5. Controller

Written By: Robert

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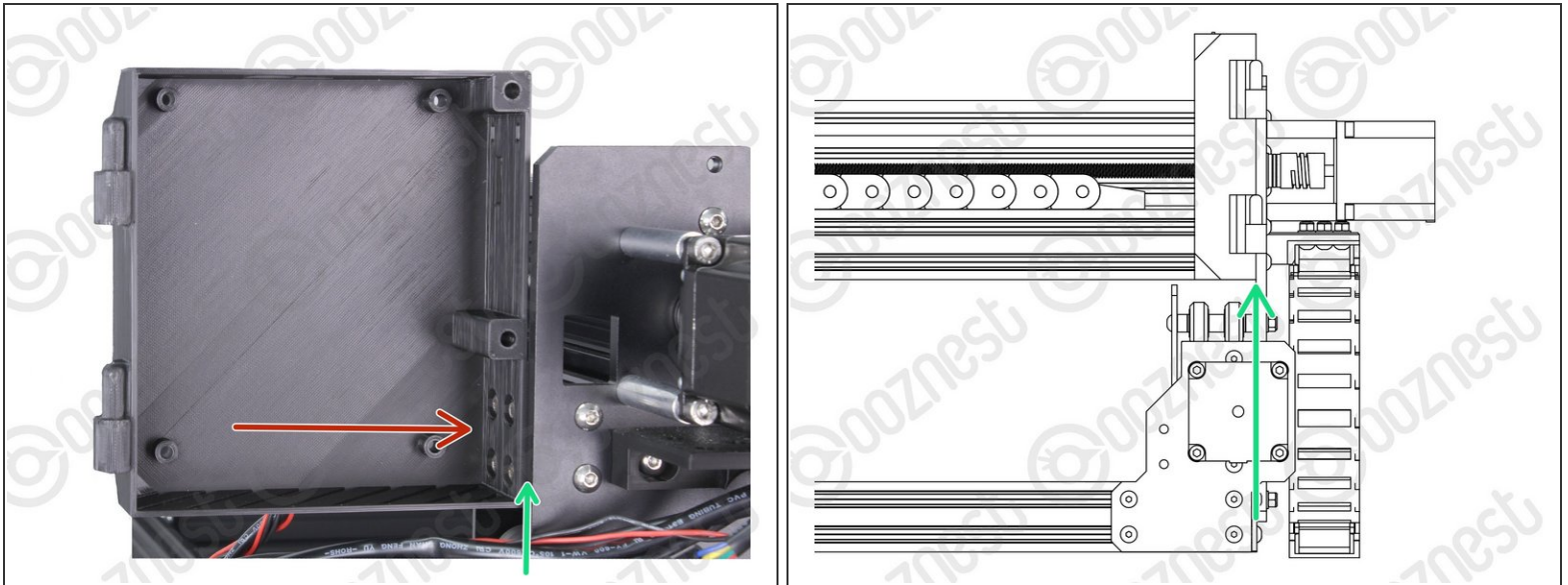
Step 1 — Mounting Bolts

- 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.

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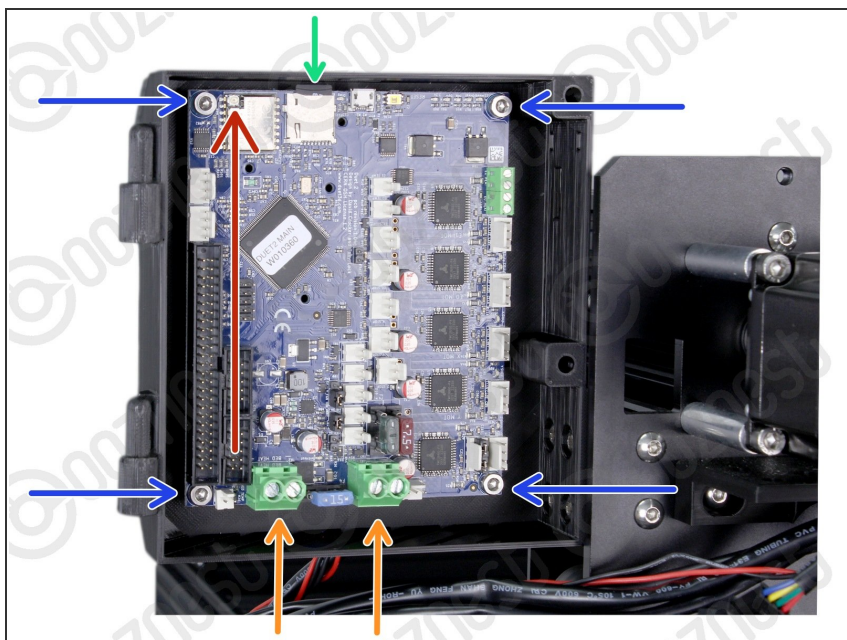© 2022   learn.ooznest.co.uk/   Page 2 of 14

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.

  (i) 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.

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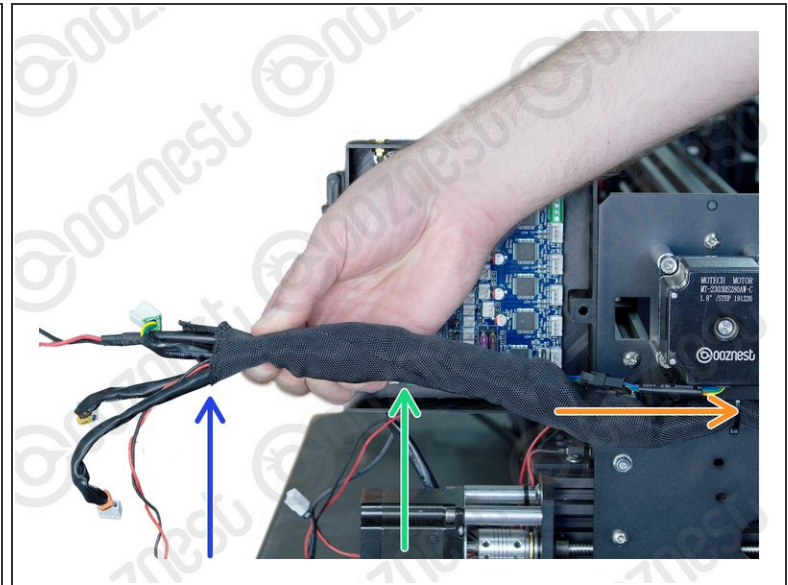© 2022   learn.ooznest.co.uk/   Page 3 of 14

Step 3 — Controller Mounting

ⓘ 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.

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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.
    - ⓘ 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.

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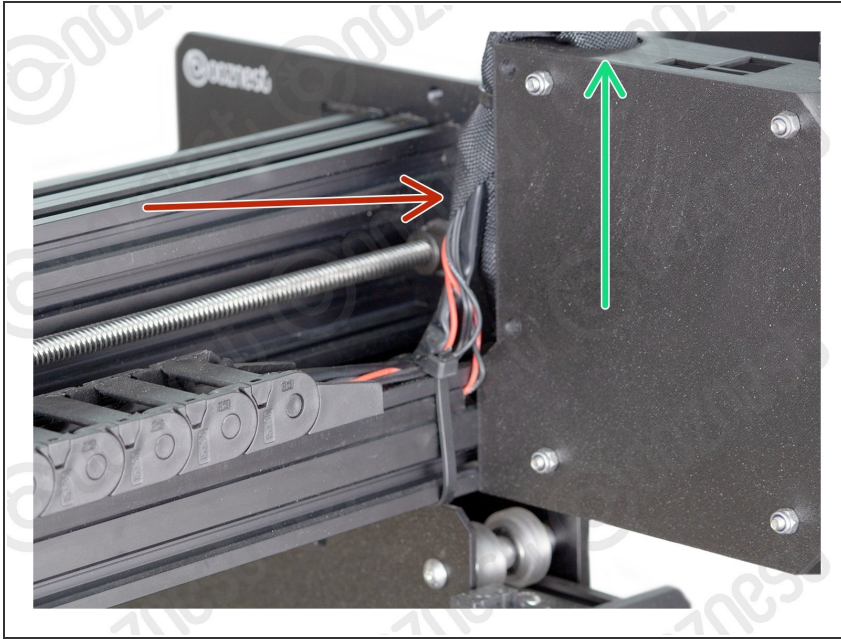
Step 5 — Wire Routing Part - 1

- 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.
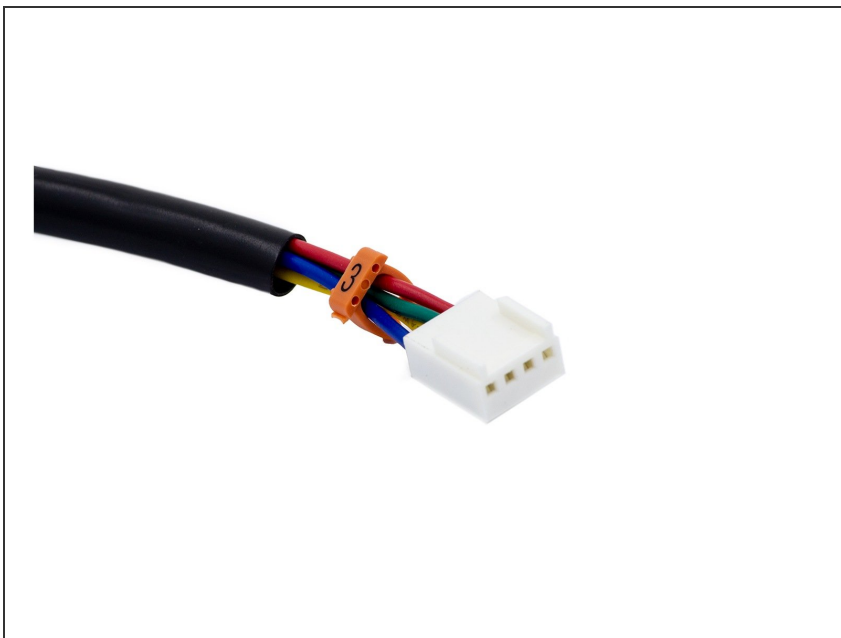
Step 6 — Wire Routing - Part 2

- 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
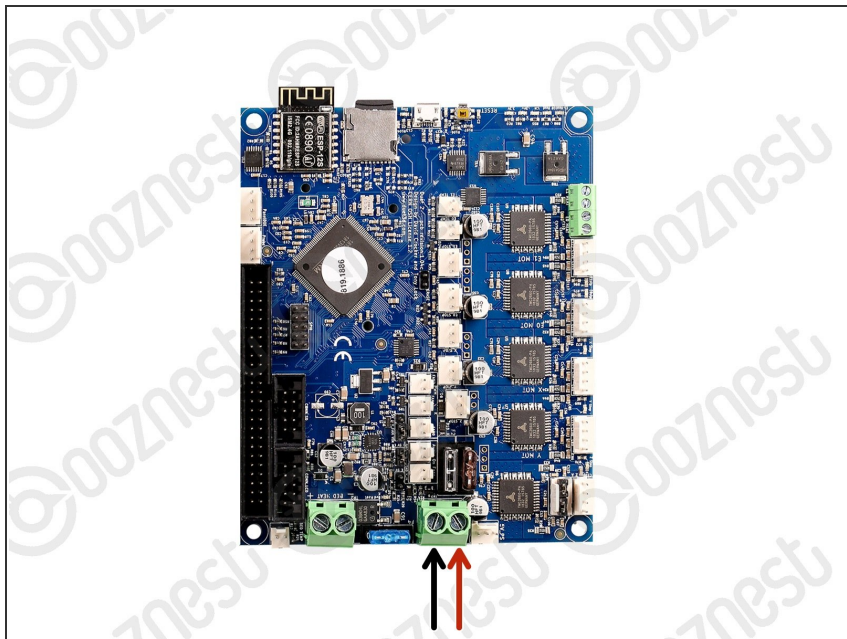 - ⓘ Include the Touch Probe wire in this Step.

Step 7 — Wire Identifications

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

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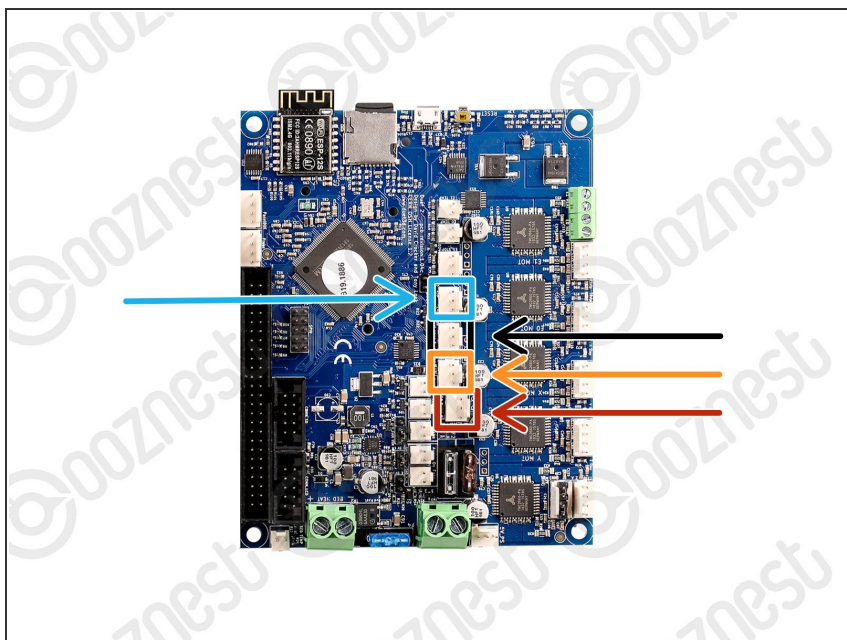
Step 8 — Connecting the PSU Output Cable

⚠ 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.

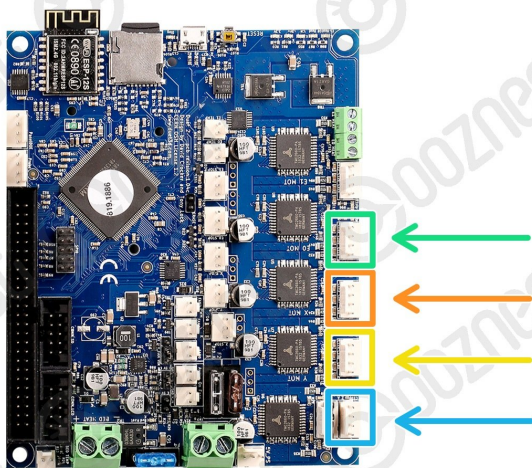⚠ Use an Insulated Flathead Screwdriver.

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.

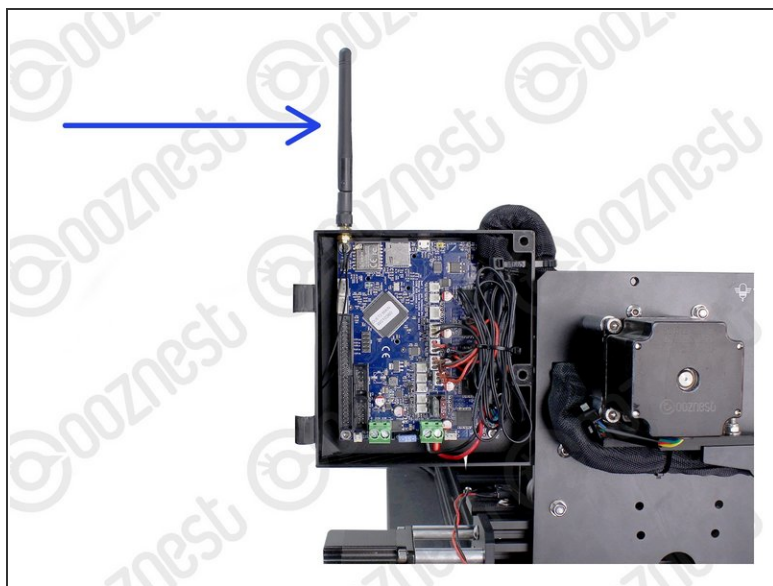This document was generated on 2022-08-28 07:13:15 PM (MST).
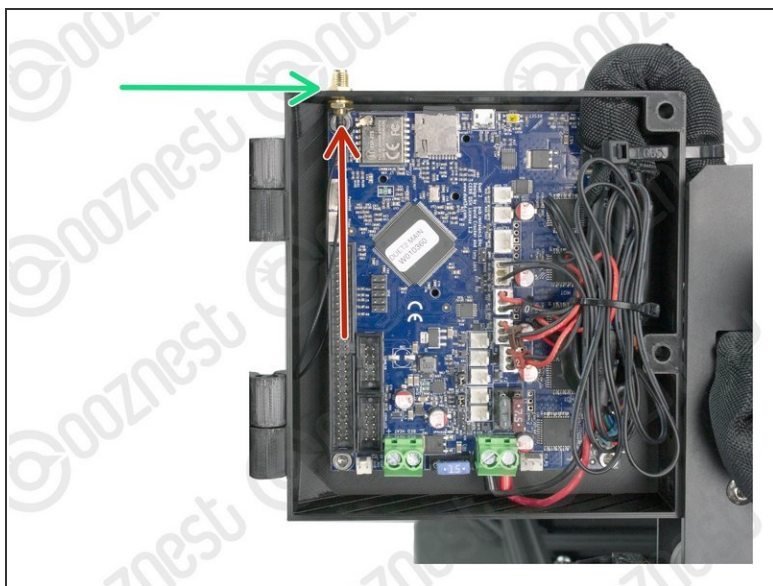
Step 10 — Motor Wires

- 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)
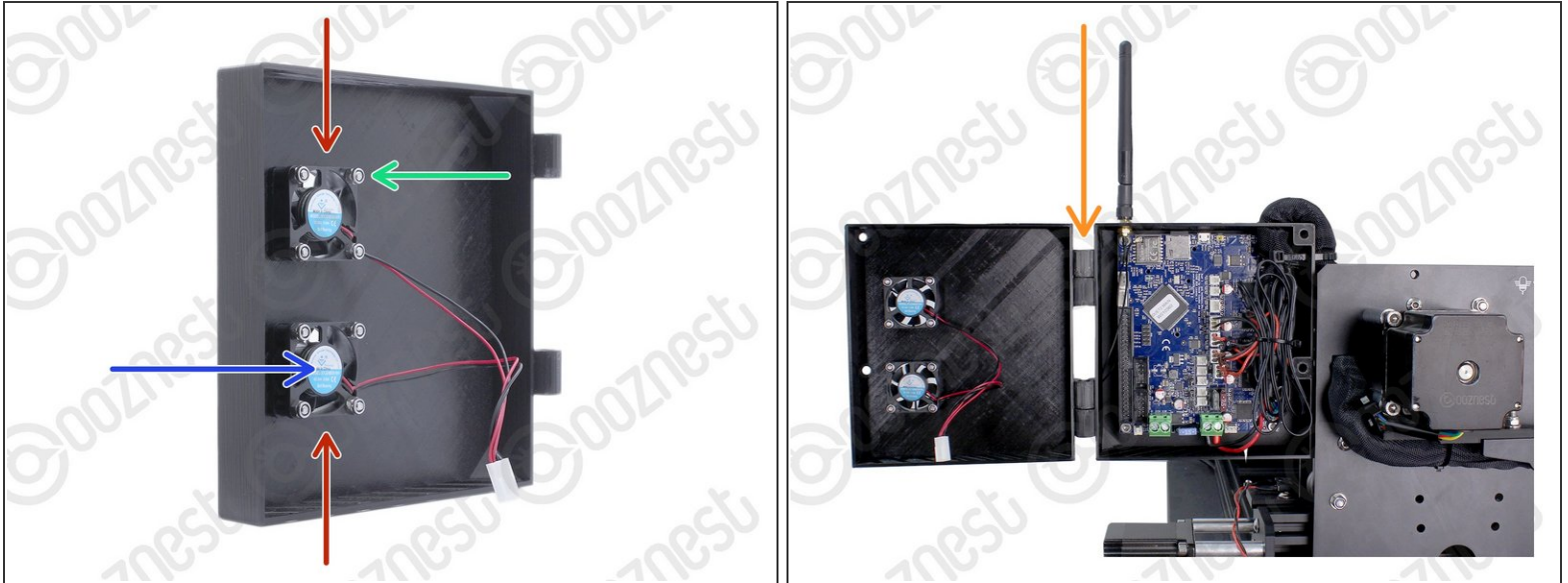 - Motor-Wire-6 (Z-Axis)

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Step 11 — Install Antenna

ⓘ If you have the Wifi Controller please complete this Step. Otherwise, skip to the next Step.

ⓘ 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.

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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.

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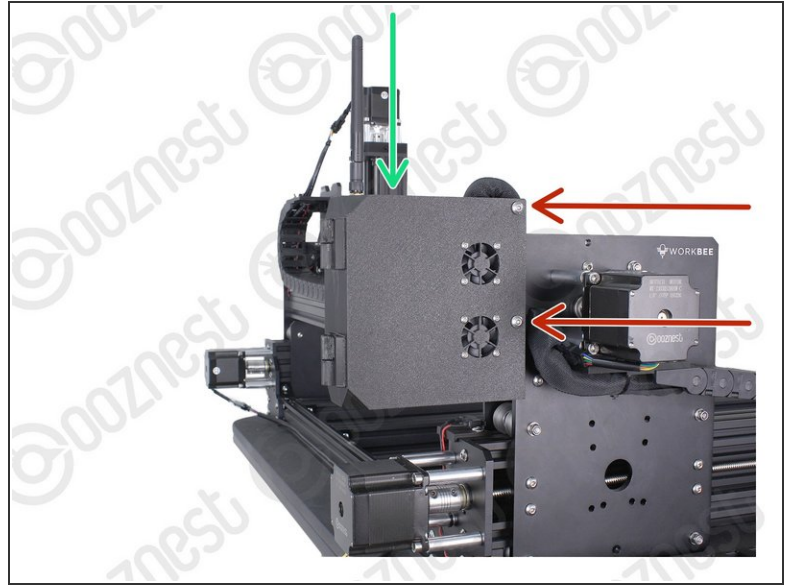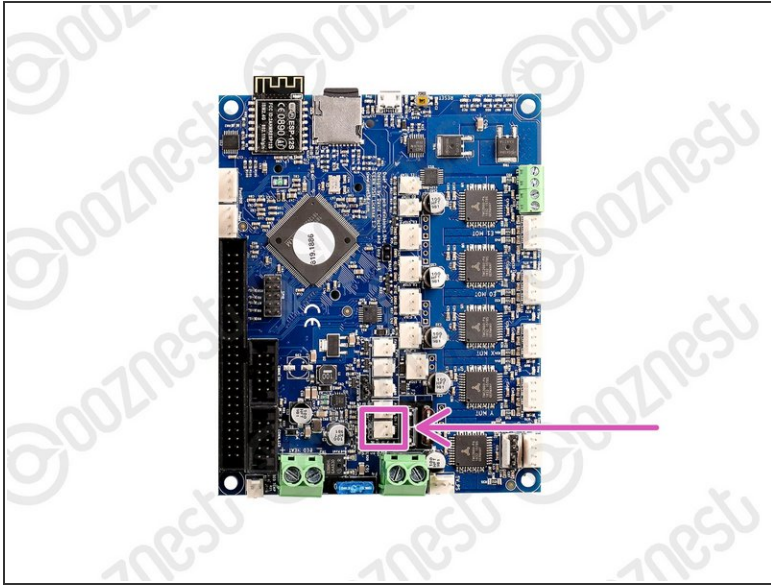
Step 13 — Wire Tidying

- 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.

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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

ⓘ 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!

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