Replacing a Stepper Motor Driver

This guide will explain how to replace a stepper driver on the electronics board for any motor.

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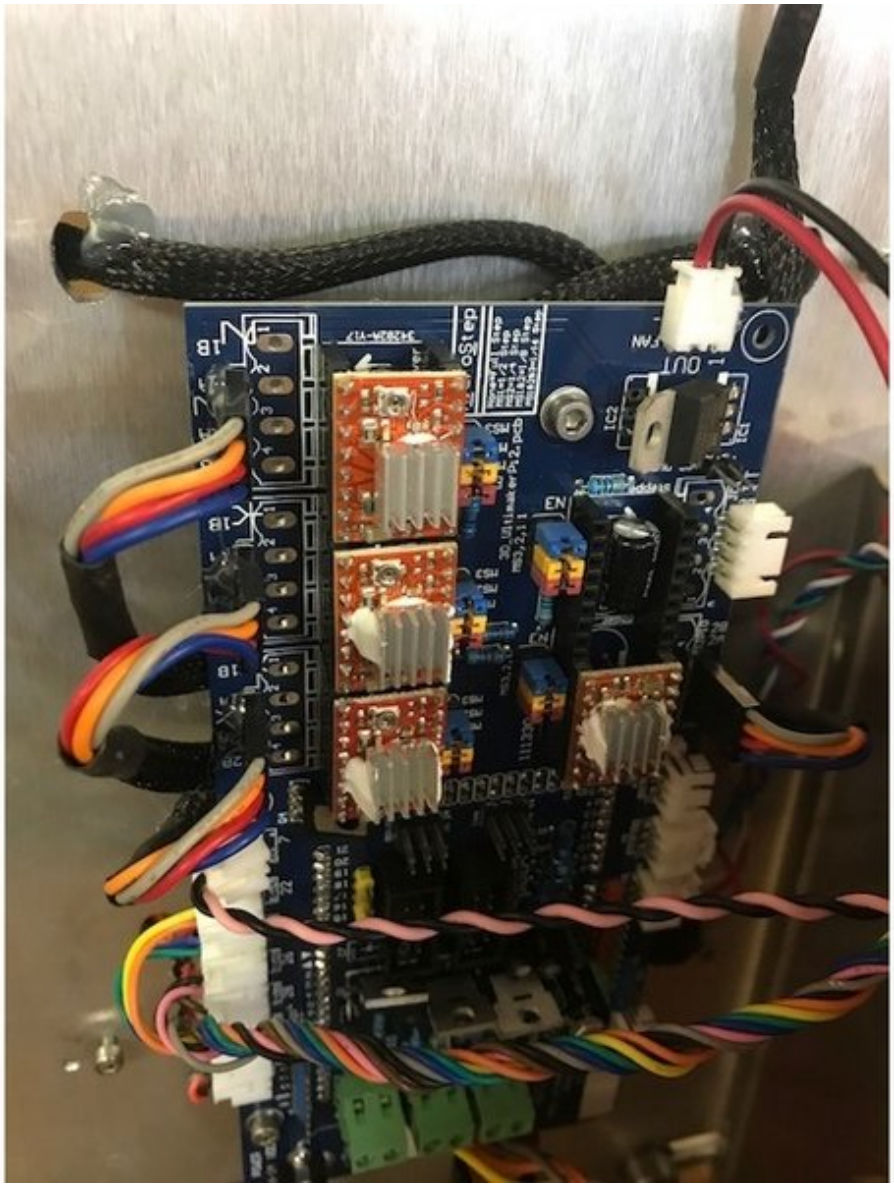


INTRODUCTION

This guide will explain how to replace a stepper driver on the electronics board for any motor.

TOOLS:

- 2.5 mm allen key (1)
found in Fix-it kit
- multimeter (1)
- precision screwdriver (1)
- precision cutter (1)

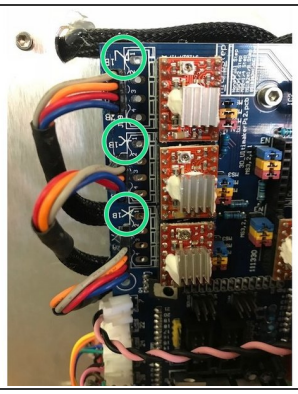
PARTS:

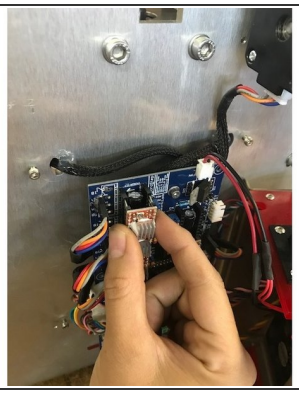
- motor stepper driver (1)

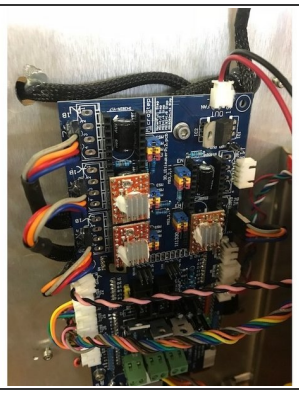
Step 1 — Remove Fan Cover

- Use your 2.5mm allen key to loosen the four bolts on the outer edge of the fan cover.
- Carefully lift the fan cover up.
- Slowly pull the fan cover away from the body. This will expose the electronics board. Pay close attention to the wiring connected to the board, so that you do not pull any connection loose.
  - The wires connecting the fans to the board are often tucked behind the top corner of the board. As you pull the cover, away be sure to gently move the wires around the corner so that they do not get disconnected.

Step 2 — Locate and Remove Bad Stepper Driver

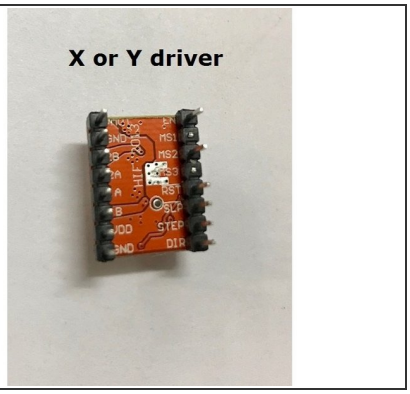


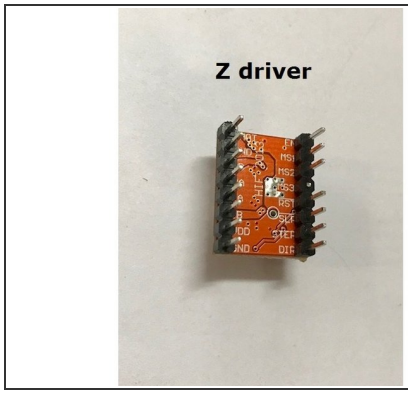


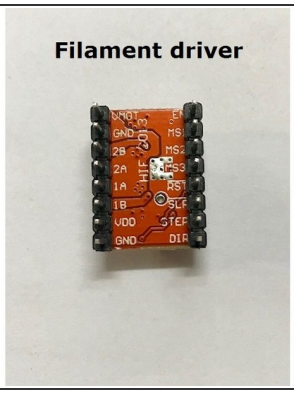


- The X, Y, and Z motors are labeled on the left side of the board (circled in green). The stepper driver that controls each motor is adjacent to its corresponding letter. The stepper driver controlling the filament drive is by itself on the right side of the board (not pictured).
  - The stepper drivers are in order Z, Y, then X from top to bottom. The filament drive driver is directly to the right of the X driver.
- Carefully remove the bad stepper driver by pinching it on both sides while pulling away from the board.

Step 3 — Prepare New Driver



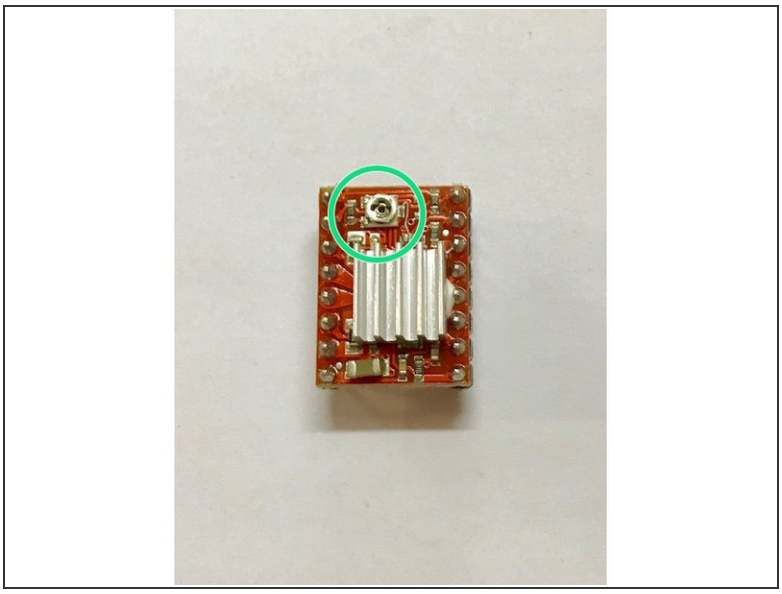


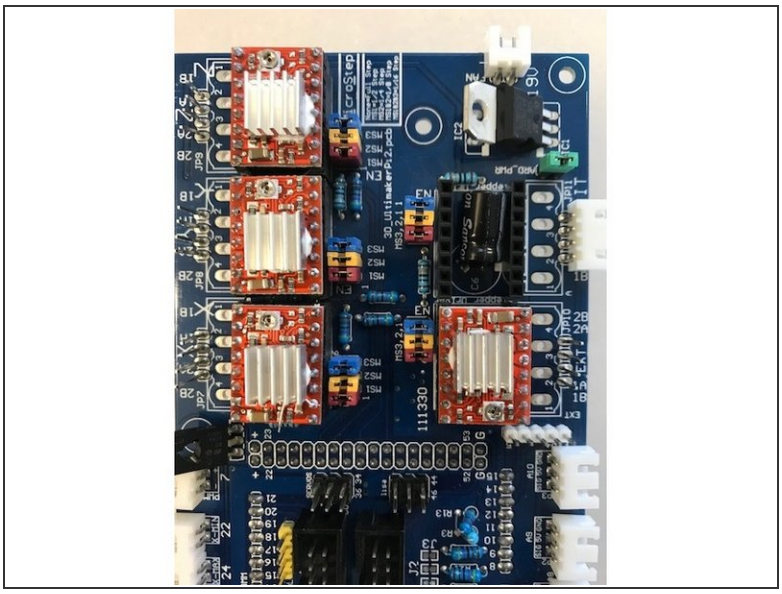


If you received a replacement stepper driver from the BoXZY shop that was shipped for a specific motor, then it is likely this step was already done for you. If you are using a stepper driver from your Fix-It kit, or any other source ,be sure to complete this step.

- First, take a look at the back of the driver. You will notice two rows of pins with small text markers next to each pin.
- Next, use a small pair of snips to remove the appropriate pin(s) for the motor the driver is assigned to.
  - X and Y driver snip MS1 and MS3.
  - Z driver snip MS3 only.
  - Filament driver do not snip any pins.

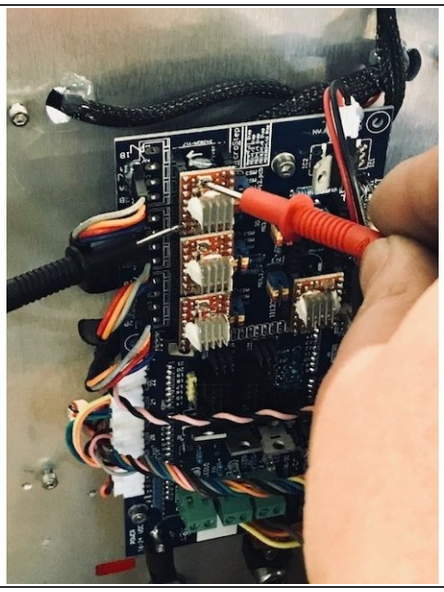
Step 4 — Return New Driver to Electronics Board





- Carefully align the pins on the stepper driver with the connectors on the board. Use the silver pot as a reference point to ensure your driver is in the correct orientation.
  - The pot is the circular component on the front of the driver that controls the amount of power it sends to the motor. It looks somewhat like the head of a Philips Head screw.
    - When positioning the X, Y and Z axis drivers, the pot should be at the top.
    - When positioning the filament driver the pot should be on the bottom.
    - You can use the second picture as reference.

Step 5 — Adjust Stepper Driver's Current

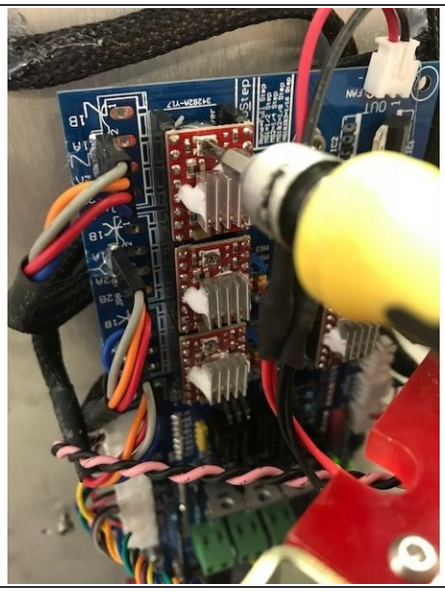


If you were sent a driver directly from BoXZY and the driver was sent for a specific motor, then this step was most likely done for you before it was shipped.

You will need to preform this step while your BoXZY is connected to your computer or smart controller via the USB cord, but be sure your power station is OFF.

- Now, get out your multimeter and set it to read DC millivolts. Touch the positive (red) lead to the center of the pot, and the negative (black) lead to the ground pin.
  - For your X, Y, and Z drivers, the ground is located on the left row of pins second from the bottom. The filament driver's ground is located on the right side second from the top.

Step 6 — Adjusting Stepper Driver's Current, cont.



- Your driver is set properly when your mulitmeter reads:
  - 0.650 mV, +/-0.01 for the X and Y axes
  - 0.700 mV, +/- 0.01 for the Z axis
  - 0.400 mV, +/- 0.01 for the filament driver
- Use a precision driver to turn the pot on the driver either clockwise or counterclockwise in small increments until you get a proper reading with your mulitmeter according to the paramerters above.

Step 7 — Remount Fan Cover

- You have completed replacing and adjusting the stepper drive. All thats left to do is to put everthing back the way it started.
- Keep the wires connecting to the electronics board running along either side of the board as you carefully return the fan cover to its four mounting bolts. You want to avoid allowing the wiring to restritc any airflow to the drivers.
  - Once its on, be sure to give it some downward pressure so the fan cover locks into place over the bolts.
- Use your 2.5 mm allen key to tighten the the mounting bolts so the fan cover is securely in place.

