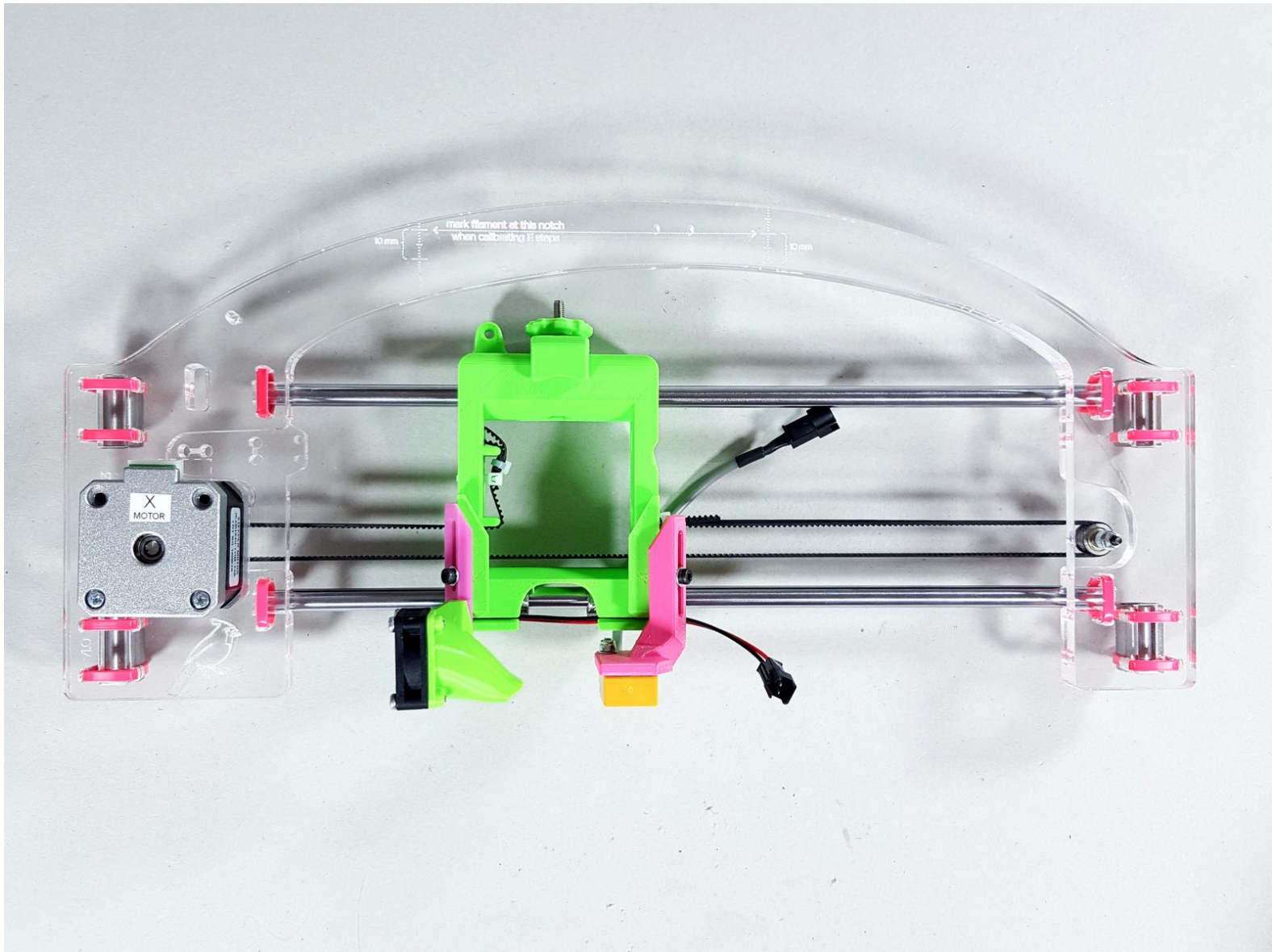
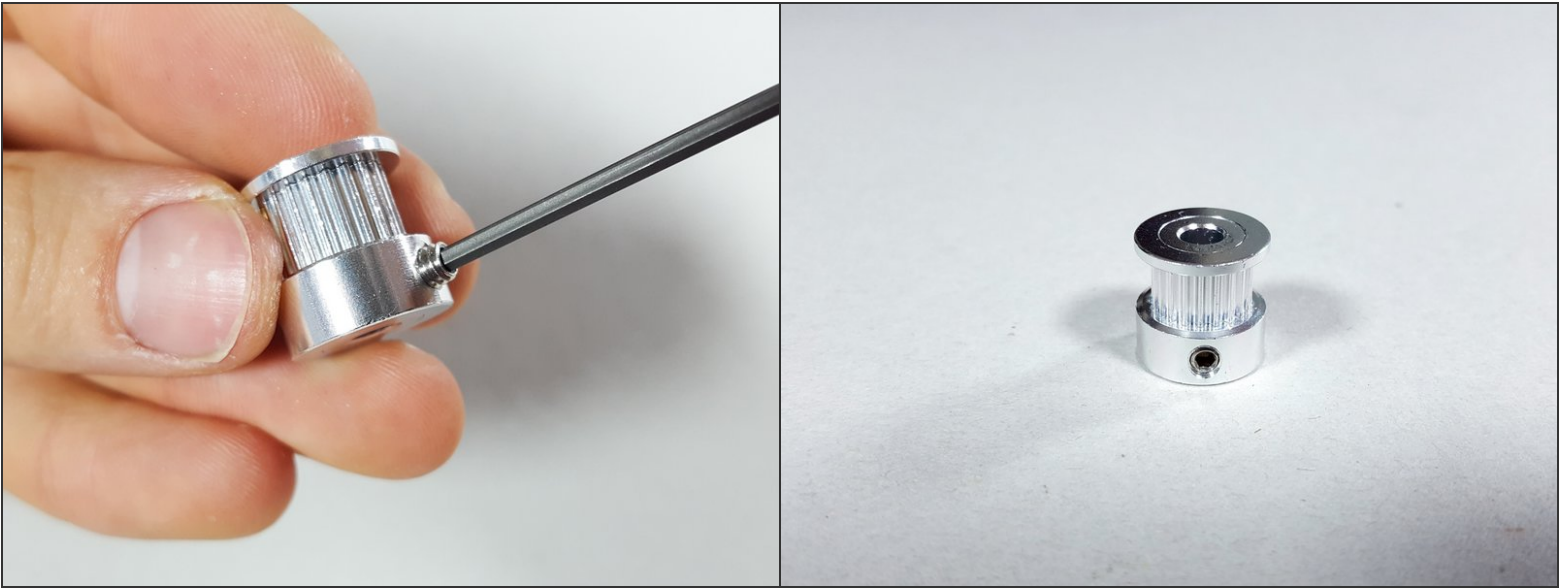




Assemble the X Assembly



Step 1 — ↳ Threadlock the Pulley Set Screws

- Take out both set screws (i.e., two) out of the pulley.
- (You can find the pulley in the hardware box - left bottom corner)

Step 2



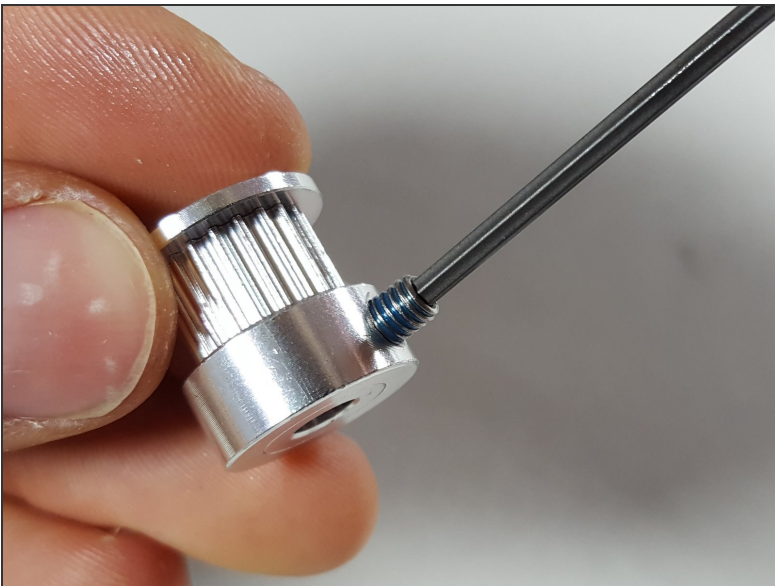
- Put a **single, small drop** of thread lock onto the set screw thread.
 - Most people use way too much threadlock. Really, little is enough.
 - Let the threadlock spread the thread lock into the thread. Soak excess with a paper towel if necessary.
- ✦ Tip: Keep the set screw on the hex key for easy manipulation.

Step 3



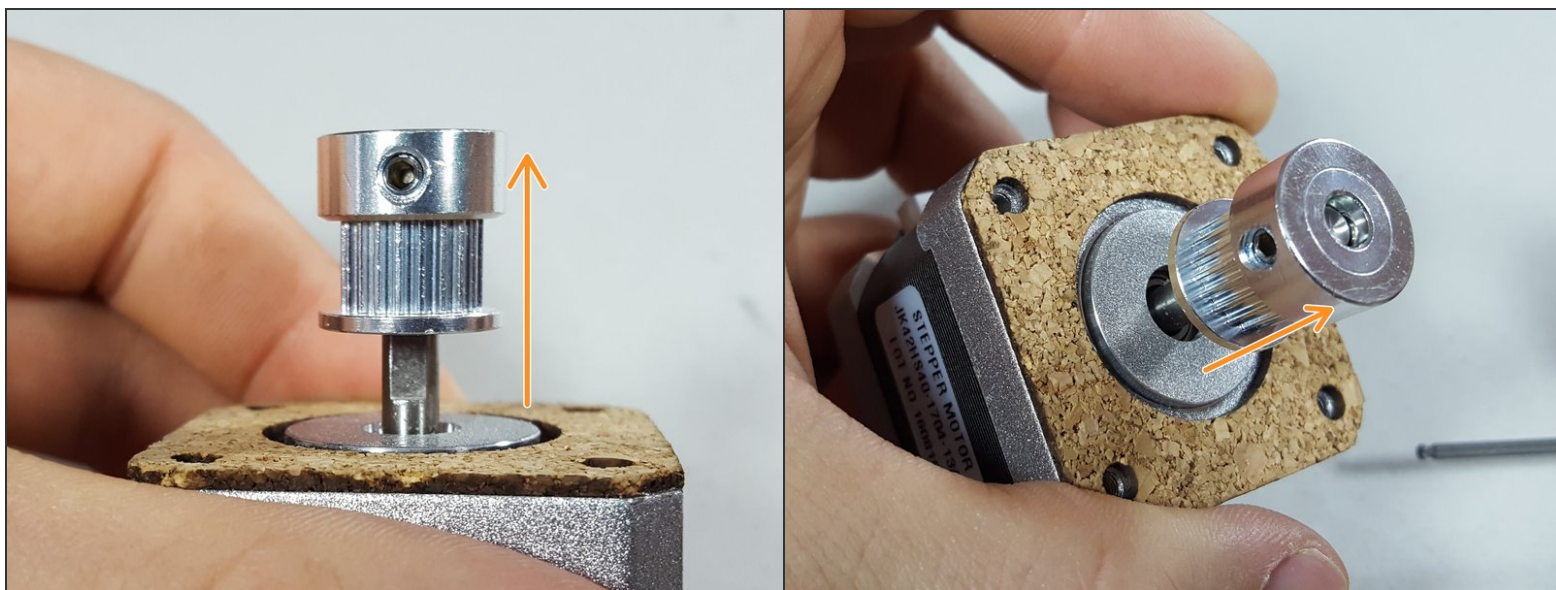
- One of the set screws may be shorter than the other one.
- That's nice, but not necessary. If your two set screws are identical, don't worry about it.

Step 4



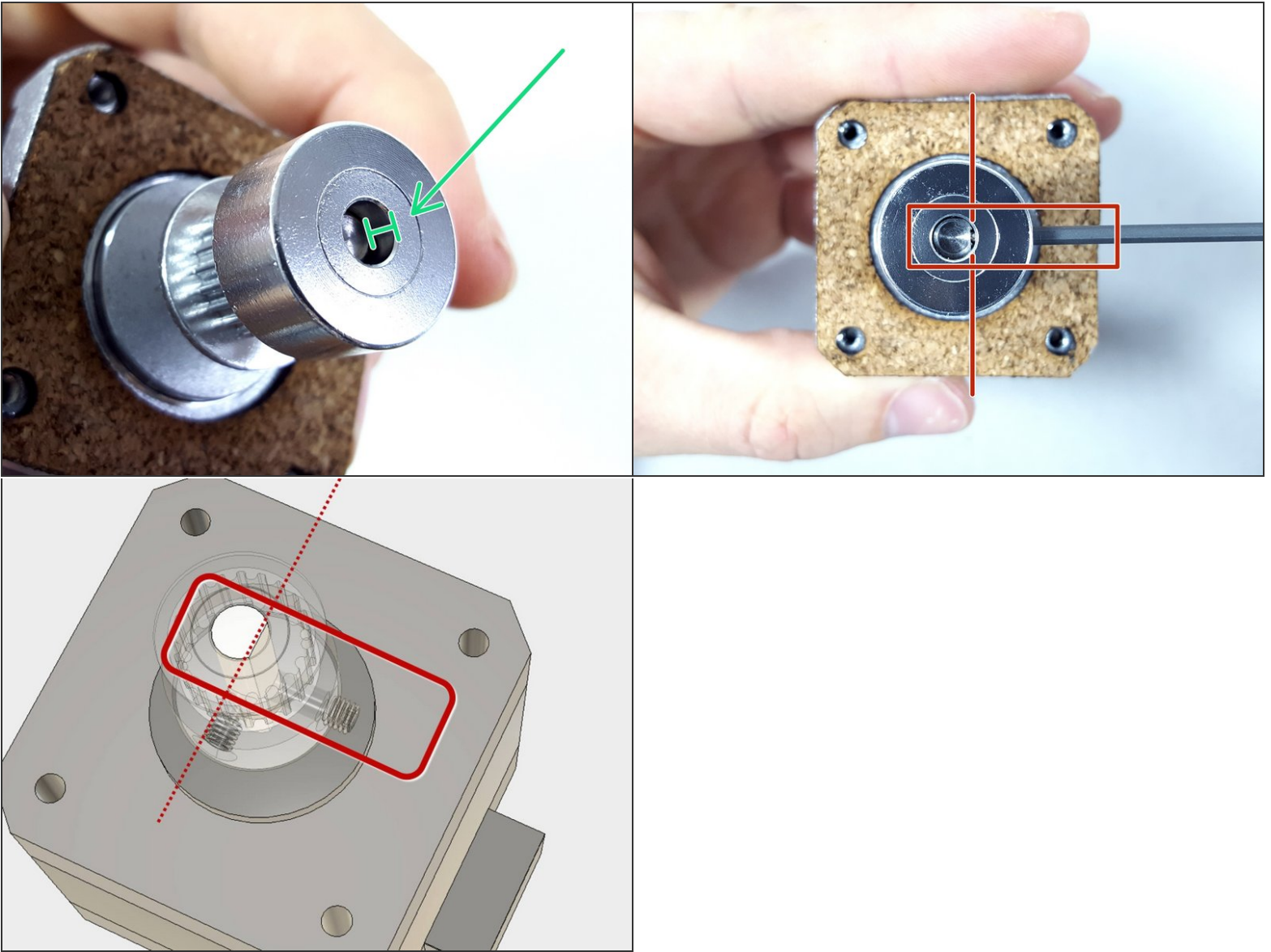
- Re-insert both set screws into the pulley.

Step 5 — ↪ X Pulley



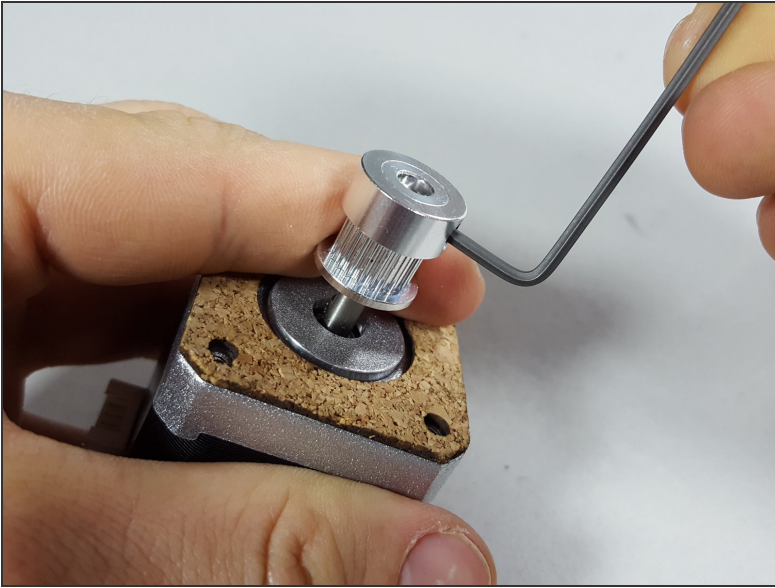
- Slide the X pulley onto the X motor shaft.
- The set screws in the pulley should be on the side**away** from the motor.
 - (This is the opposite of the Y motor pulley!)

Step 6




- Slide the pulley as far away from the motor as you can.
 - The X pulley will be extending about 3mm (0.12") beyond the top of the X motor shaft.
 - The set screws should still fully grip the motor shaft.
 - Tighten the longer set screw against the FLAT side of the motor shaft
- ⚠ The X motor pulley alignment is very different from Y motor pulley. Follow the instructions closely.

Step 7



- Tighten the set screws well. We do not want these to be loose.

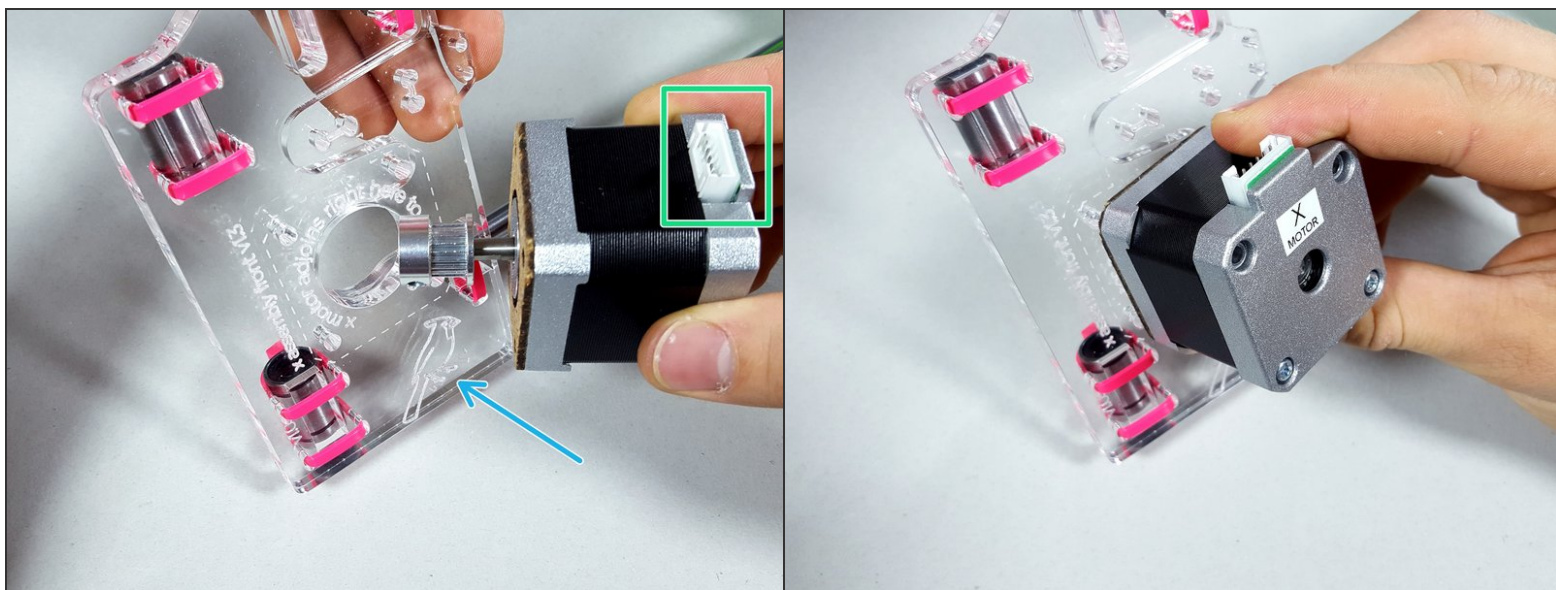
 *Tightening well* does not mean tightening with unrestrained force. You can strip the set screw threads or its hex head if you use too much force.

Step 8 — ↳ X Motor



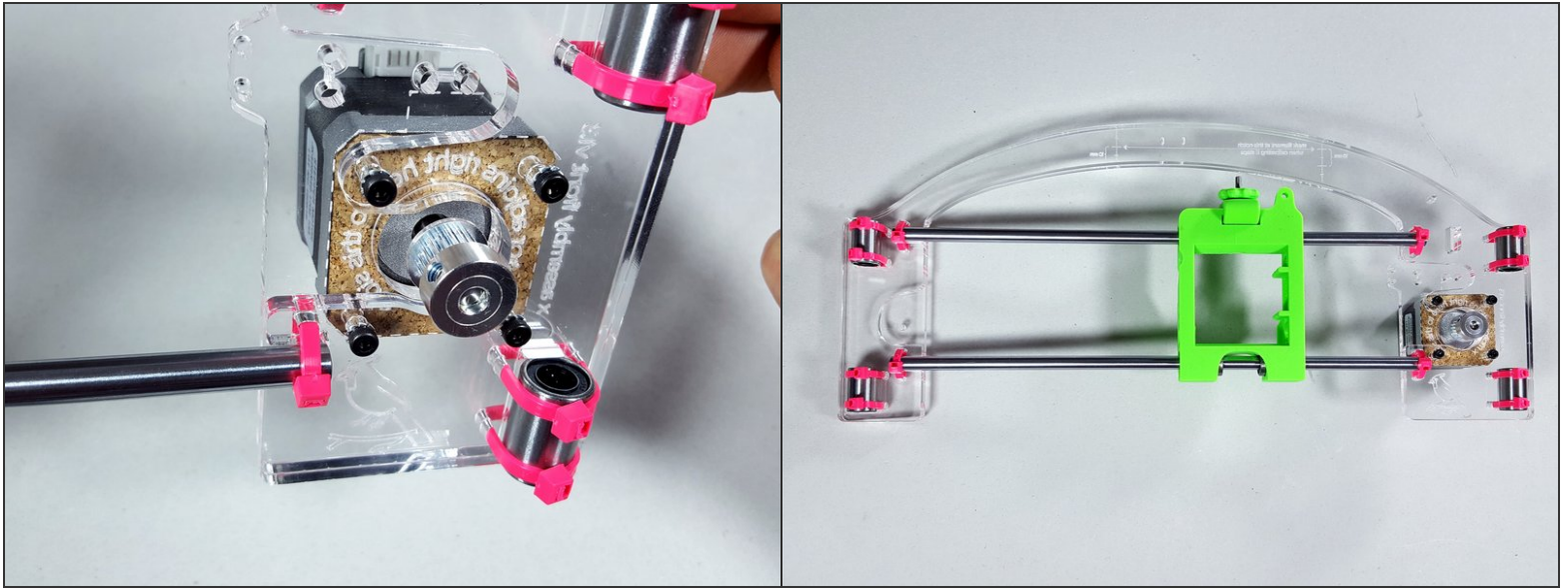
- M3x16 screws (4)
- M3 serrated washers (4)

Step 9



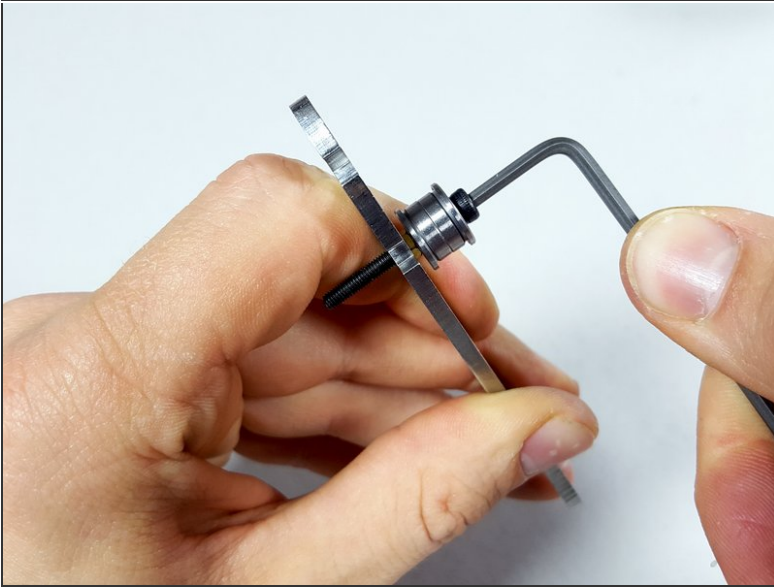
- Align the X motor with the front 'bird' acrylic piece.
- Make sure the X motor connector is facing upwards.
- Follow the instructions etched on the X assembly: "X Motor adjoins right here to this side", and adjoin the motor.

Step 10



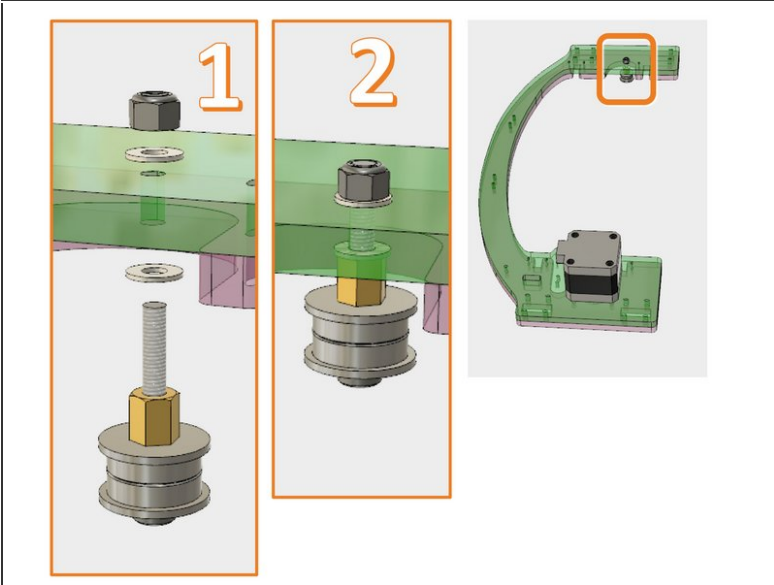
- Secure the X motor with the M3x16 screws and serrated washers.
- Use the revered ["cross-tightening" technique](#) for proper alignment and force distribution.

Step 11 — ↪ X Idler



- Two idler bearing halves
- M3x25 socket head screw
- 4mm hex spacer (That's the **shorter** one of the two spacers in JellyBOX!)
- Tighten well.
- Tip: The IMADE3D wrench has a special slot just for the spacers as they are slightly smaller than regular M3 nuts.

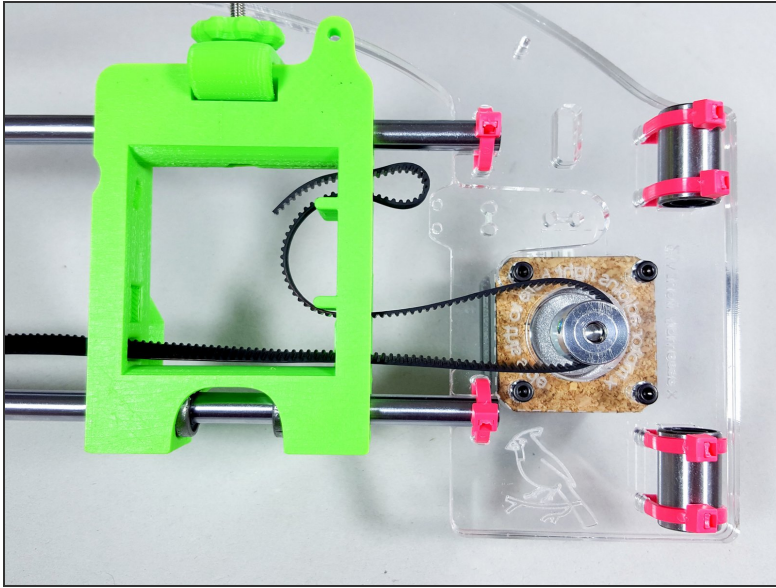
Step 12



- Place an M3 regular washer on either side of the acrylic.
- Secure with an M3 nylock.
- Tighten well, but careful not to crack the acrylic.

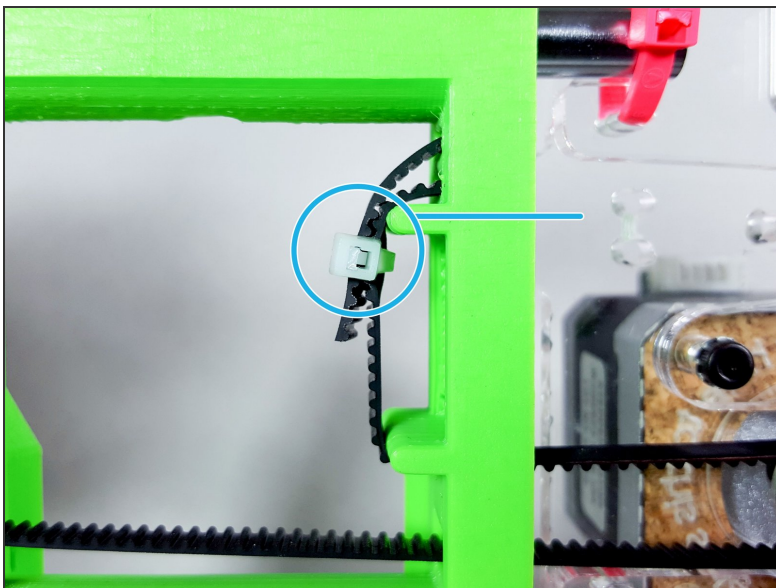
⚠ Make sure the idler bearings are on the back side (the one with smooth rods, linear bearings, and the motor pulley).

Step 13 — ↳ X Belt



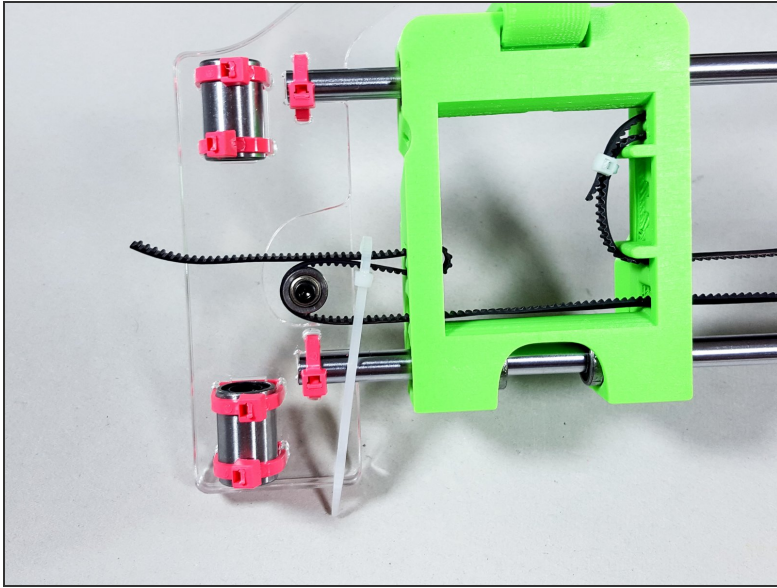
- Thread the X Belt through the X carriage, around the X motor pulley, and around the X idler.
- (Is this description useless? Maybe.)

Step 14



- Secure the loop with 4" zip tie directly below the upper post.
- The belt teeth should lock into each other.
- Tighten well.

Step 15



- Thread the belt around the idler and through the left side of the x carriage.
- (Well, the right side, but we are looking from behind).
- Hold with a loose 4" zip tie loop.
- (The belt teeth are not locking into each other; that's ok.)

Step 16



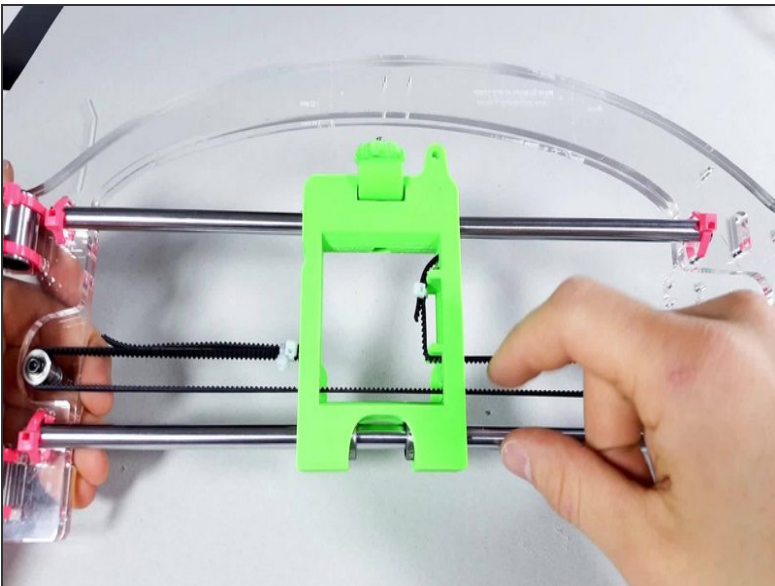
- Pull on the belt with moderate force, and tighten the loop.
- ① This is a good job for two. Have an assistant pull the belt while you focus on the zip tie.

Step 17



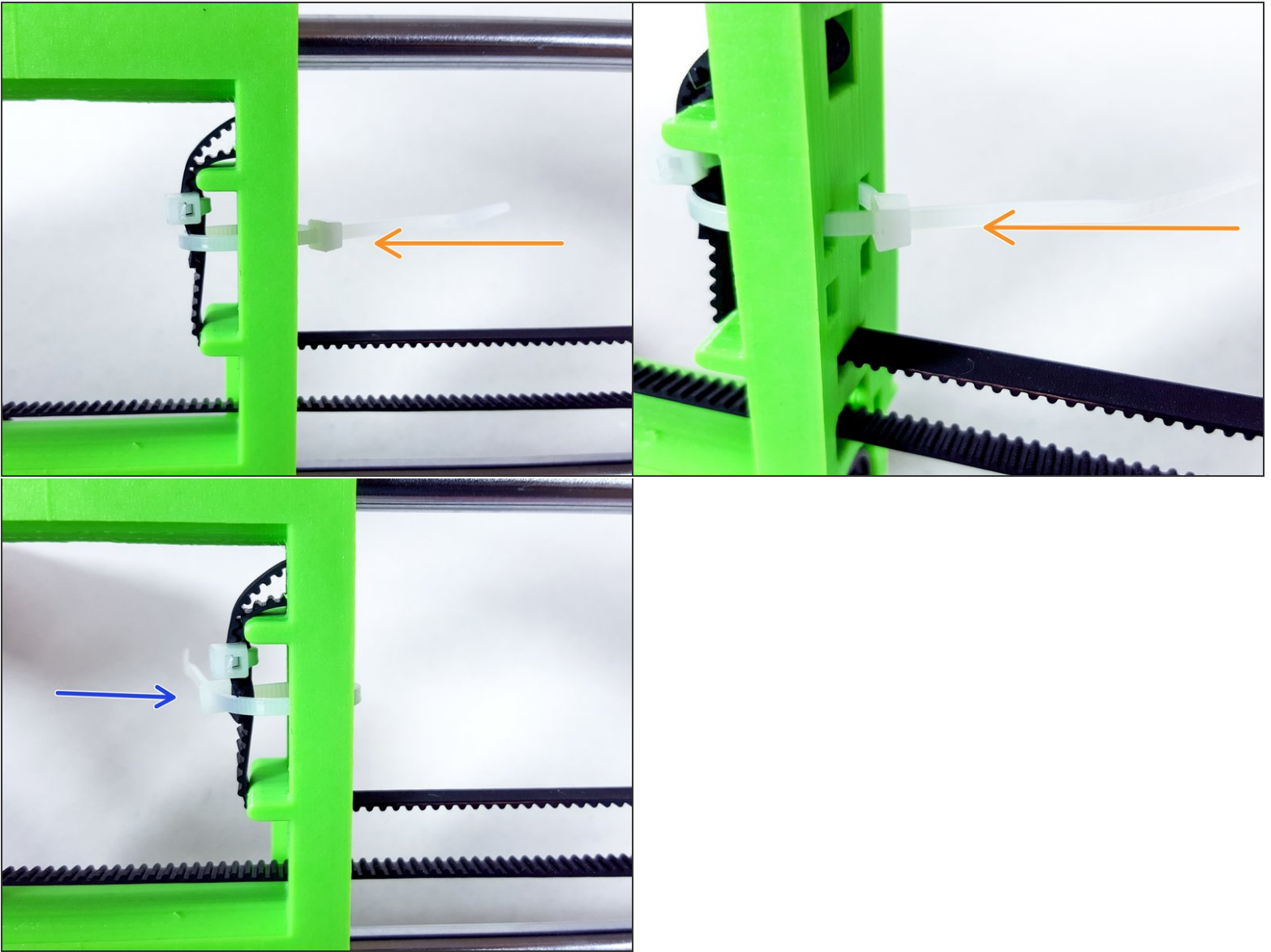
- Add a 2nd zip tie to make sure the loop is secure.
- Tighten well.

Step 18



- The belt can be tighter or a bit looser at this point. (Listen for the **sound** in the video.)
- We'll make it tune the tension in the next steps.

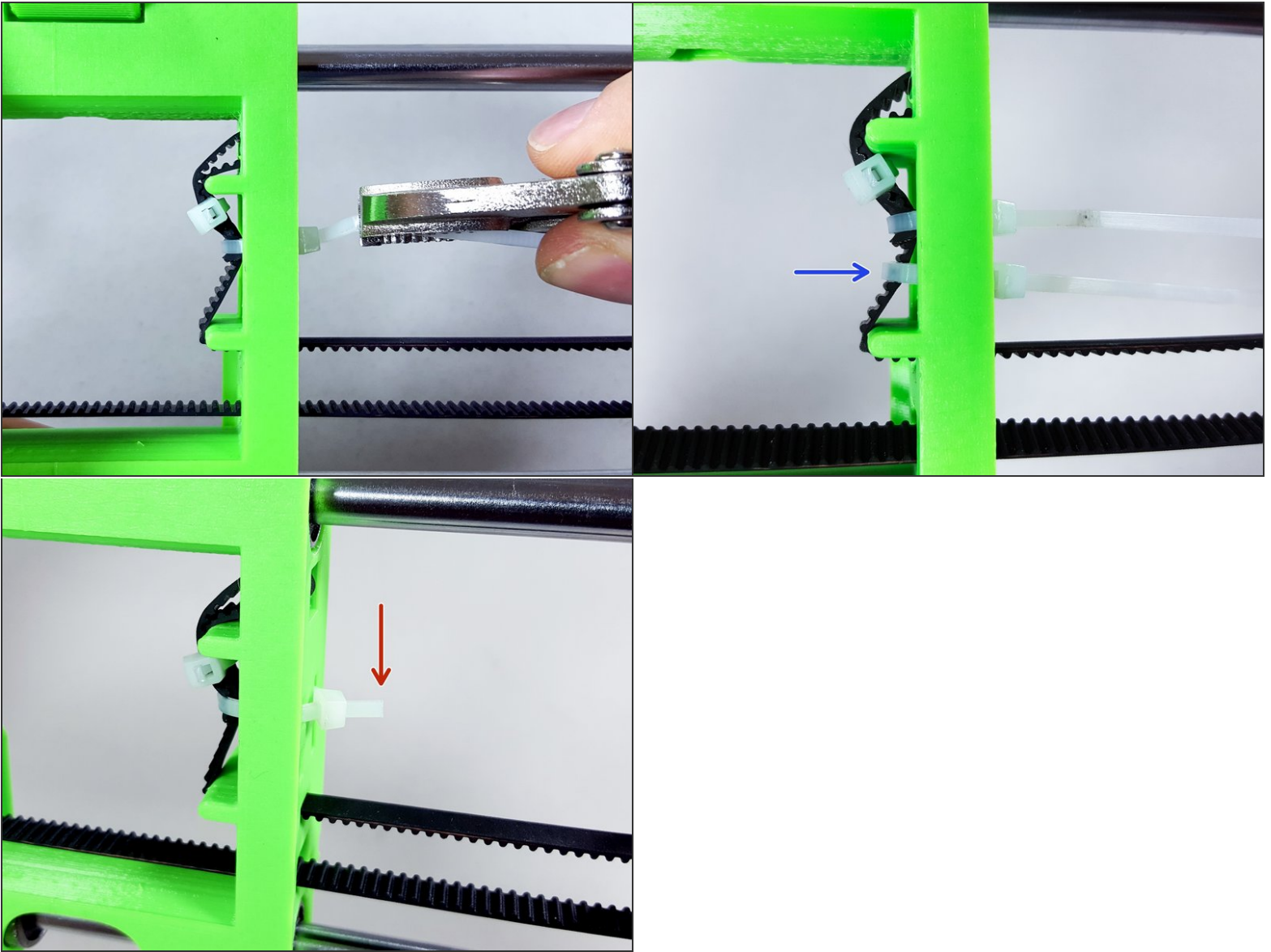
Step 19



- Make a loose 4" zip tie loop around the belt on the right side. This is the tensioning mechanism.

Overachiever's Tip: If it pleases your aesthetic sense, you can put the zip tie head on the inside of the X carriage instead. Potential future re-tightening will be a bit less comfortable, but it works as well. Make sure to have the zip tie tail exit towards the front then.

Step 20

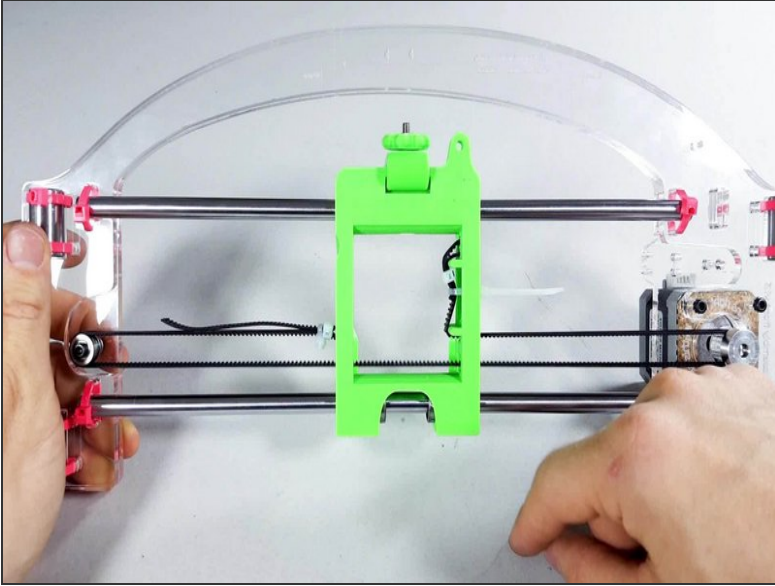


- Make the belt tighter by tightening this zip tie.

There's a slot for 2nd zip tie if one is not enough to get the belt tight. (Optional; as needed.)

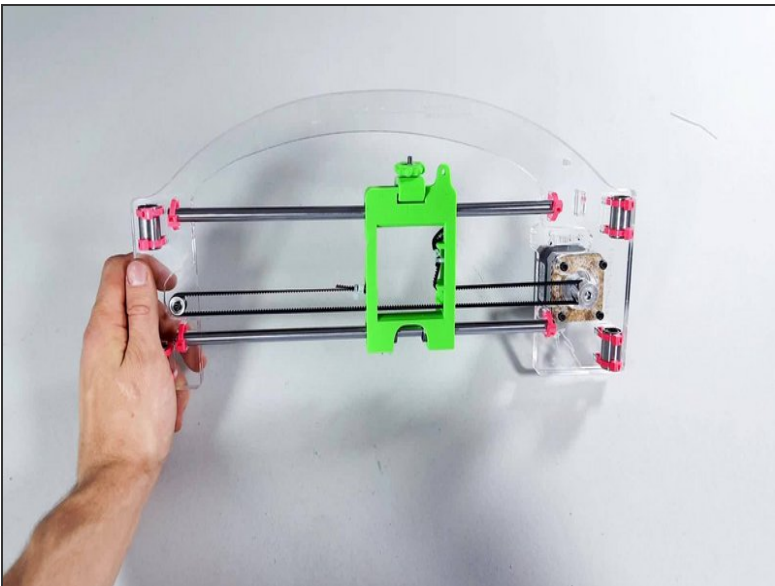
⚠ When you're done, you can clip the zip tie, but not fully. Make sure to leave enough so you can still grab it with vise grip for potential re-tightening.

Step 21



- **How tight is right?**
- We got the science: the belt should emit a moderately high pitch sound when plucked.
- You can always tweak the tension once you're printing.
- In general, a bit too tight is better than a bit too loose.

Step 22 — Mechanical Checkpoint.

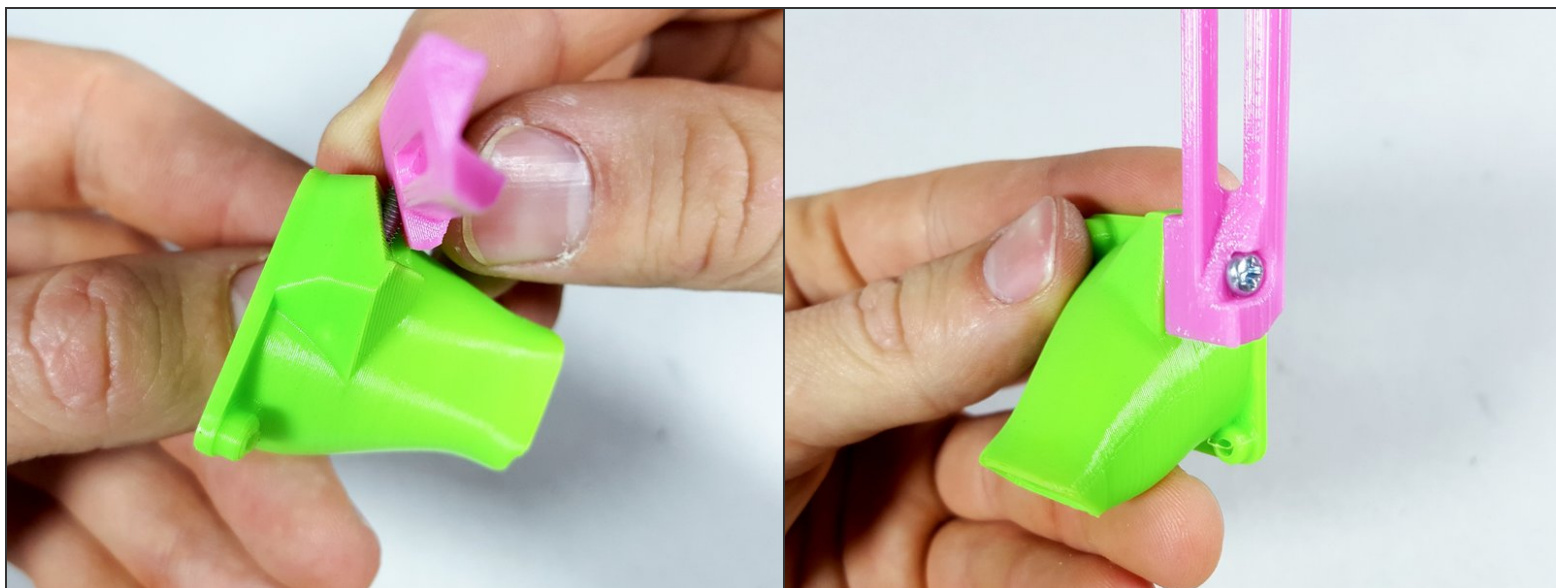


- Is everything is moving smoothly?
- Is the X carriage facing the right way?

Step 23 — ↳ Left Filament Fan

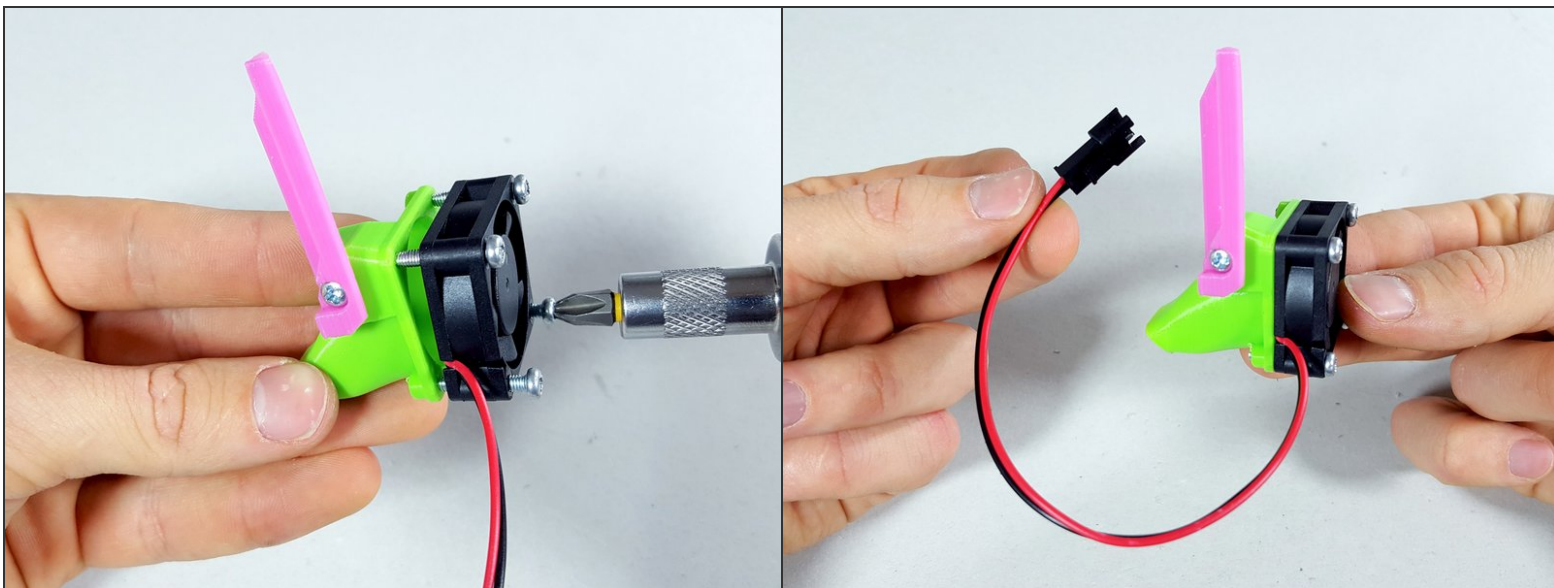
- You'll Need:
- Green left filament fan shroud
- Pink left filament fan mount
- Plastite screw (5)
- 30mm fan

Step 24



- Connect the shroud and the mount with a plastite screw.

Step 25



- Attach a small 30mm filament fan to the shroud with four plastite screws.

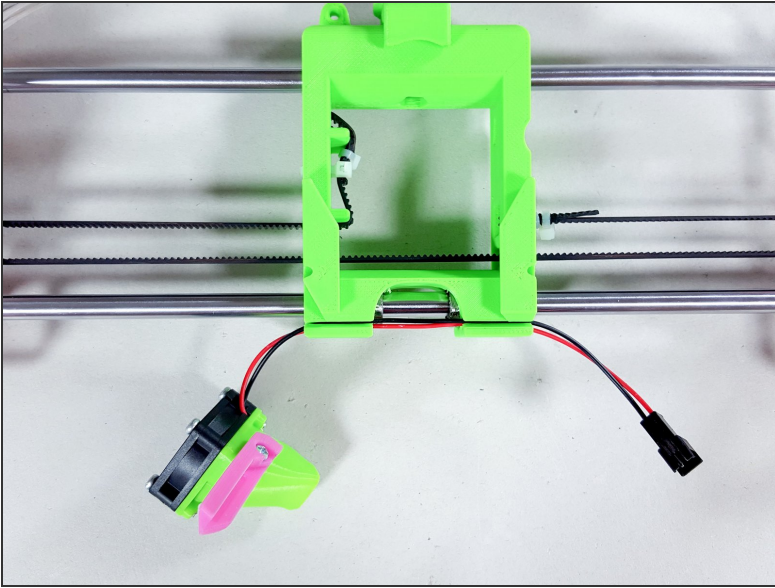
⚠ Pay attention to the orientation of the fan cable.

Step 26



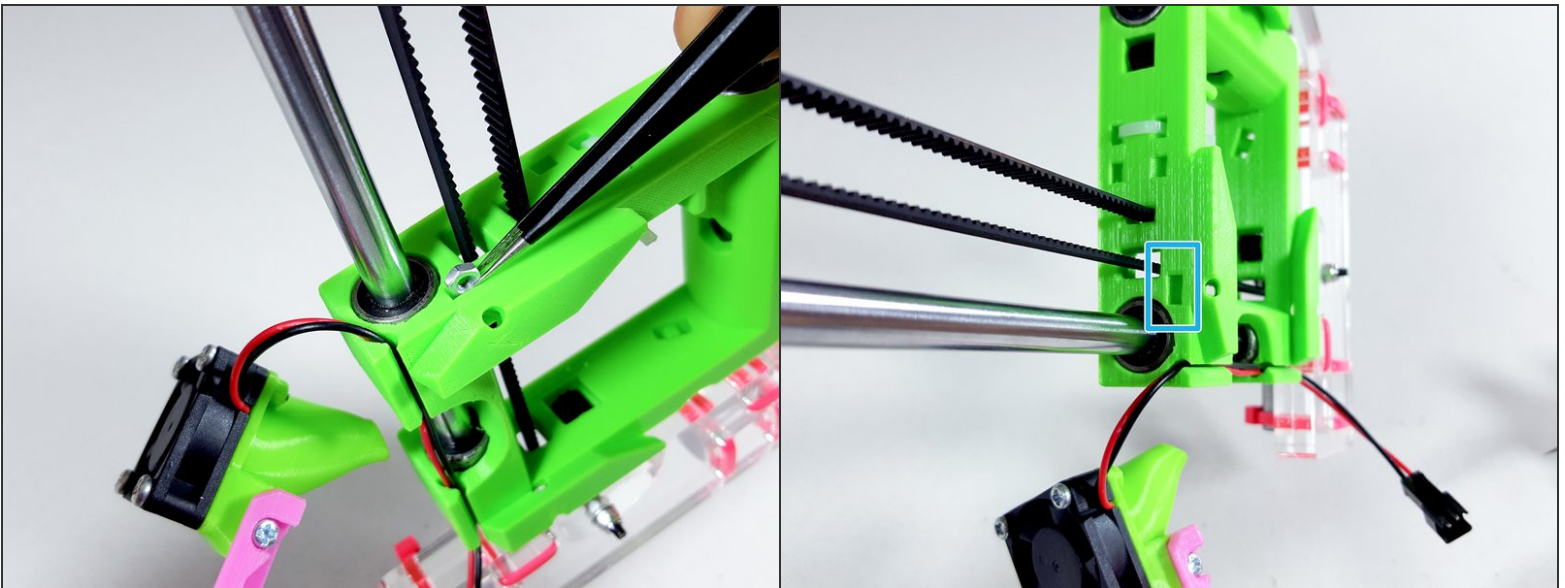
- M3x12 screw
- M3 regular washer
- M3 regular nut

Step 27



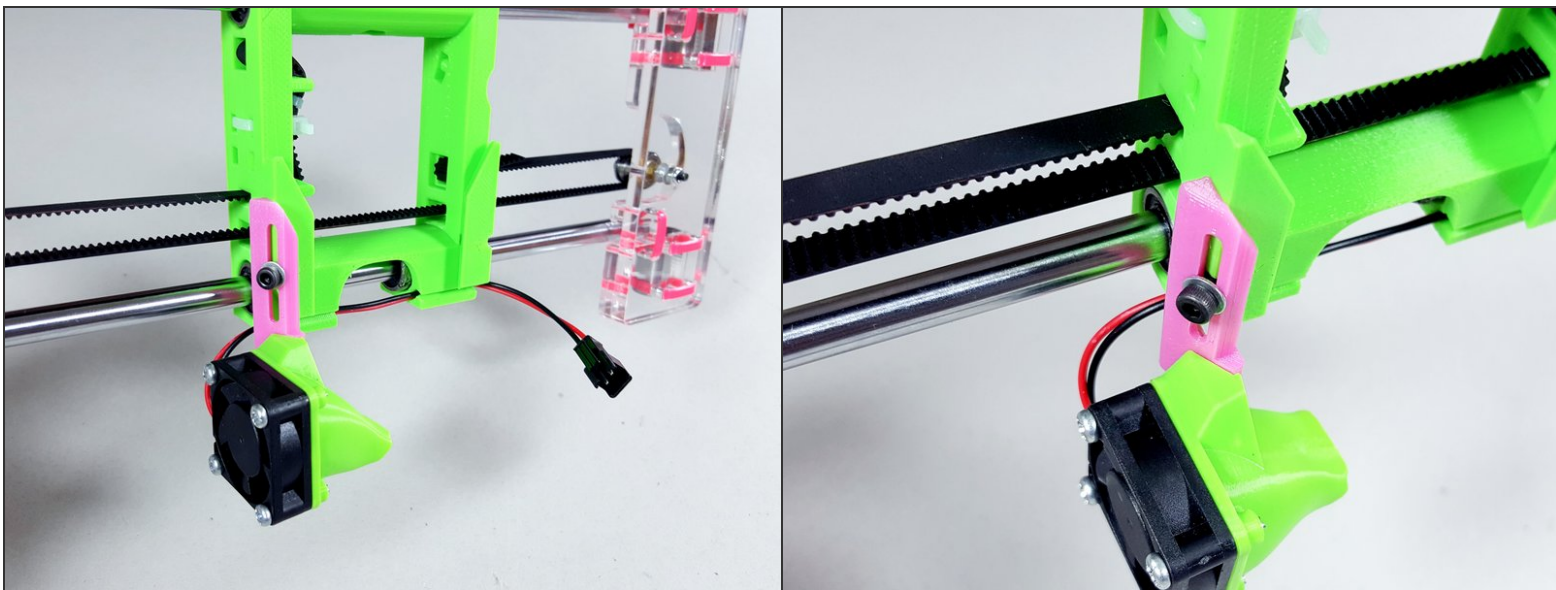
- Place the wire from the fan in the slot running along the bottom of the carriage.

Step 28



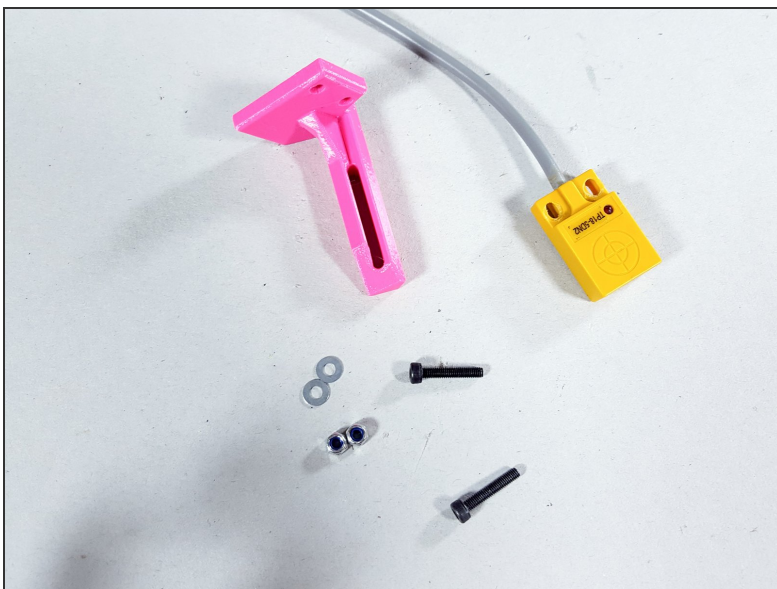
- Insert a regular M3 nut into a slot on the left side of the X carriage.

Step 29



- Attach the Left Fan to the X Carriage with an M3x12 screw and a regular M3 washer.

Step 30 — ↪ Z Probe

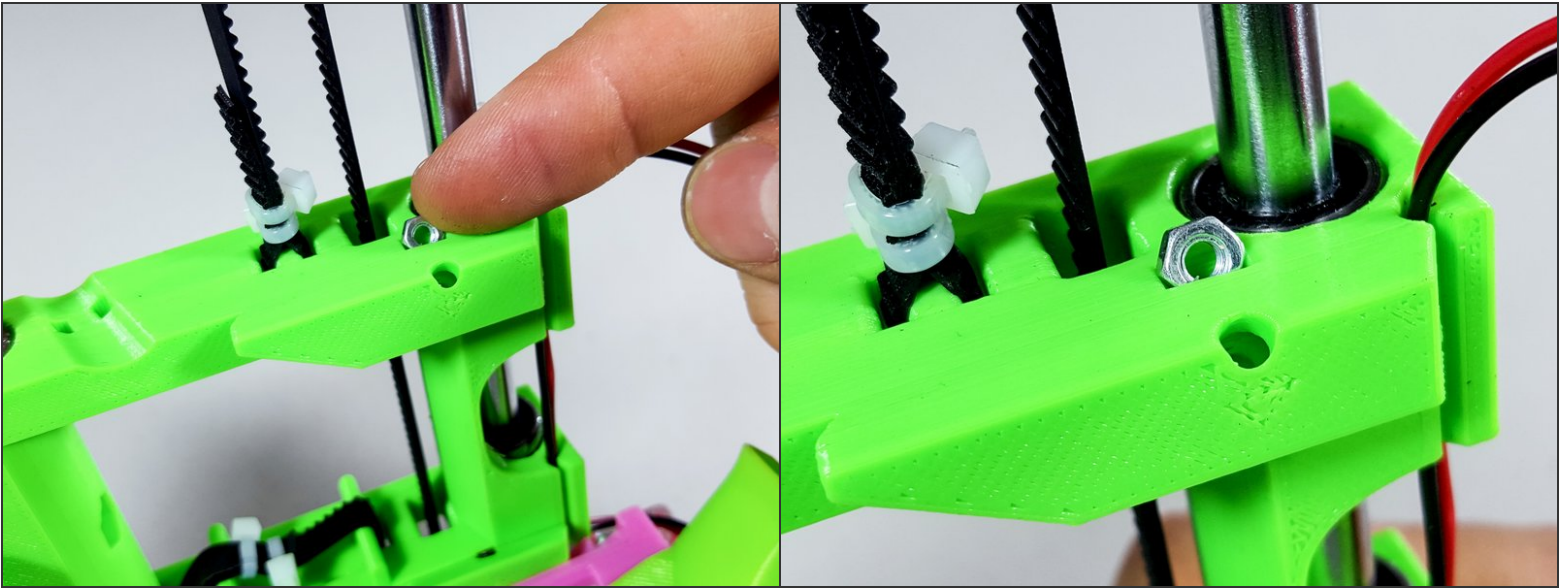


- M3x16 screw (2)
- M3 nylock (2)
- M3 regular washer (2)

Step 31

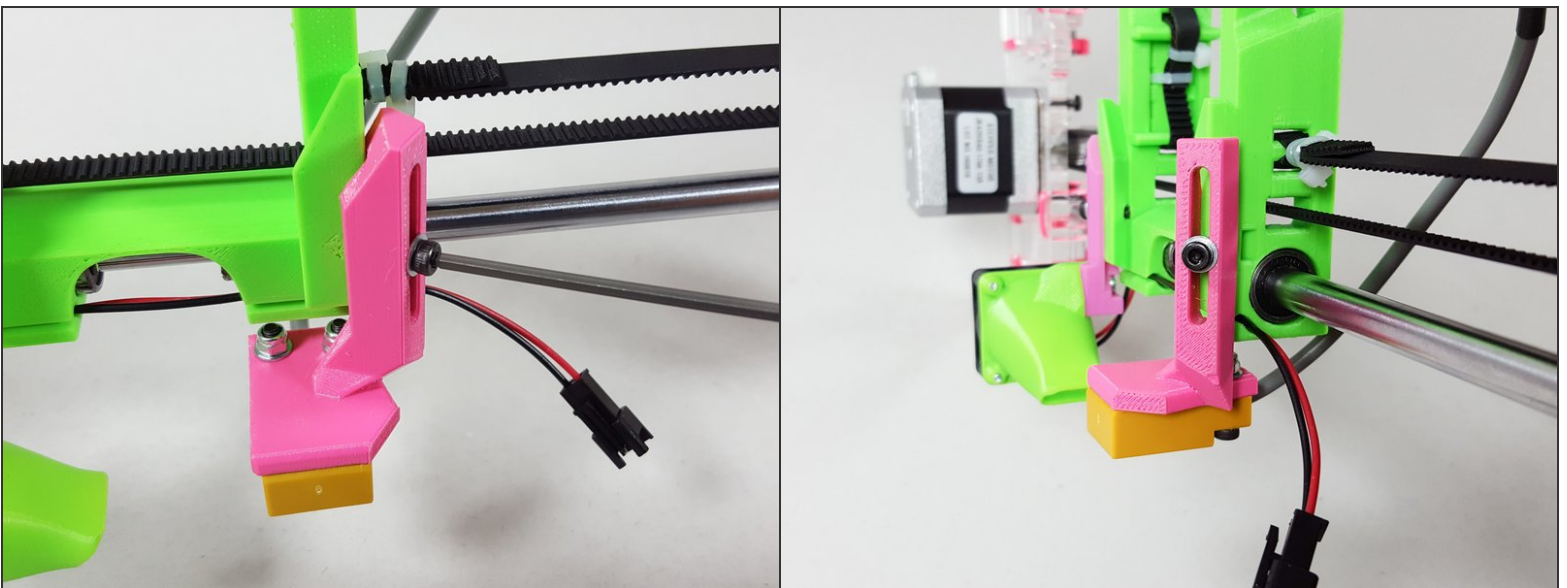


Step 32



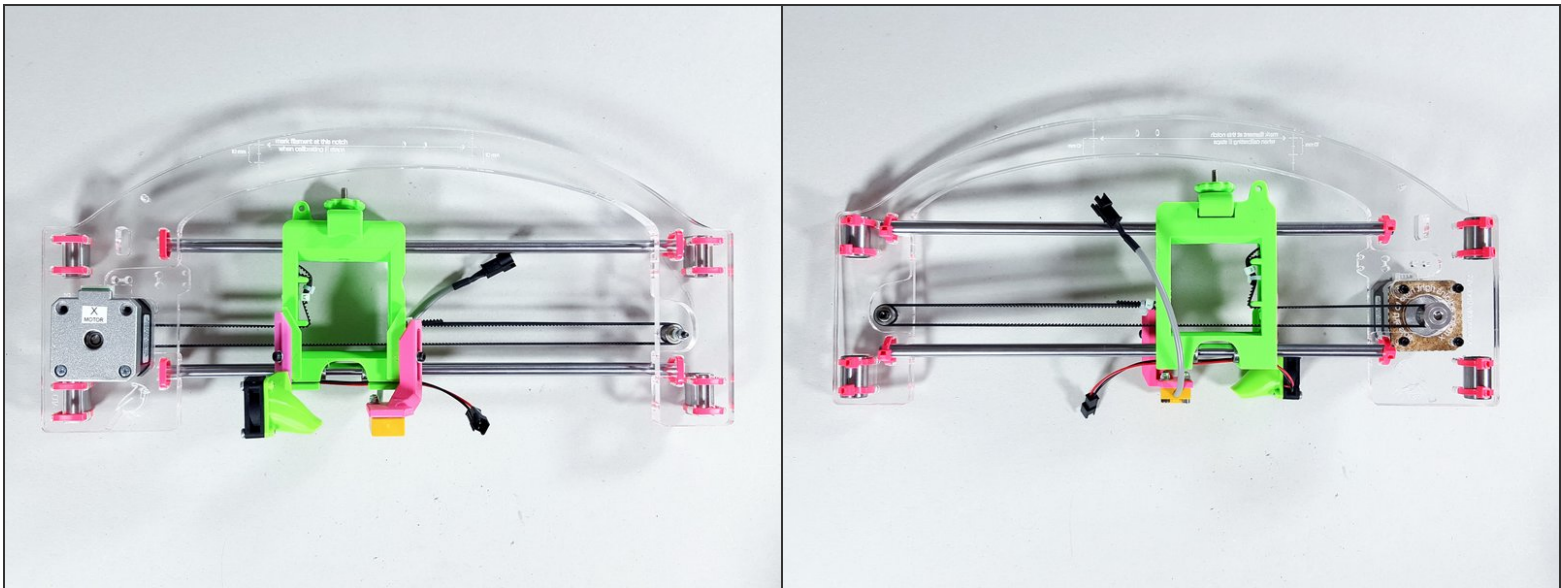
- Insert a regular M3 nut into a slot on the right side of the X carriage.

Step 33



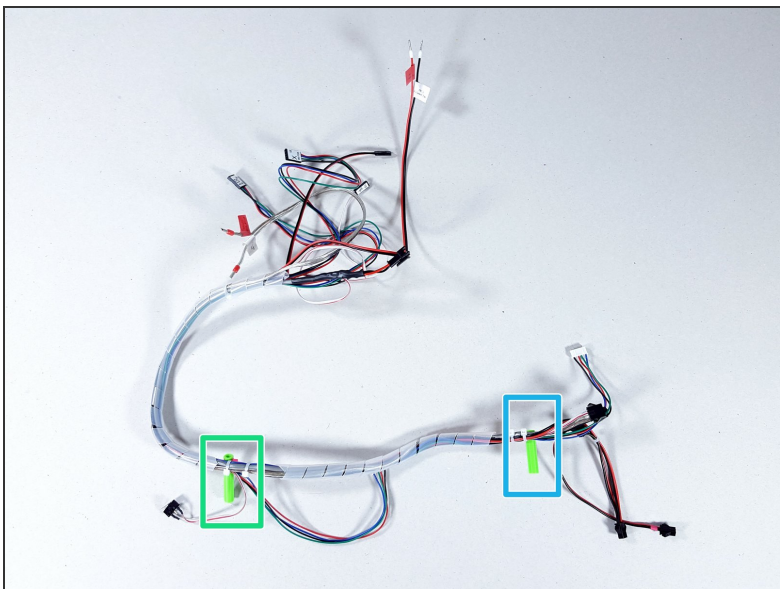
- Attach the Z probe to the X Carriage with an M3x16 screw and a regular M3 washer.
- Don't worry too much about how high your proximity sensor is. We'll adjust that later.

Step 34 — X Assembly Mechanical Checkpoint



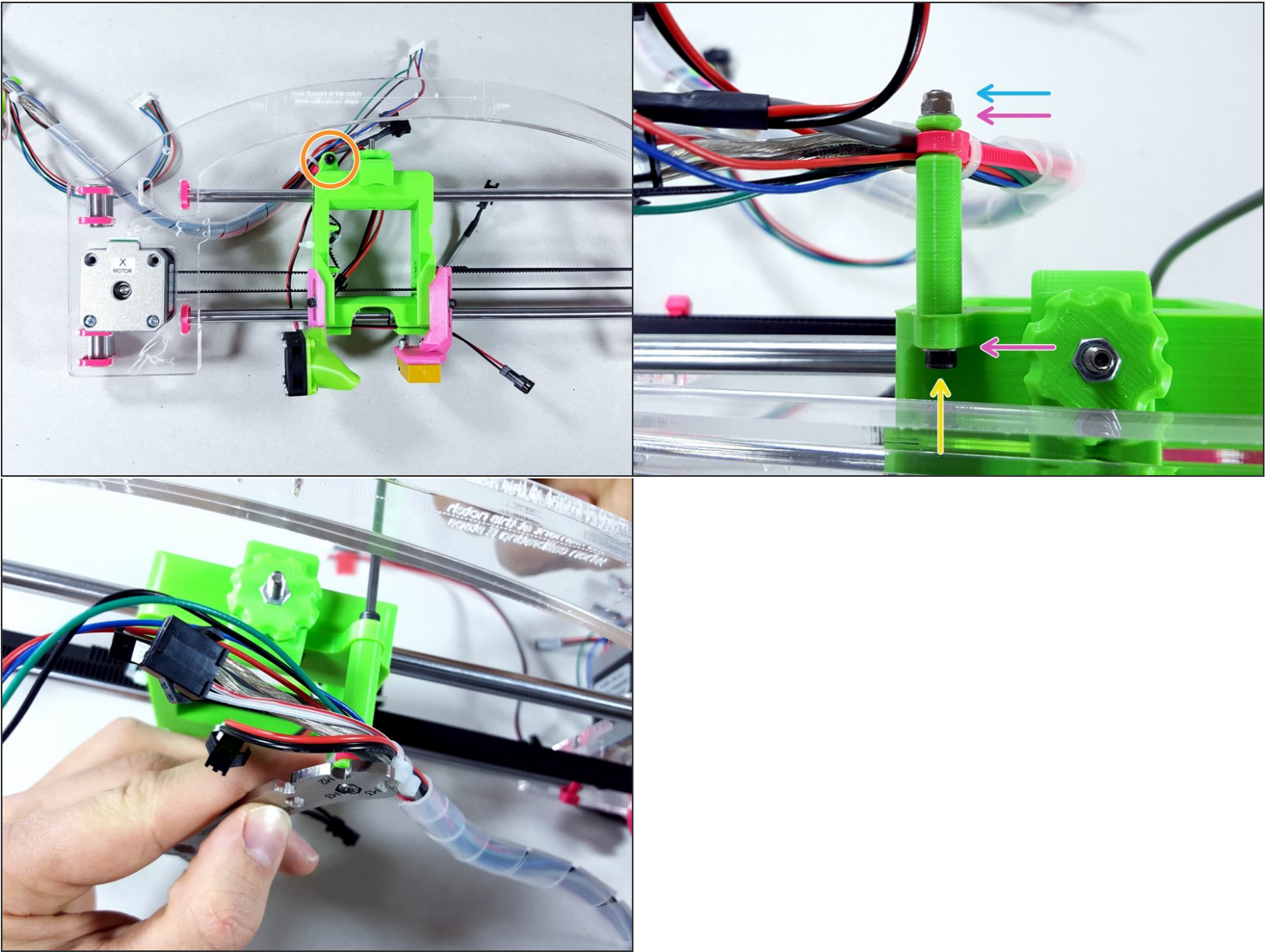
- Done!
- This is what should be in front of your eyes.

Step 35 — ↵ X Wire Harness



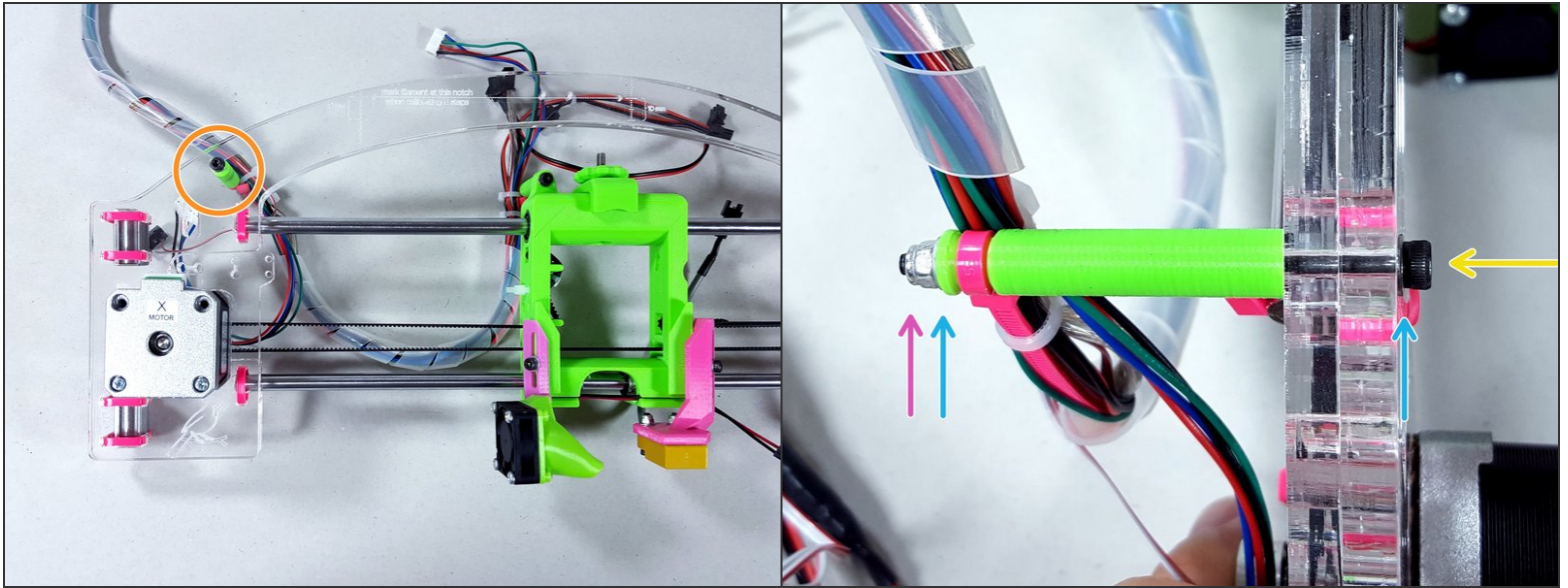
- There are two stand-offs attached to the x wire harness.
- Short stand-off.
- Long stand-off.
- ❗ "Wire" or "cable harness" is simply an industry term for an assembly of wires.

Step 36



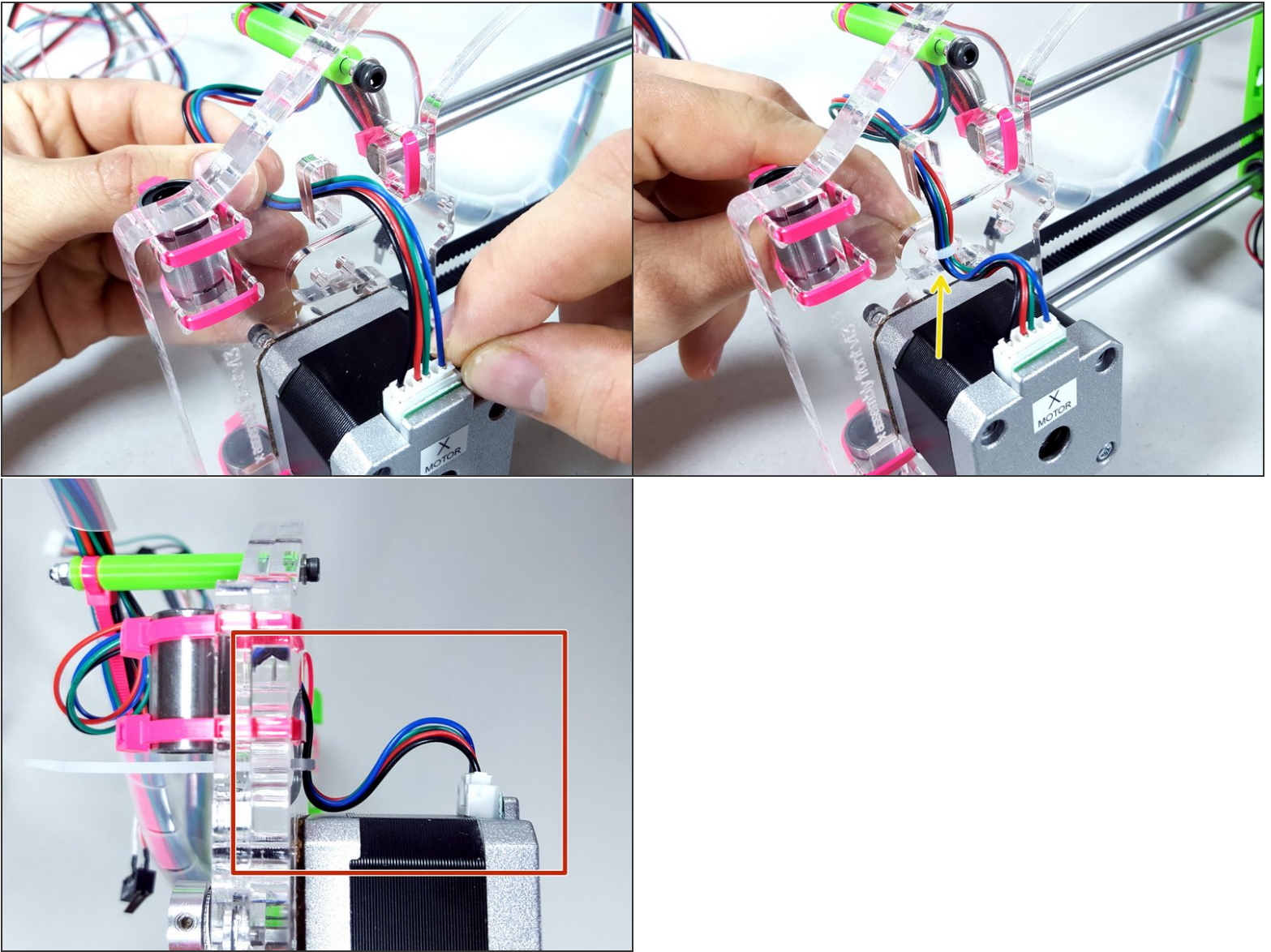
- Attach the short stand-off to the X carriage.
- M3 nylon locknut (1)
- M3 regular washer (2)
- M3x45 bolt (1)


Step 37



- Attach the long stand-off to the acrylic.
- M3 nylon locknut (1)
- M3 regular washer (2)
- M3x60 bolt (1)

Step 38



 Color and order of the wires can be different from the ones in the picture.

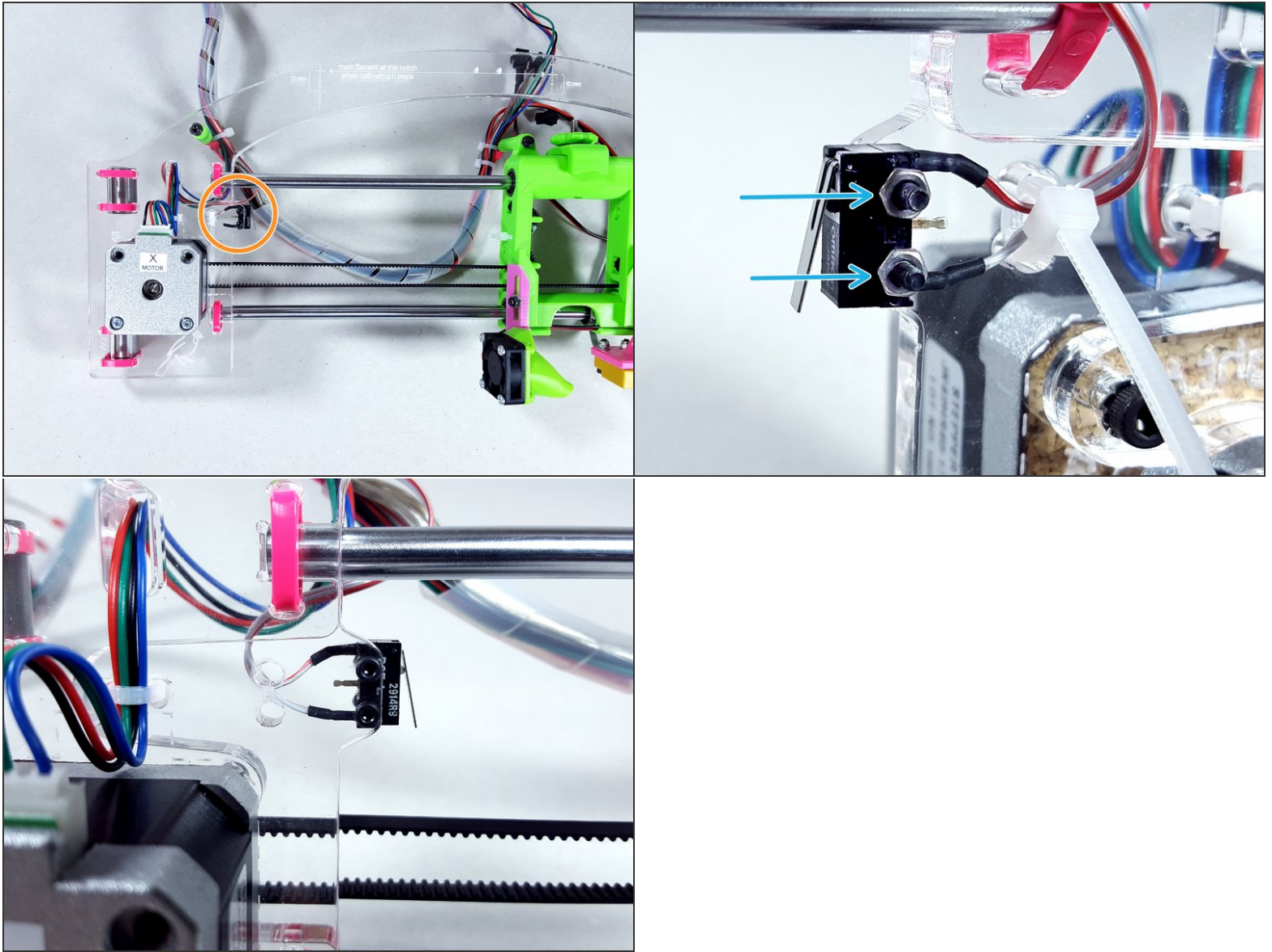
- Thread the X motor wire through the acrylic.

- 4" zip tie

 You **must** shape the wire into an "S".

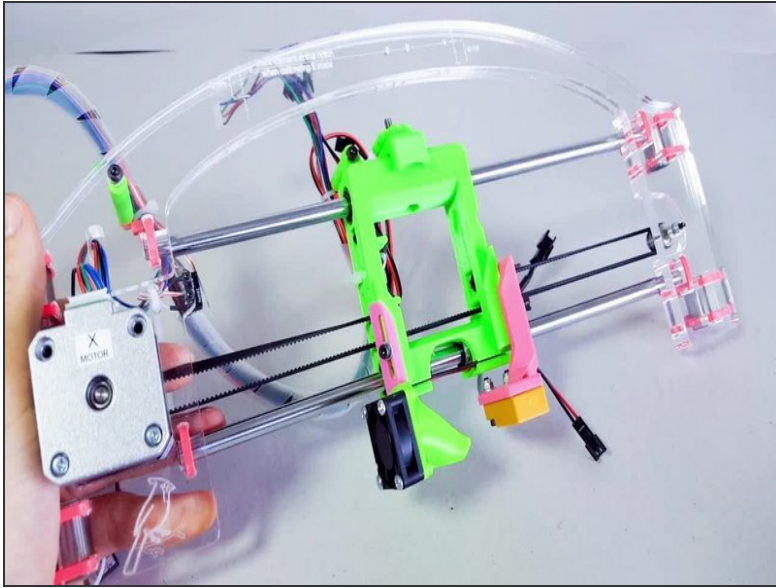
- This protects the connector from side tension, and makes sure the wires are out of the way all along the Z axis.

Step 39



- X endstop
- Two M2x16 screws and two M2 nuts.
- Secure the wire with a 4" zip tie.

Step 40 — ↳ Quick Release Extruder



- This is a good time to train HOWTO insert and remove the extruder.
 - For more detailed instructions, follow the "[Insert the Extruder](#)" guide.
- ⚠ Do not pinch the hotend wires. Make sure they go **underneath** the x carriage.

Conclusion.