



# JABBERWOCKY BUILD GUIDE V82

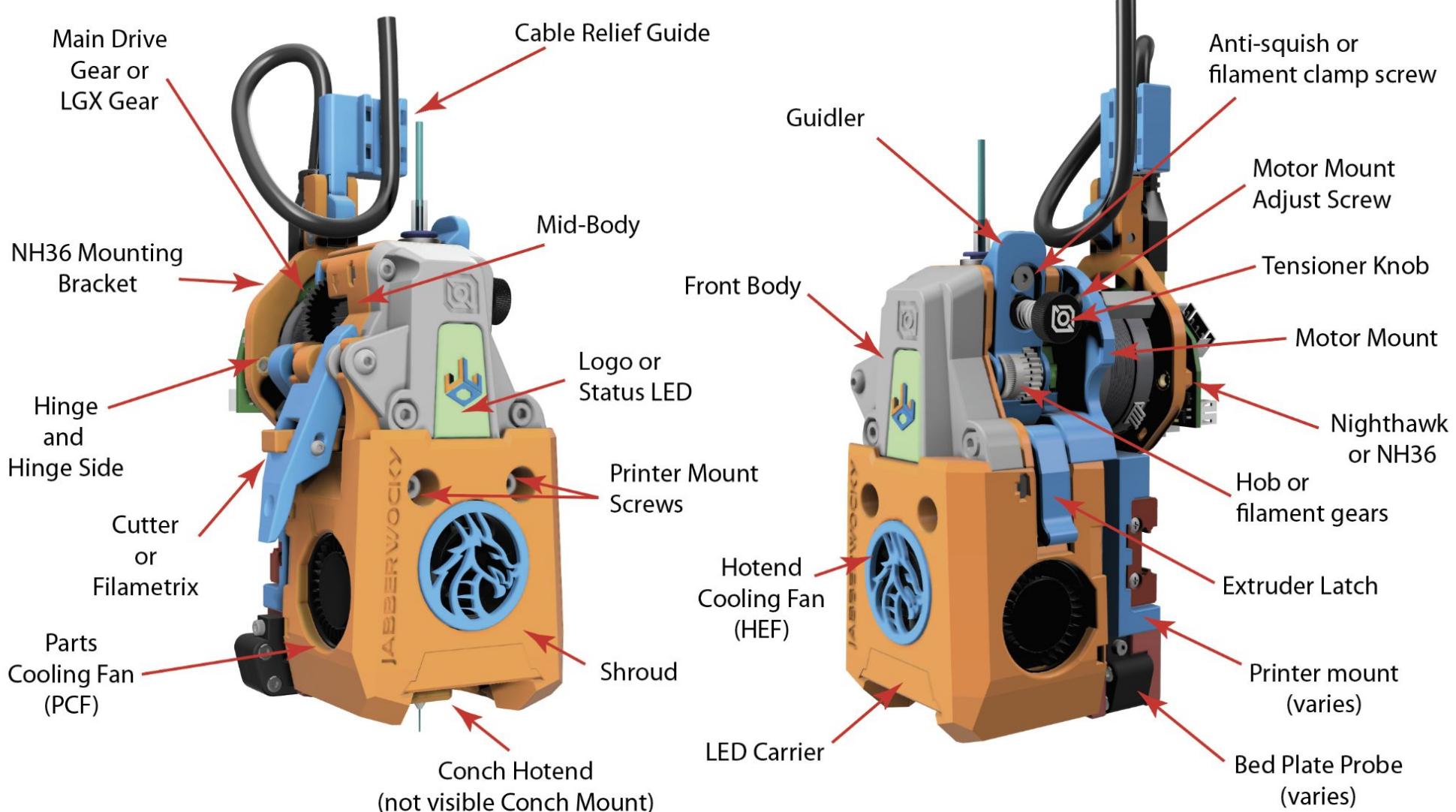
MMU Ready toolhead

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Edition Date: 2026-01-31

# JABBERWOCKY TOOLHEAD CAD OVERVIEW

Download the latest STEP file from the CAD Folder and open it with the free Autodesk Fusion 360 to follow this guide.



# JABBERWOCKY TOOLHEAD

## Preparing to Build

Before you start printing Jabberwocky, it's highly recommended that you tune your printer to ensure dimensional accuracy and pressure advanced (bulging corners will affect tolerances). Proper calibration will help you get the best performance and fit from your prints. If you need a calibration model, Terrance has created the [Swiss Cheese Calibration Cube](#), explicitly designed to help dial in your settings.

### Recommended Print settings (ABS or ASA):

- 0.4mm nozzle
- Translucent material for the LED diffuser
- ABS or ASA (use only high-quality filament, not plus)
- NO MATERIAL SHRINKAGE adjustment (this must be set to default or parts will not fit properly)
- .2mm layer height
- .25mm first layer height
- 30-40% Adaptive Cubic/Gyroid/Rectilinear Grid/Honeycomb infill
- 4 Walls/Top/Bottom
- Arachne Wall Generation (Turn off Classic Walls and Detect Thin Walls)

Turn on 5mm of BRIM for the following critical AND core components to prevent any chance of slight warping:

- [b] Conch\_Mount
- and any front gantry carriage mount parts that interface with the Conch Mount

#### Caution

*It is highly recommended to verify these parts on a glass table or marble slab to check for absolute flatness. Failing to print absolutely flat will result in a toolhead that is not at a 90 degree angle to your build plate.*

# JABBERWOCKY TOOLHEAD

## Preparing to Build

### Cooling settings

It is recommended to avoid warping or distortion to turn down cooling to a minimum. Warping will cause parts to lift off your build plate and fail. Heat-soak your enclosure to ensure a minimum ambient temperature of 45 °C. 50-55 °C is ideal if your system can get that high. If your enclosure temperature is above 55 °C, you need to reduce your printing speed by adjusting layer time.

- 0-17% for regular layer cooling
- 0-25% for bridging at 25% speed

### Optional Settings

These optional line settings ensure the correct overlap between filament lines, increasing strength and preventing delamination.

- Default: 112.5% or .45mm
- First Layer: 115% or .46mm
- Outer Wall: 112.5% or .45mm
- Inner Wall: 112.5% or .45mm
- Top Surface: 110% or .44mm
- Support: 85% or .34mm

# JABBERWOCKY TOOLHEAD

## Preparing to Build

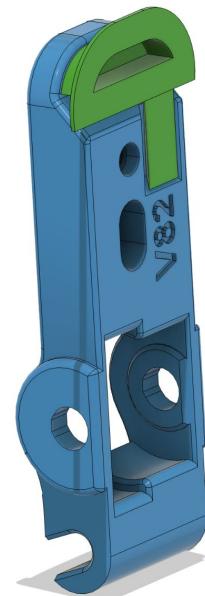
### Print Supports

Several parts include removable built-in print supports (all indicated in **green**).

Carefully remove them and sand any remnants left behind or to make contact points smoother.



Extruder Front Cover - 1 part



Extruder Guidler - 1 part



Extruder Midbody - 4 parts

Make sure to remove the middle filament support and check with a piece of filament that it is all clear. If it has a stray filament, I recommend using a 2mm drill bit to clean it up. You can also use a small needle file at the two converging openings to smooth them out.

# JABBERWOCKY TOOLHEAD

## Preparing to Build

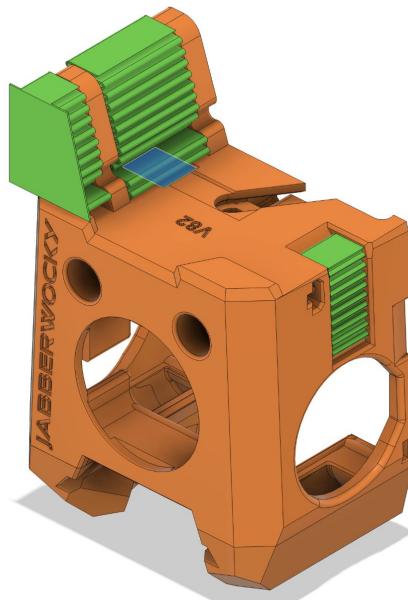
### Print Supports

Several parts include removable built-in print supports (all indicated in **green**).

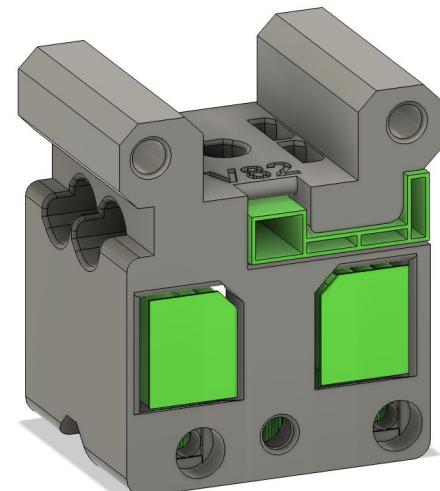
Carefully remove them and sand any remnants left behind or to make contact points smoother.



Extruder Motor Mount - 1 part



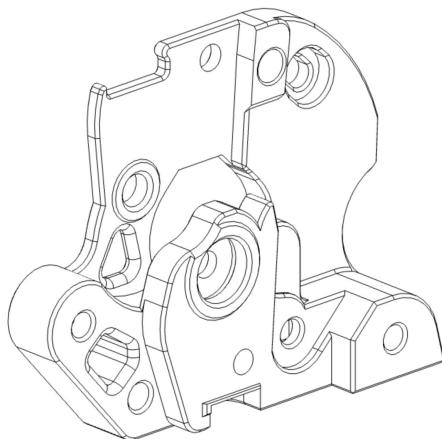
Shroud - 4 parts



Conch Mount - 2 parts

The surfaces beside the two hinge extensions may need a little light sanding to ensure smooth pivoting.  
Do not forget the support that is in the blade path  
(highlighted in blue in the image).

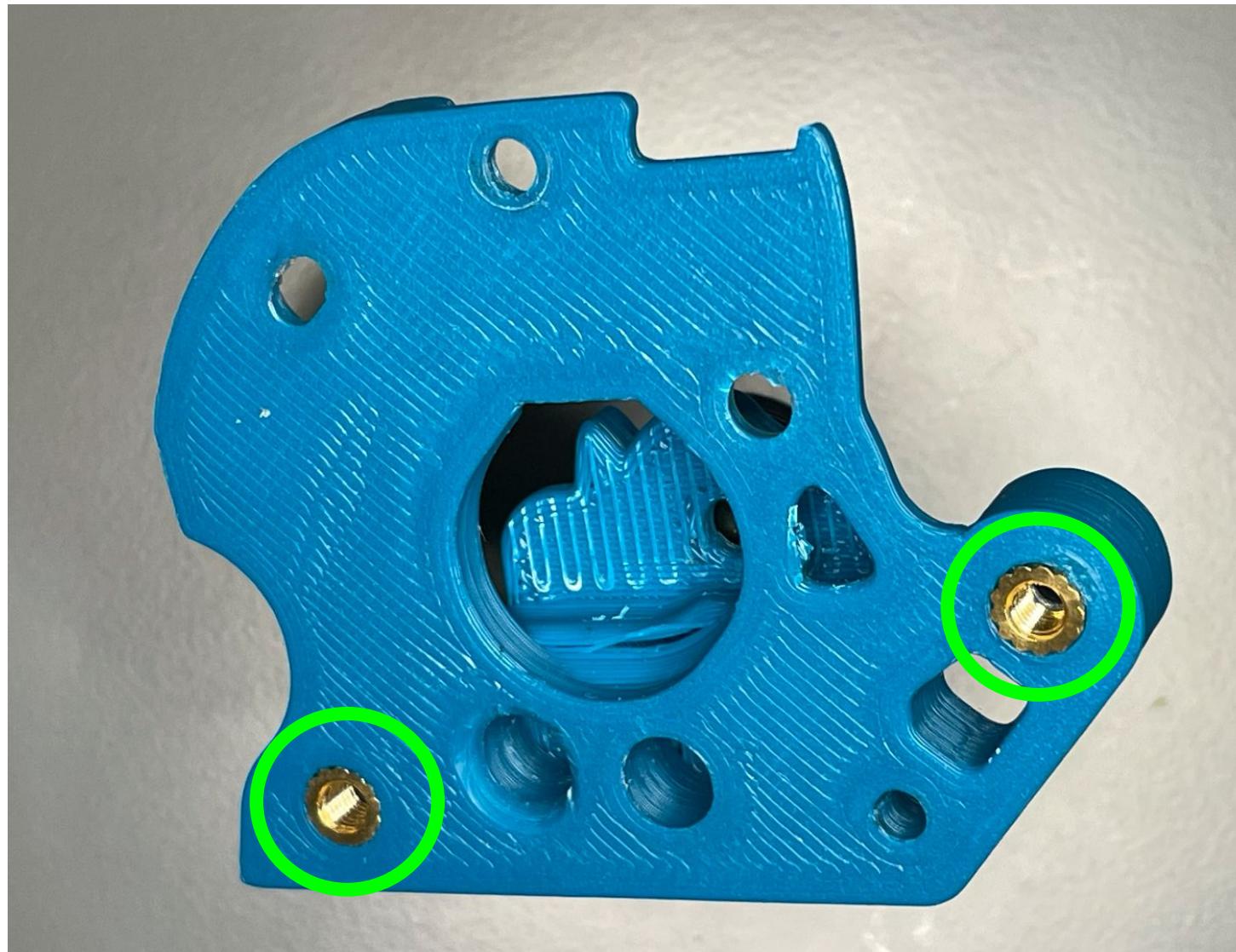
# EXTRUDER ASSEMBLY



As you build, we use some terms to describe the various orientations of the assembly to insert things correctly. We use the latch-side to describe the lever that is used to unhook the Jabberwocky for servicing. While hinge-side will be used to describe the side of the assembly where the extruder pivots.

To begin the assembly, start by installing the **M3 heat inserts** into the **Motor Mount** printed part as pictured in the photo...

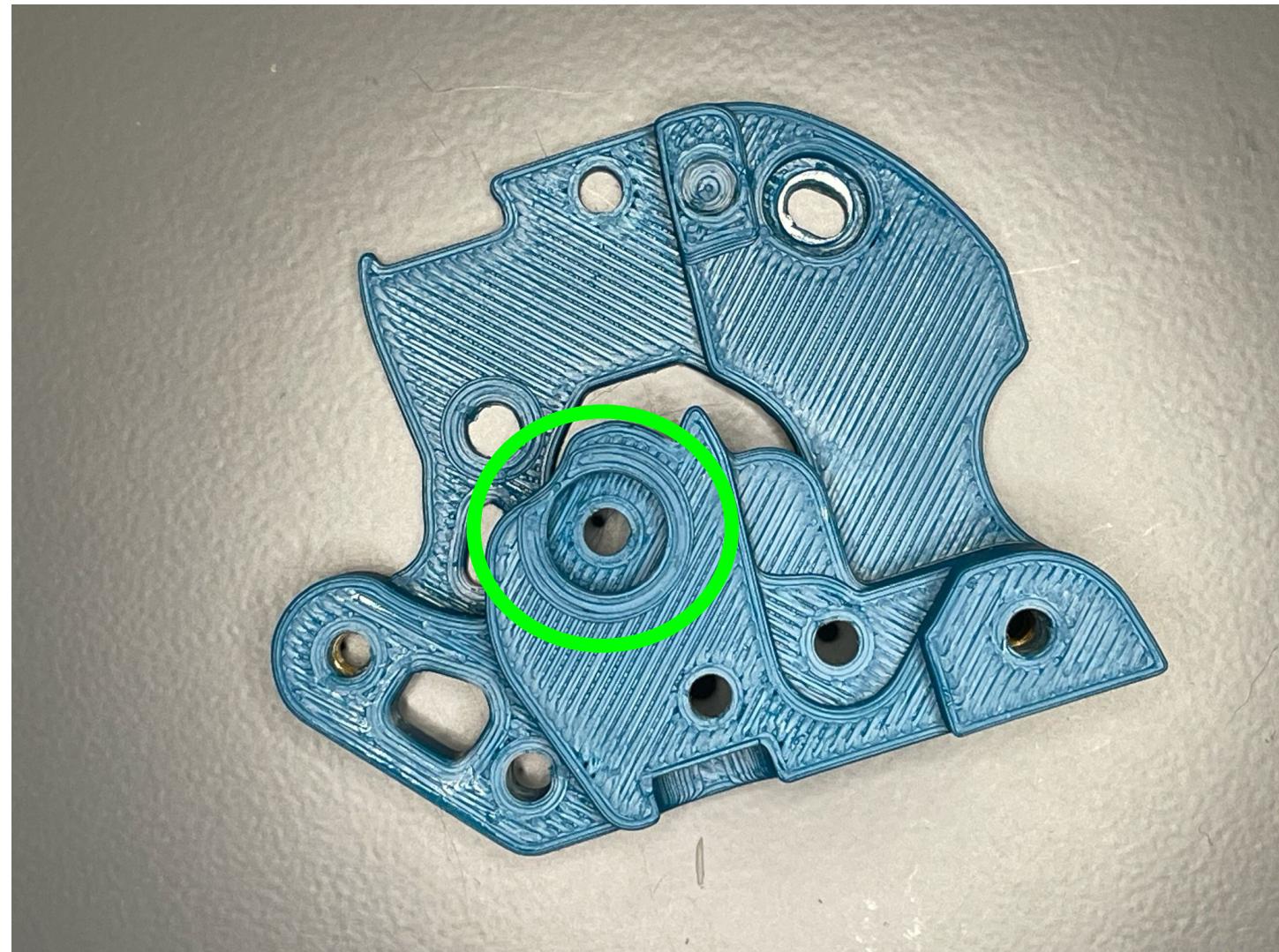
**Hardware used in this step:**  
**(2) M3 Heat Inserts**



# EXTRUDER ASSEMBLY

Inspect the bearing hole outlined in green on the image of the **Motor Mount**

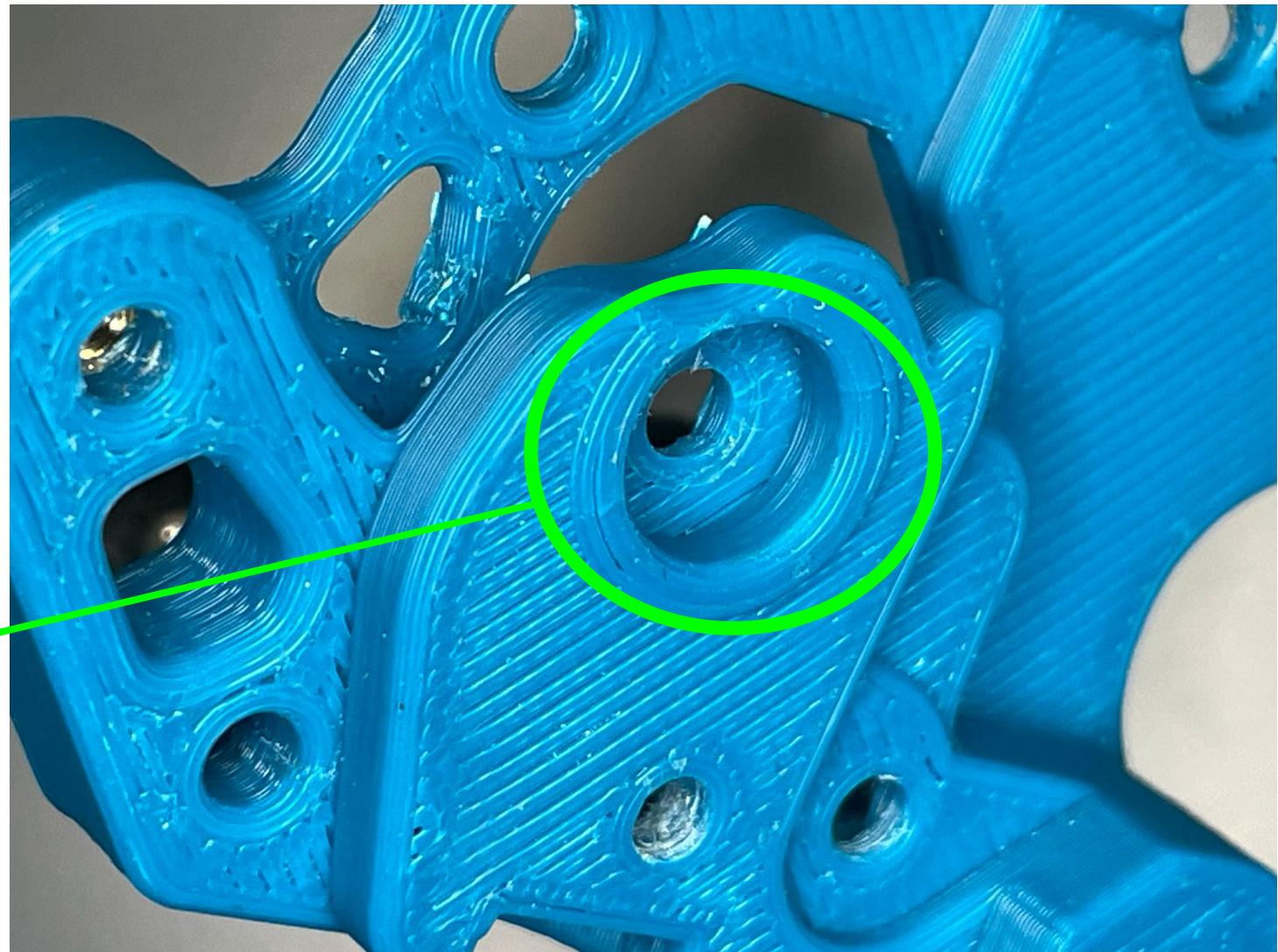
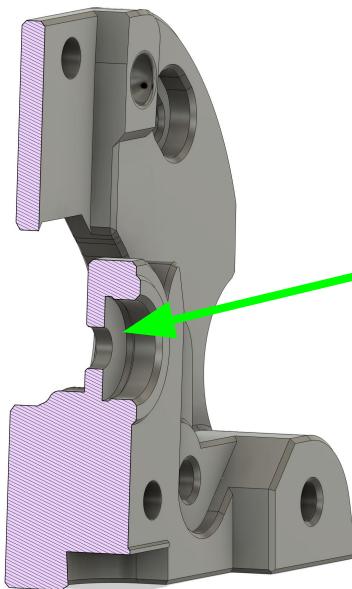
Make sure it is clean and does not have extra filament located in the void.



# EXTRUDER ASSEMBLY

Turning the part to the side, you'll be able to inspect the void to ensure there is no debris or plastic in there. You can use a small screwdriver to take anything out.

This is designed with a larger cavity to receive any plastic scrapings from the bearing installation that might prevent it from pushing all the way in.



# EXTRUDER ASSEMBLY

Install the **MR84-ZZ bearing**, using the printed tool. The tool is designed to apply even pressure and prevent the bearing from being inserted further than necessary.



Hardware used in this step:  
(1) MR84-ZZ bearing

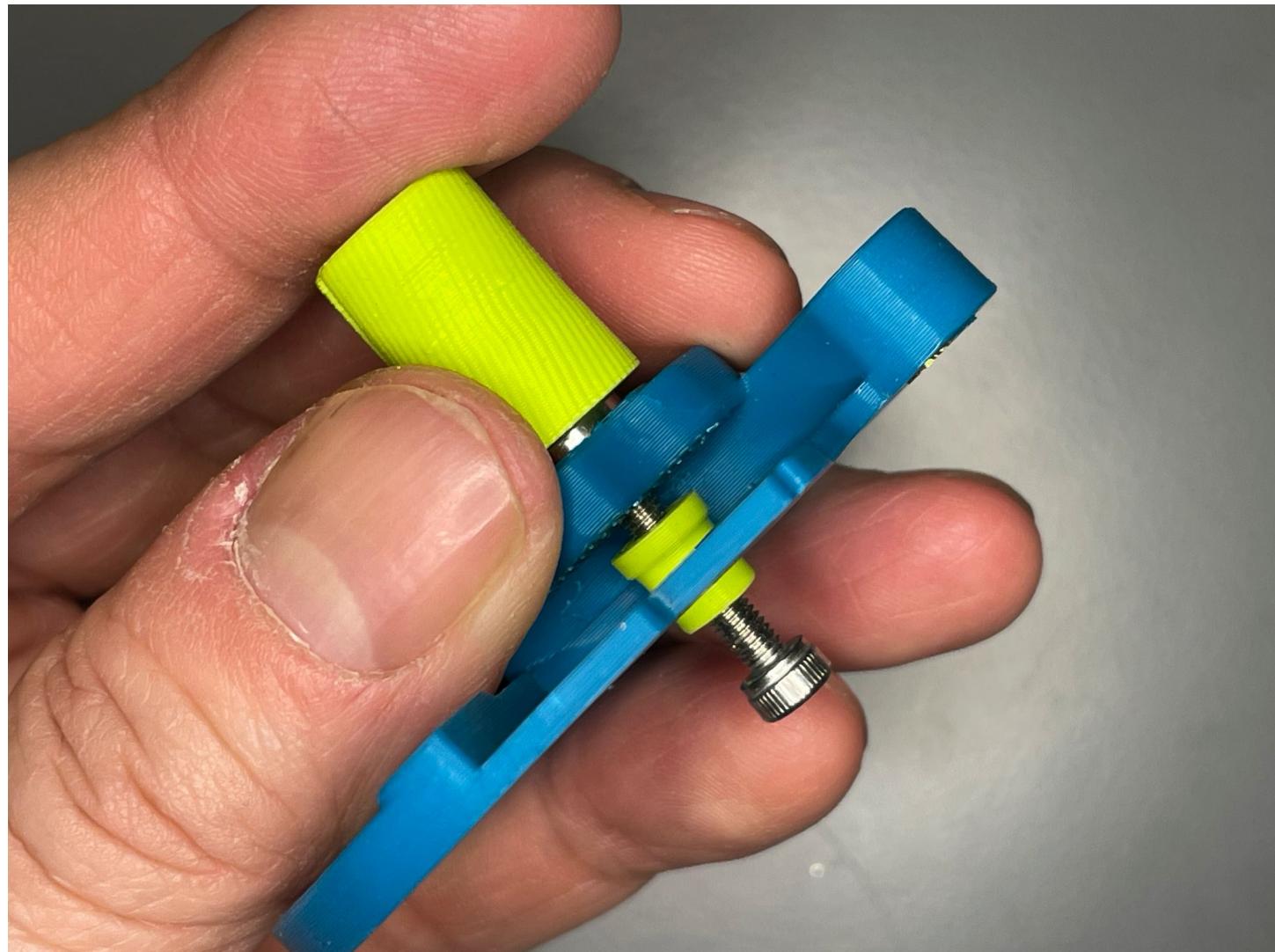
# EXTRUDER ASSEMBLY

Temporarily use any full-threaded **M3x35** or longer screw from the kit (partially threaded screws are not recommended), along with an **M3 hex nut**, to secure the bearing in place through the two-piece printed tool.

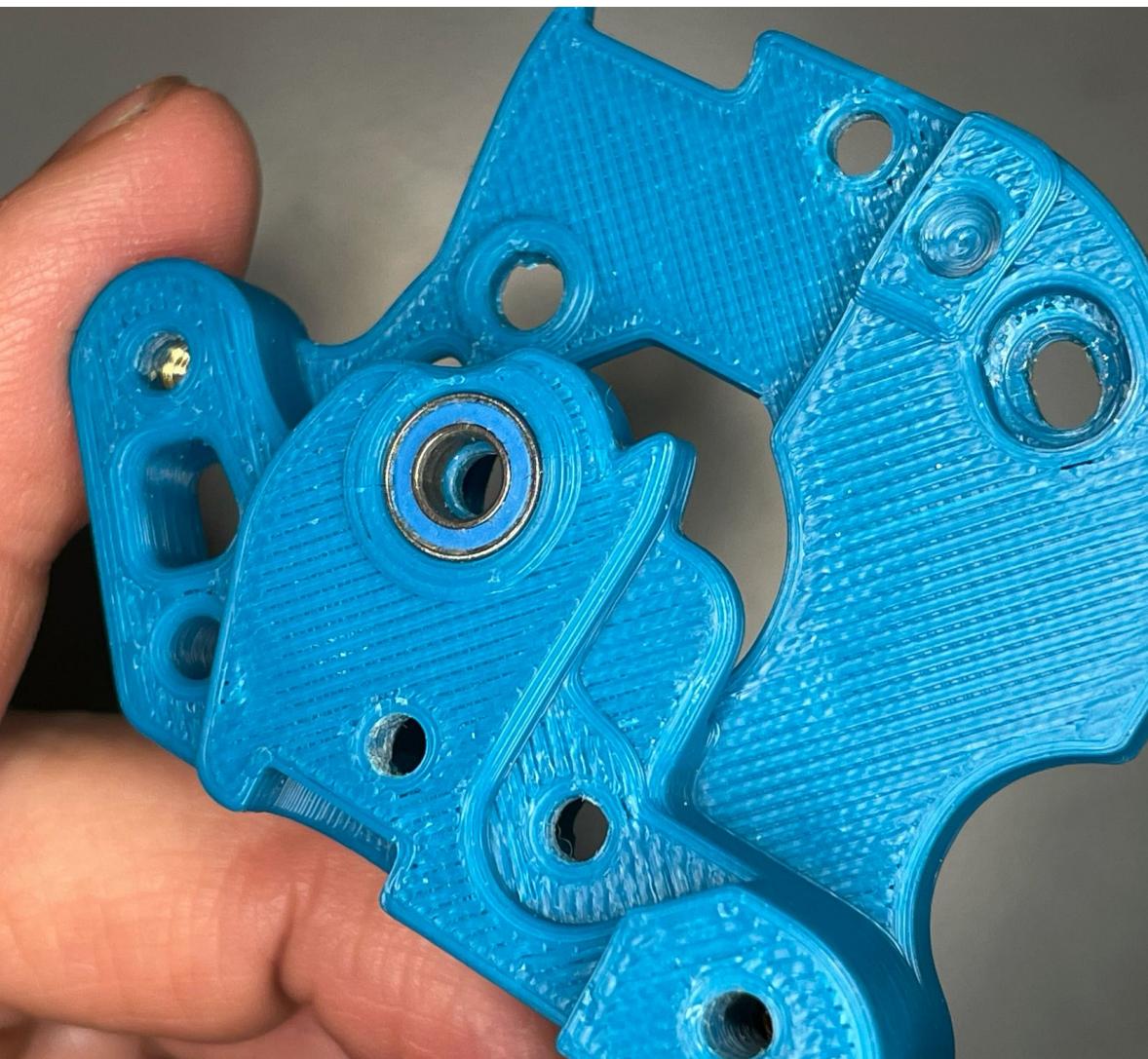


## Hardware used in this step:

- (1) M3x35mm or longer
- (1) M3 Hex Nut

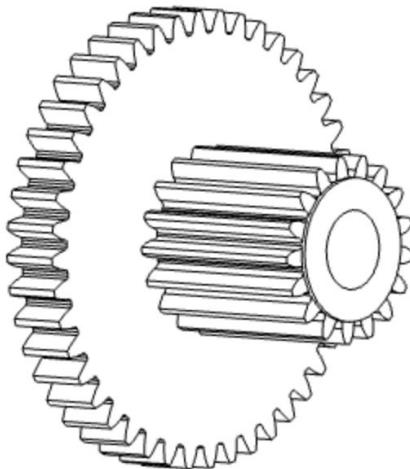


# EXTRUDER ASSEMBLY



The **MR84-ZZ bearing** installed correctly will be flush with the surrounding plastic boss.

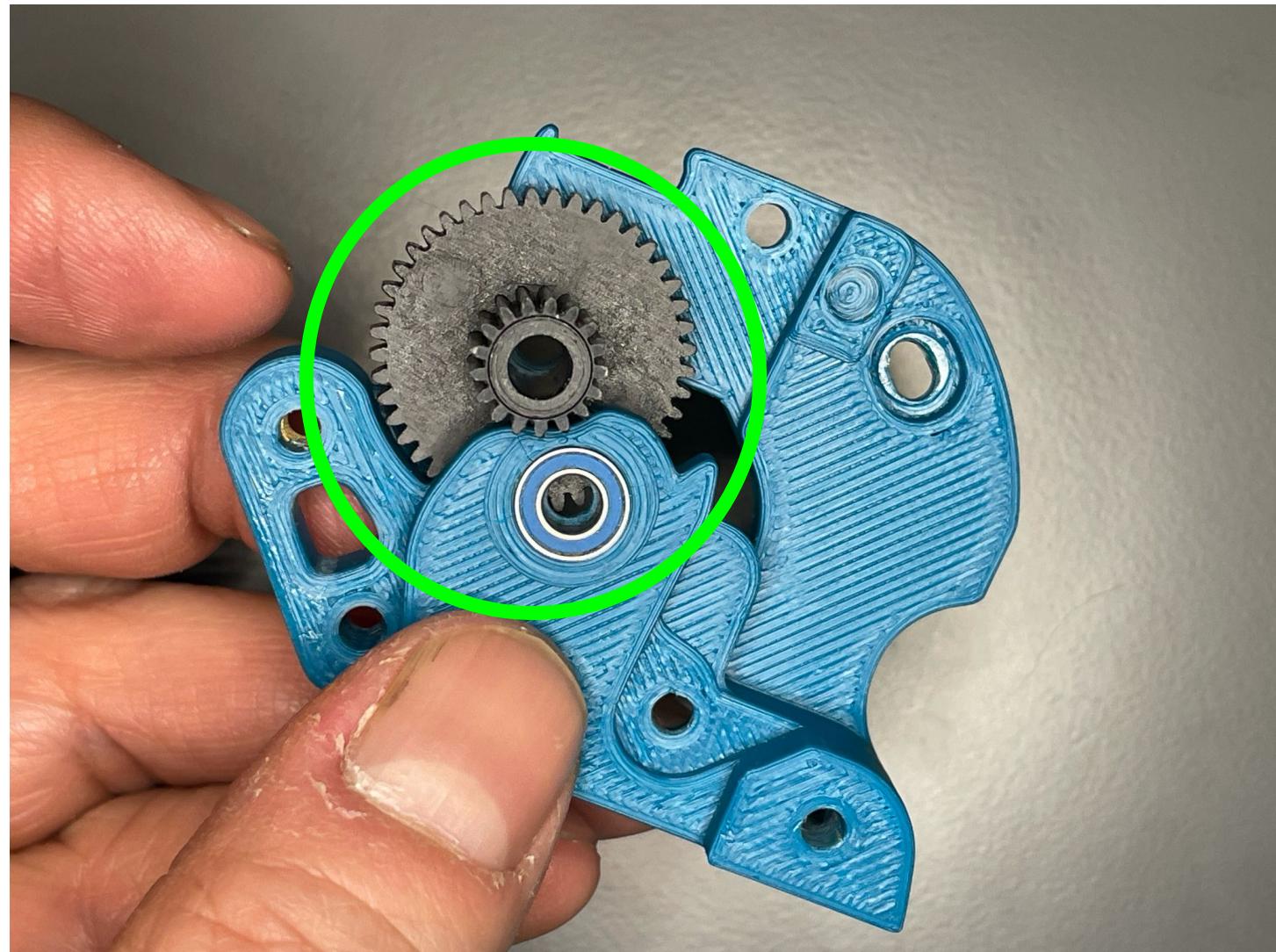
# EXTRUDER ASSEMBLY



Next, install the **BondTech compound drive gear** on the **Motor Mount**.

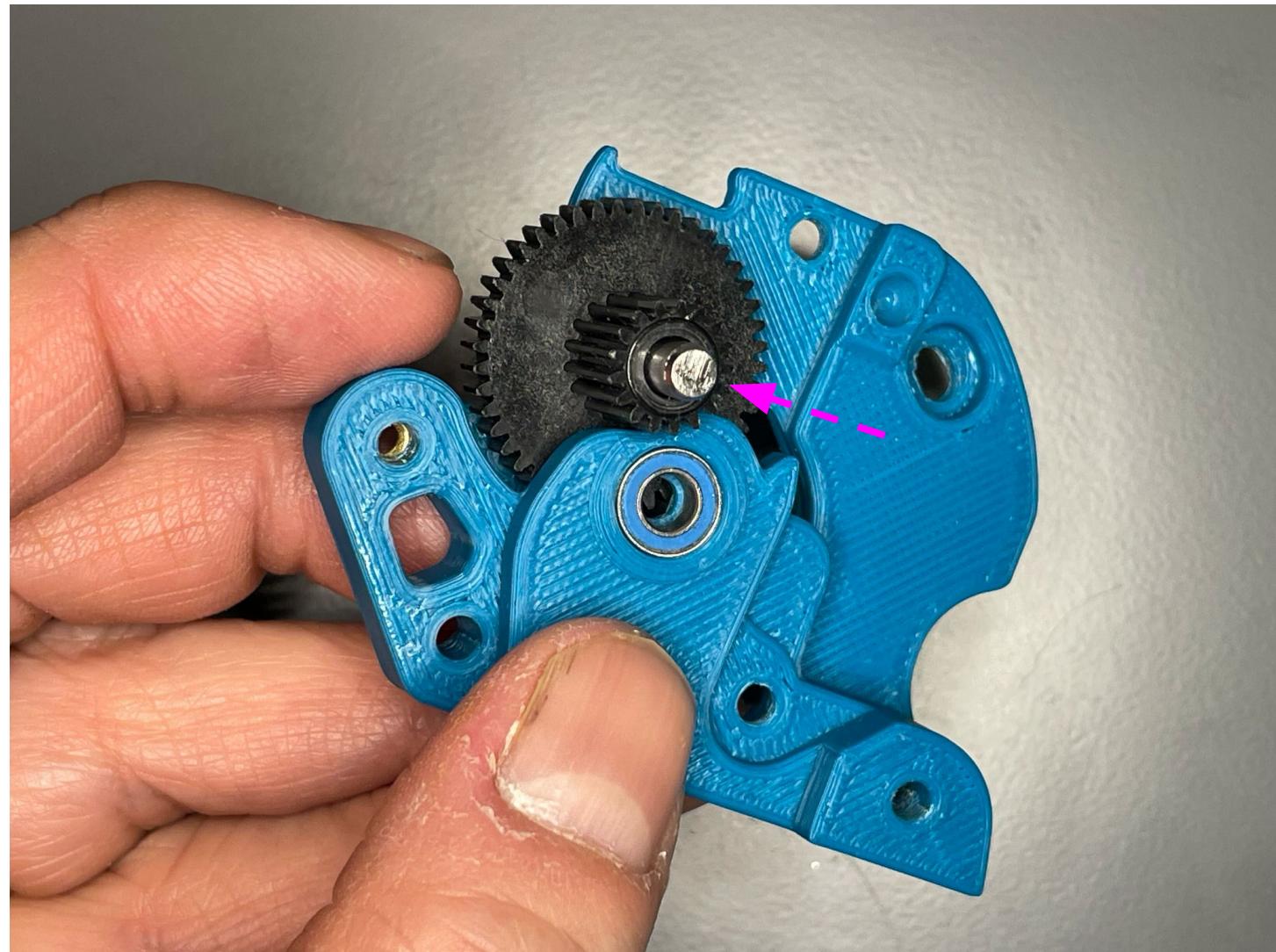
It will sit in this location until you put the **dowel pin** to line it up to the hole.

Hardware used in this step:  
(1) BondTech Compound Drive Gear



# EXTRUDER ASSEMBLY

Insert the **M4x18mm dowel** from the narrow side of the gears through the **BondTech drive gear**. The dowel does not push all the way through so don't force it.



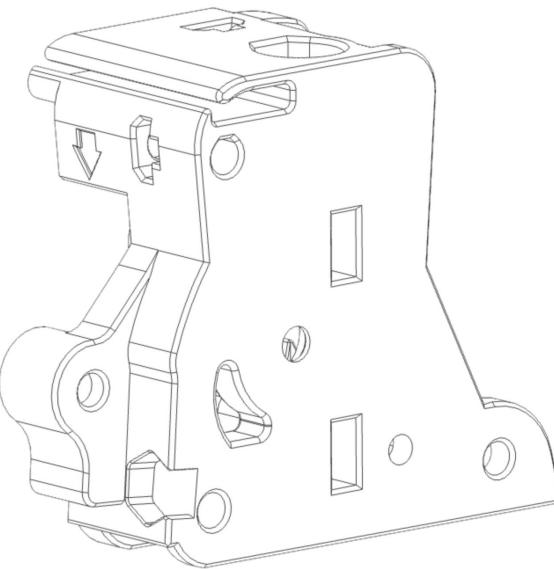
Hardware used in this step:  
(1) M4 x 18mm Dowel

# EXTRUDER ASSEMBLY

Check that the gear turns freely and that the pin does not stick out.

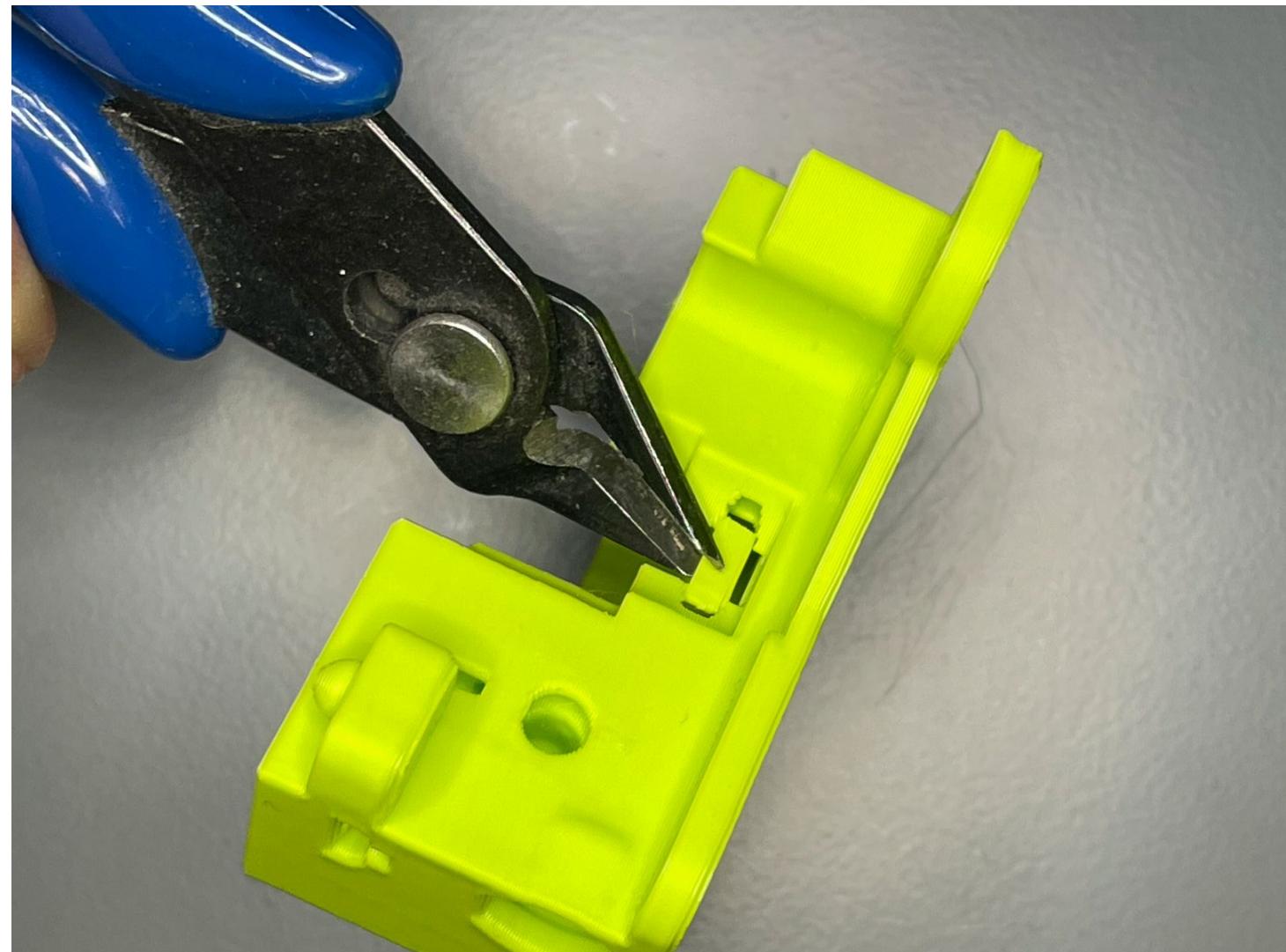


# EXTRUDER ASSEMBLY



Next will be the **Mid-body** assembly of the extruder assembly.

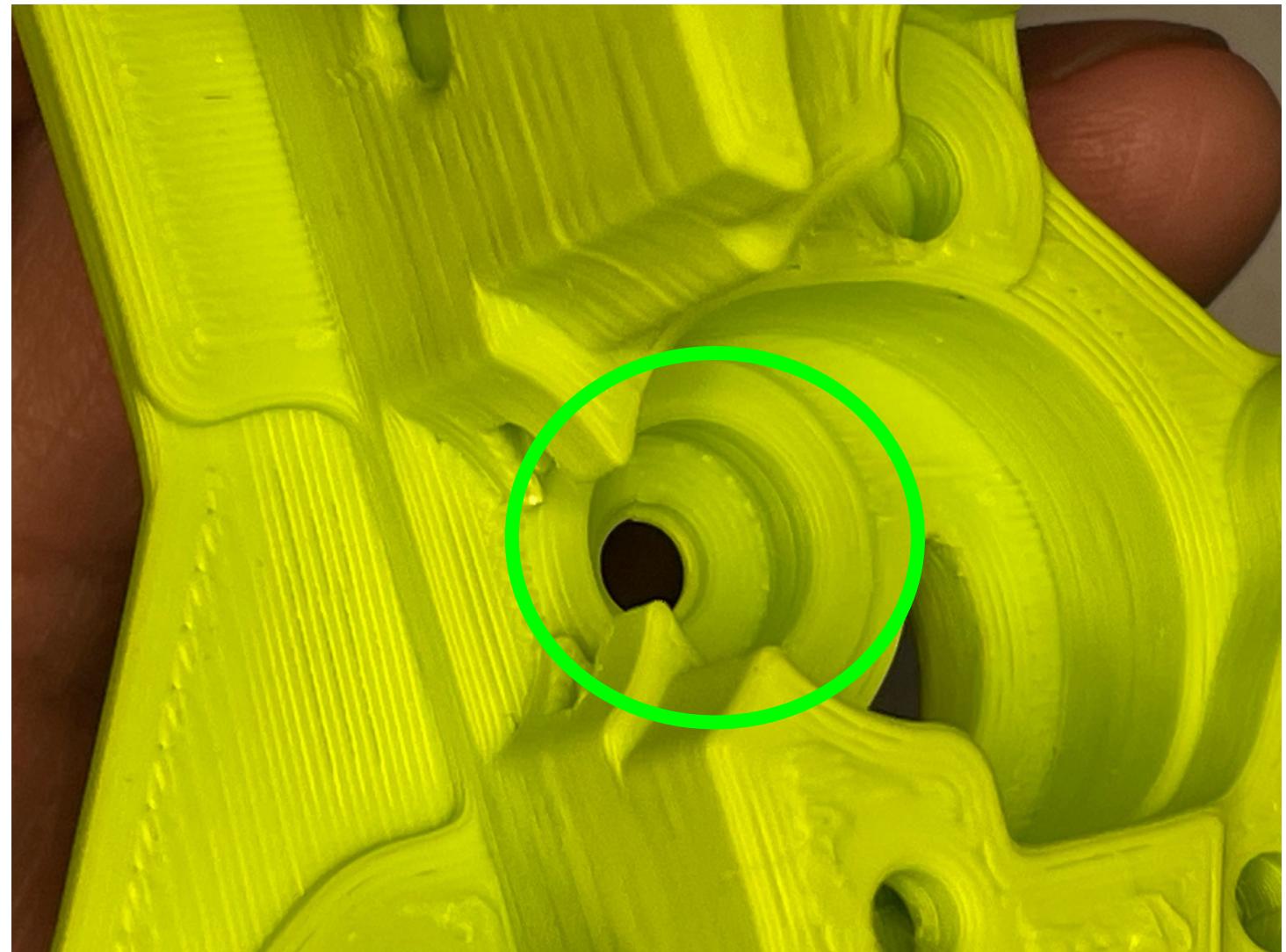
Double check that the print support for the filament path has been removed. Make sure the removal is clean and no bits are left behind. A file can be used to clean this up.



# EXTRUDER ASSEMBLY

Turning the part to an angle and inspect the void to ensure there is no debris or plastic in there. You can use a small screwdriver to take anything out.

This void is designed so if the bearing does scrape any plastic along the side, that there is a void there to receive it and not prevent the bearing from pushing all the way in.



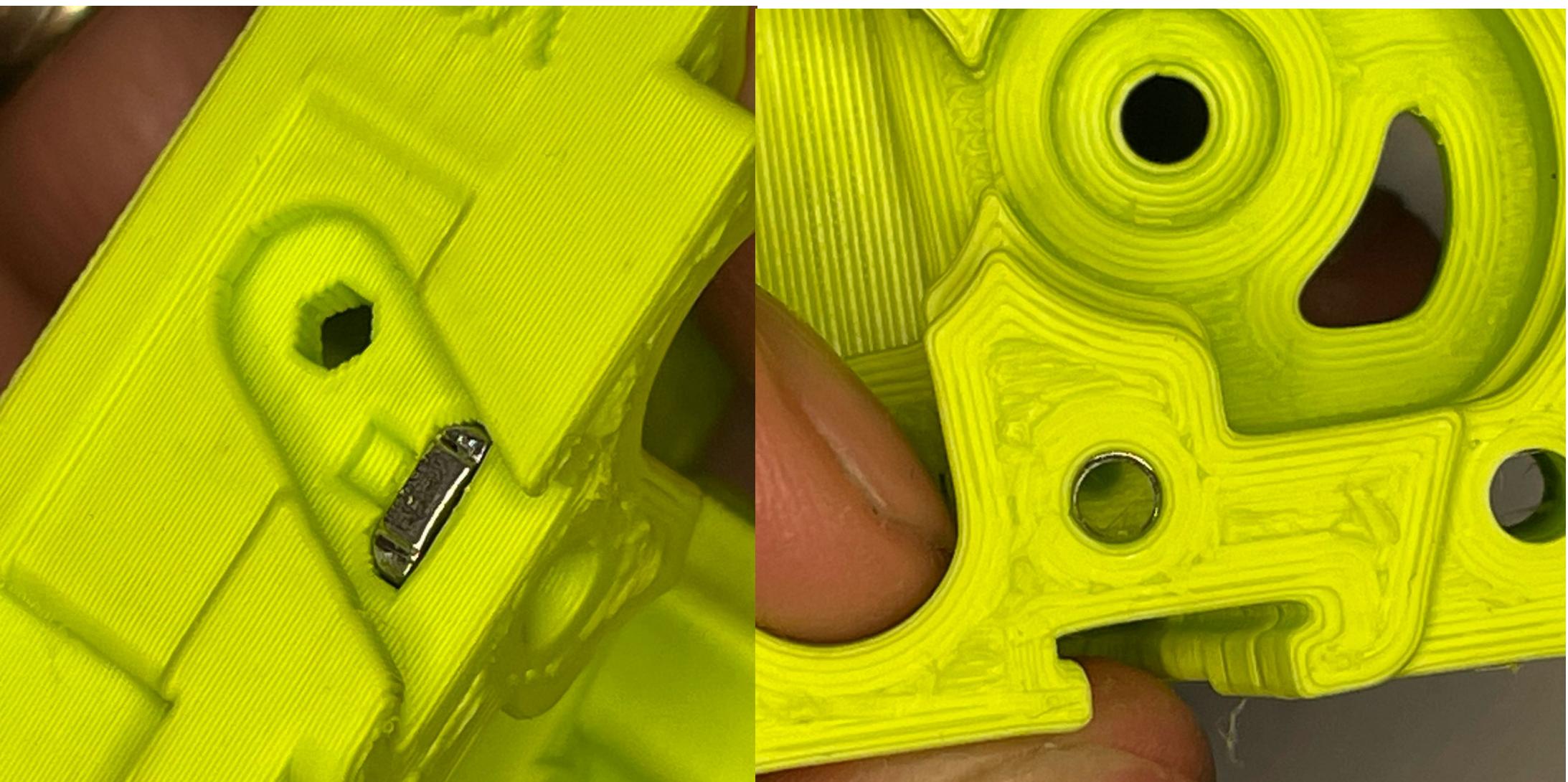
# EXTRUDER ASSEMBLY

Preload the four **LDO T-Nuts** as shown in the image.



Hardware used in this step:  
(4) LDO T-Nuts

# EXTRUDER ASSEMBLY



The T-nuts should be pushed centered on each circular cutout where the screws will be attached.

# EXTRUDER ASSEMBLY

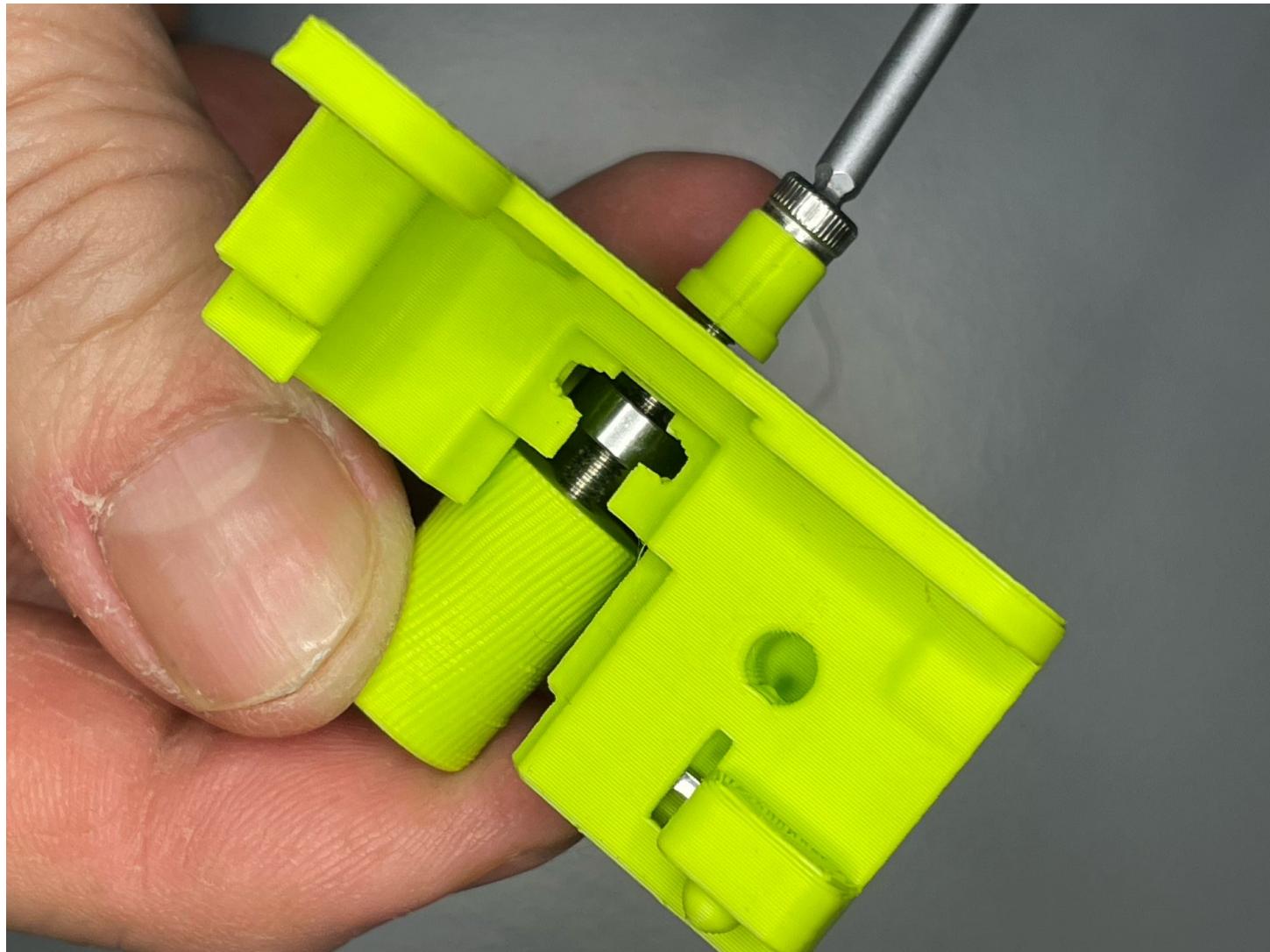
Next, step is to install the **MR84-ZZ bearing** into the mid-body using the printed tool used on the first bearing on the motor mount.

Temporarily use any full-threaded **M3x35** or longer screw from the kit (partially threaded screws are not recommended), along with an **M3 hex nut**, to secure the bearing in place through the two-piece printed tool.



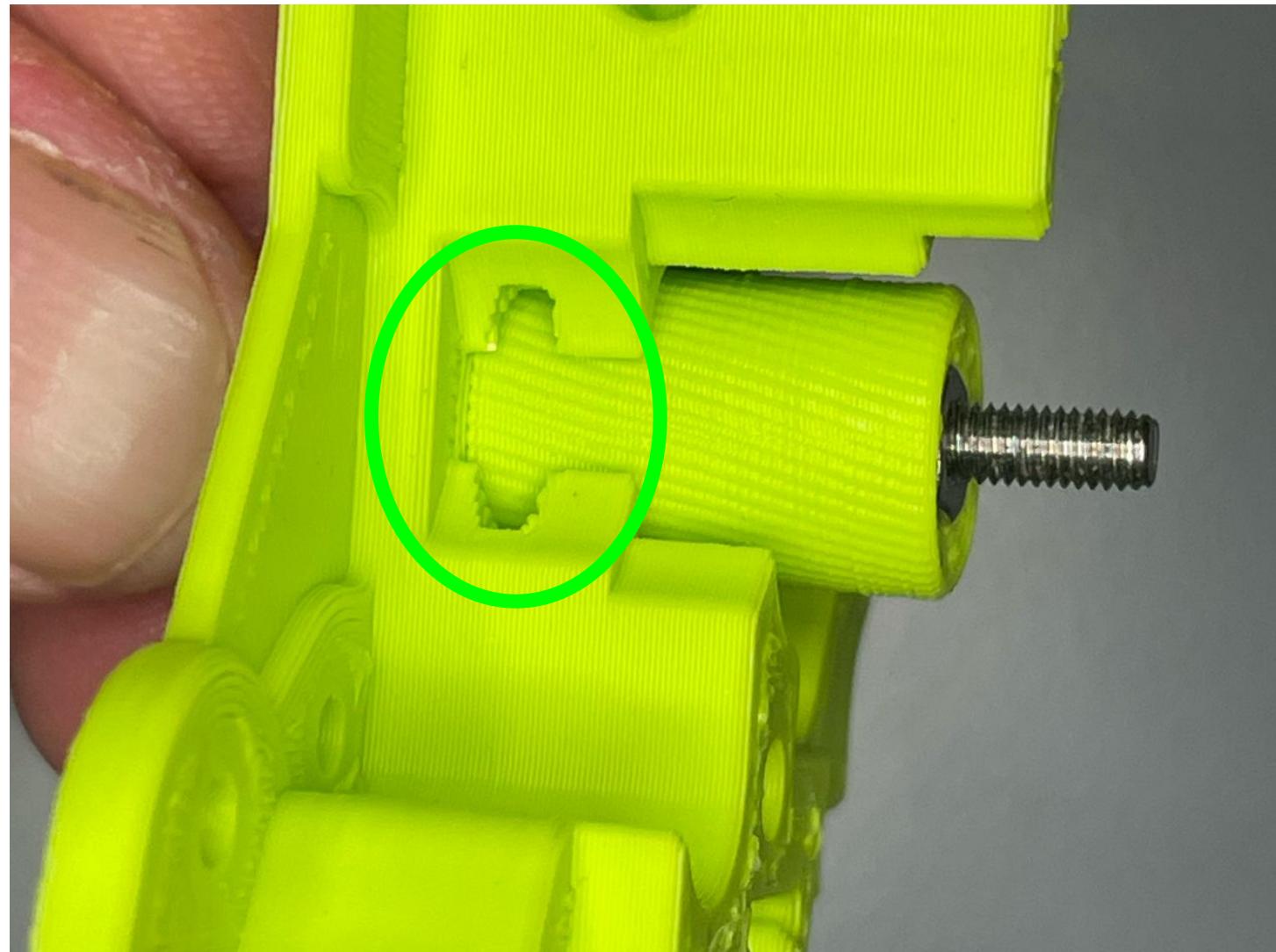
Hardware used in this step:

- (1) MR84-ZZ Bearing
- (1) M3x35mm or longer
- (1) M3 Hex Nut



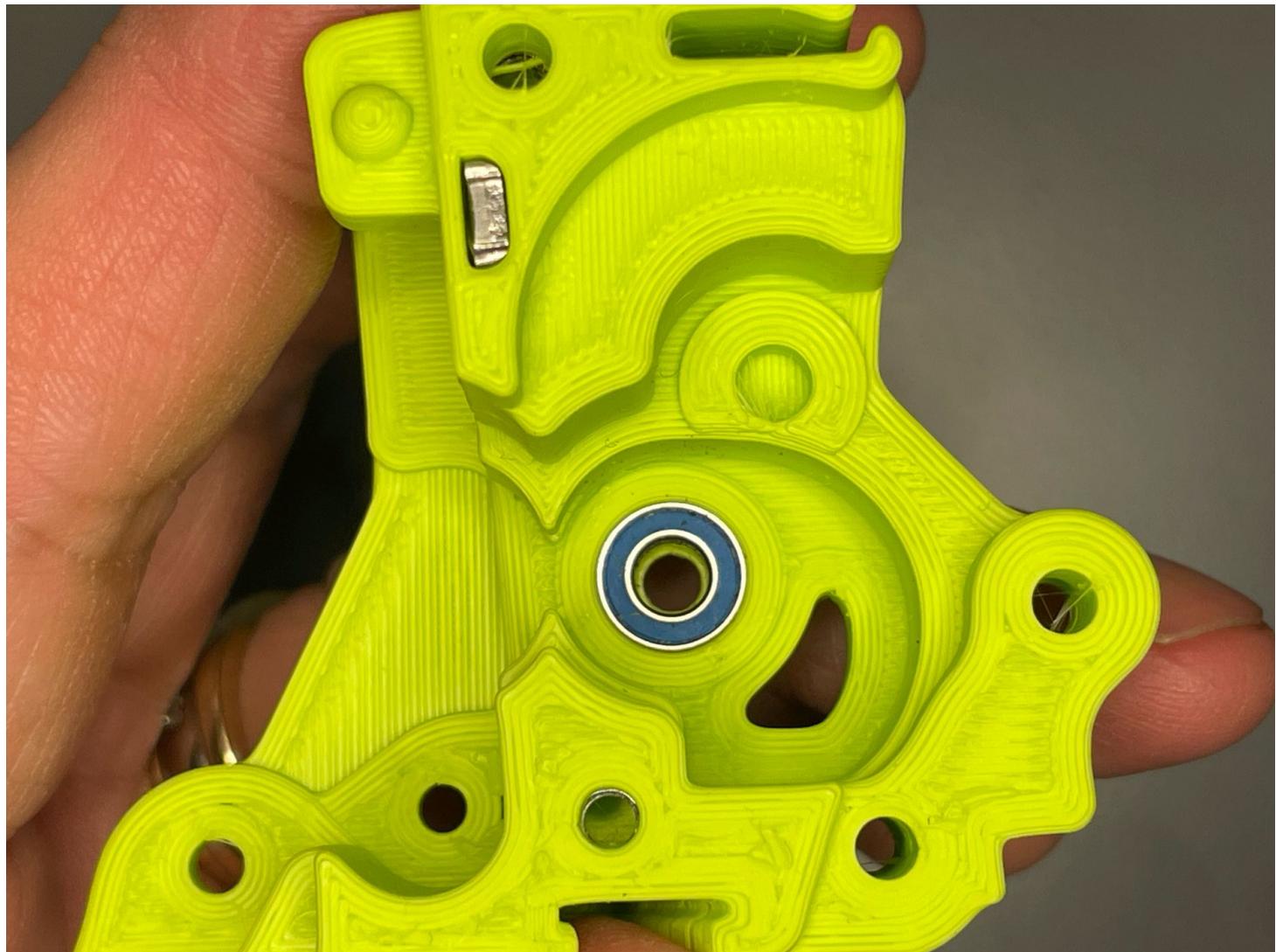
# EXTRUDER ASSEMBLY

From the image on the right, you should not see any bearing or gap where it is circled. If it is, pull out the tool, and the bearing (you'll need to use either one of the free **M4 Dowels** to carefully wiggle it out or a hex tool). Check for any debris, and try again.



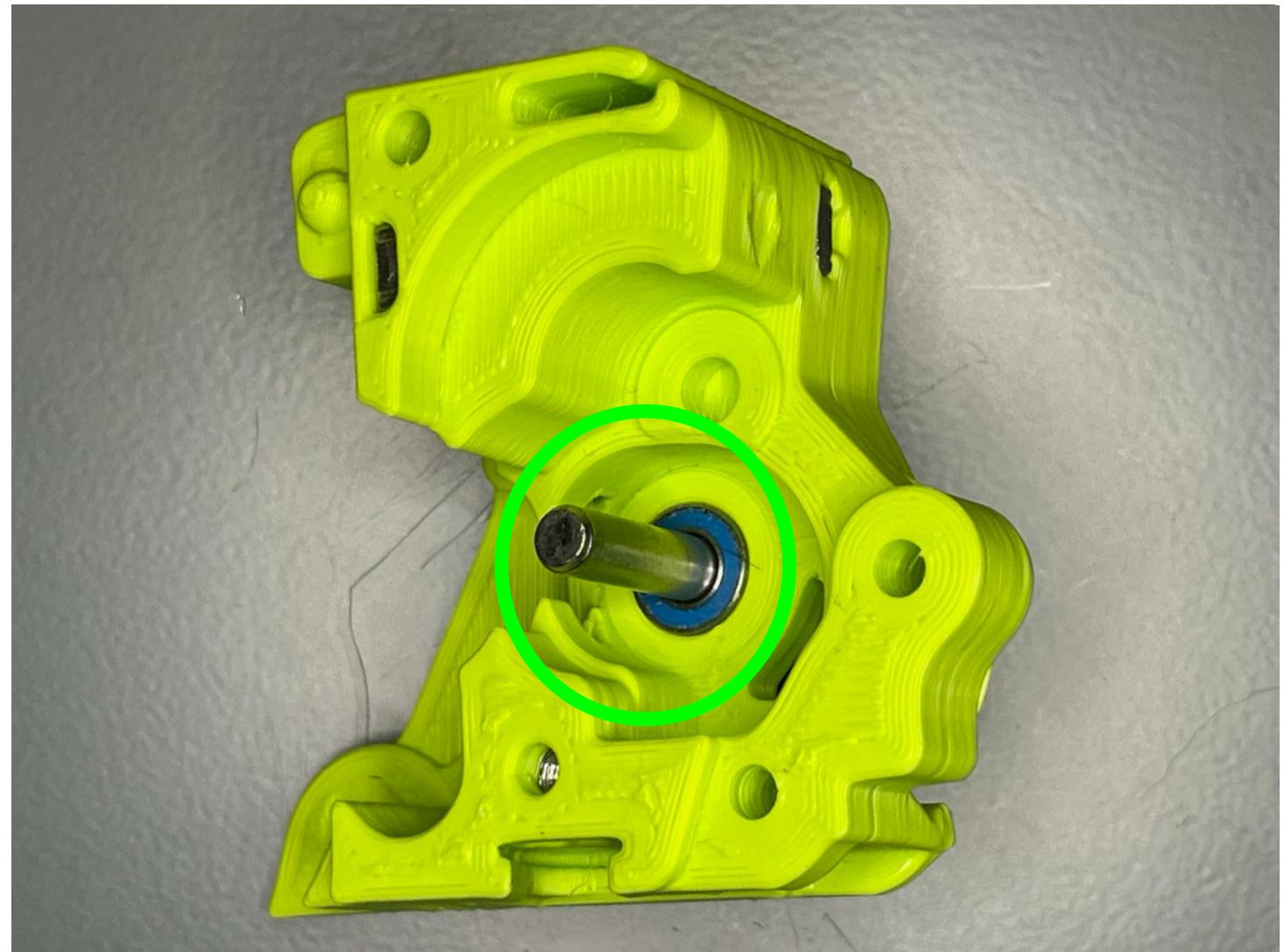
# EXTRUDER ASSEMBLY

**IT IS CRITICAL** that the bearings are aligned flush to the boss of each of the receiving holes. If they are not flush, remove and inspect the holes for any debris or filament.



# EXTRUDER ASSEMBLY

Insert the **M4x18mm metal dowel** from the bearing side.

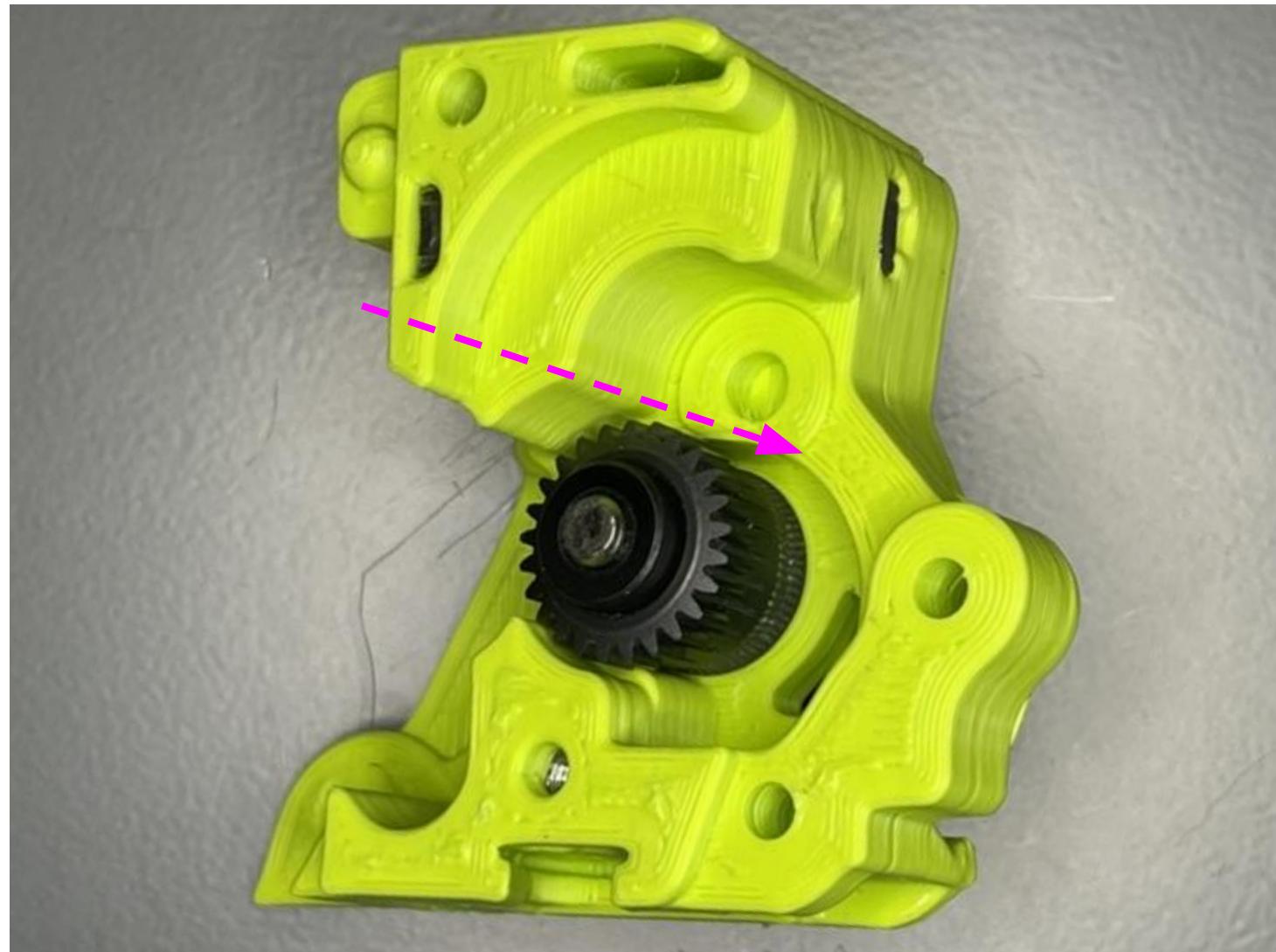


Hardware used in this step:  
(1) M4 x 18mm Dowel

# EXTRUDER ASSEMBLY

Install **LDO PEEK sleeve bearing**, and the **non-threaded Orbiter gear**.

Double-check that everything is aligned correctly, as any misalignment will prevent the Motor Mount from sitting flush.

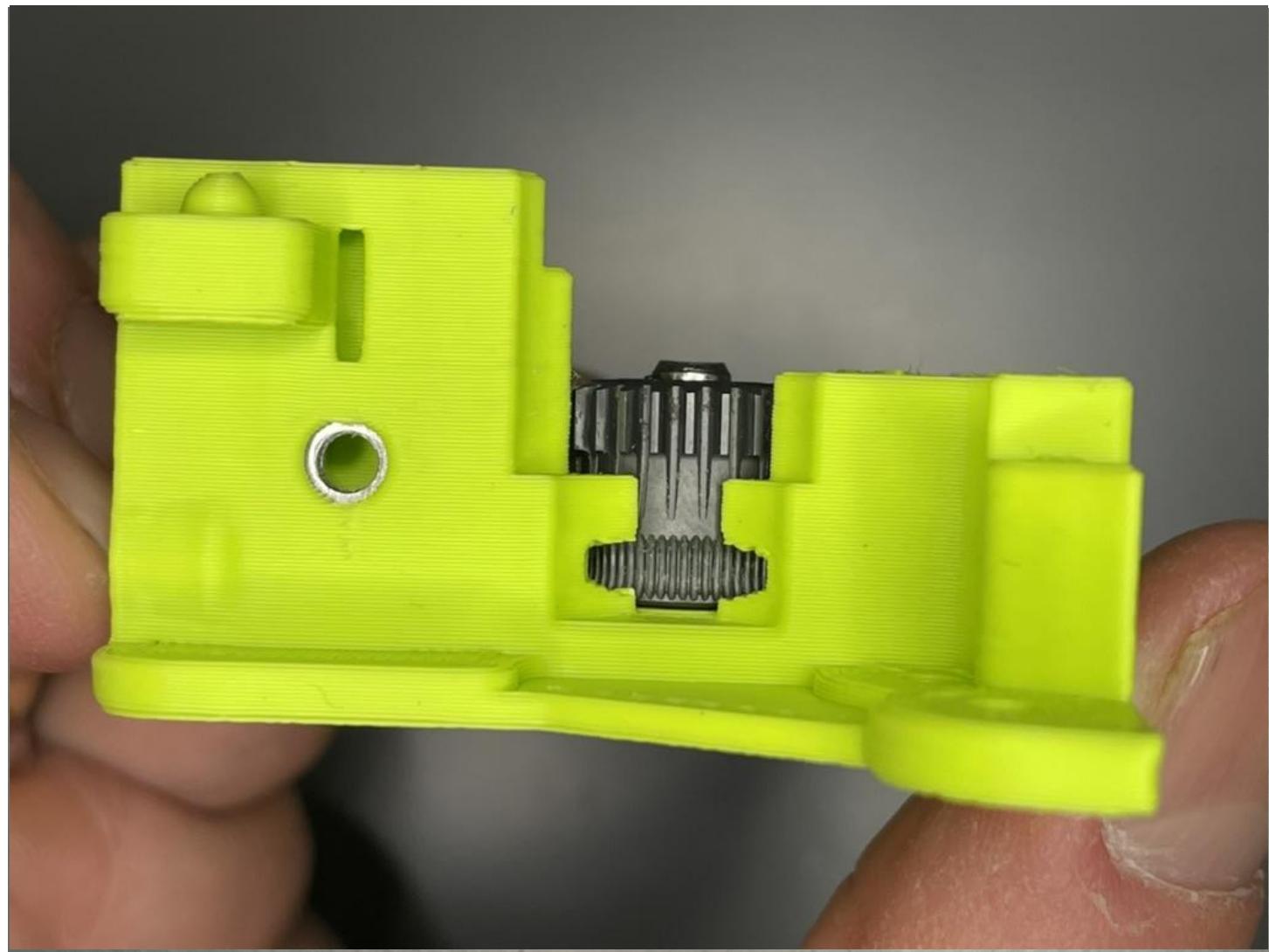


Hardware used in this step:

- (1) LDO PEEK Sleeve Bearing
- (1) Non-threaded Orbiter Gear

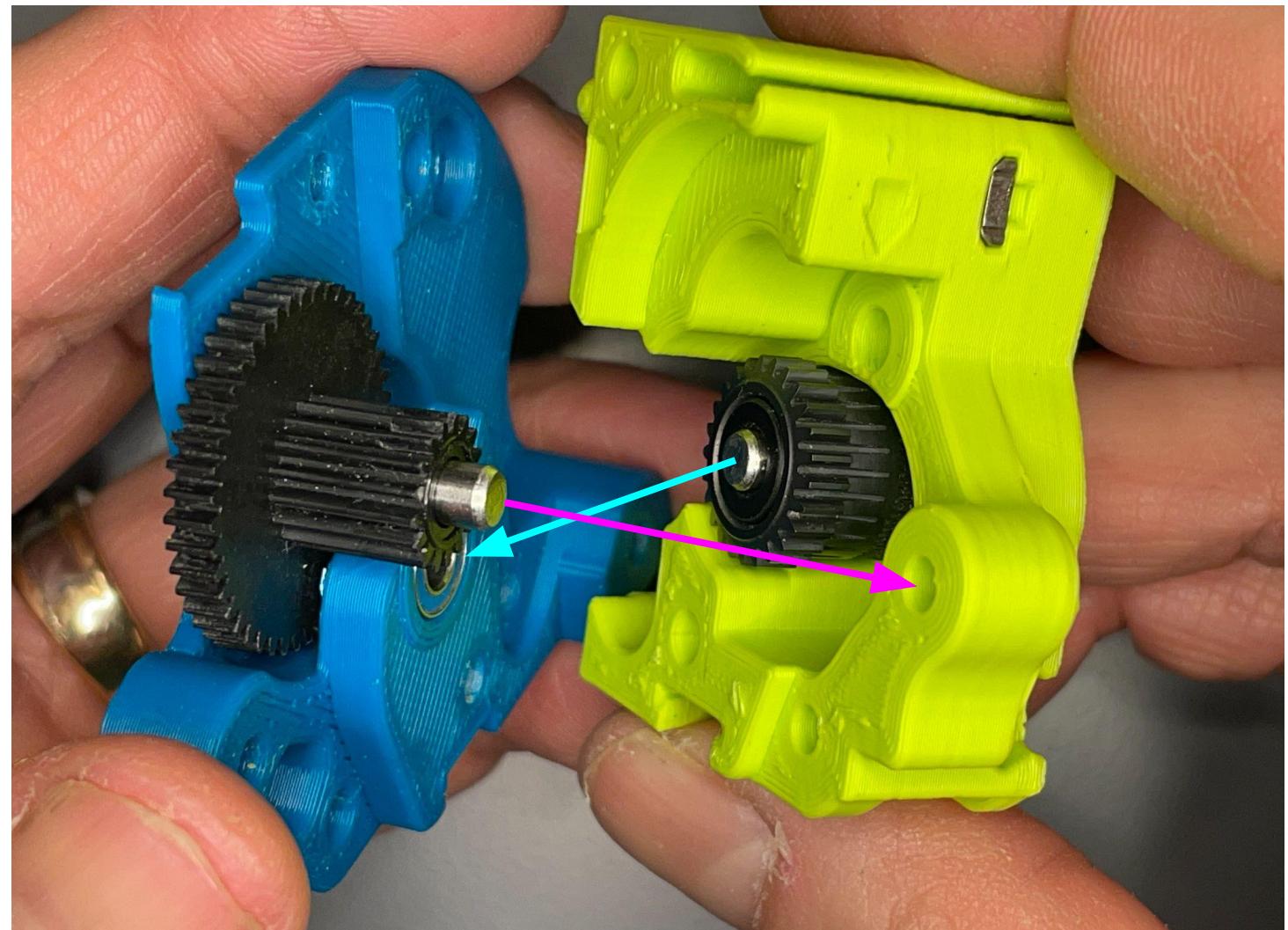
## EXTRUDER ASSEMBLY

Inspect that the gear assembly is aligned properly. The filament gear teeth should be precisely in the middle of the filament path as shown in the image on the bottom right.



# EXTRUDER ASSEMBLY

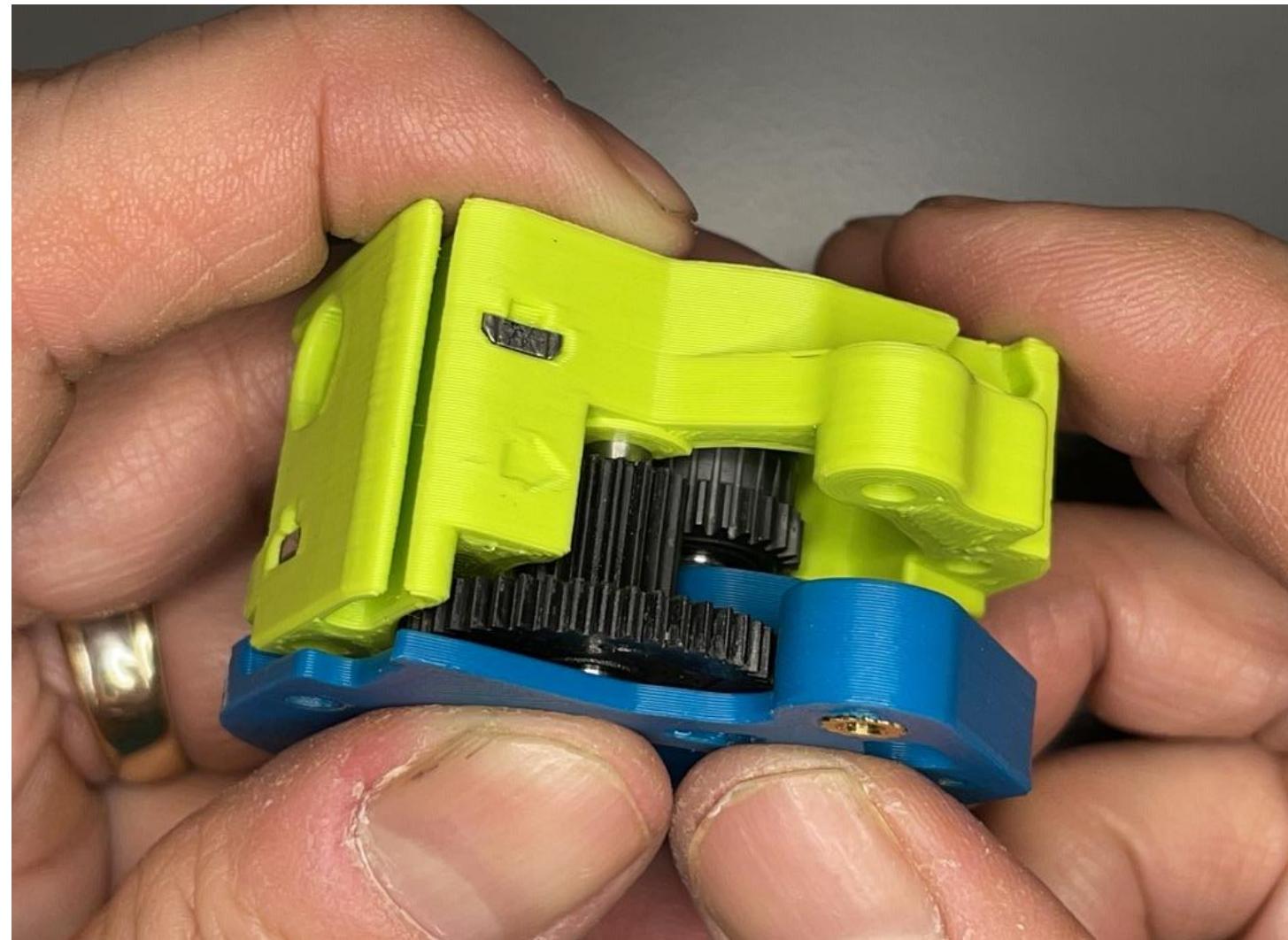
Next, attach the mid-body and motor-mount together, ensuring the gears are properly aligned and the **M4 dowels** are ALIGNED into each of the bearings.



# EXTRUDER ASSEMBLY

Check that the gears turn smoothly. This is also the first major check point where there should be a small amount of backlash between the **drive gear** and the **filament gear**.

You can inspect it by locking the filament gear with your finger, and wiggling the drive gear. There should be a small amount of wobble between gears. If it feels very tight and it's not turning smoothly, disassemble and try again. If it still feels stiff to turn and no backlash is present, it is possible your printed parts are not printed properly. Do not print with any shrinkage settings as these parts are optimized for ABS/ASA printing at 100%.



# EXTRUDER ASSEMBLY

Take one **6x3mm N52 magnet** and push-fit it into the side of the **Mid body**. For added security, you can apply a small dab of **superglue** to prevent it from slipping out during operation. You can also take a marker and mark the polarity of the magnet. The cutter assembly will need to be opposing (repelling) this when you get to that step.

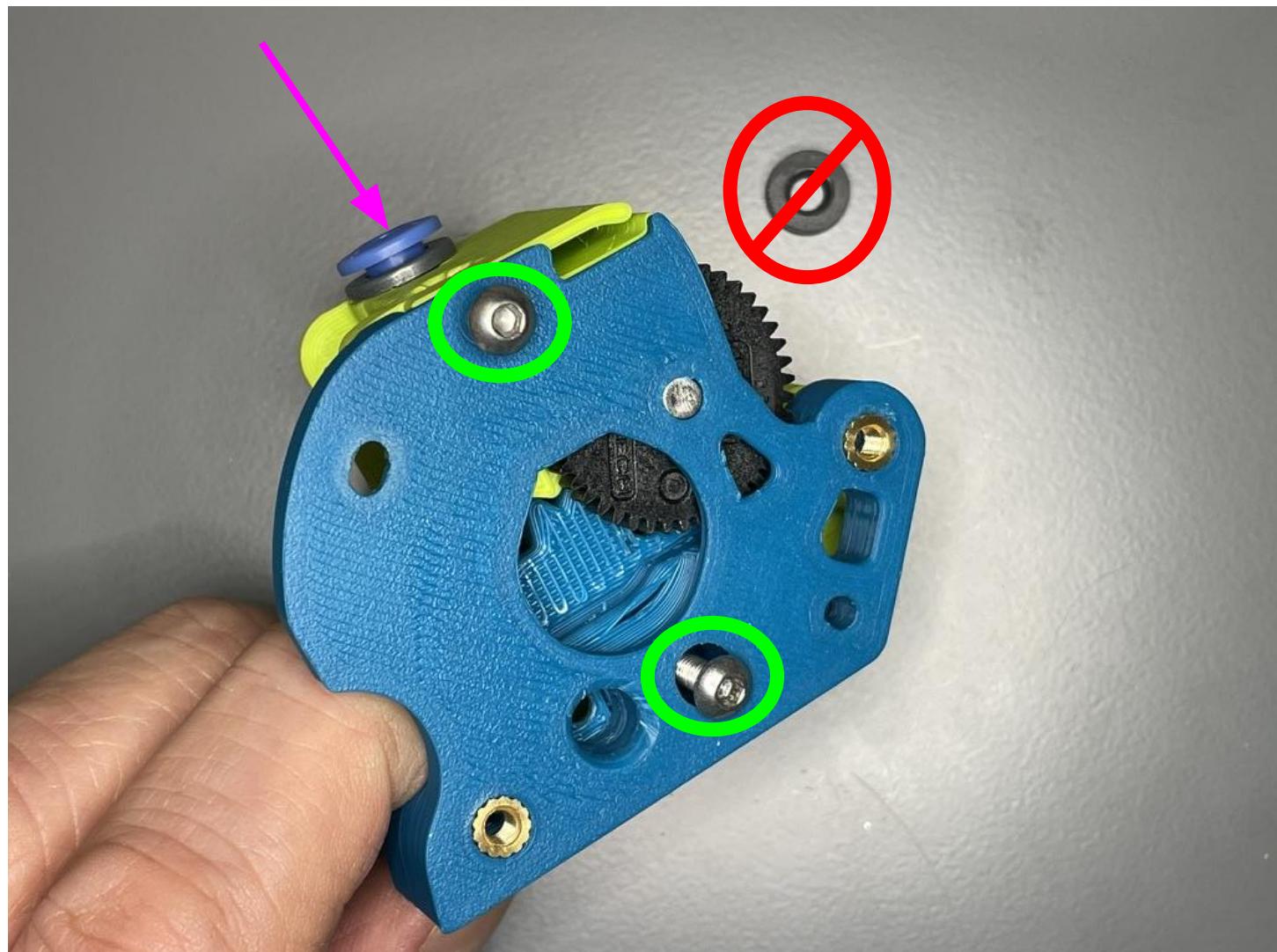


Hardware used in this step:  
(1) 6x3 N52 Magnet

# EXTRUDER ASSEMBLY

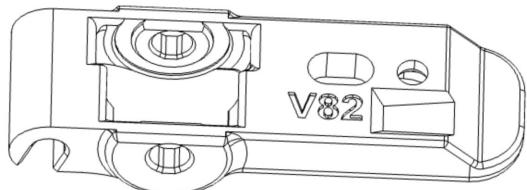
Use two **Stainless Steel M3x10 BHCS** to secure the pieces together and tighten.

Remove the bottom rubber part of the **ECAS Coupler fitting** (circled in red) and push-fit it into the top of the **Mid body** (ratcheted bar C-clamps works best to apply even pressure, or use a solid surface to press down)..



Hardware used in this step:  
(2) Stainless Steel M3x10 BHCS  
(1) ECAS Coupler Fitting

# EXTRUDER ASSEMBLY



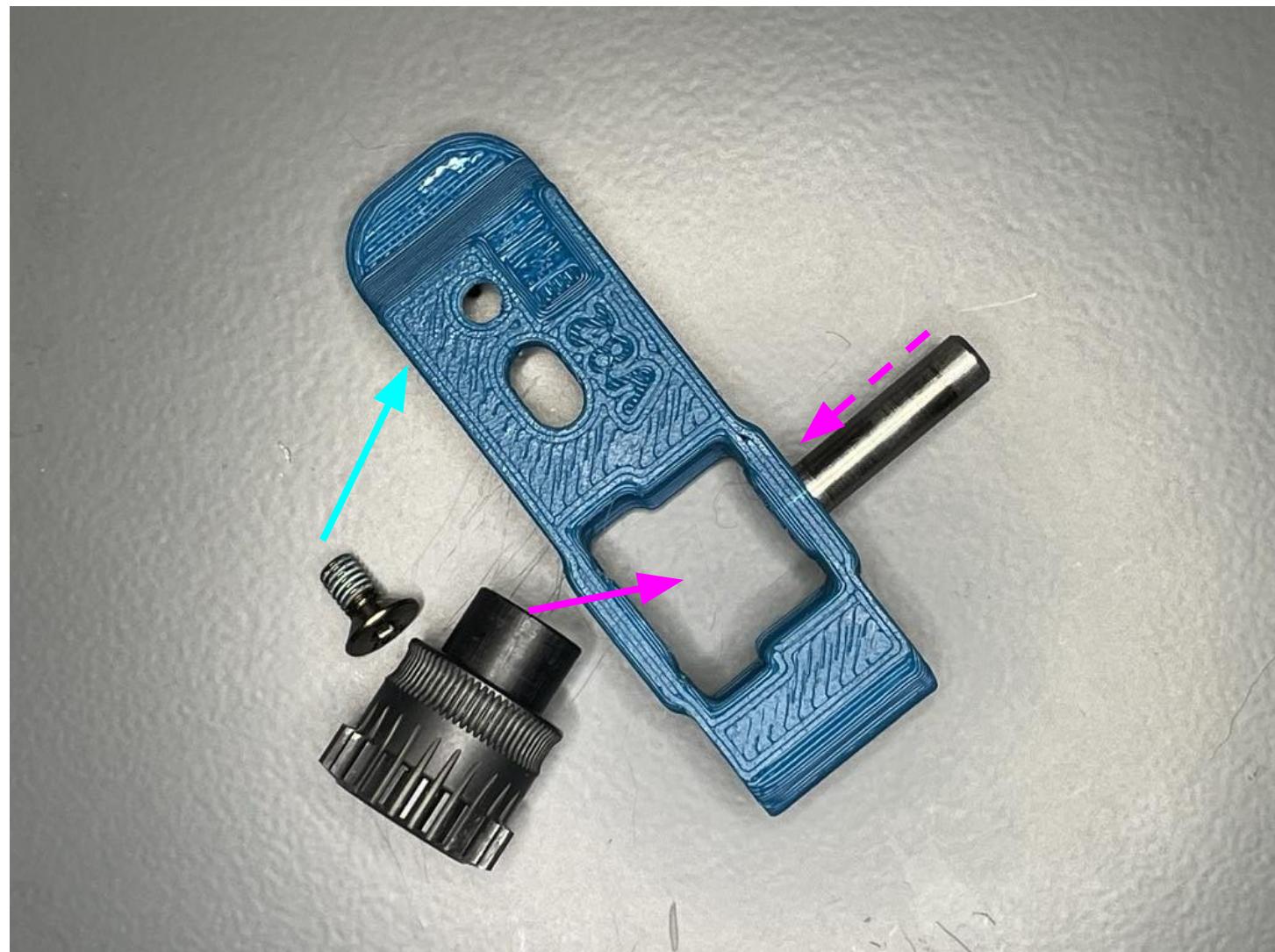
Next, we'll assemble the **Guidler**.

Begin by inserting the **LDO PEEK sleeve bearing** into the second **non-threaded Orbiter gear**. Then, align the gear with the slot on the **Guidler** and secure it in place using the **M4x16 dowel pin**.

Finally, install the **M3x6 FHCS** (on the opposite side of the part in the image), tightening it until it sits flush to the flat surface of the **Guidler**—this screw will later be used to adjust the clamping distance on the filament..

## Hardware used in this step:

- (1) LDO PEEK Sleeve Bearing
- (1) Non-threaded Orbiter Gear
- (1) M4x16mm Dowel
- (1) M3x6mm FHCS



# EXTRUDER ASSEMBLY

The **LDO Tensioner Spring** can be kept aside, or inserted as shown.. Make sure the dowel is flush to the sides. Once the **Guidler** is assembled set aside.

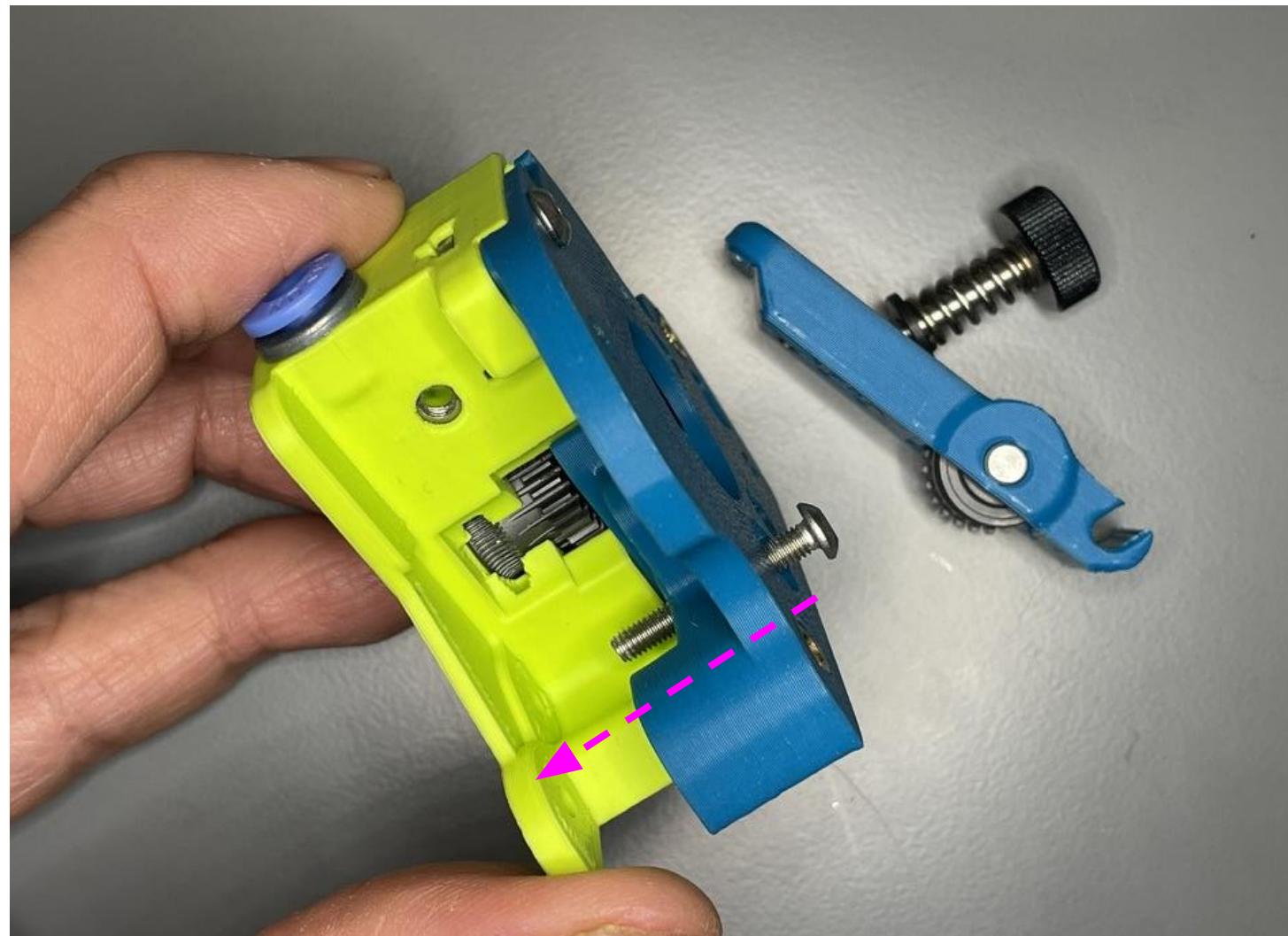


Hardware used in this step:  
(1) LDO Tensioner Spring

# EXTRUDER ASSEMBLY

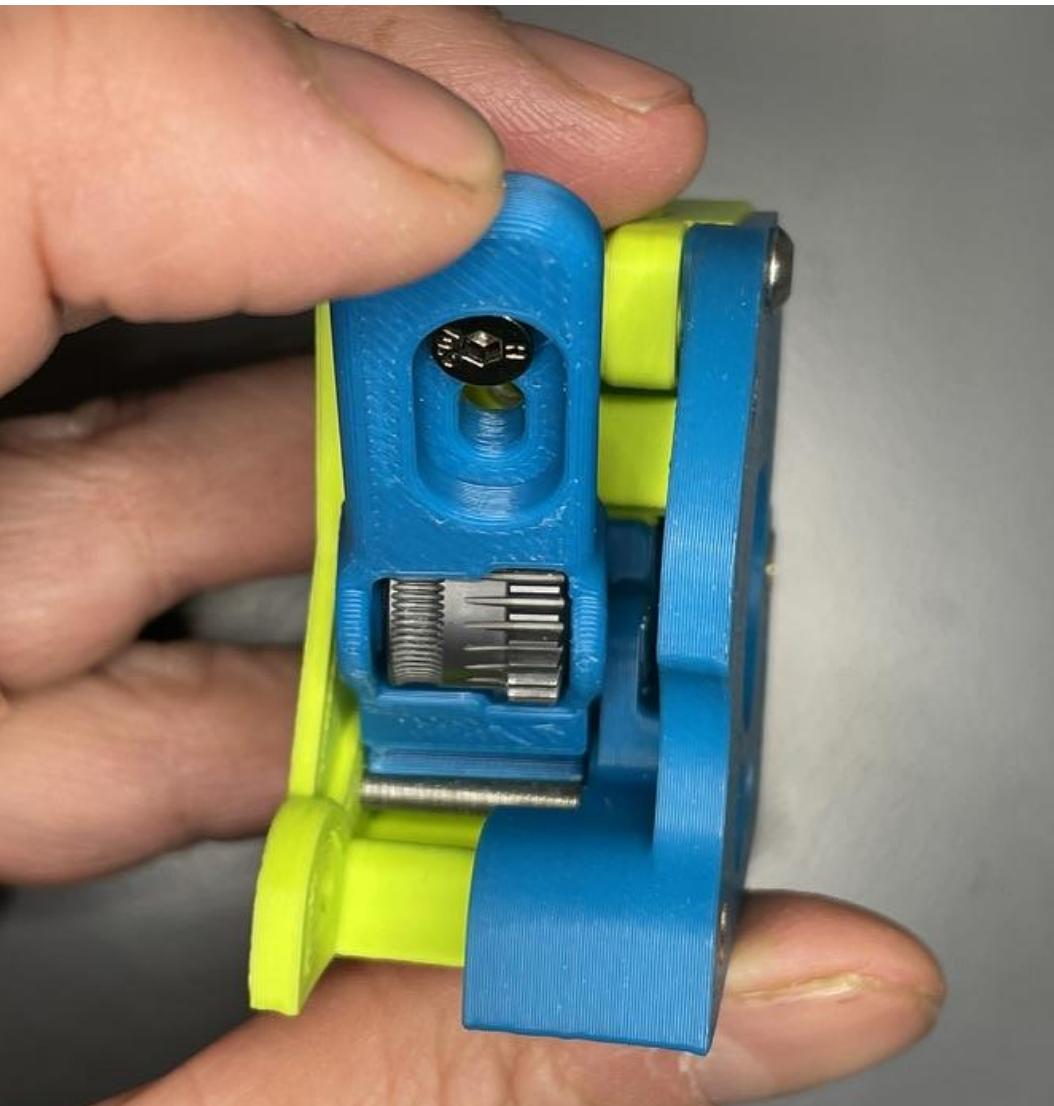
Install a **M3x20mm SHCS** hinge pin until it is bridged across the two parts (do not overtighten this screw).

The Guidler assembly is designed with a hook so it can be accessed without complete disassembly. This is done by unscrewing the LDO Tensioner Screw and unhooking from the hinge pin.

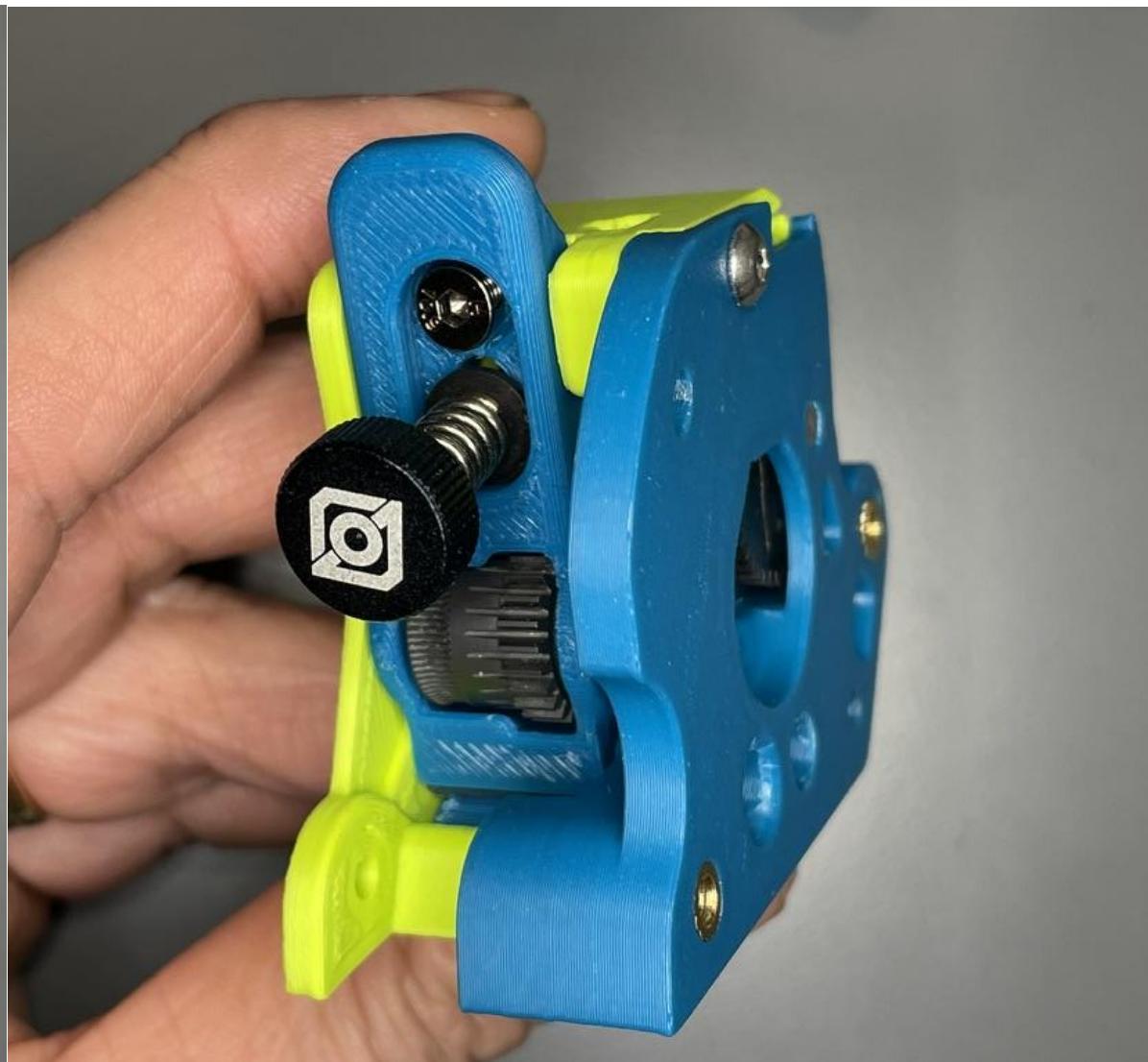


Hardware used in this step:  
(1) M3x20mm SHCS

# EXTRUDER ASSEMBLY

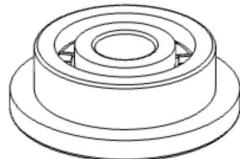


Take the guidler assembly, and tilt the hook side back as shown, and snap into the screw hinge pin.



Complete the guidler installation with the **LDO Tensioner Spring**

# EXTRUDER ASSEMBLY

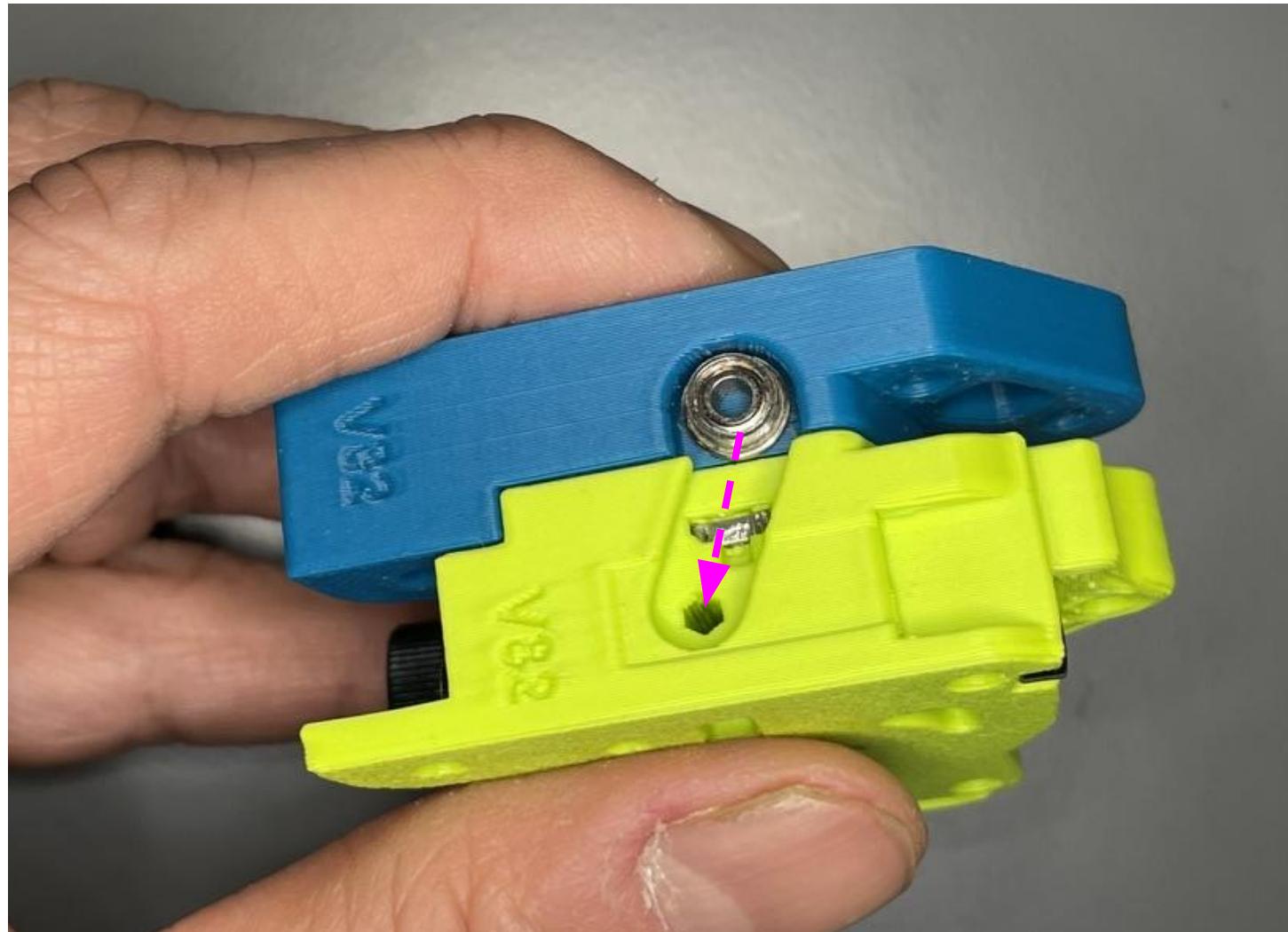


Insert the **F682X-ZZ filament guide bearing** into the bottom of the extruder through the cutout. Use a hex tool to push the bearing until it lines up with the filament hole. It is a snug fit and should not move after it is in place.

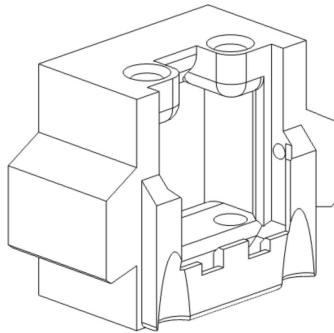
Ensure that it lines up with the filament hole. If it does not inspect the channel for any debris that might prevent it from pushing all the way through.

This completes the **Extruder Assembly**

**Hardware used in this step:**  
**(1) F682X-ZZ**



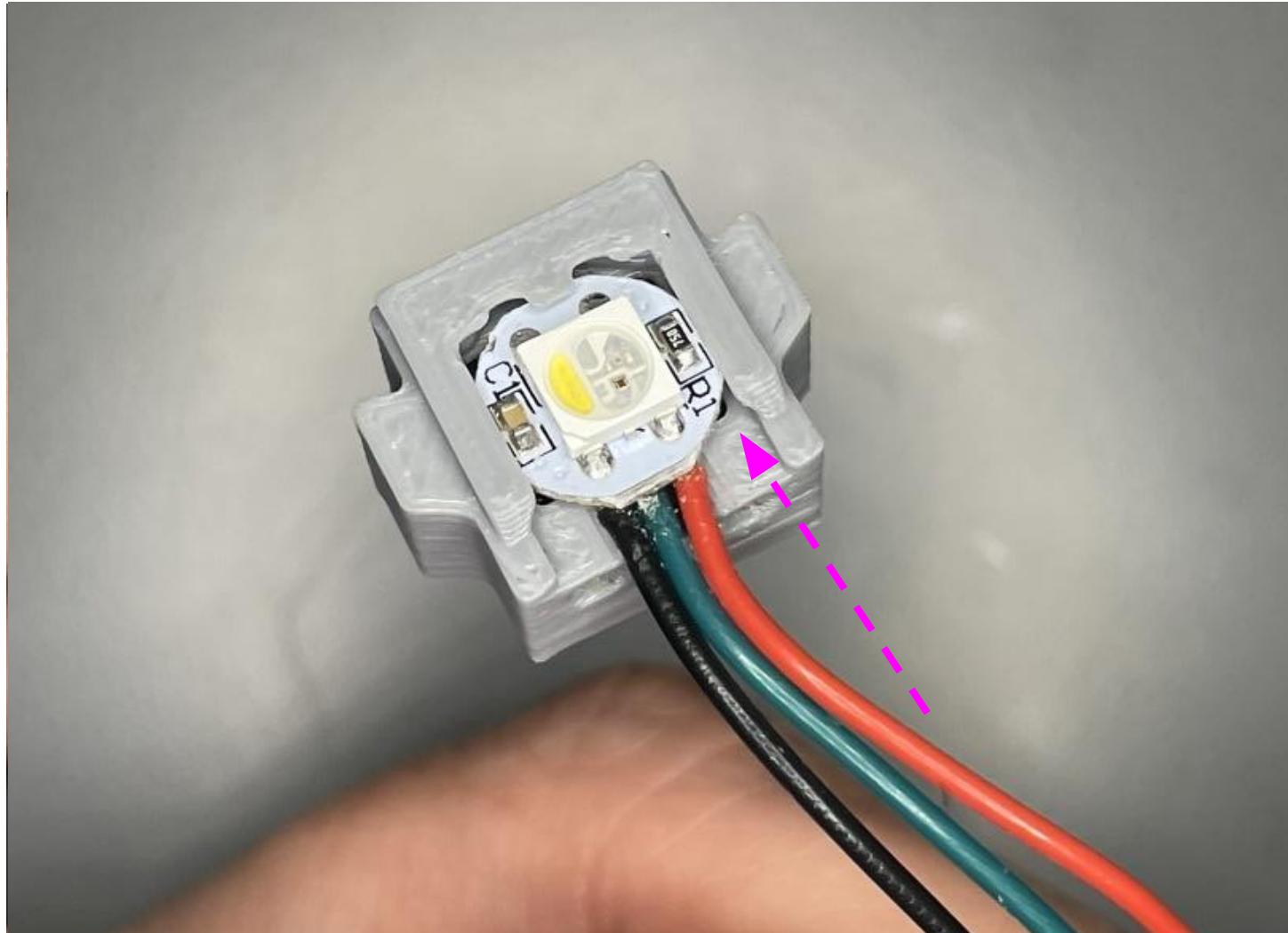
# EXTRUDER FRONT COVER ASSEMBLY



To start the front cover assembly we will mount the **LED** and **filament sensor switches** onto the **e(electronics) mount**. Insert the single **pre-wired Neopixel LED** into the **electronics mount** as shown.

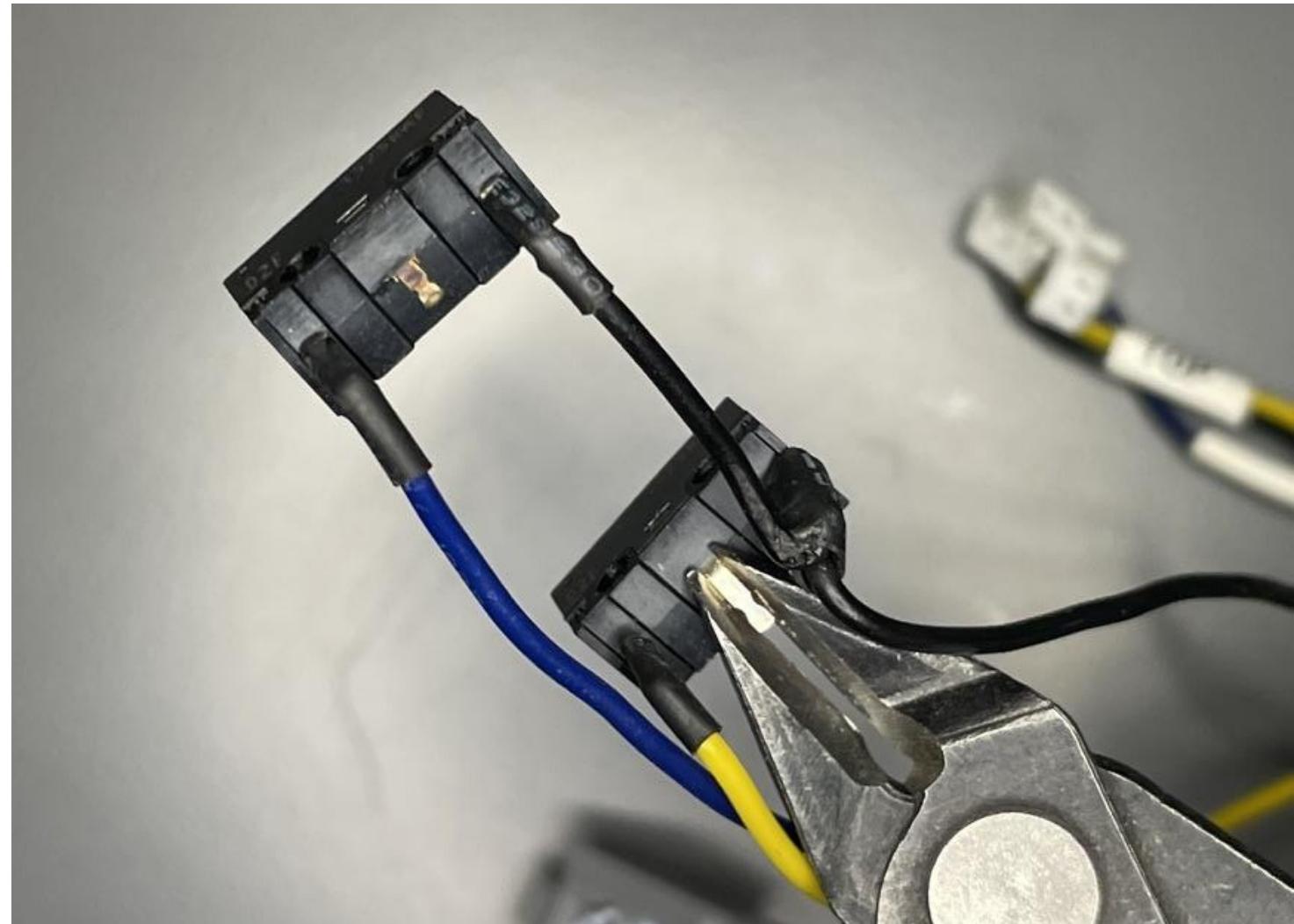
The fit is snug, what is most important is the wires are kept close together and that the LED sits in the channels. Don't force the wires into the void.

**Hardware used in this step:**  
**(1) Pre-wired Neopixel LED**



# EXTRUDER FRONT COVER ASSEMBLY

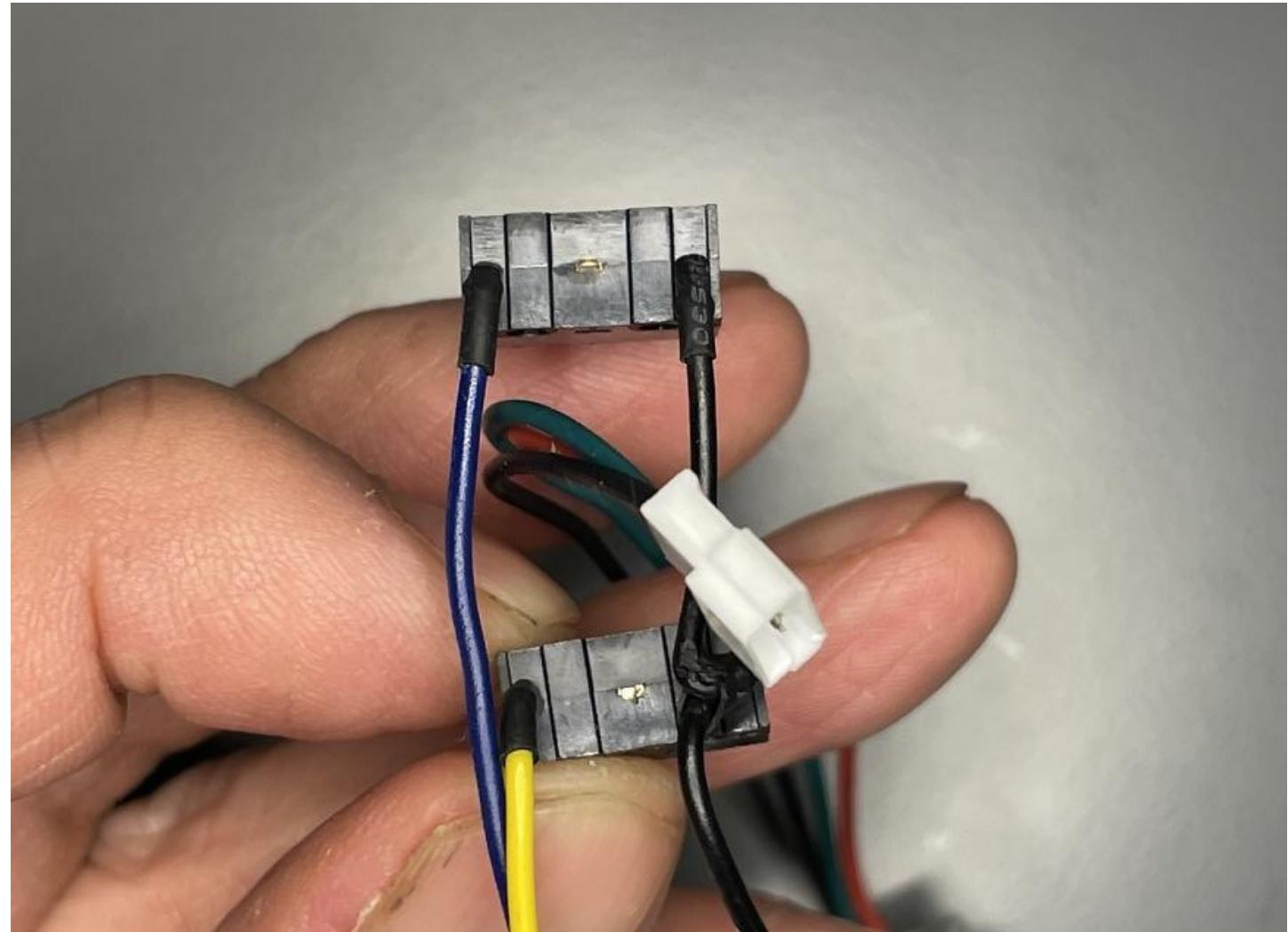
Find the **pre-wired micro switches** and optionally trim the pin on the switches that have the yellow wire (labeled as TOP). You can also bend the pin down flat. This makes it easier to feed wires between the two wires.



Hardware used in this step:  
(1) Pre-wired Micro Switches

## EXTRUDER FRONT COVER ASSEMBLY

Feed the assembled electronics  
mount LED wiring header end  
between the switches. The wires will  
fit between the yellow and black  
wire.



# EXTRUDER FRONT COVER ASSEMBLY

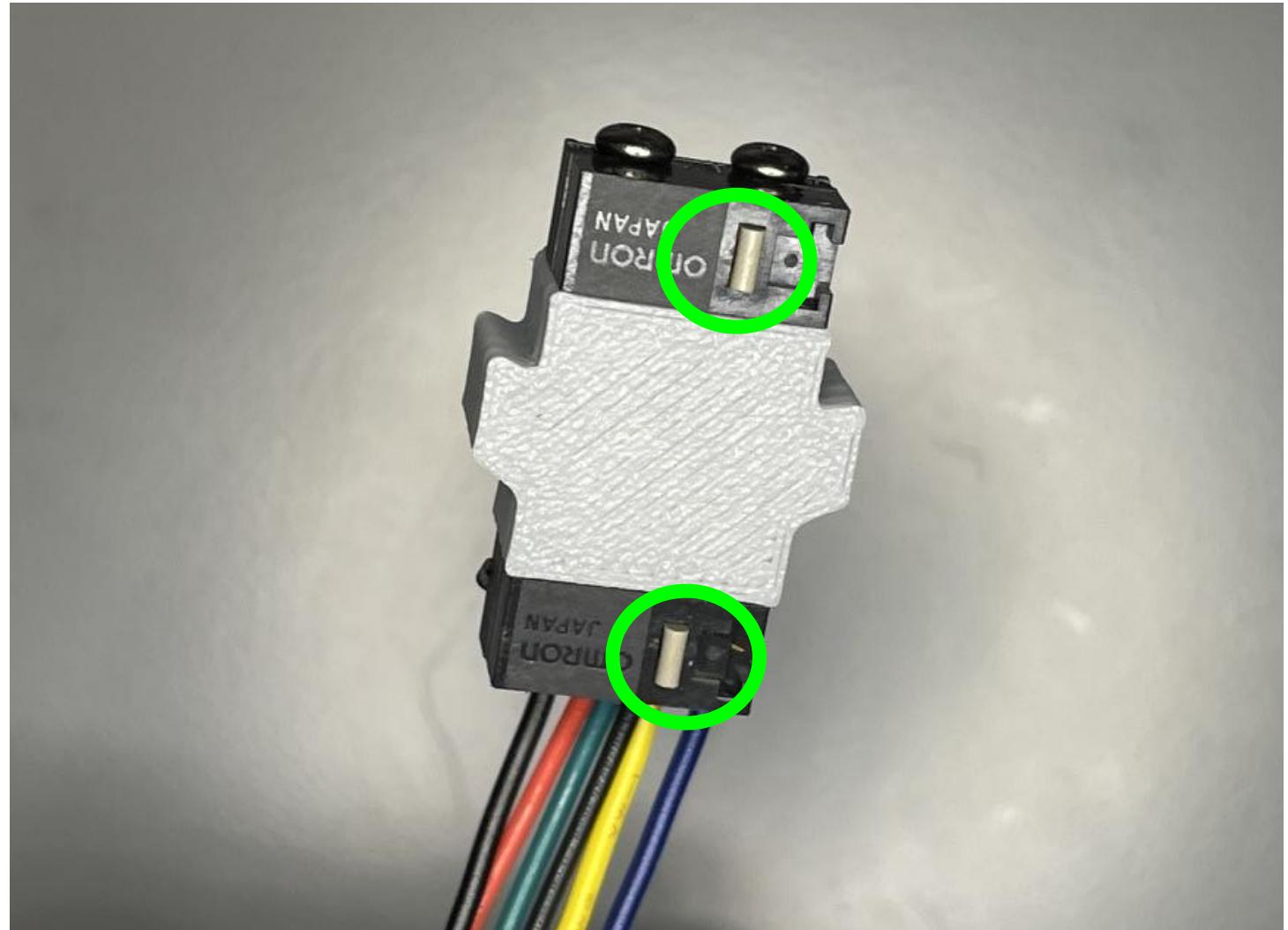
Screw into place using four **M2x10 SHCS**. Note that the black ground wire position on this is to the right of the assembly as pictured here.



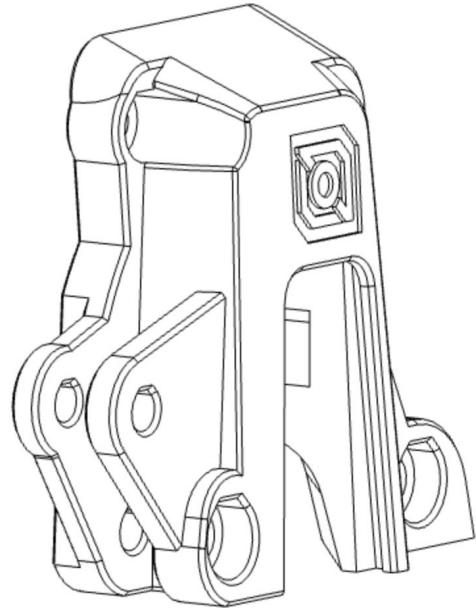
Hardware used in this step:  
(4) M2x10mm SHCS

## EXTRUDER FRONT COVER ASSEMBLY

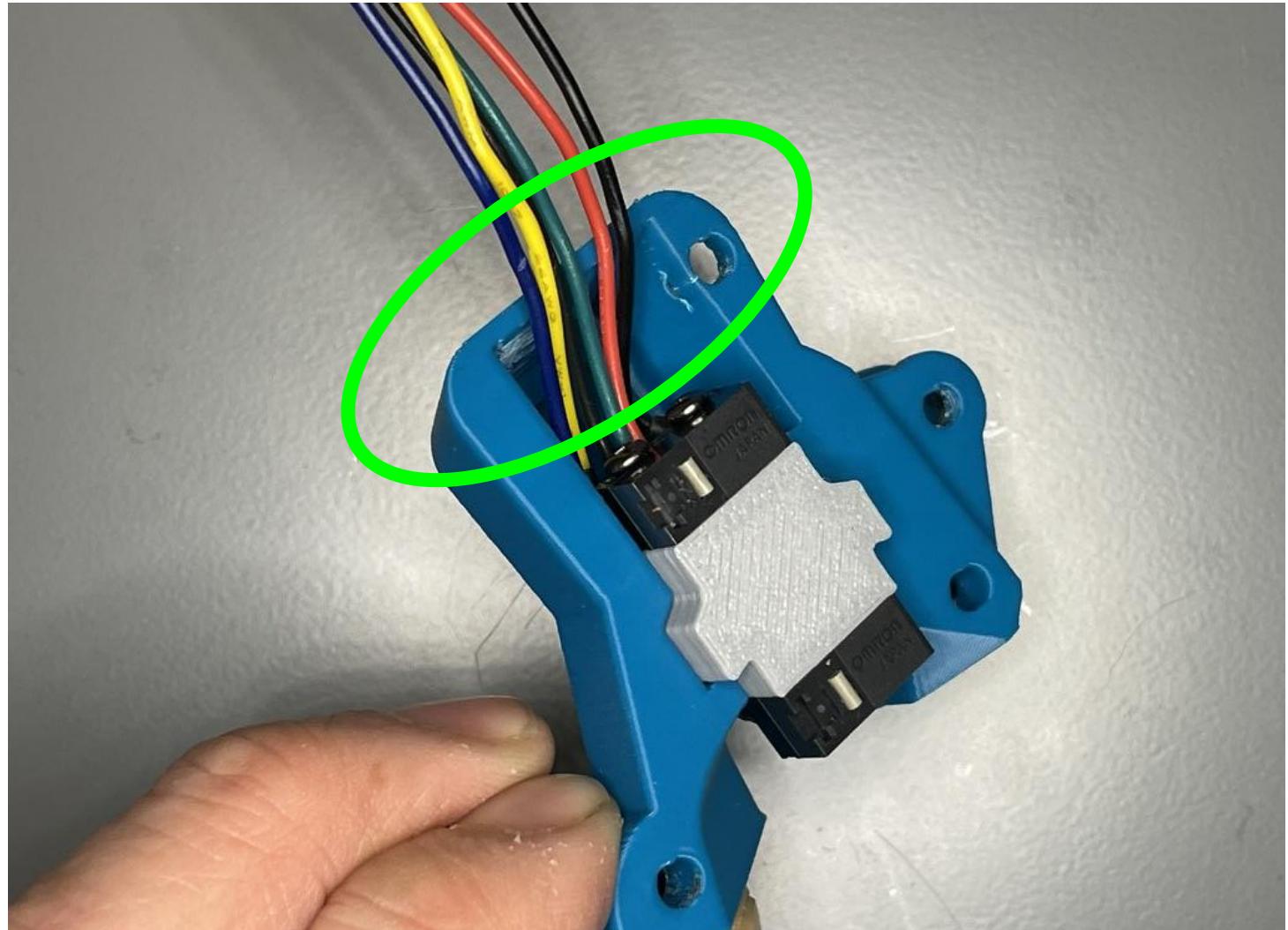
Flip the assembly to check that the plungers of the switches are sitting as pictured.



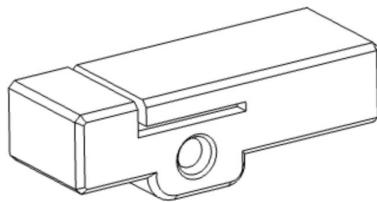
# EXTRUDER FRONT COVER ASSEMBLY



Install the assembled **Electronics Mount** into the **front cover**, ensuring that the wires are oriented upward, as they will be routed through the assembled extruder.



# EXTRUDER FRONT COVER ASSEMBLY



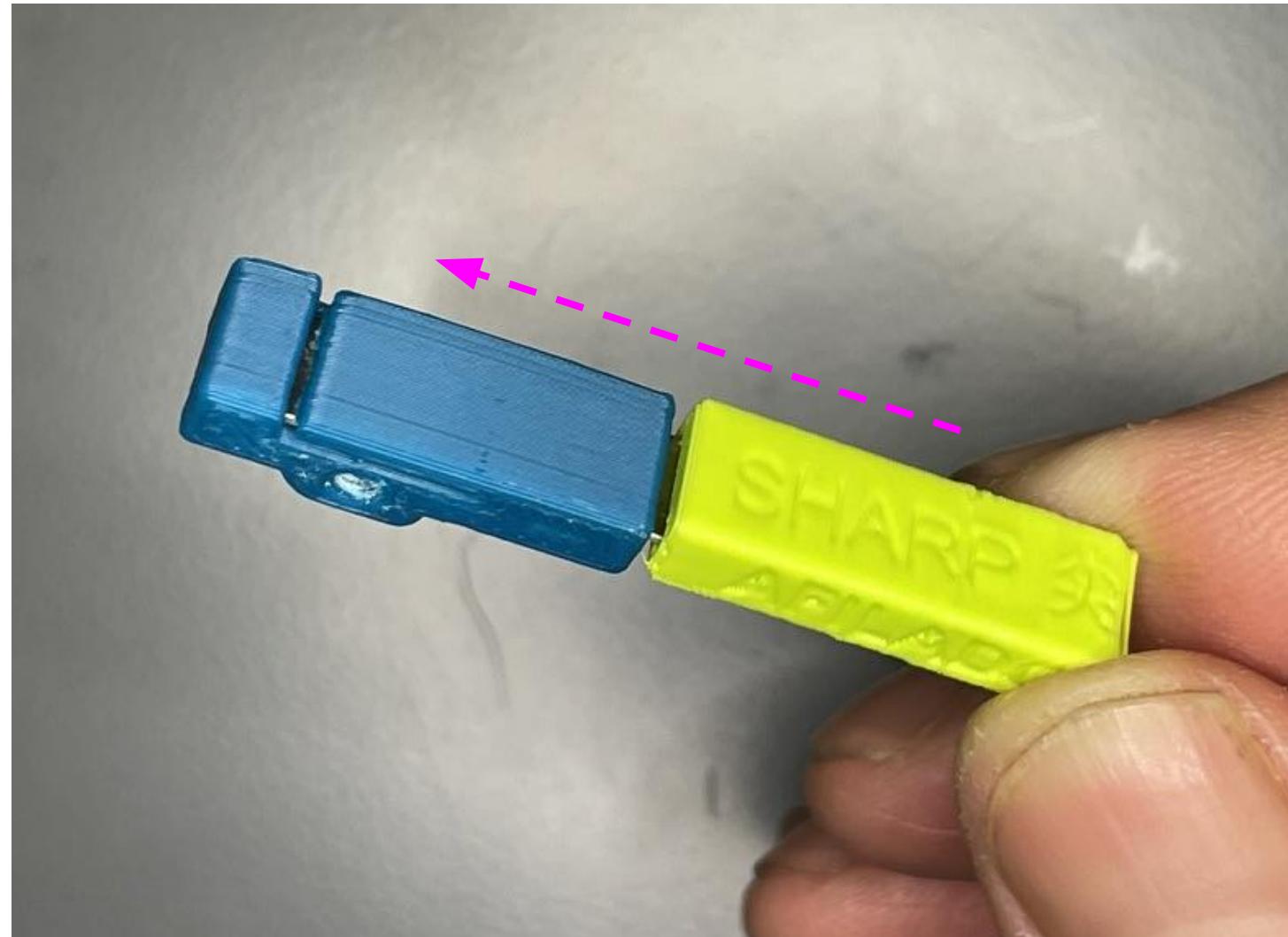
Next, we'll assemble the **filament cutter**. Begin by installing the **#4 blade**—carefully load and press it into the **blade carrier** using the **blade installation tool** with the cutting edge inserted into the safety tool (yellow). The carrier is a compliant mechanism that will lock into the hole of the **#4 blade** to prevent it from falling out.

It is recommended to print a new blade carrier when you need to replace the blade.

Each blade can last between 6,000-8,000 cuts depending on the type of filament used (on average about 30-40 average sized multi-colour projects).

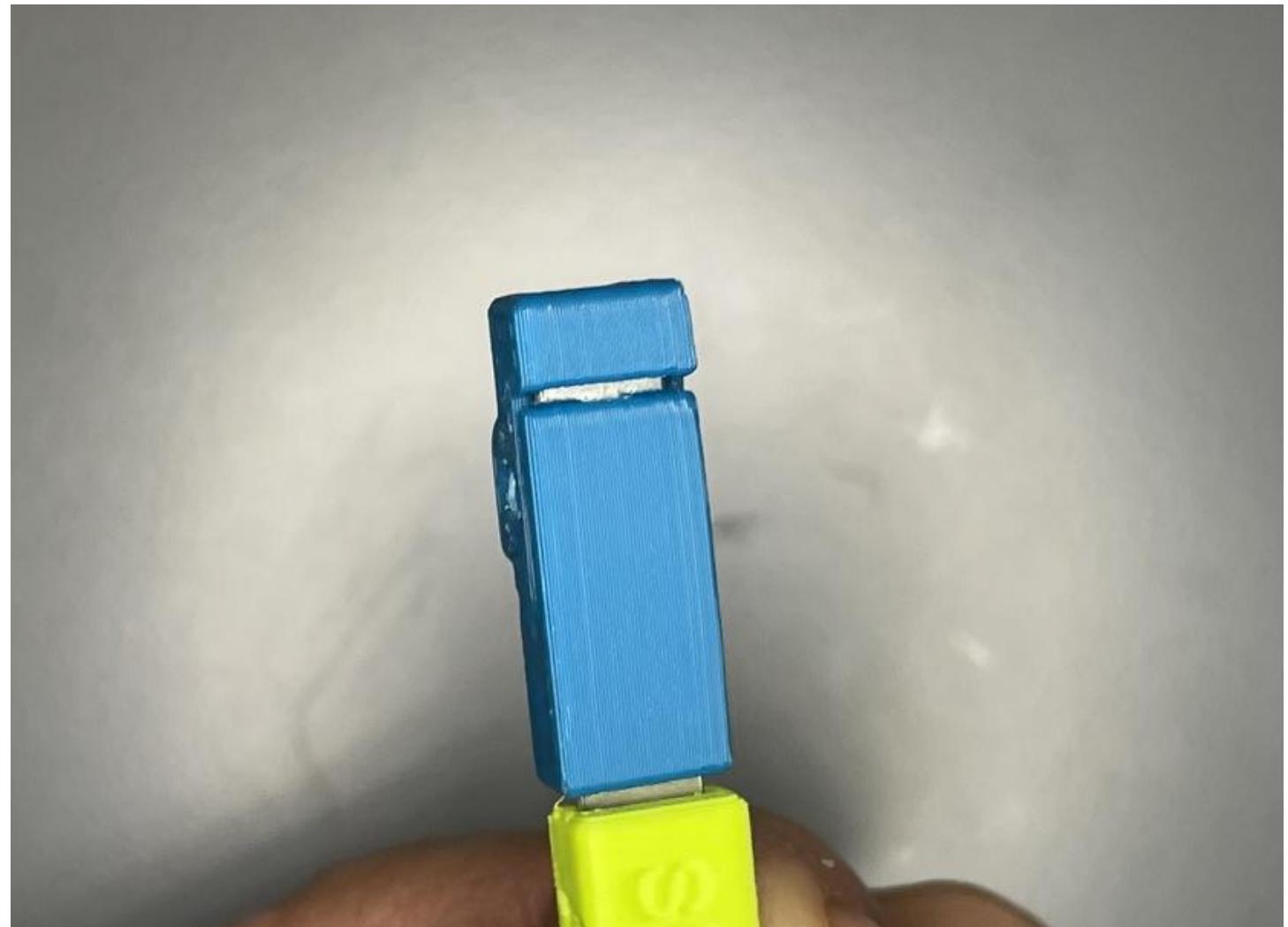
## Hardware used in this step:

- (1) #4 Hobby Blade

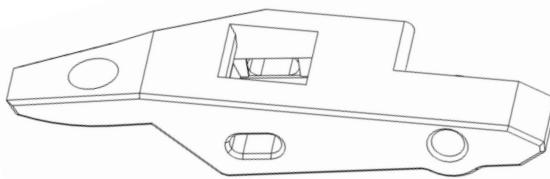


## EXTRUDER FRONT COVER ASSEMBLY

Inspect the gap in the image and you should see a portion of the blade there ensuring that installation was successful.



# EXTRUDER FRONT COVER ASSEMBLY

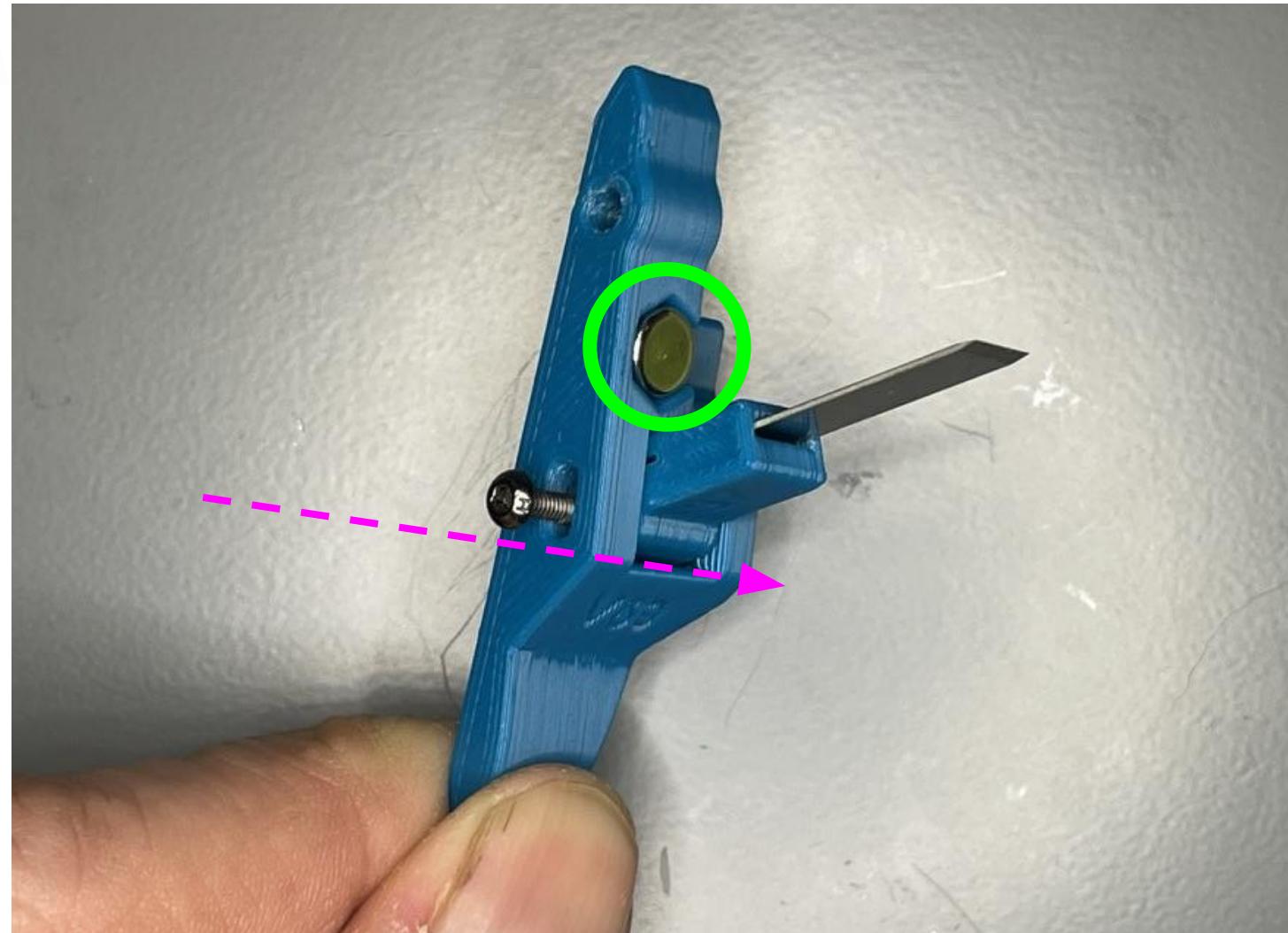


Next, slide the blade carrier into the cutter arm and secure it using the **M2x16 BHCS** (this can also be done as a last step for safety). Install the **6x3 N52 magnet** into the arm, ensuring that polarity opposes the one installed earlier (repels each other like a spring). You may add a small dab of super glue if it seems loose.

During complete assembly, if the cutter does not move easily or freely, remove the same **M2x16 BHCS**, remove the carrier through the arm and sand the plastic blade carrier lightly until it moves freely.

## Hardware used in this step:

- (1) M2 x 16mm BHCS
- (1) 6x3 N52 Magnet

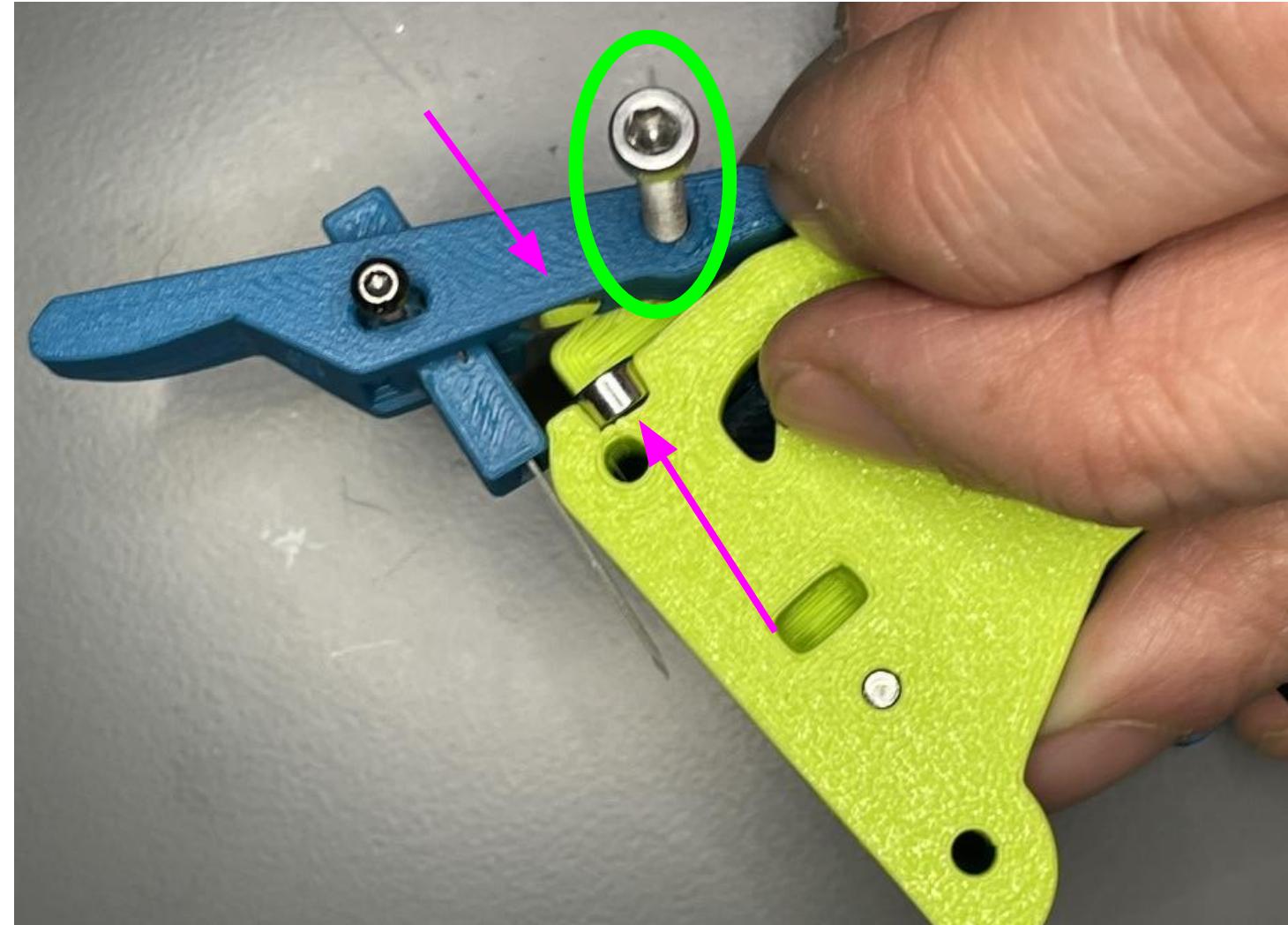


# EXTRUDER FRONT COVER ASSEMBLY

## OPTIONAL

You can temporarily install the arm with a **M3x40 BHCS** and check that the **magnets** are opposing each other while checking the action of the arm and the cutter.

At any point, by design, you can remove the cutting blade with either of the two screws for maintenance or blade exchanges.



Hardware used in this step:  
(1) M3x40 BHCS

# EXTRUDER FRONT COVER ASSEMBLY

Install the two **MR63ZZ bearings** into their designated slots on the extruder (be aware it is easy to lose your bearings here; ensure you are aware of the assembly's orientation when setting it down to prevent loss).

These bearings will engage with the switches once filament is detected.

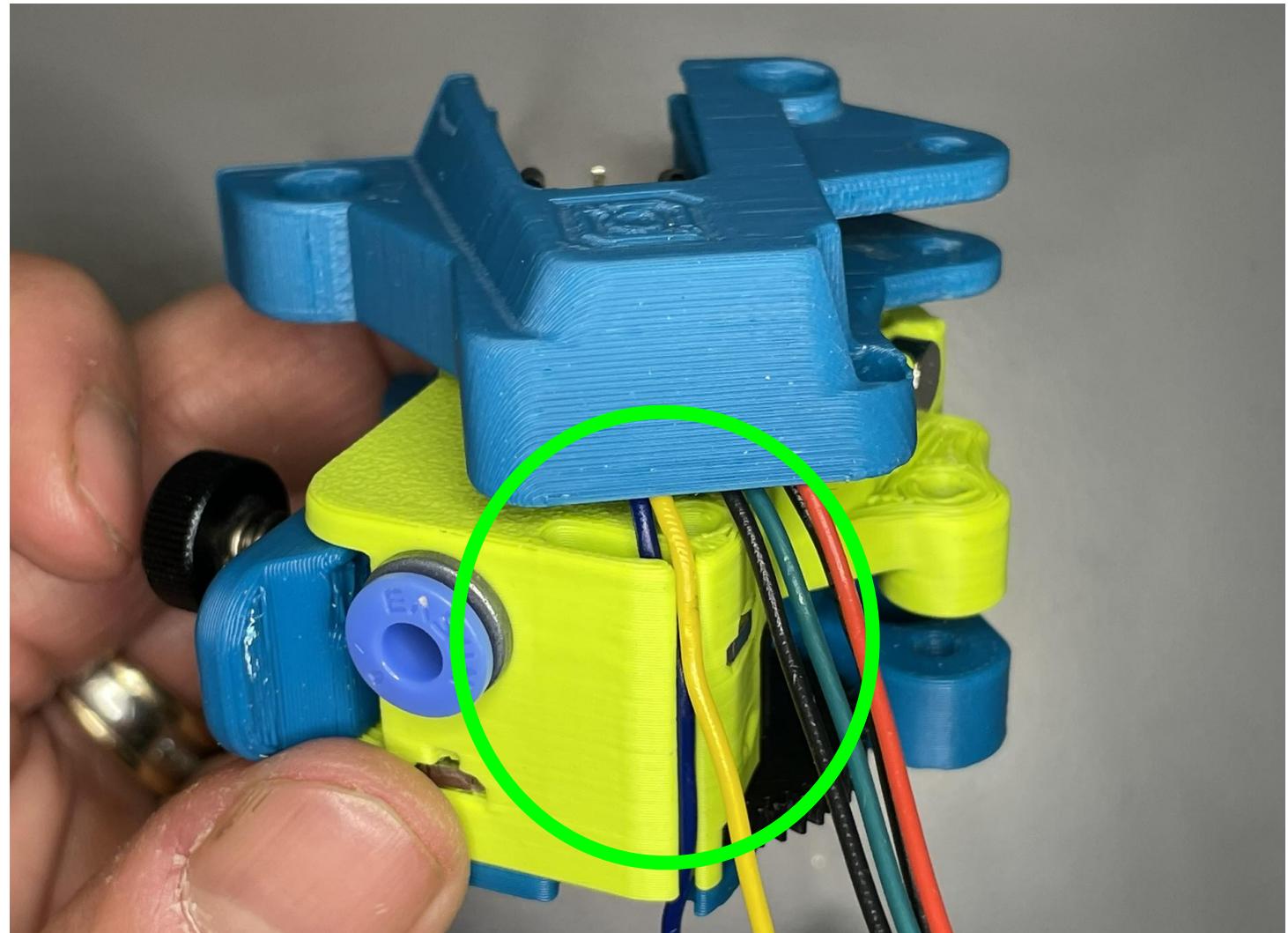
Hardware used in this step:  
(2) MR63ZZ Bearings



# EXTRUDER FRONT COVER ASSEMBLY

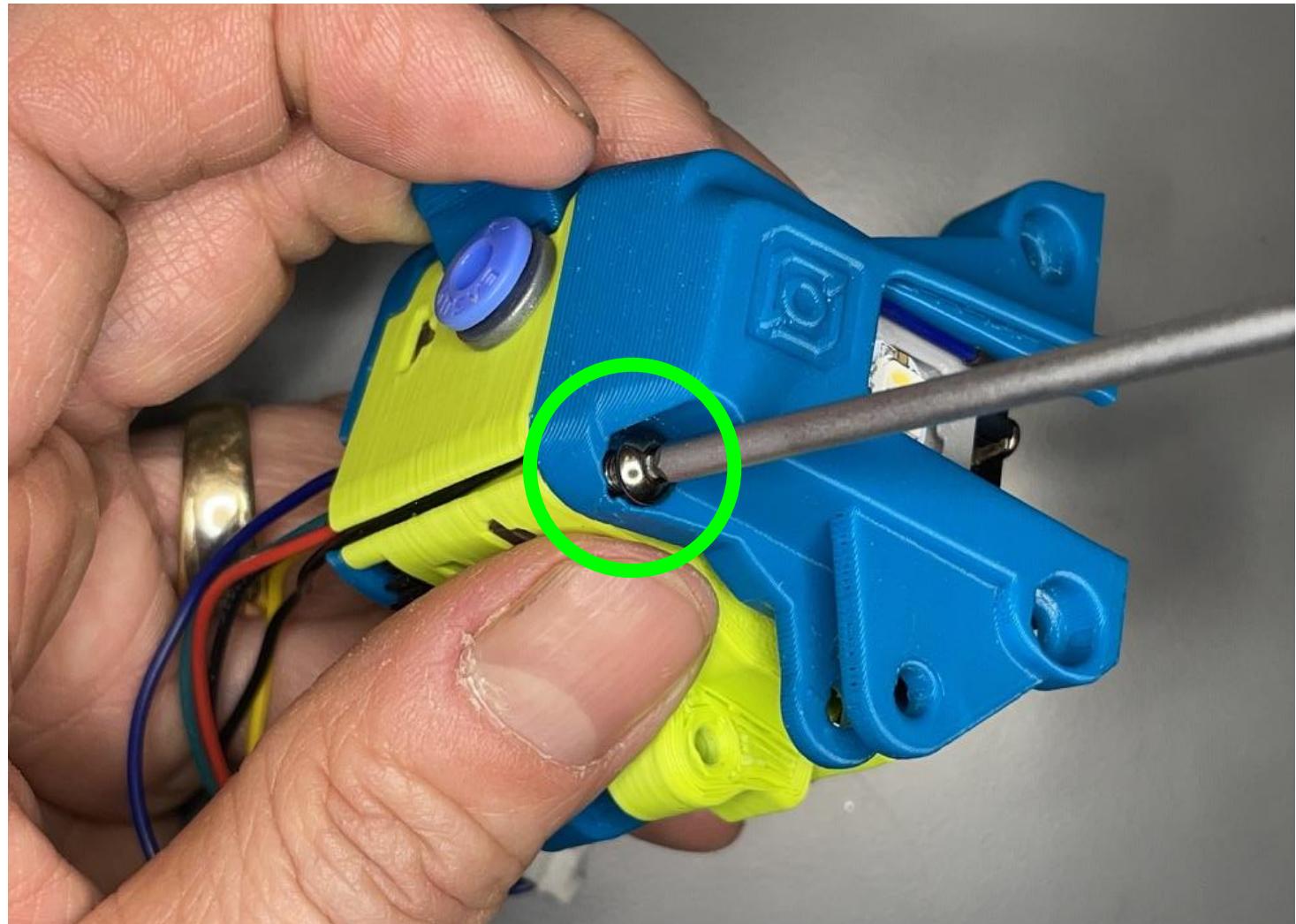
Take the **front cover** and carefully feed each wire one at a time. Push with filament or a hex tool into the wire channel of the **mid body extruder**.

Take care to keep the bearing from falling out (it is ideal to do this step with the front facing up)



# EXTRUDER FRONT COVER ASSEMBLY

Insert one **M3x12 BHCS** through the cover and lightly tightening it to hold the assembly in place (this is a good time to check the alignment of the sensor pins to the two **MR63ZZ bearings** using a piece of filament to engage and listen for the clicking of the micro switches).



Hardware used in this step:  
(1) M3 x 12mm BHCS

# EXTRUDER FRONT COVER ASSEMBLY

Then, align the **filament cutter** and insert the **M3x40 BHCS**, tighten it just enough to keep it in position. Do not overtighten or it will interfere with the hinge movements of the entire toolhead.



Hardware used in this step:  
(1) M3 x 12mm BHCS

# EXTRUDER FRONT COVER ASSEMBLY

Position the **LDO-36STH20-1004AH(IG8T)** extruder motor with the motor wires on the latch side of the extruder. Secure it with the **M3x45 SHCS**. The screw should sit protruding past the motor screw hole



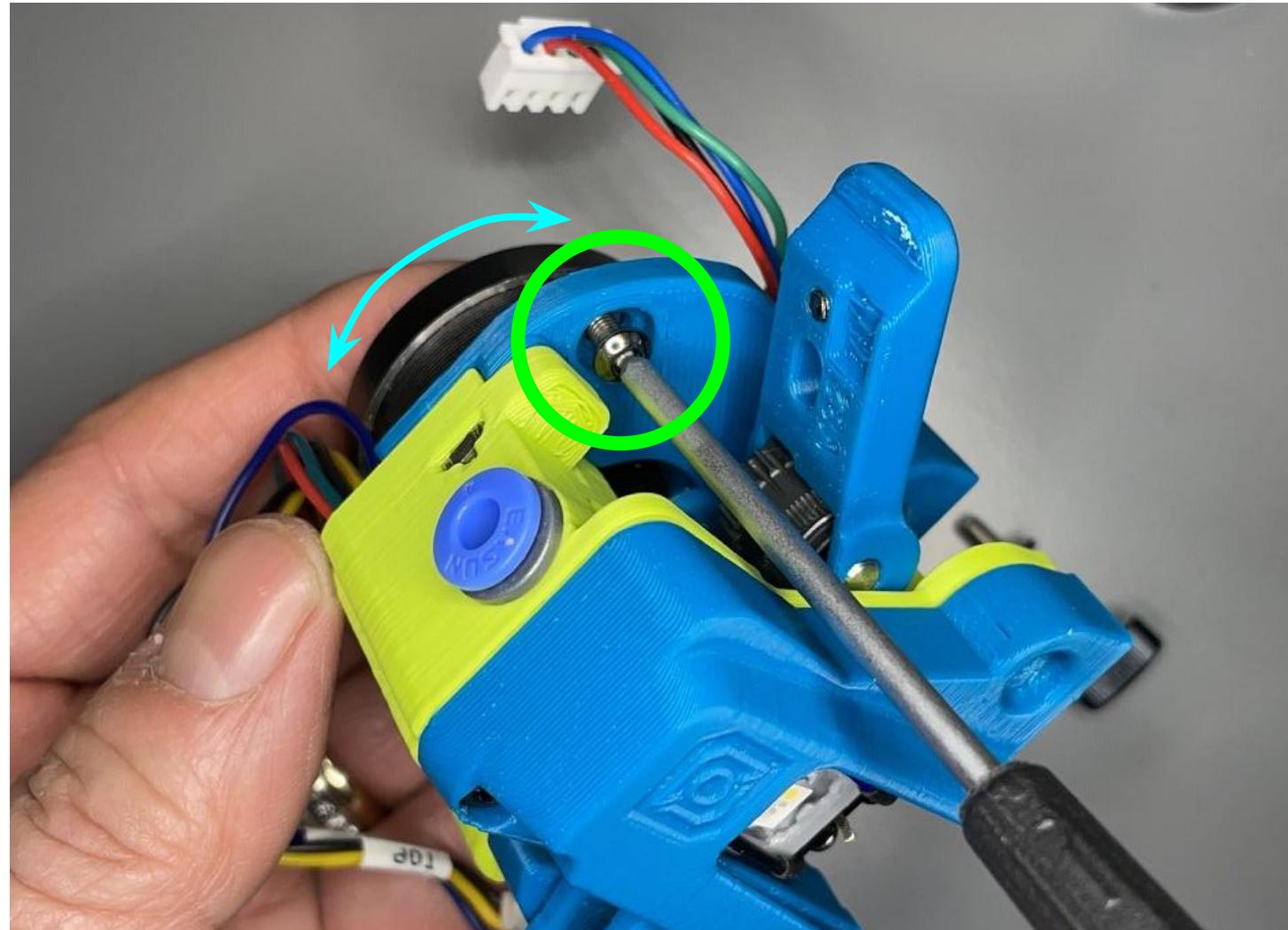
Hardware used in this step:

- (1) M3 x 45mm SHCS
- (1) LDO-36STH20-1004AH(IG8T)

# EXTRUDER FRONT COVER ASSEMBLY

Unscrew the **LDO Tensioner Spring** and move the guidler to the side.

Install the **M3x8 BHCS** and lightly tighten it. Slowly pivot the **extruder motor** until it makes contact with the extruder gears.



Hardware used in this step:  
(1) M3 x 8mm BHCS

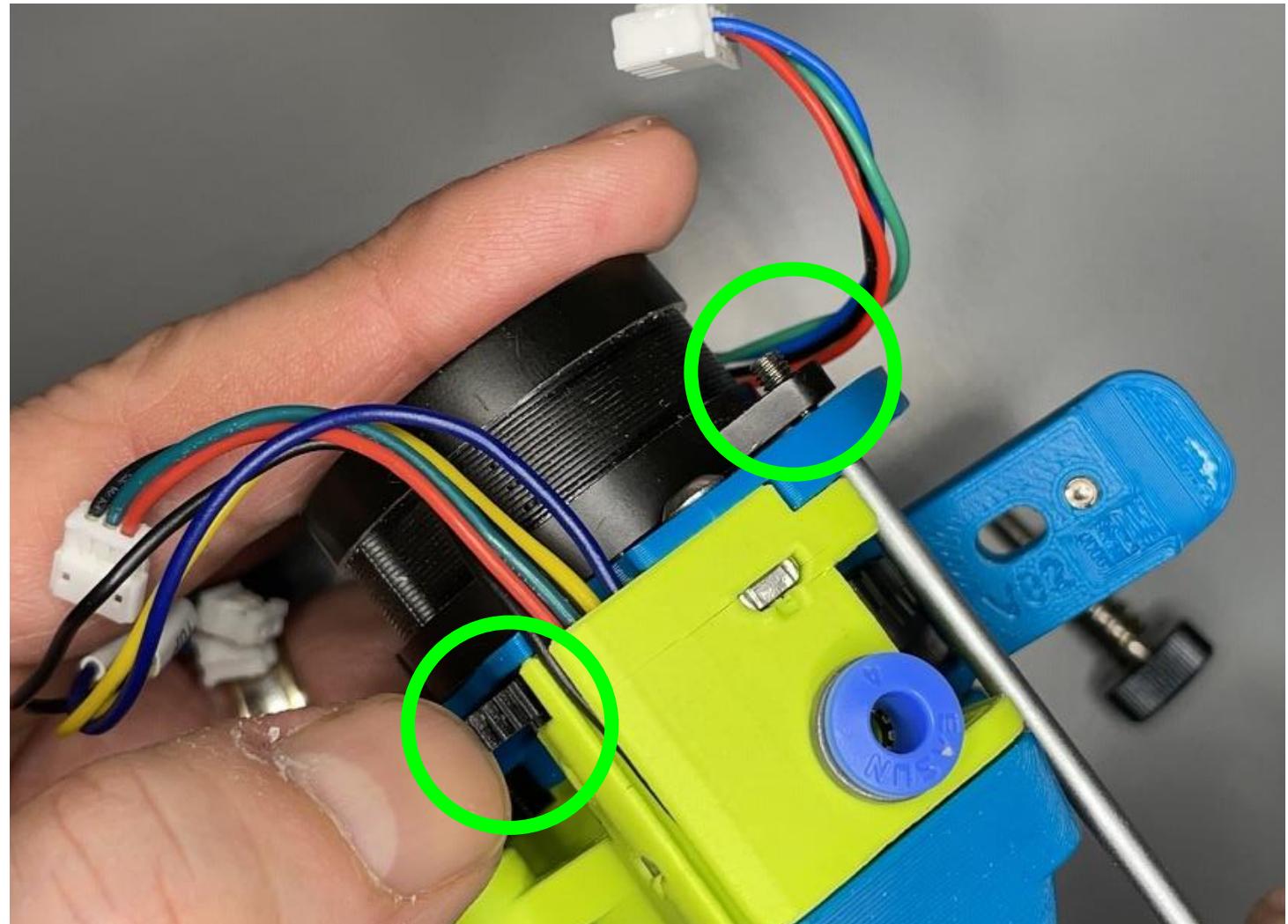
# EXTRUDER FRONT COVER ASSEMBLY

To ensure proper engagement, gently rotate the exposed **BondTech drive gear** on the left side—this will help you find the optimal contact point between the **extruder motor spur gear** and the **drive gears**.

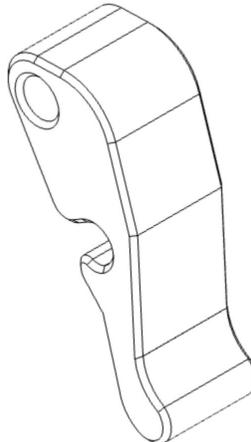
It is recommended that a tiny bit of movement be felt on the gear to reduce wear. You will be able to confirm that it isn't too tight if you can turn the gears with the exposed plastic **drive gear**. It should be smooth with a small bit of wobble (backlash) between the gears.

If you can't turn it easily, then re-adjust the screw until the wheel moves smoothly.

**Hardware used in this step:**  
**(1) M3 x 45mm SHCS**



# EXTRUDER FRONT COVER ASSEMBLY

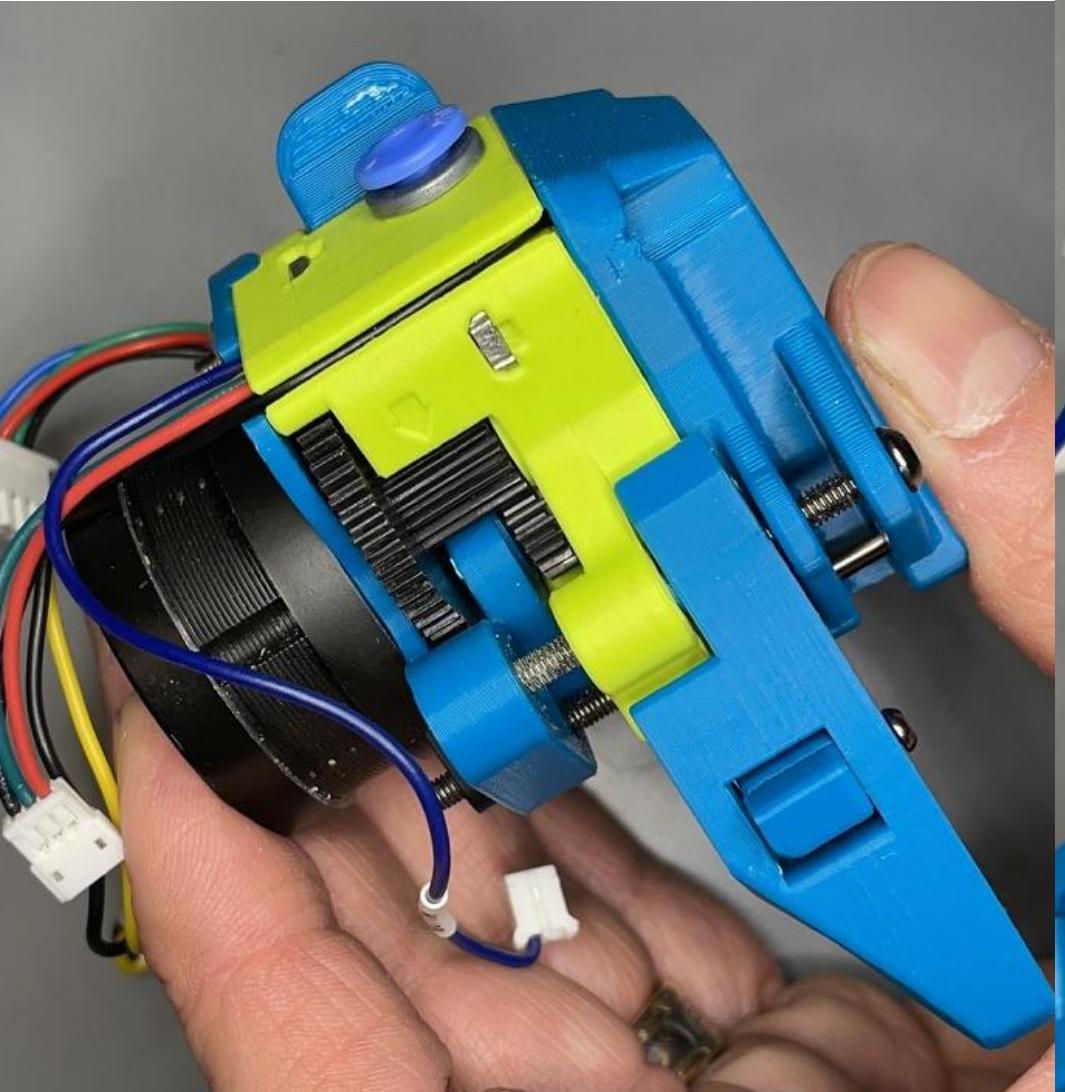


Moving to the latch-side, install the extruder lever lock and secure it using a **M3x35 SHCS**. Do not overtighten this screw. It only acts as a hinge for your latch.

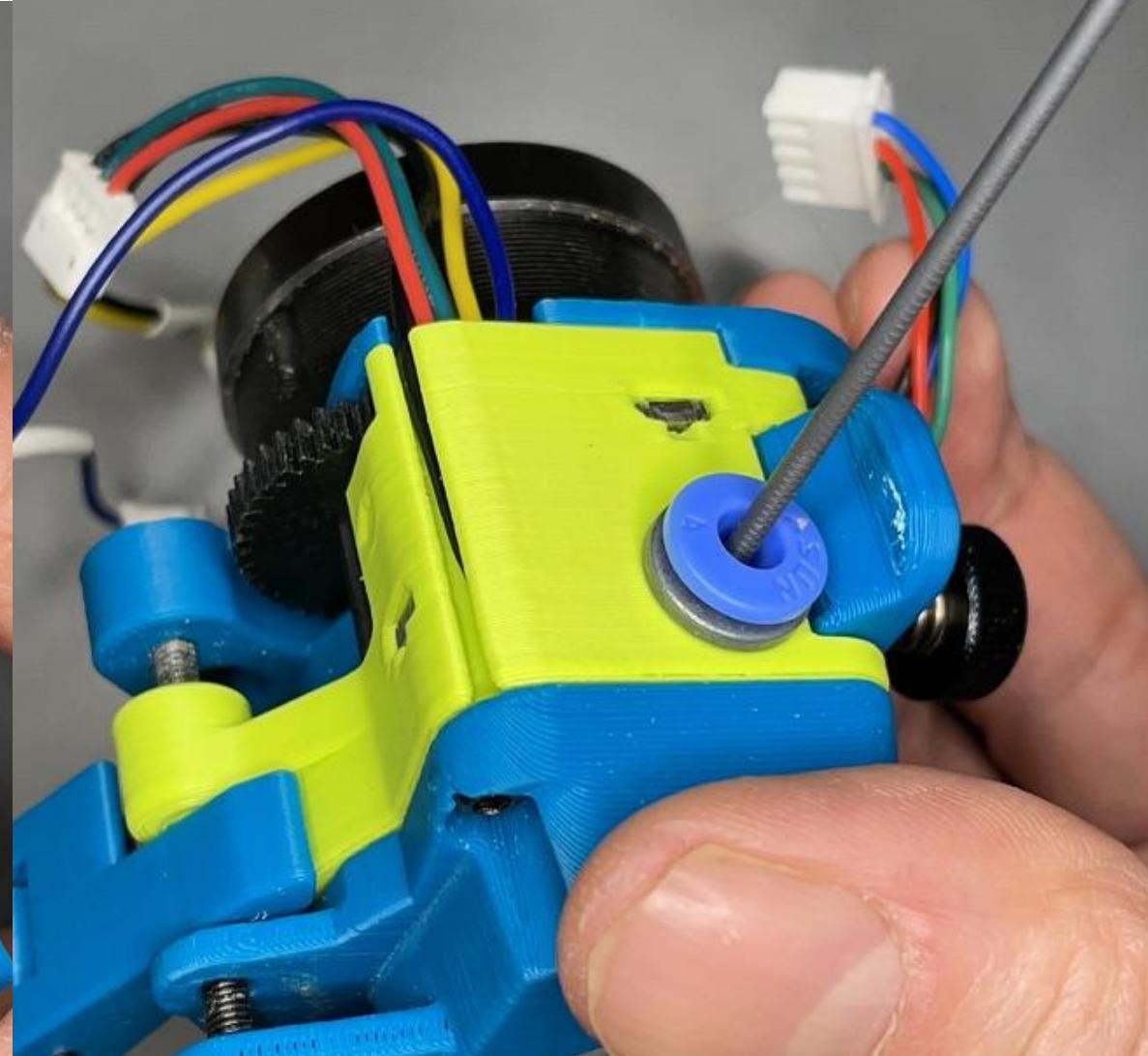
Hardware used in this step:  
**(1) M3 x 45mm SHCS**



# EXTRUDER ASSEMBLY



Check all the movements of gears and verify that there is no rubbing or binding.

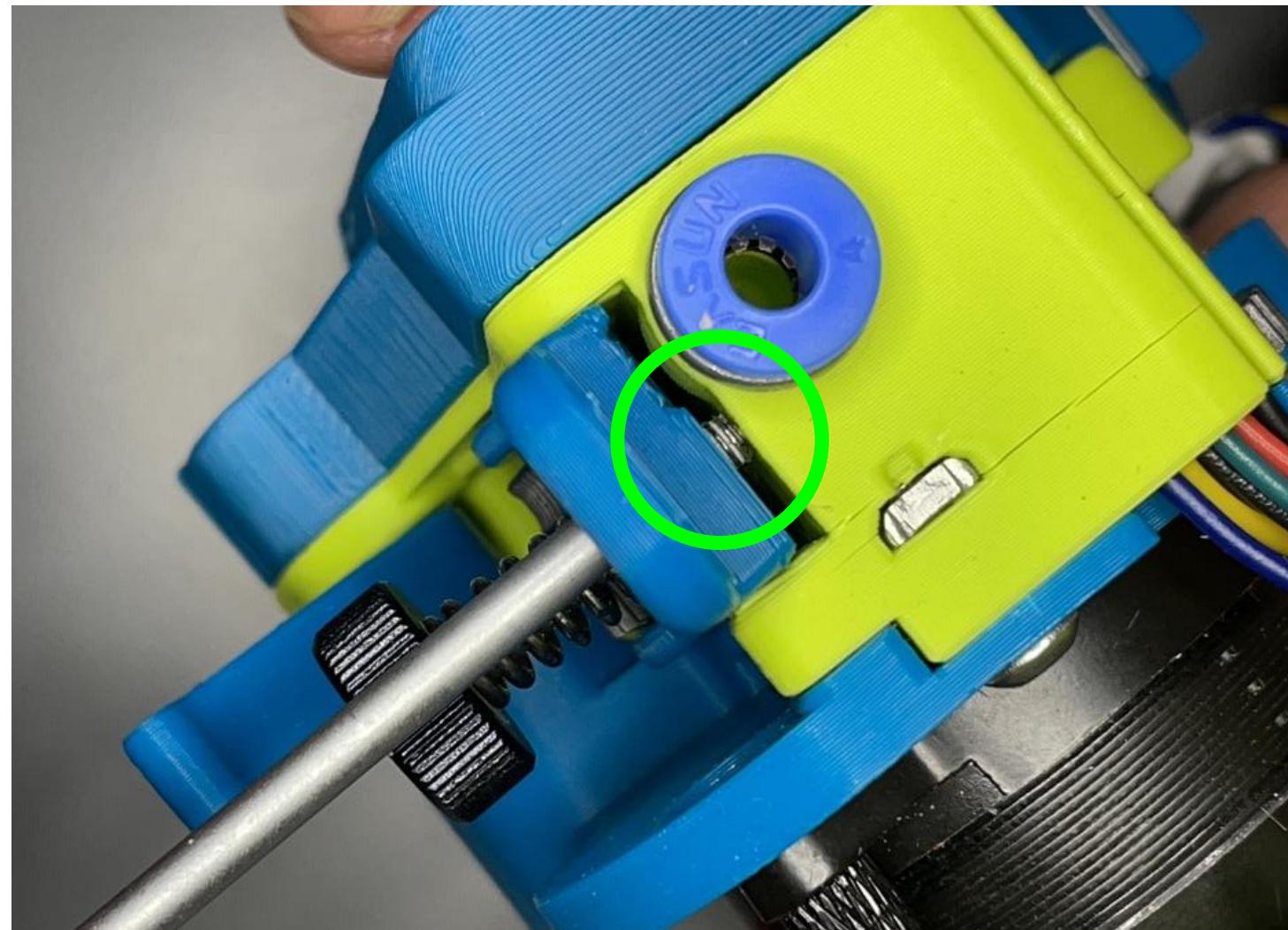


This is a good time to recheck the filament path.

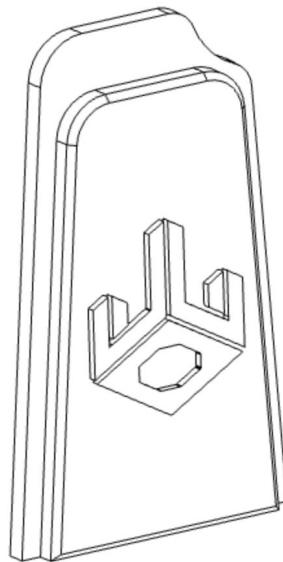
# EXTRUDER FRONT COVER ASSEMBLY

Tighten the **M3x6 FHCS** on the guidler so you see the gap shown here. This is important for filament changer operation as it will ensure the filament loads properly.

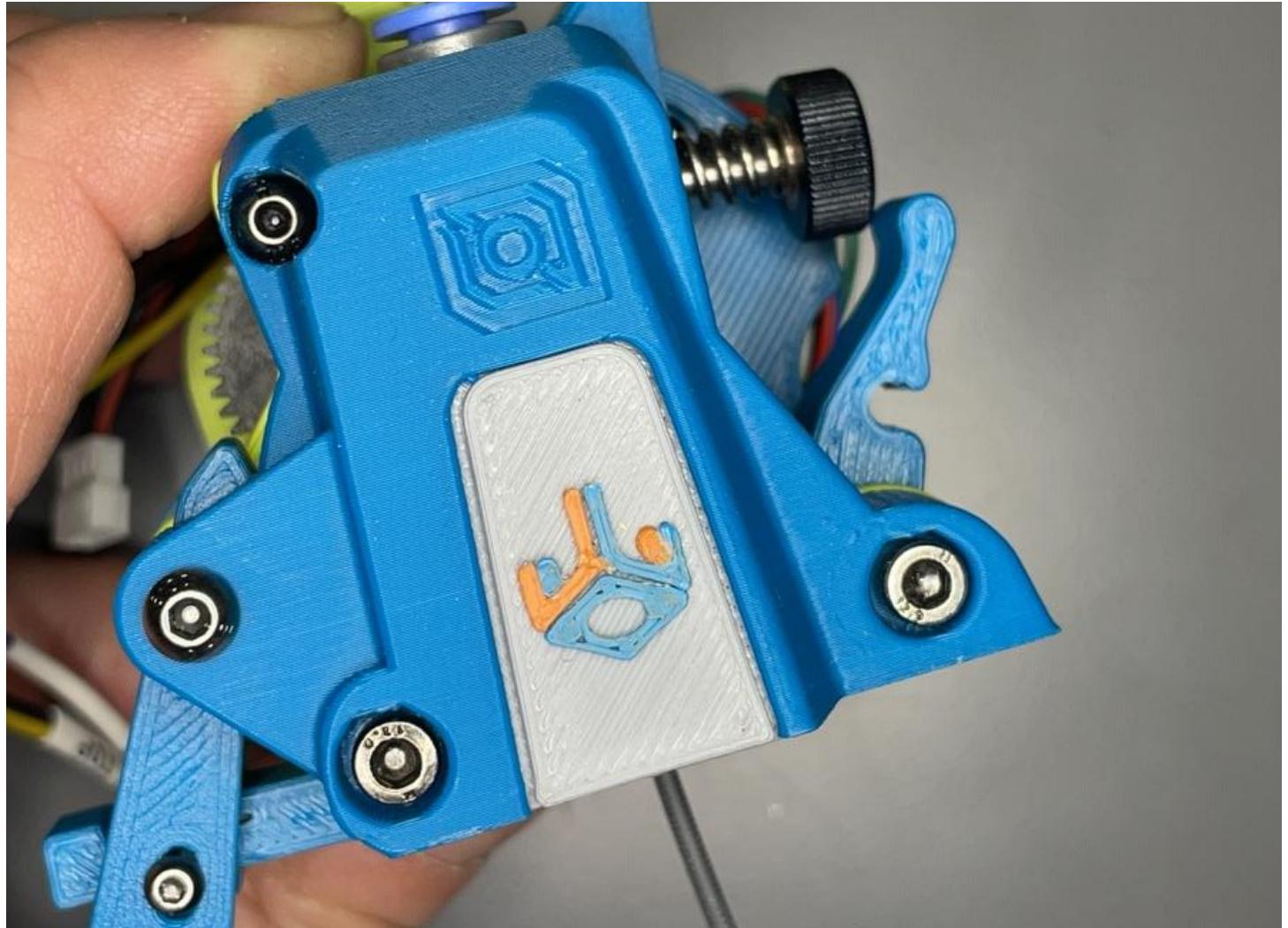
Do not make the tension screw too tight at this point. Check with a piece of filament and see if you can push it all the way through with moderate resistance (you'll be feeling most of it from the motor). If it goes through pretty easily then loosen the **M3x6 FHCS**. Check again and make sure it's not giving too much resistance. Once that is calibrated to your satisfaction you can tighten the tension screw. Jabberwocky doesn't need a lot of pressure from the tensioner spring, so do not overtighten.



# EXTRUDER FRONT COVER ASSEMBLY

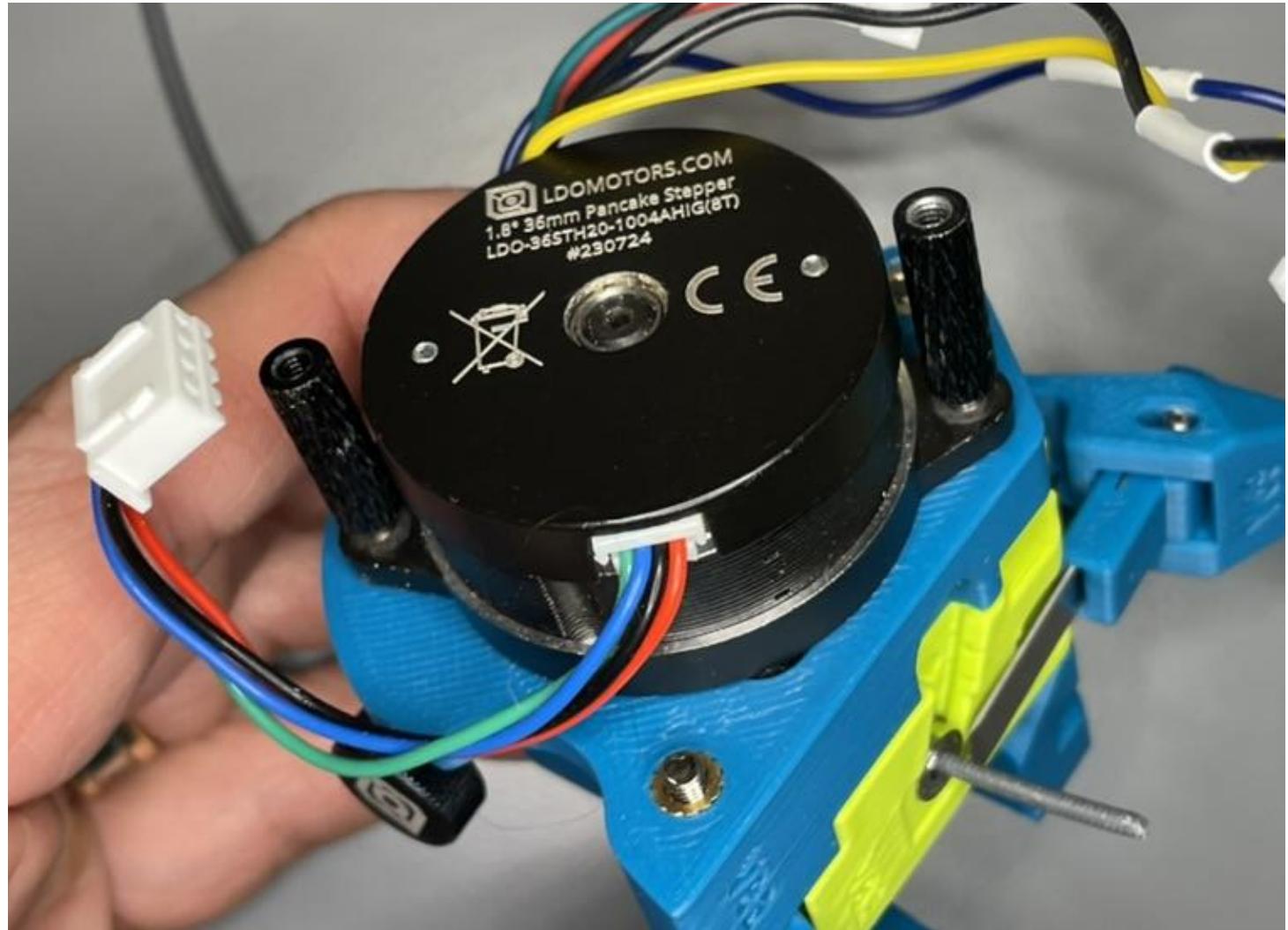


Insert the **front diffuser** to the **Front Cover Assembly**. Be cautious to not pinch any wires.



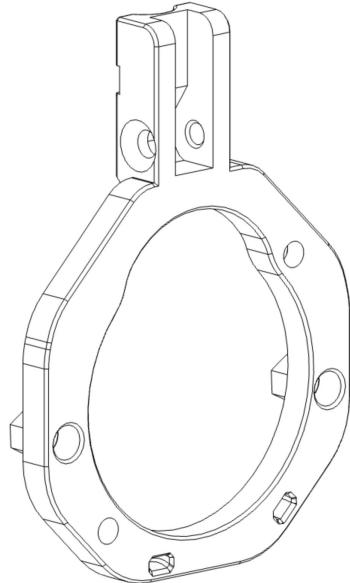
# EXTRUDER FRONT COVER ASSEMBLY

The last thing to do is install the toolhead board onto the extruder. Install the two **M3x16 knurled standoffs** (found in the Nighthawk kit) onto the screws protruding from the **extruder motor**.



Hardware used in this step:  
(2) M3x16 knurled standoffs

# EXTRUDER FRONT COVER ASSEMBLY



Add two **M3 Heatsets** to the **NH36 mounting bracket**



Hardware used in this step:  
(2) M3 Heatsets

# EXTRUDER FRONT COVER ASSEMBLY

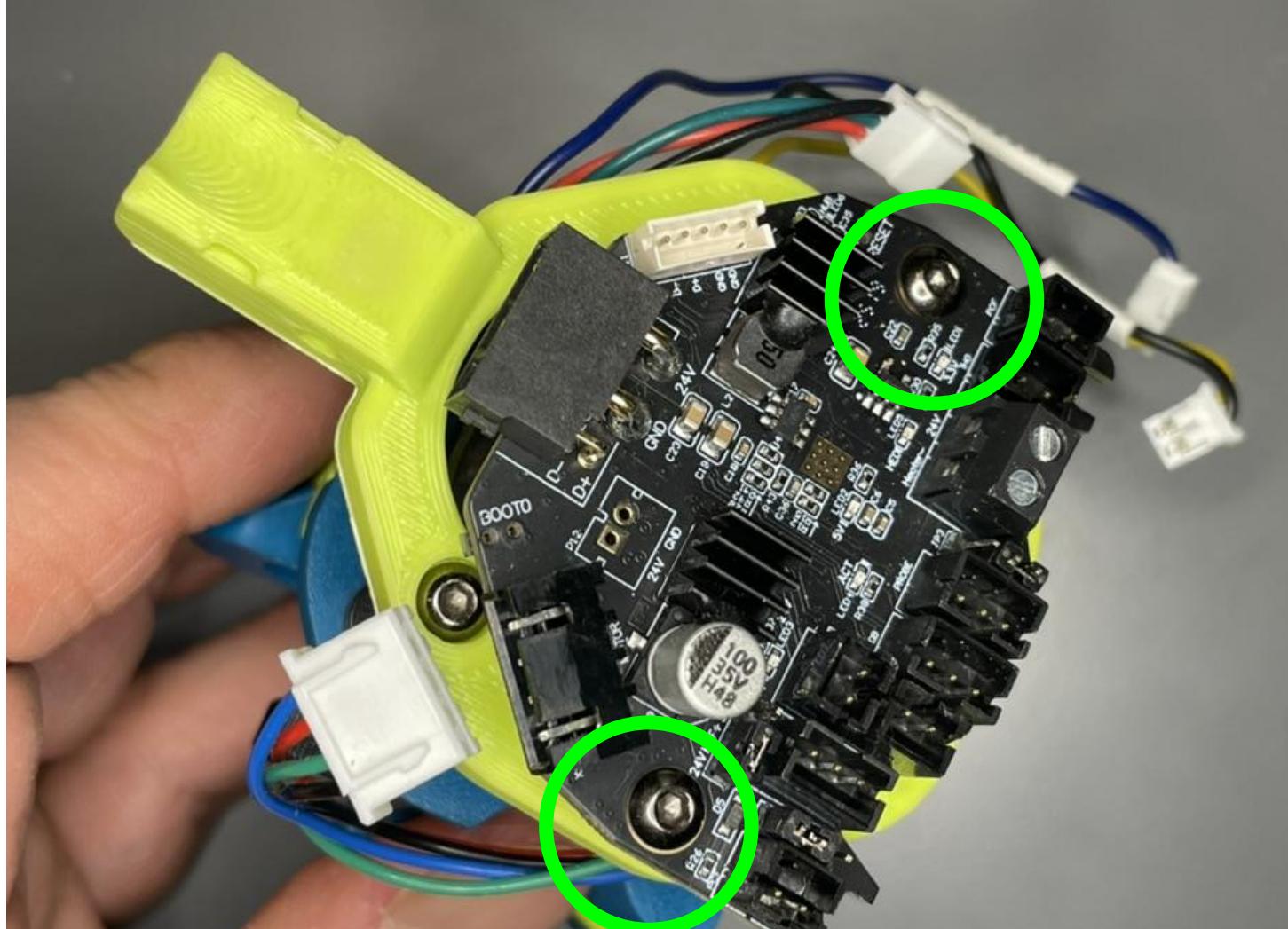
Mount the **Mount bracket** and secure it using two **M3x8 BHCS**.



Hardware used in this step:  
(2) M3x8 BHCS

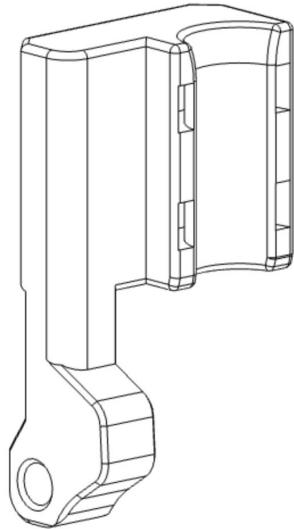
# EXTRUDER FRONT COVER ASSEMBLY

Install the **LDO Nighthawk 36 Tool Board** by securing it with two **M3x8 BHCS**.



Hardware used in this step:  
(1) LDO Nighthawk 36 Toolboard  
(2) M3x8 BHCS

# EXTRUDER FRONT COVER ASSEMBLY

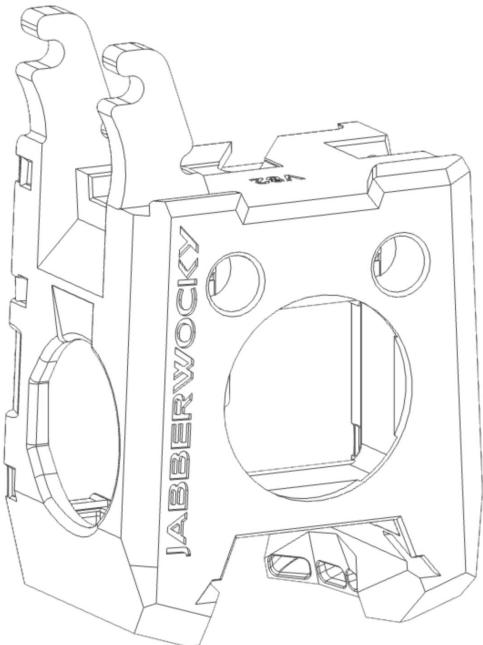


Lastly, install the **Upper Strain Relief** using an **M3x12 FHCS**.

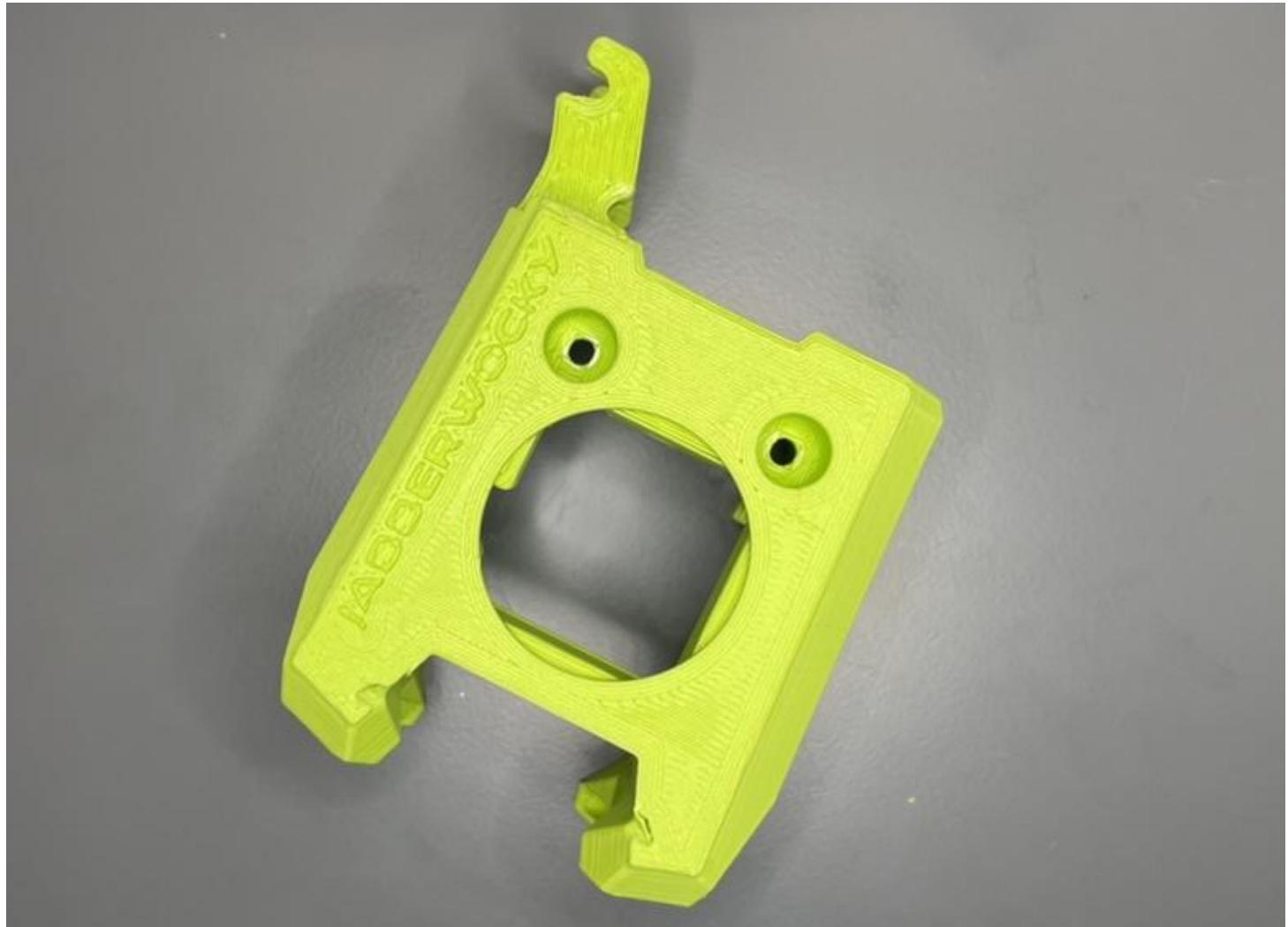
Hardware used in this step:  
(1) M3 x 12mm FHCS



## LOWER TOOLHEAD ASSEMBLY

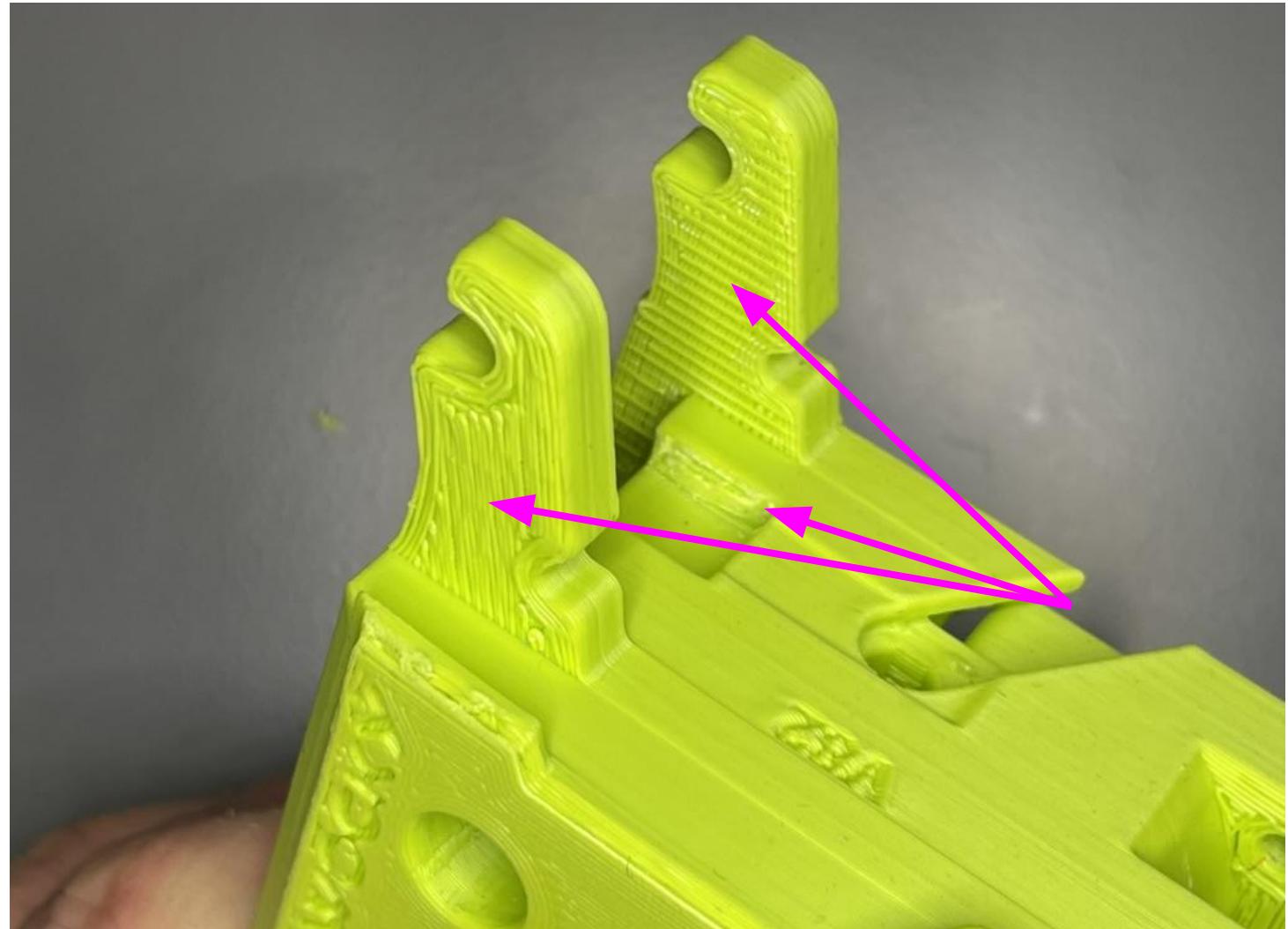


Next, we'll begin assembling the lower toolhead, which houses the printer hotend, fans, and hotend LED.



## LOWER TOOLHEAD ASSEMBLY

After removing the print supports check the hinge arms for any extra debris. You might need to do some light sanding. You can check it by sliding it into the extruder assembly.



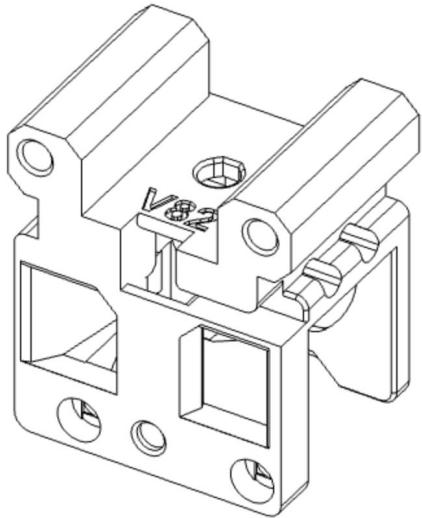
## LOWER TOOLHEAD ASSEMBLY

Begin by installing a single **LDO T-Nut** into the Shroud Body



Hardware used in this step:  
(1) LDO T-Nut

# LOWER TOOLHEAD ASSEMBLY



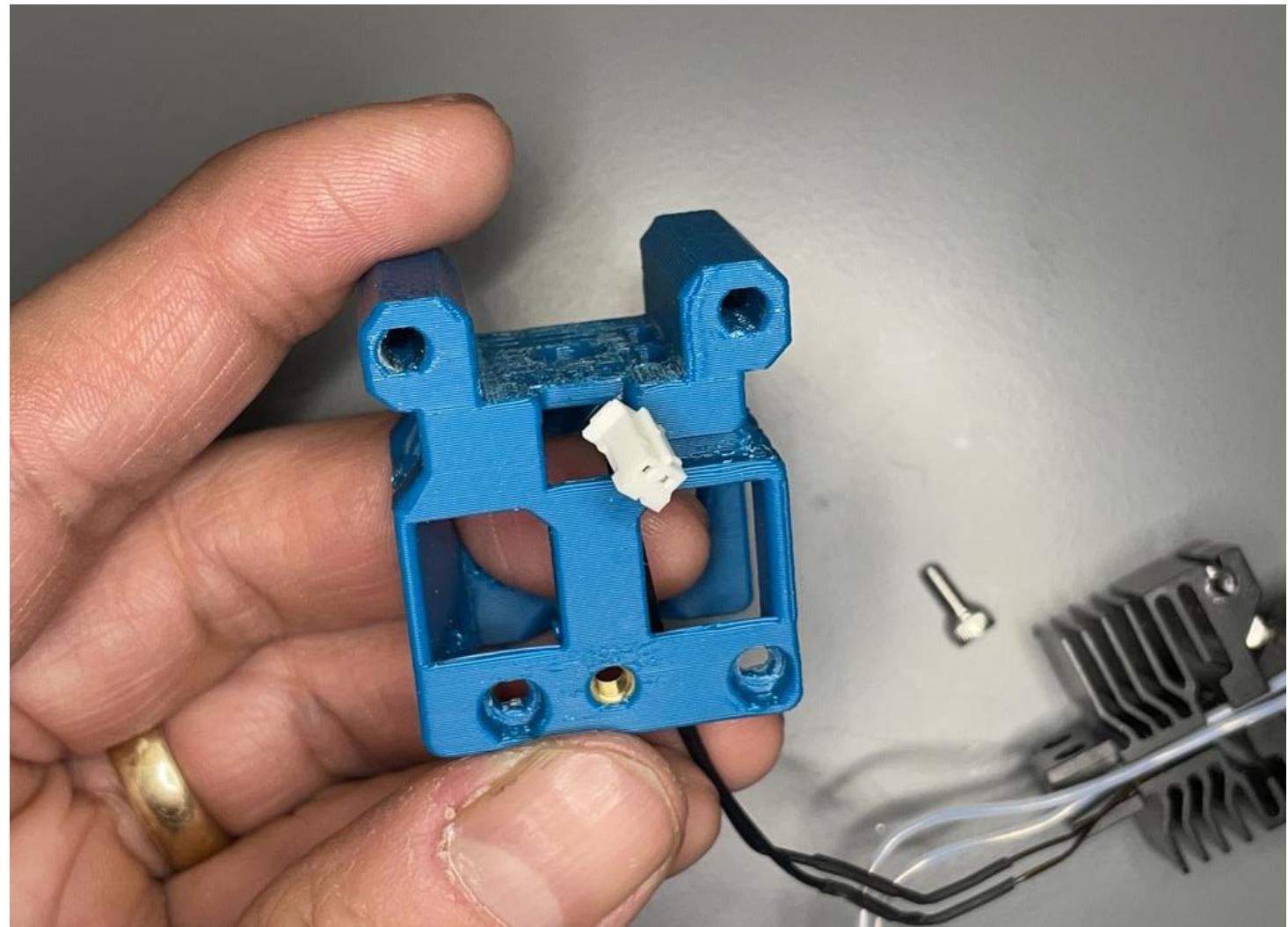
Next install a **M3 Heat-set inserts** into the **Conch Mount**. Due to limited space, a standard heat-set soldering tip cannot be used here—gently press the insert in using the side of the soldering iron. Take your time to ensure the insert sinks in evenly and does not tilt.

Hardware used in this step:  
(1) M3 Heat-Set



## LOWER TOOLHEAD ASSEMBLY

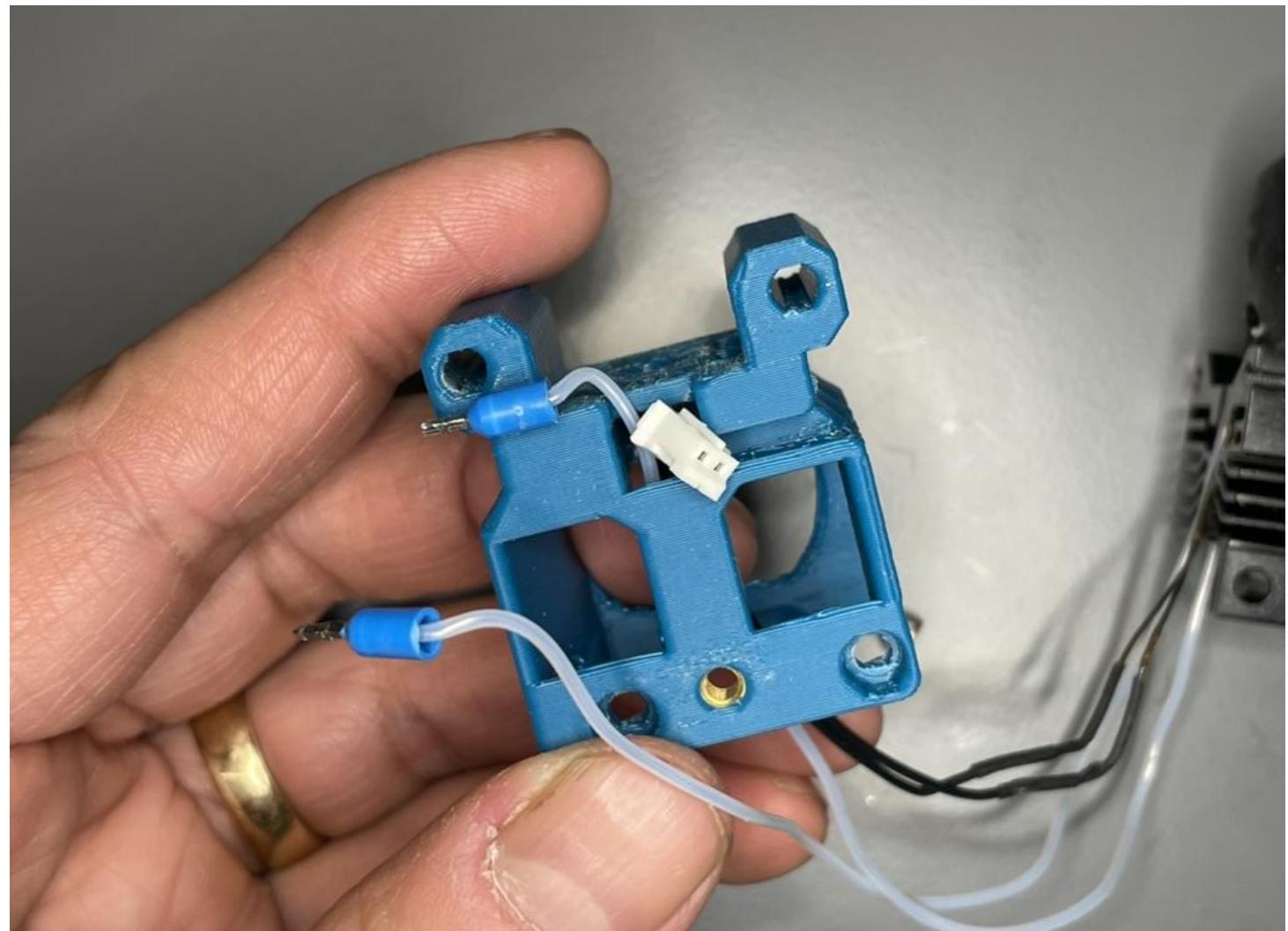
Next step is to take the **Conch Hotend** Thermistor wire header and push through the mount as shown in the image.



Hardware used in this step:  
(1) Conch Hotend

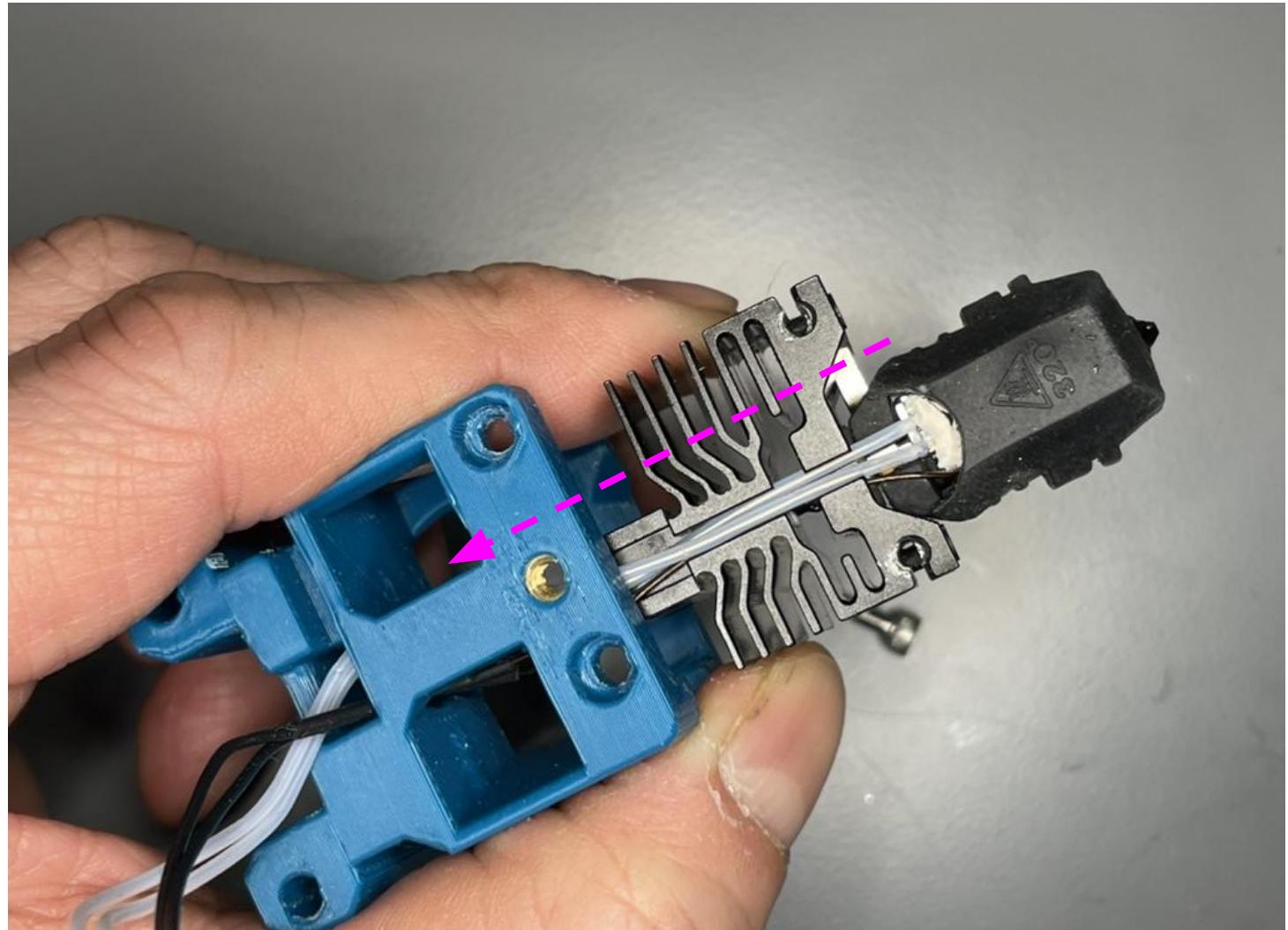
## LOWER TOOLHEAD ASSEMBLY

Feed each of the **Conch Hotend** heating wires one at a time as pictured here.



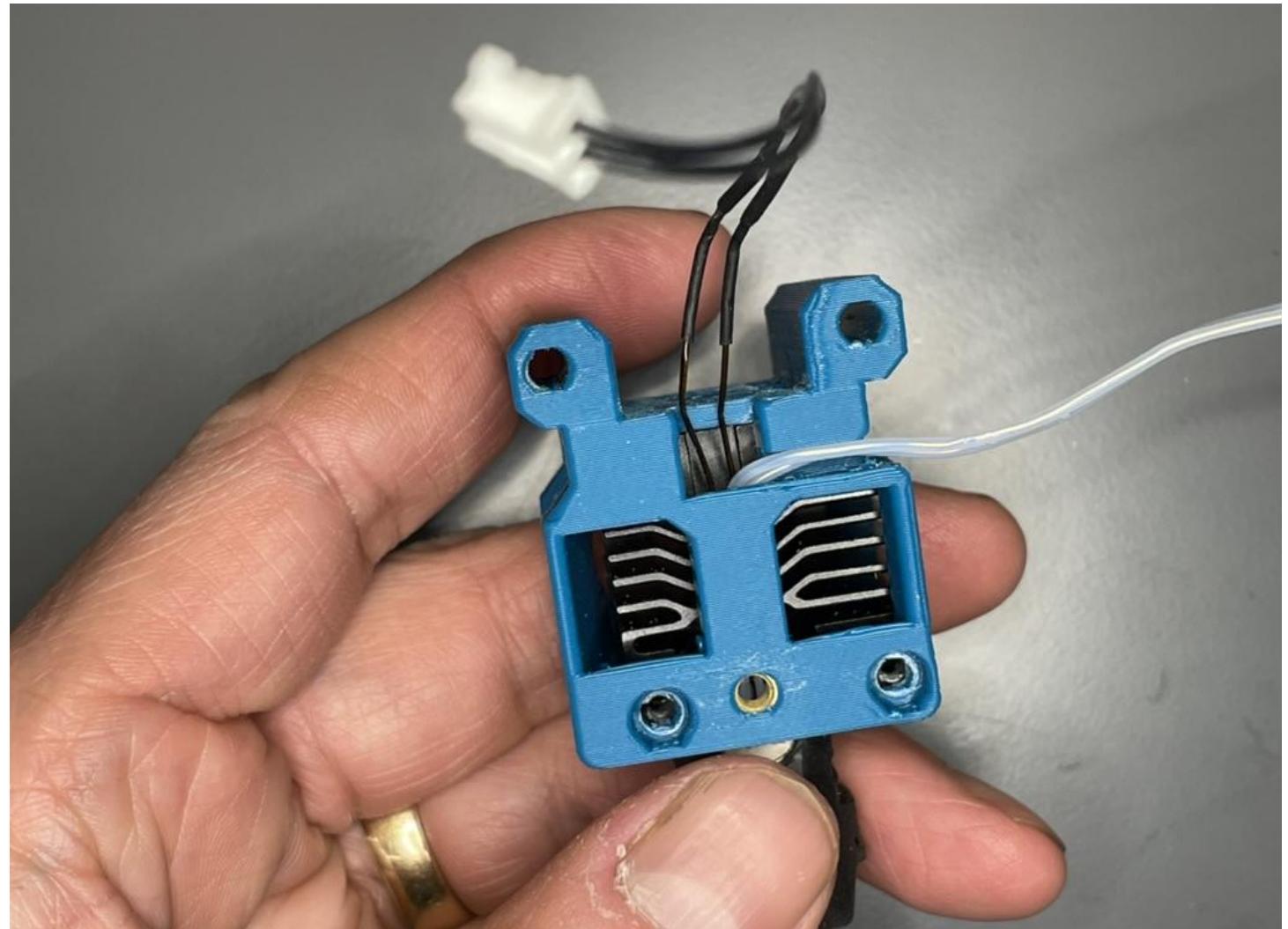
## LOWER TOOLHEAD ASSEMBLY

Once all the wires from the **Conch Hotend** are in the mount, make sure all the wires are sitting tidy in the channel of the **Conch Hotend** as you carefully slide the parts together



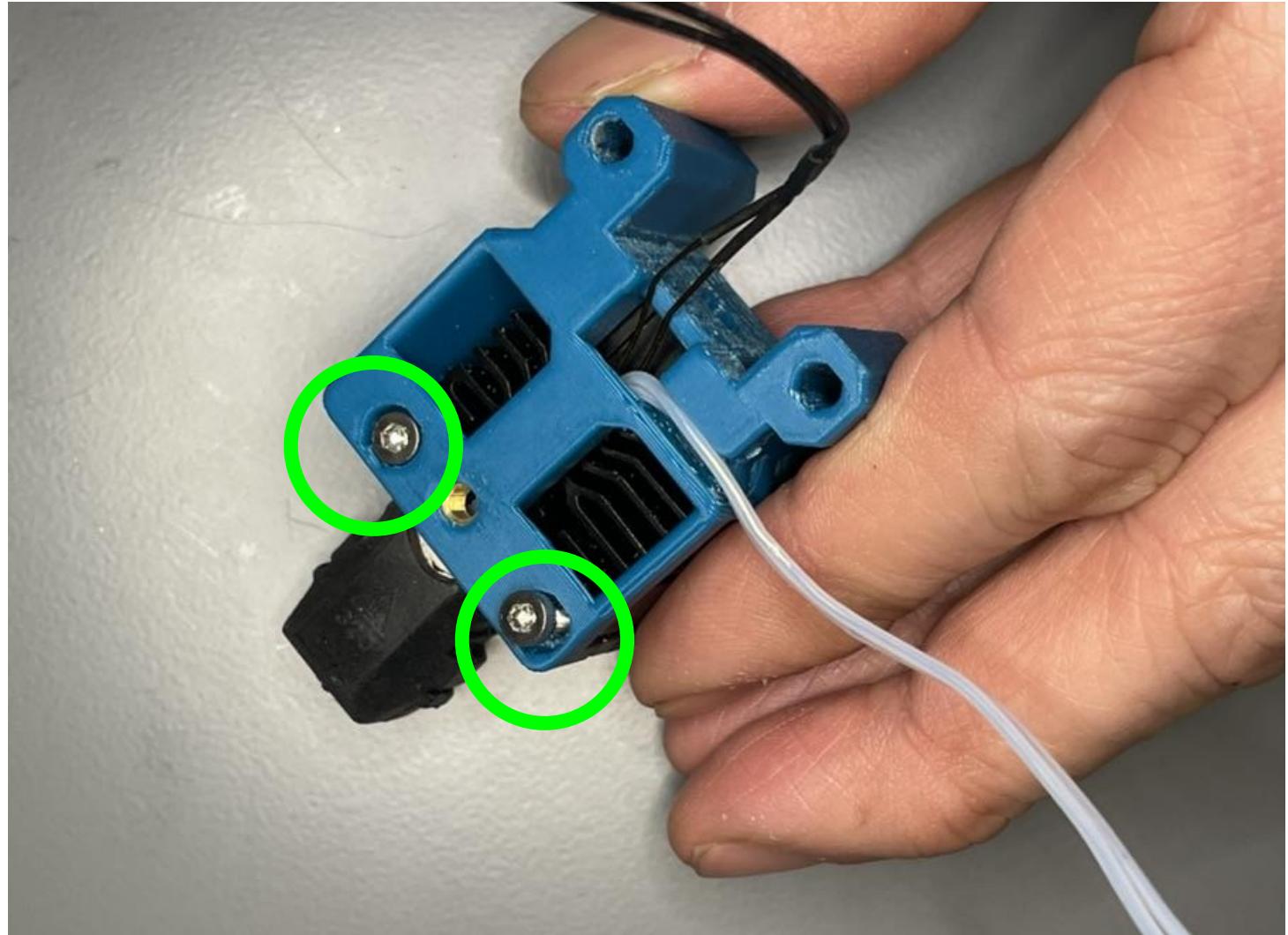
## LOWER TOOLHEAD ASSEMBLY

Separate the wires carefully with the Thermistor wires going up, and the heating wires going to the side as pictured here.



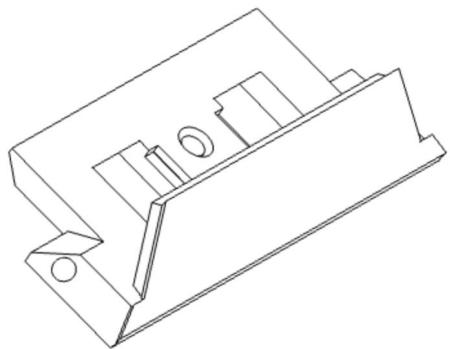
## LOWER TOOLHEAD ASSEMBLY

Insert two **M2.5x8 SHCS** to the lower portion of the **Conch Mount**



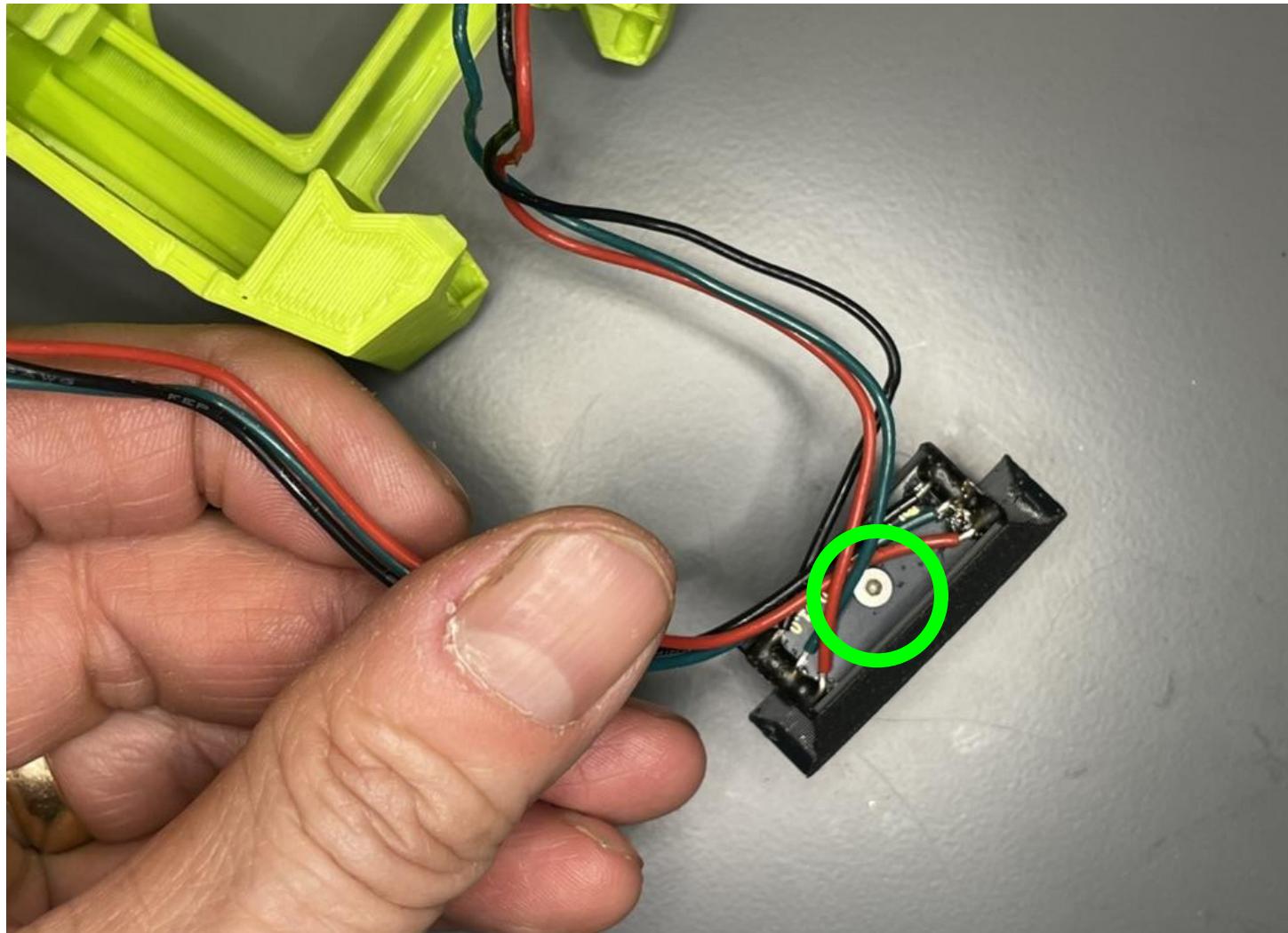
Hardware used in this step:  
(2) M2.5 x 8 mm SHCS

# LOWER TOOLHEAD ASSEMBLY



Next, we'll install the LEDs that illuminate the hotend. Start by placing the **pre-wired Neopixel LEDs** into the printed **Dual Neo Holder**. To ensure a proper fit, gently bend the wires at the center so the LEDs can drop cleanly into their designated slots and for the installation of a small **M2x4mm wafferhead screw**.

**Hardware used in this step:**  
(1) LDO Pre-wired Neopixel LEDs  
(1) M2x4mm Wafferhead Screw



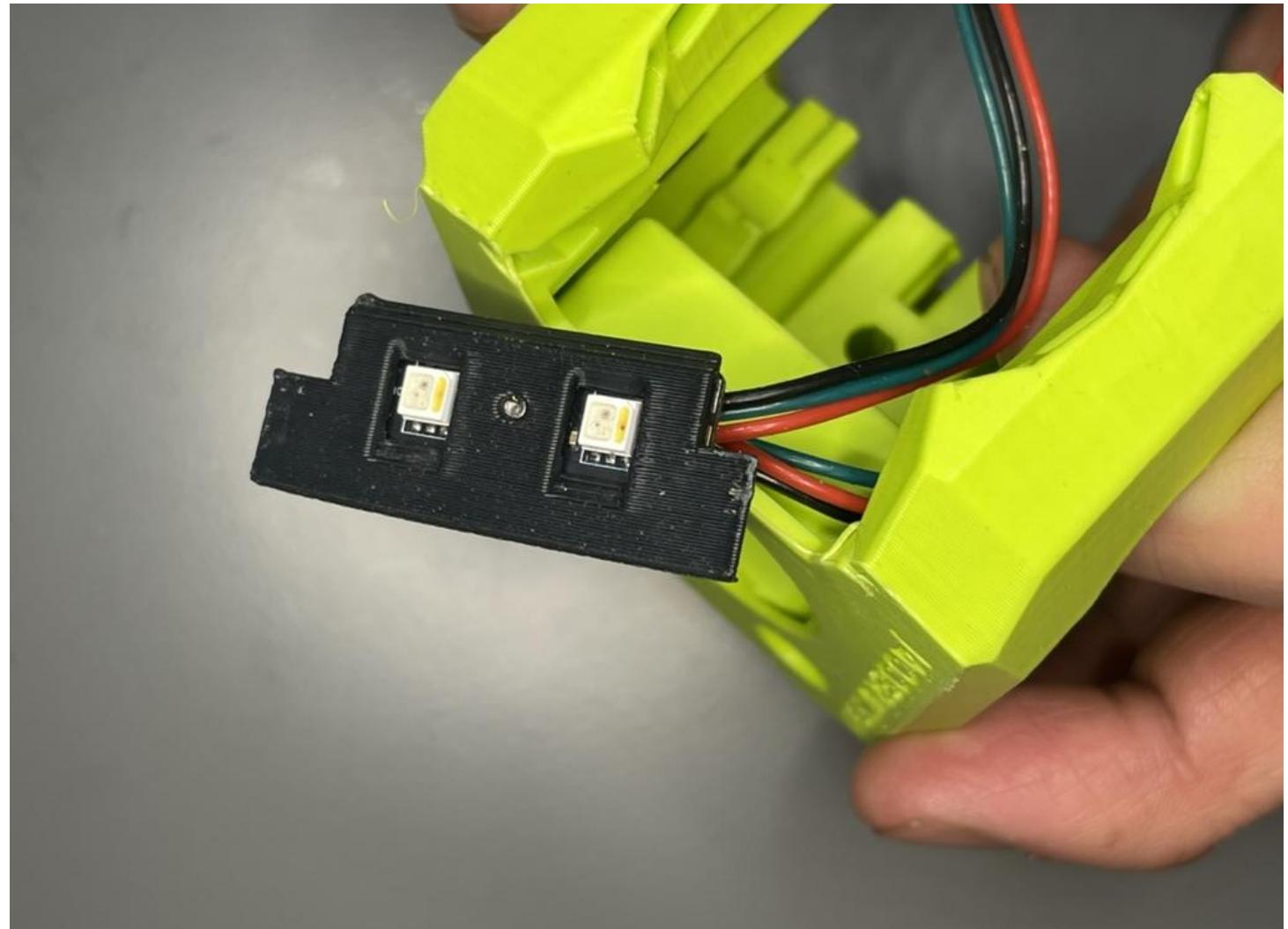
## LOWER TOOLHEAD ASSEMBLY

Bundle wires as pictured while carefully bending the wires to tuck into the holder. Route the wires into the cable channels, as the fans will be installed in front of them, and space will be limited.



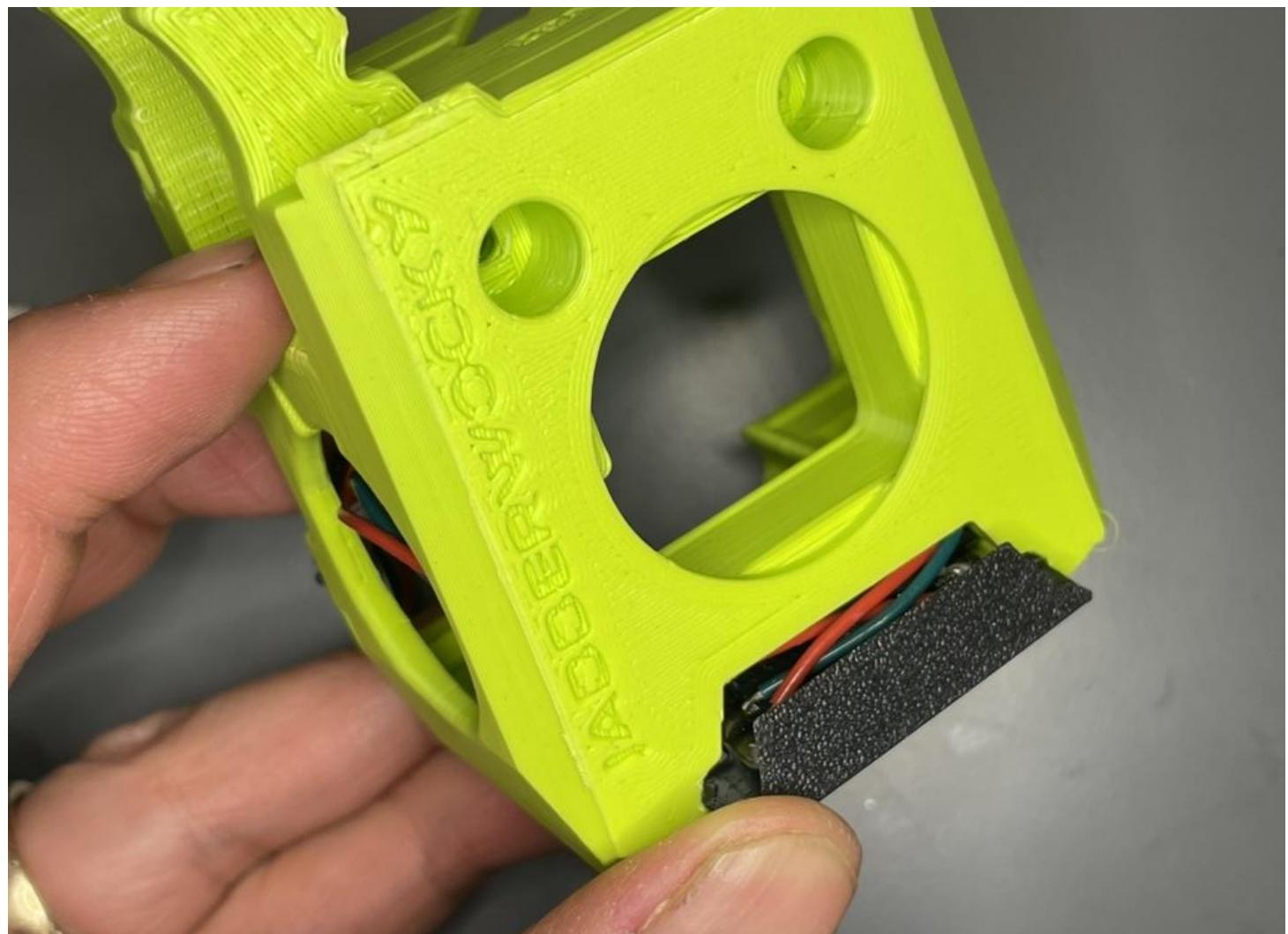
## LOWER TOOLHEAD ASSEMBLY

Feed the **Dual Neopixel Holder** from the front of the **shroud**, feeding the wires over as pictured.

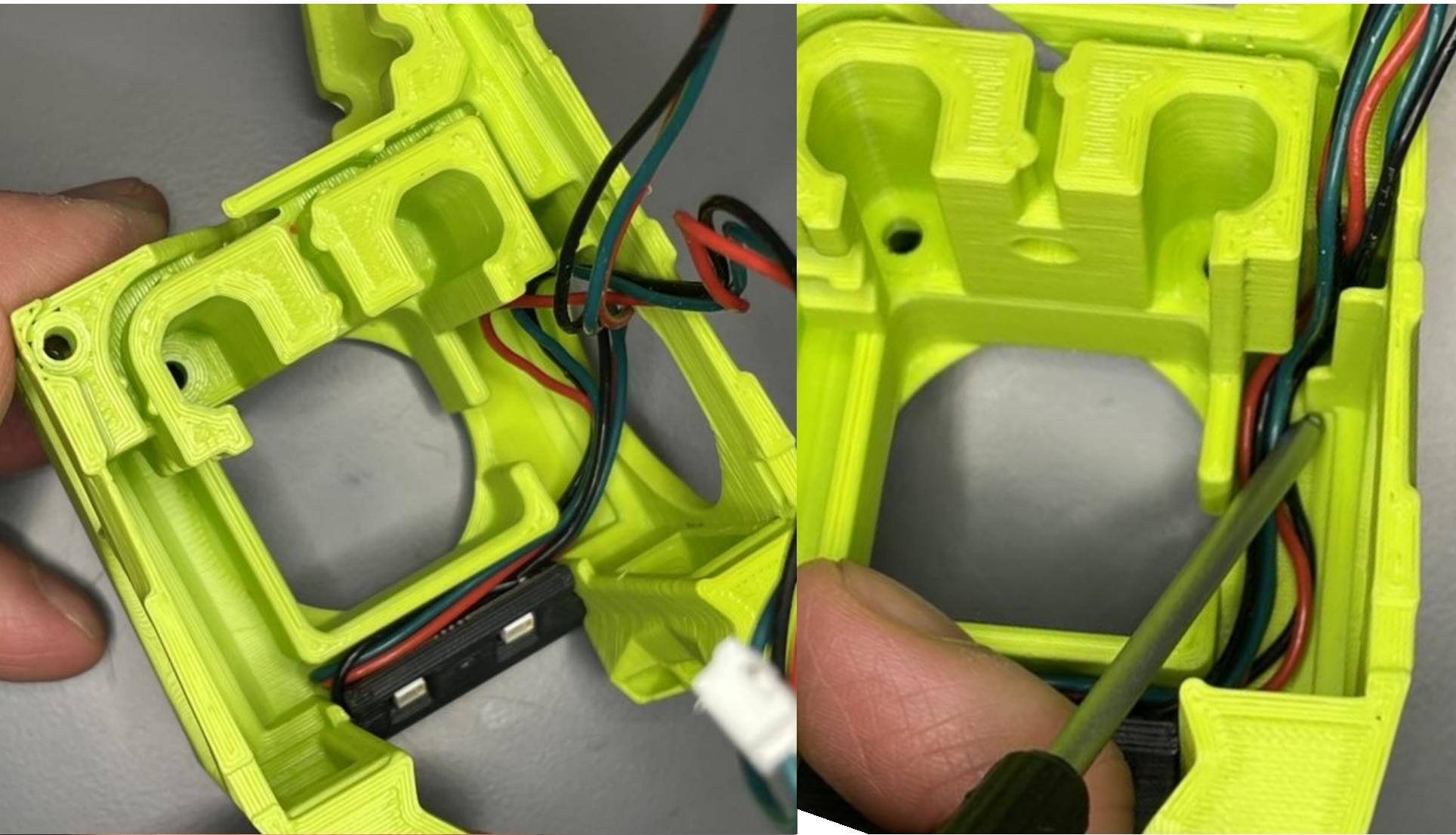


## LOWER TOOLHEAD ASSEMBLY

Push the **Dual Neopixel Holder** until it sits flush to the front of the Shroud.



## LOWER TOOLHEAD ASSEMBLY



Carefully route the wires into the cable channels, as the fans will be installed in front of them, and space will be limited.

# LOWER TOOLHEAD ASSEMBLY

Next, install the **LDO 2510 axial hotend fan**. This is a push-fit component (be careful with the fan grills as they break easily with installation or servicing) and should be oriented as pictured aligning with the designated cutout.

Carefully route the wires through the cable channel, as the **part cooling fan** will later enclose them.

Hardware used in this step:  
(1) LDO 2510 axial hotend fan



## LOWER TOOLHEAD ASSEMBLY



Add the **Fan Grill** to the front of the fan. It is a push fit and is delicate, so don't force it.



# LOWER TOOLHEAD ASSEMBLY

Proceed with installing one of the **LDO 3010 DC blower fans** (each of the fans are labelled 1 and 2. Use Parts Fan 2 for this step). Wrap the wire around as pictured.



Hardware used in this step:  
(1) LDO 3010 DC blower fans

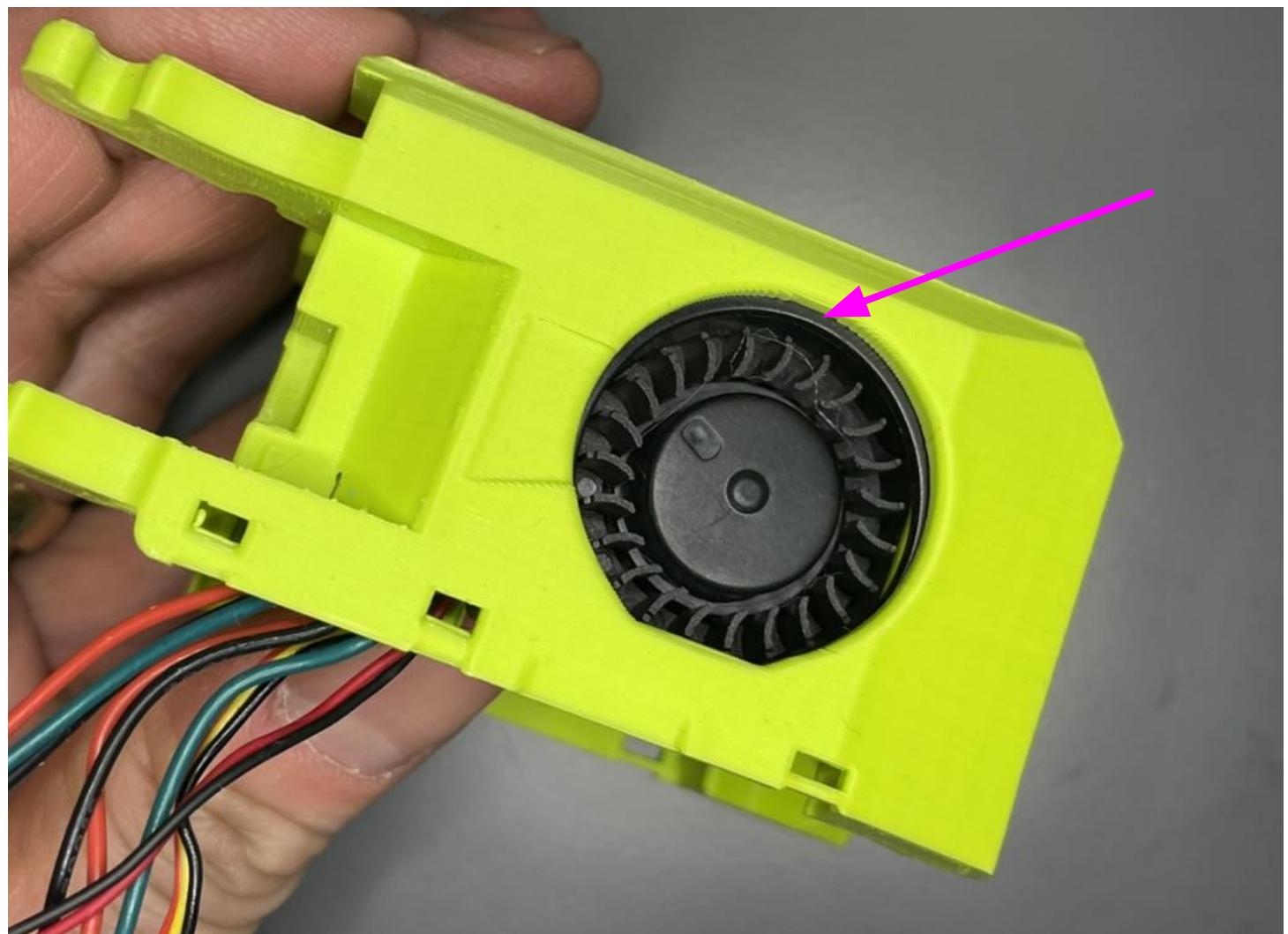
## LOWER TOOLHEAD ASSEMBLY

These slide into the fan channel with the blower outlets facing downward. All the wires should end up bundled as pictured. Do not force the fan in case wires are not sitting in the channel correctly.



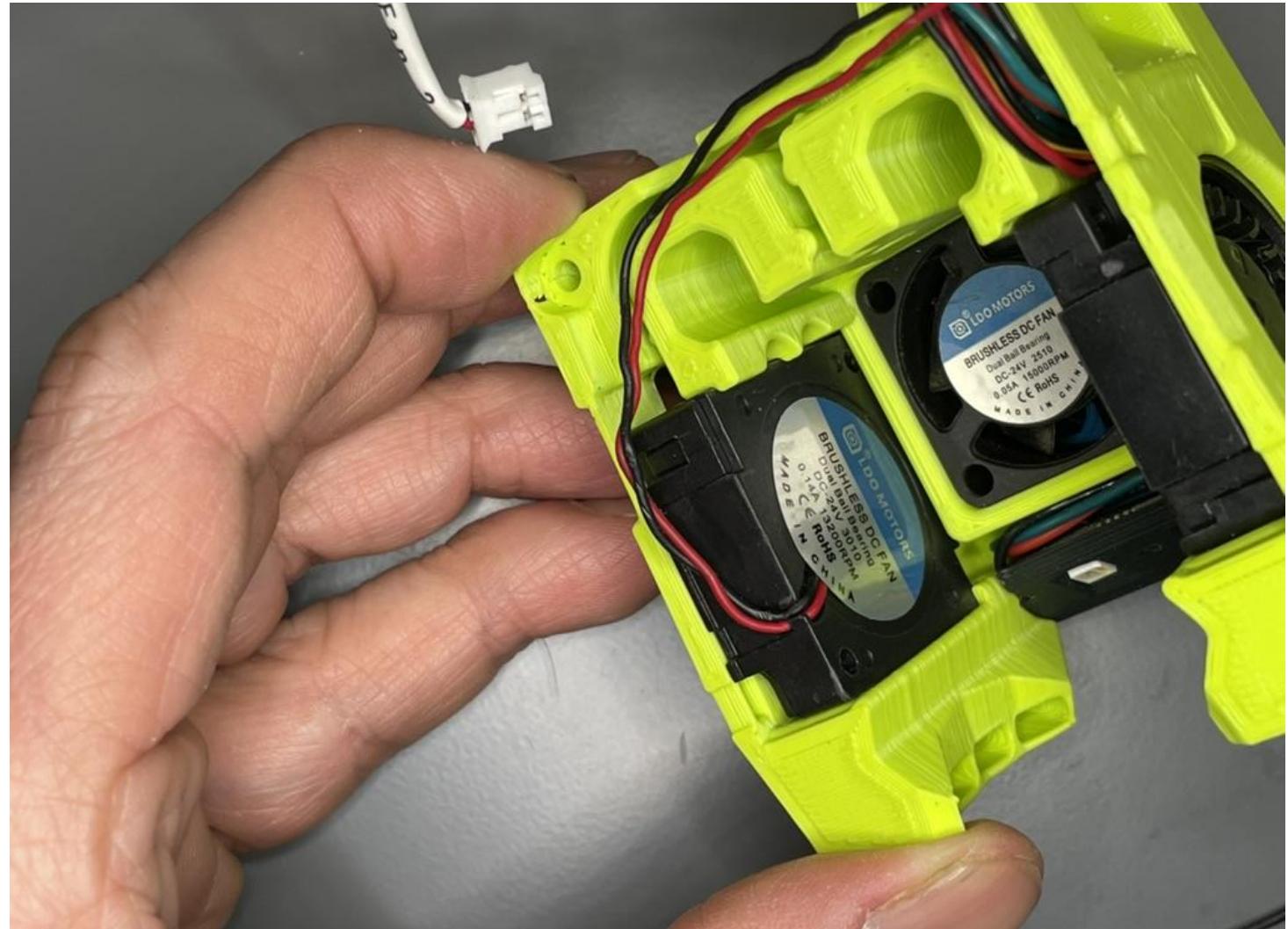
## LOWER TOOLHEAD ASSEMBLY

Verify that the fan is aligned at the front most edge.



## LOWER TOOLHEAD ASSEMBLY

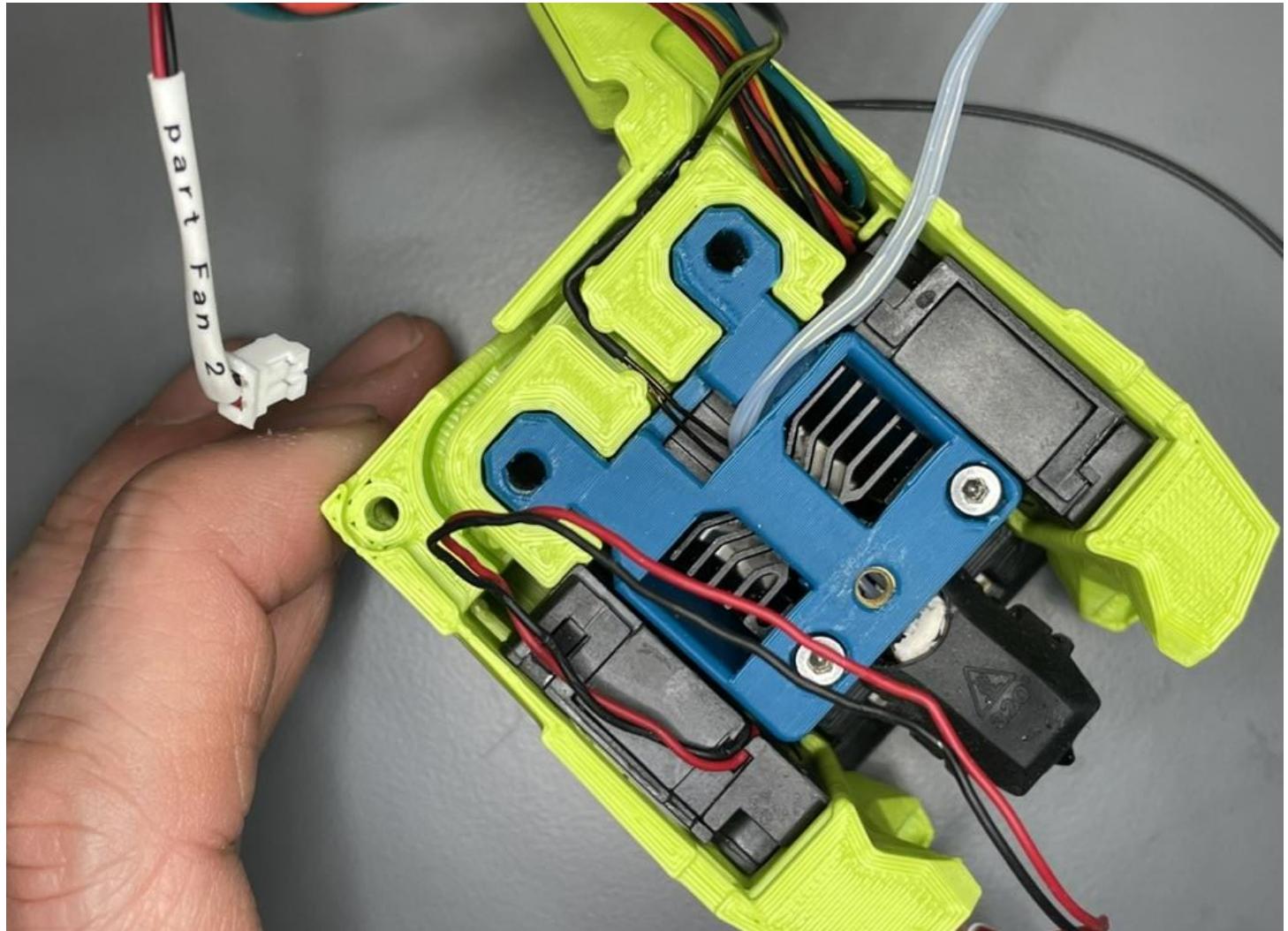
Install the second **LDO 3010 DC blower fans** with the blower outlet facing down and the wire positioned outwards, ready to put into the wire channel as pictured.



Hardware used in this step:  
(1) LDO 3010 DC blower fans

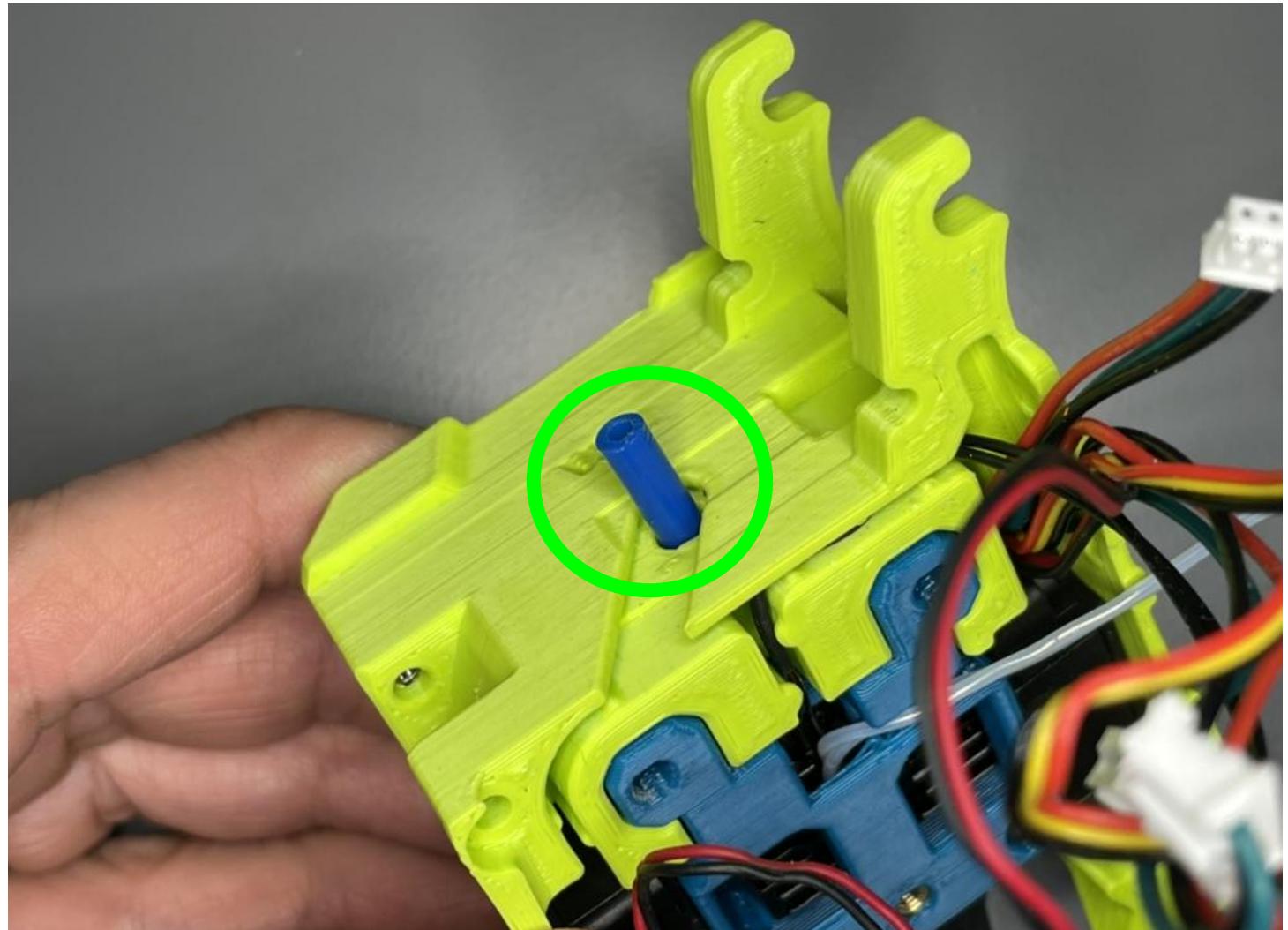
## LOWER TOOLHEAD ASSEMBLY

Carefully push the thermistor wire into the channel. Do not zip tie down until the board has been installed and plugs have been put in.



## LOWER TOOLHEAD ASSEMBLY

Next, insert the **pre-cut 15mm Bowden tube** into the top of the **Shroud**, ensuring it is fully seated. If necessary, use a hex bit to press it down evenly for a snug and secure fit.



Hardware used in this step:  
(1) pre-cut 15mm Bowden tube

## LOWER TOOLHEAD ASSEMBLY



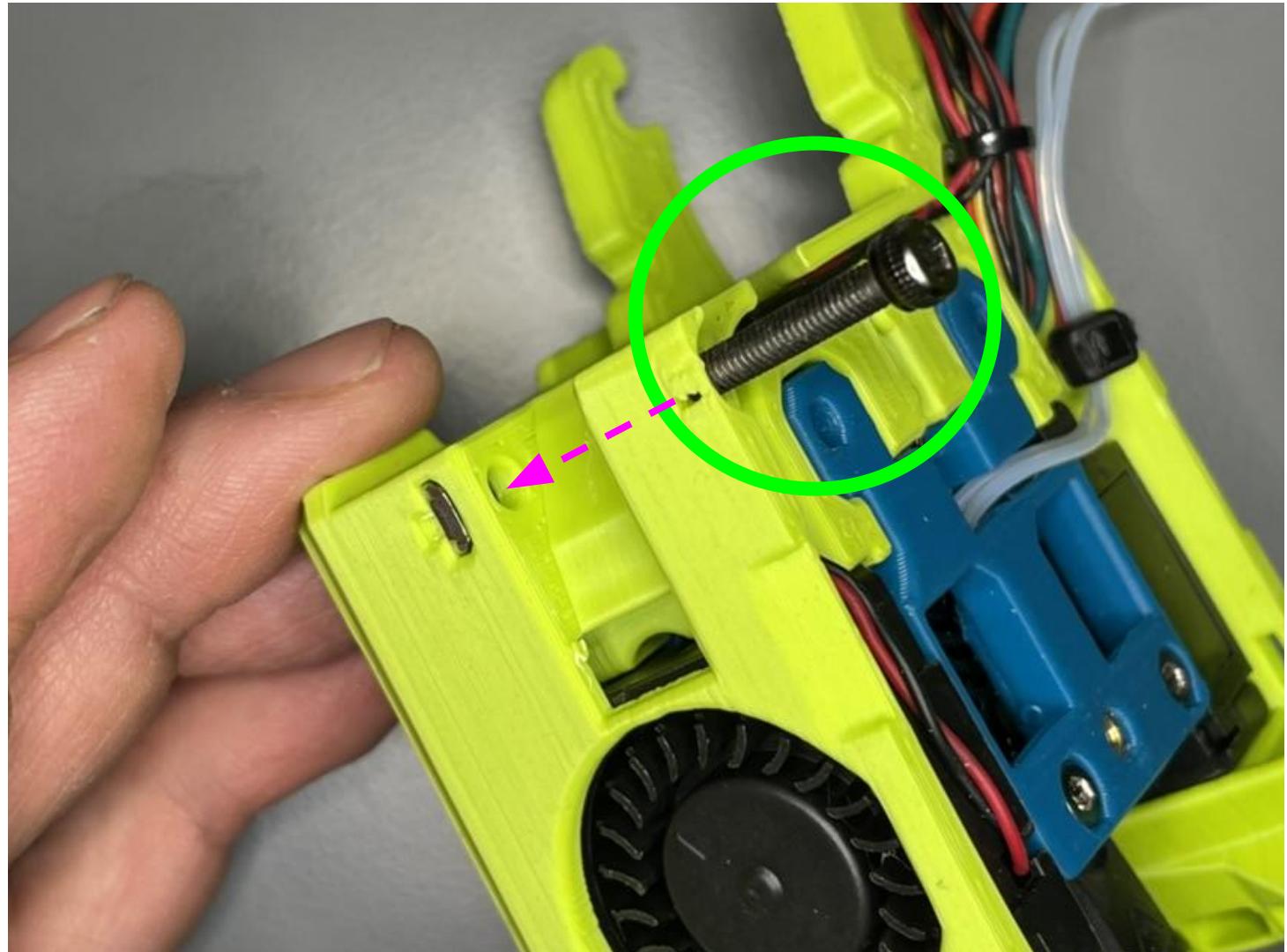
Hardware used in this step:

(1) F682-ZZ Bearing

Slide the **F682-ZZ bearing** over the **15mm Bowden tube**. If it doesn't fit, ensure the **Bowden tube** is fully inserted or trim it.

## LOWER TOOLHEAD ASSEMBLY

Install one **M3x25 SHCS**, which is used to latch the extruder to the lower toolhead body. This is located on the latch side of the shroud and into the T-nut located above the part fan 1 bay.

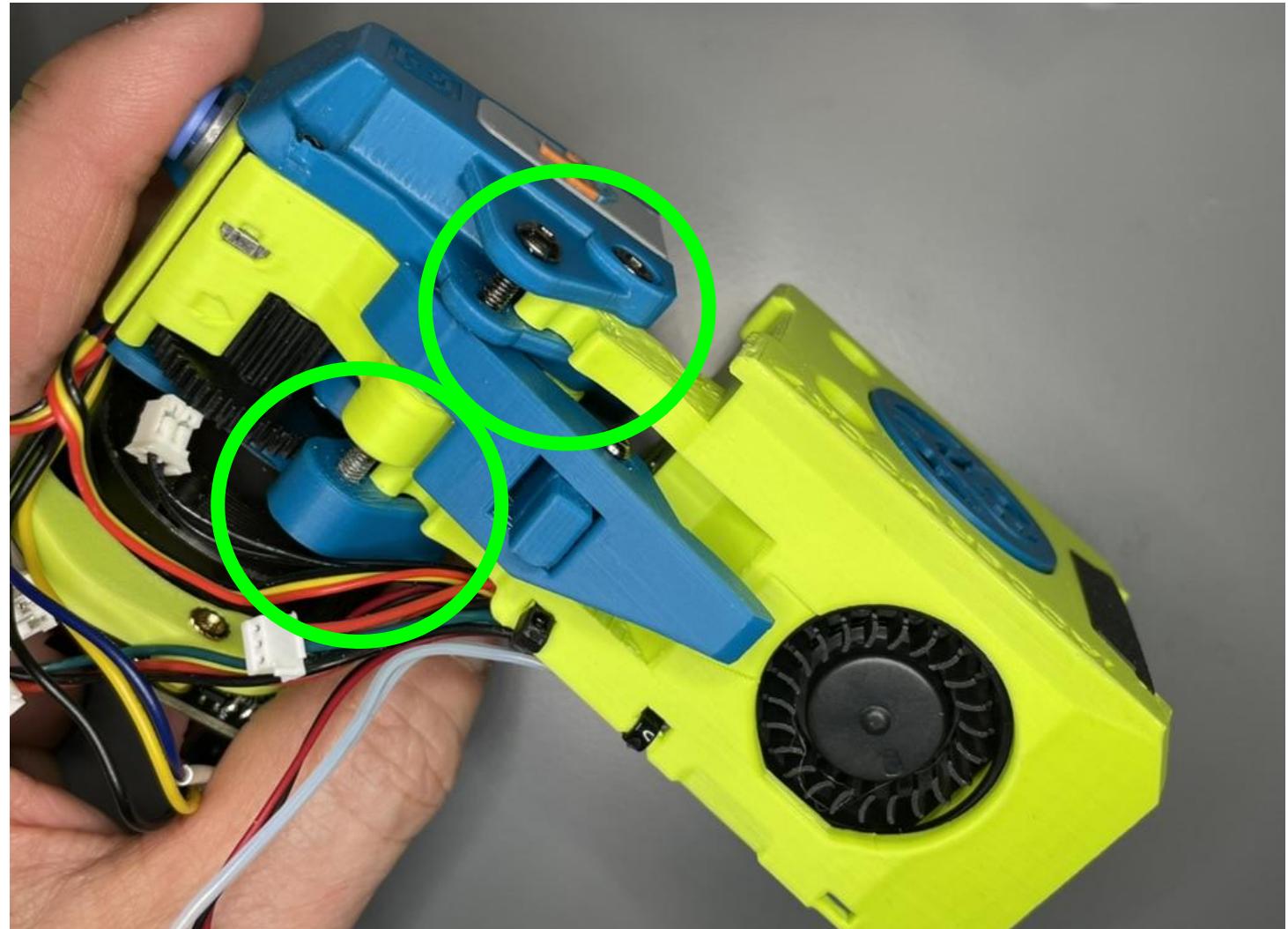


Hardware used in this step:

- (1) M3x25 SHCS

## LOWER TOOLHEAD ASSEMBLY

Next, align the top and bottom halves of the toolhead. Slide the lower body latches into position so they hook onto the **long button head cap screw (BHCS)** that secures the filament cutter. Once aligned, seat the top half of the toolhead horizontally and lock it in place using the lever lock.



## LOWER TOOLHEAD ASSEMBLY

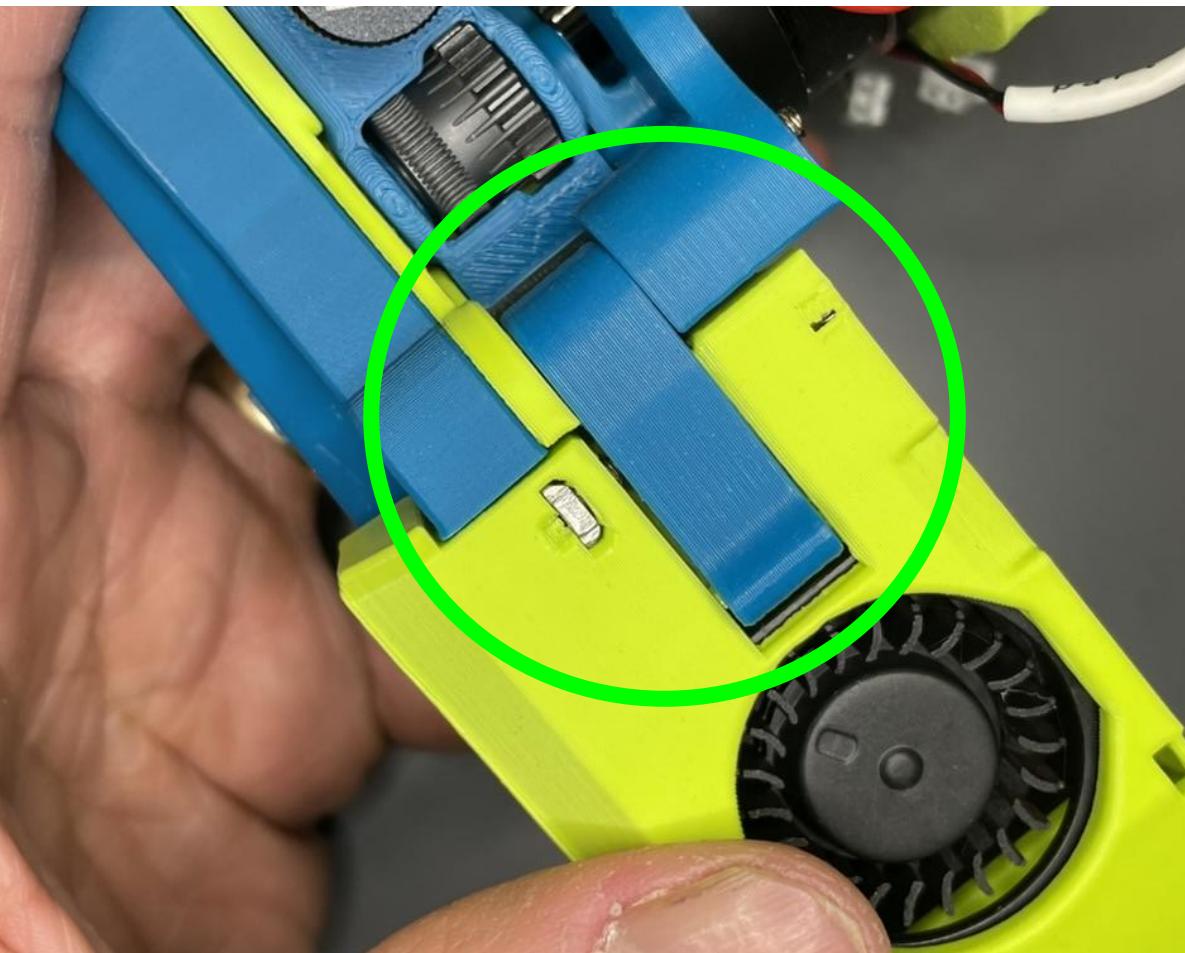
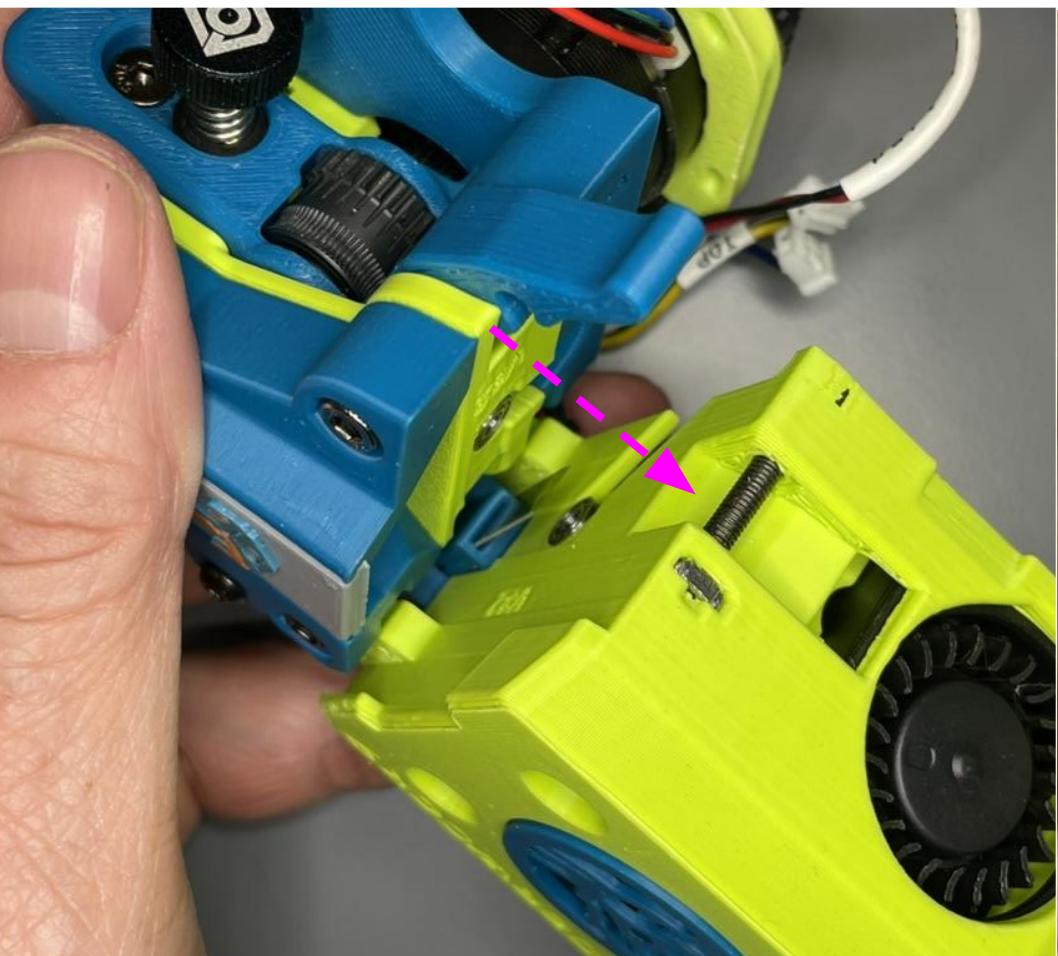


Check to see if hinge and cutter assembly is moving smoothly.



Loosen the screw that is pictured above to optimize hinge.

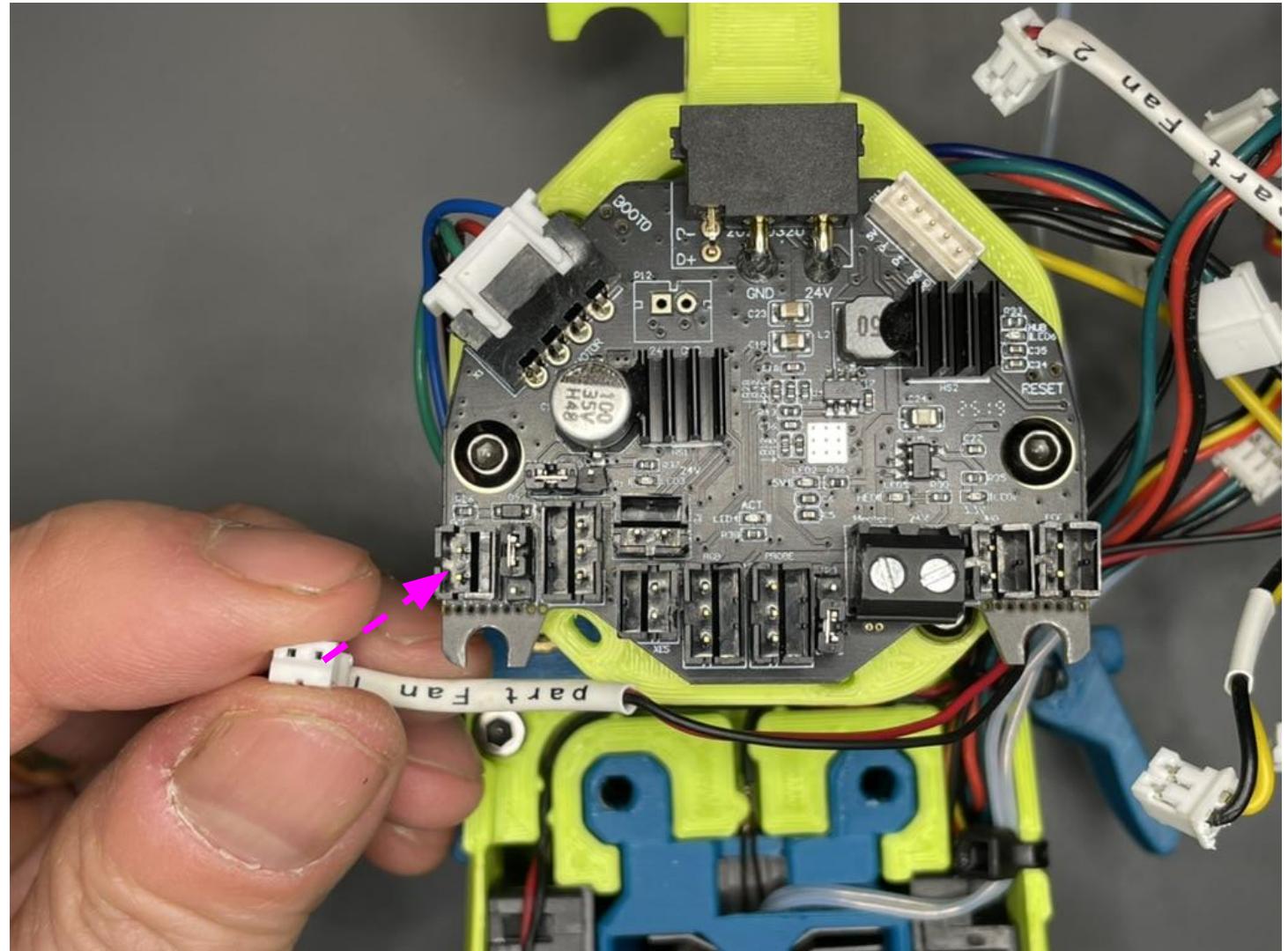
## LOWER TOOLHEAD ASSEMBLY



Tilt extruder down and lock latch.

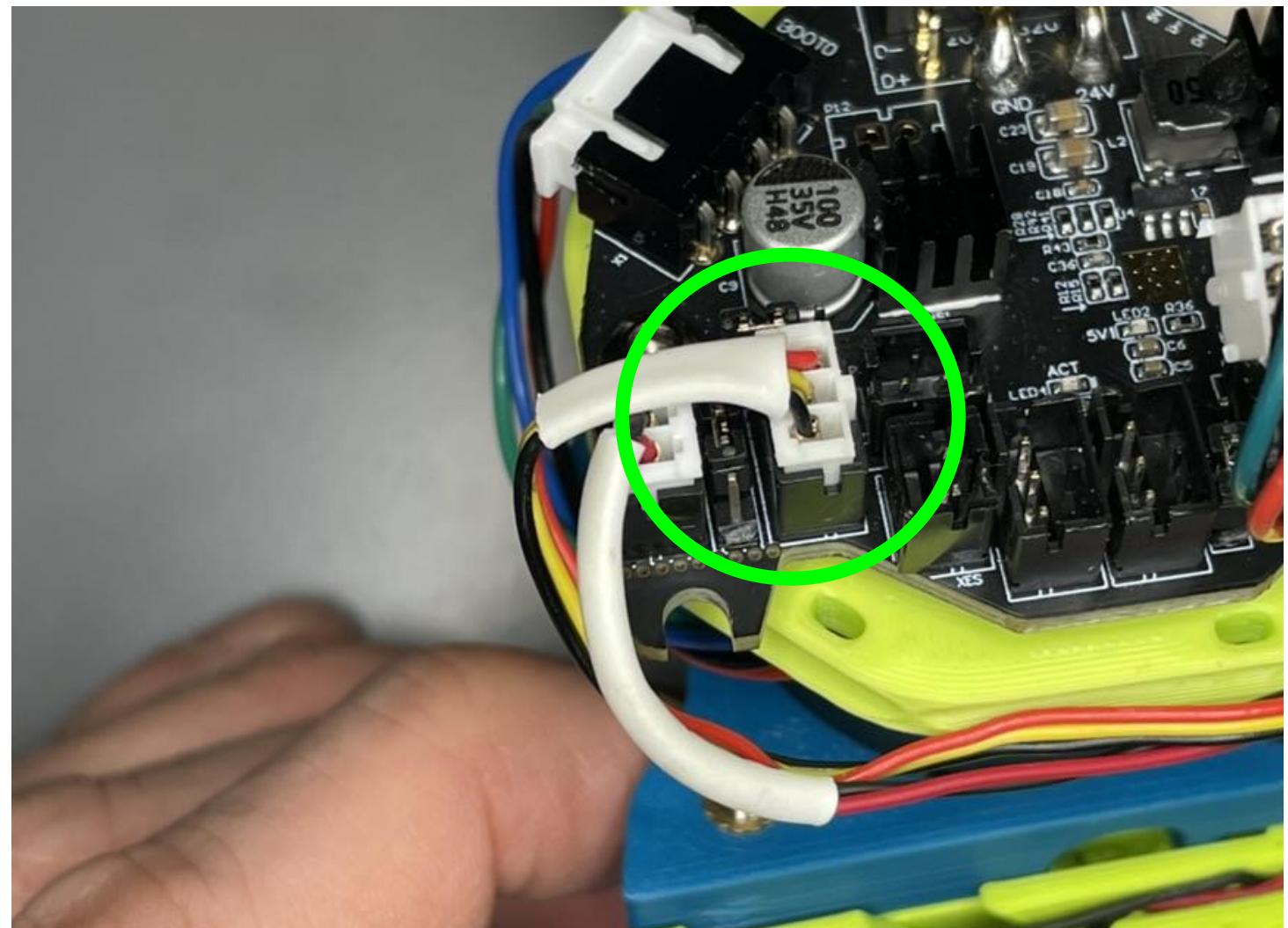
## LOWER TOOLHEAD ASSEMBLY

Next steps are plugging in the various headers into the board. Find the header labelled **Part Fan 1** and install as pictured.



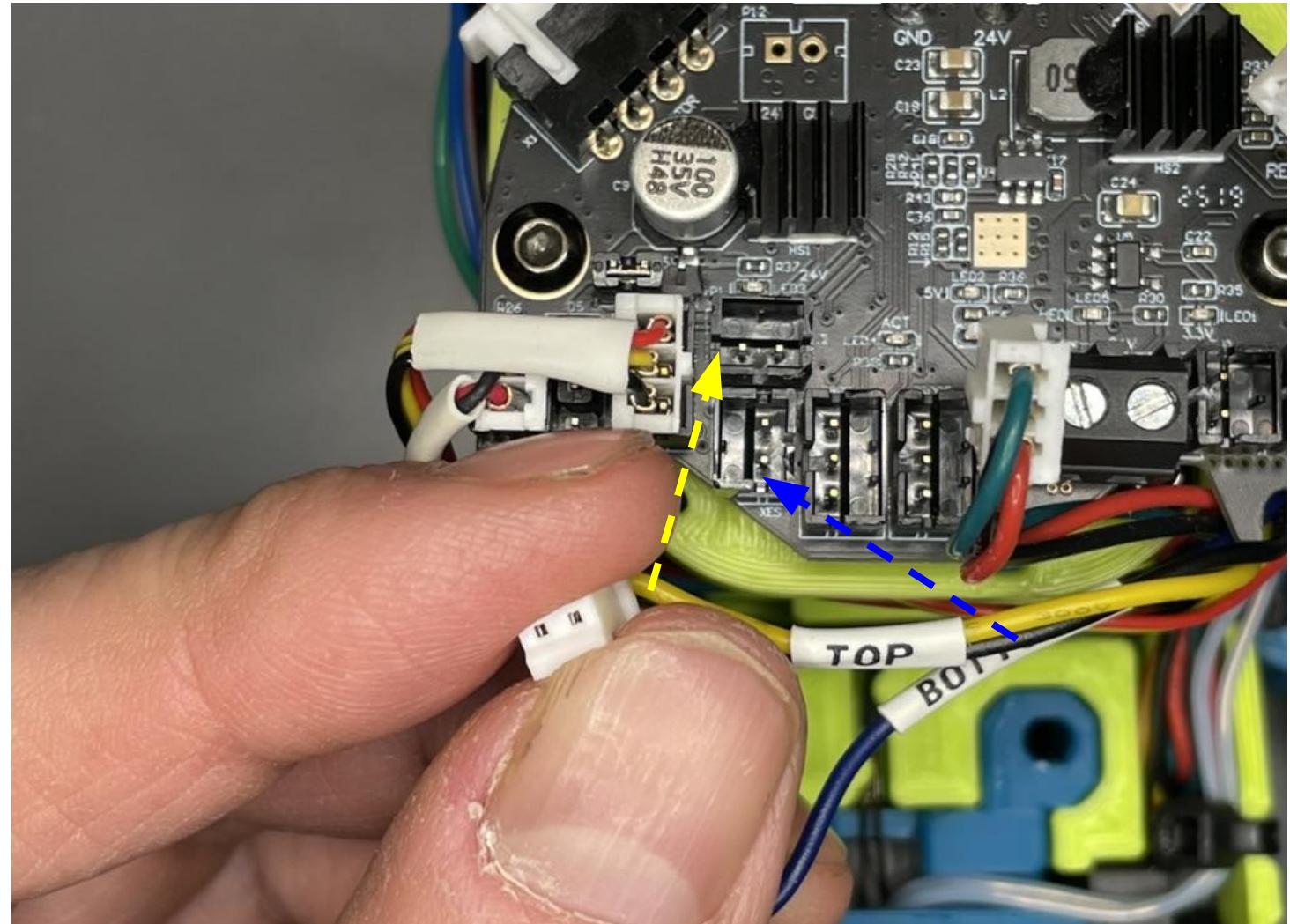
## LOWER TOOLHEAD ASSEMBLY

Plug in the header labelled **HEC** as pictured.



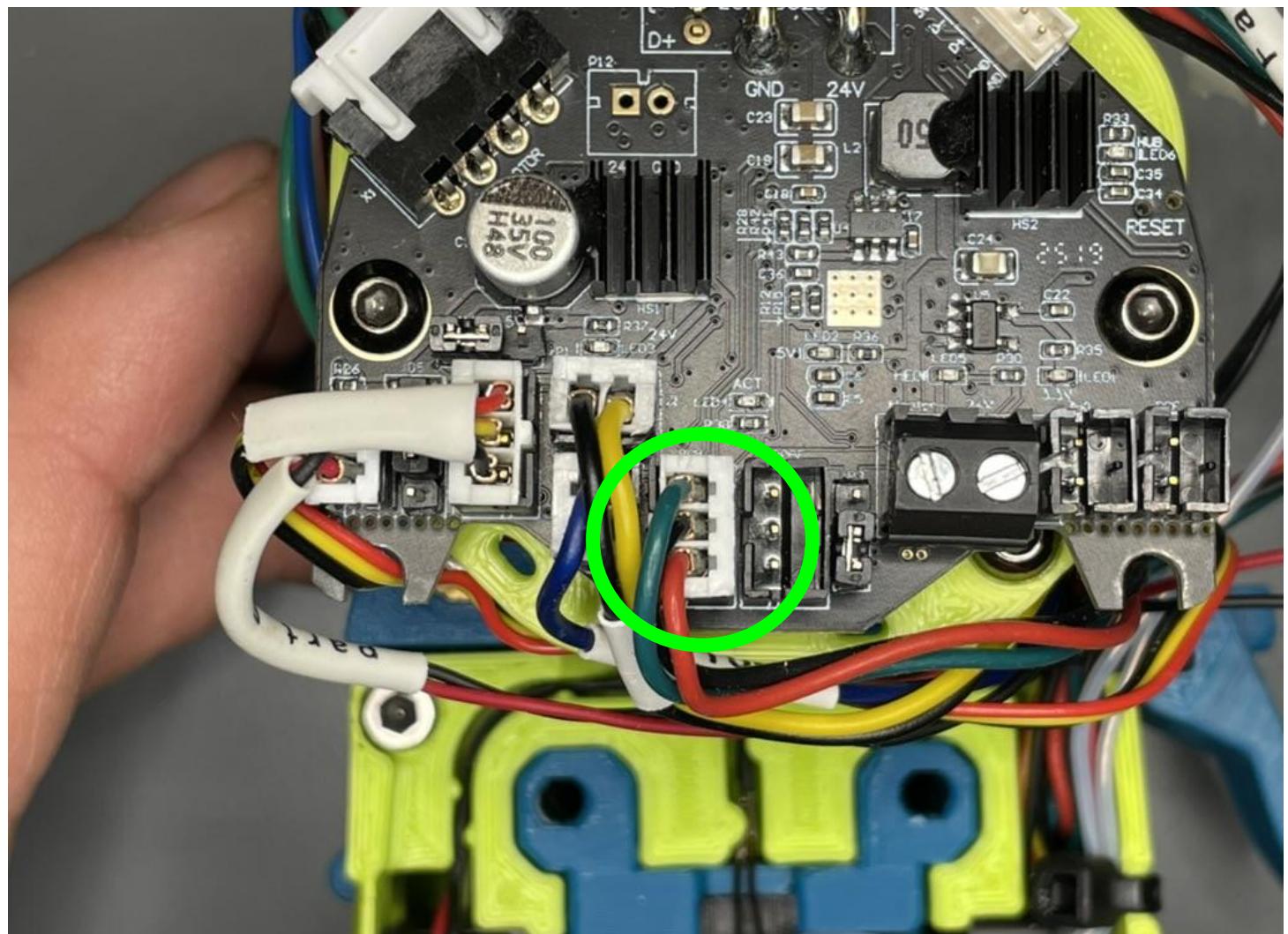
# LOWER TOOLHEAD ASSEMBLY

Next wire the **filament sensor headers** labelled **TOP** and **BOTTOM** as pictured. Yellow wire in top port, and blue in the bottom port.



## LOWER TOOLHEAD ASSEMBLY

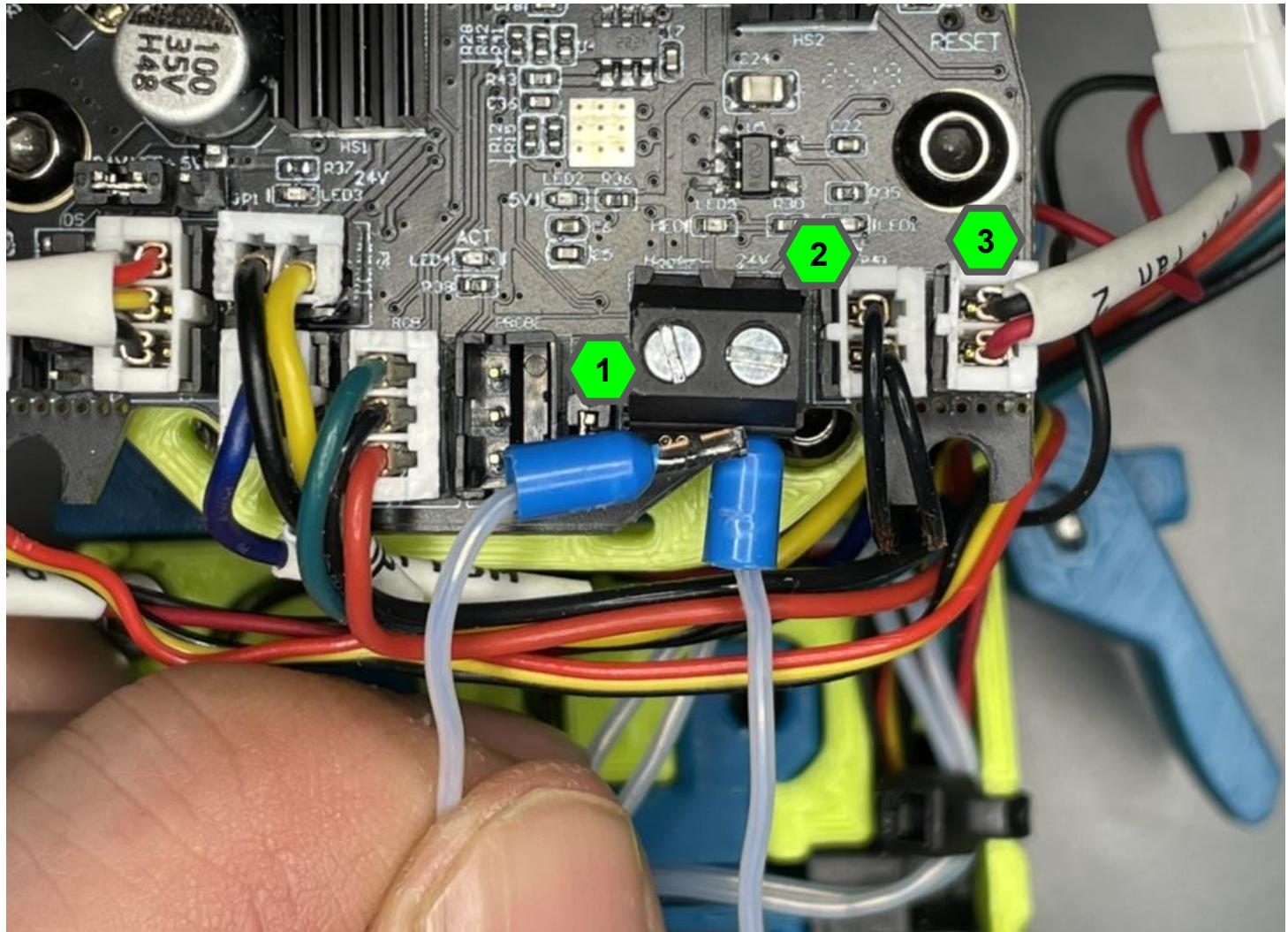
Next install the **LED wires** as pictured.



# LOWER TOOLHEAD ASSEMBLY

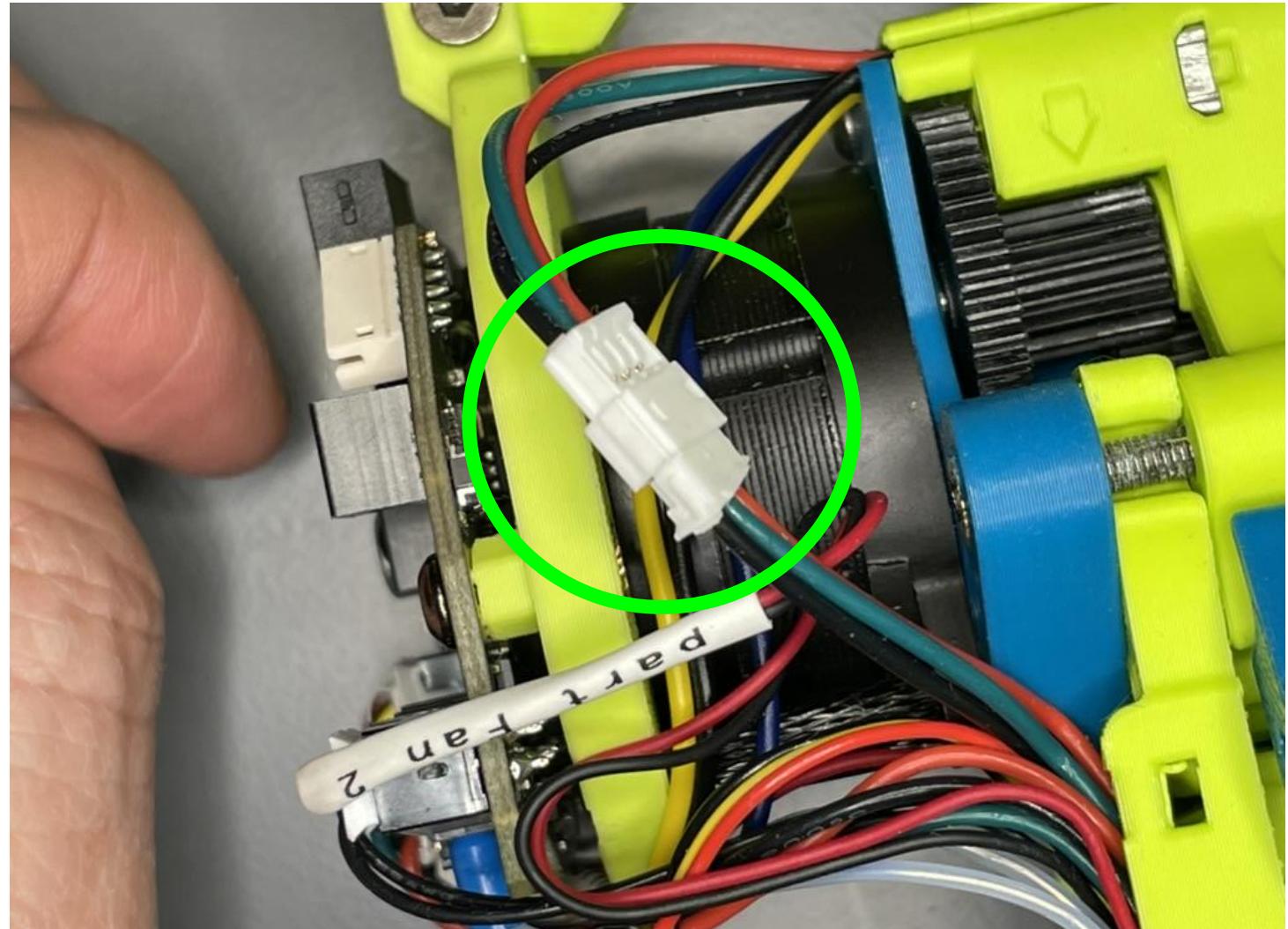
Install as pictured

1. Conch Heater Wire
2. Conch Thermistor
3. Parts Fan 2



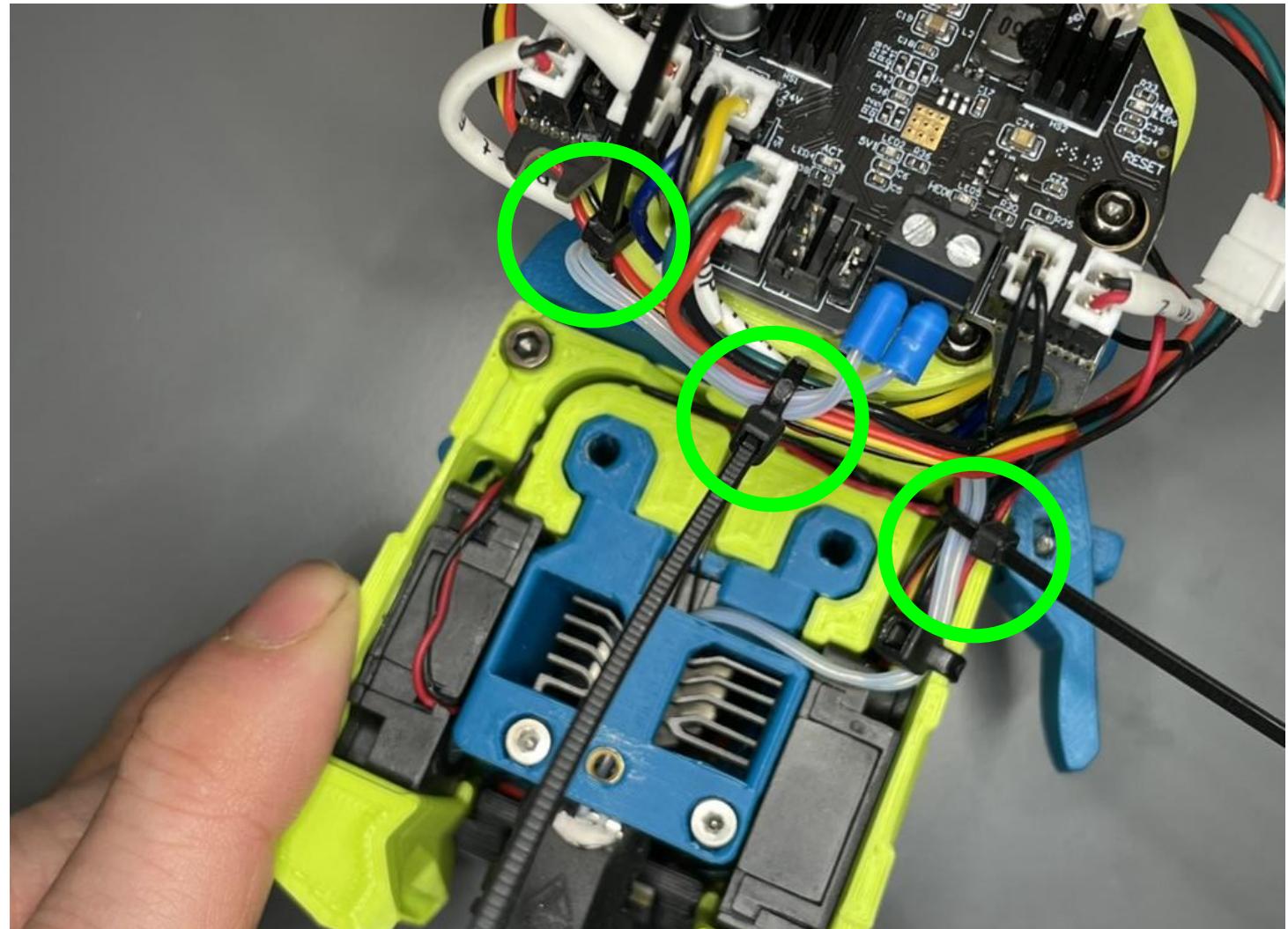
## LOWER TOOLHEAD ASSEMBLY

Find the two interconnects for the **Status Neopixel LED** and plug them together.



## LOWER TOOLHEAD ASSEMBLY

Ensure all the wires are in position and bundle up the wires neatly against the NH36 Mount and the shroud while using the Zip Ties to secure wires as pictured.



Hardware used in this step:  
(3) Zip ties

# CONGRATULATIONS

This completes the Jabberwocky Toolhead assembly.

Before installing the toolhead, please visit this short 5 minute video to verify everything is assembled correctly.

<https://www.youtube.com/watch?v=retalsq5uz0>

