

Athena Pro Arm V2 Refit Instructions

For Air Express and Early Shipping Customers - Please reach out via email if you require support.

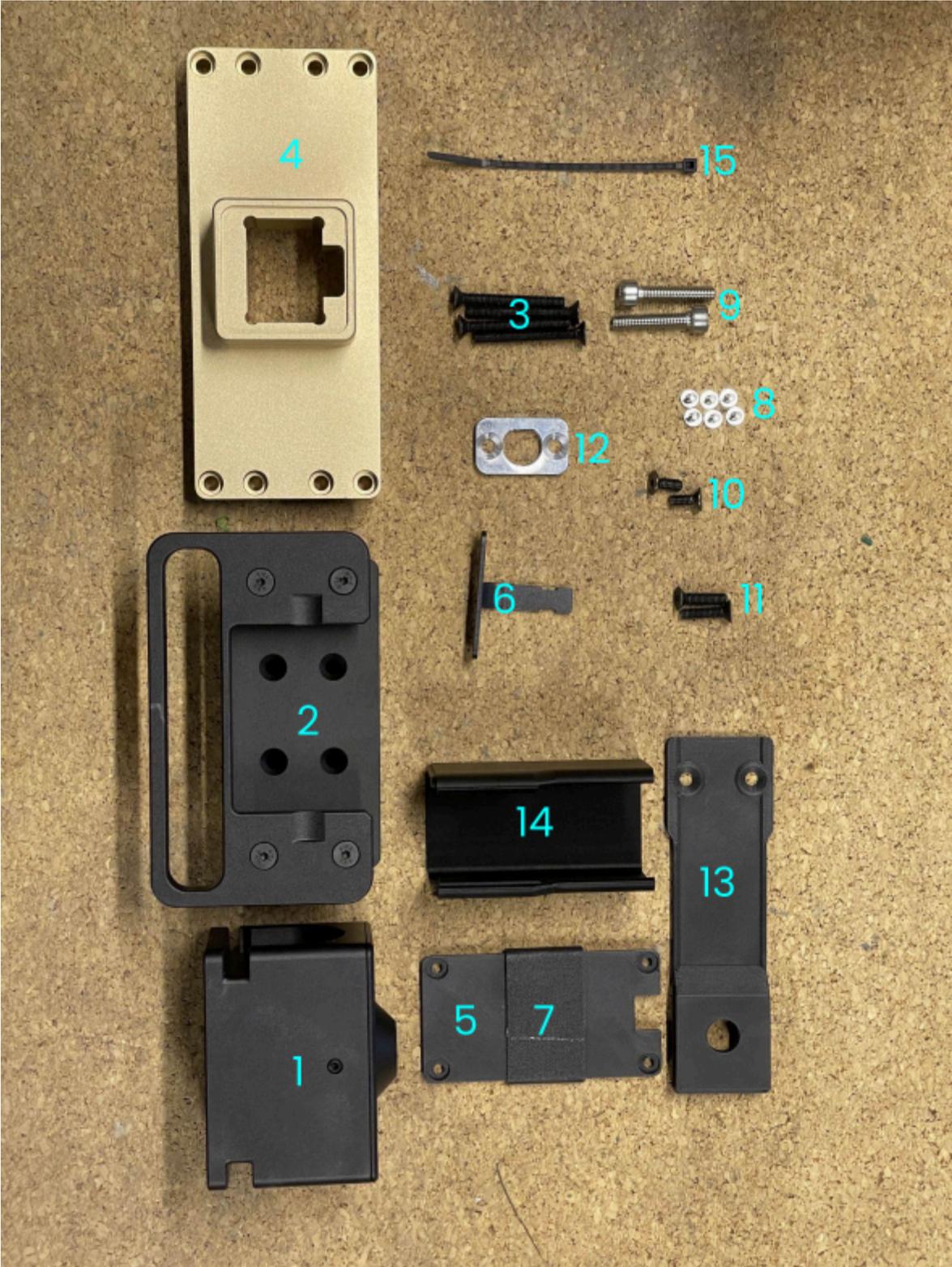
Tools Required

- 2.0 mm Hex Key
 - 2.5 mm Hex Key
 - 3.0 mm Hex Key
 - 4.0 mm Hex Key
 - 6.0 mm Hex Key
 - Flush Cutters
-

Included Parts

(Pro Buildarm Head and Build Plate Hanger arrive pre-assembled)

1. Pro Buildarm Head Assembly (*Ball & Hex Shaft are greased with anti-seize, do not remove*)
 - 1.1. Body
 - 1.2. Top Cover
 - 1.3. Clamp Block
 - 1.4. Ball
 - 1.5. Hex Shaft
 - 1.6. 3) M4 × 16 mm Socket head Bolts
 - 1.7. 3) M4 Washers
 - 1.8. 4) M3 × 6 mm Flat Head Screws
 - 1.9. 1) M4 Grub Screw
2. Buildplate Hanger/Top
 - 2.1. Build Plate Hanger Bottom V2
 - 2.2. Buildplate Handle Top V2
3. 4) M4 x 45mm Build Plate Flat Head Screws
4. Buildarm Front Plate
5. Cable Cover
6. Cable Retainer
7. Adhesive Cloth Tape (~30 cm) ***This is wrapped around the Cable Cover***
8. 6) M3 × 6 mm Flat Screws
9. 2) M5 x 25mm Load Cell Screws
10. 2) M4 × 8 mm Flat Head Screws
11. 2) M4 × 16 mm Flat Head Screws
12. Hex Shaft Base
13. Load Cell Cover Bottom V2
14. Load Cell Cover Top V2
15. Zip tie



Machine Preparation

1. Remove Resin Vat & Build Plate

Carefully remove the resin vat and build plate and set them aside.

2. Clean the Build Chamber

Make sure there is no resin residue on the LCD or surrounding area.

3. Home the Build Arm

Use the touchscreen to home the Z-axis.

4. Power Off

Turn off the machine and unplug the power cable.

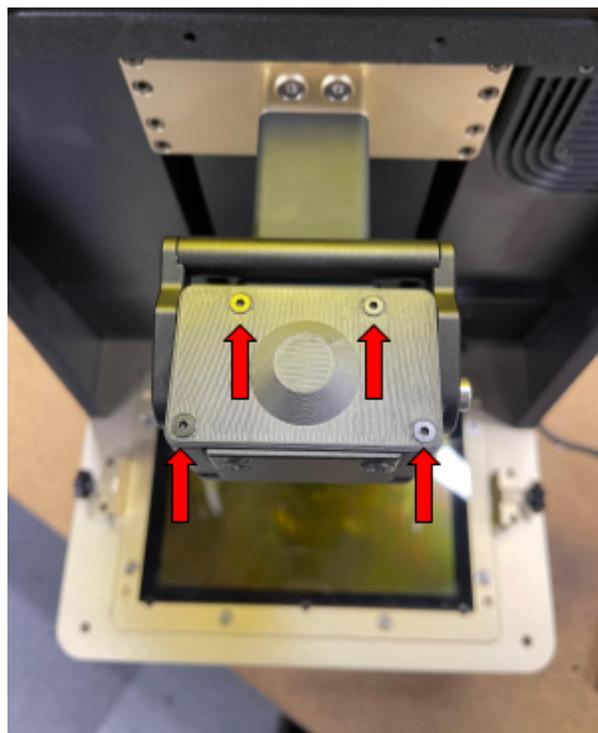
5. Cover the LCD screen

Put some foam, soft towel or cardboard on the screen to protect it from parts falling onto the LCD..

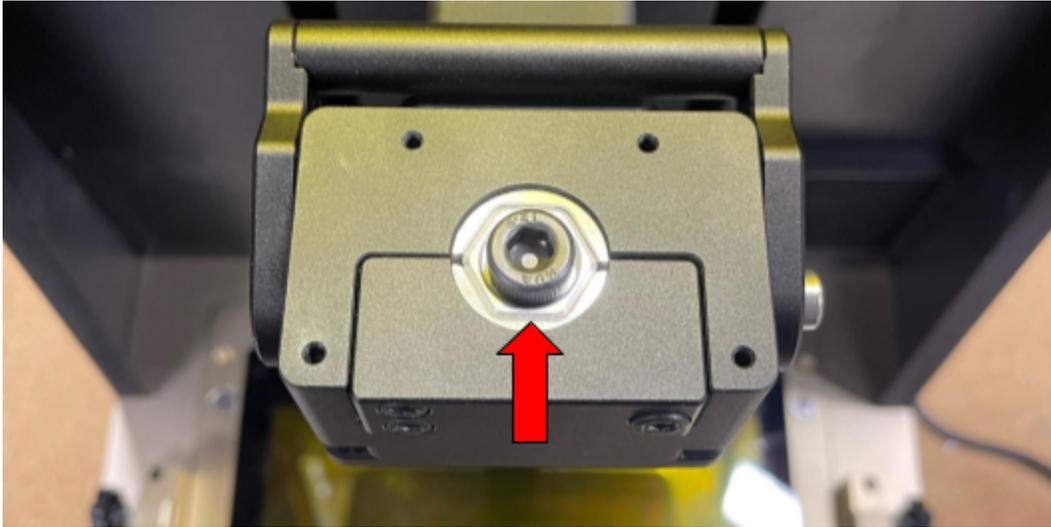
Refit Procedure

1. Remove Existing Pro Arm Head

1. Remove the **top cover screws** from the existing Pro Arm head (2.0 mm hex) then remove the top cover.



2. Remove the **M8 post retaining bolt** (6.0 mm hex). This may take some force.

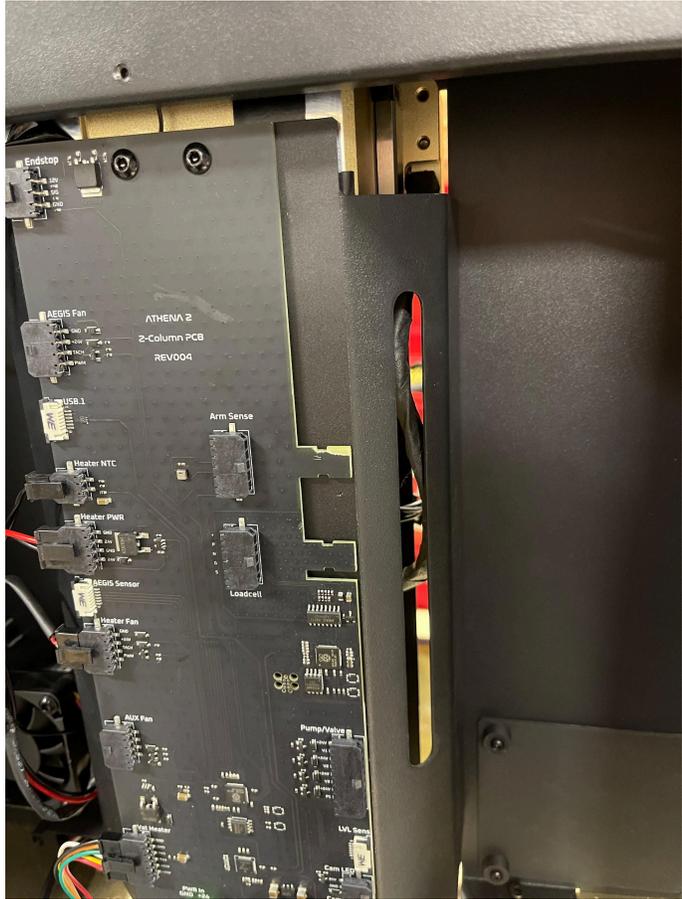


3. Remove the **load cell lower cover screws** from the underside of the build arm (2.0 mm hex).



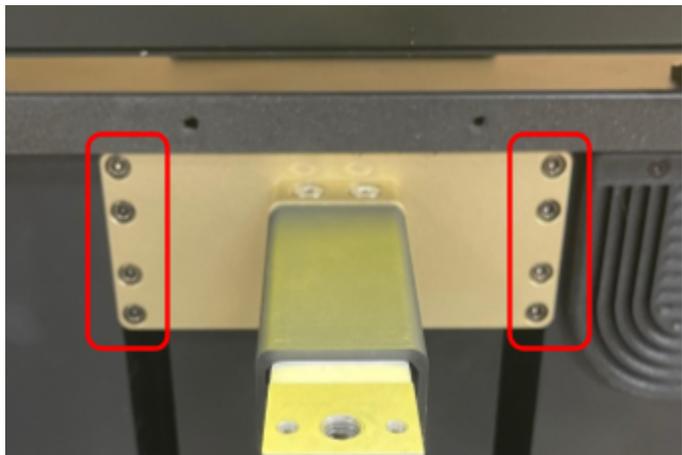
4. Pull the complete Pro Arm Head Assembly up and off the load cell..

5. Unplug the **Arm Sense** and **Load Cell** connectors by pressing the latch and pulling the connector to the right..
6. Push the wiring forward through the Z-column shield slot.



3. Remove the Build Arm Assembly

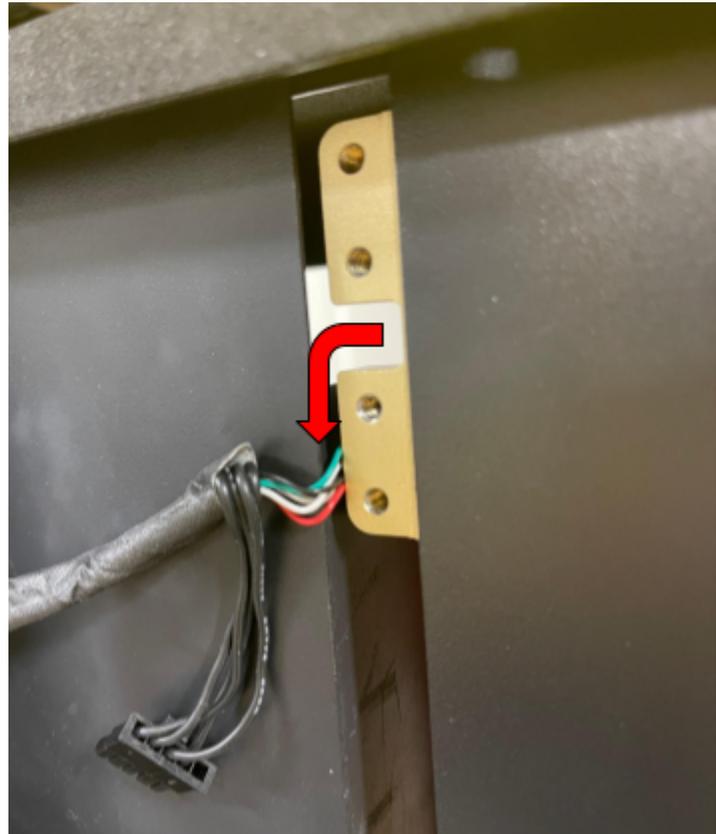
1. Turn the machine back to the front.
2. Remove the **eight build arm mounting screws** (3.0 mm hex) from the front mounting plate.



3. Pull the build arm assembly forward and out.

You want to pull the build arm assembly out as far as possible, but the connectors are too large to pass through the slot in the rear build arm plate.

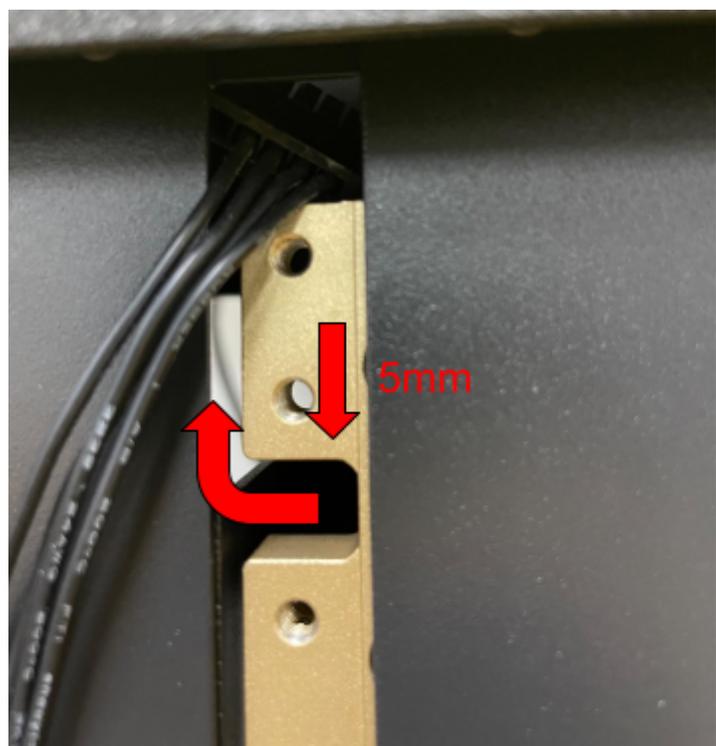
The wiring near the connector may be pushed gently downward past the left edge of the rear build arm plate then once below the rear build arm plate you can pull the wiring out.



Alternatively,

It may be easier to get the connectors out by manually moving the build arm about 5mm down and guiding the cable out the top of the rear build arm plate.

You would need to use a hex key or small screw driver to manually force the rear build arm plate down about 5 mm. Please reach out if you have any issues with this step.



4. Unwrap the cloth tape from the wiring harness.



5. Remove the **load cell mounting screws** (3.0 mm hex).

Be careful with these as they are easy to strip the heads.



4. Transfer Load Cell & MLX IR Sensor

The Load Cell is the long aluminum part with the white soft silicone section in the middle. This is part of the force sensor system and measures the forces on the build plate.

The MLX IR Sensor is an Infrared Temperature sensor which is used to measure the resin temperature in the vat.

1. Remove both the load cell and MLX IR sensor. The load cell cable is glued to the build arm front plate but it can be removed.
2. Press the MLX IR sensor out of the old lower cover.

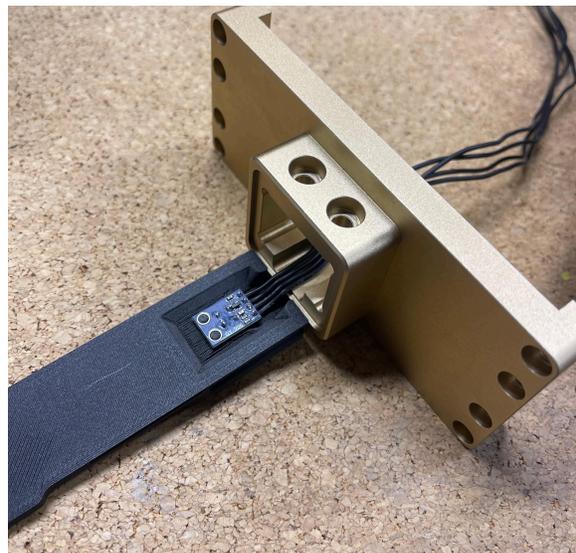


Install into New Lower Cover

- The new lower cover has **alignment pins**; slide the sensor onto them until seated.

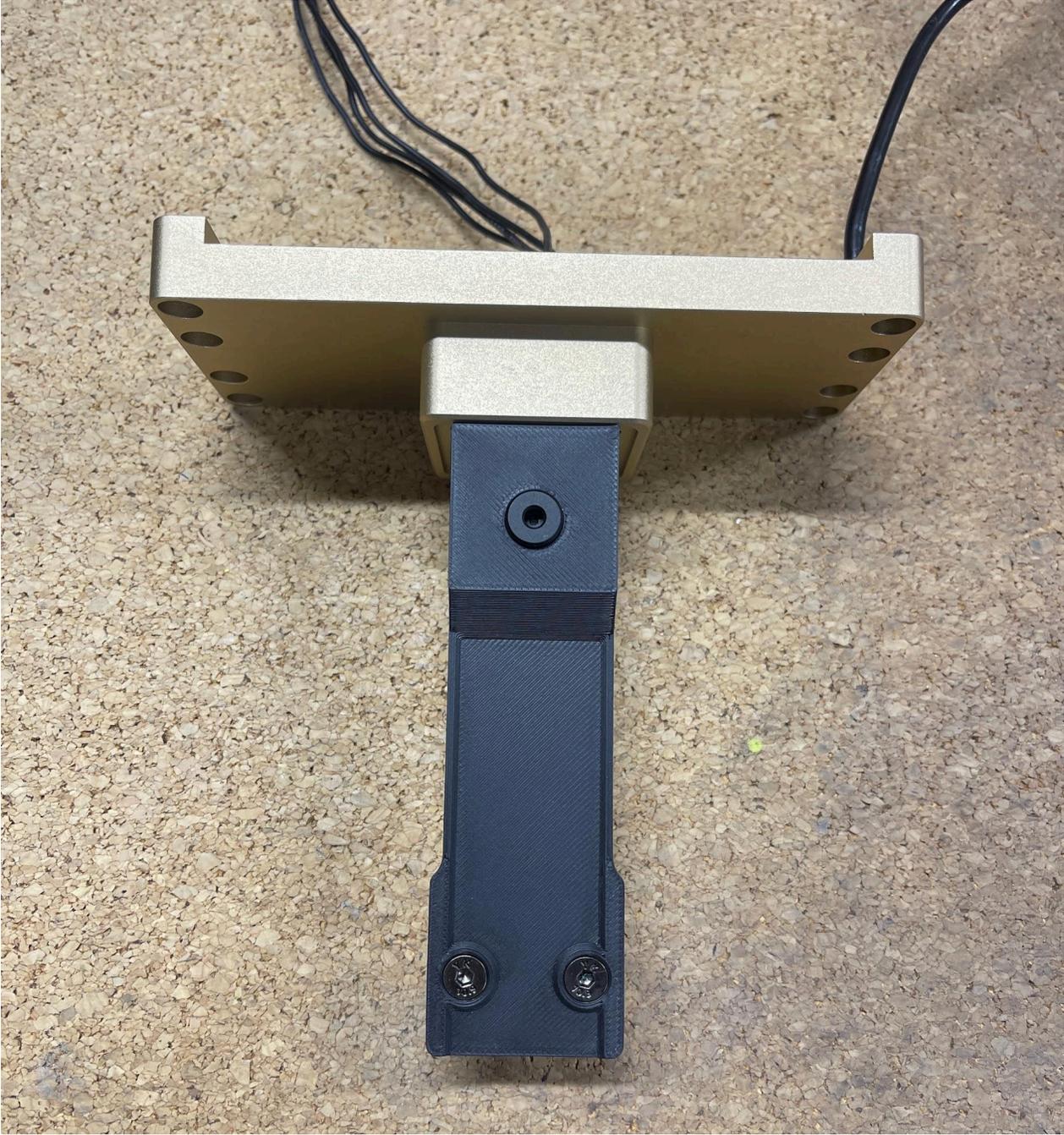
It can be tricky to get the MLX sensor onto the printed lower cover. Make sure its going in straight onto the alignment pins..

1. Pull the MLX wires through the opening in the new **build arm front mounting plate**.
2. Push the load cell from the backside into the new mounting plate and secure it with the two new **M5 load cell screws** (4.0 mm hex).
3. Install the new **lower load cell cover** using the **M4 x 8mm Flat Head screws** (2.5 mm hex).



The assembly should look like this.

Bottom Side:

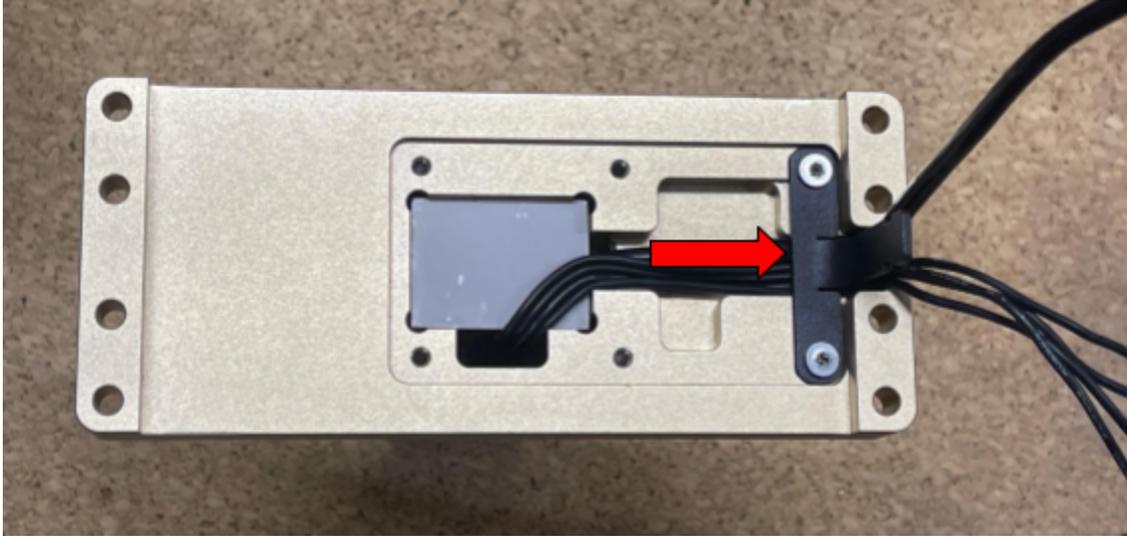


Top Side:



5. Cable Management

1. Temporarily install the **cable retainer** using the **cable cover screws** (2.0 mm hex).



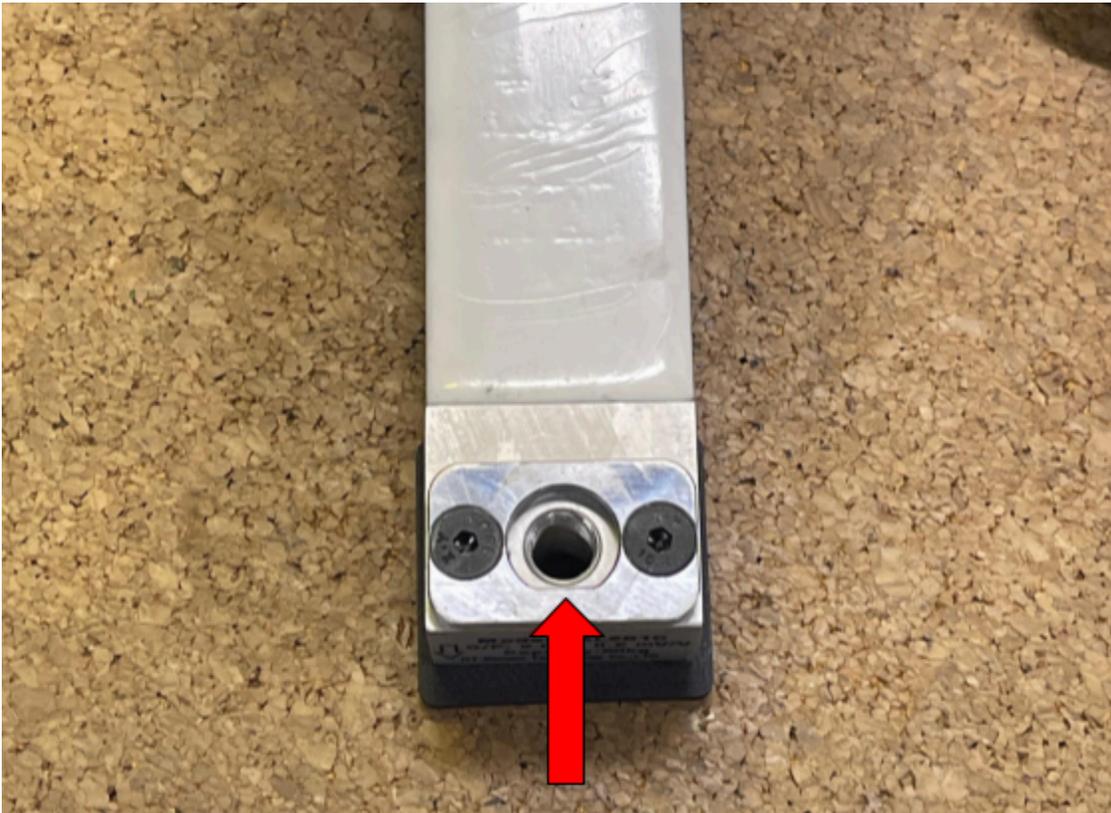
2. Wrap the wiring harness using the provided **adhesive cloth tape**, overlapping each wrap slightly.
 - Wrap all the way from and over the retainer as shown in the following photos
 - Wrap to **1–2 inches from the connector**, leaving the connector area free.



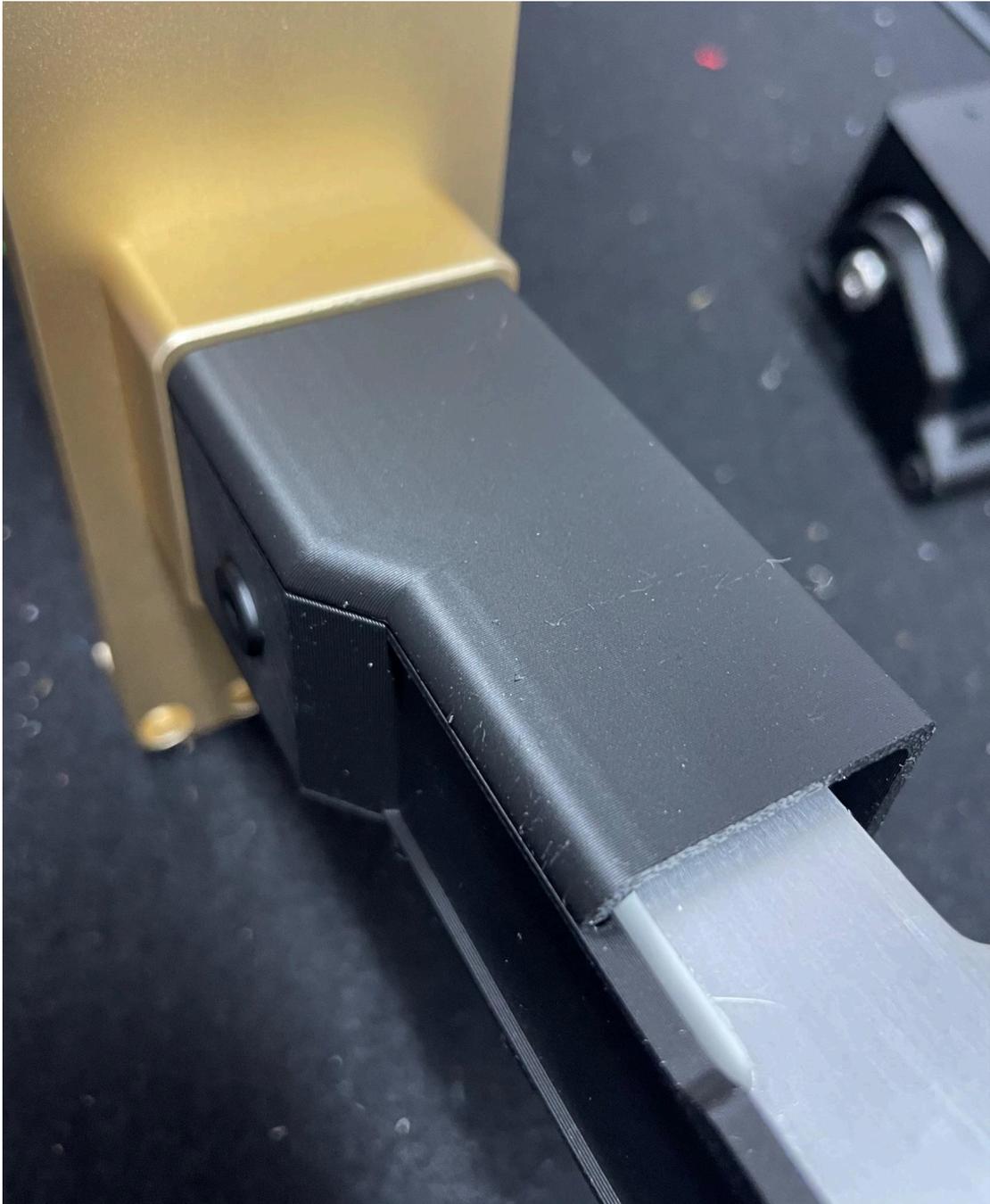
3. Remove the temporary screws and install the 3d printed **cable cover**. The cover goes over the cable retainer



4. Install the **post retainer** (flat side forward) with the **M4 x 16mm flat head screws** using a 2.5 mm hex key.



5. Install the **load cell cover top V2**. It snaps into the grooves of the bottom cover.



6. Transfer Handle & Latch Assembly

1. Remove the handle/latch assembly from the old Pro Arm head. Make sure you keep track of how it's assembled. (2.5 mm and 3.0 mm hex).
2. Reassemble the parts onto the new Pro Arm head.
 - Handles are labeled **R** (right) and **L** (left).
 - Ensure they are installed on the correct sides. The image below shows the left side.

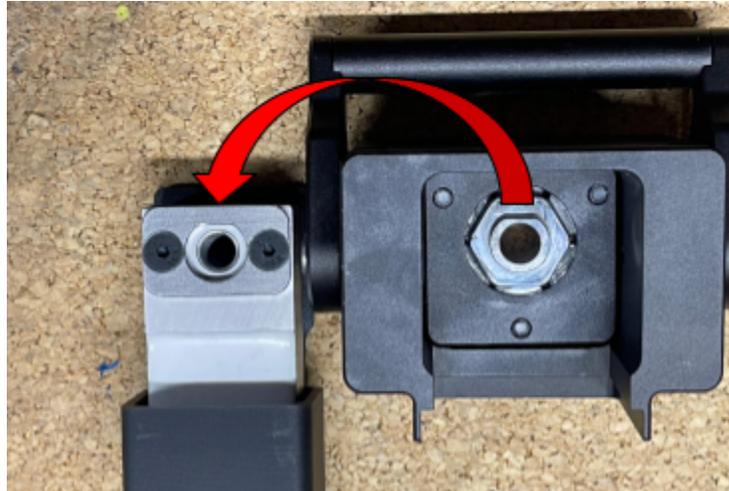


7. Install the New Pro Arm Head

1. Remove the top cover from the new Pro Arm head (2.0 mm hex).

2. Press the head onto the **post retainer**:

- The fit is **precise** and requires firm, even pressure.
- The head can only be installed in the correct orientation.
- Seat it fully until it **bottoms out**.



3. Install the **M8 post retaining bolt**, tighten it **well**. (6.0 mm hex).



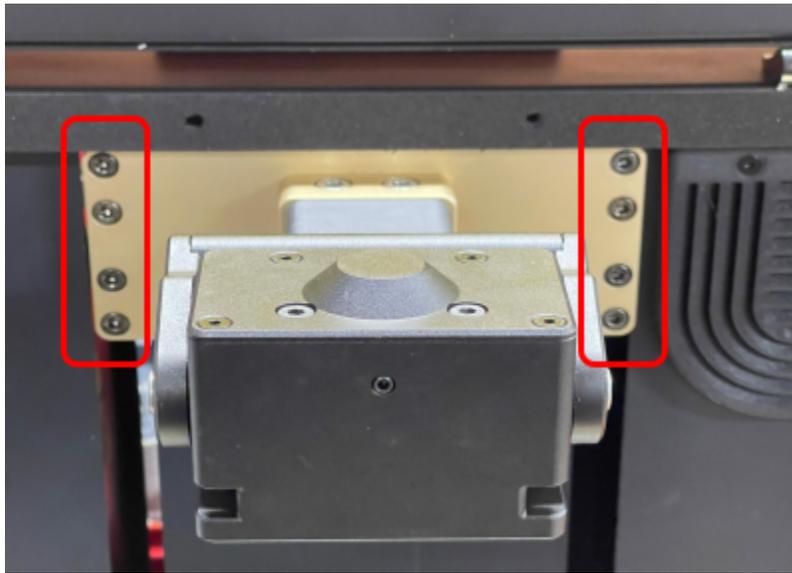
4. Reinstall the top cover.



8. Reassemble the Printer

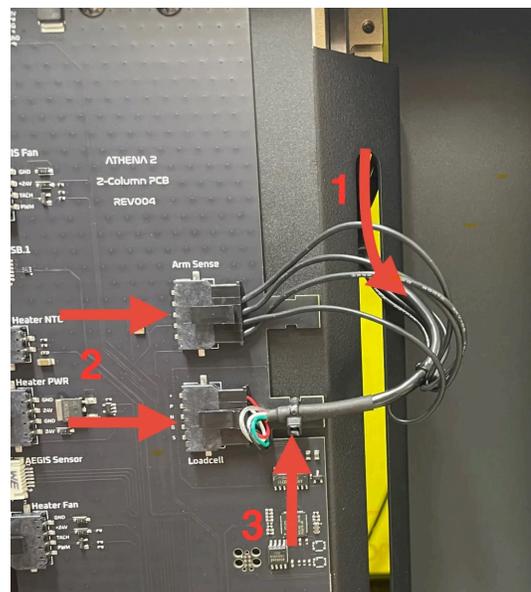
Front

1. Feed the wiring back through the rear build arm plate. The reverse of what was done on step 3-3. **Be sure to feed the wiring through the slot in the Z column shield, not over the top. This is critical or the wiring could be damaged.**
2. Reinstall the **eight build arm mounting screws** (3.0 mm hex). Make sure this plate isn't crooked before tightening.



Rear

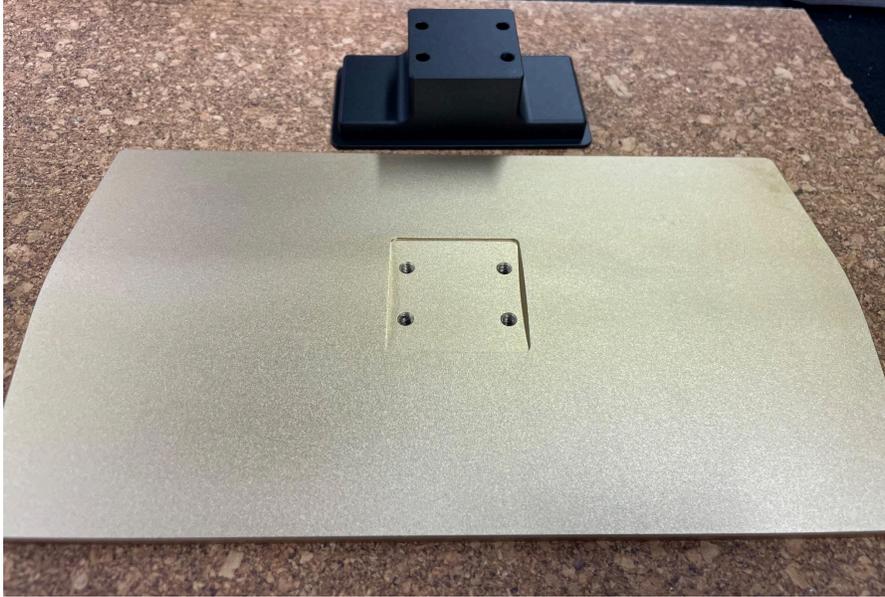
1. Pull the wiring through the Z-column shield slot (a hex key can help hook the harness).
2. Reconnect:
 - Arm Sense
 - Load Cell
3. Secure the wiring with a single zip tie.
4. Reinstall the rear cover.



9. Install the new hanger to the build plate.

1. Remove the old hanger from the build plate by removing the **4 Flat head screws** holding the hanger to the build plate. Take care with these screws as they **can be tight and the heads can strip easily**.

There will most likely be resin that has crept beneath the build plate and old handle so wear gloves and try to clean up as well as possible.



2. Install the new hanger onto the build plate with the new **M4 x 35mm Flat Head Screws** (2.5 hex). Be careful to fully insert the hex key because those screws can easily be stripped



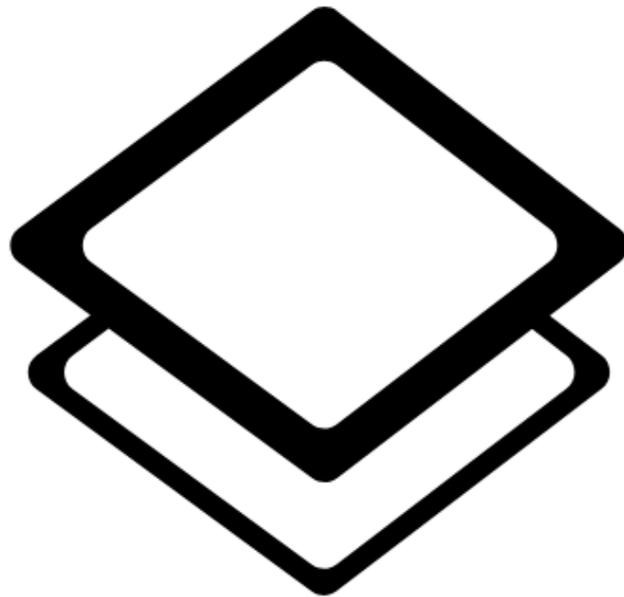
Final Step

✓ **Re-level the build plate before printing.**

This ensures proper alignment after the installation of the new Pro Arm assembly.

Follow the Pro Arm Leveling Guide Video or Printable PDF:

<https://help.concepts3d.ca/en-US/athena-2-manual-leveling-instructions-3795797>



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