Rat Rig

04. Orbiter Smart Sensor

Written By: Rat Rig

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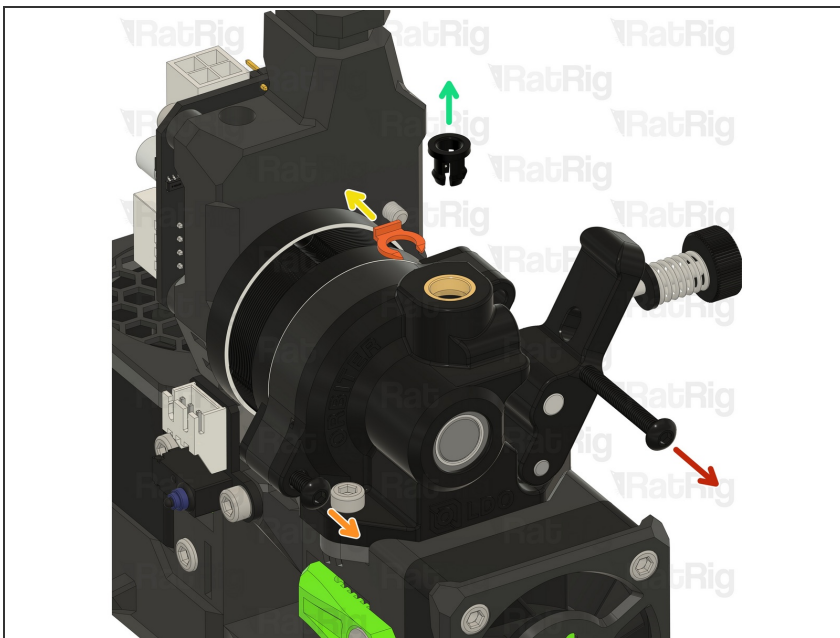Page 1 of 9

Step 1 — Prepare the following parts
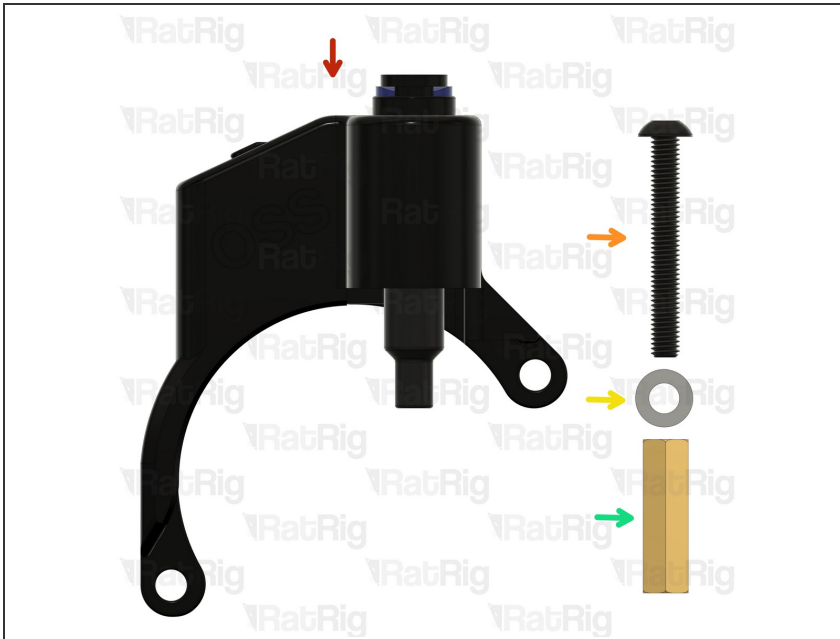
- Orbiter 2 smart sensor

- 1x M3x25 Button head (included in the orbiter 2 smart sensor box)

- 1x M3 washer (M3x6x0.5) (included in the orbiter 2 smart sensor box)

- 1x M3x16mm Hex Spacer

Step 2 — Prepare the Orbiter

- Remove the top right M3 Button head screw, it will not be used.

- Remove the lower left M3 button head screw by 5-8mm.

- Remove the PTFE retaining clip.

- Remove the PTFE locking mechanism by pulling it upwards.

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Step 3 — Remove the old spacer

- ● Remove the toolboard screws
  - ⓘ If you are careful, there is no need to disconnect the wires from the toolboard.

- ● Partially remove the toolboard.

- ● Remove the M3 Cap Head Screw holding the M3 Hex spacer.

- ● Remove the M3 Hex spacer. (It will not be used again).

- ● Install the new M3x16mm Hex Spacer.

- ● Re-install the M3 Cap Head Screw.

- ● Re-install the toolboard and its screws.

## Step 4 — Install the new orbiter 2 smart sensor

- Insert the orbiter 2 smart sensor inside the PTFE hole, carefully align it.

  ⚠ Do not force it in, you may damage the orbiter 2 smart sensor.

- Remove the tensioning screw and open the orbiter arm.

## Step 5 — Install the fasteners
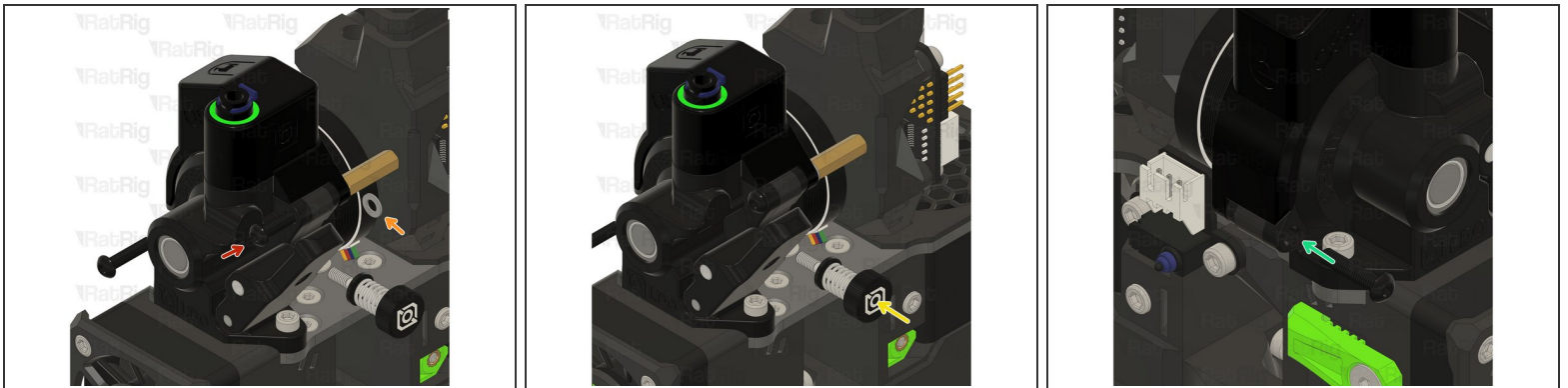
- Thread the M3x25 Button head screw half way.

- Insert the M3 washer between the orbiter 2 smart sensor and the M3 Hex spacer.

- Fully tighten the M3x25 Button head screw.

- Tighten the lower left M3 Button head, ensuring it is fed trough the orbiter 2 smart sensor hole.

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Step 6 — Mechanical assembly finished!
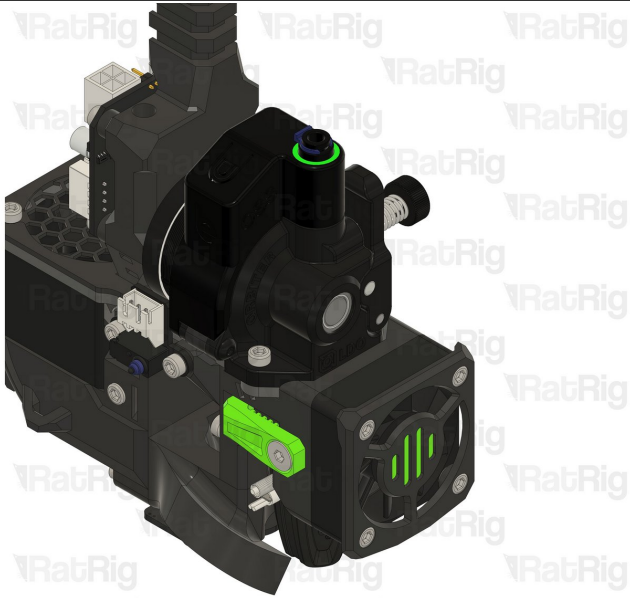
- Nice! You shall not fear empty spools anymore!

## Step 7 — Prepare the Orbiter smart sensor wiring parts
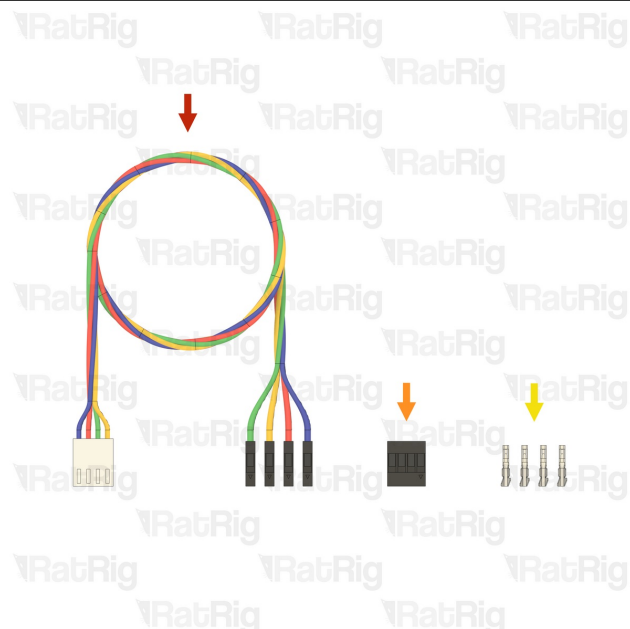
- ⓘ The following part is included in the Orbiter 2 smart sensor box (**SKU: HW3990EC**)

  - 1x Orbiter 2 Smart Sensor Wiring Harness

- 1x Connector - 4 Pin - Dupont Housing 4x1 - 2.54mm (**SKU: HW4160EC**)

- 4x Crimp - Dupont 2.54mm Female (**SKU: HW4161EC**)

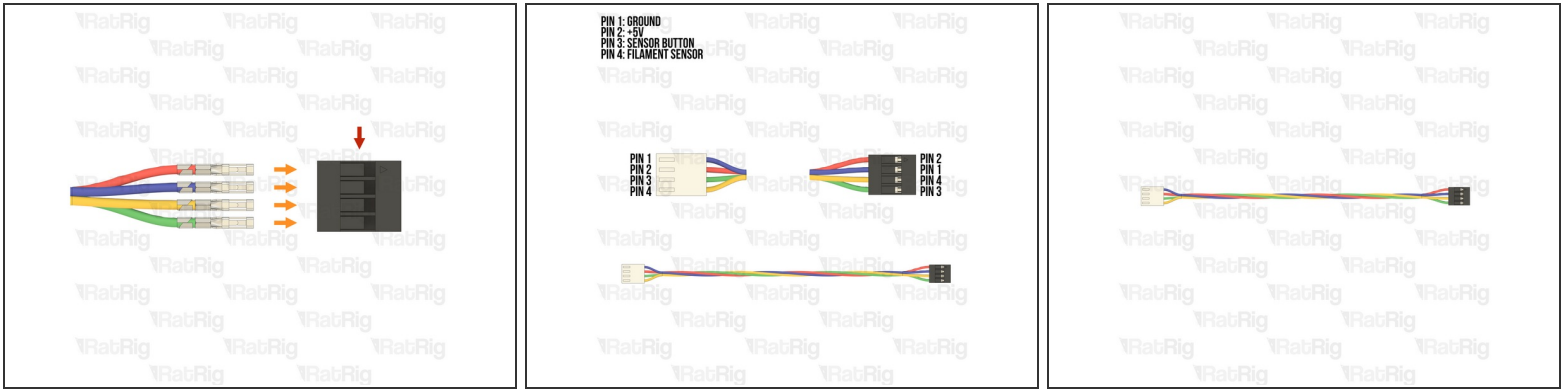## Step 8 — Prepare the Orbiter smart sensor wiring - Part 1
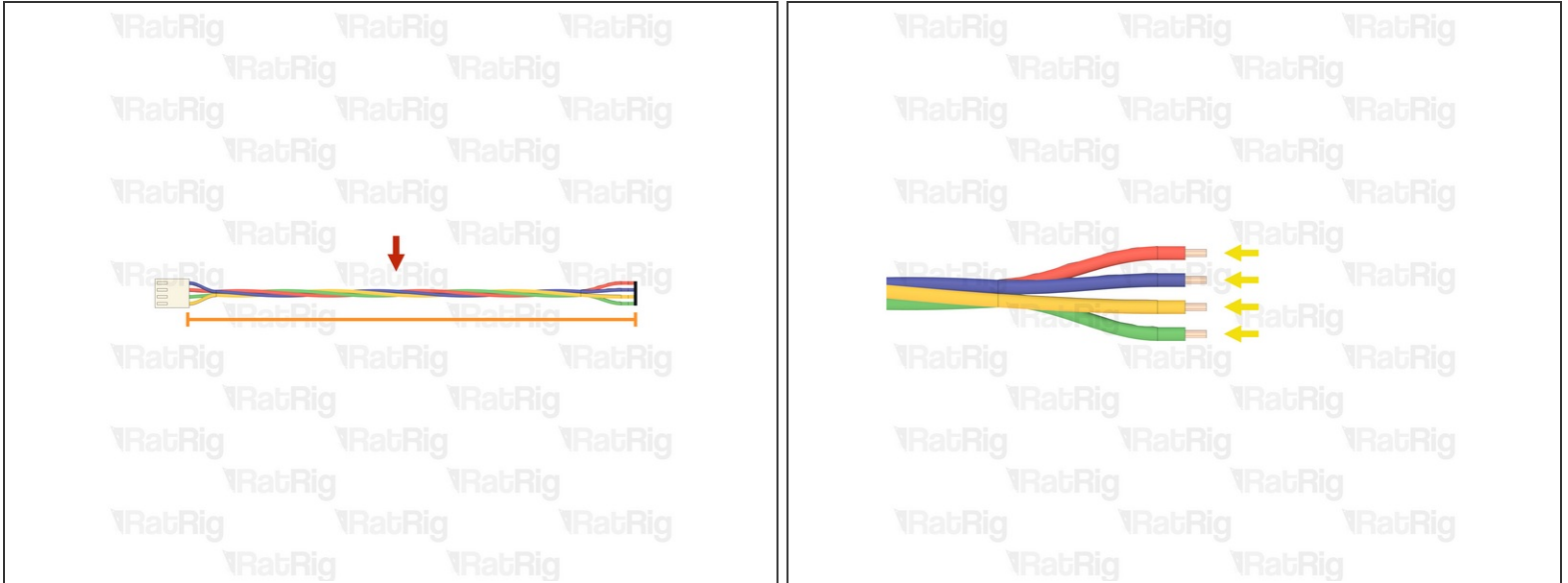
- Orbiter 2 Smart Sensor Wiring Harness

  - Measure 160mm **from the back of the single white connector**

  - Use wire cutters to cut the wiring harness the measured length

  - ⓘ The remaining wire can be discarded, it is no longer needed

- Strip 2mm of the insulation from the end of each of the bare wires

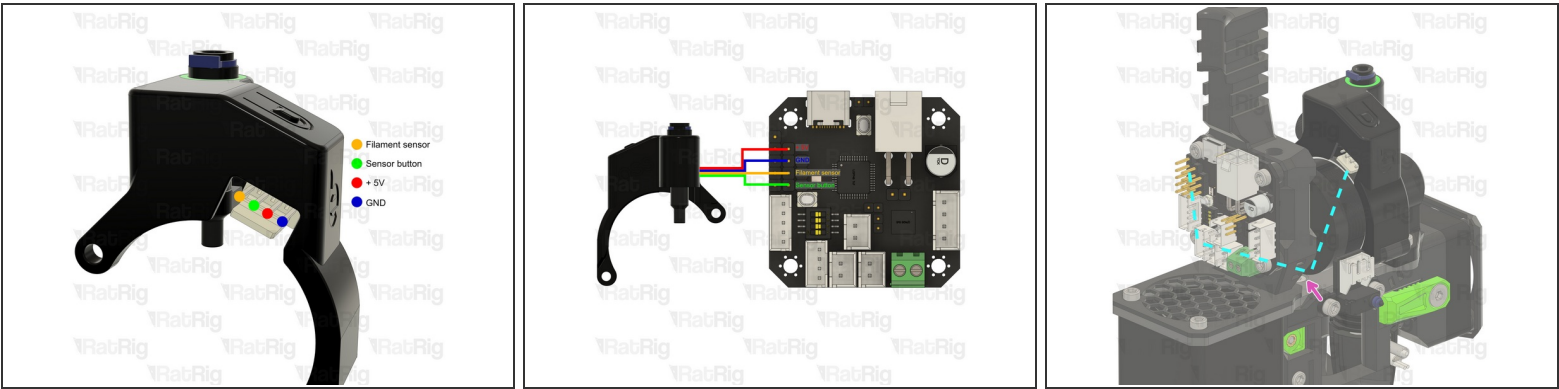## Step 9 — Prepare the Orbiter smart sensor wiring - Part 2
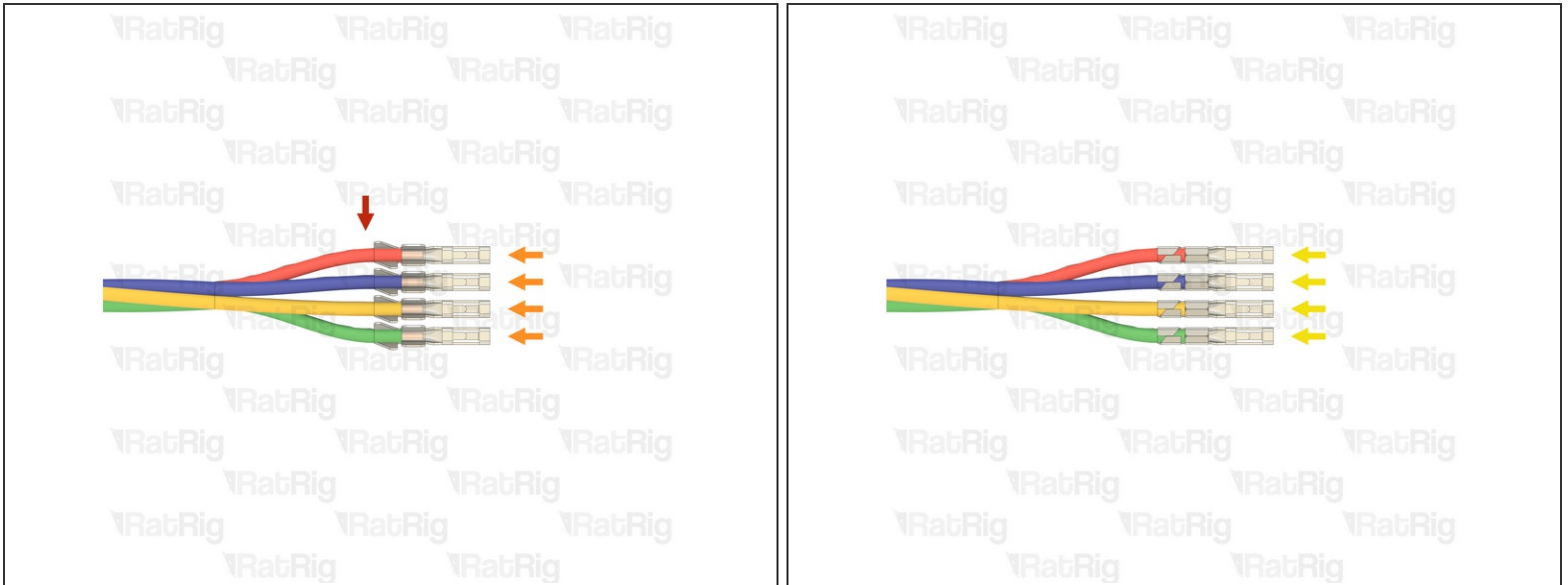
- ● Prepared wires from the previous step

- ● Crimp - Dupont 2.54mm Female
  - ● Crimp a female Dupont terminal onto each of the four stripped wires

- ⚠ **Before proceeding**, verify that all four crimp terminals are correctly crimped to the wires

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Step 10 — Prepare the Orbiter smart sensor wiring - Part 3

- Connector - 4 Pin - Dupont Housing 4x1 - 2.54mm

- ⚠ **Please note: The wiring colour shown may not match** your Orbiter smart sensor harness. It is **very important** to use the provided wiring diagram to correctly assembly the cable. **Do not** blindly follow the wire colours

- ⓘ Make sure the wires are inserted into the **correct positions**. Incorrect wiring **will damage the Orbiter smart sensor, toolboard, and other electronics**

- Insert the crimped terminals into the Dupont connector, using the wiring diagram provided. The crimp terminals will "click" when fully inserted

Step 11 — Wire the Orbiter smart sensor

- Connect the cable prepared in the previous steps to the Orbiter smart sensor to the EBB42 toolboard

  ⚠ Pay close attention to the connection to the EBB42 toolboard. The Dupont connector is not keyed and can be installed backwards. Verify the connection before continuing

- Route the cable as shown, using zip ties to secure it in place.

- 📌 For more information about the Orbiter Smart Sensor V2 - Click Here

Step 12 — Configure the Orbiter Smart Sensor

- Test!

- ⓘ Click here to be redirected to the config page where you can COPY the text.

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