



## 5. Controller

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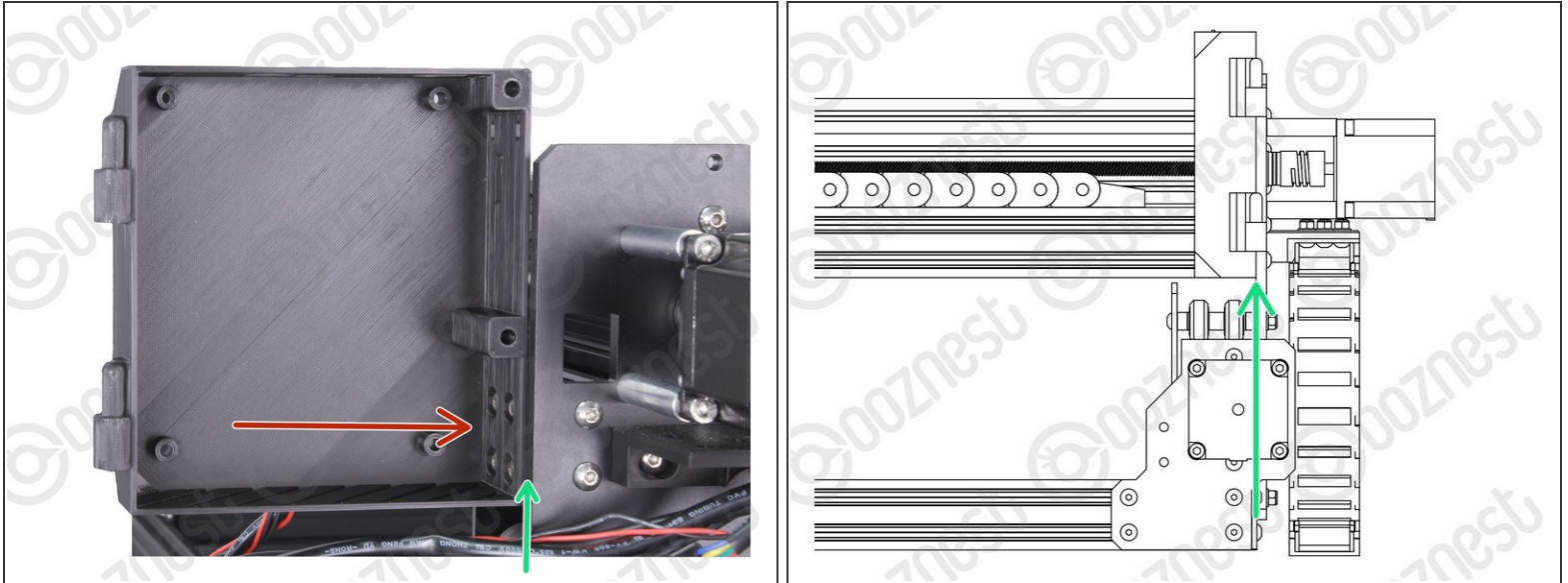


## Step 1 — Mounting Bolts



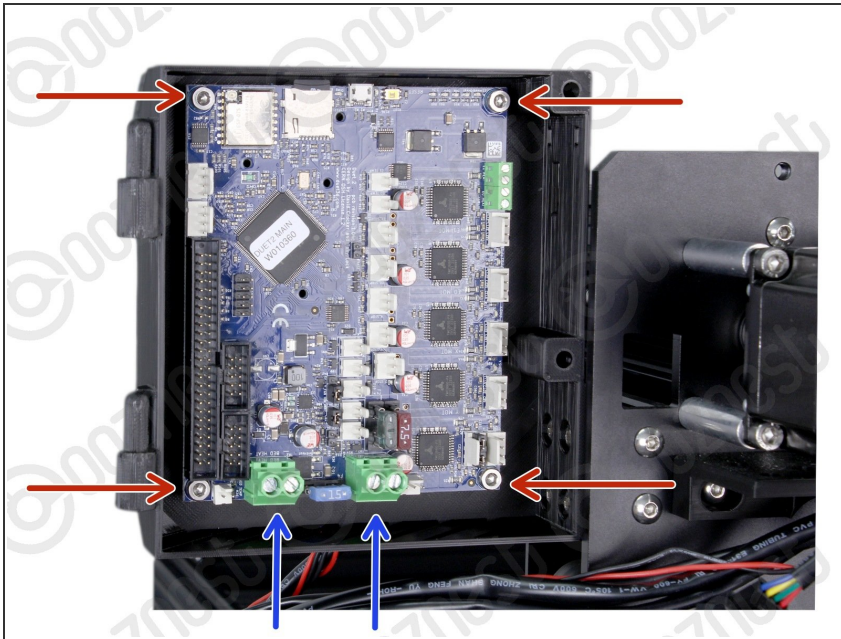
- Insert 4 x M5-Button-Head-Bolt-12mm through the holes on the Controller-Case-Body
- Slightly thread a M5-Drop-In-Tee-Nut onto each bolt.

## Step 2 — Mounting



- Join the Controller-Case-Body to both slots on the back of Extrusion-B. Using the previously inserted M5-Button-Head-Bolt-12mm.
  - It should be pushed up against the Y-Carriage. See Image 2.
- ① Using a 3mm Hex Key Ball driver would be easiest.
- ⚠ Make sure the M5-Drop-In-Tee-Nuts are engaged with the slots on Extrusion-B.

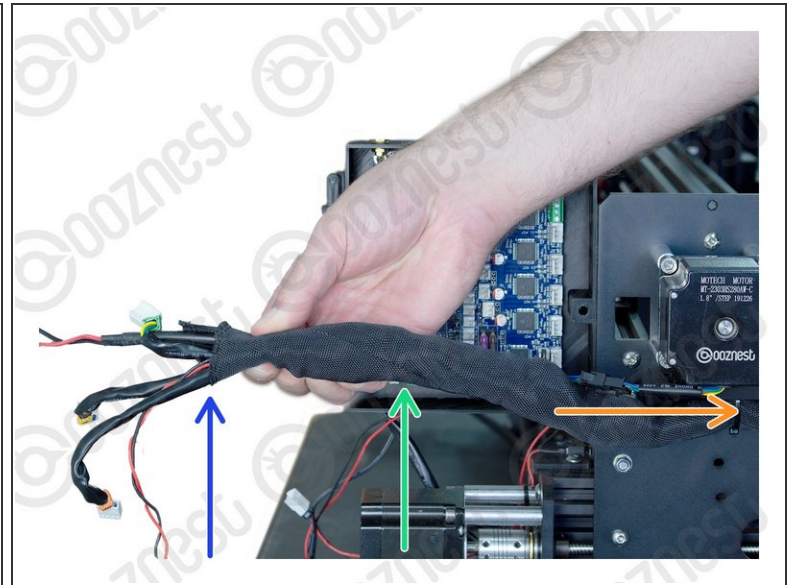
### Step 3 — Controller Mounting



- Mount the Controller to the Controller-Case-Body using 4 x M4-Cap-Head-Bolt-16mm and 4 x M4-Nyloc-Nut.
- The 4 x M4-Nyloc-Nuts go on the back of the Controller-Case-Body.
- Make sure the Controller is orientated correctly with the two large green terminals at the bottom.

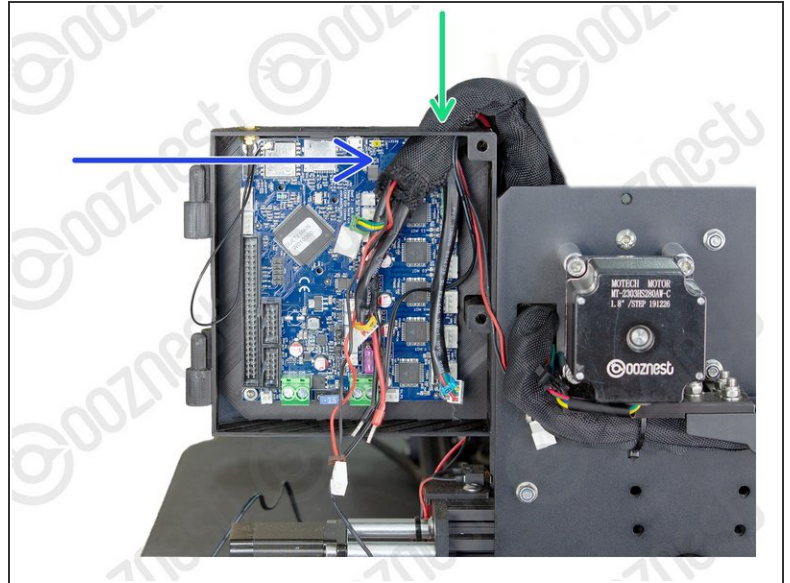


## Step 4 — Wire Preparation



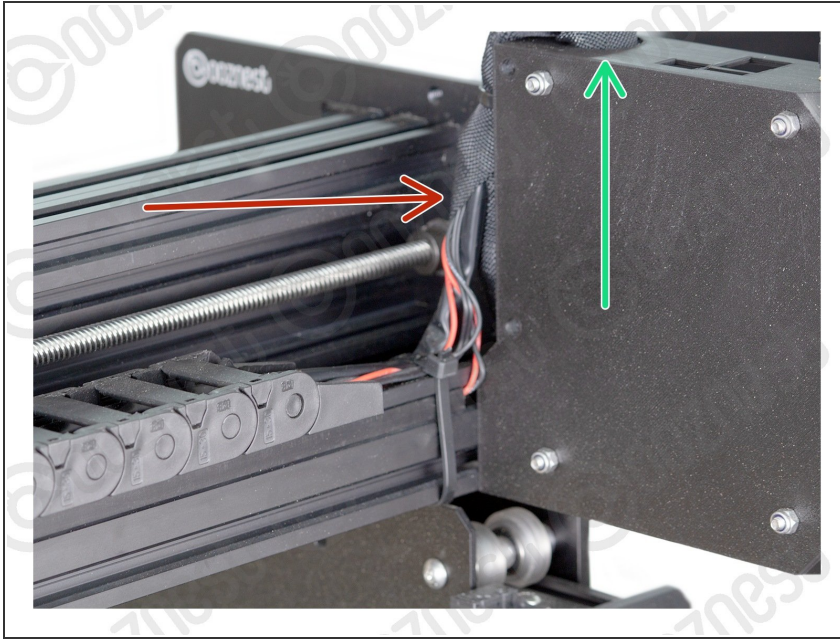
- Gather all the wires coming of Drag-Chain-Y.
- Neatly twist the wires together to form a consistent cylinder of wires. It should look like Image 1.
- ① Include the Ethernet-Cable in this bundle.
- Wrap the provided Cable-Sleeve around all the wires. It should look like Image 2.
- The Cable-Sleeve should not go right to the end.
- Excess Cable-Sleeve can go inside Drag-Chain-Y.

## Step 5 — Wire Routing Part - 1



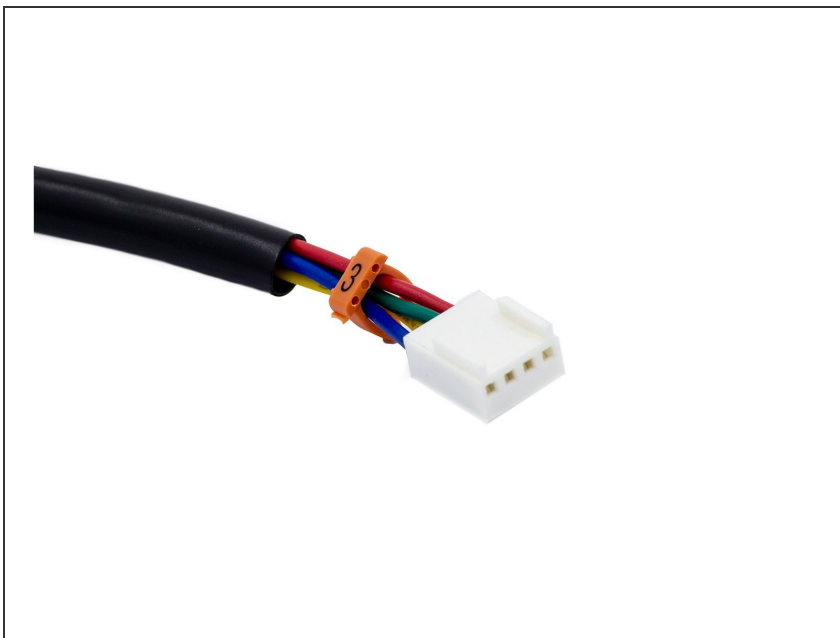
- Feed the twisted bundle of wires through the square hole on the Y-Carriage.
- Then run it up the side of the Controller-Case-Body and into the large hole on the top.
  - ⚠ Do not put the Ethernet Cable through this hole. Slip it out of the Cable-Sleeve.
- Roughly 50mm of Cable-Sleeve should be protruding into the Controller-Case-Body.
- ① Take your time to tidy up the Cable-Sleeve, and feed any back into the Drag-Chain-Y.

## Step 6 — Wire Routing - Part 2



- Bring the wires from Drag-Chain-X & Limit-Switch-0, up into the side of the Cable-Sleeve.
- Feed them through the same hole in the top of the Controller-Case-Bod

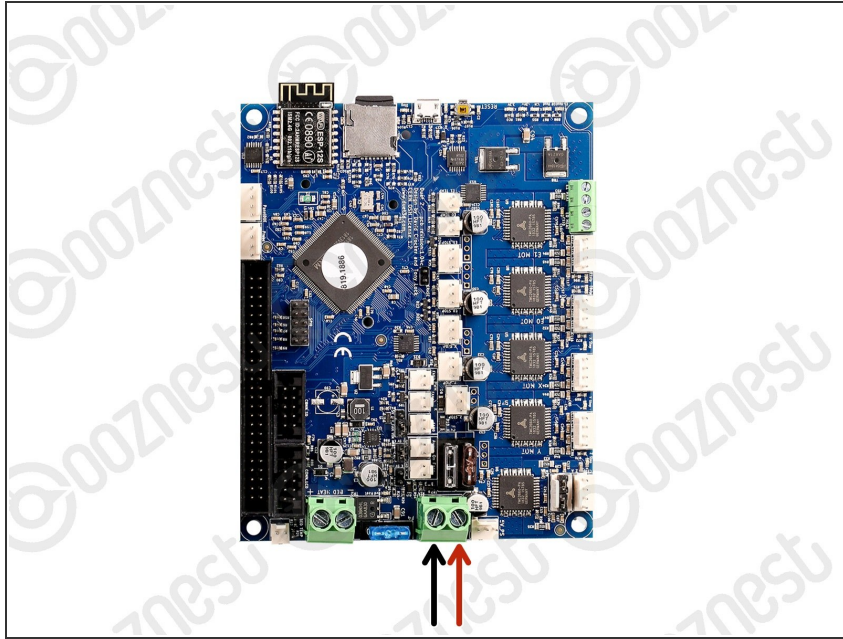
## Step 7 — Wire Identifications



- You are going to need our Motor Wire and Limit Switch [Cheat Sheet](#). We recommend printing it off!



## Step 8 — Connecting the PSU Output Cable

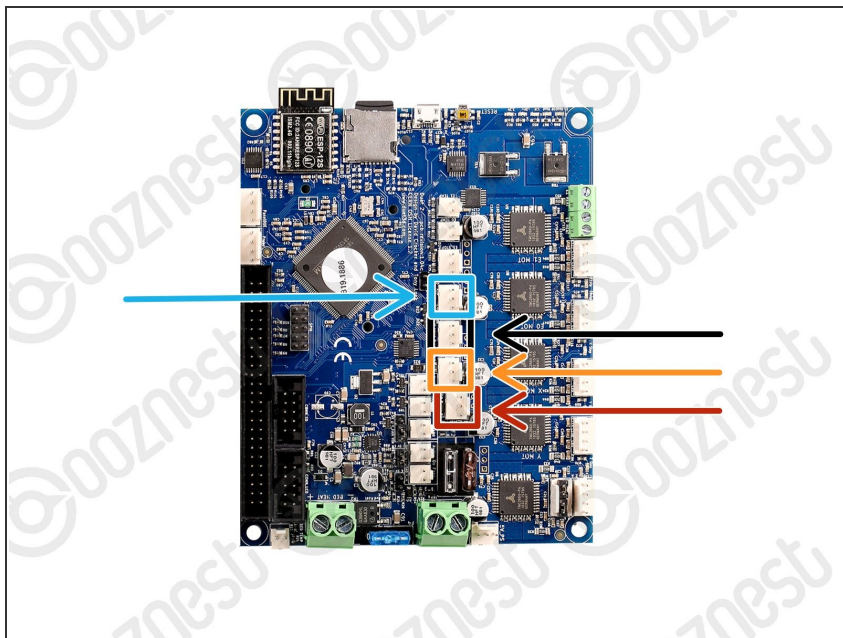


**⚠ Remember we have not told you to plug the power supply in yet, so please make sure it is not!**

- Connect the output wire of the Emergency-Stop into the input screw terminal on the Controller.

**⚠ Use an Insulated Flathead Screwdriver.**

## Step 9 — Limit Switch Wires

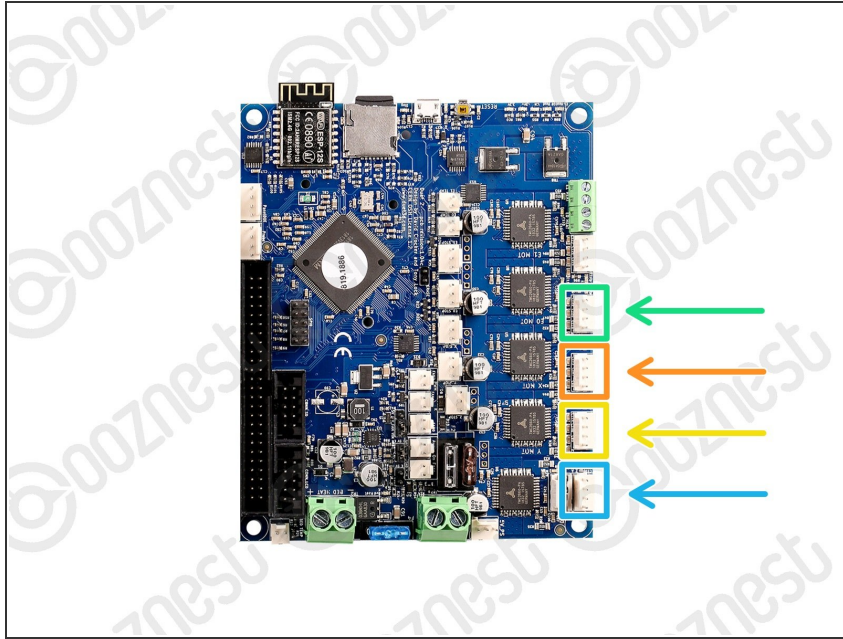


**i** The connectors on the wires are keyed, so there is only one way which they can plug in.

- Plug in the limit switch wires following Image 1.
  - Limit-Switch-0 (X-Axis)
  - Limit-Switch-1 (Y-Axis)
  - Limit-Switch-2 (Z-Axis)
- The Touch Probe wire can also be plugged in.

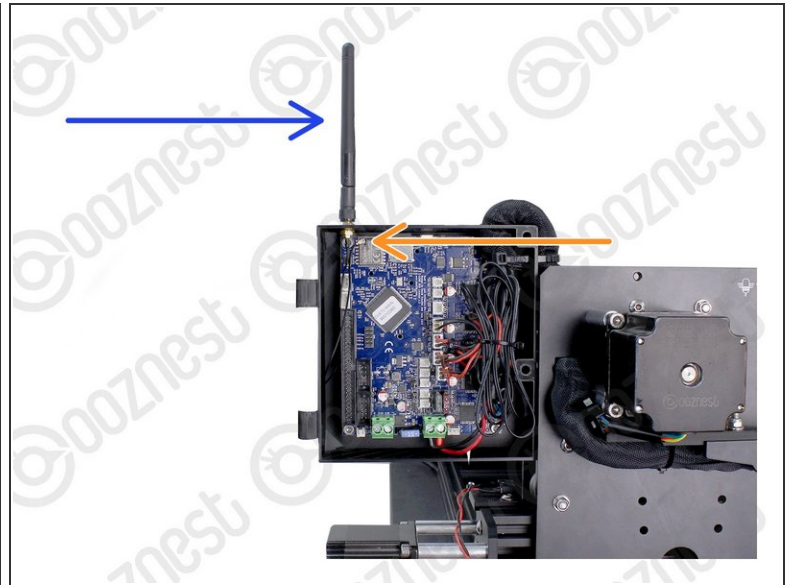
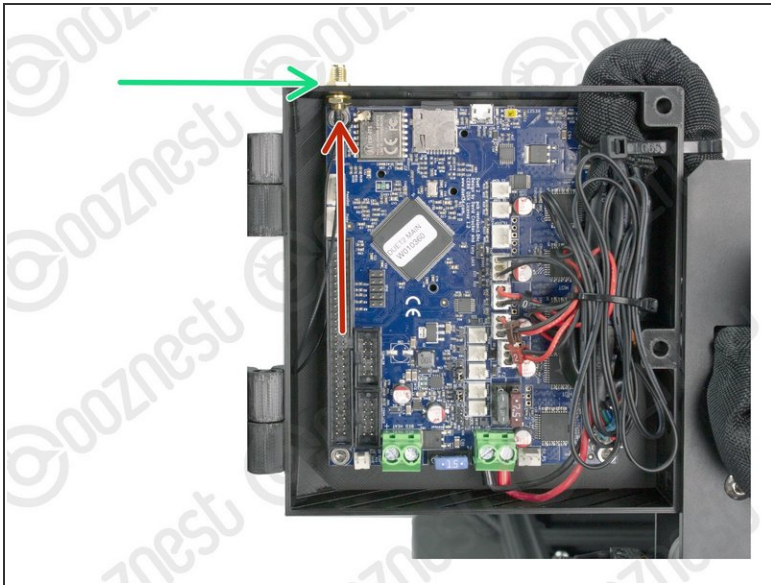


## Step 10 — Motor Wires



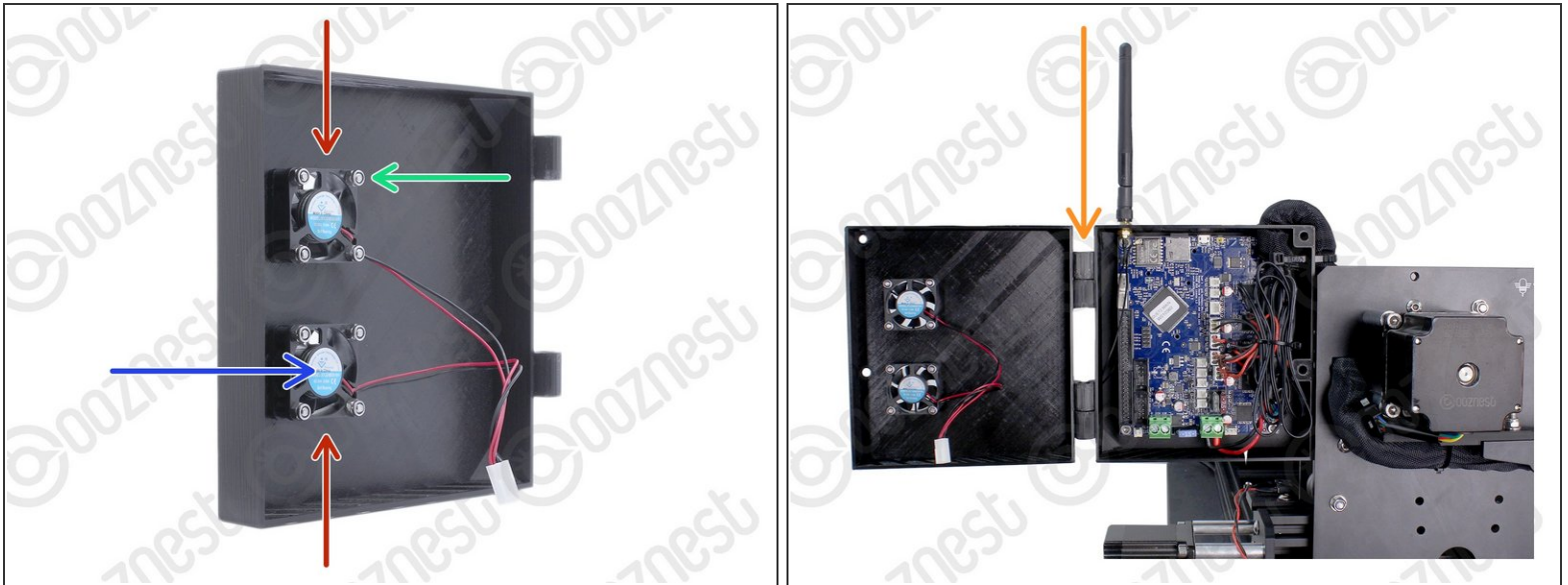
- Plug in the motor wires following Image 1.
  - Motor-Wire-5 (Y-Axis-Right)
  - Motor-Wire-3 (X-Axis)
  - Motor-Wire-4 (Y-Axis-Left)
  - Motor-Wire-6 (Z-Axis)

## Step 11 — Install Antenna



- i** If you have the Wifi Controller please complete this Step. Otherwise, skip to the next Step.
- i** Inside the External-Antenna bag, there will be the Antenna-Arm, Antenna-Wire, Spring-Washer, Star-Washer and Hex-Nut.
- Insert the threaded portion of the Antenna-Wire up into the hole of the Controller-Case-Body.
  - The Spring-Washer should be in between the shoulder of Antenna-Wire and Controller-Case-Body.
  - On the outside of the Controller-Case-Body add the Star-Washer, and then thread on the Hex-Nut.
  - Tighten this assembly.
  - Screw on the Antenna-Arm.
  - Push the Antenna-Fitting onto the Wifi Module until it clicks into place.

## Step 12 — Fans



- Mount the Controller-Fans to the Controller-Case-Cover using 8 x M3-Button-Head-Bolt-16mm & 8 x M3-Nyloc-Nut.
- The Controller-Fans go on the inside of the Controller-Case-Cover.
- The M3-Nyloc-Nuts should be on the inside of the Controller-Case-Cover. See Image 1.
- The stickers on the Controller-Fans **should be visible.** See Image 1
- Hook the Controller-Case-Cover onto the hinges on the Controller-Case-Body.

## Step 13 — Wire Tidying

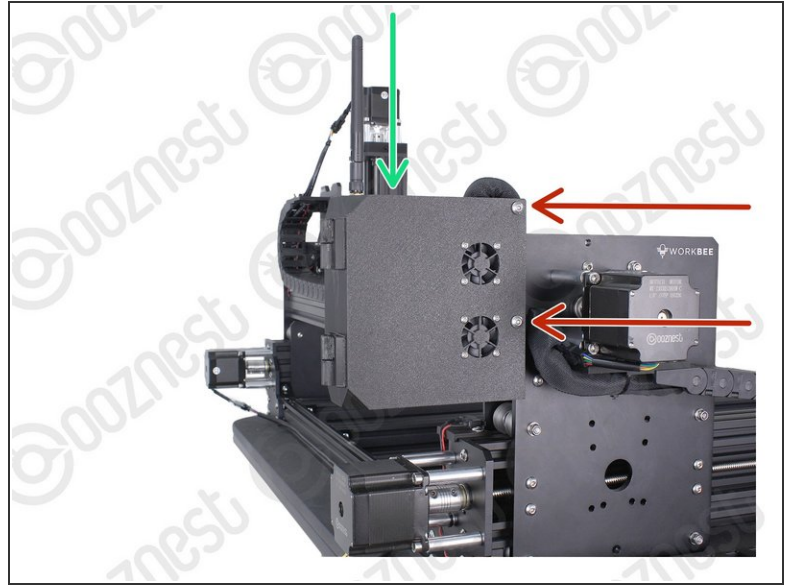


- Bundle the excess cable inside the Controller-Case and add a small cable tie around the bundle.
- On the side of the Controller-Case use a large cable tie to secure the bundle of wires inside of the Cable-Sleeve to the Controller-Case.
  - The large cable tie should go around the Cable-Sleeve bundle inside and outside the Controller-Case to sandwich it all together.
- Tidy up the Cable-Sleeve on the outside controller and feed any excess back into Drag-Chain-Y.
  - Use a large cable tie to secure the bundle to the Drag-Chain-Mount.
- Use a large cable tie to secure the wires from Drag-Chain-X & Limit-Switch-0 to Extrusion-B

**⚠ Make sure your wires look nice and neat like all the Images.**



## Step 14 — Closing The Cover



- Plug the Controller-Fans into the Controller following Image 1.
- Close the Controller-Case-Cover to the Controller-Case-Body.
  - Secure it using 2 x M5-Button-Head-Bolt-60mm and 2 x M5-Nyloc-Nut.
  - The 2 x M5-Nyloc-Nuts go on the back of the Controller-Case-Body.
- If you have the Ethernet version of the controller, you can now plug the Ethernet-Cable into the top of the Controller.

## Step 15 — Guide Complete



**i** That is the fiddly bits done! Now the exciting part....

- Guide Complete

- Wifi Controller:

- Window Users - Proceed to [1. Connecting your Controller via USB - Windows](#)

- Mac Users - Proceed to [1. Connecting your Controller via USB - MacOS](#)

- Ethernet Controller:

- Proceed to [1. Connecting your Controller to a Network - Ethernet](#)

Thanks for following the guide. Any issues, please contact us!