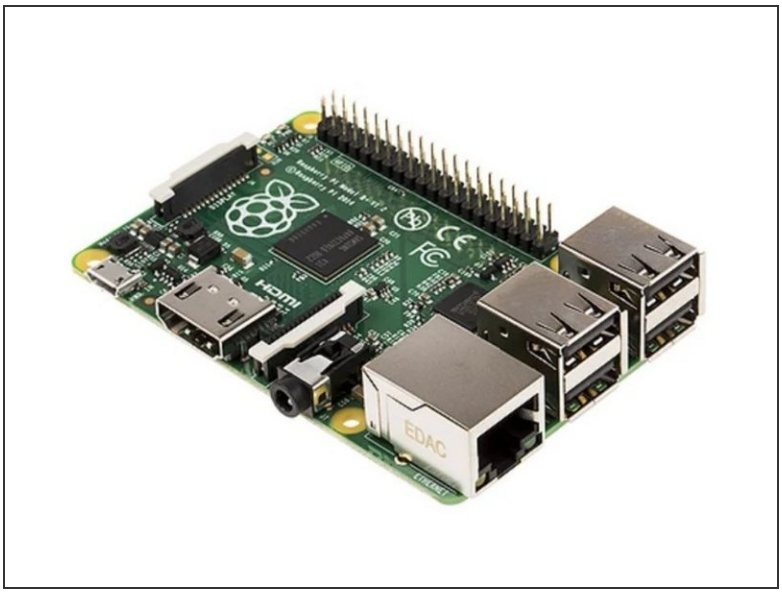
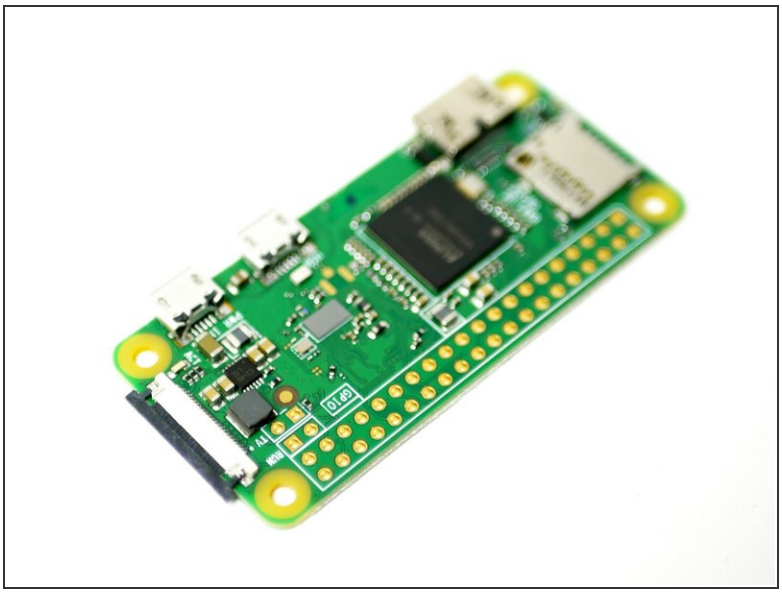
Makertech

Stage 01 - Hardware

Written By: Makertech

Step 1 — Raspberry Pi Board





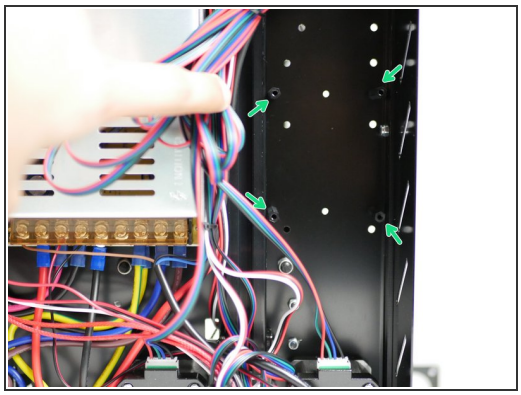
Before installing this upgrade you will need a Raspberry Pi board. If you don't already own one from a previous project you can purchase one relatively easily locally.

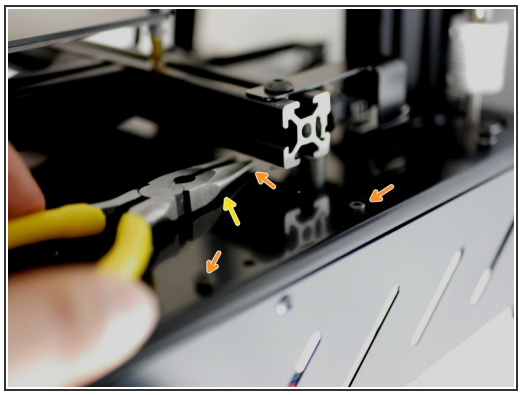
We also sell the Raspberry Pi B+ (recommended) here on our webstore.

You can alternatively also use the Raspberry Pi Zero W for this upgrade but it's strongly recommended that you use the Pi 3 B+ board.

Make sure the Raspberry Pi board you use has an on board WiFi receiver, else you will need to use an ethernet cable (included) or USB receiver.

Step 2 — Mounting the Standoffs



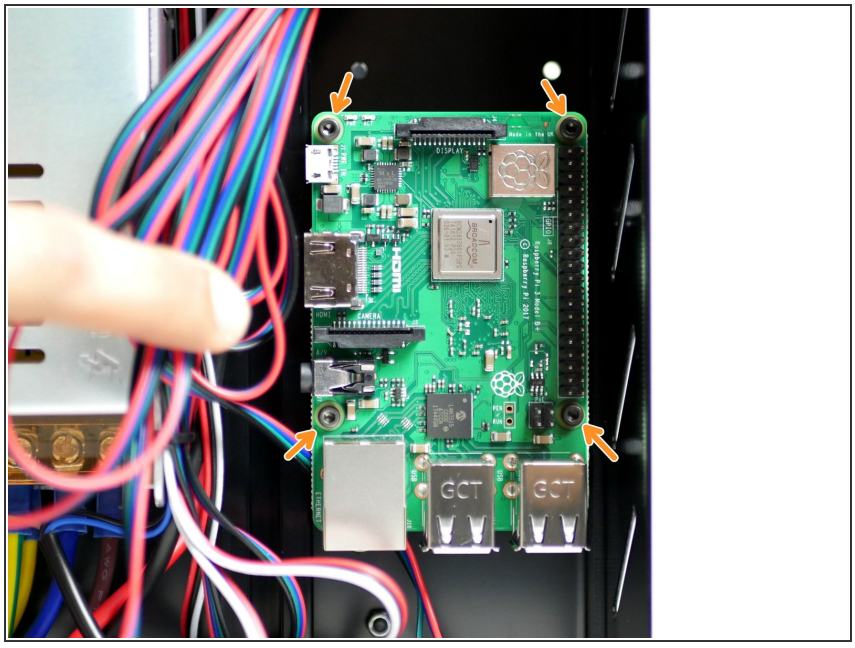


Fix the four Raspberry Pi standoffs to the Base with four M2.5 x 6mm bolts.

- M2.5 x 10mm standoff
- M2.5 x 6mm bolt

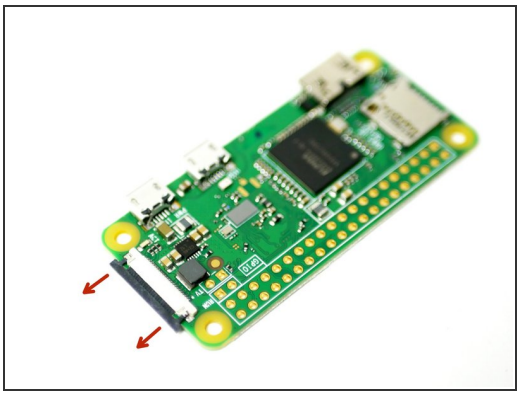
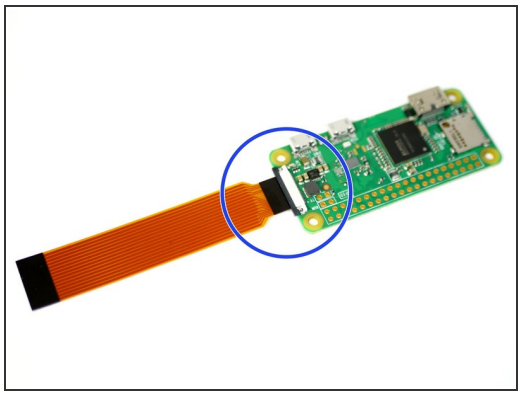
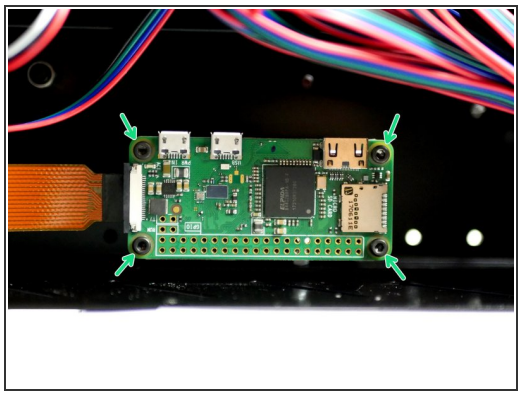
- If you plan on using the Raspberry Pi Zero W then mount the standoffs in these positions.
- Use the pliers to place and hold the bolt in place whilst tightening the standoff from underneath where the platform beam makes it difficult to get to.

Step 3 — Mounting the the Raspberry Pi 3 B+



- Mount your Raspberry Pi to the base with four M2.5 x 6mm bolts.

Step 4 — Mounting the Raspberry Pi Zero W

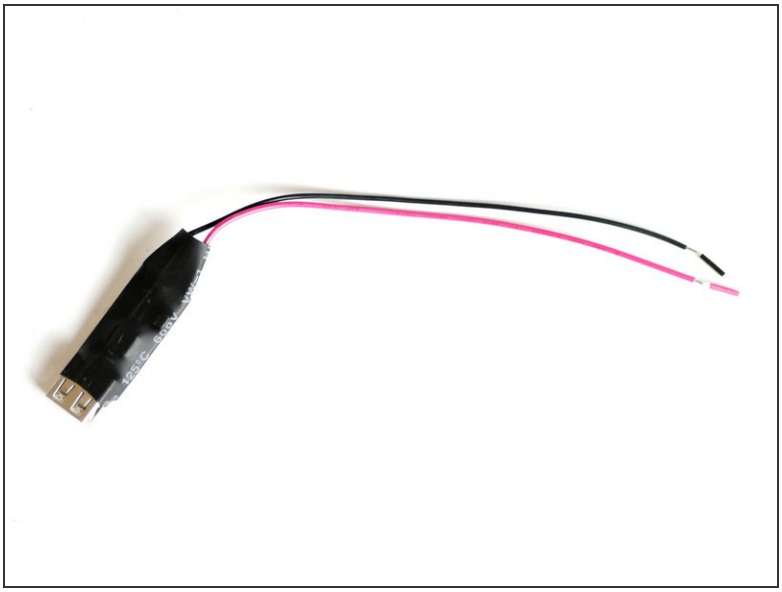
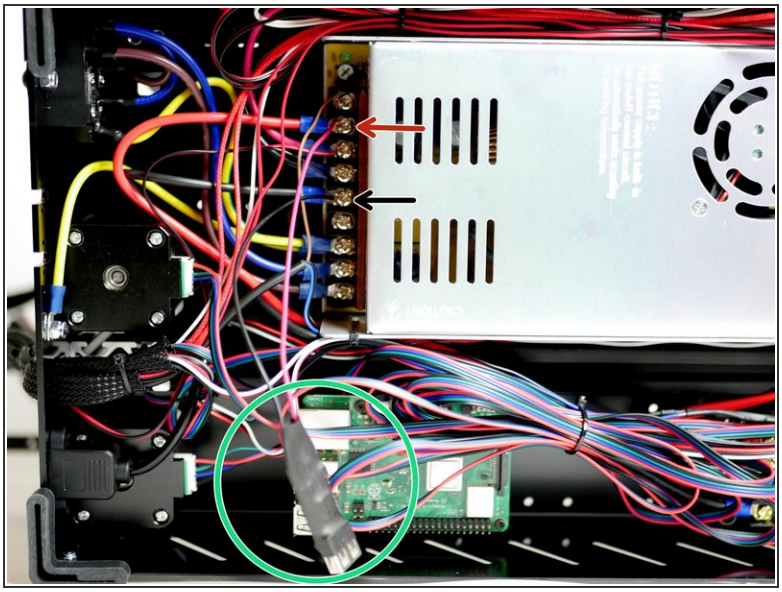




ⓘ Before mounting the raspberry Pi Zero W, connect to it the golden ribbon cable for the camera.

- Pull back the black bar on the connector.
- Connect the golden ribbon cable to the Raspberry Pi with the black side up. Push the black bar back in to lock the cable into the connector.

- Mount using four M2.5 x 6mm bolts.

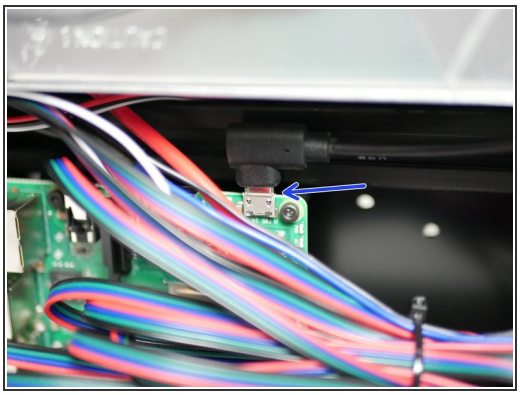
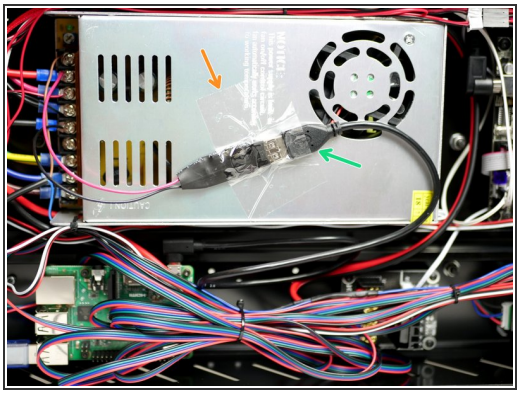
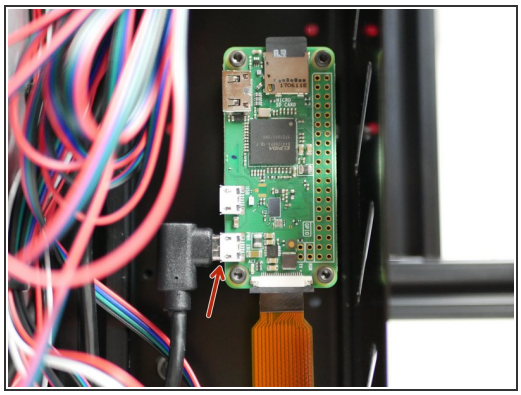
Step 5 — USB Power Connector Wiring

- Connect the USB convertor to the power supply.

⚠ Connect the red cable to a positive terminal and the black cable to a negative terminal.

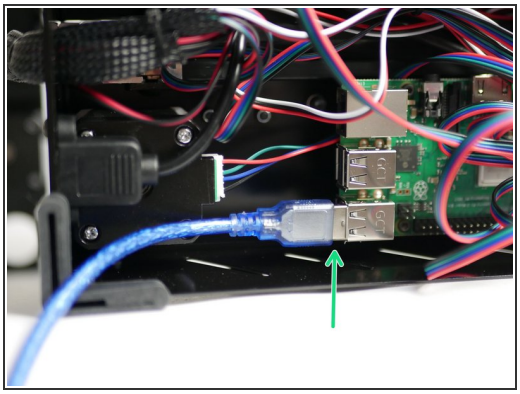
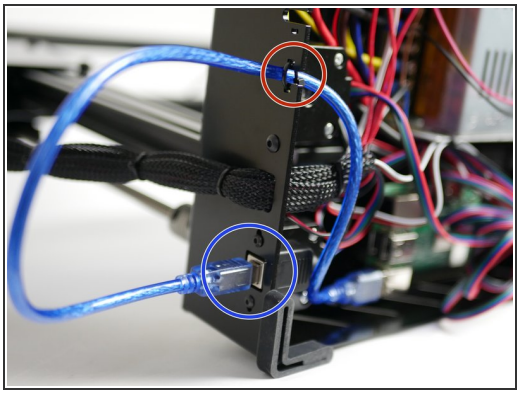
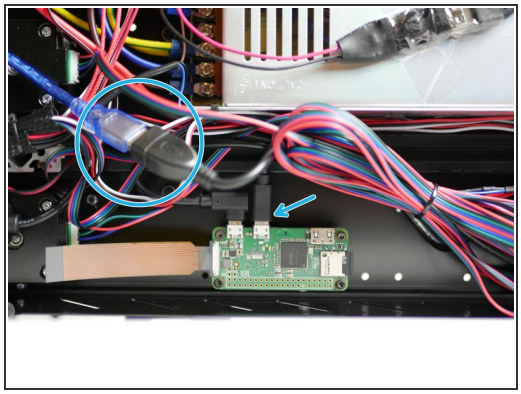
Step 6 — Raspberry Pi Power cable

- Connect the USB power cable to the Raspberry Pi.
- Connect the other side of the cable to the power supply USB connector.
- Tape the connector to the back of the power supply.

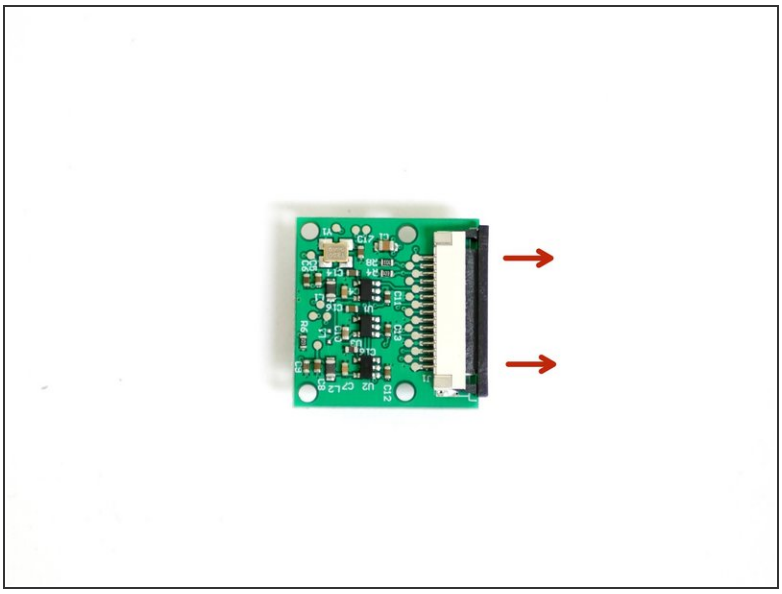
  Avoid covering any of the vents with tape!
- If you're using the Pi Zero W, make sure to connect the power cable to the connector nearest the ribbon cable like shown in the third image.

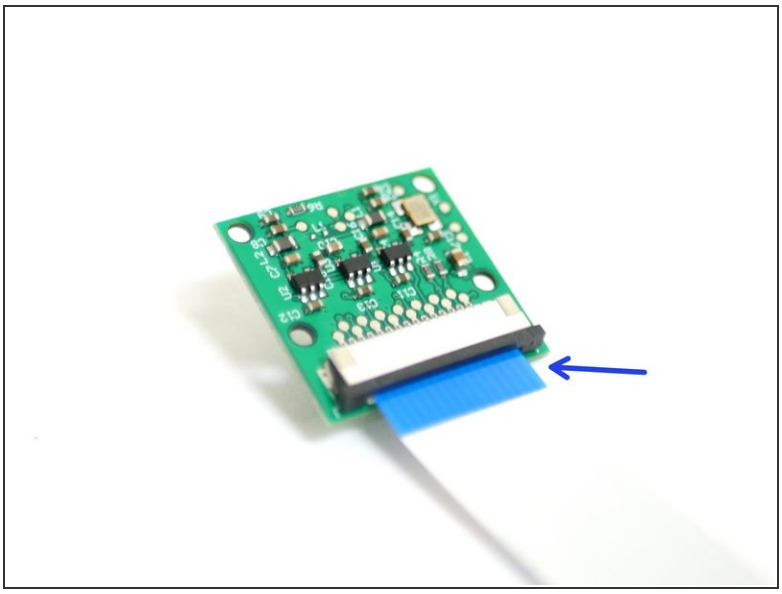
Step 7 — USB Cable

- Connect the printers USB cable to the Raspberry Pi.
- Connect the other end of the cable to the port on the back of the printer.
- Cable tie the cable to the base like shown.
- Use the OTG cable adapter to connect to the Pi Zero W.

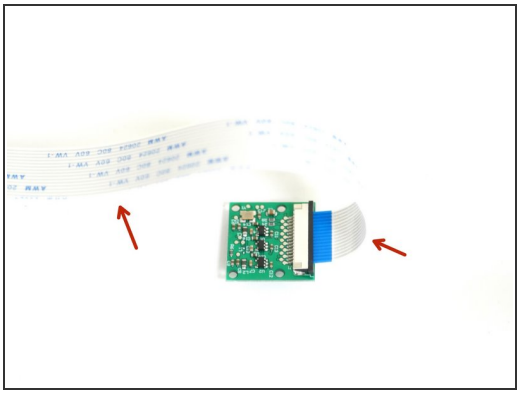
Step 8 — Pi Cam Assembly

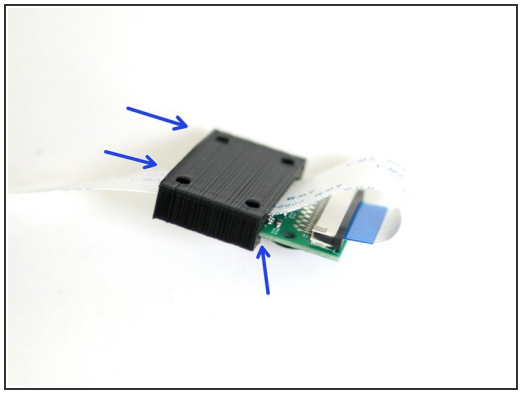


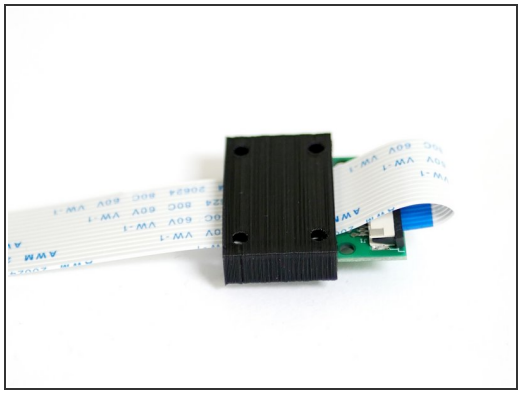


- Carefully pull back the black bar on the connector on the back of the Pi camera.
- Connect the 60cm ribbon cable to the Pi Cam **with the blue tab facing towards you.**

Step 9 — Pi Cam Assembly Cont.

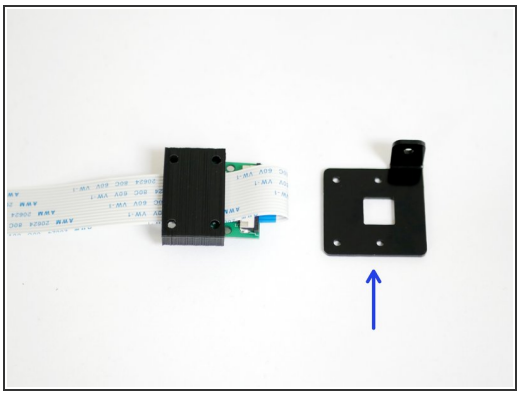
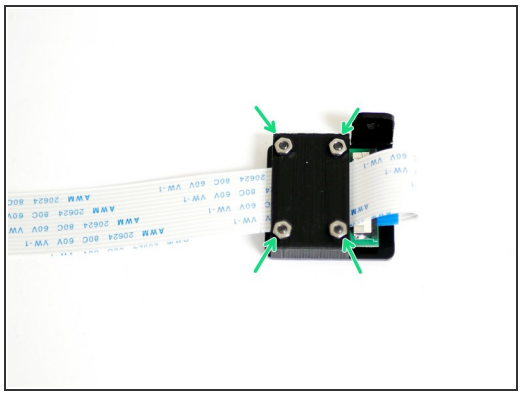
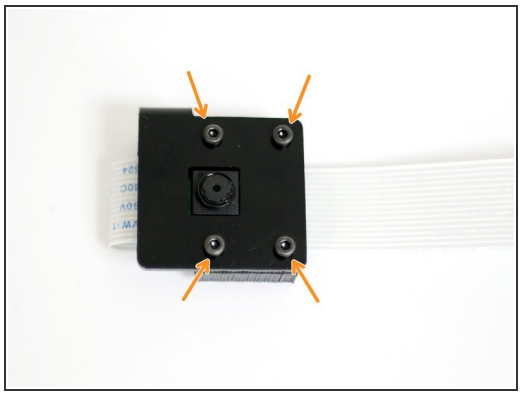






- With the camera placed face down fold the ribbon cable over to the left.
- Slide the 3D Printed cover onto the Pi Cam with the ribbon cable looped over and sandwiched between them.

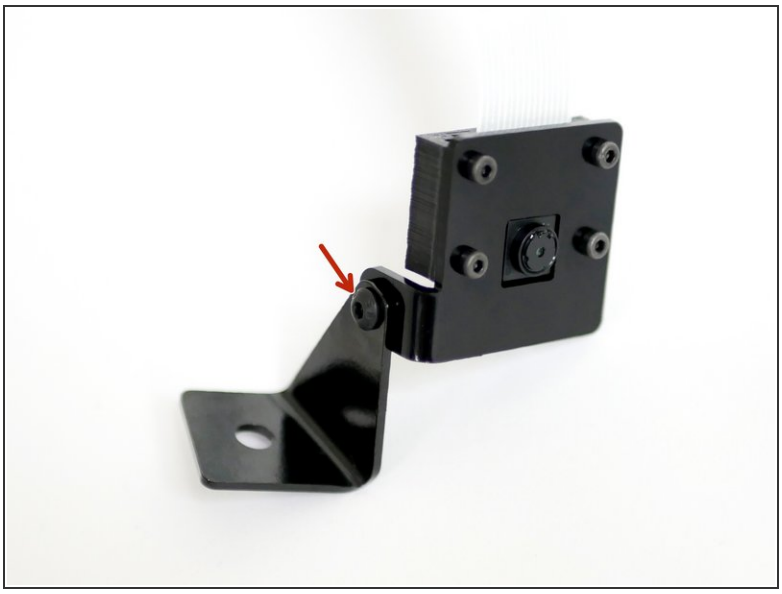
Step 10 — Pi Cam Assembly Cont.

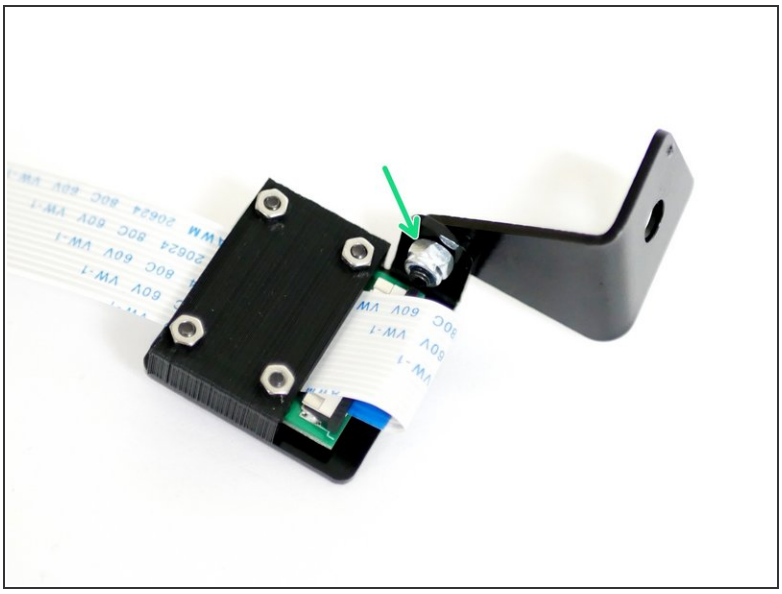




- Fix the Pi Camera to the metal casing with:
  - M2 x 10mm bolt
  - M2 Nut

Take care to match the orientation in the photos.

Step 11 — Pi Cam Mounting Bracket

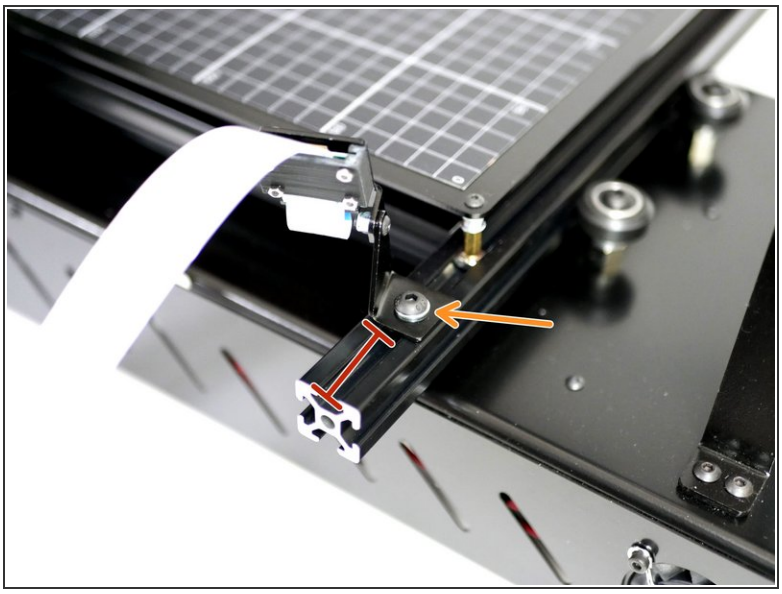


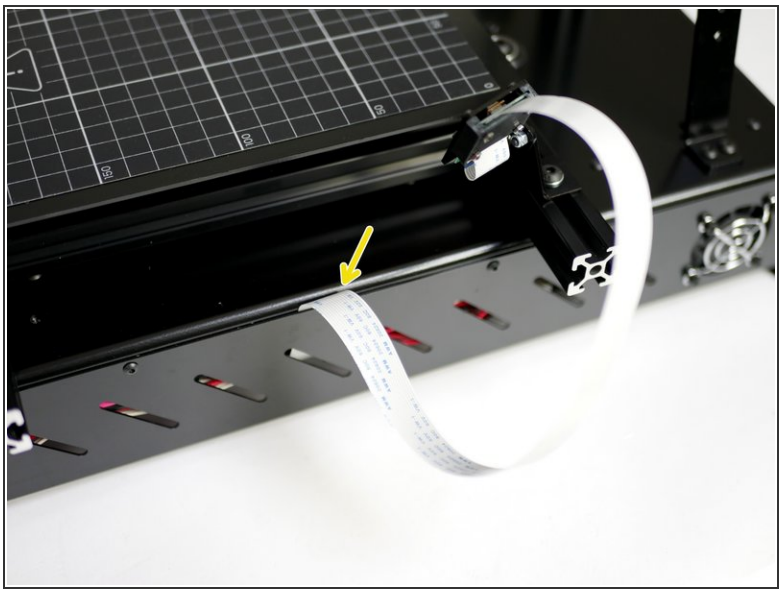


- Fix the Pi Cam case assembly to the metal mounting bracket.
  - M3 x 8mm bolt
  - M3 Nyloc Nut

Orientate as shown in the photos.

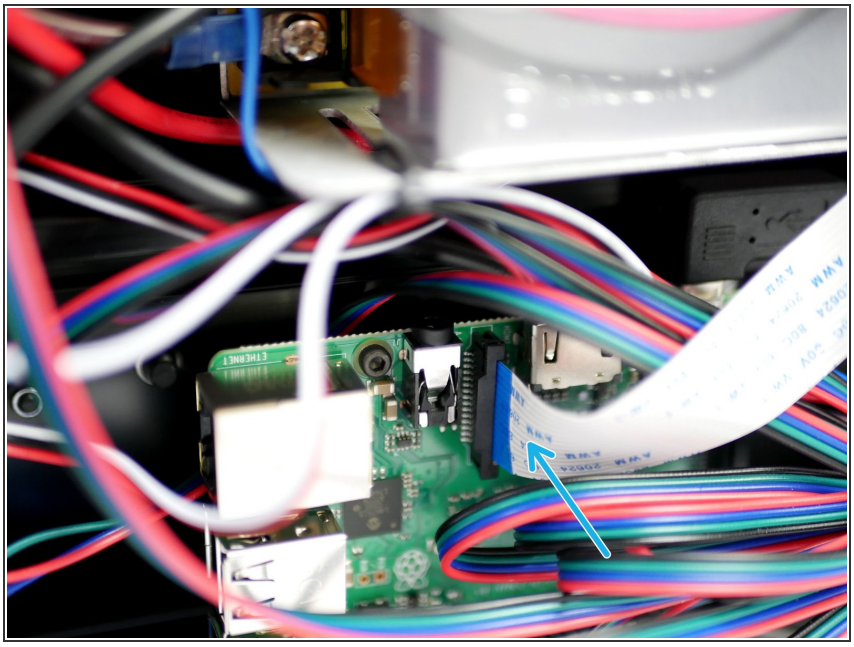
Step 12 — Mounting the Pi Cam





- Mount the Pi Cam to the lower left extrusion of the platform with an M5 x 8mm bolt, M5 washer and M5 T-Nut.
- Mount approximately 1 inch in from the end of the beam.
- Feed the cable between the side panel and base.

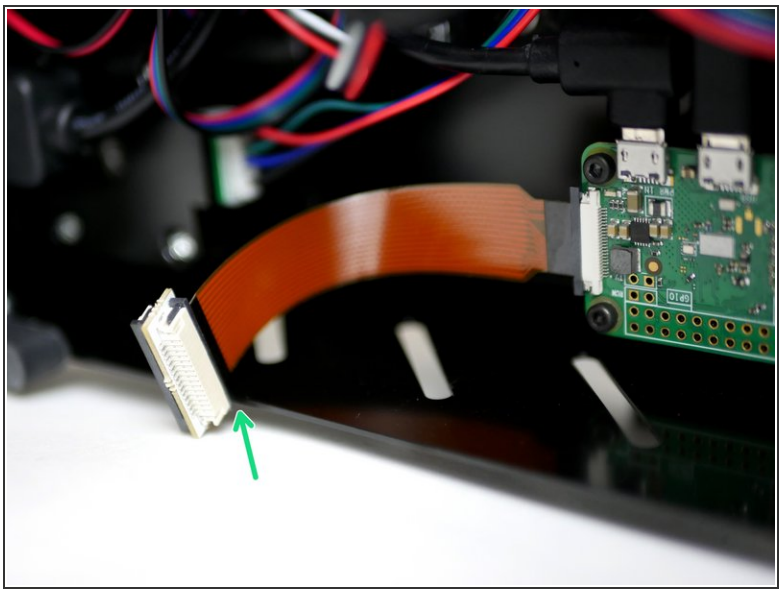
Step 13 — Connecting the Pi Cam - Pi 3 B+

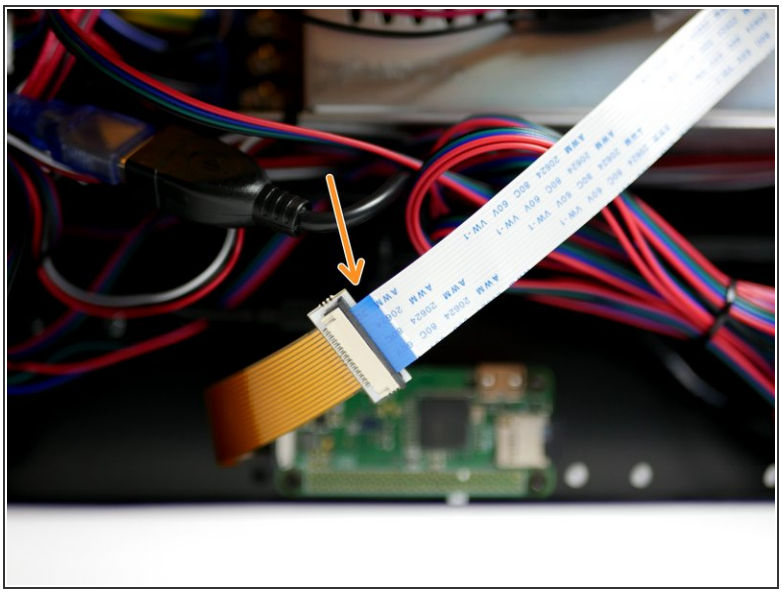


- Connect the other end of the cable to the Raspberry Pi.

  Make sure the blue side of the cable is facing the USB ports.

Step 14 — Connecting the Pi Cam - Pi Zero W





- Connect the Pi cam Cable extender to the short golden cable from the Pi Zero W like shown, with the black side facing up.
- Connect to the other side of the extender to the Pi cam cable from the Pi Cam like shown with the blue side facing up.