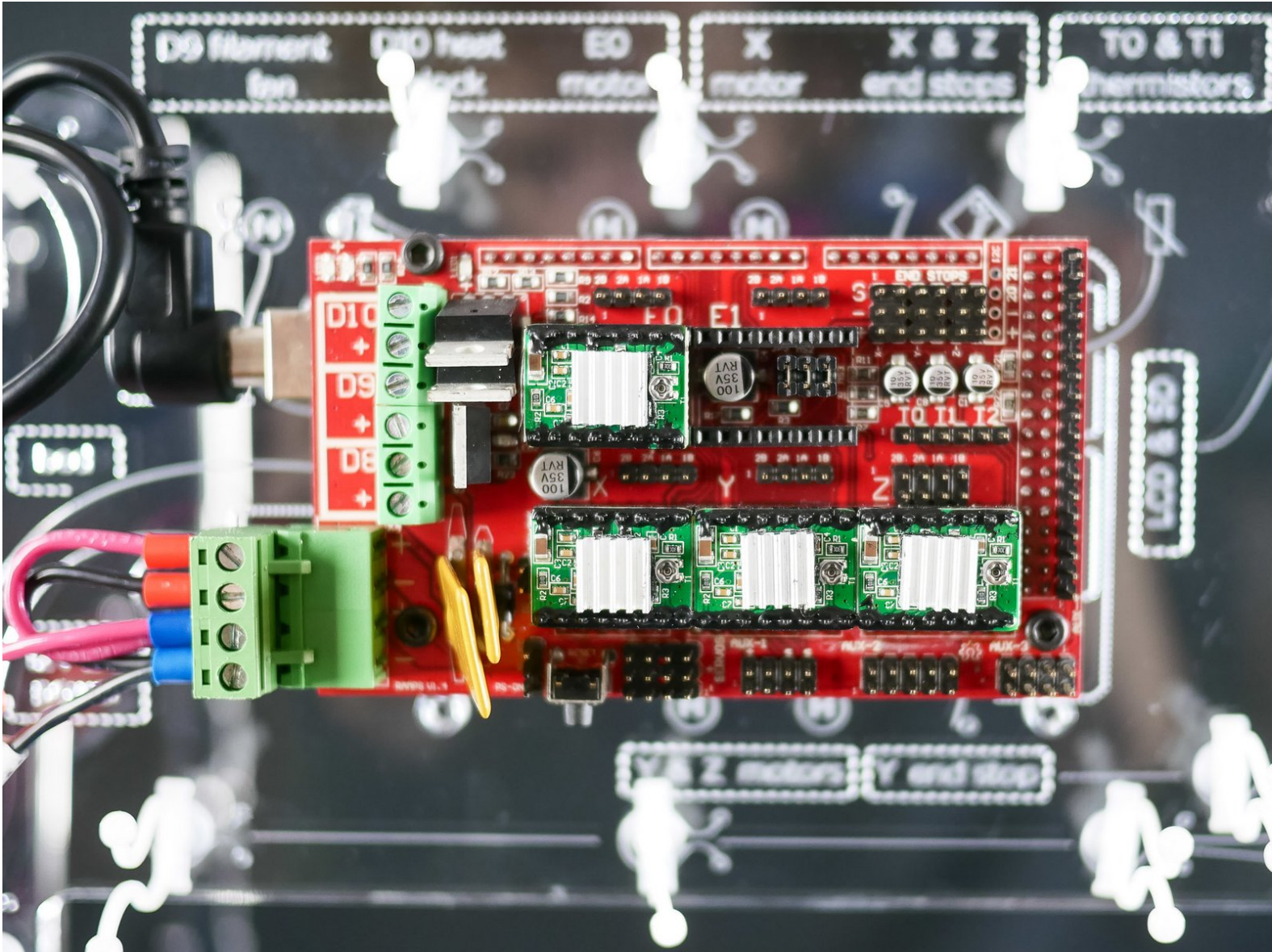




Electronics

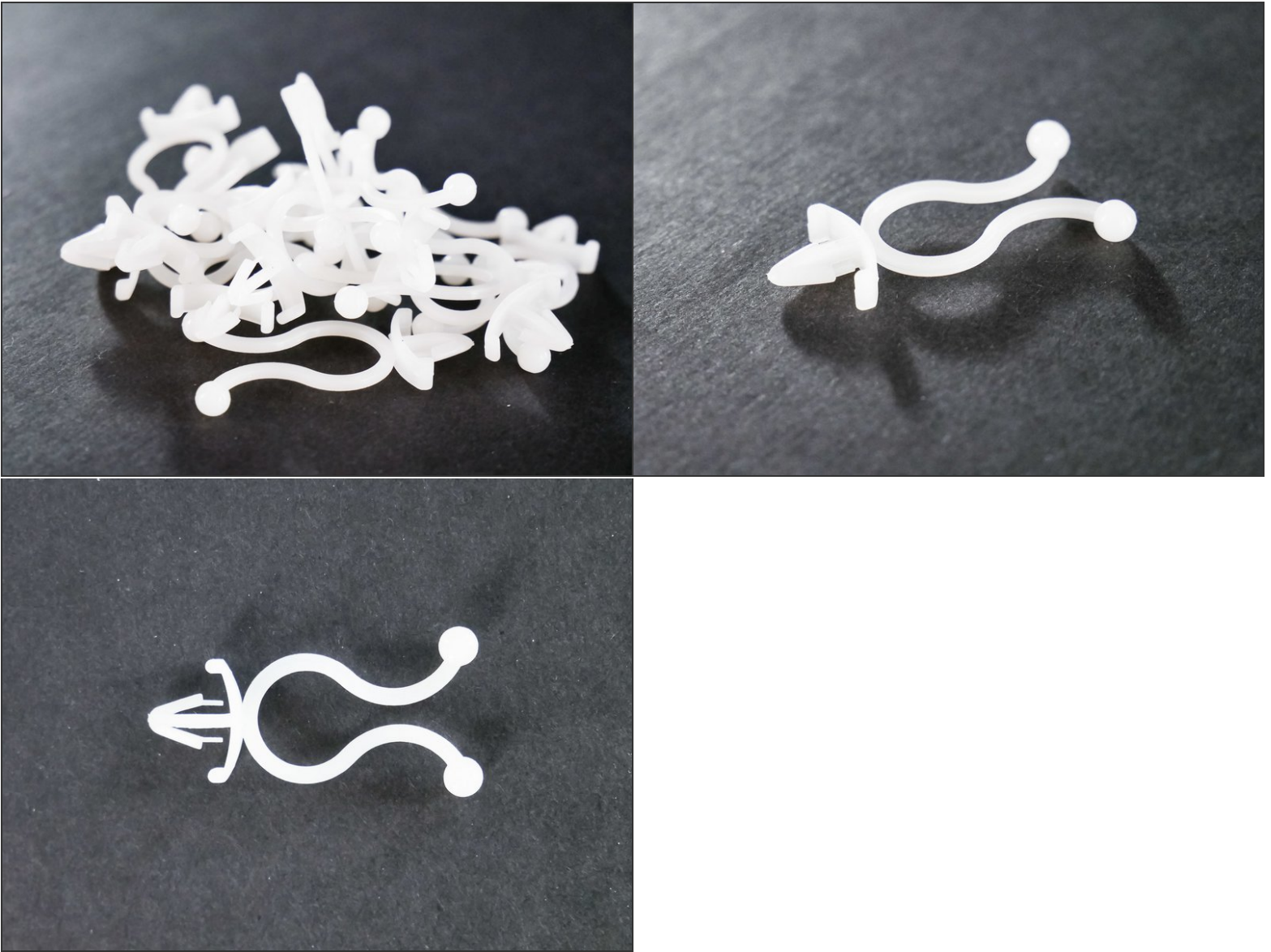
Electronics



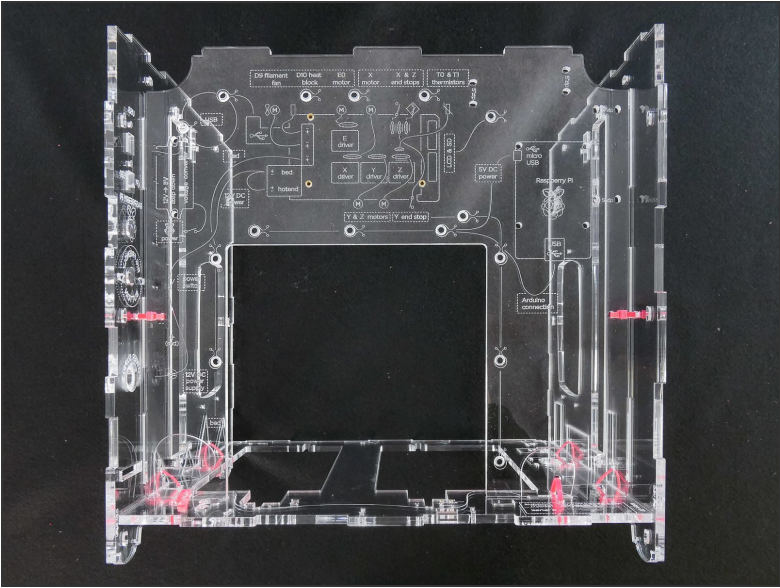
INTRODUCTION

Not the guide you are looking for?

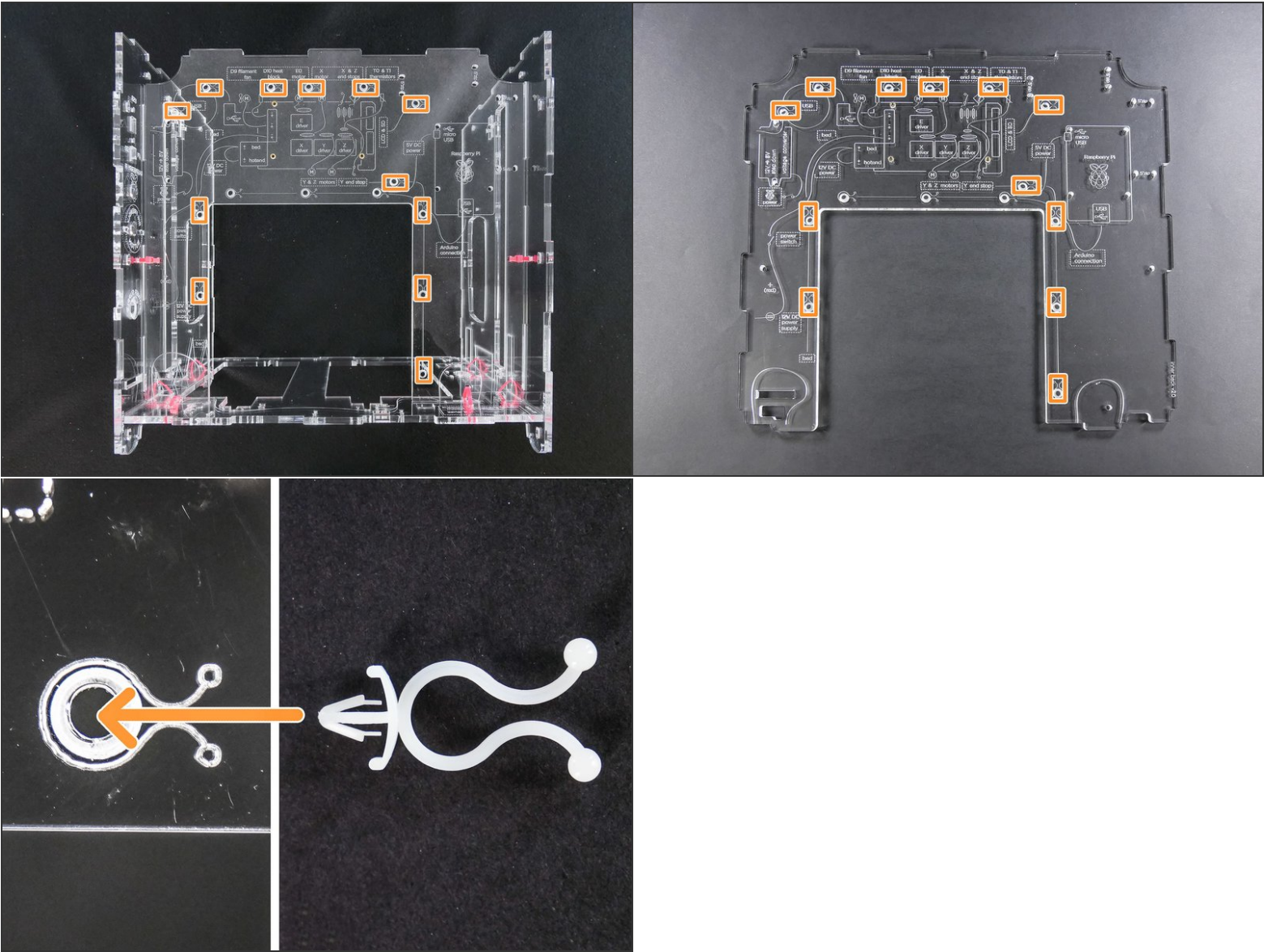
Go back to the [← Makers Kit Build Flow.](#)

Step 1 — ↳ Twist Locks

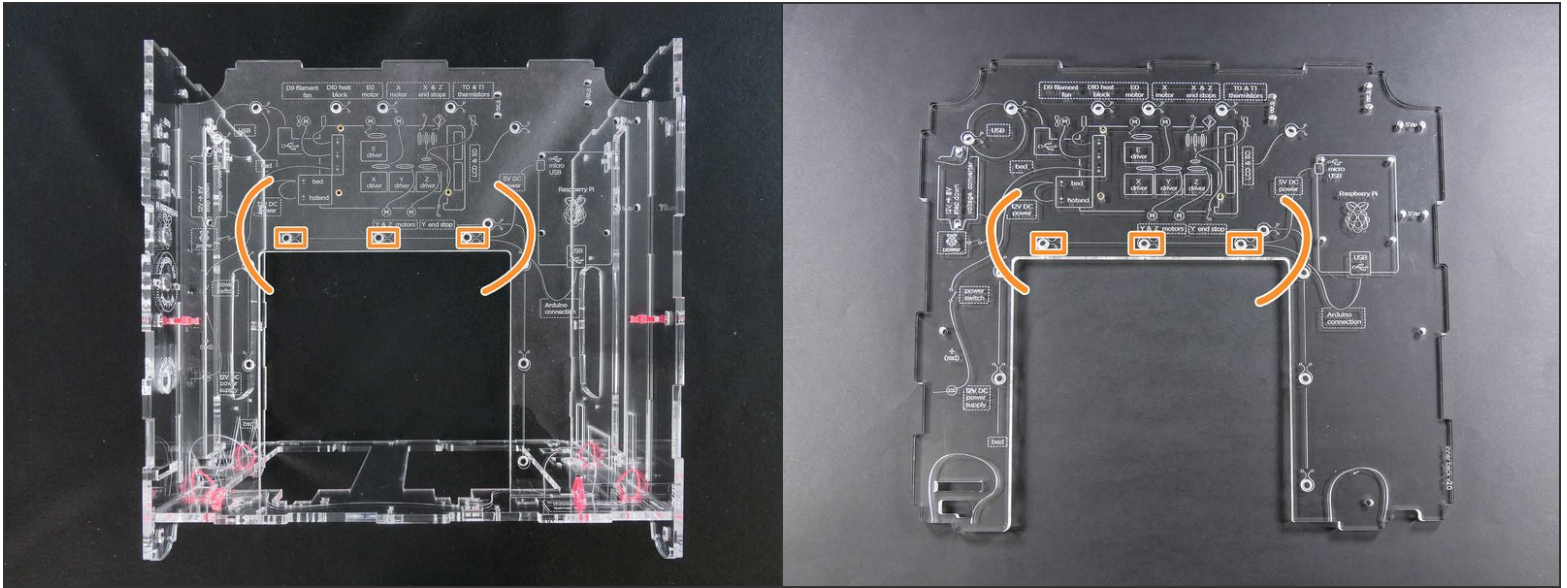
Step 2



Step 3

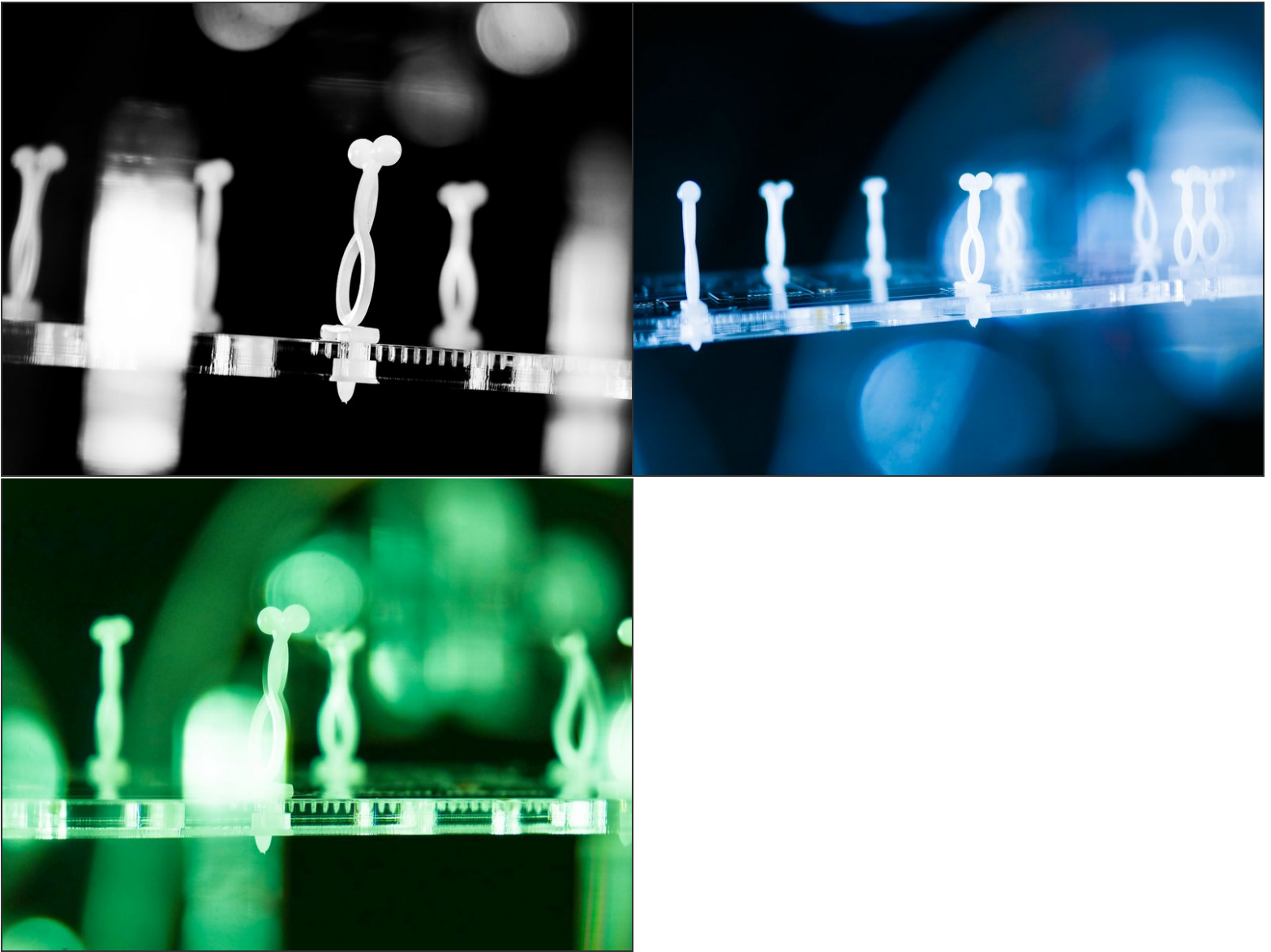


Step 4



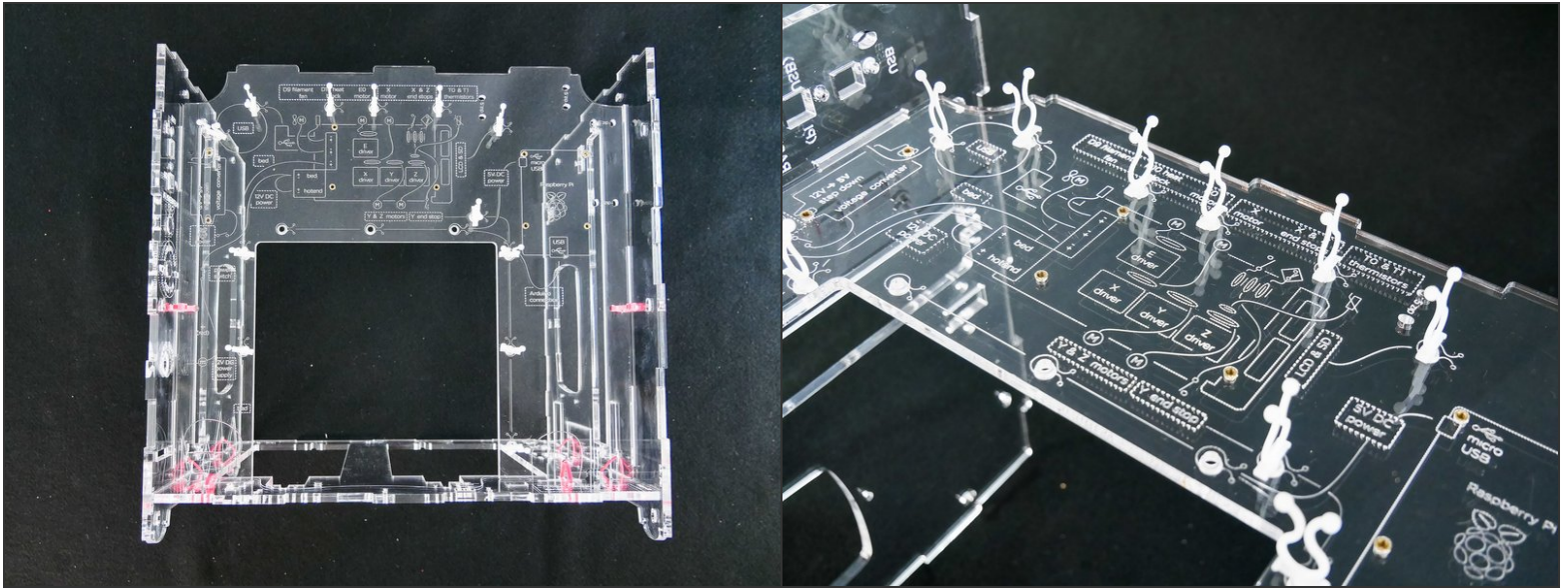
i PS: **Don't** worry about these three. They are used for the Raspberry Pi upgrade. You may use them later or not.

Step 5



- All this beauty...

Step 6 — Looking good!

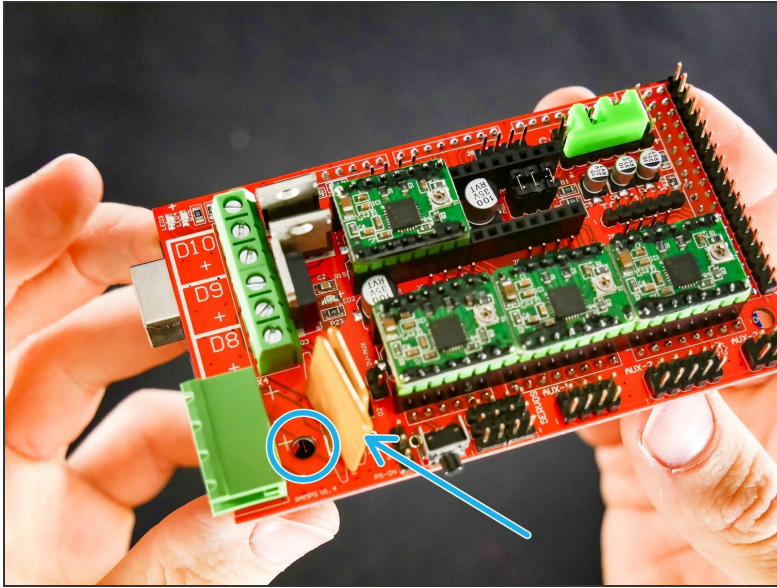


Step 7 — ↳ Arduino + RAMPS



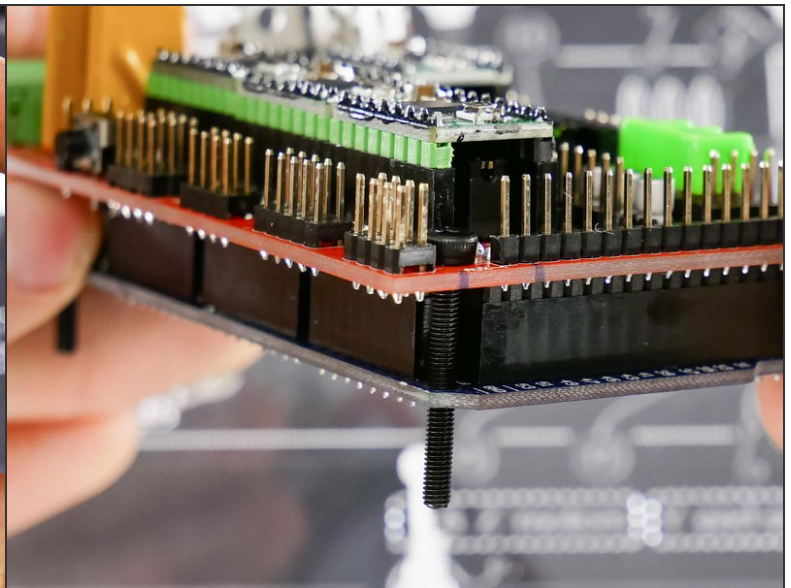
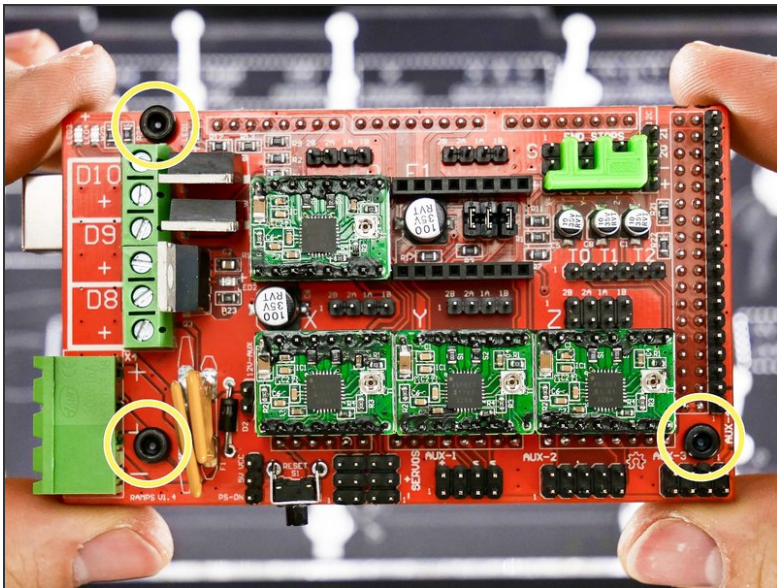
● M3x25

Step 8



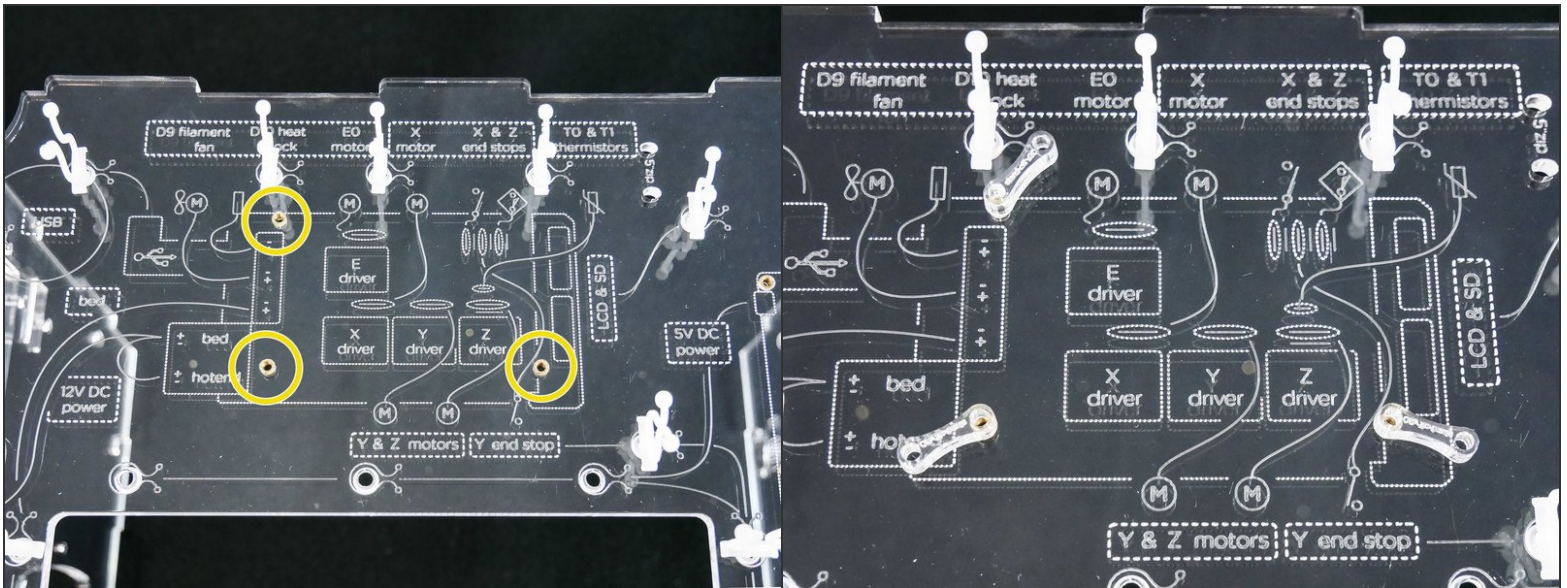
- These yellow rectangular fuses may be hiding this hole. Fearlessly but **gently** bend them away.

Step 9

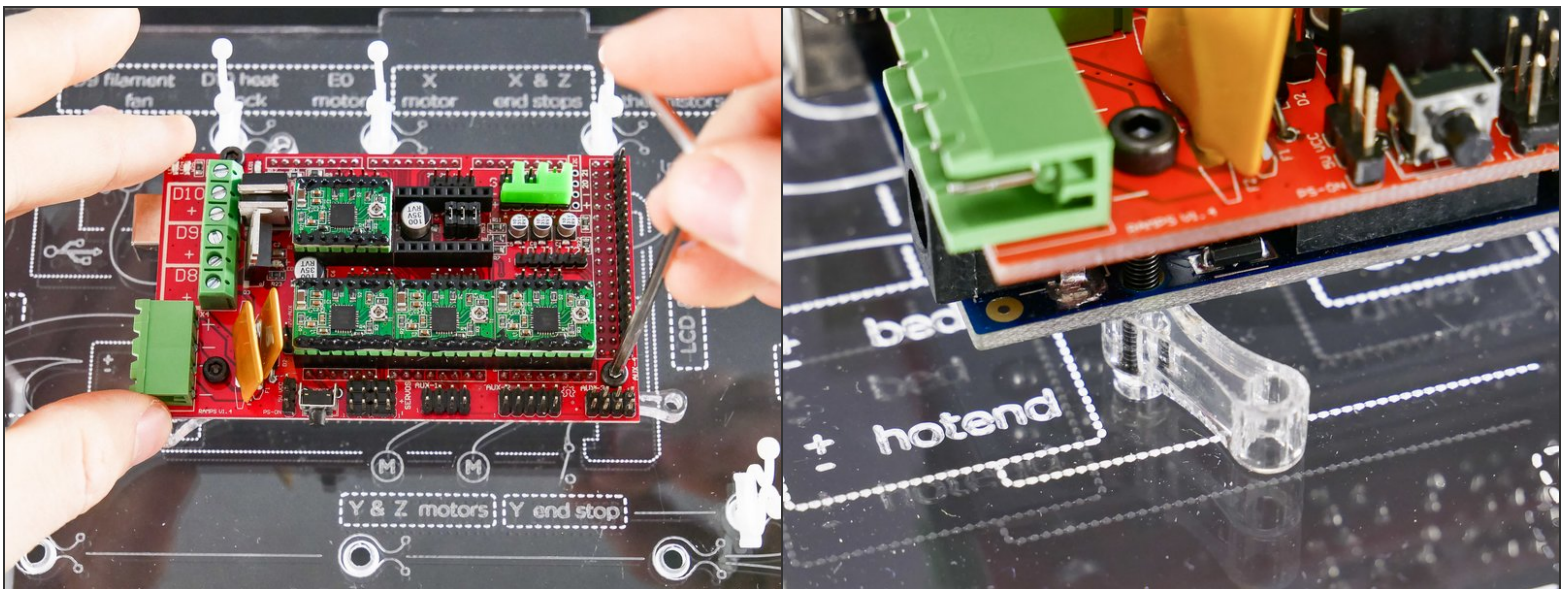


- M3x25

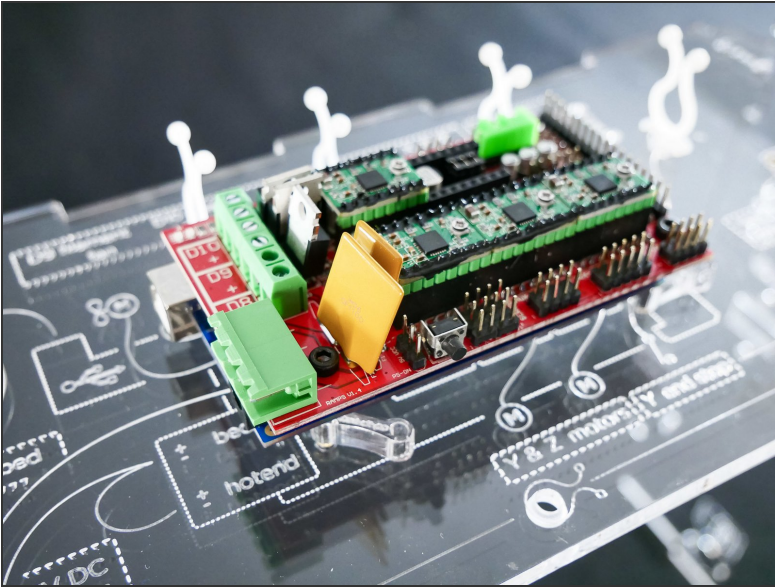
Step 10



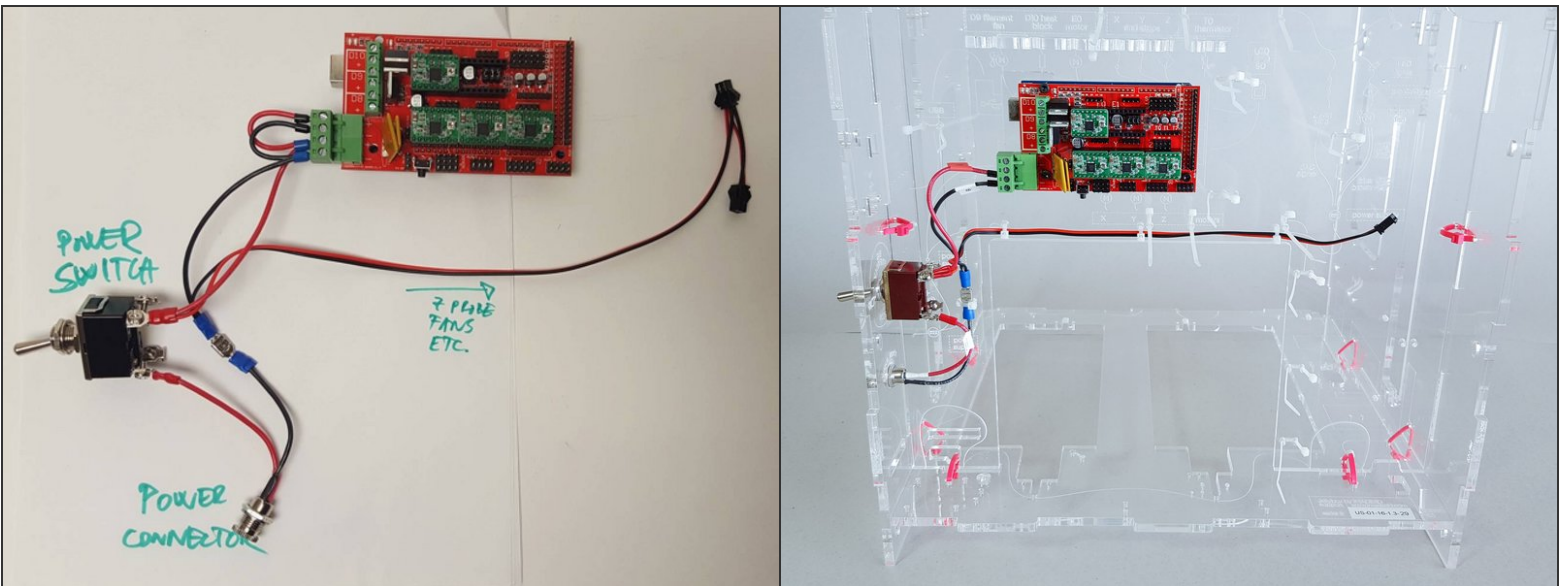
Step 11



Step 12 — Looking good!

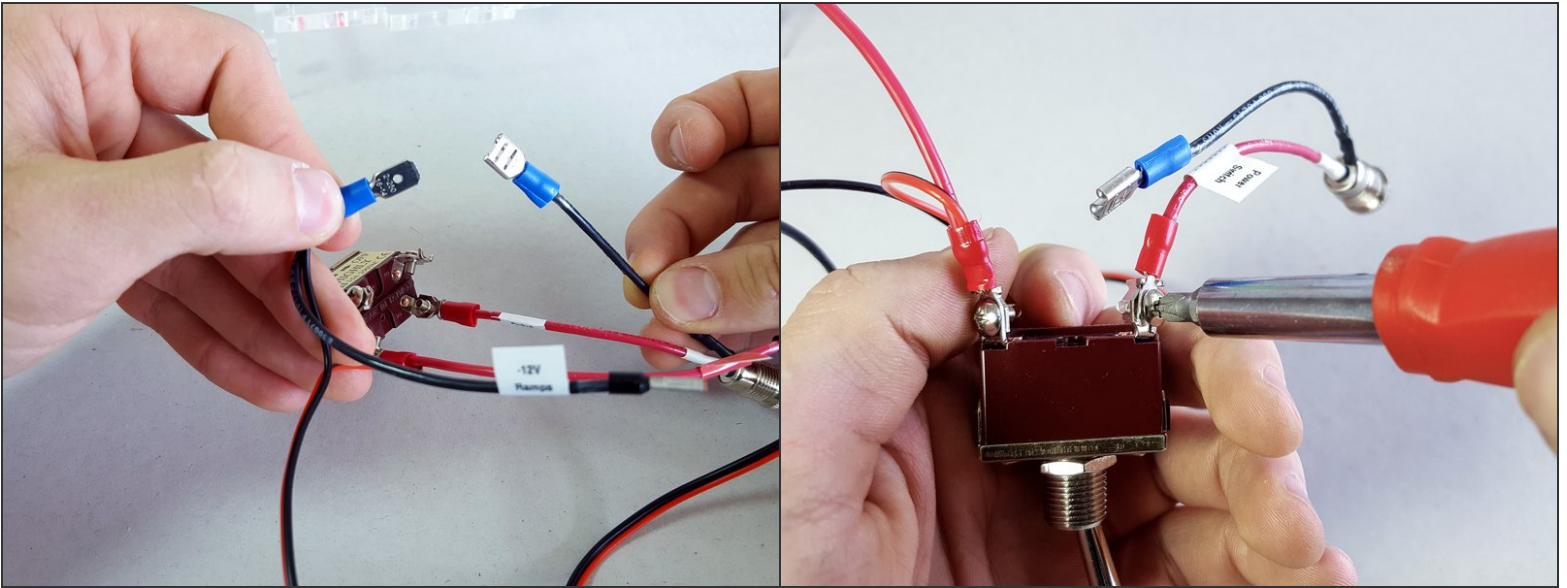


Step 13 — ↴ Power Wiring



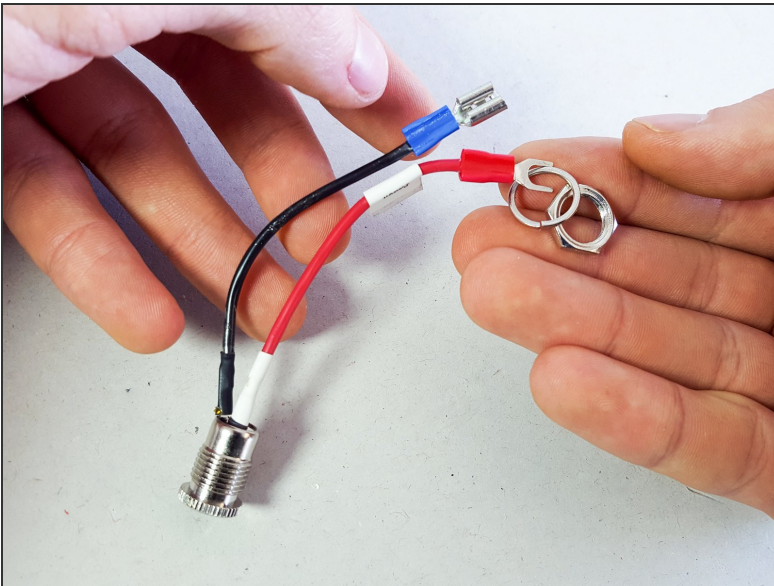
- The Goal.

Step 14 — Power Connector



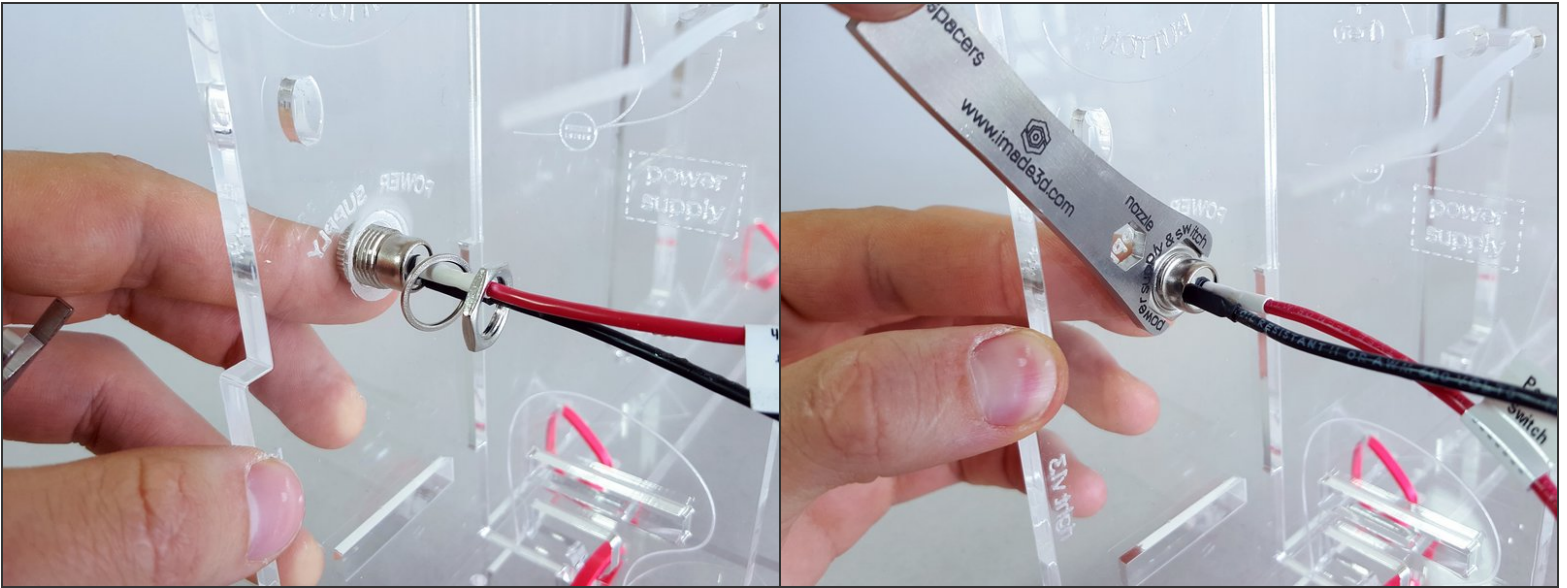
- Disconnect the power supply *connector* from the rest of the power wire harness.

Step 15



- Remove the nut and spring washer from the connector.

Step 16



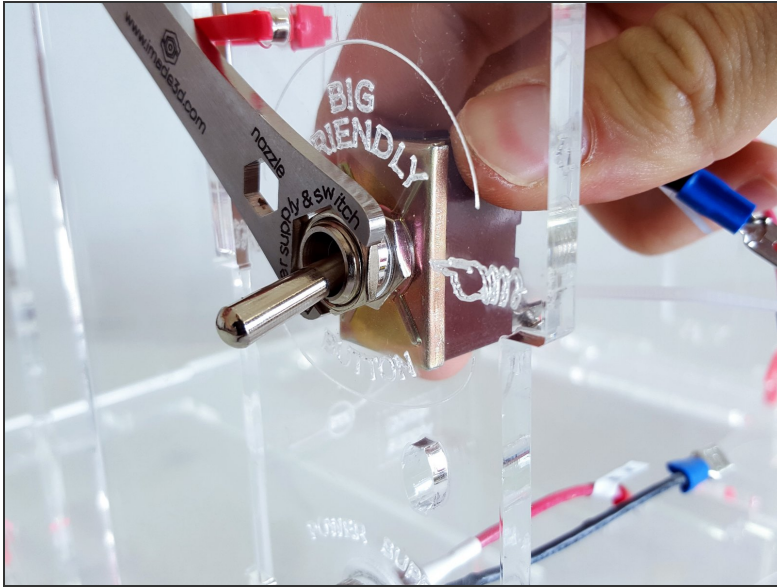
- Insert the connector into the frame from the outside.
- Secure with the spring washer and the nut.

Step 17 — Power Switch



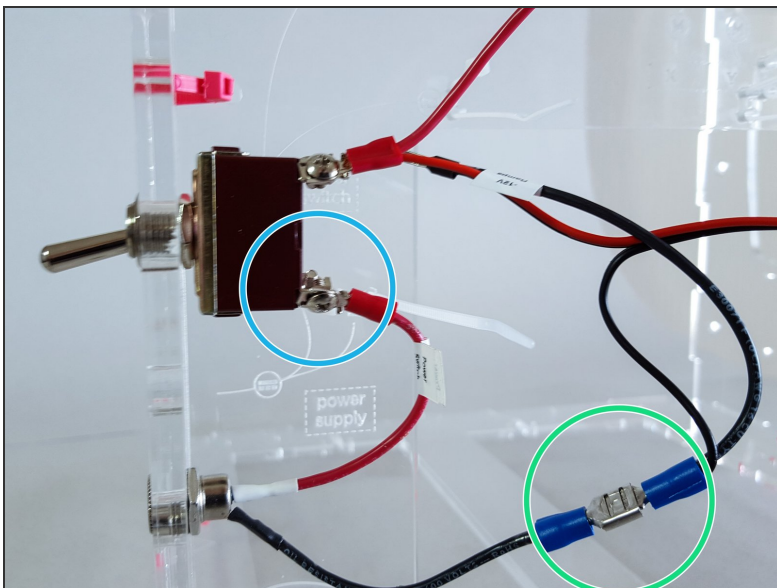
- Remove one nut from the front of the power switch.

Step 18



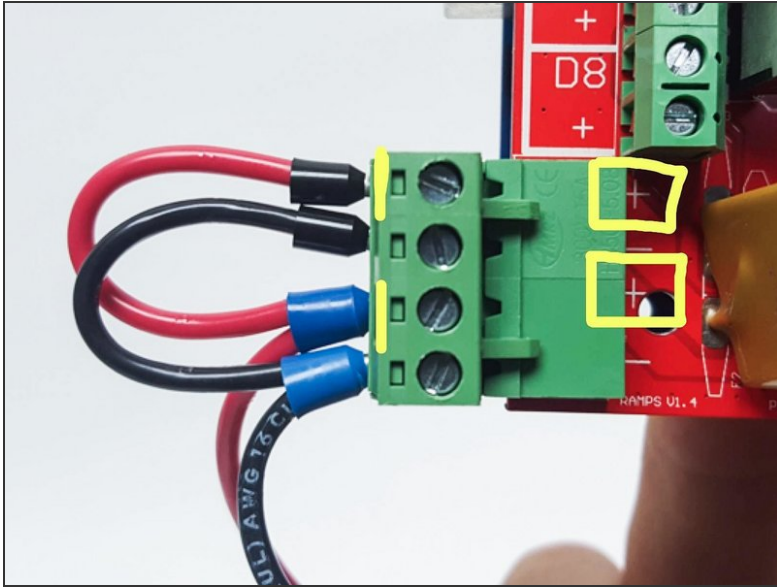
- Place the switch into the "Big Friendly Button" hole from the inside.
- Secure with the nut.
- ⓘ Commonly, switches are installed so that
 - bottom position = off
 - top position = on

Step 19



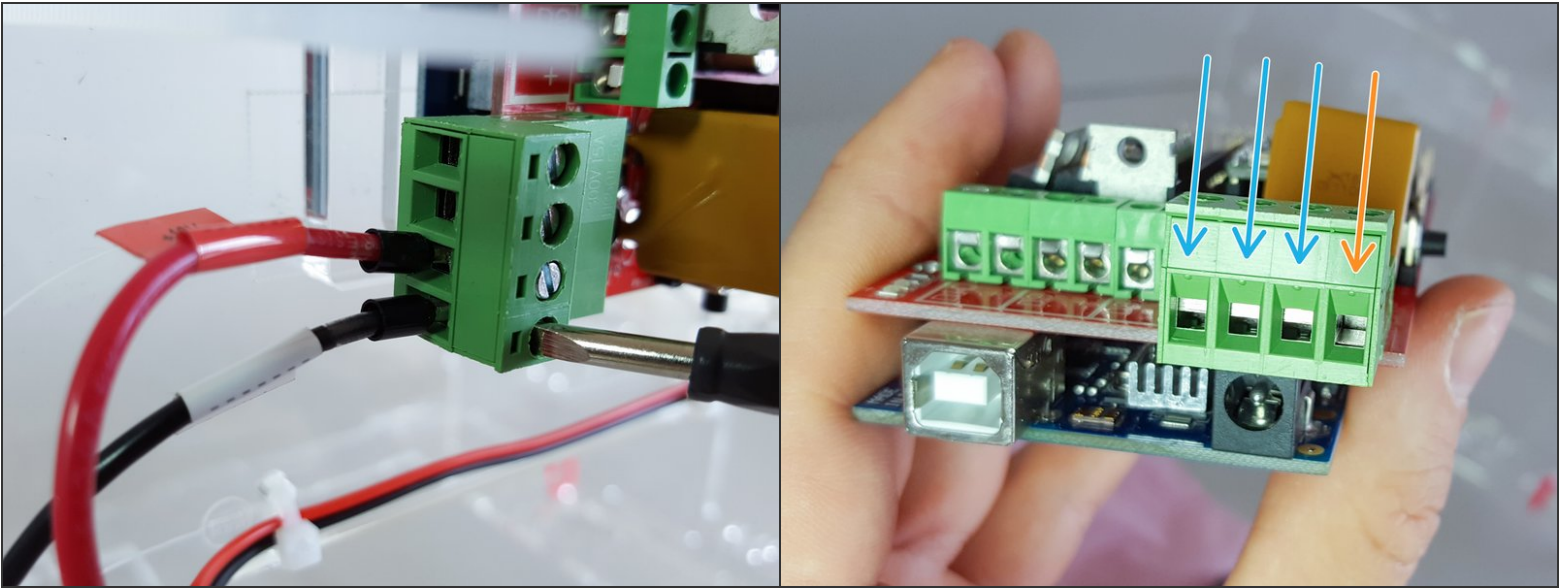
- Re-attach the positive terminal to the switch.
- Re-connect the negative spade connector.

Step 20 — Wire up the Arduino



- ⚠ Minus **MUST** connect to minus and plus **MUST** connect to plus or you **WILL** destroy your board and will need to buy a replacement.
- ⚠ Read the wire labels. Red wire is always plus. Black wire is always minus.
- ℹ You can find little pluses and minuses on the RAMPS board next to the connector.

Step 21

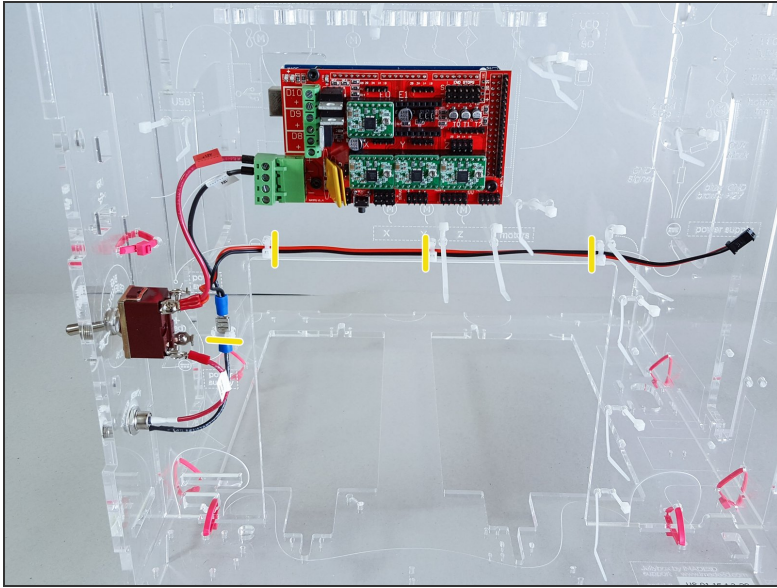


⚠ Make sure to properly insert the power wires into the green RAMPS power connector, and tighten them very well. If you leave this connection loose, it may lead to excessive contact oxidation, excessive resistance, and eventually to a melted connector or fire.

⚠ The wire ends (crimps, ferrules) are thick; you need to fully open the connector.

- fully open :-)
- not fully open :-(-

Step 22 — Tidy Up

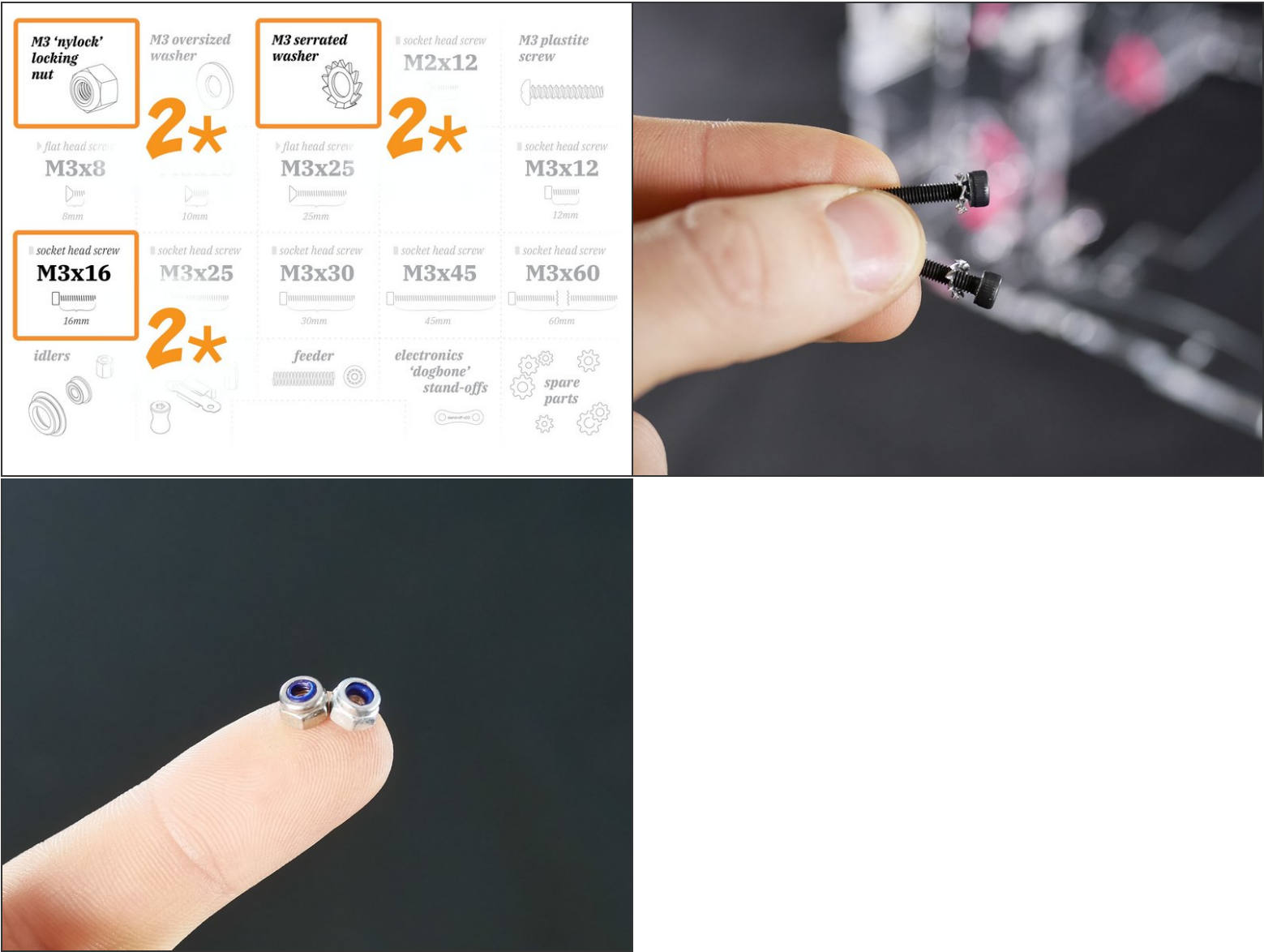


- Tidy up with 4" zip ties.
- You can tighten these only lightly by hand.

Step 23 — ↳ USB Extension

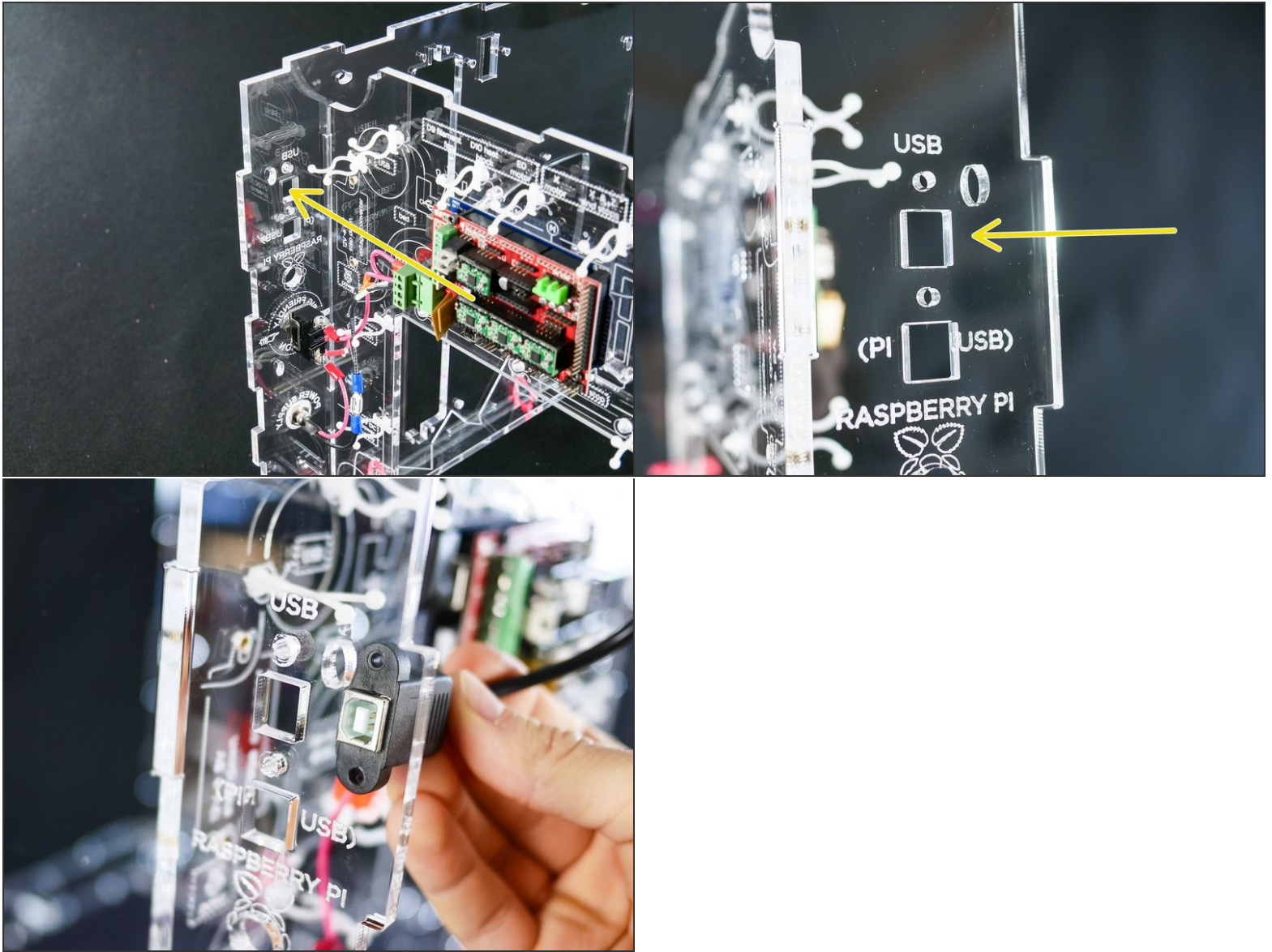


Step 24

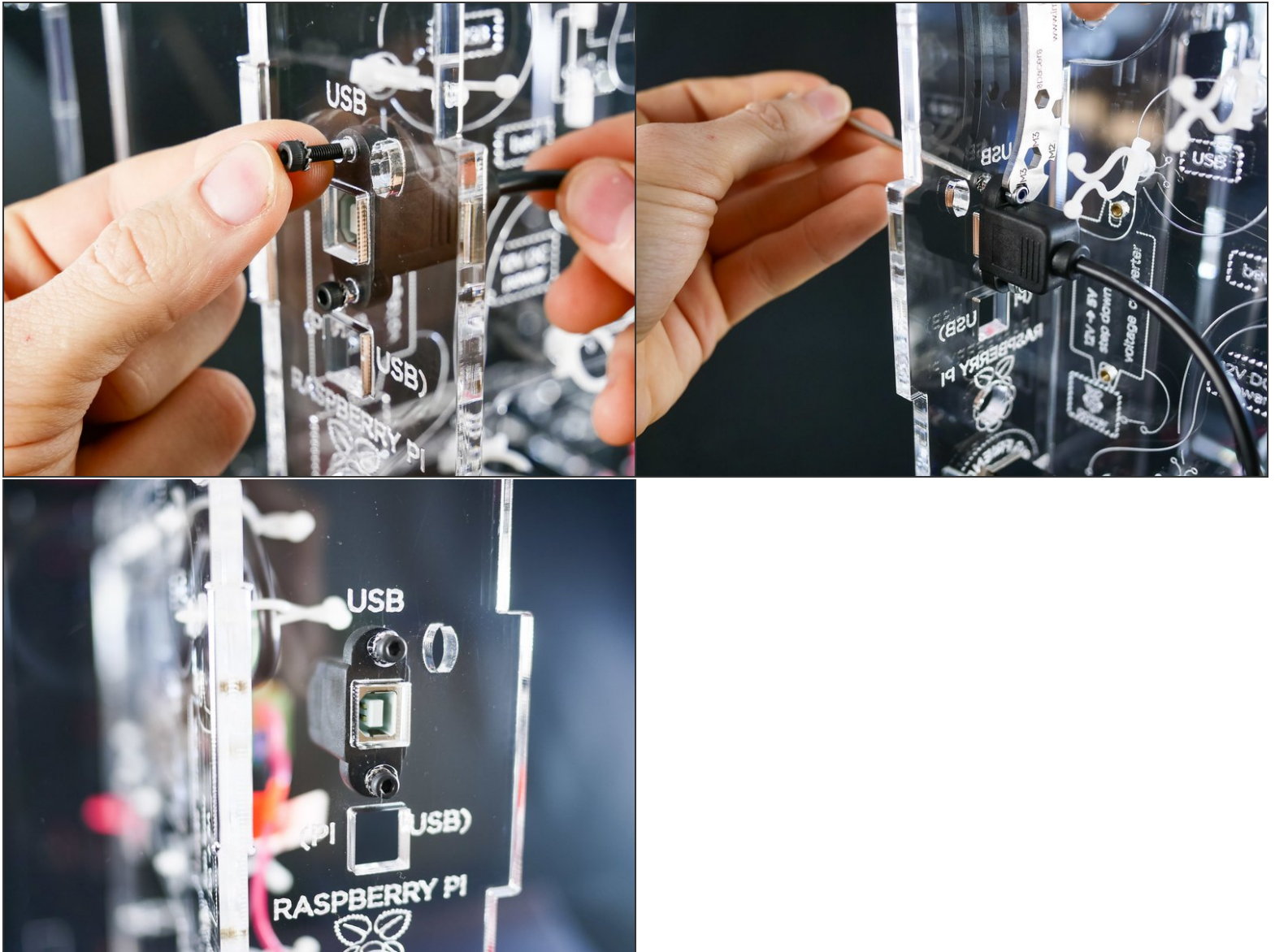


● M3x16

Step 25

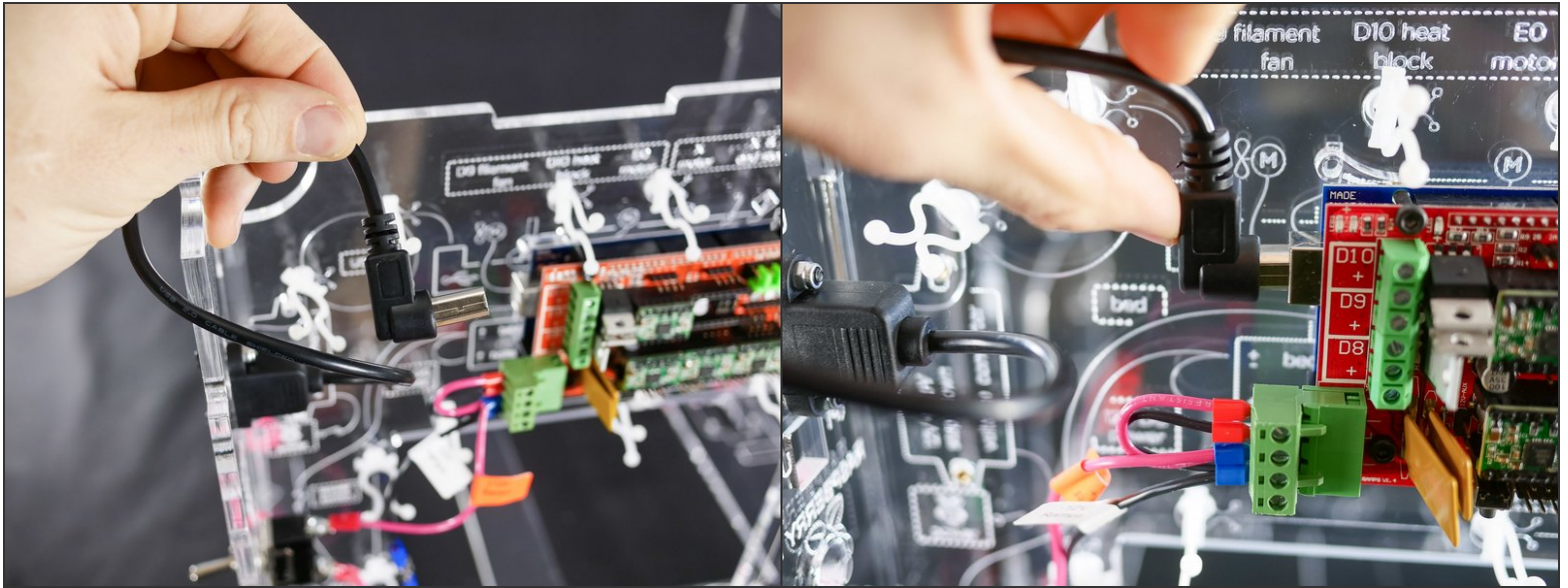


Step 26

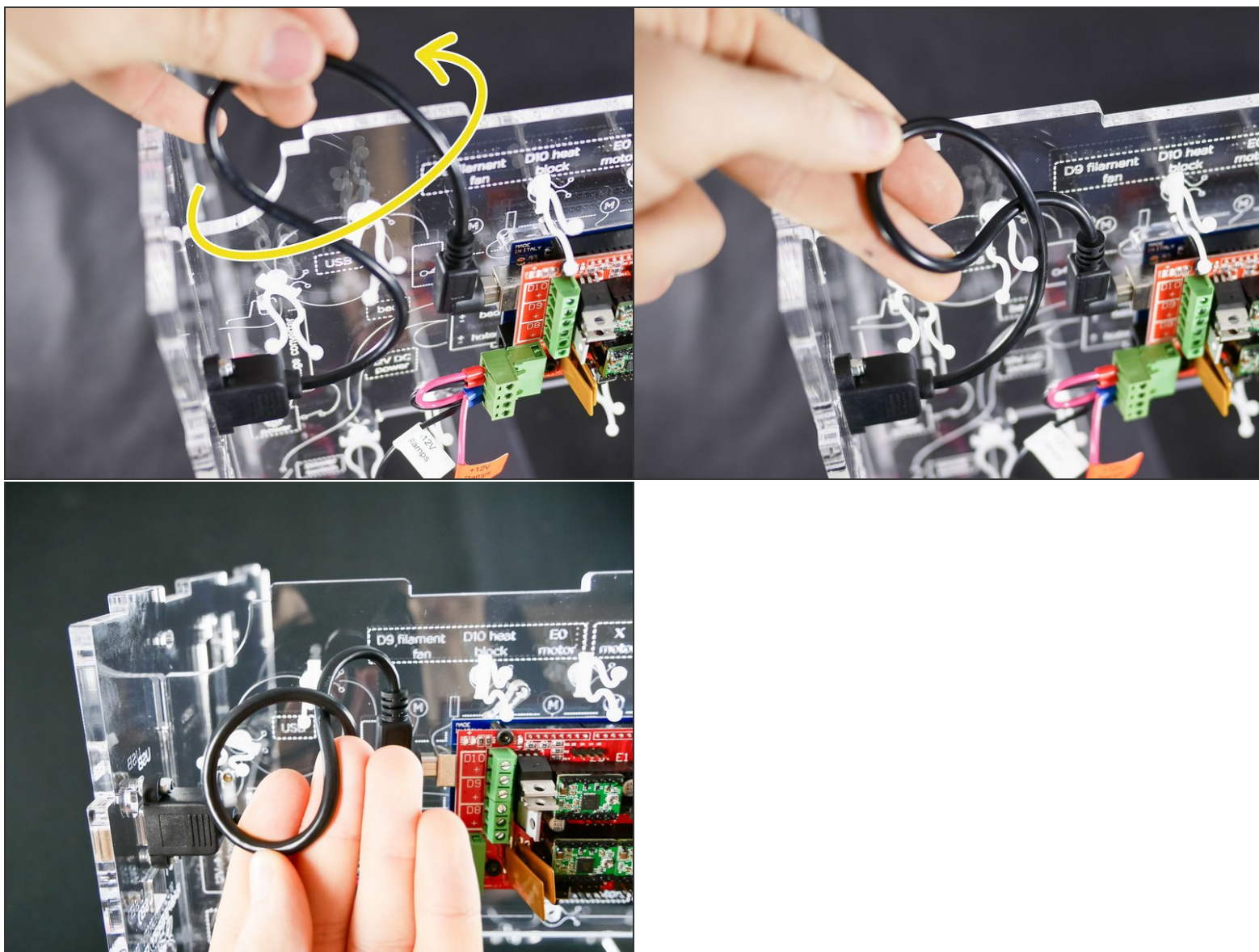


- M3x16

Step 27

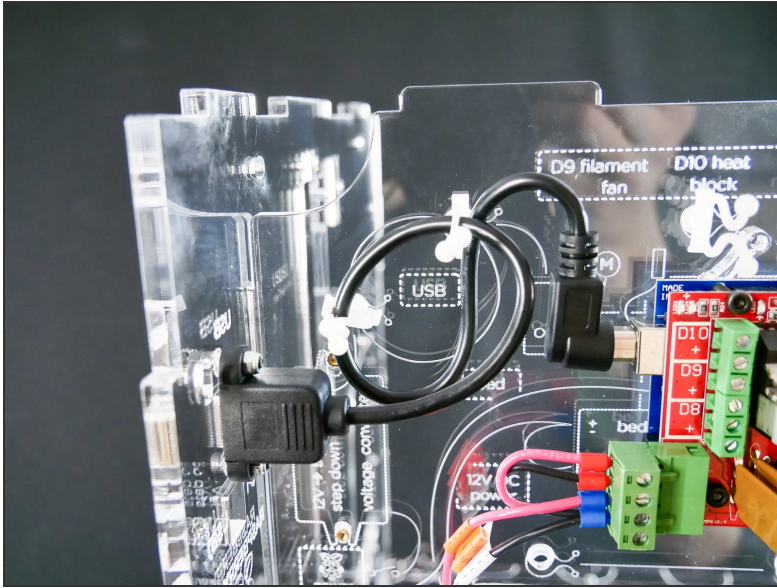


Step 28



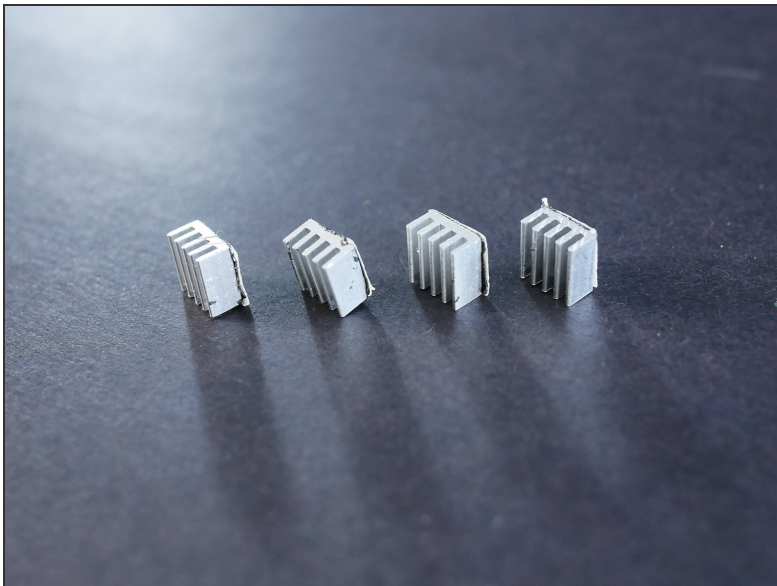
- Twisting a wire can be *art*.

Step 29 — Looking good!

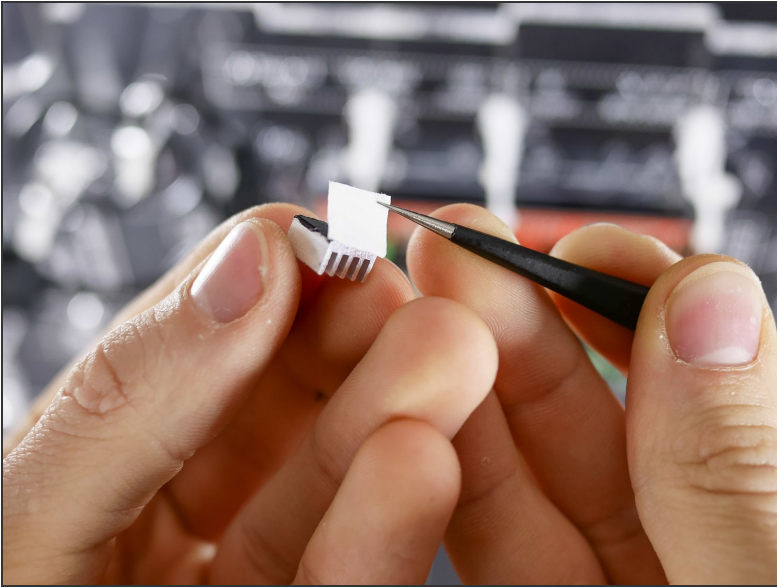


- What an elegant twist.

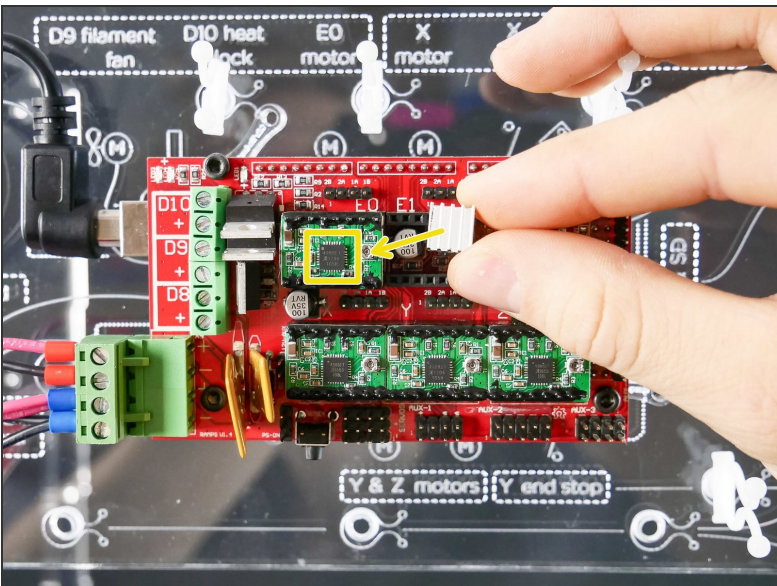
Step 30 — ↳ Driver Heatsinks



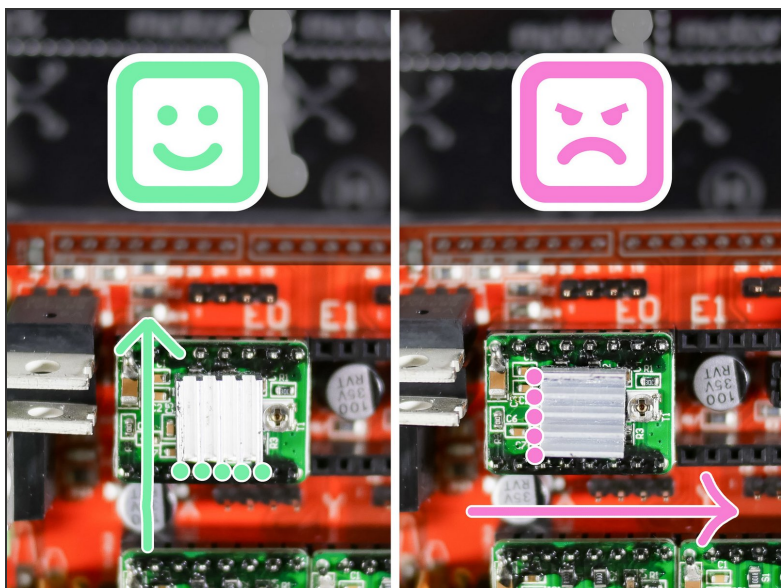
Step 31



Step 32



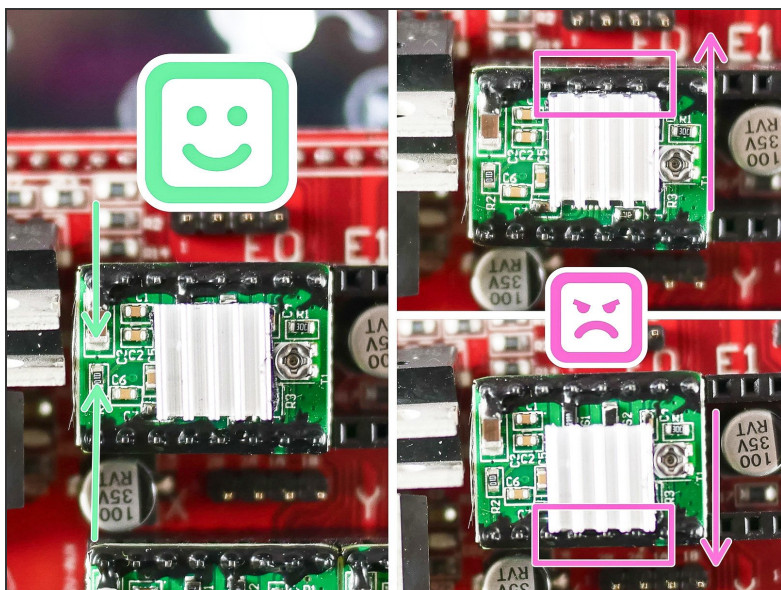
Step 33



⚠ The ridges of the heatsink should be vertical so that the heat fleets faster.

- Heat has a tendency to rise up.

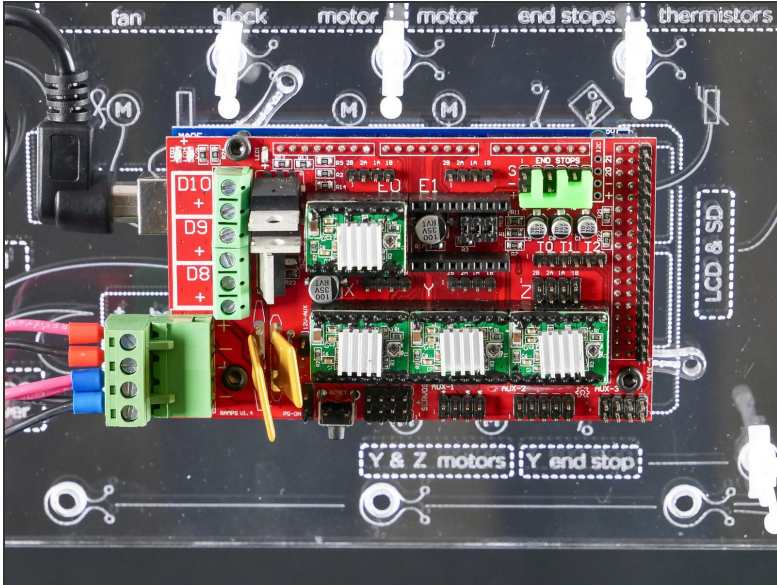
Step 34



⚠ It is important that the heatsinks **do NOT touch** the pins on the drivers.

- The heatsinks could connect the driver pins and *burn out the driver*.
- We actually put a protective isolating liquid over the pins to protect against shortage, but it's better to just leave the pins alone.

Step 35 — Looking good!



What's Next?

Get back to the [← Makers Kit Build Flow](#) and continue with the next guide.