



5. Controller

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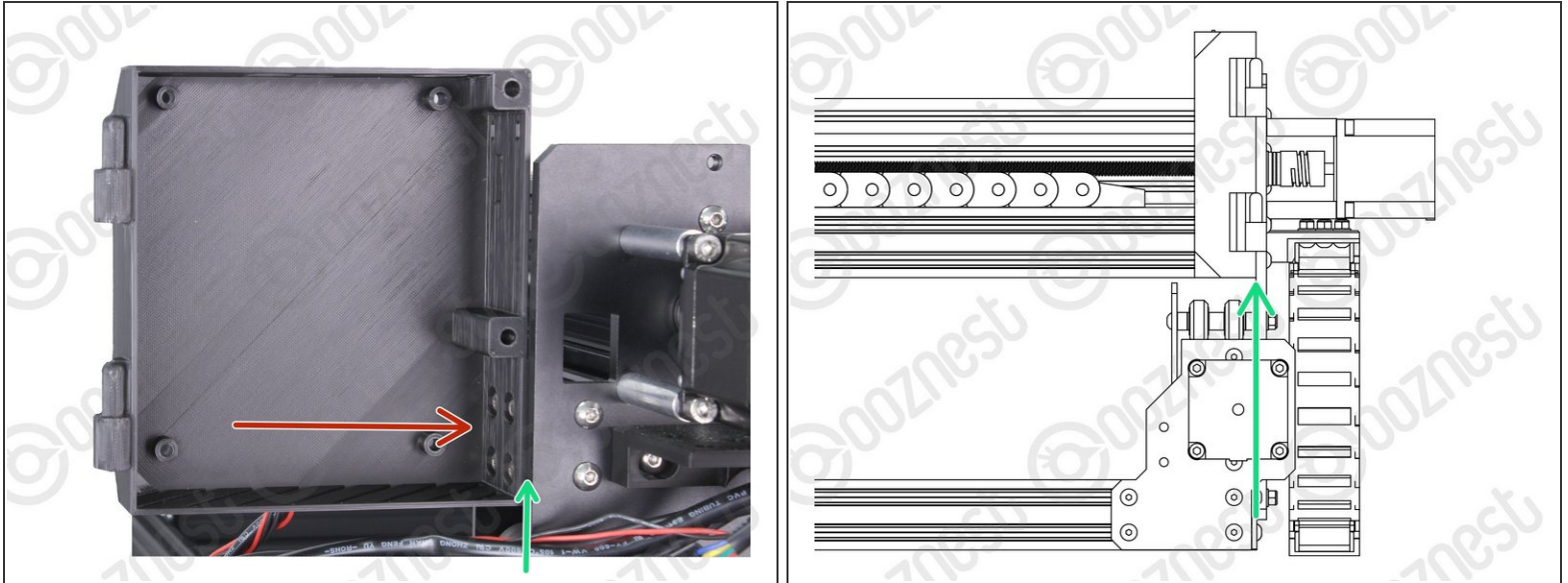


Step 1 — Mounting Bolts



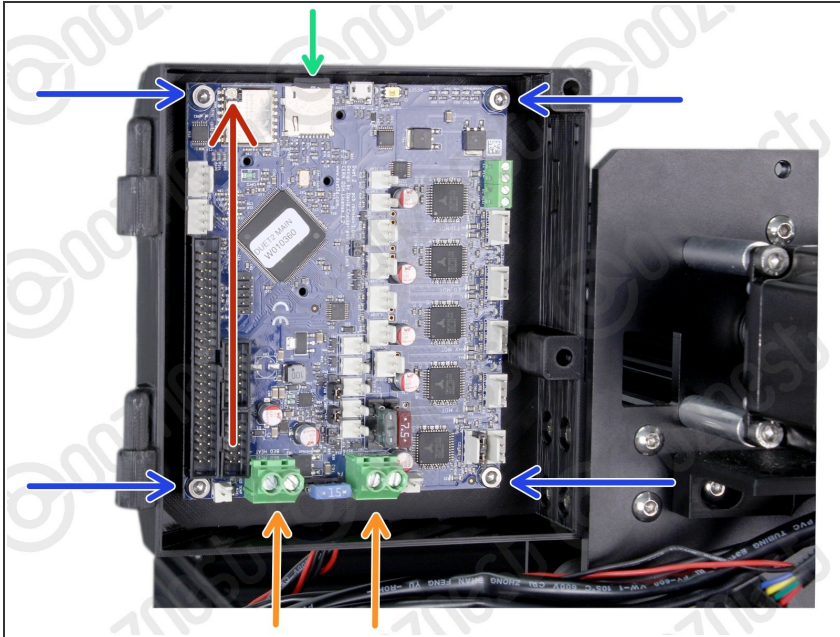
- Insert 4 x M5-Button-Head-Bolt-12mm through the holes on the Controller-Case-Body
- Slightly thread a M5-Drop-In-Tee-Nut onto each bolt.

Step 2 — Mounting



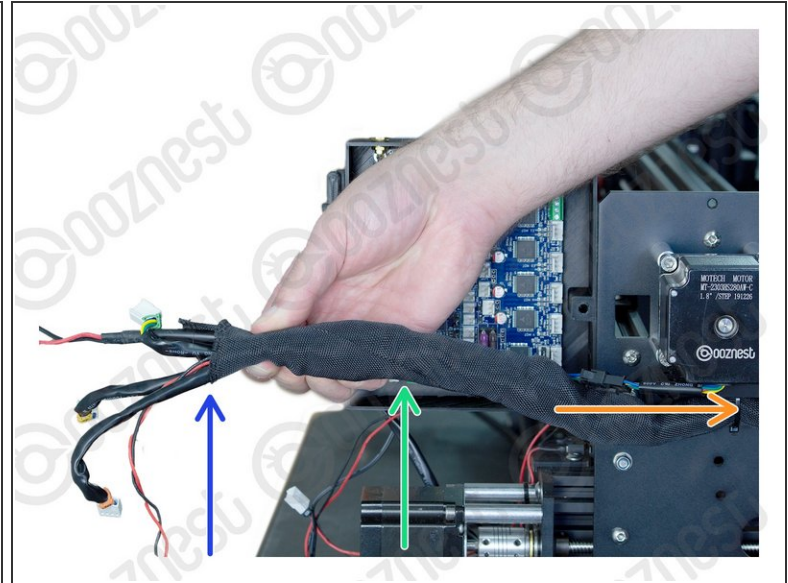
- Join the Controller-Case-Body to both slots on the back of Extrusion-B. Using the previously inserted M5-Button-Head-Bolt-12mm.
- It should be pushed up against the Y-Carriage. See Image 2.
- ① Using a 3mm Hex Key Ball driver would be easiest.
- ⚠ Make sure the M5-Drop-In-Tee-Nuts are engaged with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

Step 3 — Controller Mounting



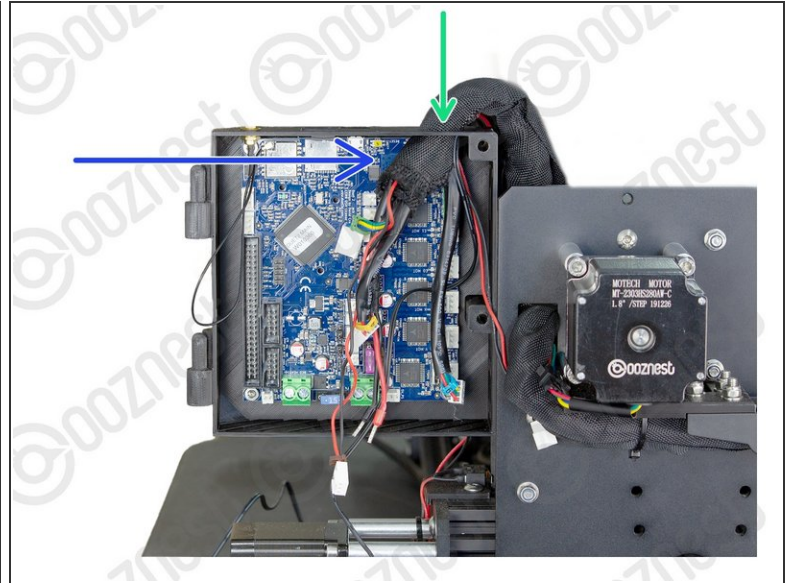
- ① If you have the Wifi version, the External-Antenna is made up of 5 pieces: Antenna-Arm, Antenna-Wire, Spring-Washer, Star-Washer and Hex-Nut.
 - For the Wifi version, before putting the Controller inside the Controller-Case plug the Antenna-Wire into the Wifi module until it clicks.
- Insert the supplied SD Card into the SD Card reader on the Controller.
- 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



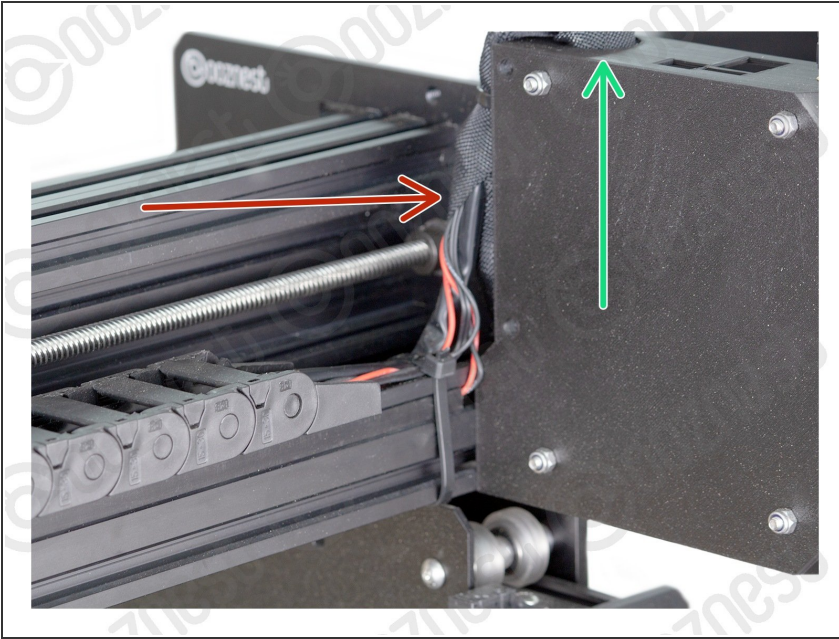
- Gather all the wires coming of Drag-Chain-Y as well as Motor-Wire-3
- Neatly twist the wires together to form a consistent cylinder of wires. It should look like Image 1.
 - ① Include the Ethernet-Cable in this bundle.
- Wrap the provided Cable-Sleeve around all the wires. It should look like Image 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



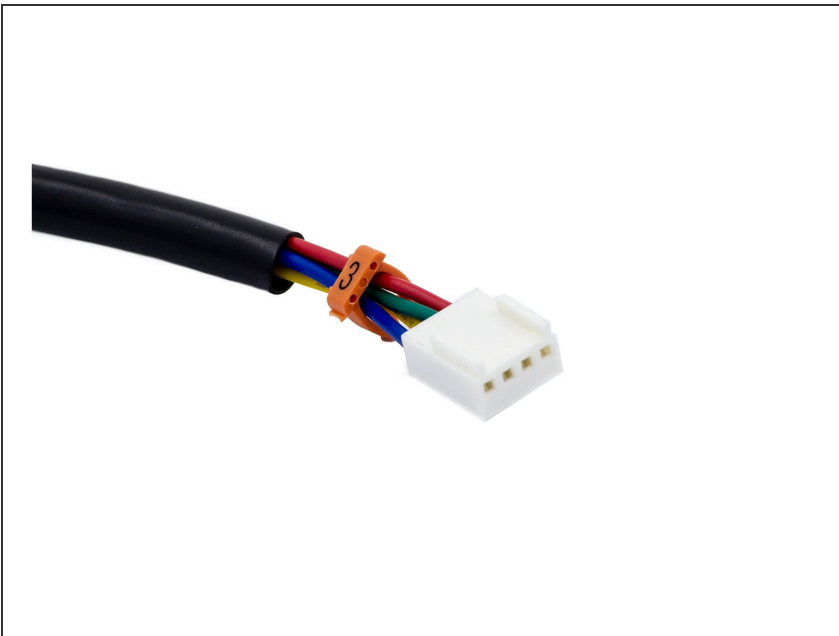
- Feed the twisted bundle of wires through the square hole on the Y-Carriage.
- Then run it up the side of the Controller-Case-Body and into the large hole on the top.
 - ⚠ Do not put the Ethernet Cable through this hole. Slip it out of the Cable-Sleeve.
- Roughly 50mm of Cable-Sleeve should be protruding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

Step 6 — Wire Routing - Part 2



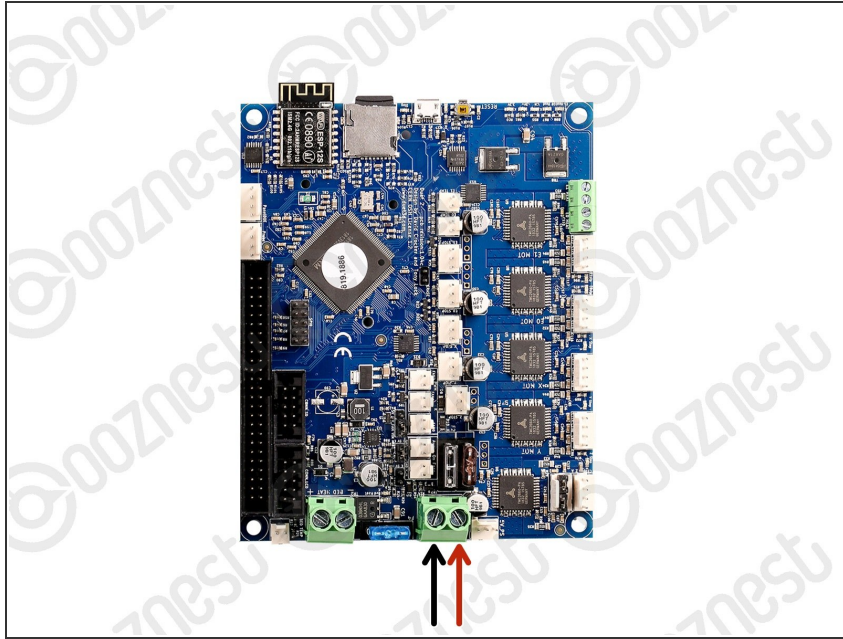
- Bring the wires from Drag-Chain-X & Limit-Switch-0, up into the side of the Cable-Sleeve.
- Feed them through the same hole in the top of the Controller-Case-Bod
- ⓘ Include the Touch Probe wire in this Step.
- ⓘ If at any point the wires are too short, 1-2 links can be removed from the corresponding drag chain.

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

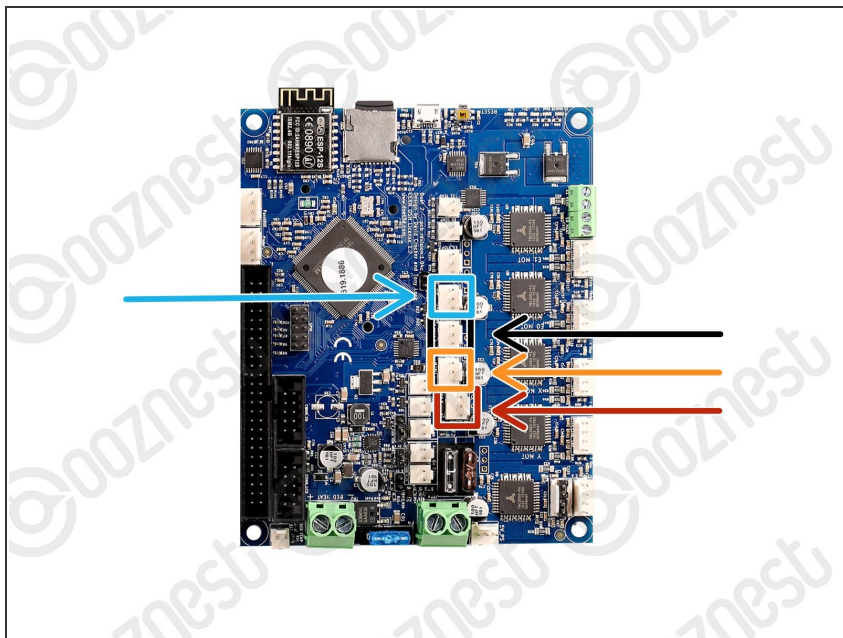


⚠ Remember we have not told you to plug the power supply in yet, so please make sure it is not!

- 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



ⓘ 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.

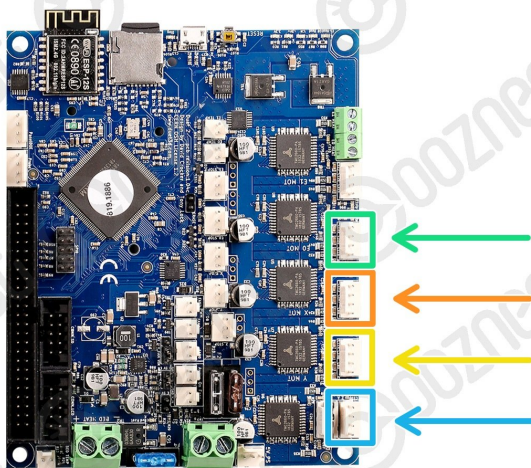
- Limit-Switch-0 (X-Axis)

- Limit-Switch-1 (Y-Axis)

- Limit-Switch-2 (Z-Axis)

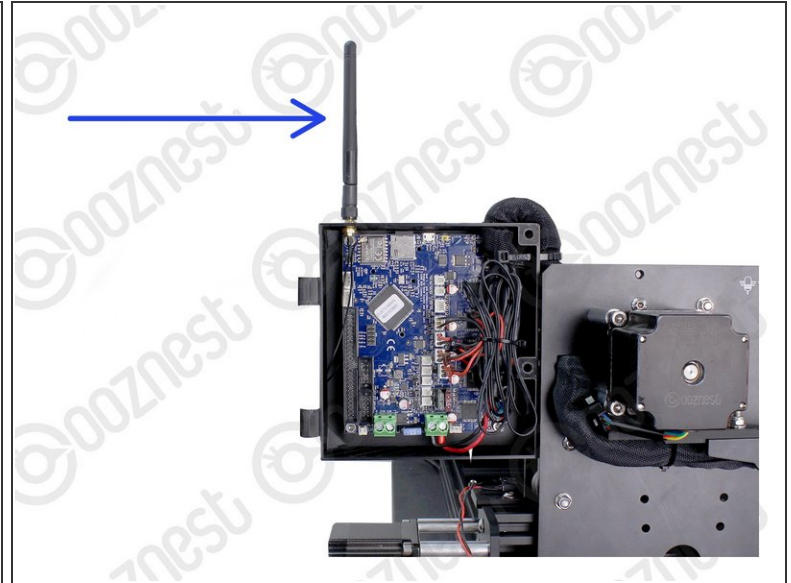
- The Touch Probe wire can also be plugged in.

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



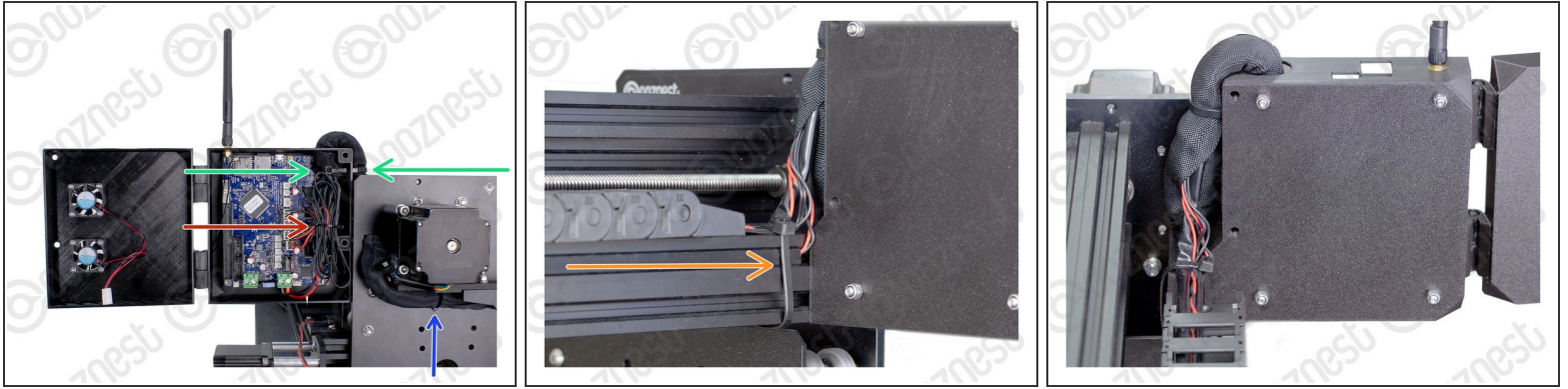
- ① If you have the Wifi Controller please complete this Step. Otherwise, skip to the next Step.
- ① Inside the External-Antenna bag, there will be the Antenna-Arm, Antenna-Wire, Spring-Washer, Star-Washer and Hex-Nut.
- Insert the threaded portion of the Antenna-Wire up into the hole of the Controller-Case-Body.
- 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.

Step 12 — Fans



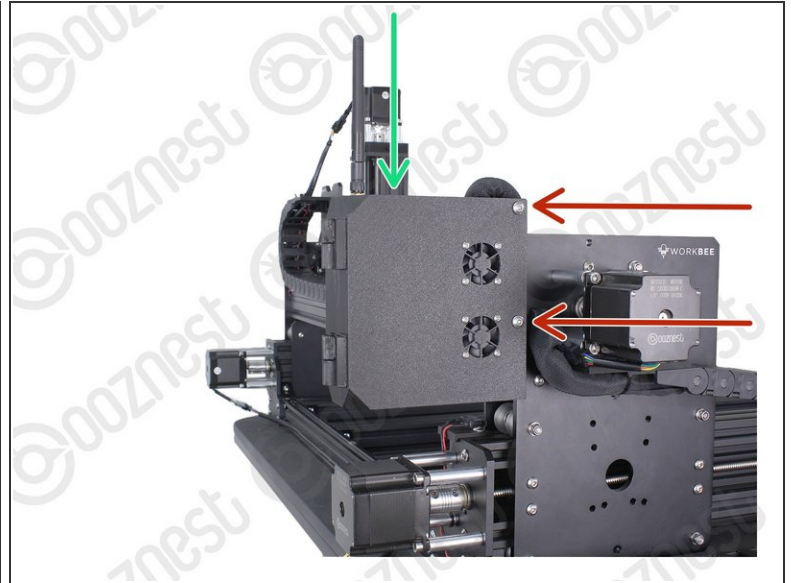
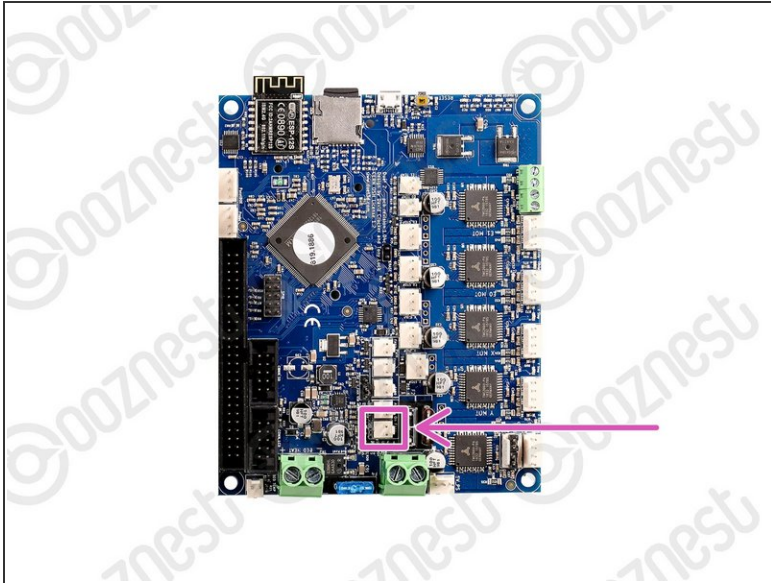
- Mount the Controller-Fans to the Controller-Case-Cover using 8 x M3-Button-Head-Bolt-16mm & 8 x M3-Nyloc-Nut.
- The Controller-Fans go on the inside of the Controller-Case-Cover.
- The M3-Nyloc-Nuts should be on the inside of the Controller-Case-Cover. See Image 1.
- The stickers on the Controller-Fans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



① 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!