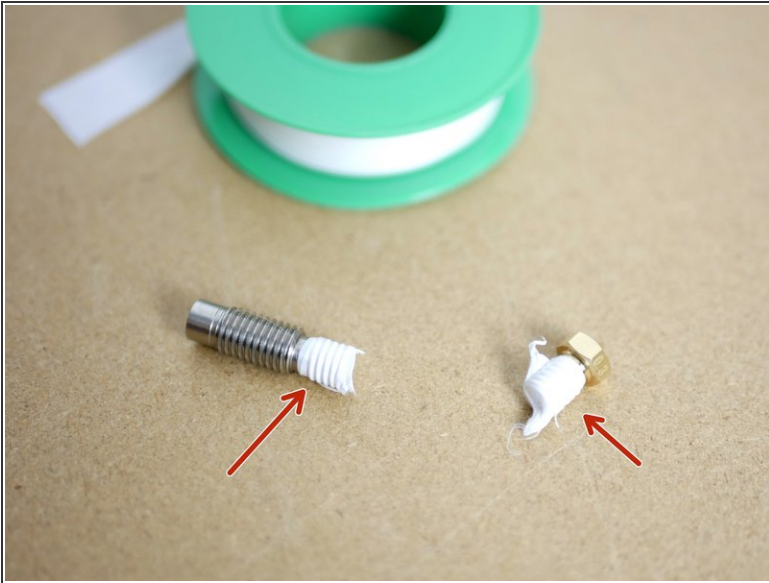
- Heater Block

- Brass Nozzle

☒ You could install one of the abrasion resistant steel nozzles here but we recommend starting printing with PLA where the brass nozzle would provide better heat transfer.



## Step 4 — PTFE Thread Tape



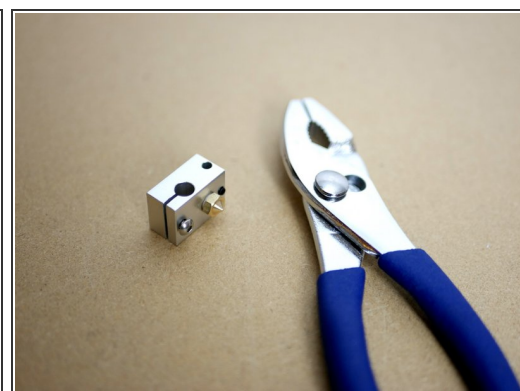
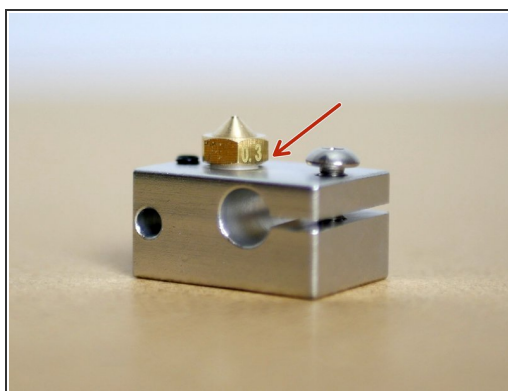
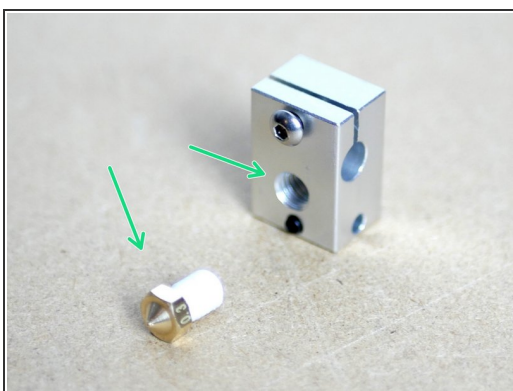
- Wrap several layers of the PTFE Thread Tape around the threads of the Throat and Nozzle as shown in the image.
  - ☑ The tape should be wrapped around the shorter part of the thread on the throat.
- Use the included craft knife to scrape away the excess PTFE tape.
  - ☑ Make sure that the openings are clear of the tape.

## Step 5 — Heatsink and Throat



- i **HAND TIGHTEN** the Heatsink to the Throat.

## Step 6 — Heater Block and Nozzle

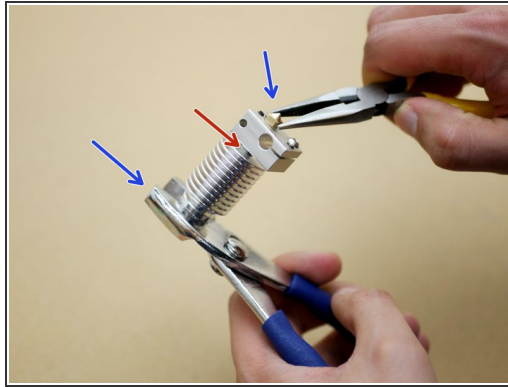


- Fix the Nozzle to the Heater Block, it should be screwed into the same side as the set screw.

⚠ Do **not** tighten the nozzle all the way up to the heater block, leave about a 1mm gap - this will make it easier to unscrew if you ever later on need to replace the nozzle.

- ★ You should need to use the pliers to screw the nozzle on, if it threads on too easily you need to add more layers of the PTFE tape to the nozzles thread.

## Step 7 — Heatsink to Heater Block



- ❗ Fix the Heatsink assembly to the Heater Block assembly.
- ❗ Hand tighten at first and then use the included pliers to tighten everything down.
  - When tightening with the pliers hold the assembly from the heat sink and nozzle like shown in the second image.
- ⚠ Be careful when tightening, applying too much force can break the narrow part of the Throat.

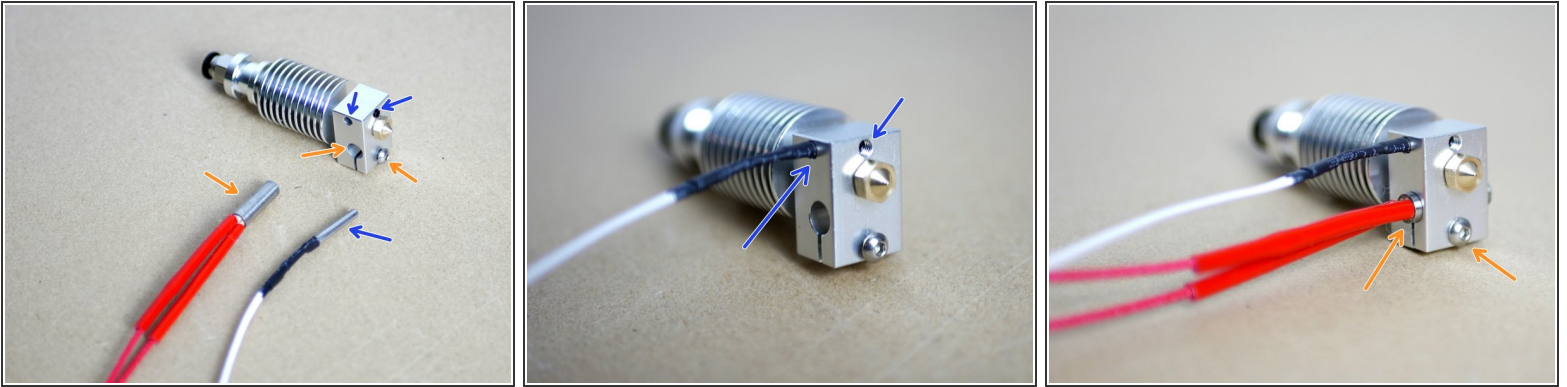
## Step 8 — Pneumatic Coupling



- Fix the pneumatic coupling onto the Heatsink.

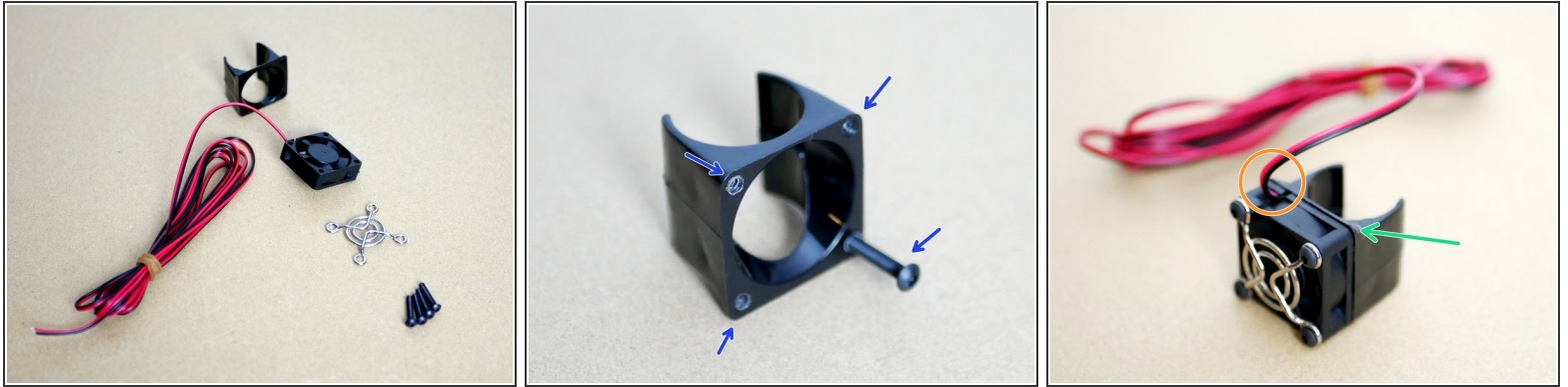


## Step 9 — Heater Cartridge



- Slide the thermistor into the heater block **from the left side** and tighten down the set screw to hold it in place.
  - Slide the Heater Cartridge into the Heater Block from the left side, position it centrally and tighten down the M3 bolt to hold it in place.
- i** Dual Extrusion: For the second hotend make sure the cables are on the **right hand side**.

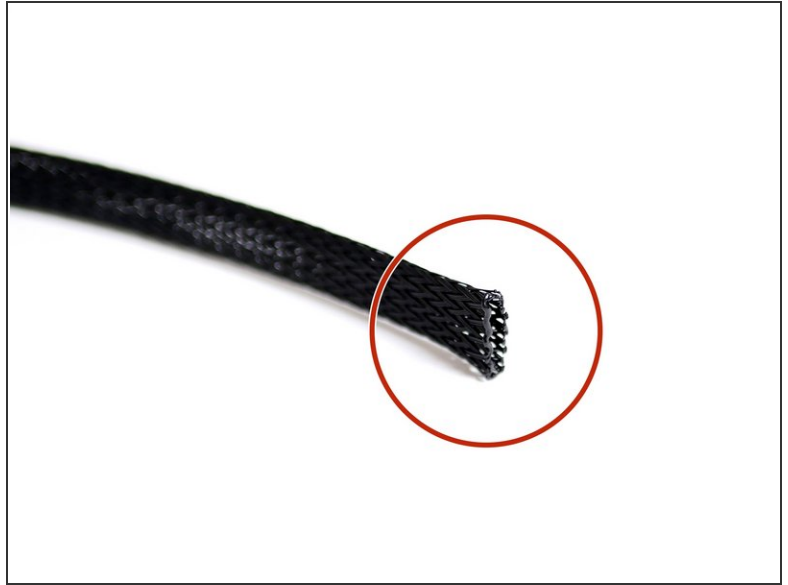
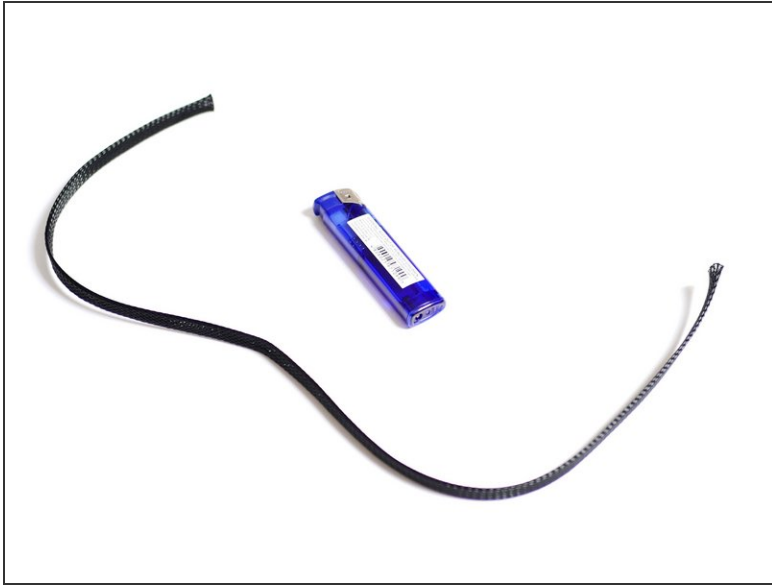
## Step 10 — Heatsink Fan Assembly






- For the Heatsink fan assembly begin by using an M3 x 16mm bolt to thread the holes on the plastic mount.
  - ☑ You will need to press down and turn to begin the thread, a loud clicking noise is normal.
- Assemble the fan with the sticker facing inwards and the fans cable coming out of the top left like shown in the third image.
  - Also note the top side of the fan mount is the lipped side.
- ☑ When assembling, don't fasten one bolt at a time, instead get all four bolts to thread slightly first and then tighten everything down.
- 📄 Dual Extrusion: For the second hotend make sure the fans cables are on the **right hand side**.

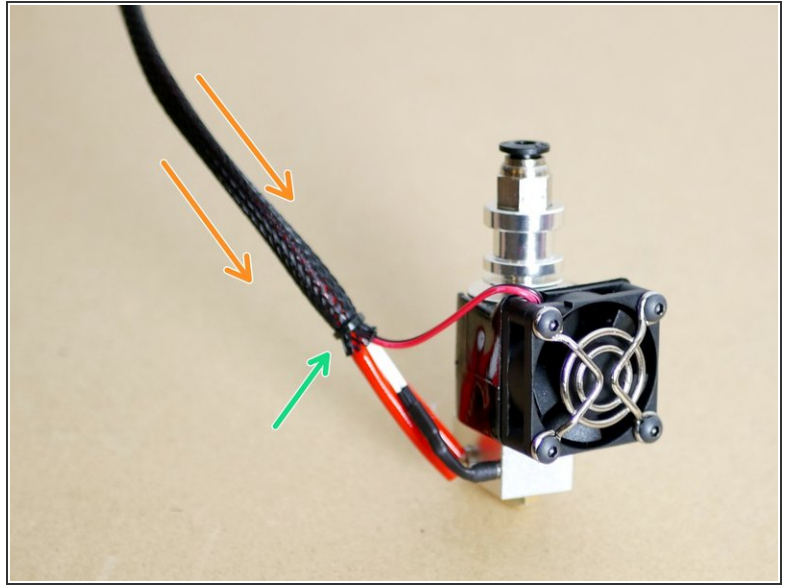
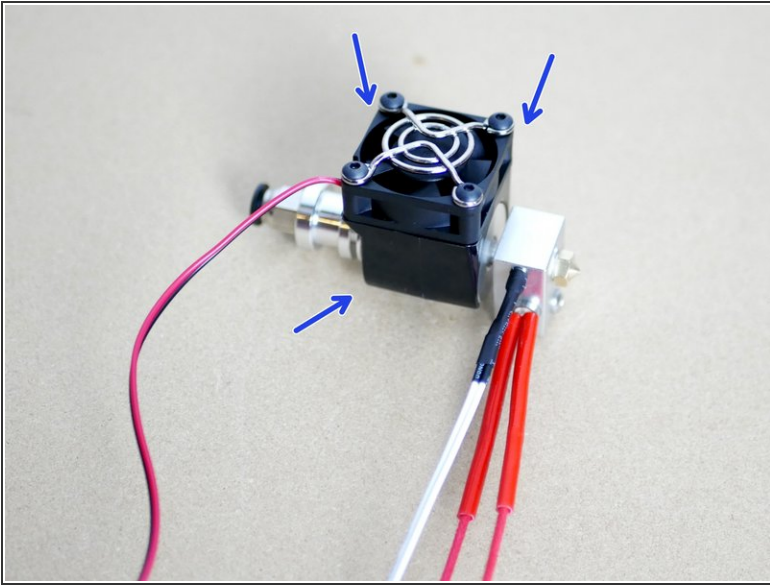


## Step 11 — Braided Cable Sleeving Prep.



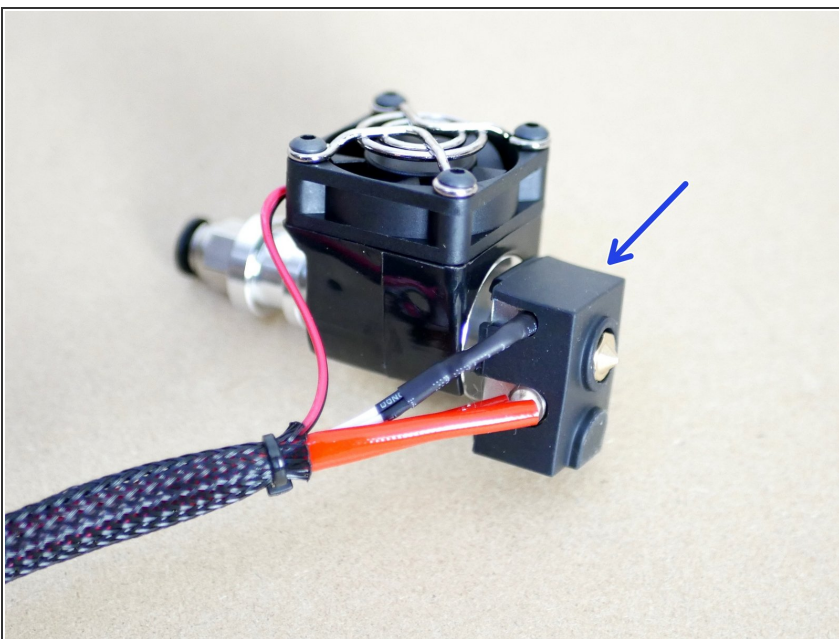
-  Cut 1 meter of braided cable sleeving.
-  Use a lighter to melt the ends to stop them from fraying out.
-  DSE: cut the second 1 meter of braided cable sleeving from the sleeving in the DSE box.

## Step 12 — Braided Cable Slewing



- Snap the heatsink fan assembly onto the heat sink as shown in the first image.
- Slide the braided sleeving onto the cables.
- Use a cable tie to secure the sleeving in place.

## Step 13 — Silicone Sock



- Finally fix the silicone sock cover onto the heater block.

