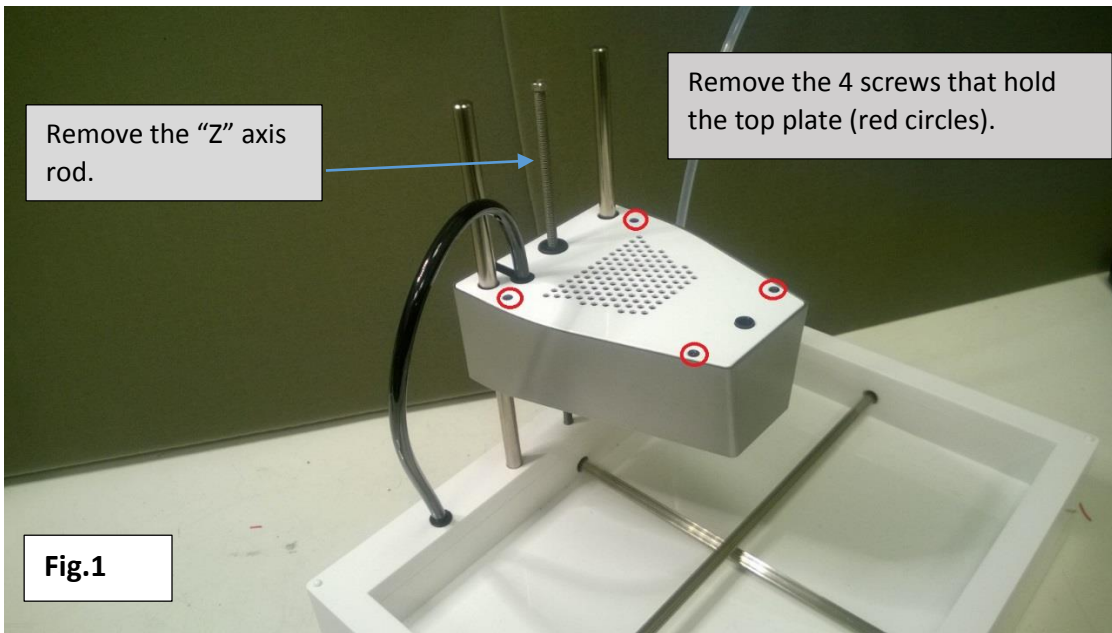


1. Tools required:

- a. an 8mm spanner wrench, 10mm spanner wrench or a small adjustable wrench
- b. a #2 Philips screws driver
- c. Optional – needle nose pliers, wire cutters

2. Procedure – Uninstalling carriage:

- a. Unplug the printer.
- b. Remove the build tray if possible
- c. Unscrew the 4 carriage cover screws on the top of the carriage but DO NOT remove the cover yet.
- d. Unscrew the Z-Axis lead screw from the base of the printer with the 8mm wrench.



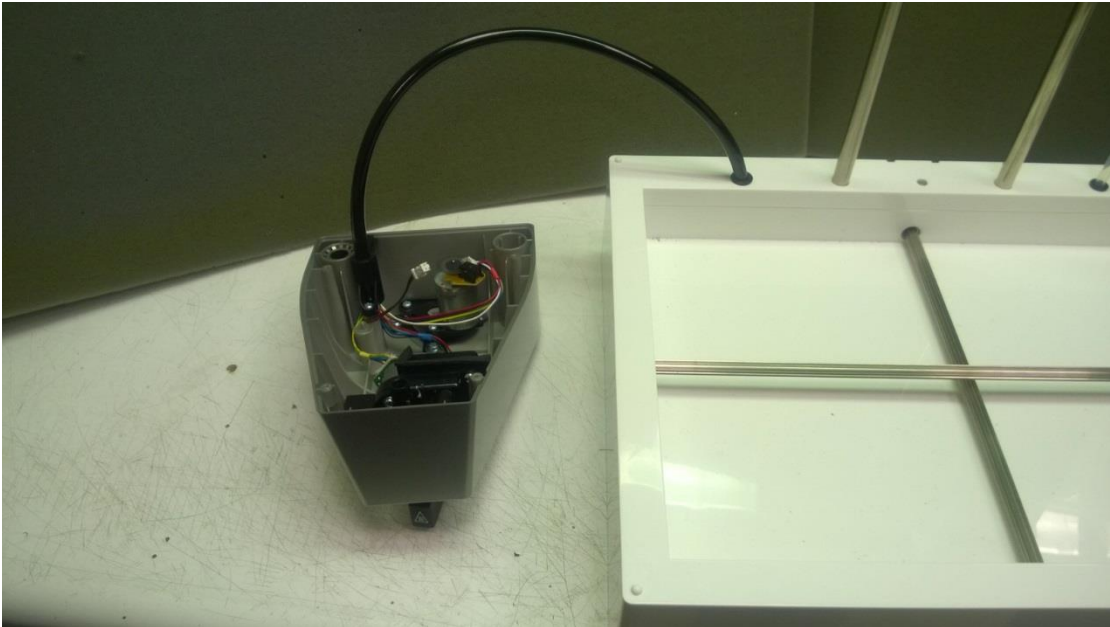
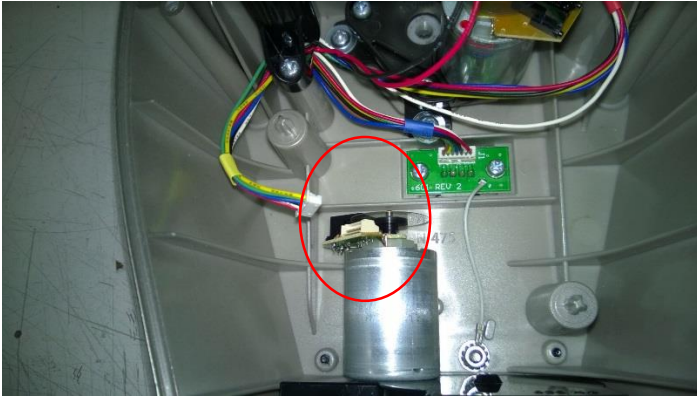
- e. Raise the carriage body up to almost the top of travel by hand.
- f. Lift the carriage cover off of the carriage, clearing the vertical guide rods. As shown in Fig. 2
- g. Pull the carriage cover off the printer by slipping it past the harness conduit and set the cover aside.



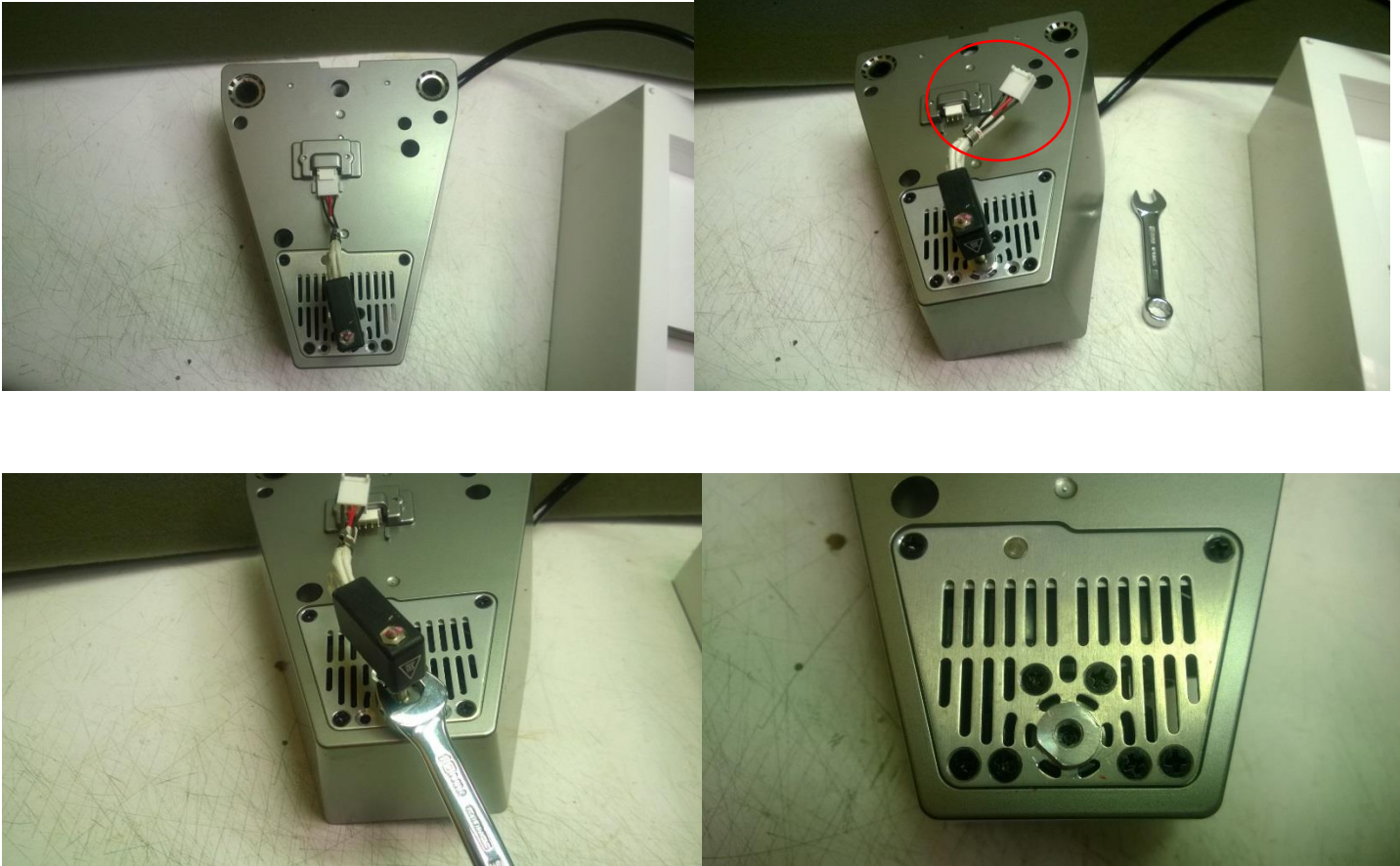
- h. Bring the carriage back down gently and let it rest in place. The hot end will touch the pinion rods at this moment.
- i. Lift off the blower and unplug it from the harness.



- j. Unplug the motor connection to the extruder assembly (yellow band).
- k. Gently lift the carriage off of the vertical rods until free of the printer.



- I. Flip the Carriage on its topside.
- m. Remove the hot end from the carriage, first unplug the wiring. Next using a 10mm wrench or adjustable wrench hold the aluminum bushing that the hot end is screwed in to. Rotate the hot end counter clockwise to remove.

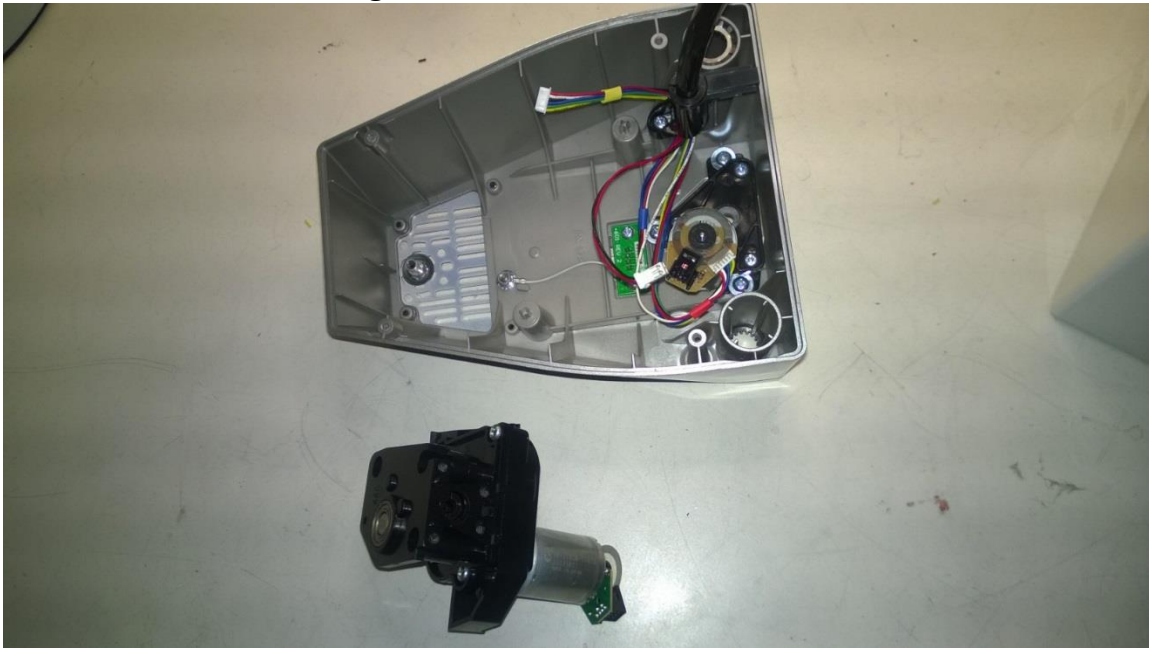


3. Extruder removal

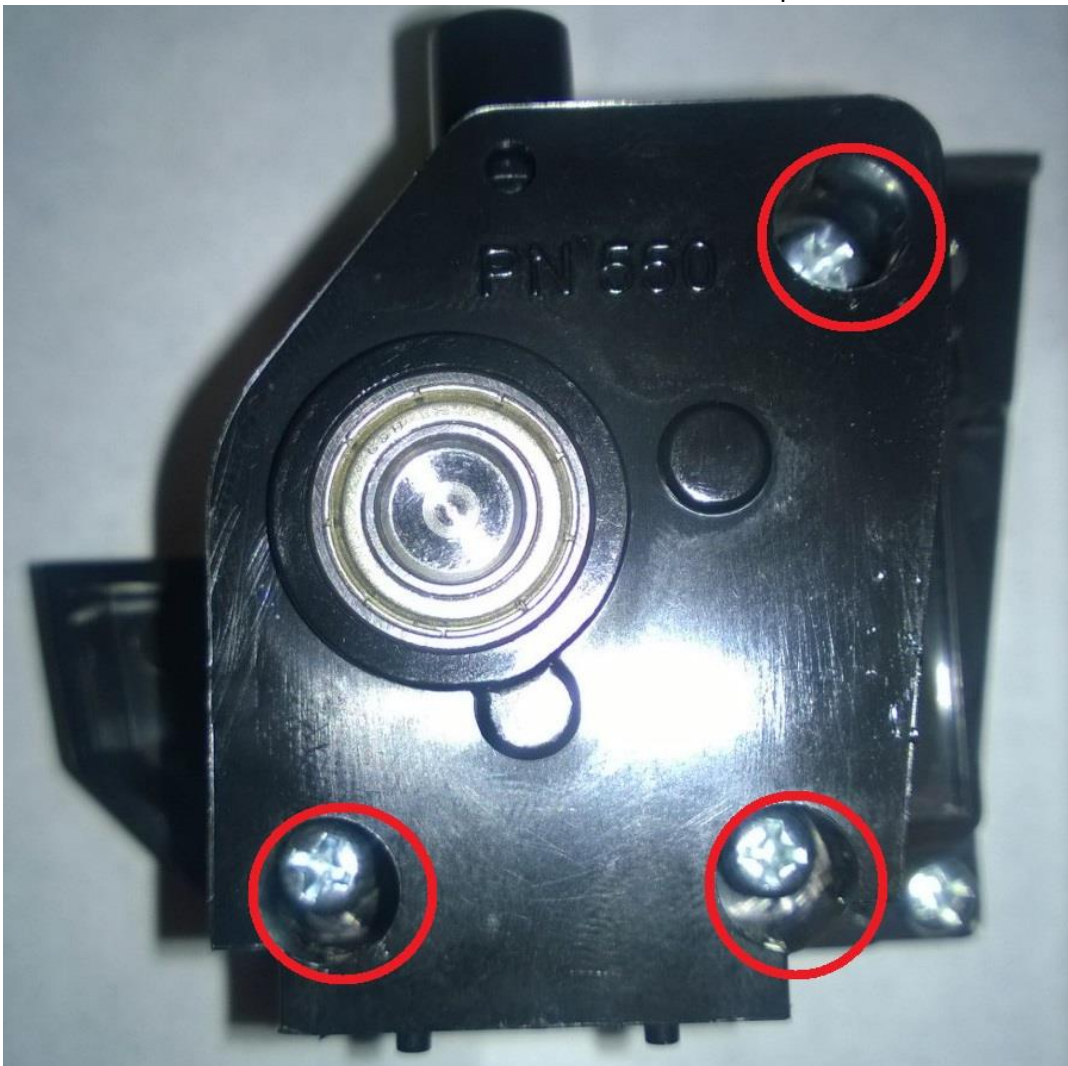
- a. With the carriage still on its top side, remove the 4 screws circled in red.



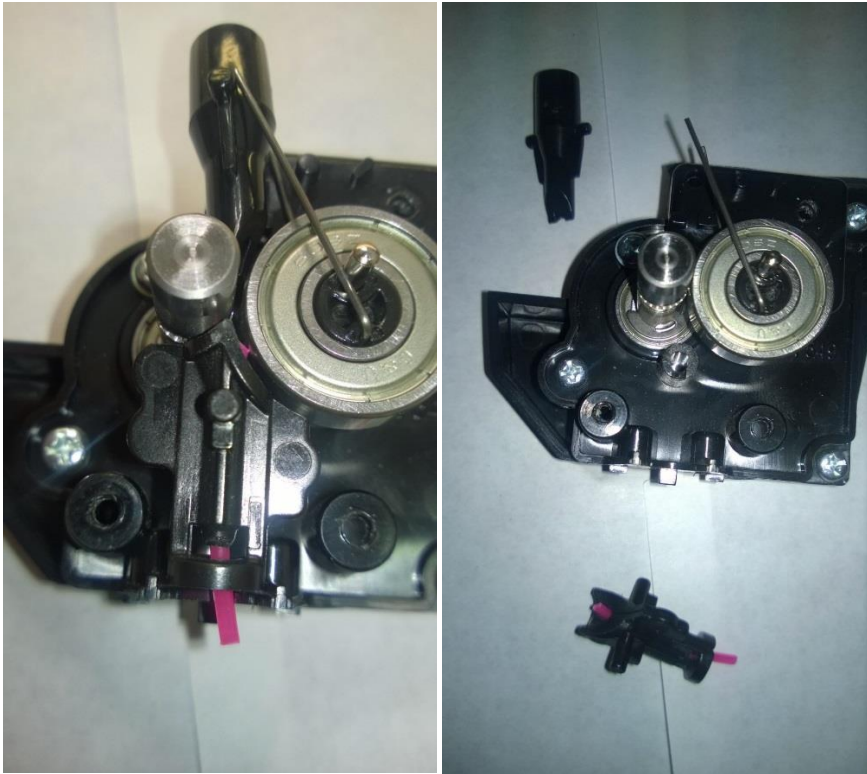
- b. This should allow the extruder assembly to fall out, if the assembly does not come out you may need to rock the assembly a little to free it from the carriage.



- c. Remove the 3 cover screws that holds the outer cover in place.



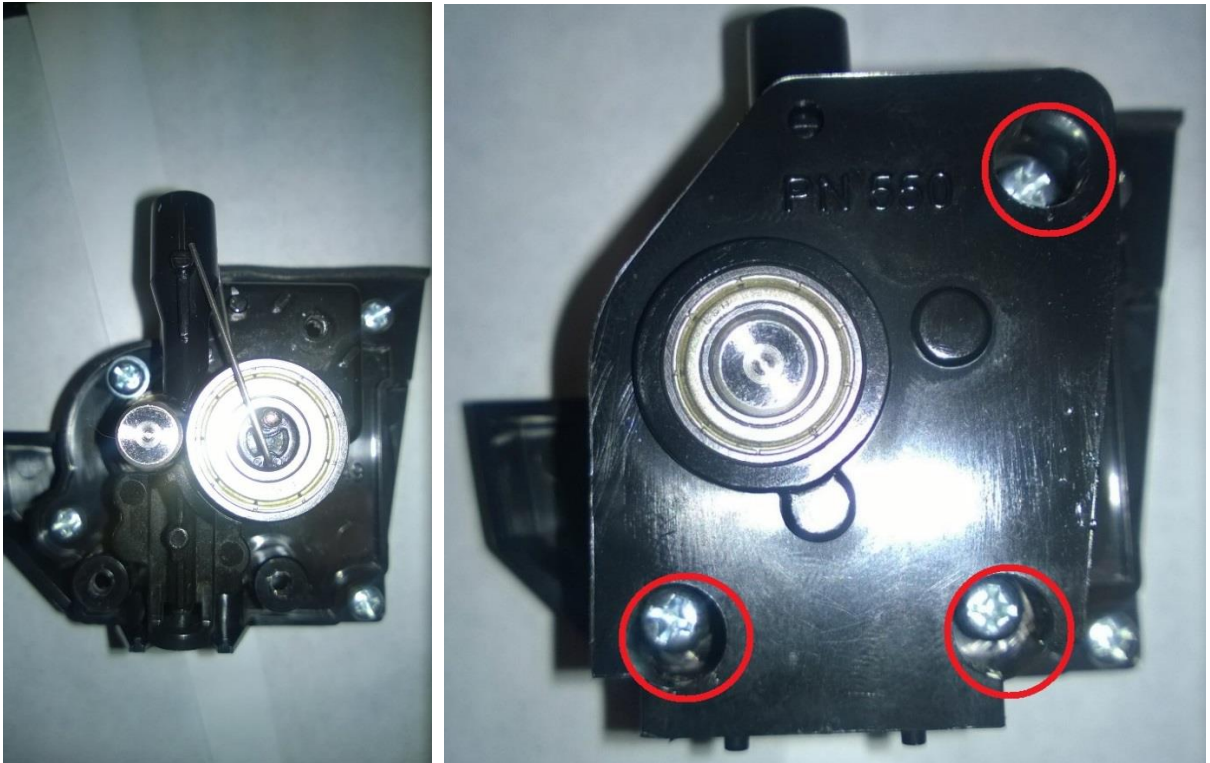
- d. Remove the cover, be careful when taking apart. The upper, lower extruder and retention bearing will fall out.
- e. Once the cover is removed you should be able to identify the clogged or jammed filament.
- f. Clean both upper and lower extruder filament guides as well as the bearing and surrounding area of any debris.



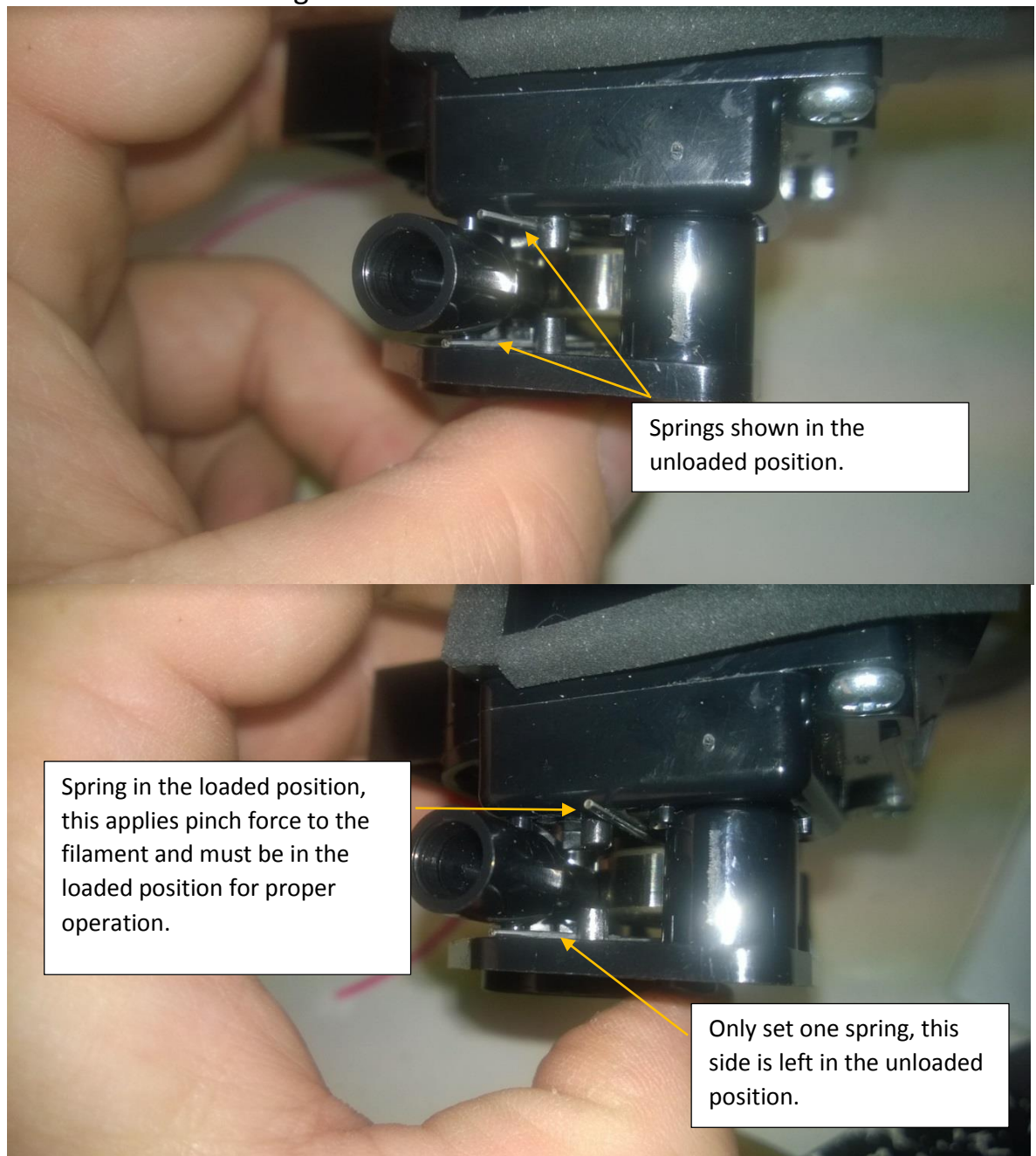
- g. Before installing the extruder assembly check to make sure the aluminum barrel is clear of any filament material.



- h. Re-install components as shown below. Align cover to mating pins on the upper, lower extruder and bearing shaft. Replace 3 screws shown in red.



- i. Reset the filament pinch spring as shown. The picture on the left shows the spring in the unloaded position. The other shows the spring in the set position.



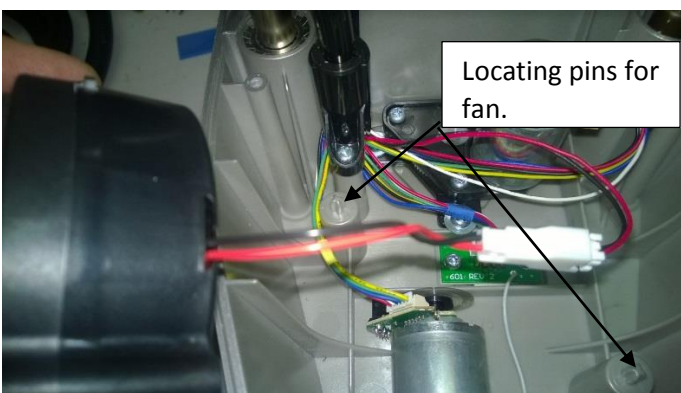
4. Extruder Installation

- Align the extruder assembly inside the carriage, hold in position and install the screws on the bottom. Beware of wire harness, do not position it under the extruder assembly.
- Plug in the motor connection to the extruder assembly (yellow band).
- Reposition the carriage with its topside down.
- Install the hot end using the 10mm wrench. Hold the aluminum barrel in place while screwing in the hot end in and tighten finger tight snug. DO NOT OVER TIGHTEN. Plug the hot end in.

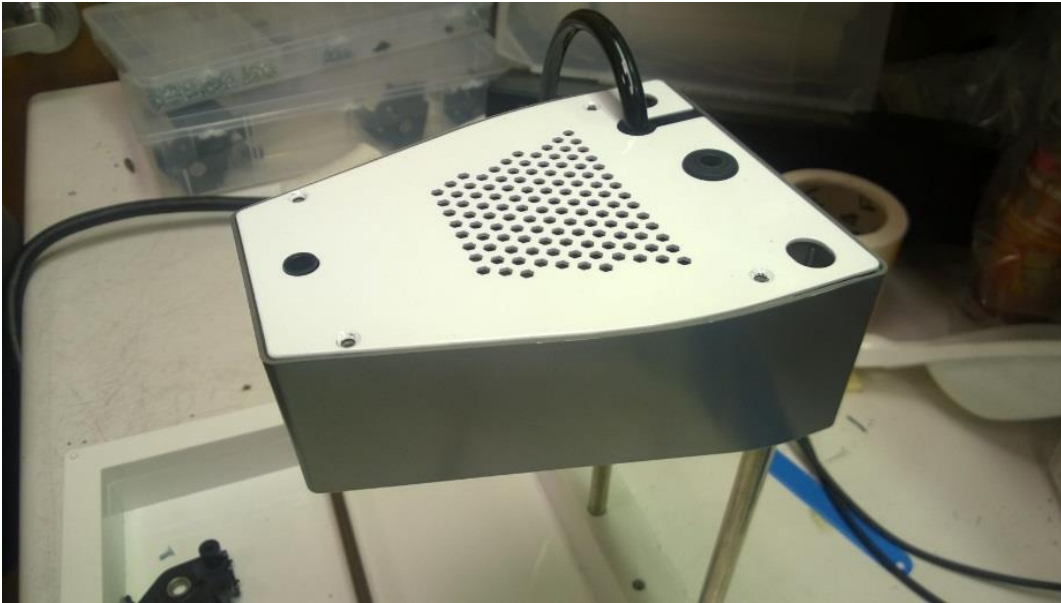


5. Procedure – Installing carriage:

- Align the vertical guide rods of the printer with the left and right lower carriage bearing holes.
- Gently slide the carriage down on the vertical guide rods. Let the carriage rest on the printer gently because the hot end nozzle will rest on the pinion rod.
- Keep all wires away from motor encoder disk.
- Plug the fan assembly in and position it in place on the 2 locating pins (the fan intake should face the top).



- e. Raise the carriage to the top of the guide rods so the top cover can be installed.



- f. While holding the carriage half way in its travel, reinsert the z-axis screw and turn it until it reaches the base of the printer. May need to hold the z-axis gear to prevent it from turning.
- g. Screw the z-axis screw into the base when the carriage is at half height.