



BMCUPro Guide

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9 Document 3427 Word ⓘ



🔥 Welcome to the BMCU Pro Guide

BMCU version -----

✓ BMCU Pro 2.0 installation tutorial

Extruder -----

Bottom shell -----

Extruder bottom shell consolidation -----

Connect the printer for testing -----

✓ FAQ guide

Teflon tubes -----

Light indication -----

✓ Model iteration

Iterative explanation -----

✓ Firmware iteration

Firmware Description: -----

BMCU version

BMCU version introduction

BMCU130

It adopts a 130 motor, and the structure is clutch feeding, and there is no auxiliary feeding function

BMCU370

There are several versions

BMCU - Optoelectronic version

There is a risk of headshots, and it adopts gear direct transmission and has an auxiliary feeding function

BMCU-C (Hall version)

Solves the risk of headshots, adopts gear direct transmission, has auxiliary feeding function, and is currently one of the most stable versions (original author **4061**)

BMCU-XC (Dual Micro Hall Version)

Based on the characteristics of BMCU-C, the self-priming function is added, the consumables indicator light, and there is a stardust leading second creation (**stardust** maintenance).

It comes with a rewind structure

BMCU-D

Adopt BMCU130 structure plus B1 electric rewinding design (the author forgot)

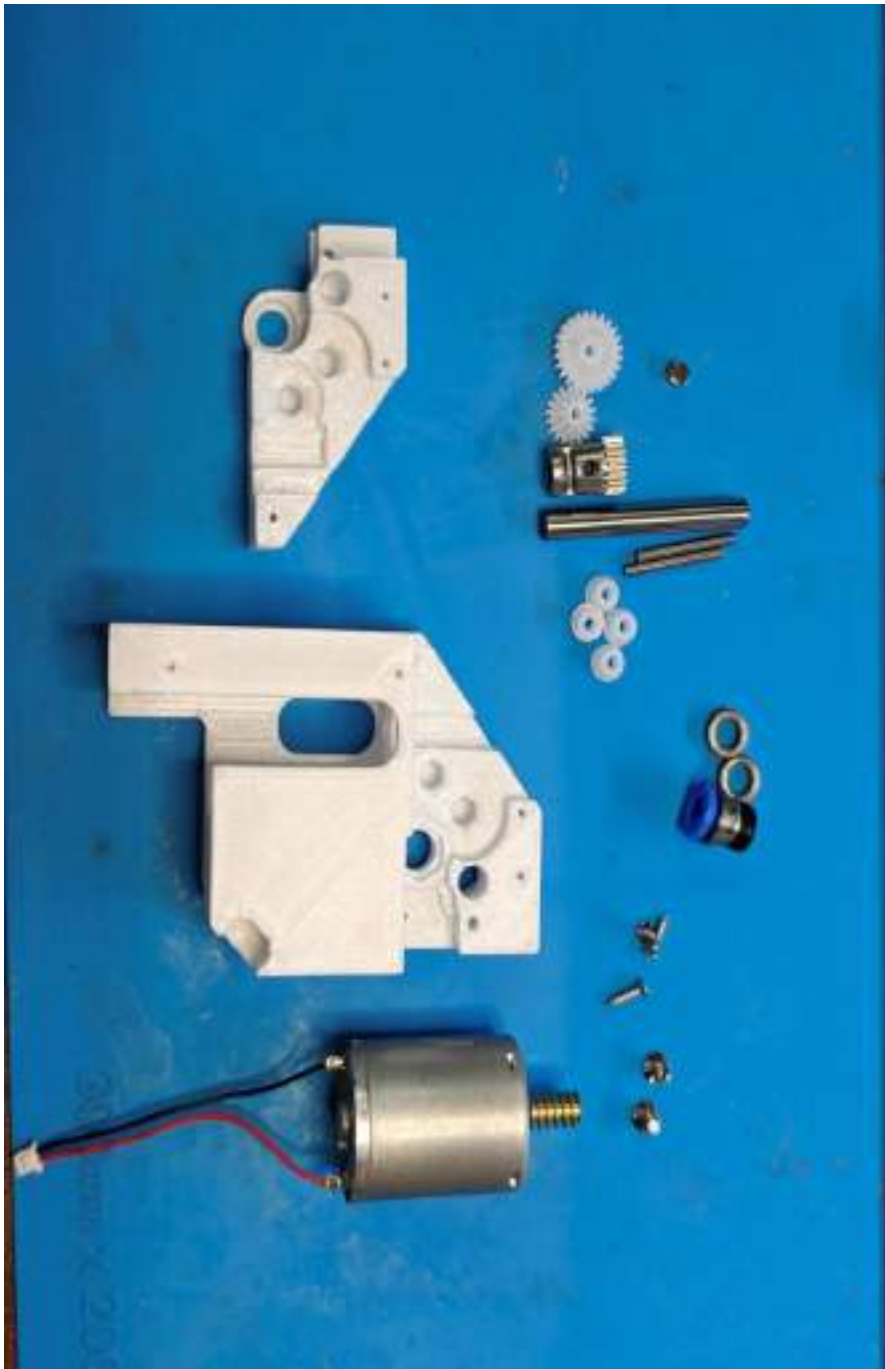
BMCU-Pro

Based on the characteristics of BMCU-XC, the timing belt drive adds active rewinding, feed and discharge buttons (the author **Abin will not model**)

Extruder

Next is the tutorial for BMCU Pro 2.0

First, take out the following materials

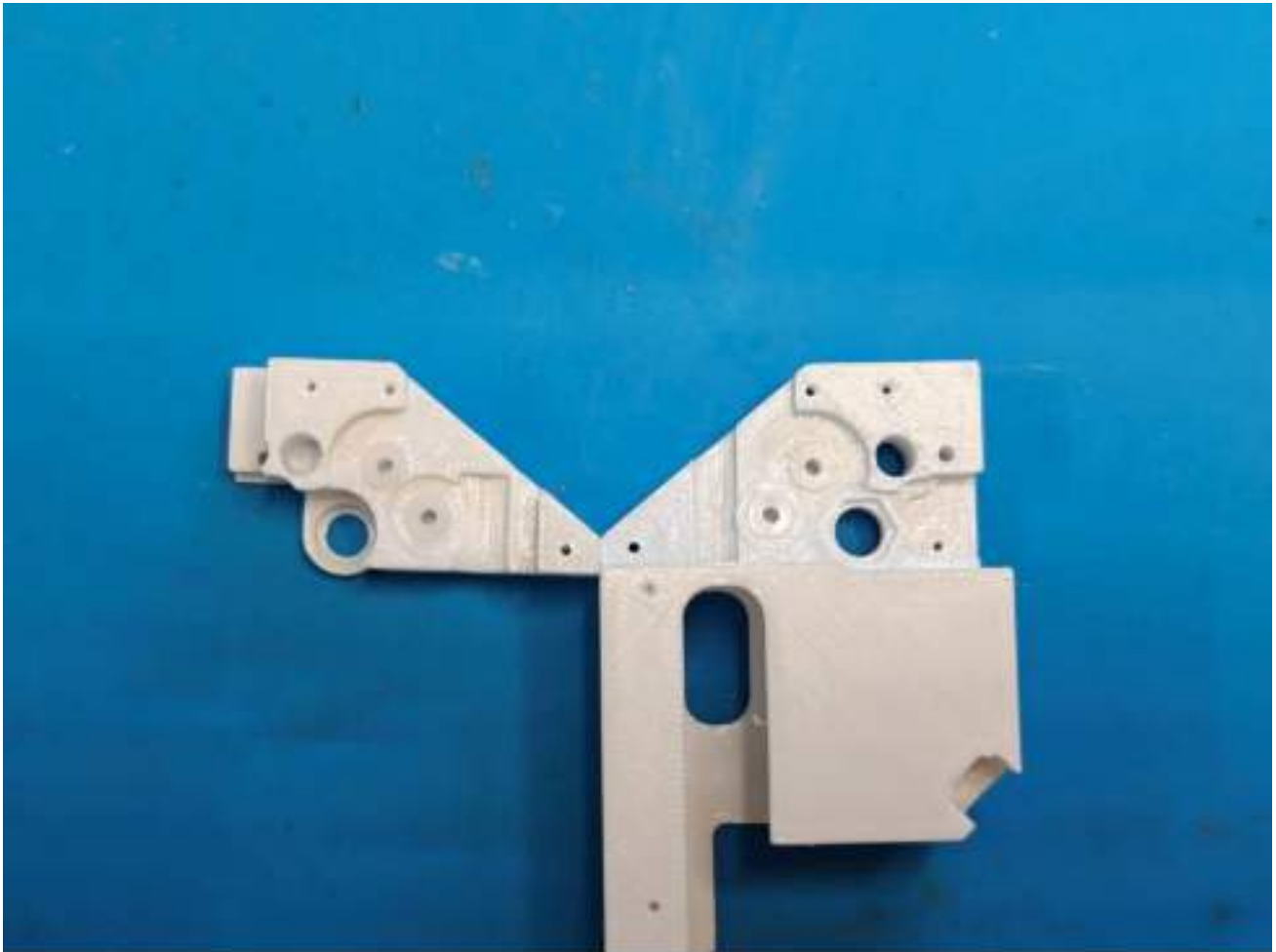


OPPO Find X7 Ultra

HASSELBLAD

47mm f/1.8 1/100s ISO400

Next, install the bushing 62b, install it in the notch of the bottom frame and the middle frame, after installation, take out the gear and position it with 2*20, as shown in the picture, fix it slightly, take out the bottom frame and put the gear on it, press the gear to the end, and put it aside. Now take out the **BMG gear with top wire** and 4*2.5 magnets, MR85 bearings, install them as shown in the picture, and then tighten the top wire **(use magnets to make the limit, as shown in Figure 2)**. Now take out the middle frame to install the motor, M3*5 screws. After the motor is installed, take out the accessories installed in the front, put them together, and take out three M2*8 self-tapping screws to tighten them.



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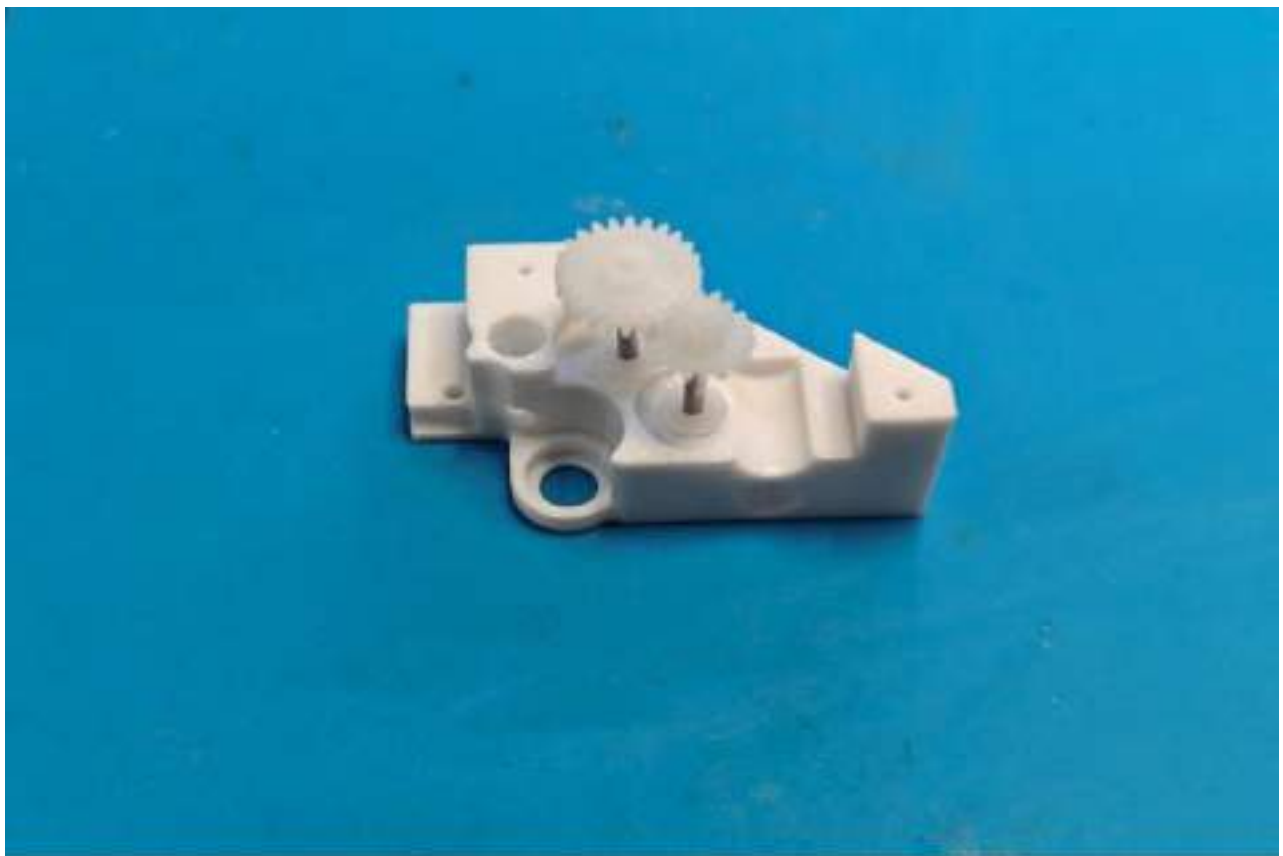
47mm f/1.8 1/100s ISO640



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● 47mm f/1.8 1/100s ISO800



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● 47mm f/1.8 1/100s ISO500



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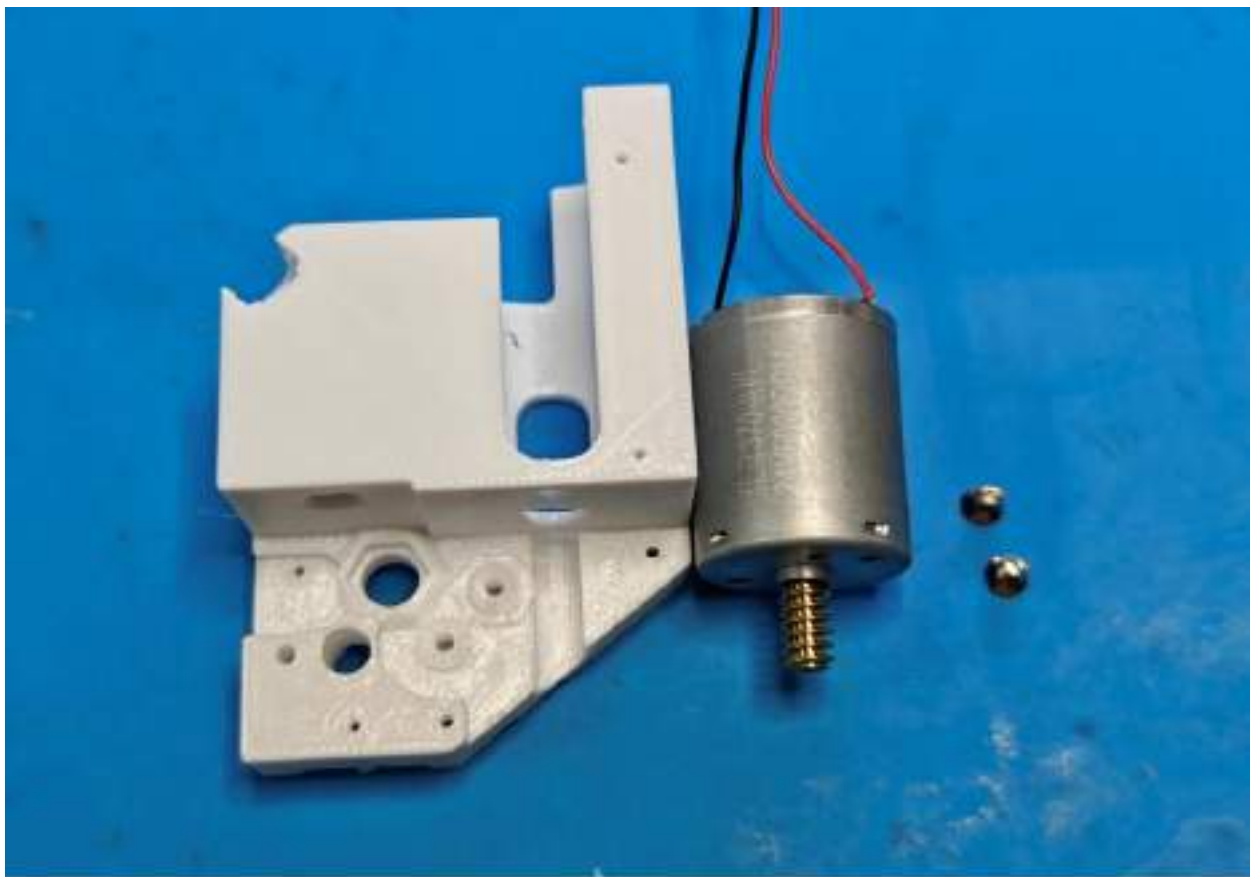
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● 47mm f/1.8 1/100s ISO1000

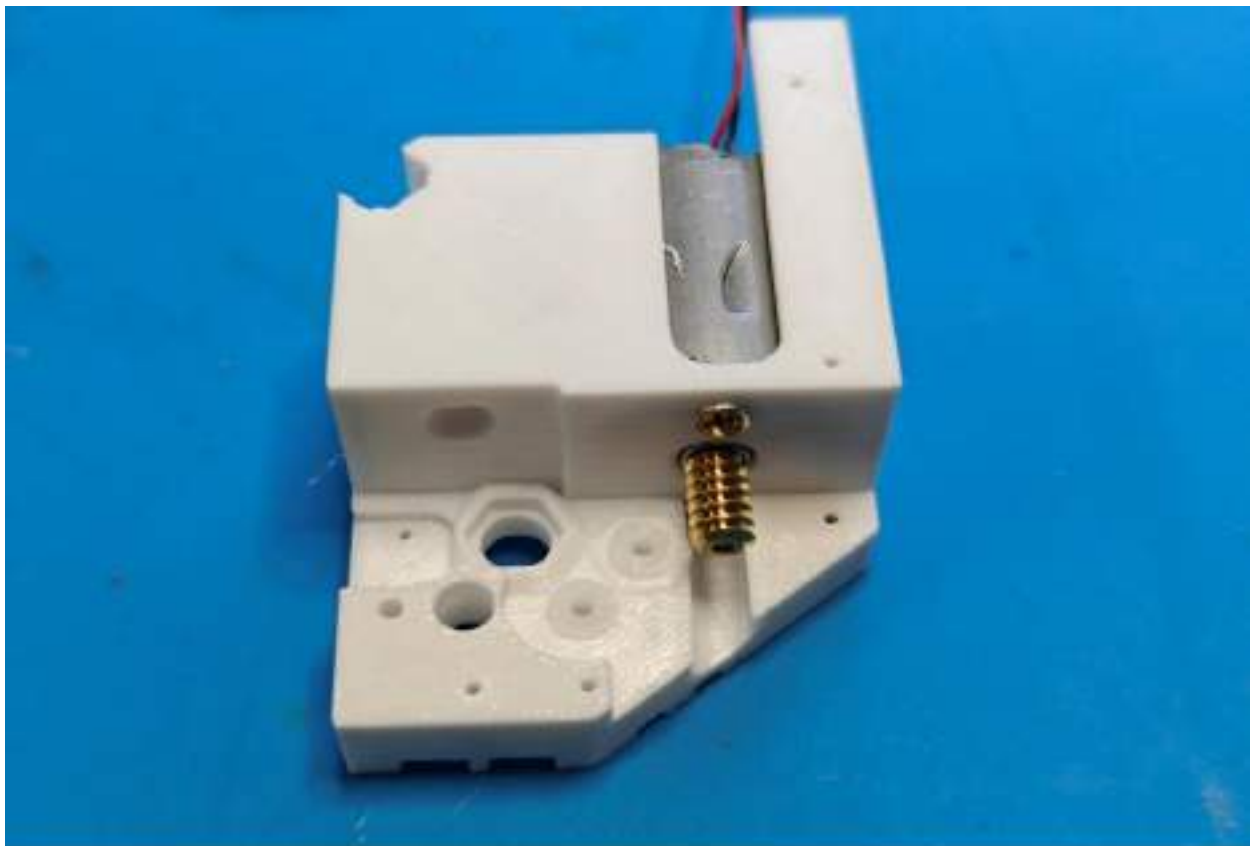


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47mm f/1.8 1/100s ISO500

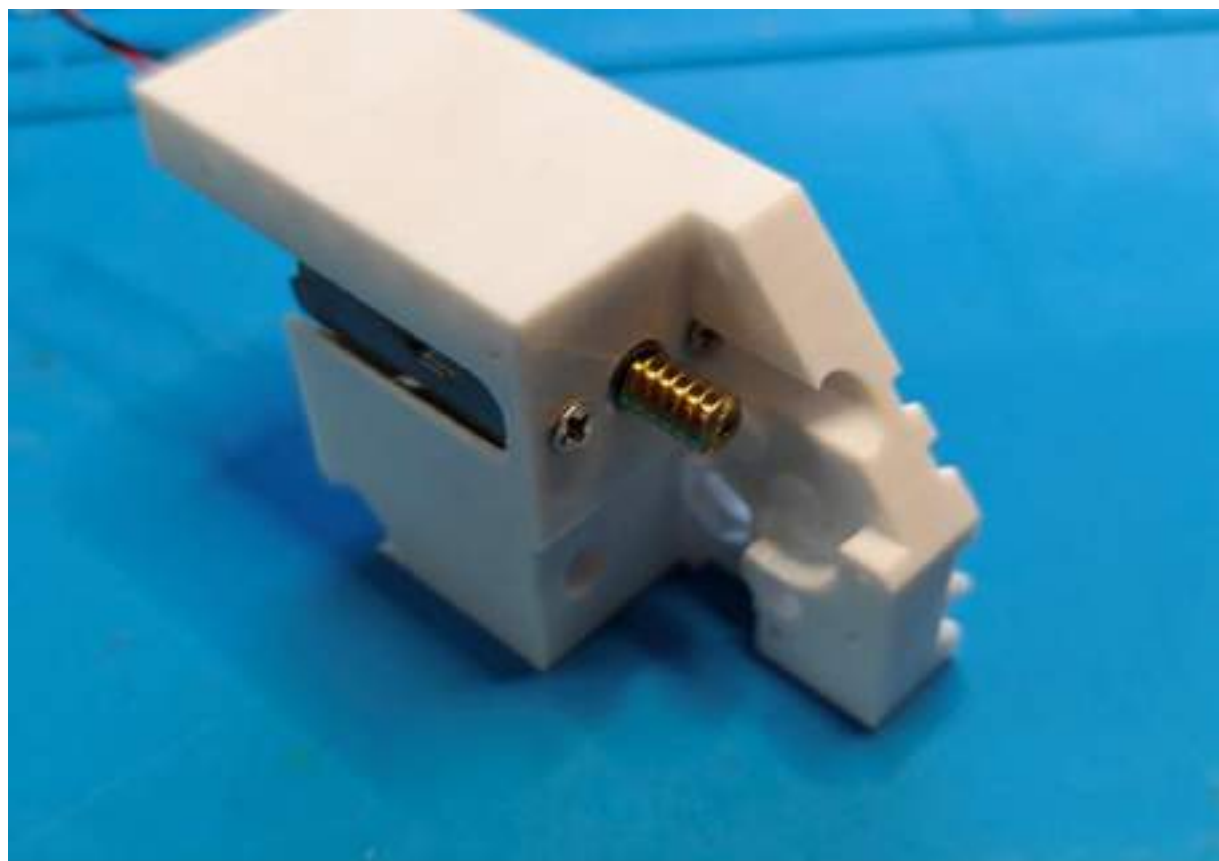
500



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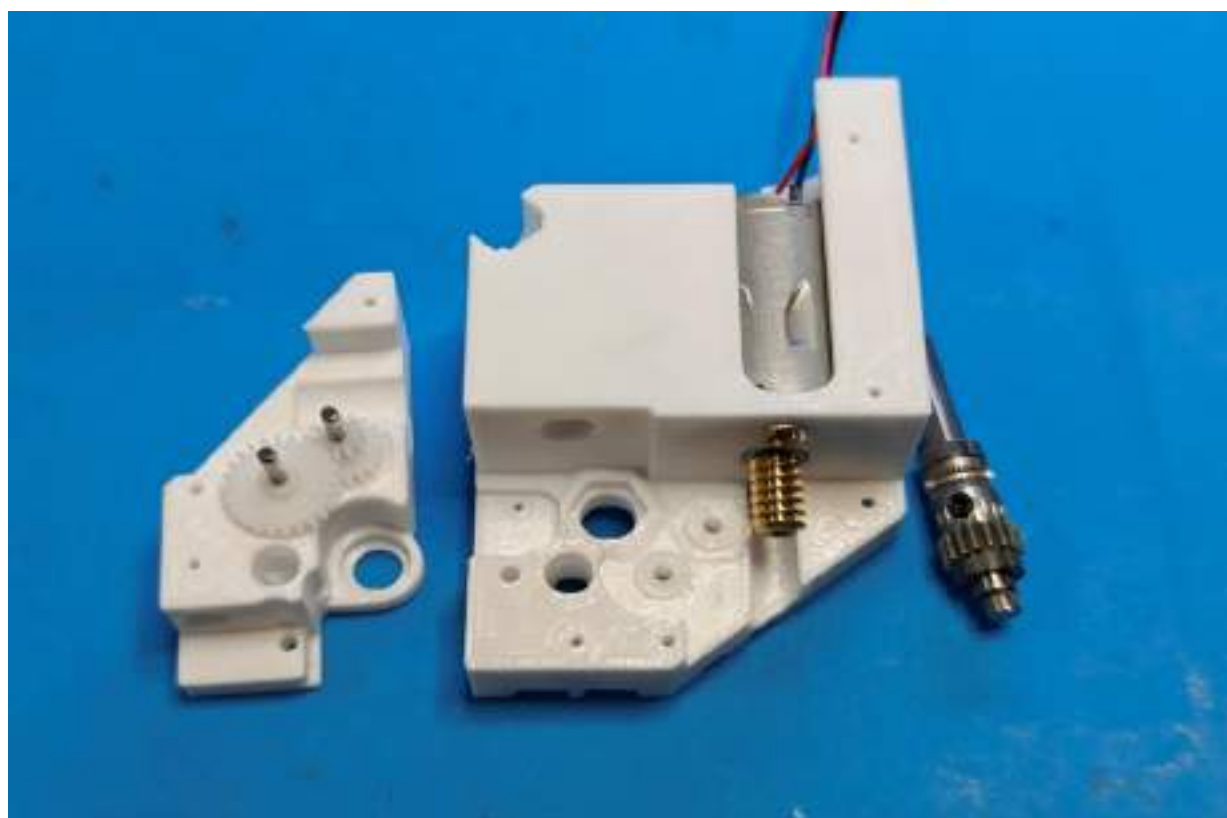
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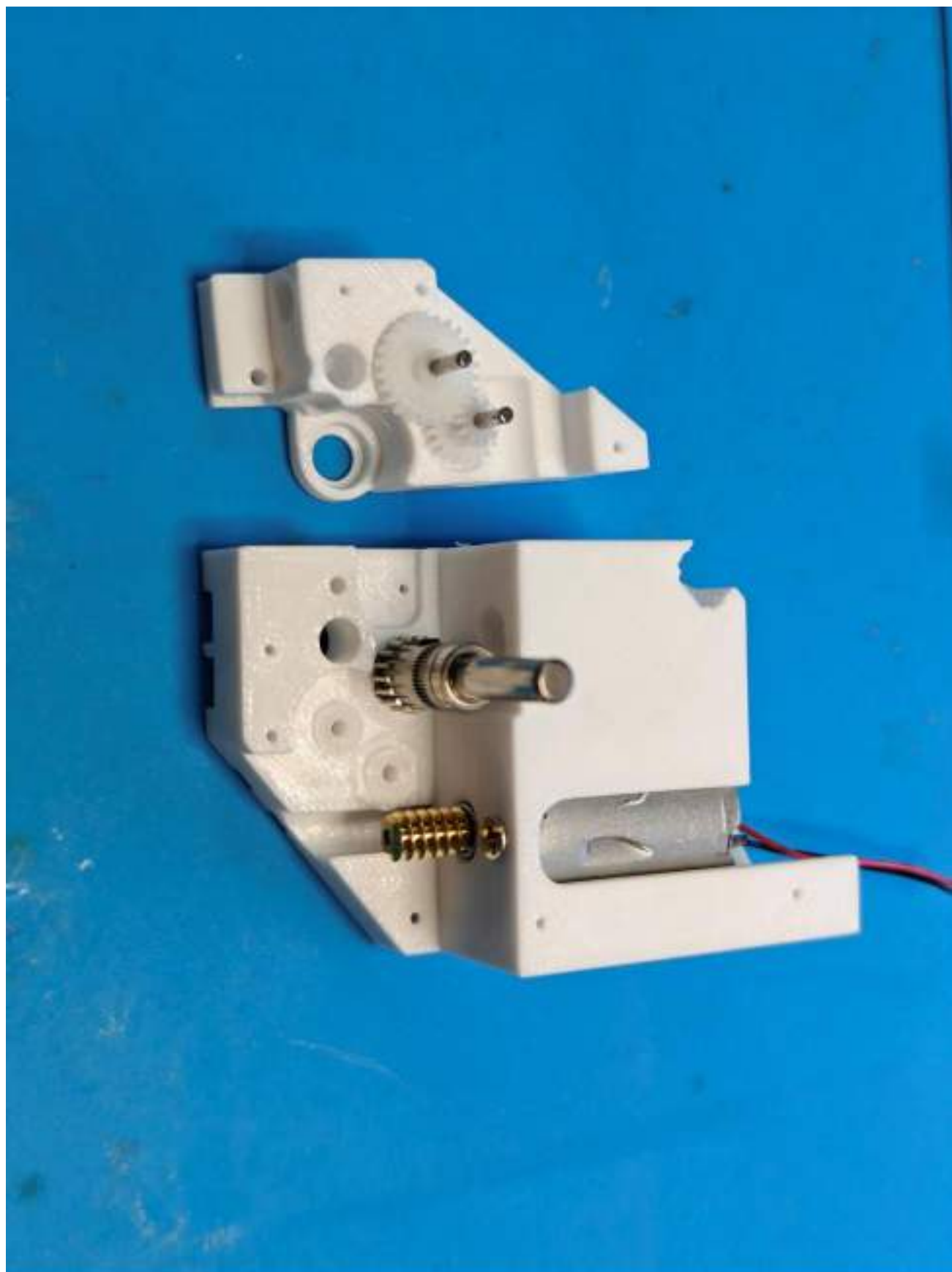
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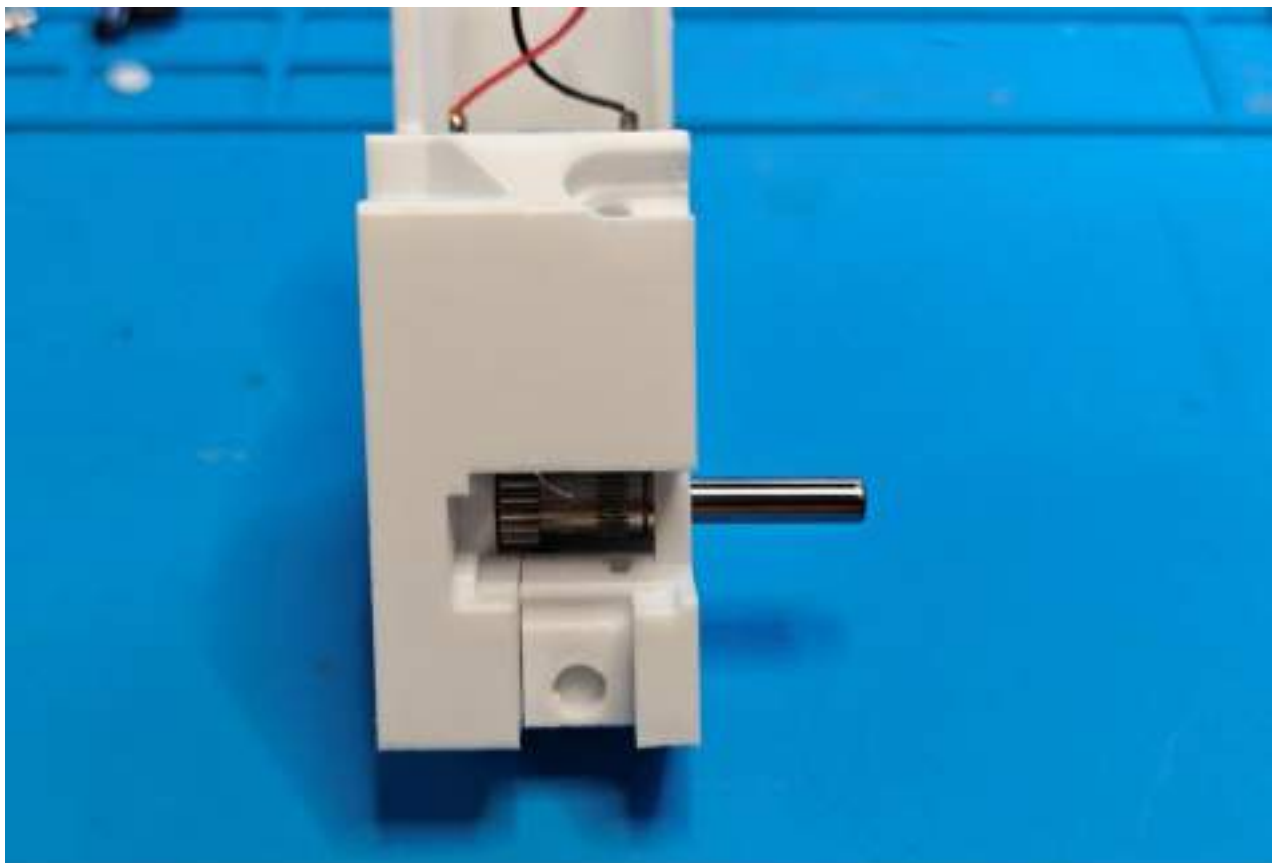
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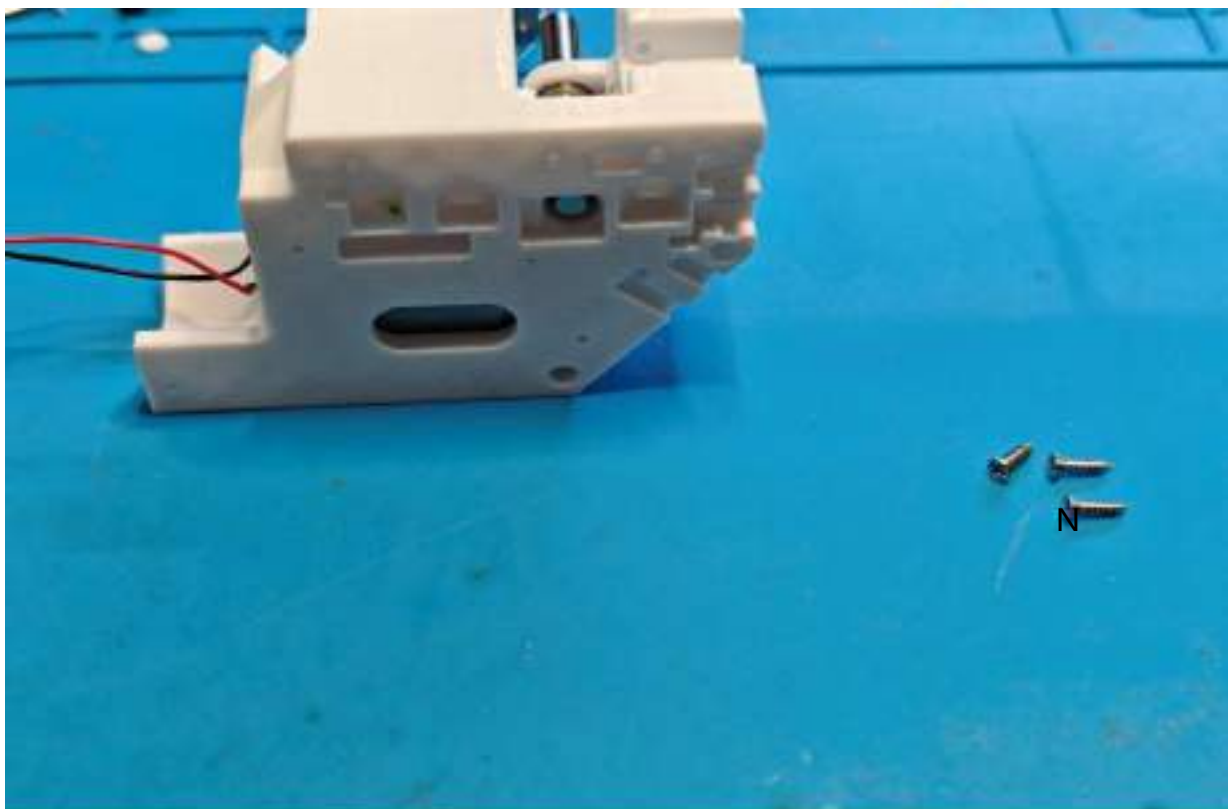
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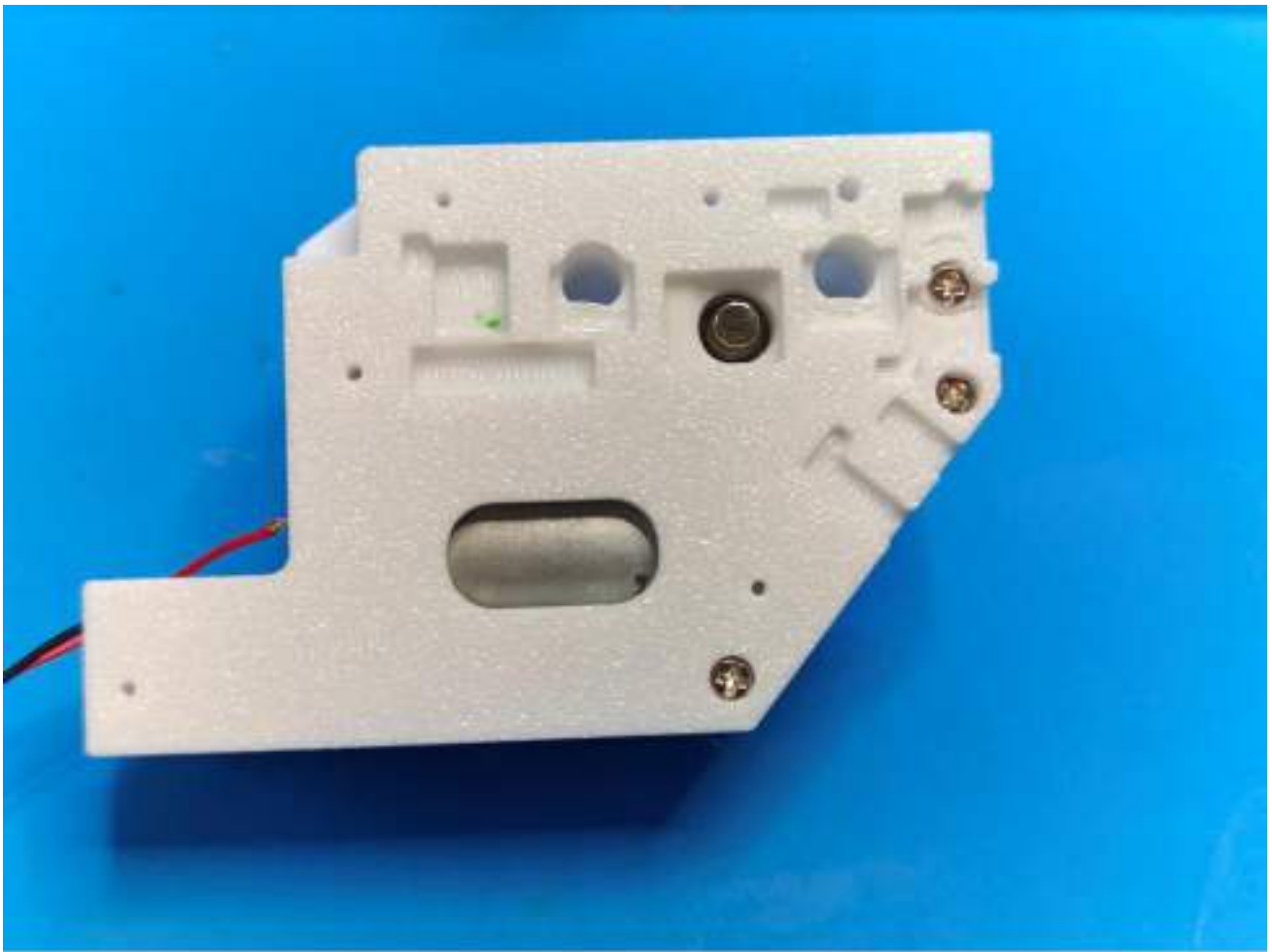
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47mm f/1.8 1/100s ISO640



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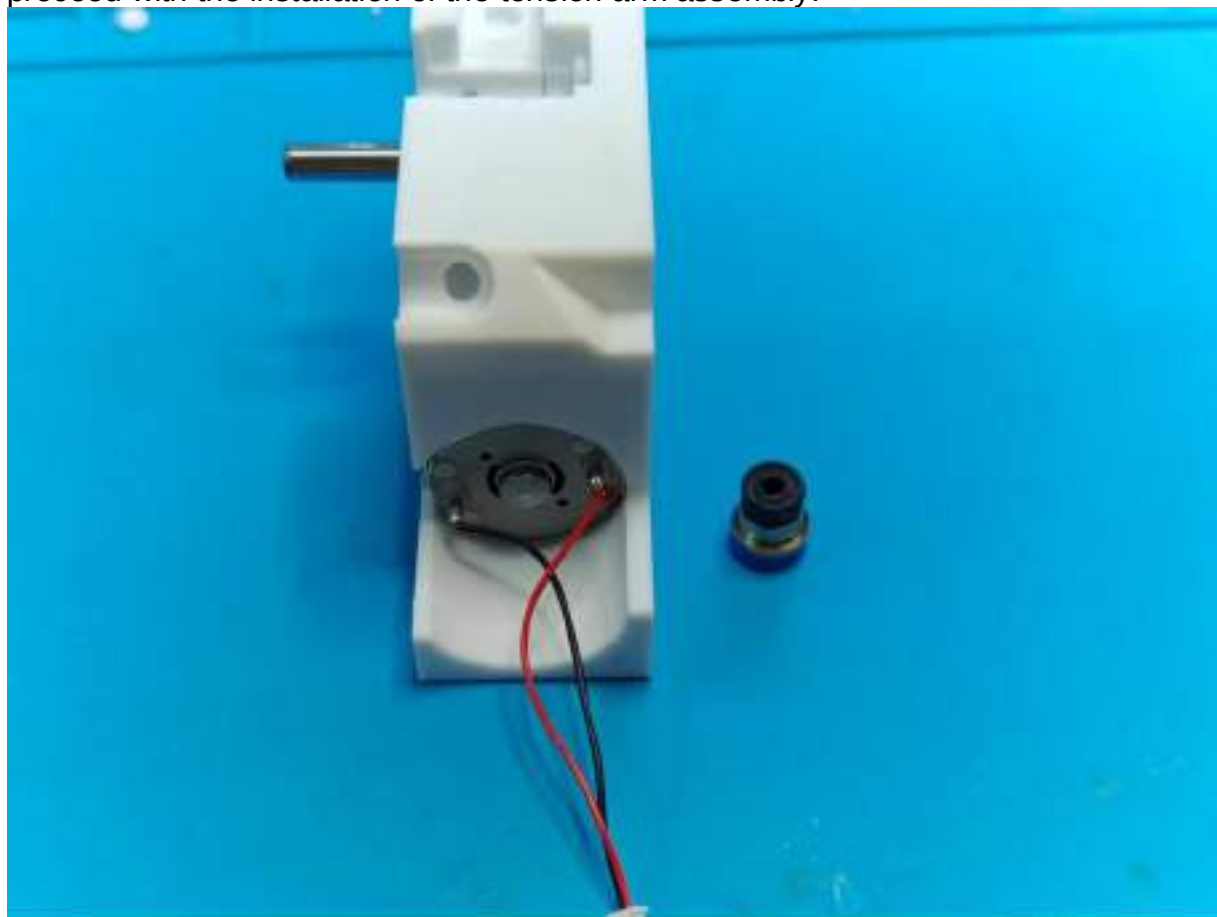
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47mm f/1.8 1/100s ISO400

Once the screws have been tightened, retrieve the Bowden connector for installation; note that the Bowden connector features a black rubber ring—remove and discard it.

With the Bowden connector successfully installed, retrieve the second BMG gear (the one without a set screw), two needle bearings, an M3×20 locating pin, a spring retainer, and a 0.6×4×15 spring to

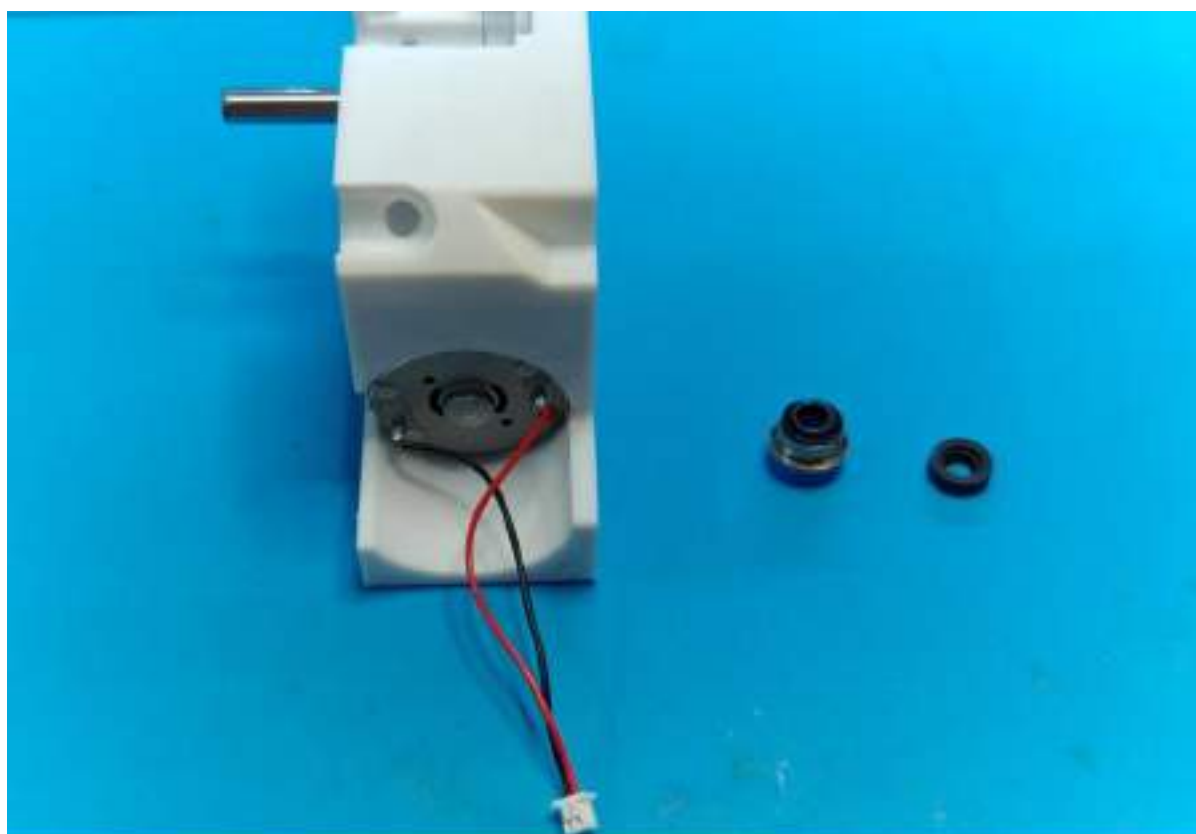
proceed with the installation of the tension arm assembly.



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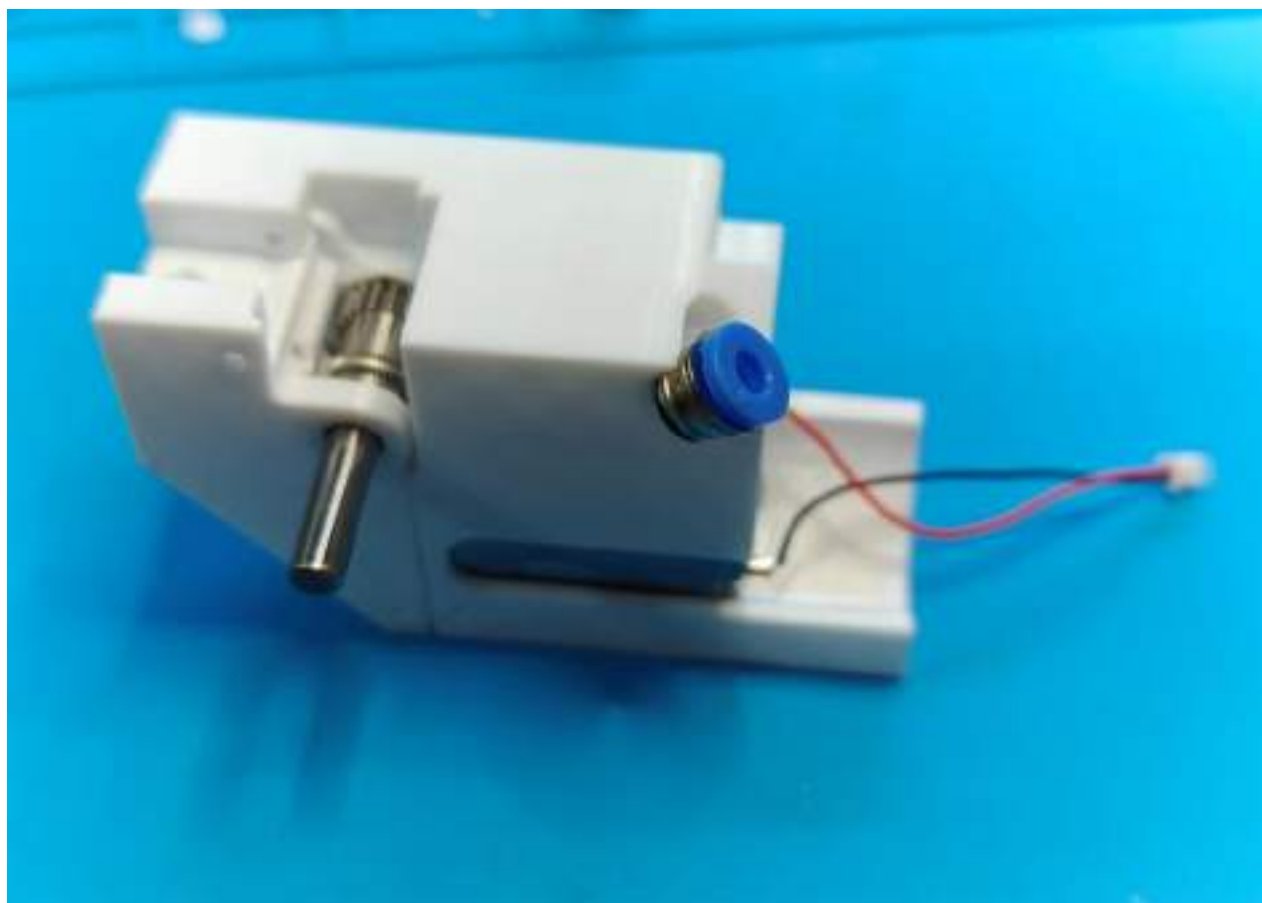
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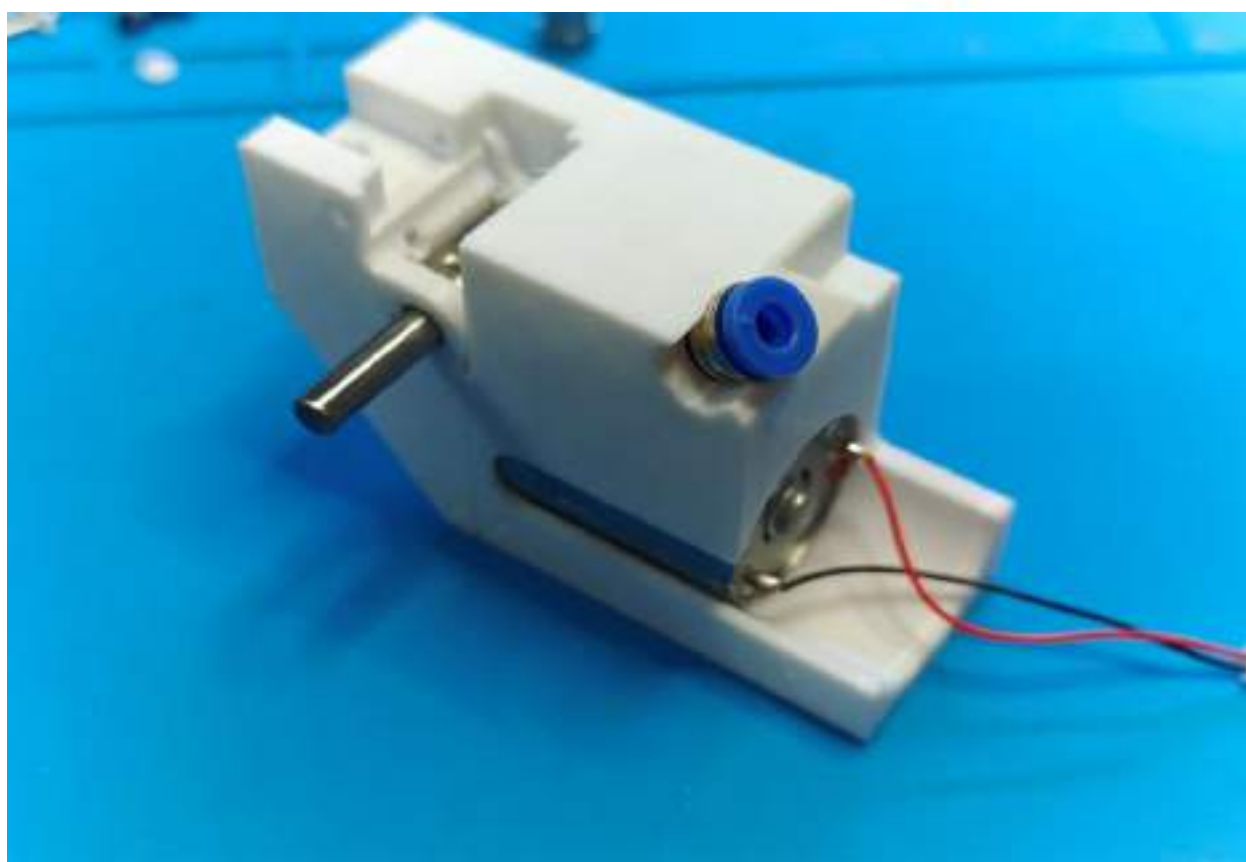
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● 47mm f/1.8 1/100s ISO400



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47mm f/1.8 1/100s ISO320

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● 47mm f/1.8 1/100s ISO640

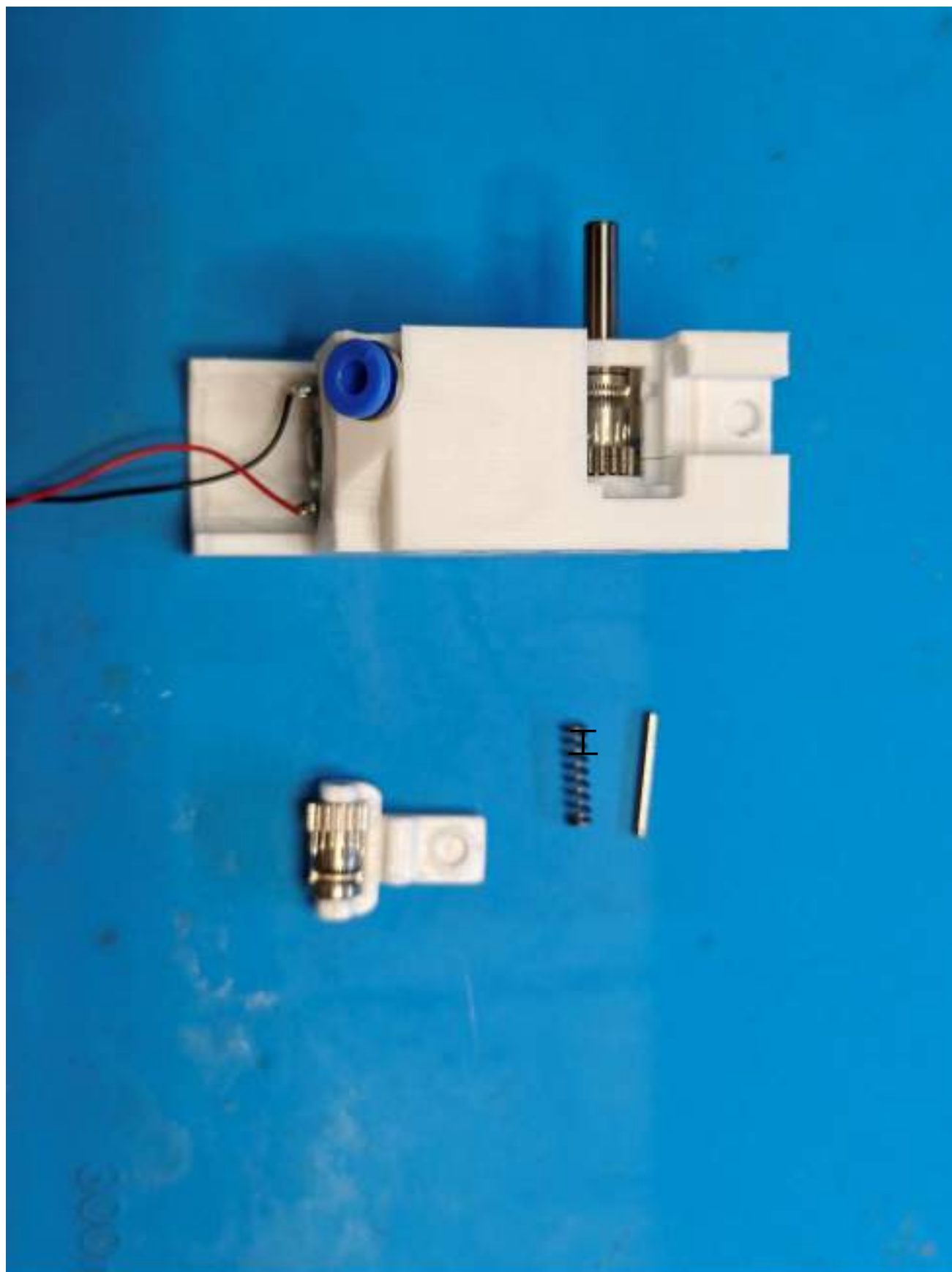


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● 47mm f/1.8 1/100s ISO640

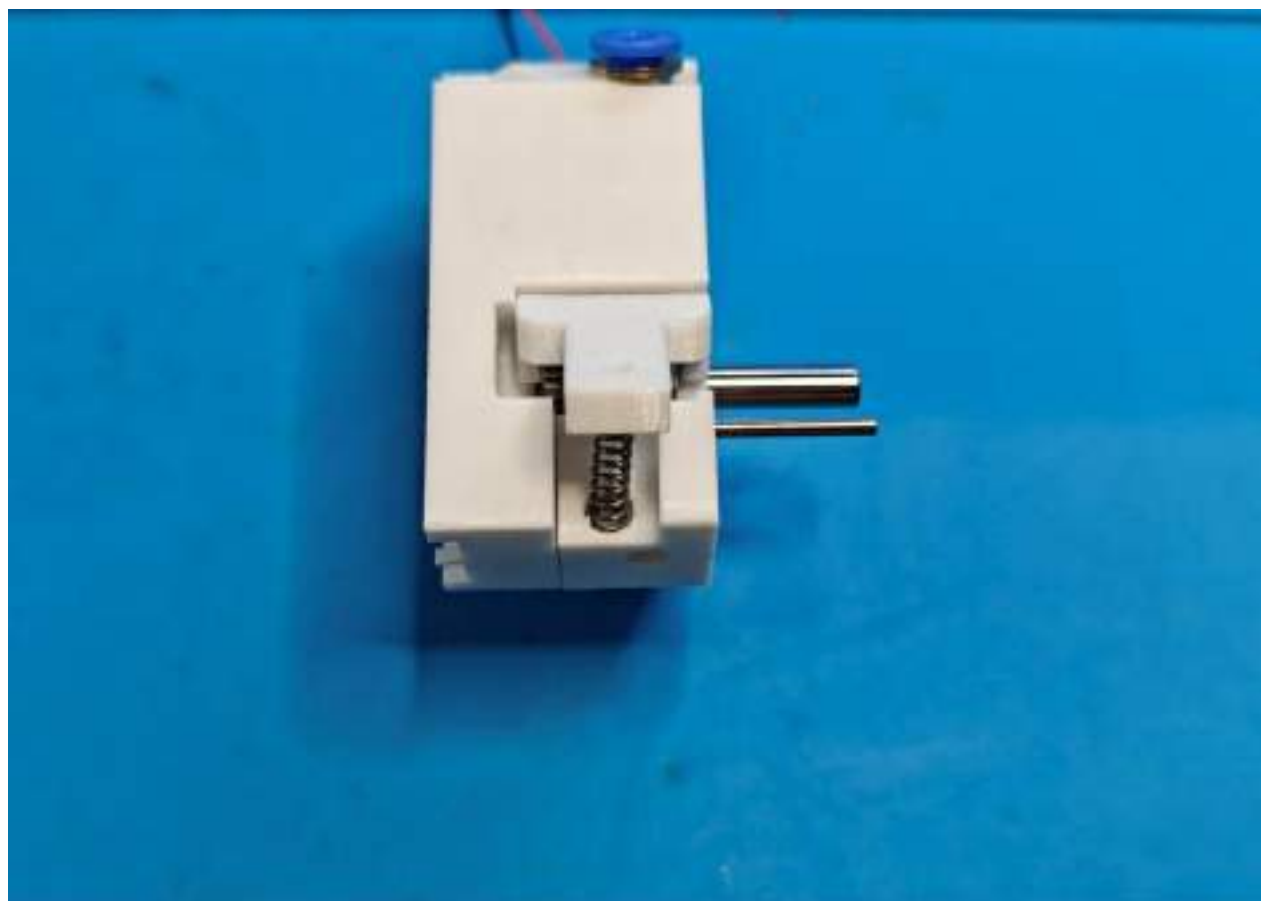
Once the wrench is properly installed, retrieve the front extruder and an M2*20 locating pin to proceed with assembly.



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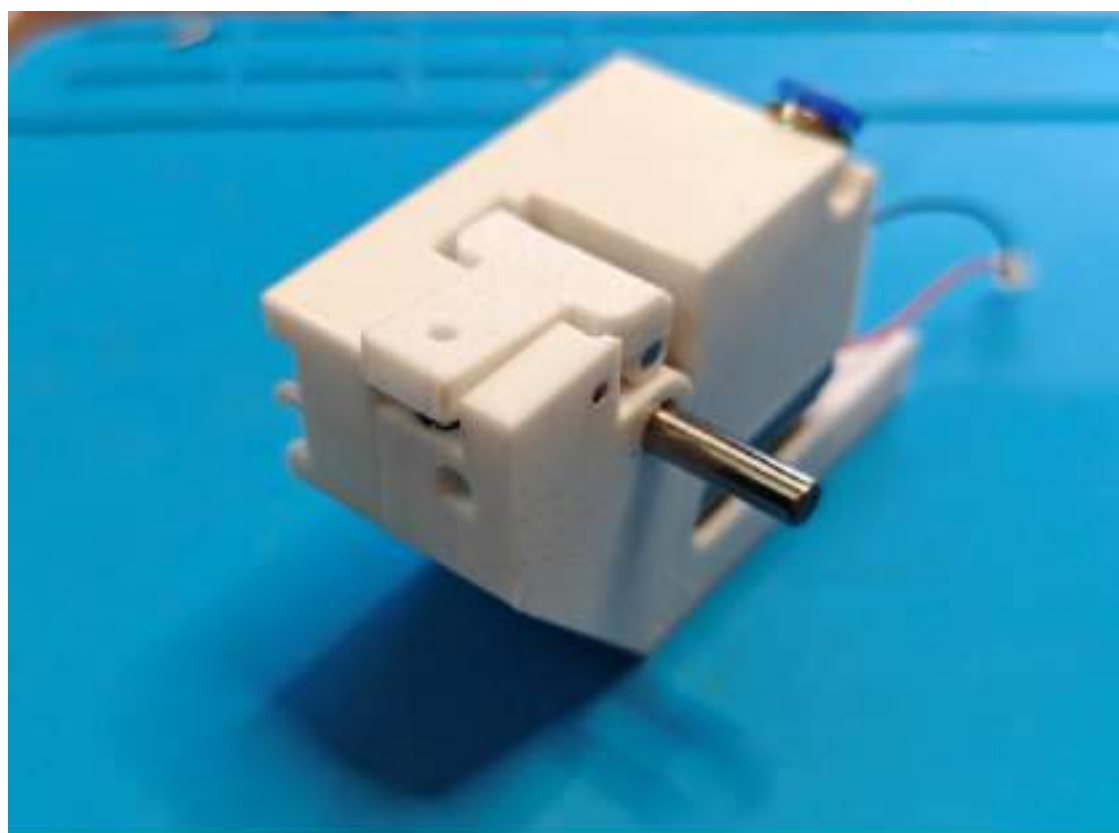
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● 47mm f/1.8 1/100s ISO500

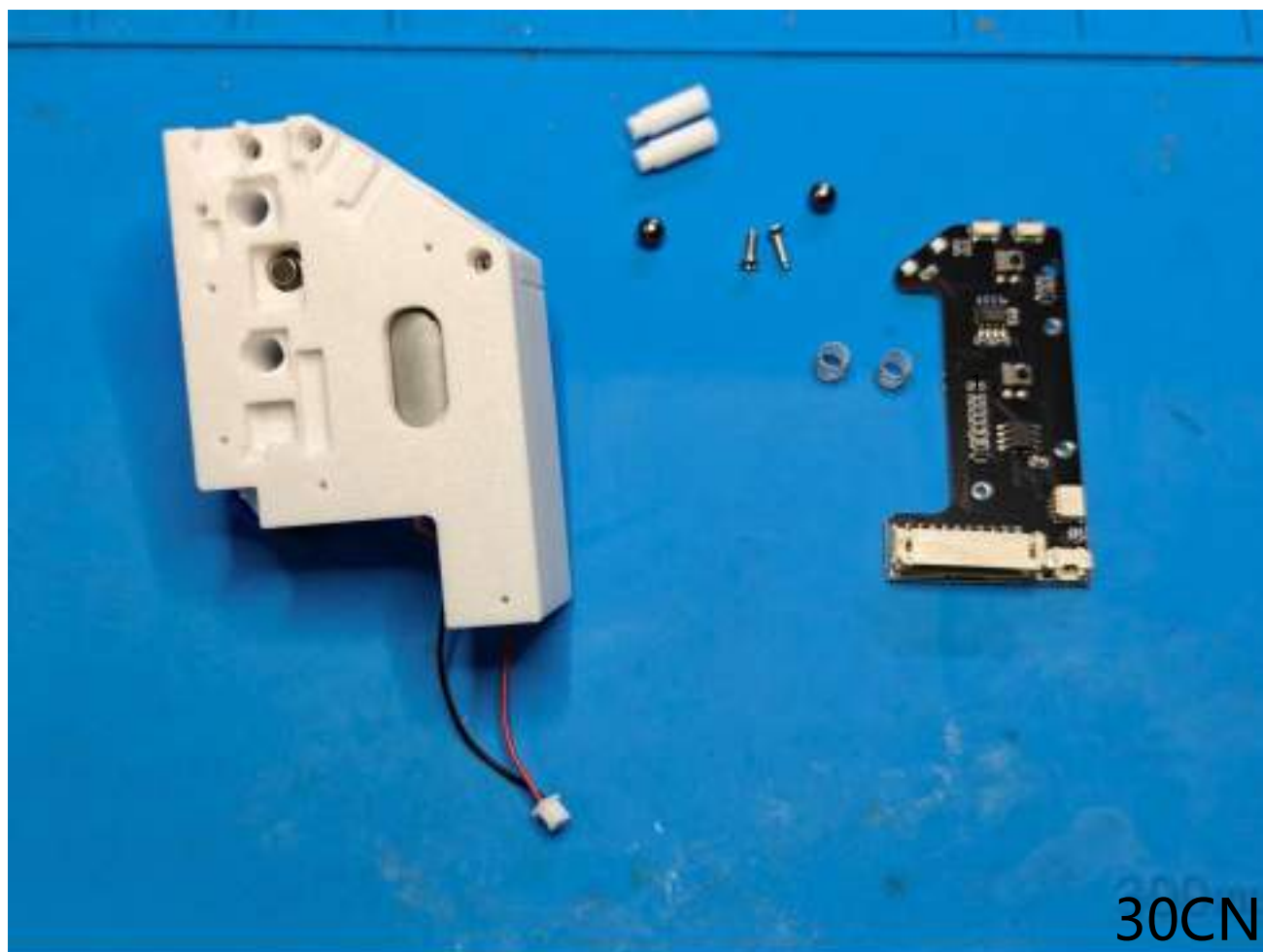


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● 47mm f/1.8 1/100s ISO640

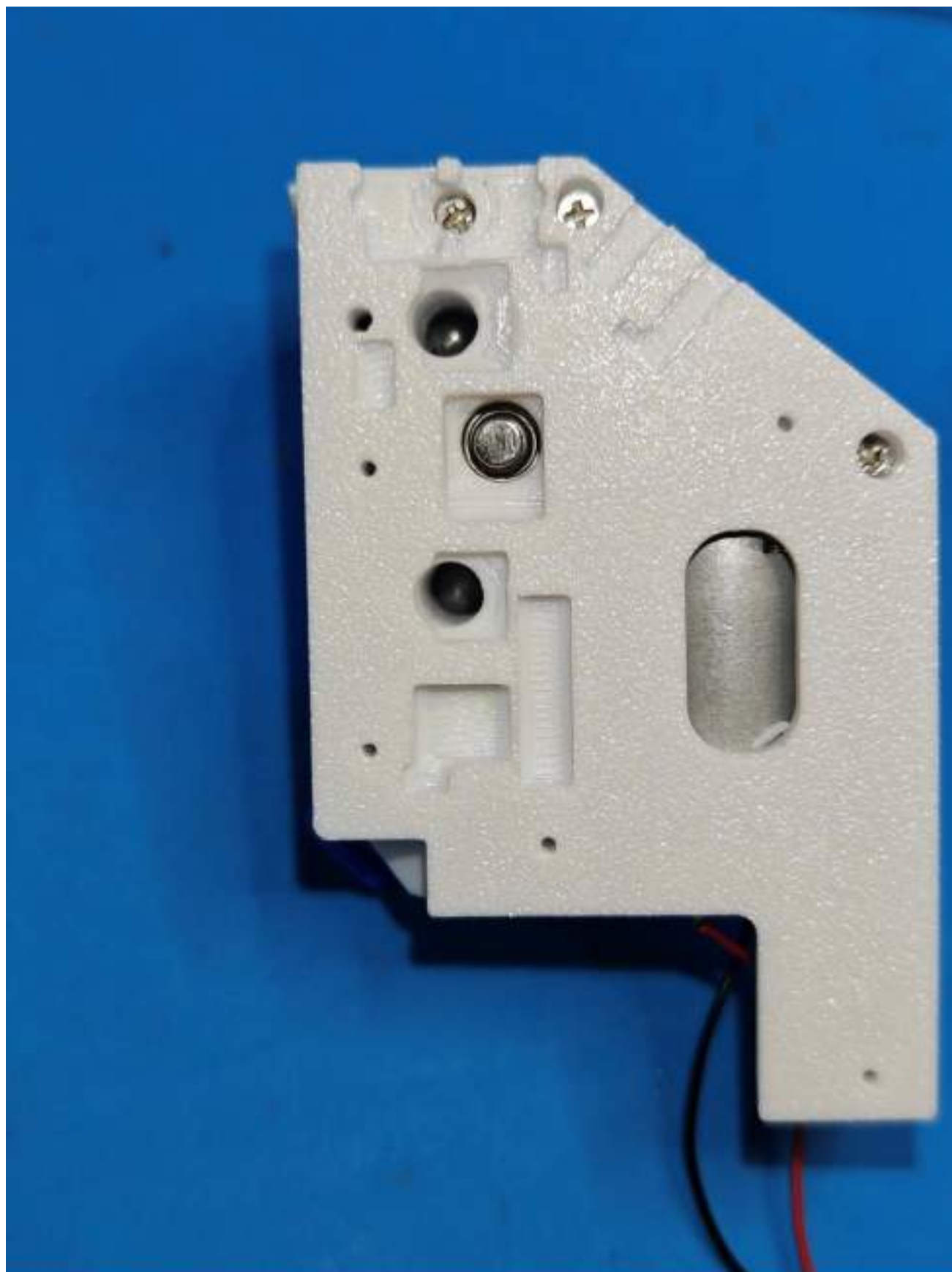
After assembly, take out the sub-plate, two steel balls, two 0.3*5*5 springs, two top columns, and two M2*8 screws for assembly



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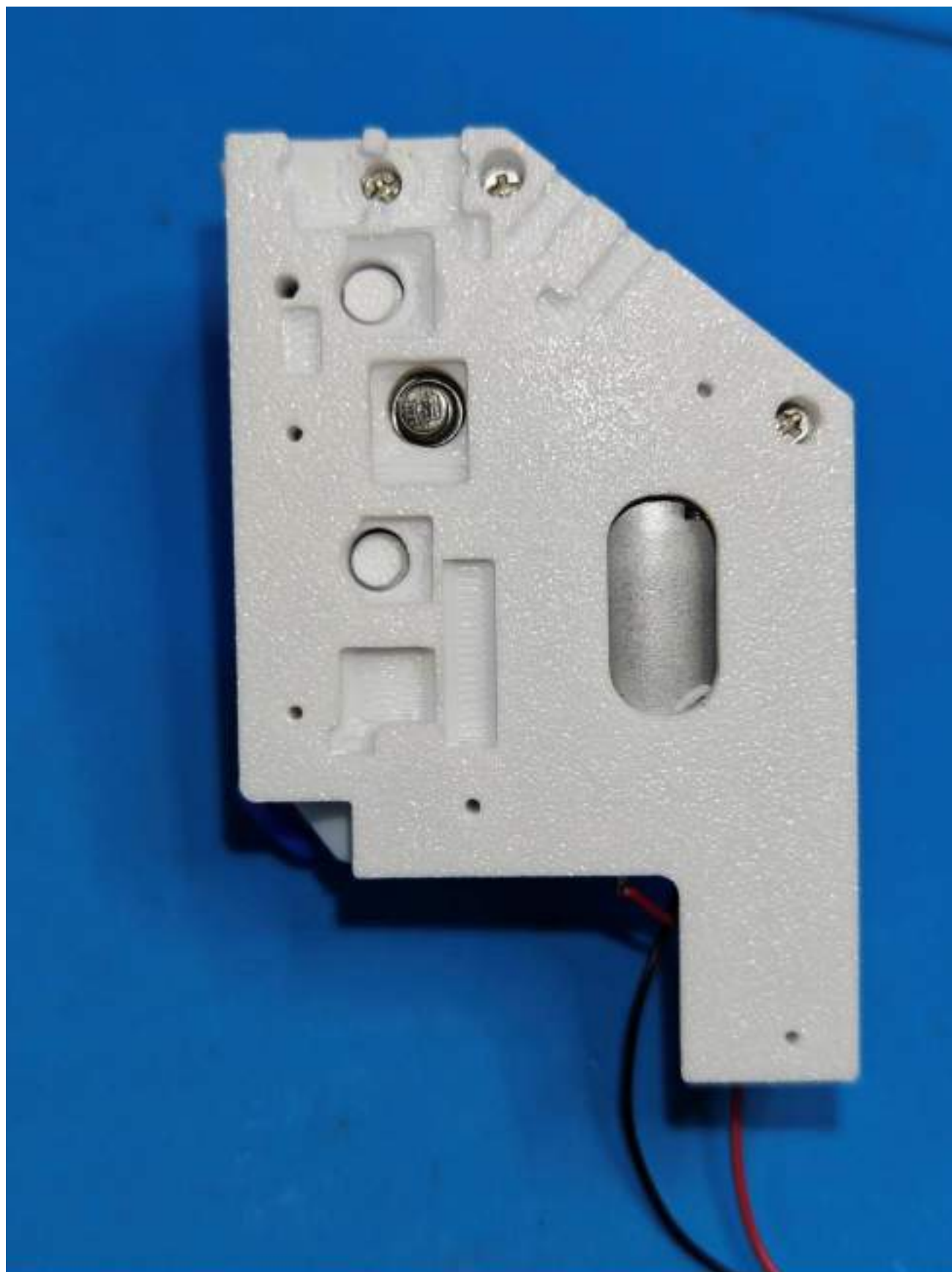
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47mm f/1.8 1/100s ISO320



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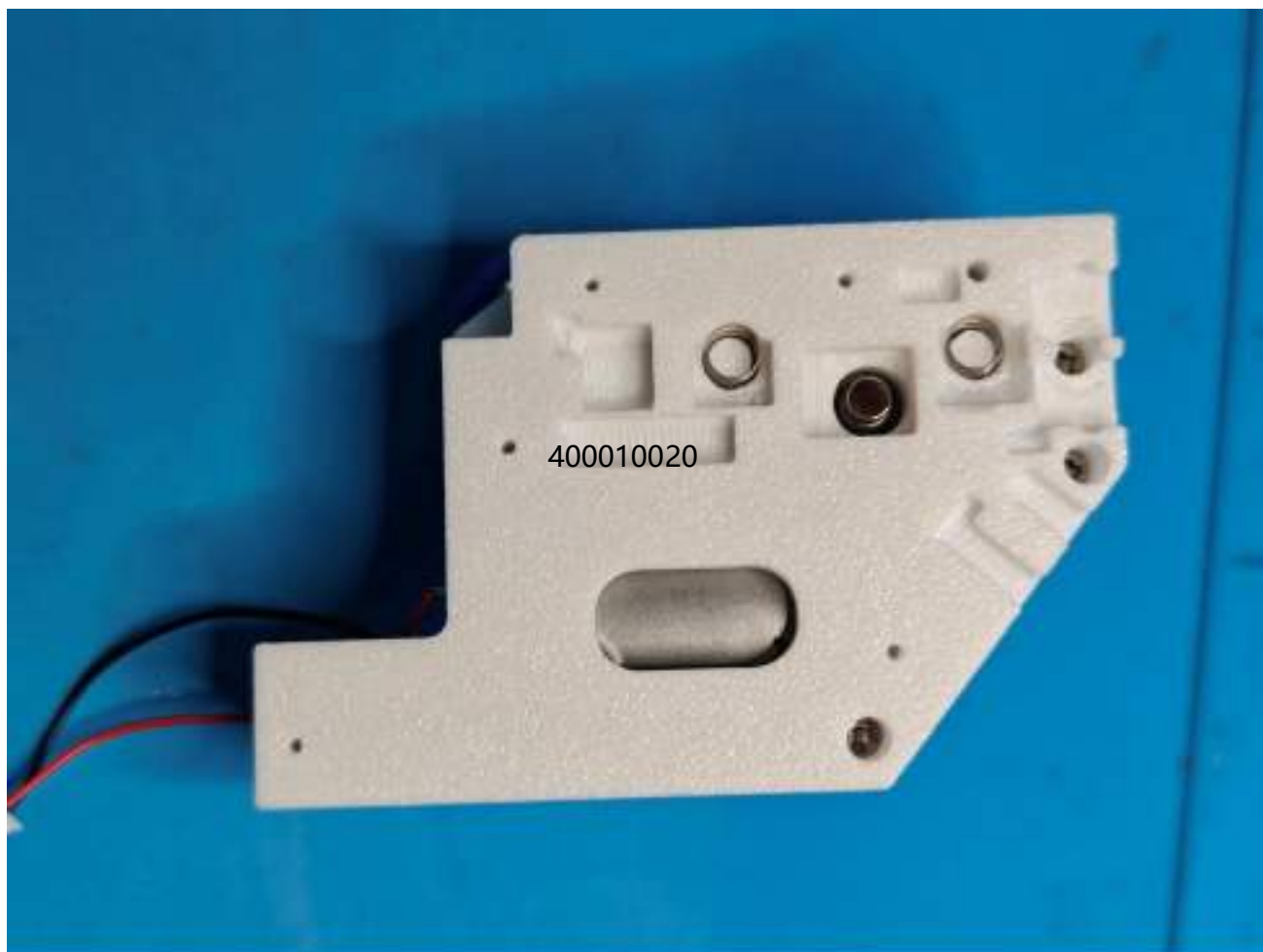
● 47mm f/1.8 1/104s ISO200



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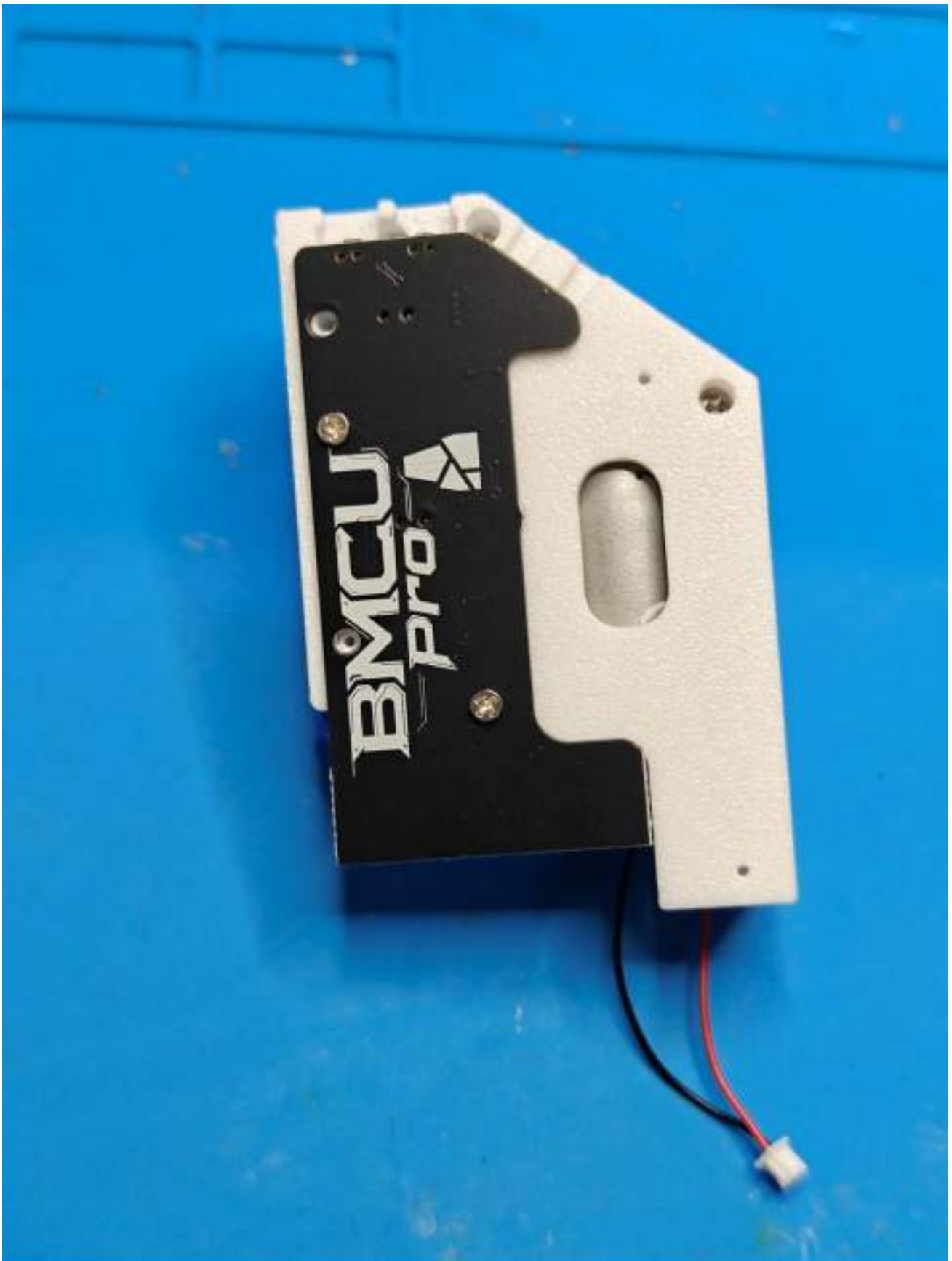
● 47mm f/1.8 1/109s ISO200



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● 47mm f/1.8 1/100s ISO250

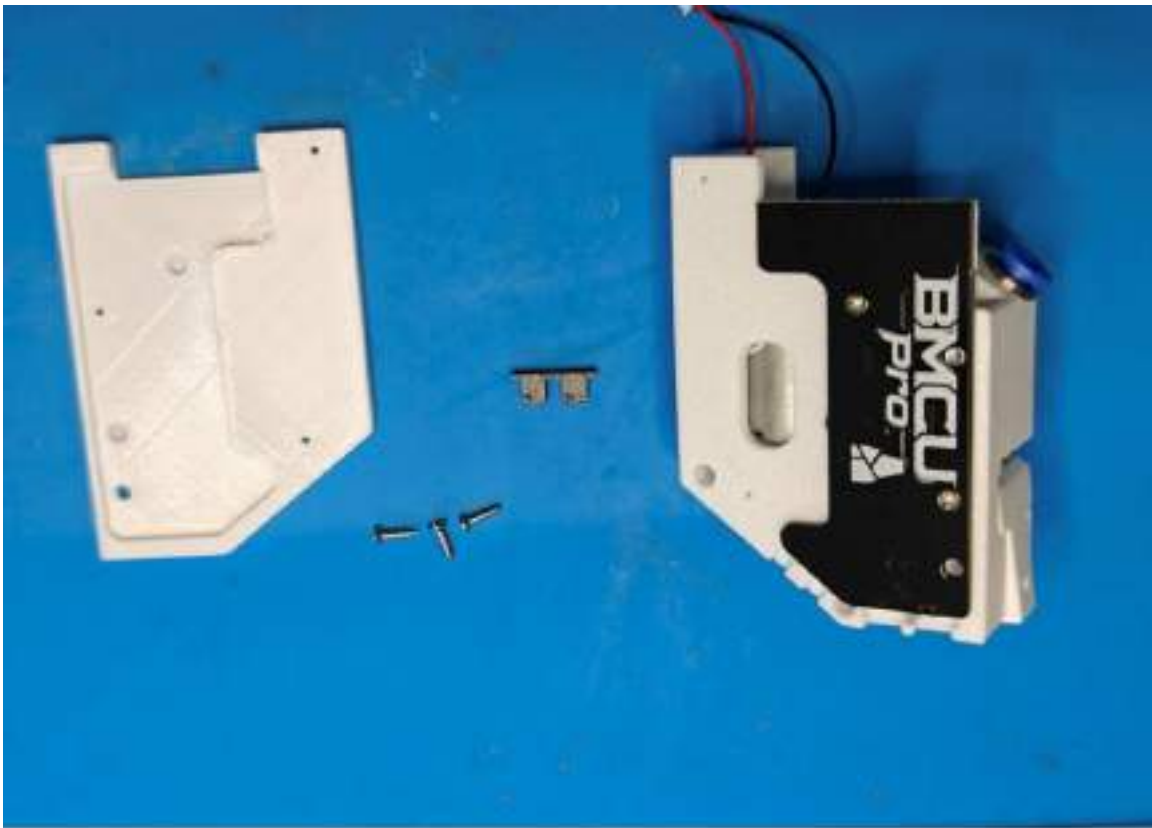


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● 47mm f/1.8 1/100s ISO400

Take out the front cover, the three M2*8 self-tapping screws, and the button, and proceed with the installation



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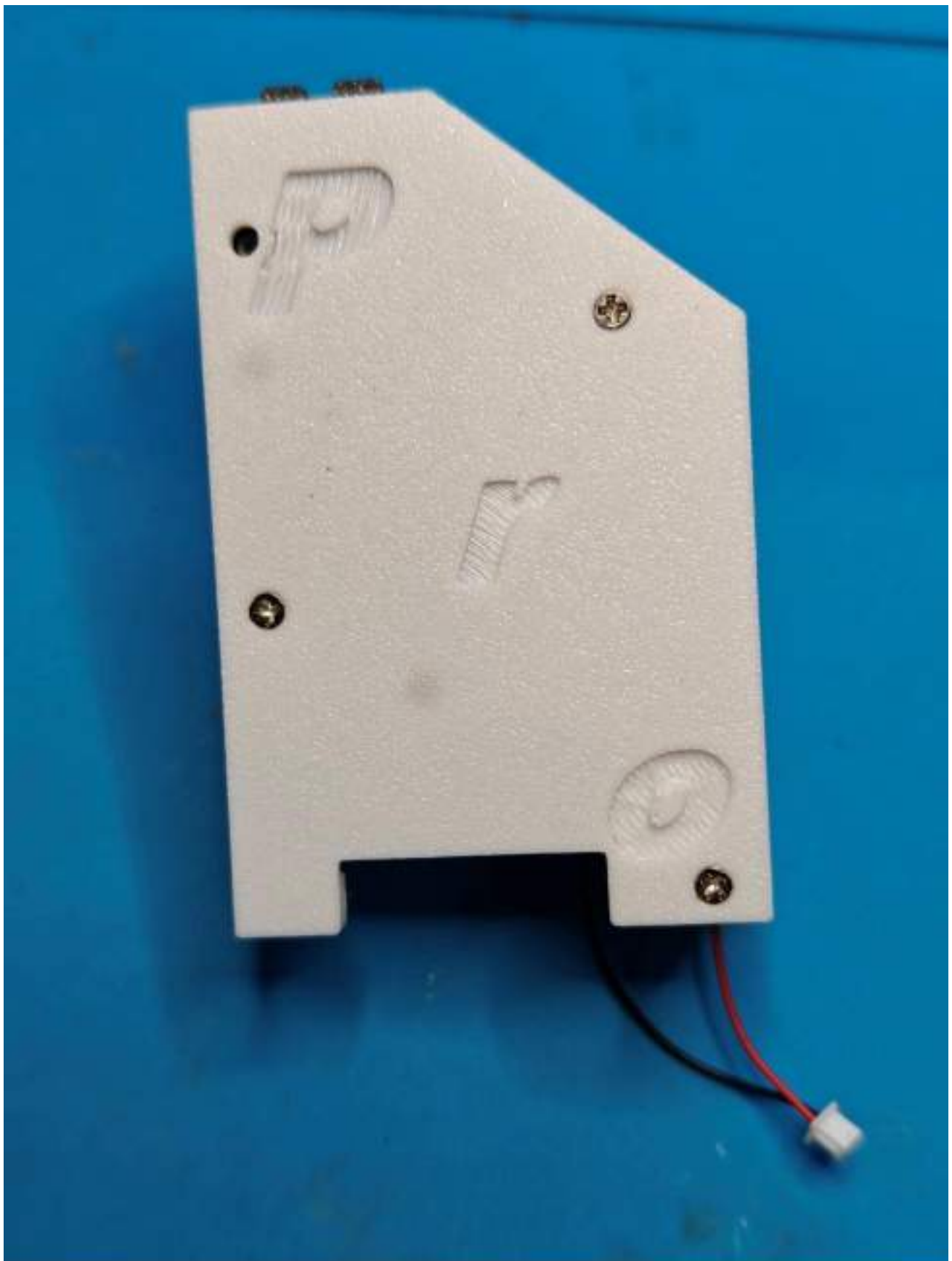
● 67mm f/1.8 1/100s ISO250



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● 67mm f/1.8 1/100s ISO800

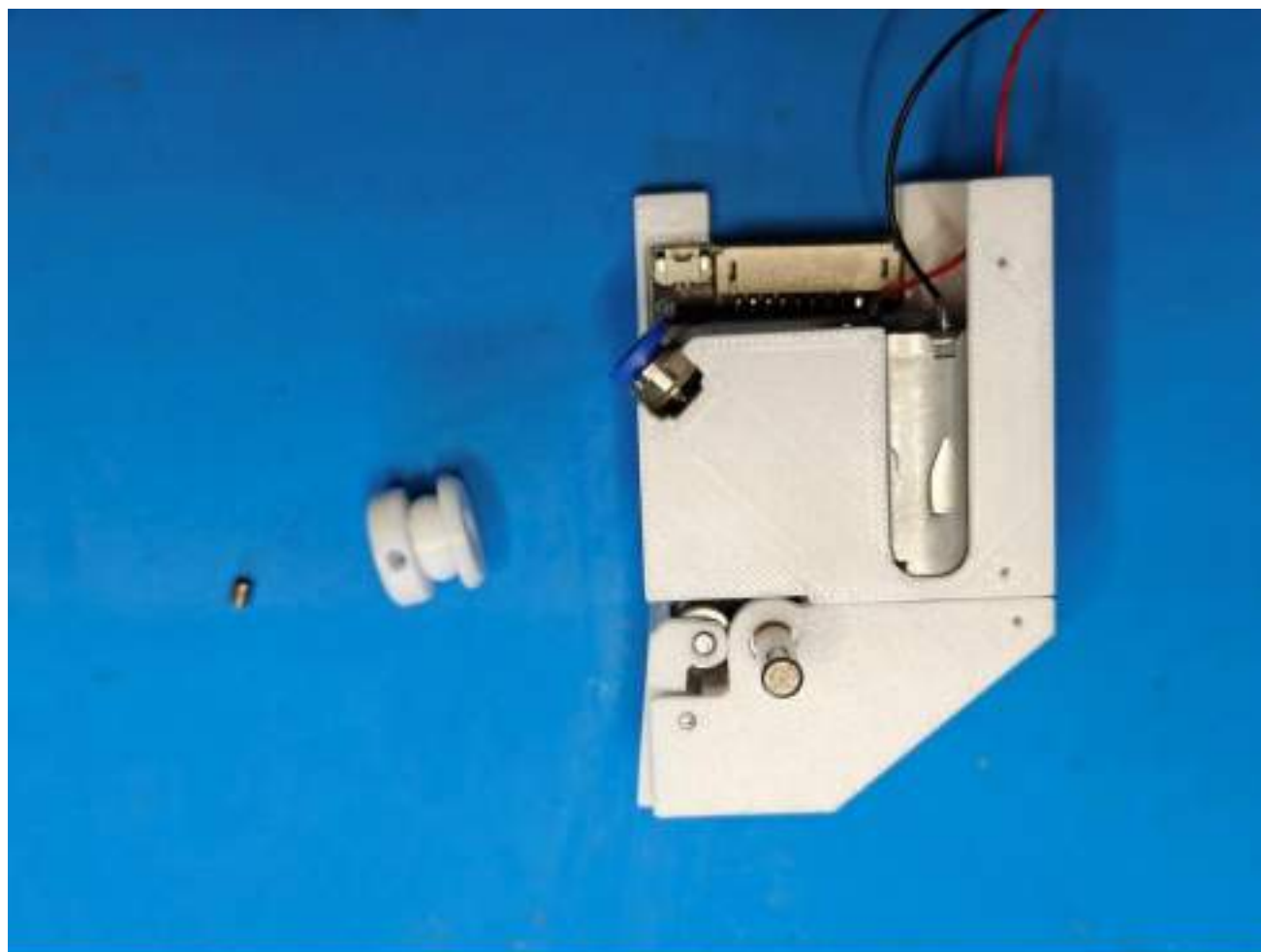


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● 47mm f/1.8 1/108s ISO200

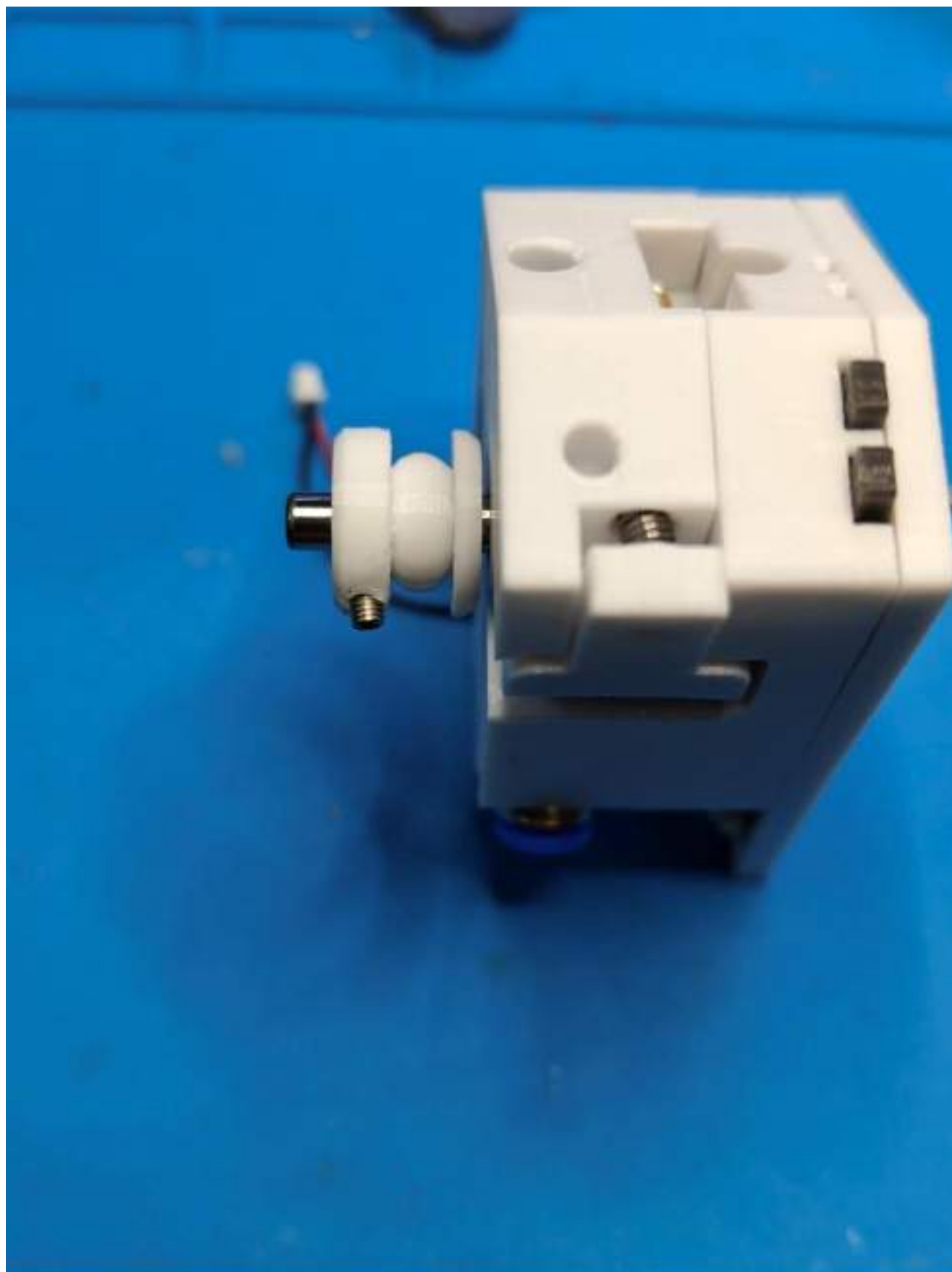
Now take out the small synchronous wheel and assemble it with an M3*5 top wire



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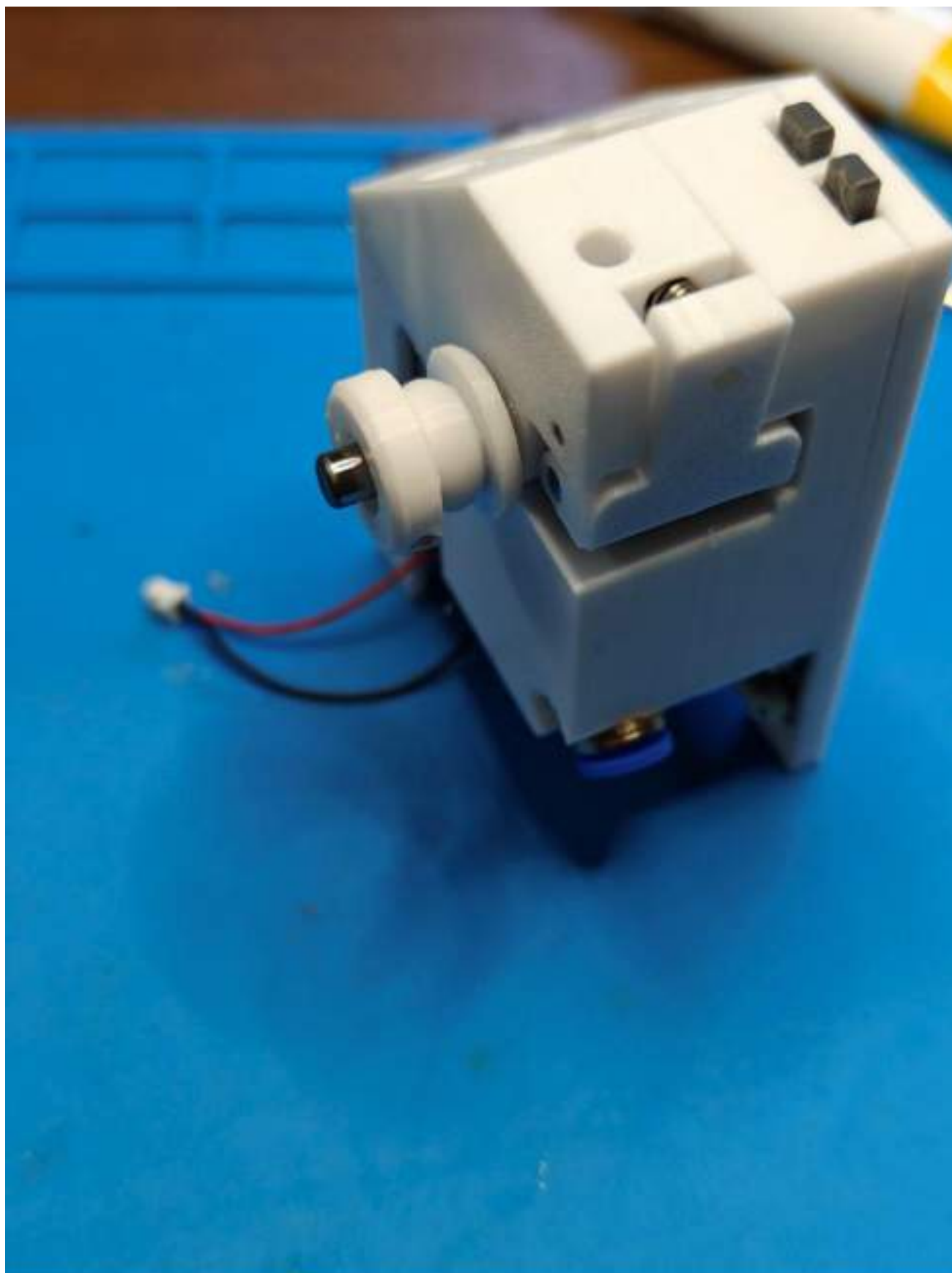
● 47mm f/1.8 1/100s ISO520



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● 47mm f/1.8 1/100s ISO250

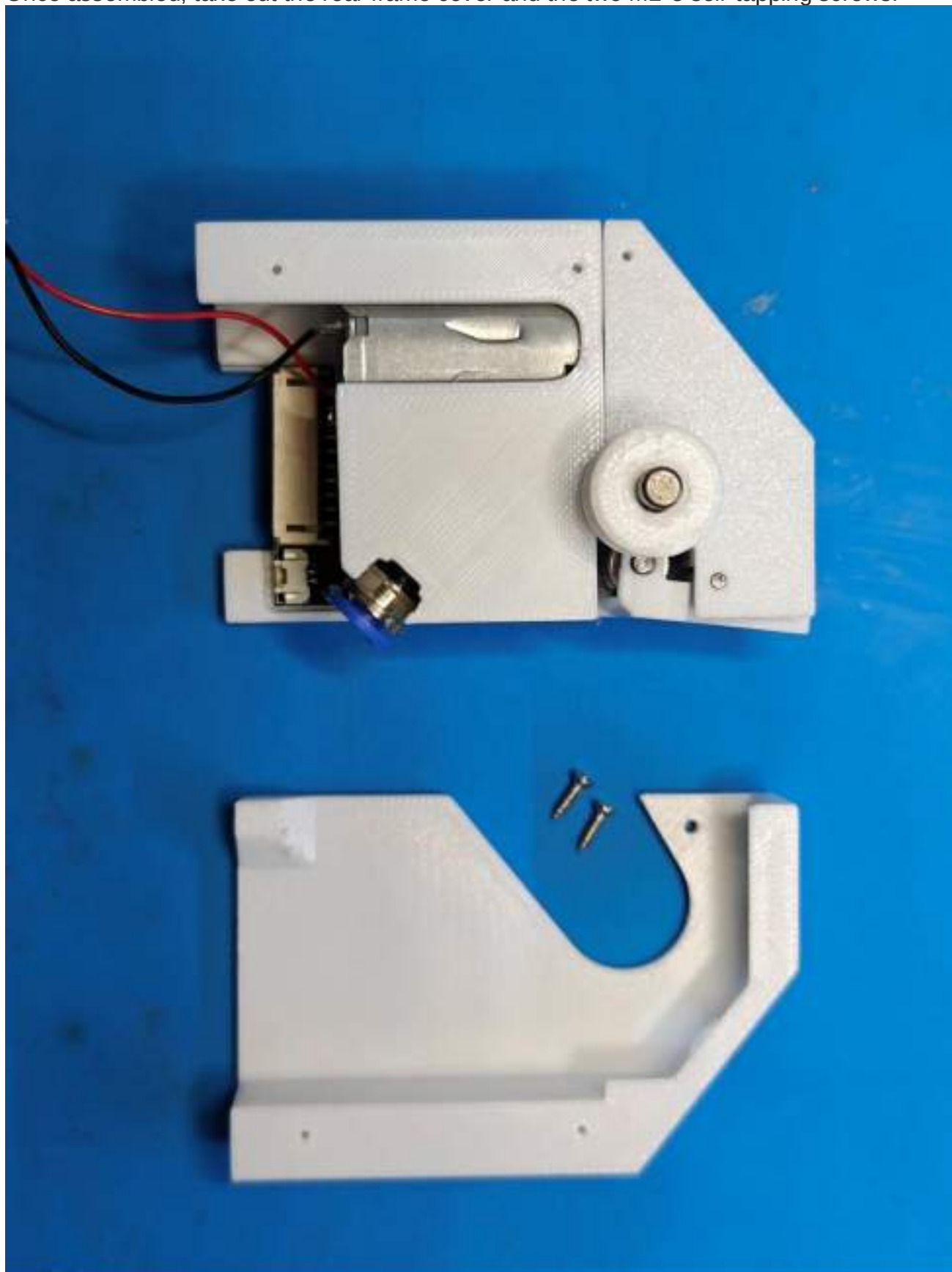


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● 47mm f/1.8 1/100s ISO320

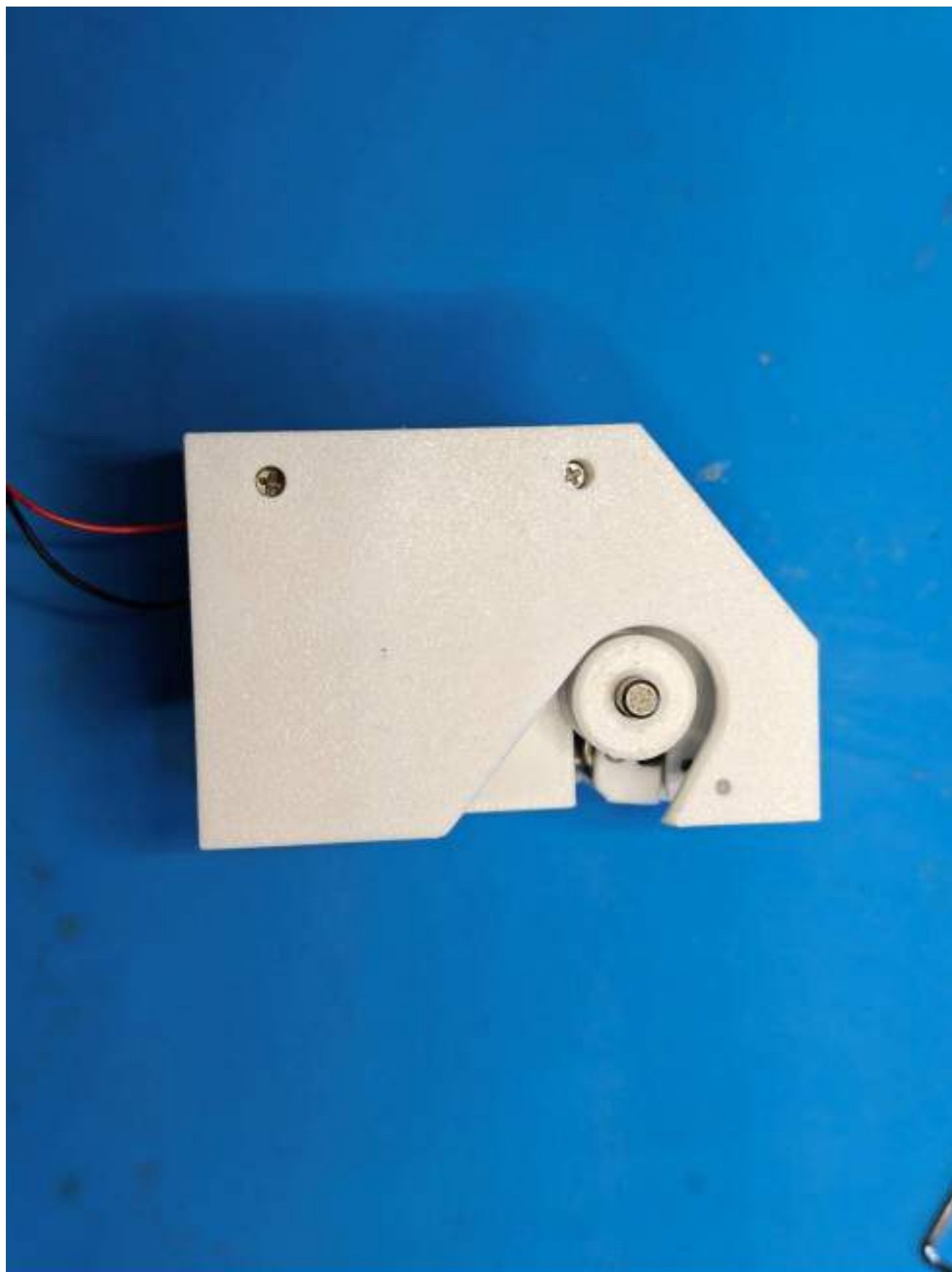
Once assembled, take out the rear frame cover and the two M2*8 self-tapping screws.



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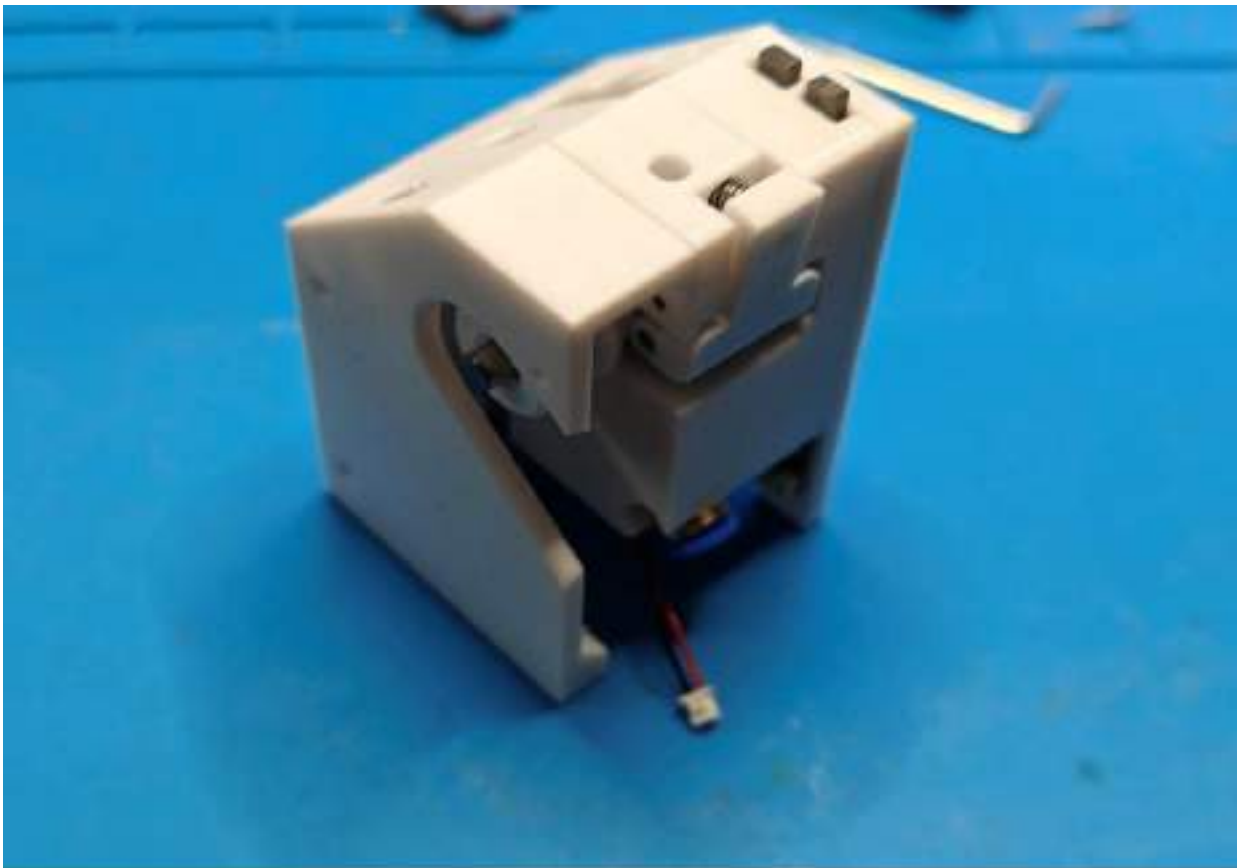
● 47mm f/1.8 1/100s ISO320



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● 47mm f/1.8 1/100s ISO320



OPPO Find X7 Ultra

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● 47mm f/1.8 1/100s ISO400

Now, take out the top cover and install it.



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● 47mm f/1.8 1/100s ISO320



OPPO Find X7 Ultra

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47mm f/1.8 1/100s ISO320

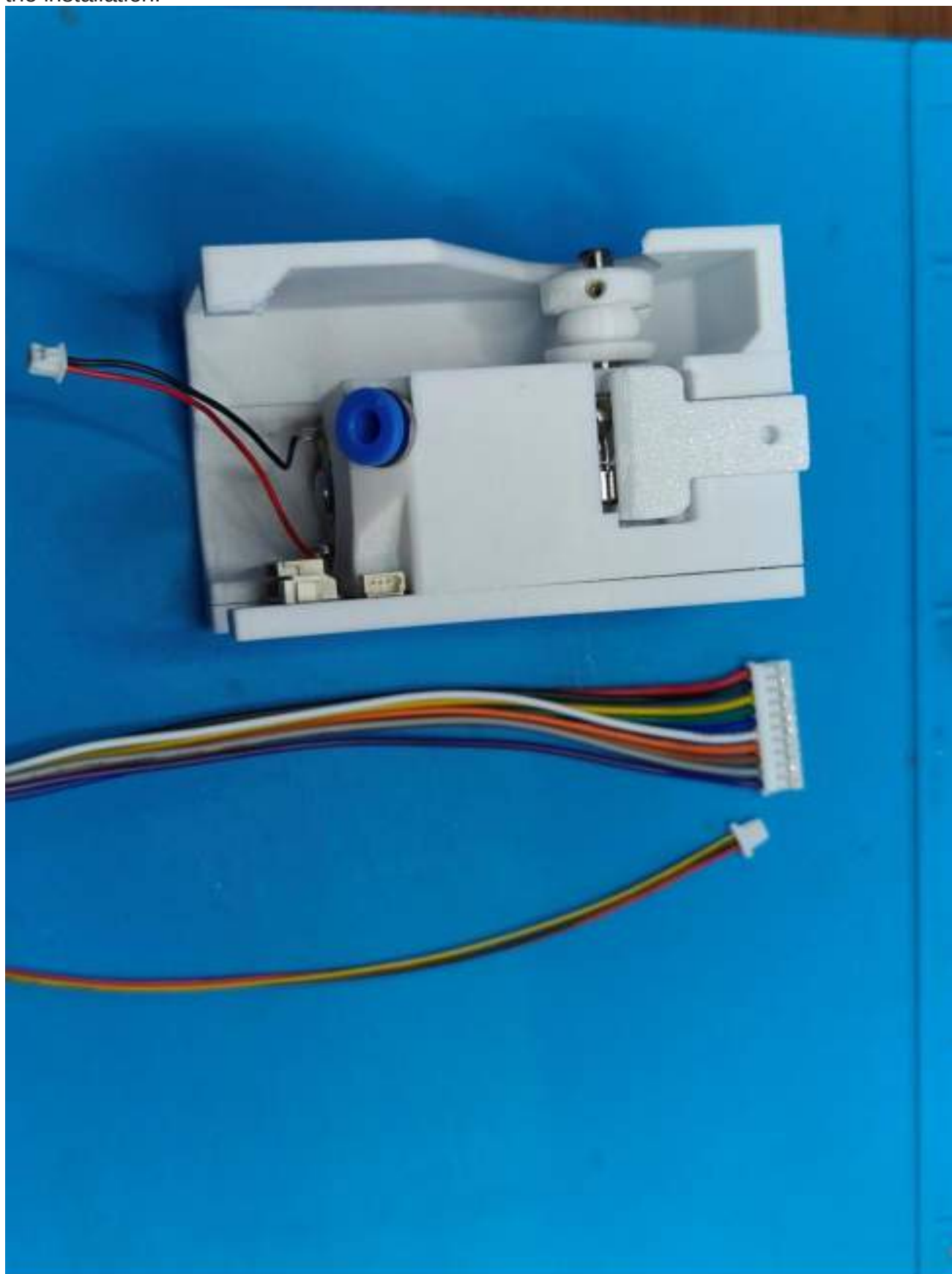


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47mm f/1.8 1/100s ISO200

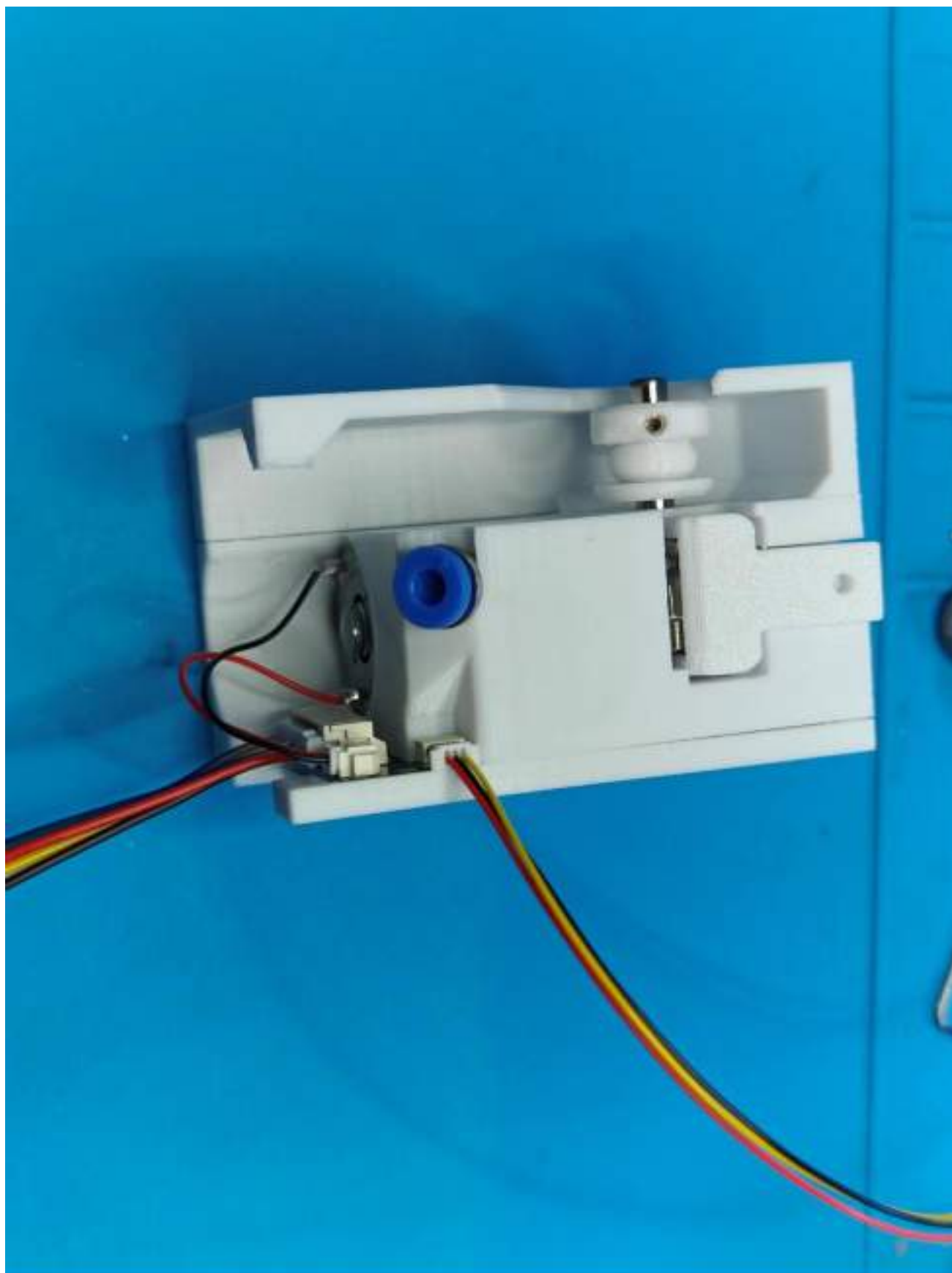
Next, take out the PH2.0 10-pin ribbon cable and the SH1.0 3-pin ribbon cable, and proceed with the installation.



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● 47mm f/1.8 1/124s ISO160

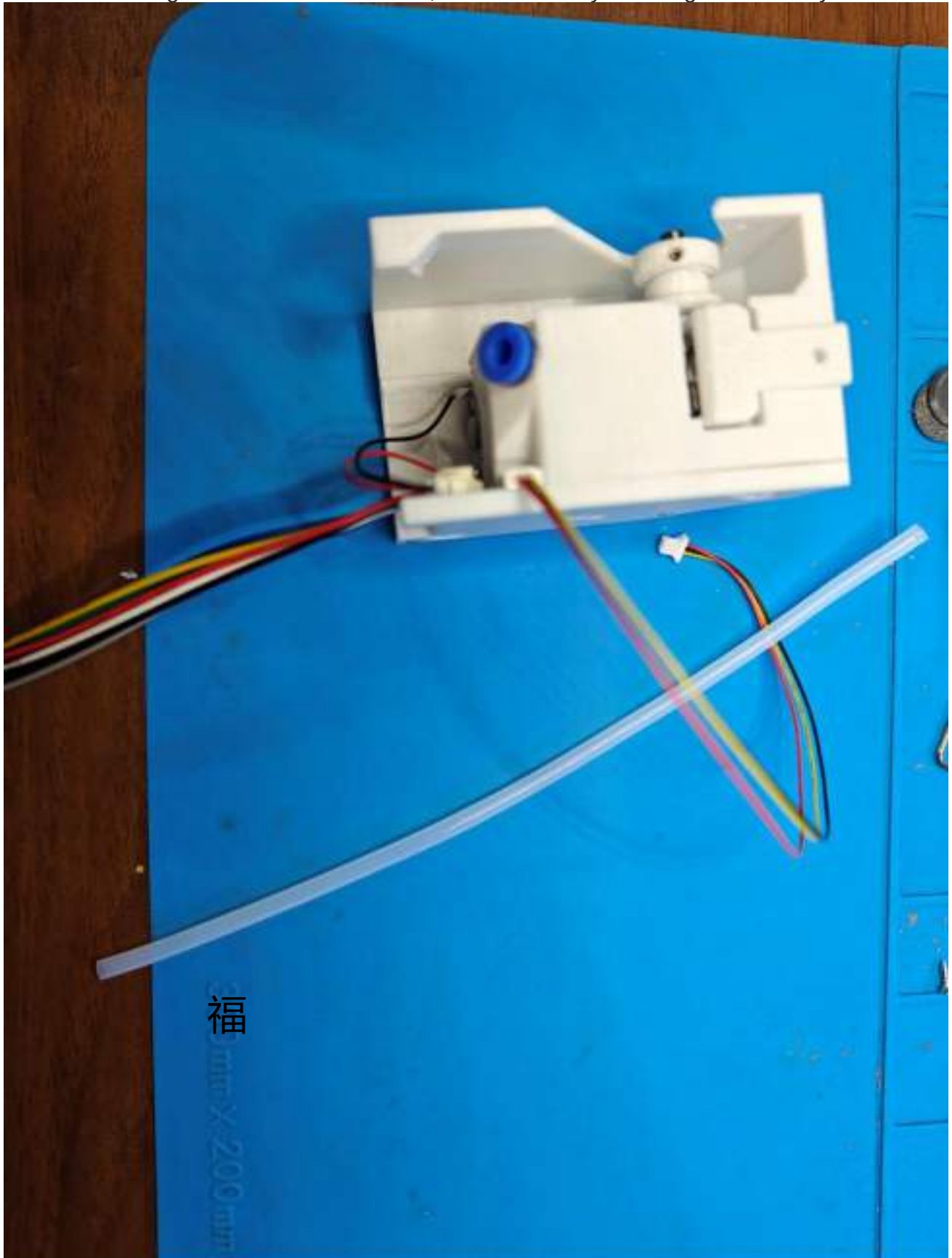


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● 47mm f/1.8 1/113s ISO160

Cut a 20 cm length of the 4x3 Teflon tube, then install it by inserting it all the way to the bottom.



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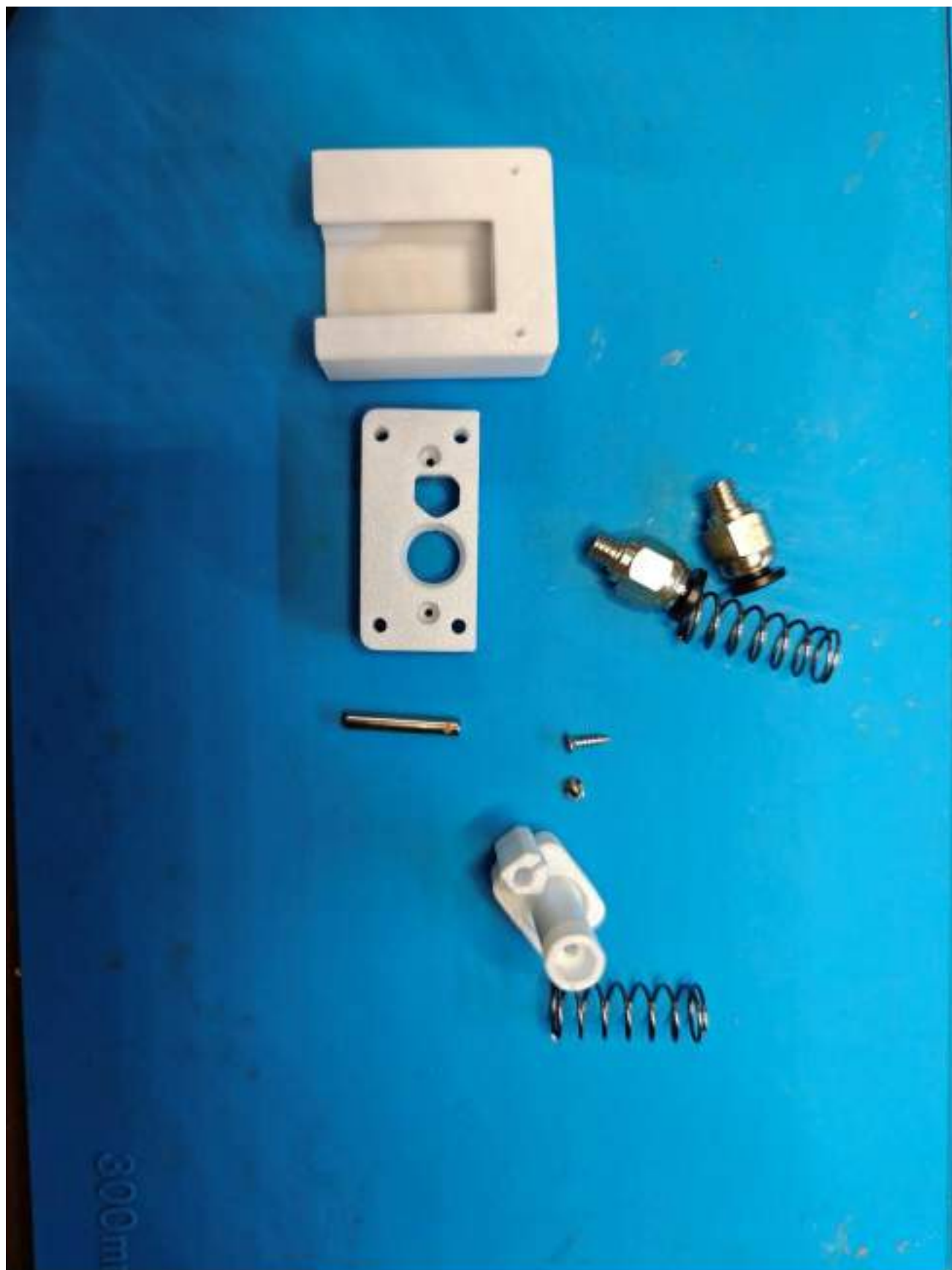
● 23mm f/1.8 1/100s ISO400

Congratulations on completing the extruder installation.

Bottom shell

Next is the tutorial for the rewinding part

First of all, take out the following items: buffer shell, cushioning, 3*20 cylindrical magnets, two PC4-M6 pneumatic heads (**require penetration, otherwise the consumables will be**ashed), two 0.7*10*25, and two M2*8 self-tapping screws



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● 23mm f/1.8 1/100s ISO500

The South Pole faces upward



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● 47mm f/1.8 1/100s ISO400

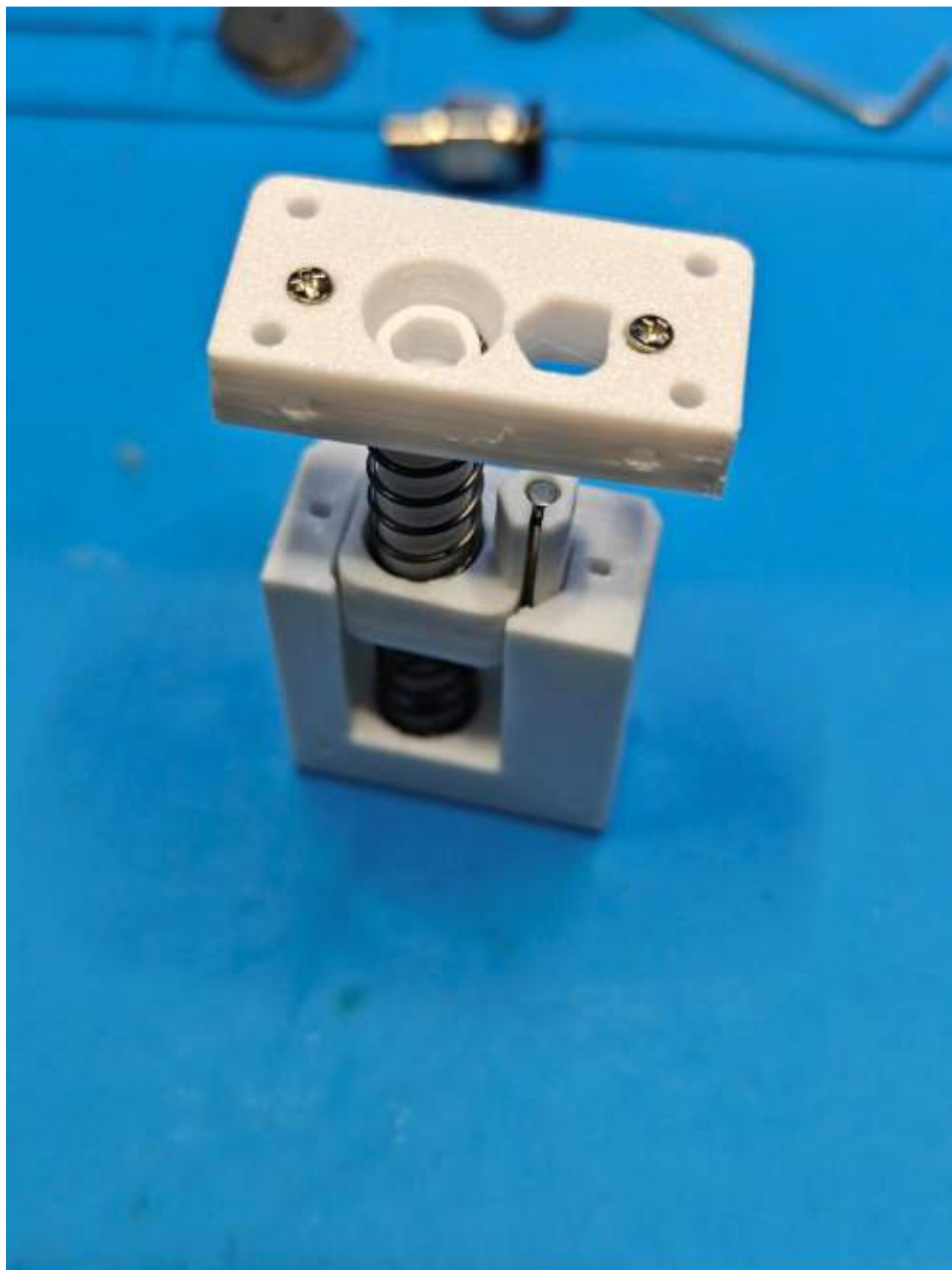
Press the magnet all the way down.



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● 47mm f/1.8 1/100s ISO400



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● 47mm f/1.8 1/100s ISO320

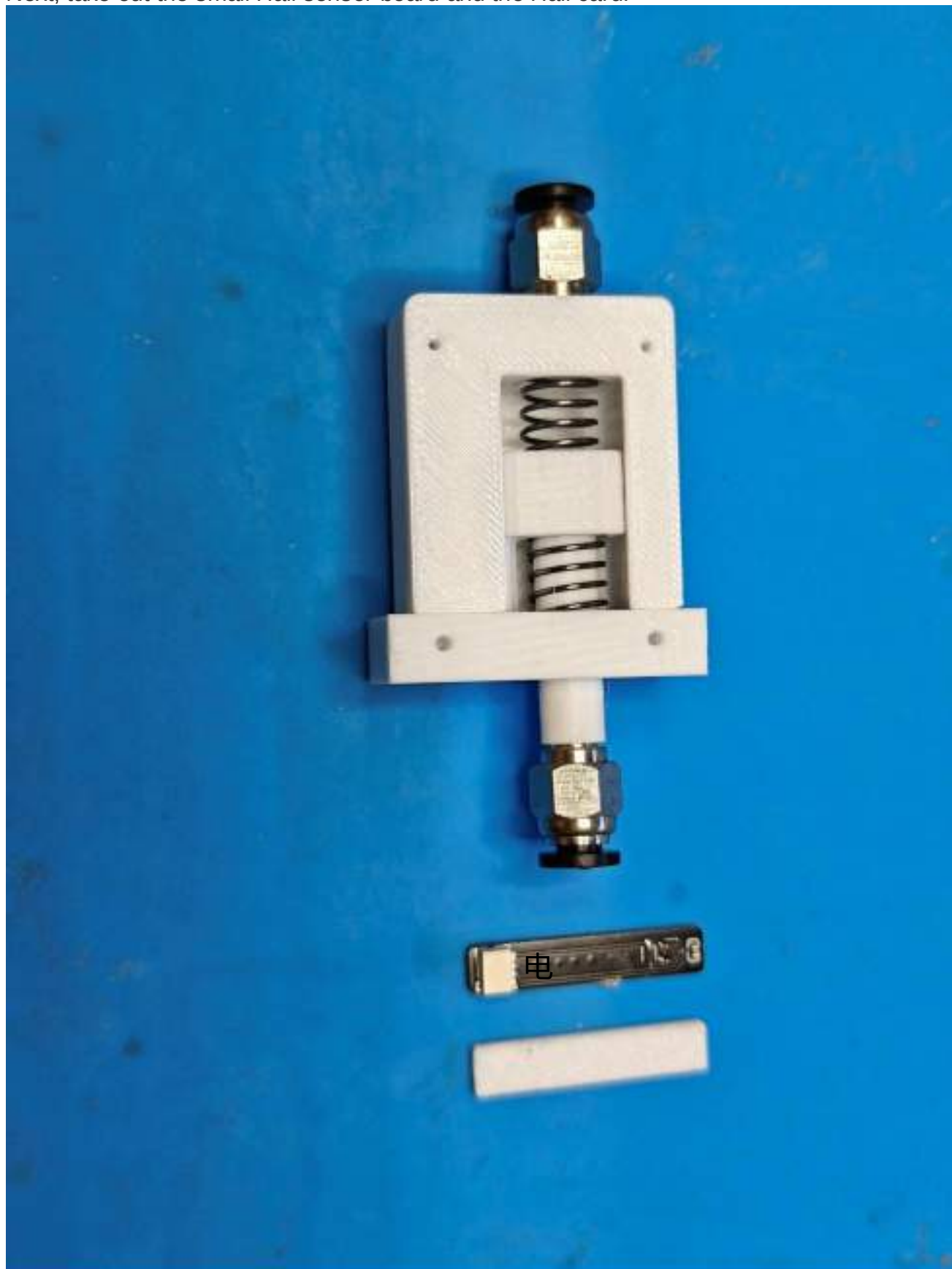


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● 47mm f/1.8 1/100s ISO320

Next, take out the small Hall sensor board and the Hall card.



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● 47mm f/1.8 1/100s ISO250



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● 47mm f/1.8 1/100s ISO400



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47mm f/1.8 1/100s ISO400



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47mm f/1.8 1/100s ISO320

Next is the installation of the front roller assembly.

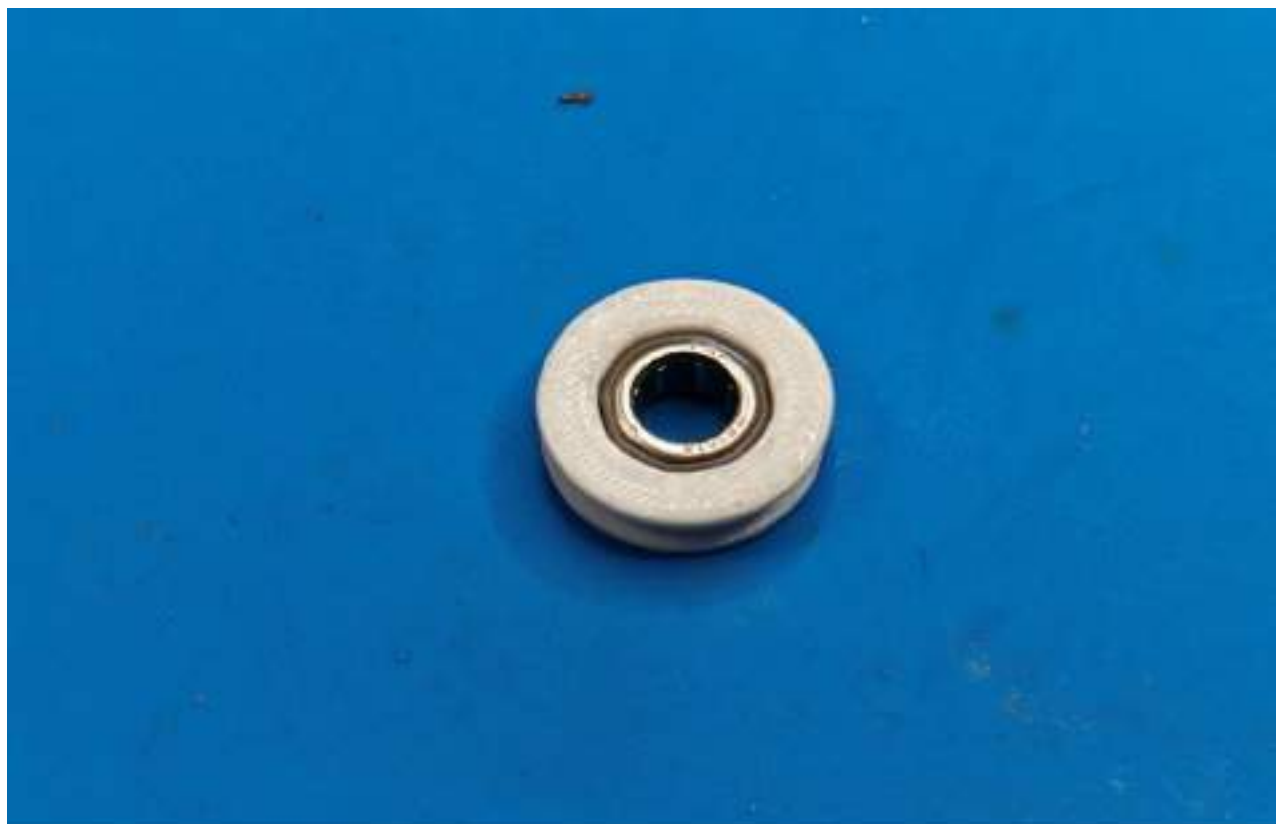
You will need to retrieve the 3D-printed front wheel component, the limit post, the large timing pulley, two 608ZZ bearings, an 8×80 dowel pin, a one-way bearing, a non-slip ring, and two M3×10 set screws.



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47mm f/1.8 1/100s ISO600

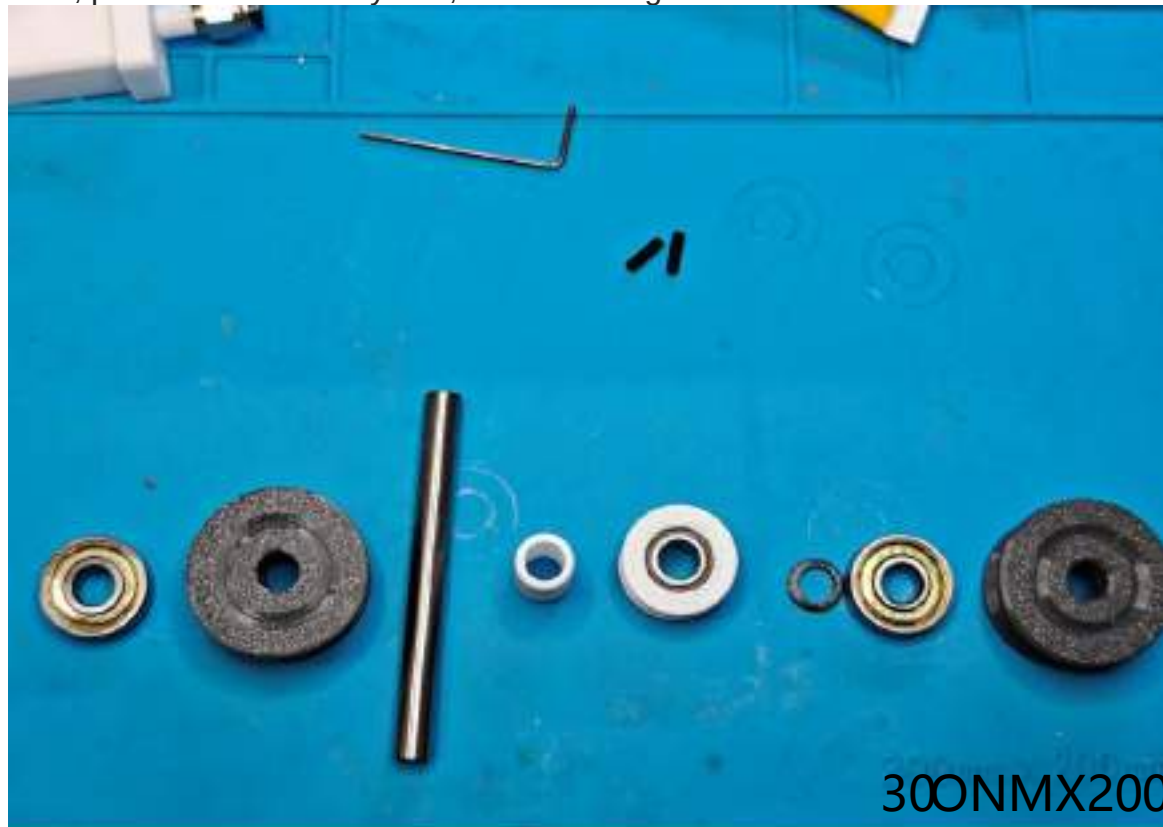


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72mm f/2.6 1/100s ISO520

Next, place them in one by one, from left to right.



300NMX200U

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47mm 1/1.8 1/100s ISO520

Note that the side of the one-way bearing with the markings should face upwards.



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72mm f/2.8 1/100s 180320



OPPO Find X7 Ultra

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72mm 1/2.8 1/100s ISO400



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72mm 1/2.8 1/100s ISO640



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● 72mm f/2.6 1/100s ISO500

Slip on the anti-slip ring.



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47mm 1/1.8 1/100s ISO320

Next up is the rear roller assembly: take out the 3D-printed rear wheel part and two 608ZZ bearings



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47mm f/1.8 1/100s ISO520

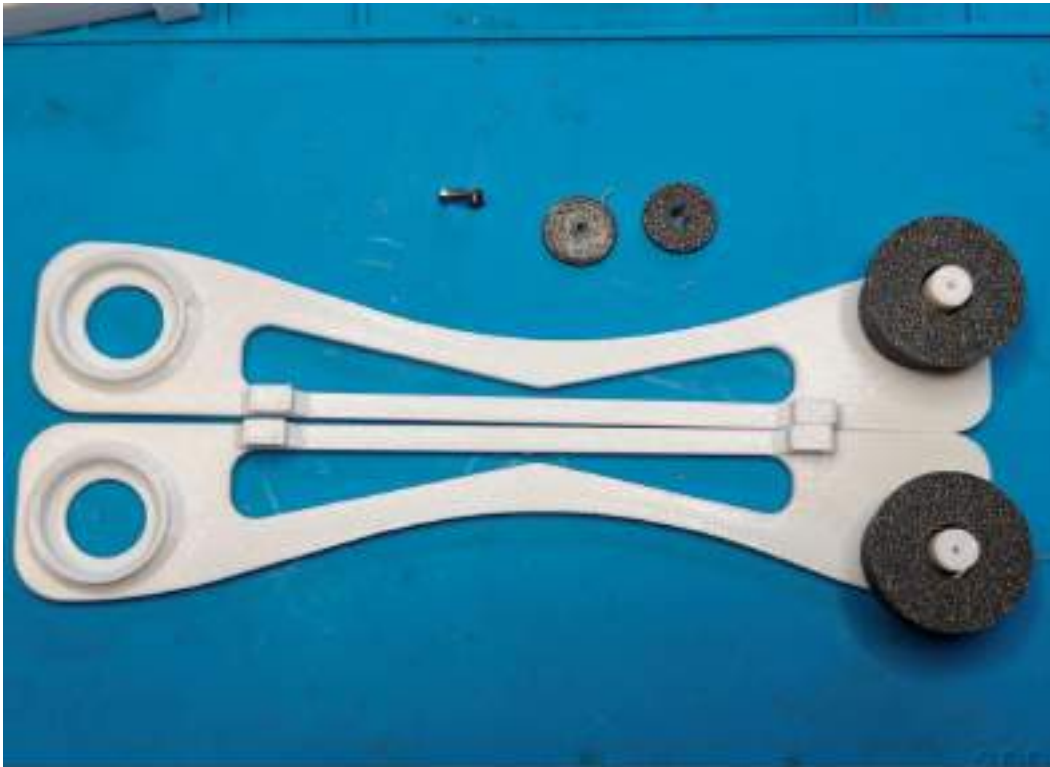


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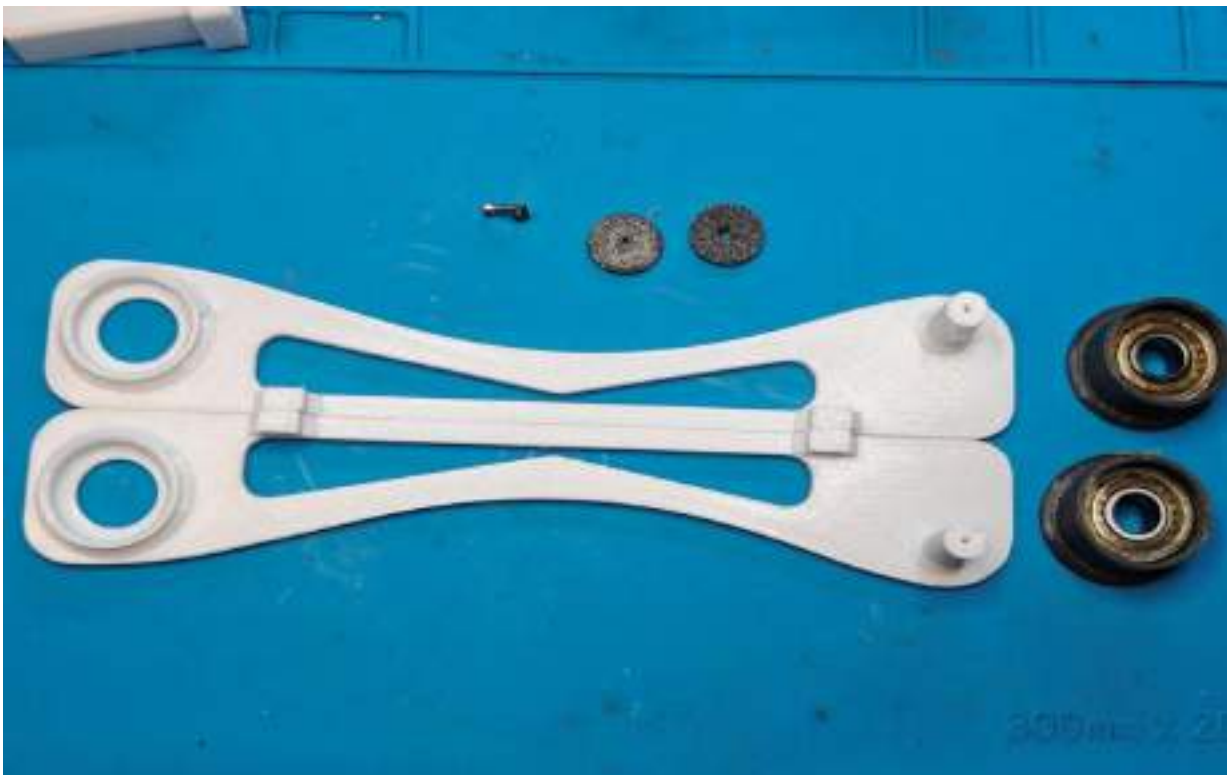
47mm f/1.8 1/100s ISO520

Next, take out the printed base, the rear wheel stopper plate, and two M2*8 self-tapping screws, and proceed with the installation.



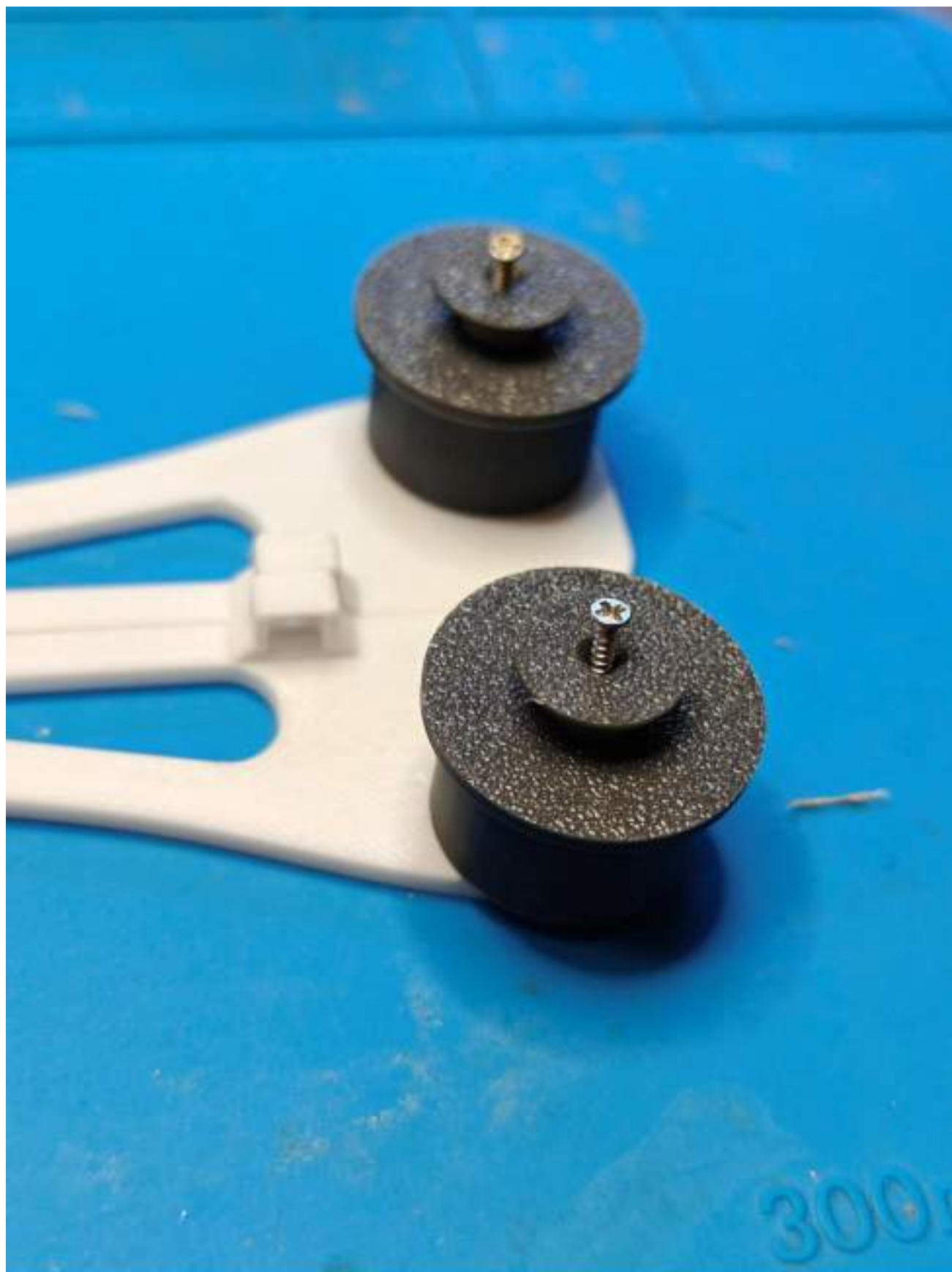
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47mm f/1.8 1/100s ISO200



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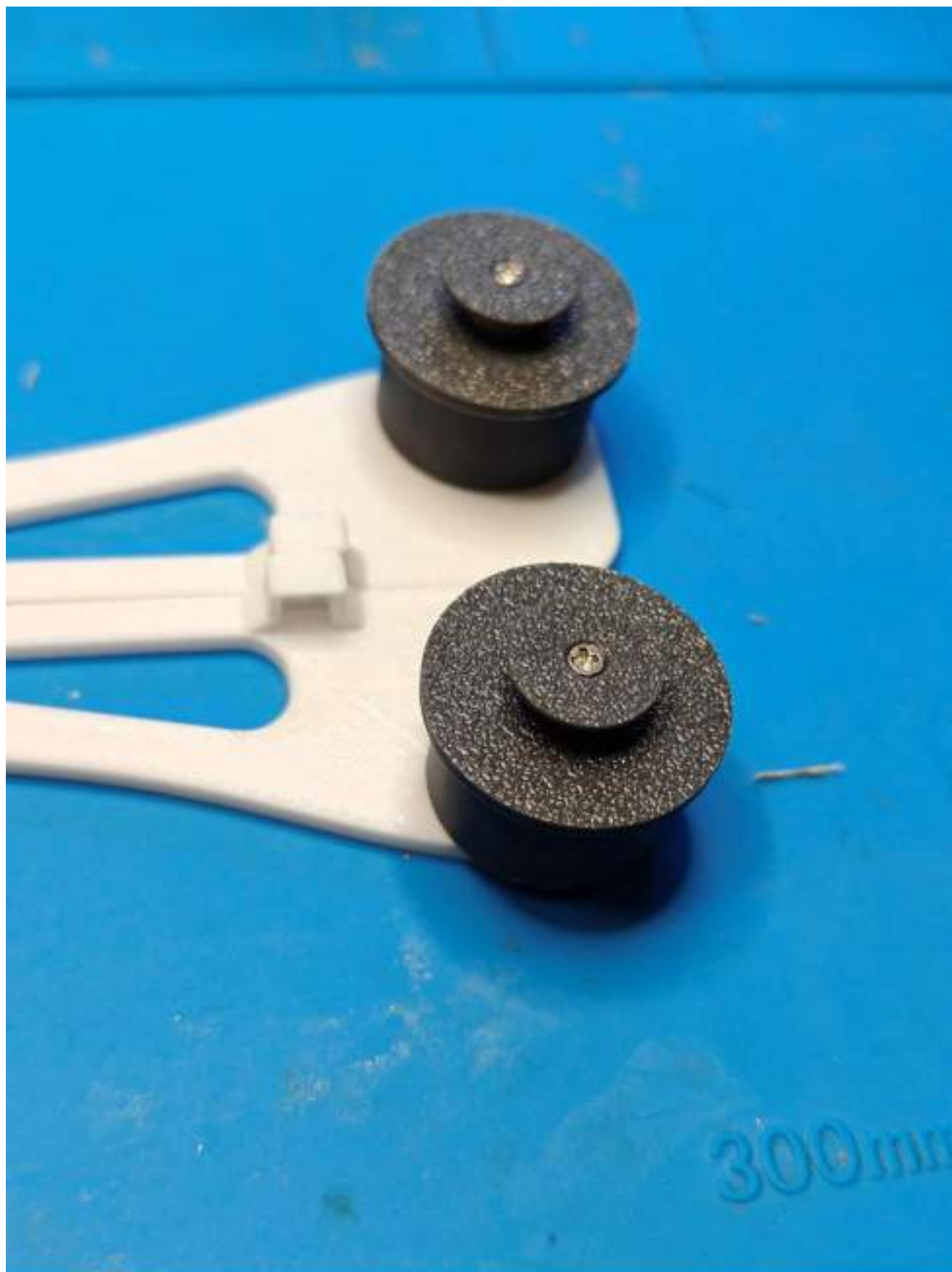
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47mm f/1.8 1/100s ISO200



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● 47mm f/1.8 1/100s ISO400



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● 47mm f/1.8 1/100s ISO400

nstallation is complete. Take out the M3 square nuts.



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● 47mm f/1.8 1/100s ISO320



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● 47mm f/1.8 1/100s ISO320

Take out the bottom shell, the front roller, and the four M3*12 screws.



Tighten it slightly first to position it.





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● 47mm f/1.8 1/100s ISO320

Next, take out the assembled buffer and the three M2*8 self-tapping screws to secure the buffer in



OPPO Find X7 Ultra

HASSELBLAD

47mm f/1.8 1/100s ISO320

place.

First, tighten it slightly to secure its position.



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● 47mm f/1.8 1/100s ISO400



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● 47mm f/1.8 1/100s ISO320

Next, begin securing the front wheel—start by tightening the screws on one side.



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47mm f/1.8 1/100s ISO400



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47mm f/1.8 1/100s ISO500

Take out the 35×5×1 rubber band and place it inside the front roller.



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47mm f/1.8 1/100s ISO600

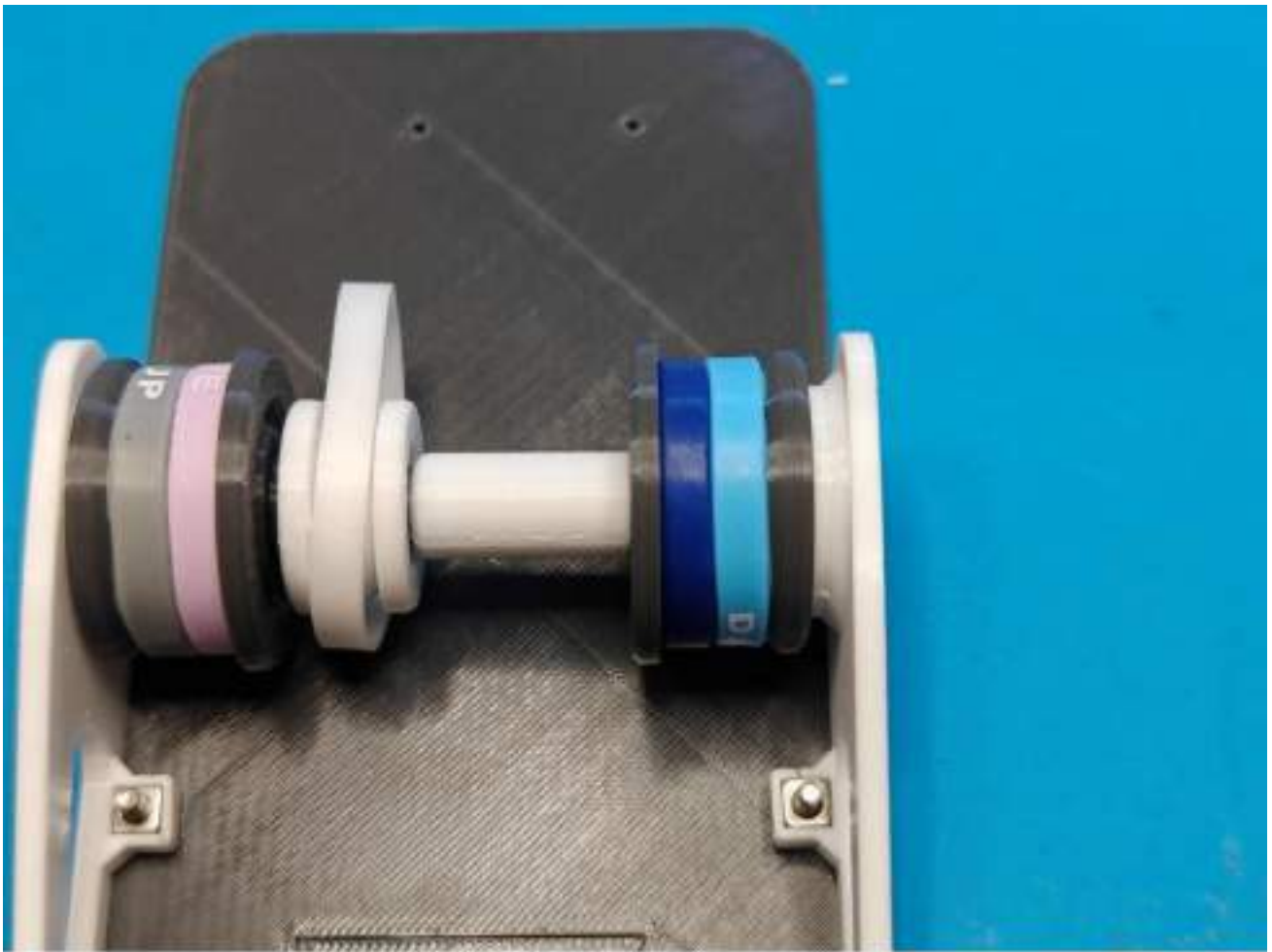
Then tighten the screw on the other side



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47mm f/1.8 1/100s ISO600



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47mm f/1.8 1/100s ISO320

If the front wheel margin is too large, readjust the position of the front wheel and do not shake too much from side to side



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47mm f/1.8 1/100s ISO400



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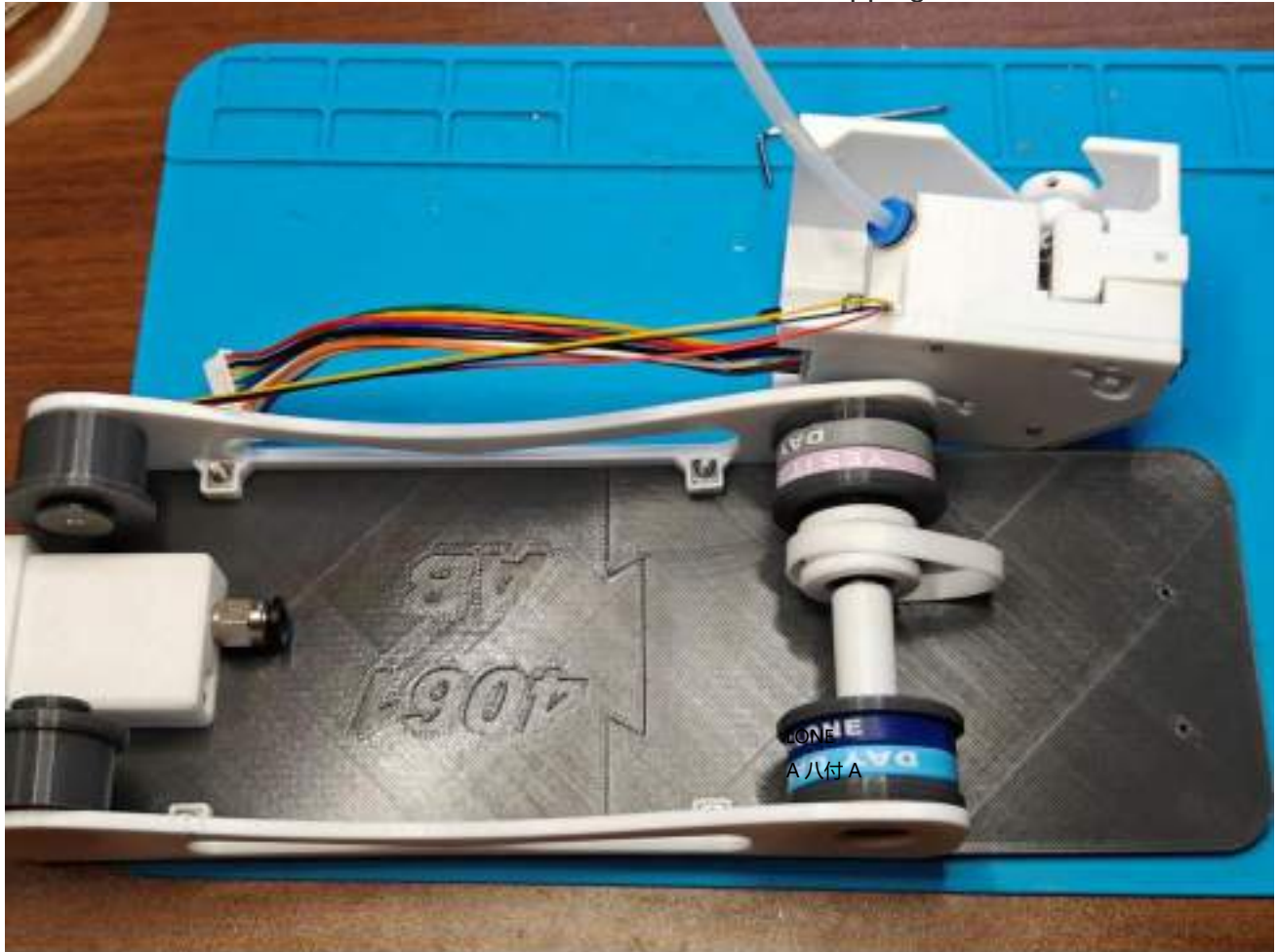
47mm f/1.8 1/100s ISO520

Now the bottom shell rewinding part has been partially completed
Next is the installation of the extruder and the bottom shell

Extruder bottom shell consolidation

Below is the tutorial for merging parts

Take out the bottom shell and extruder, and three M2*8 selftapping screws

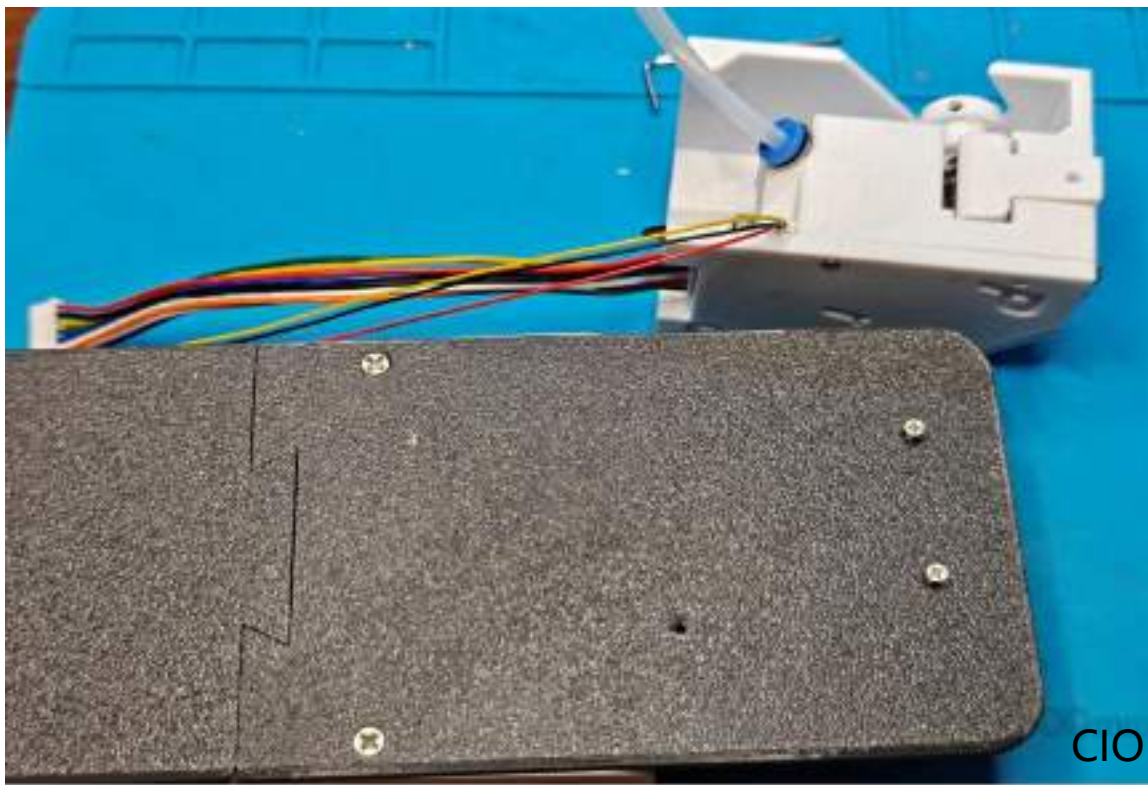


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47mm f/1.8 1/100s ISO320

Twist it a little first to position it



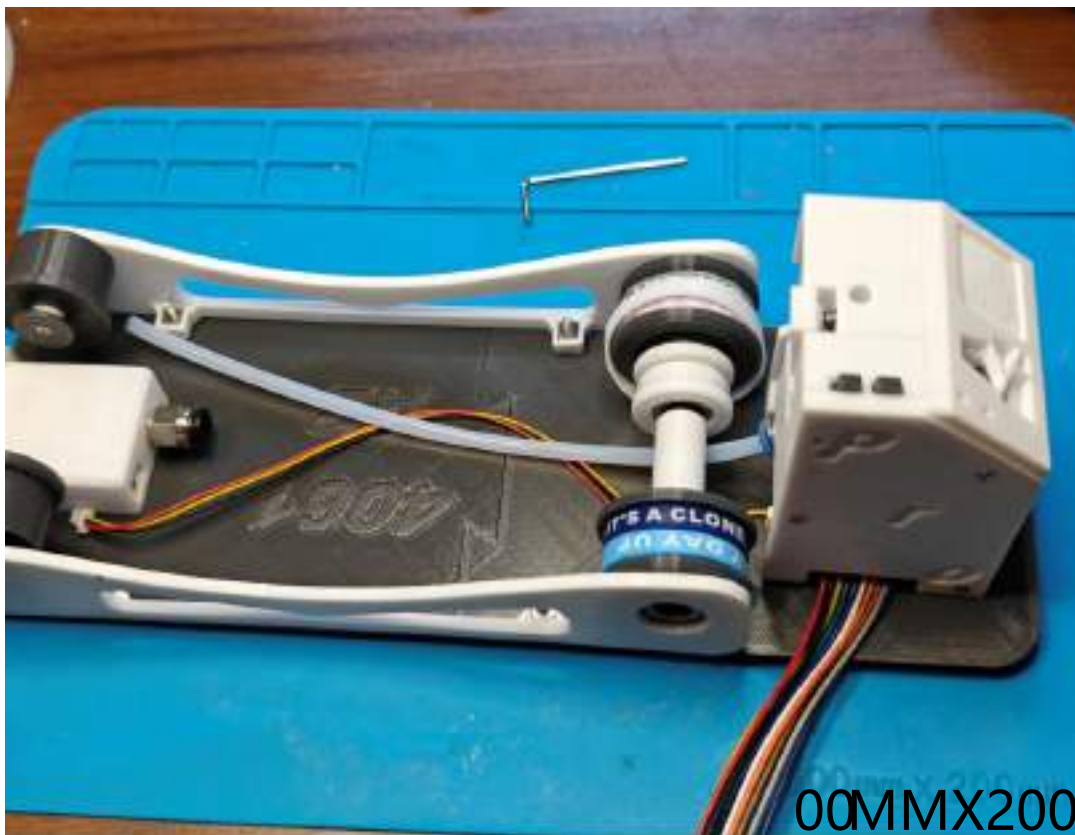
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47mm f/1.8 1/100s ISO400

The thread is all passed under the front wheel, and then the last screw is tightened

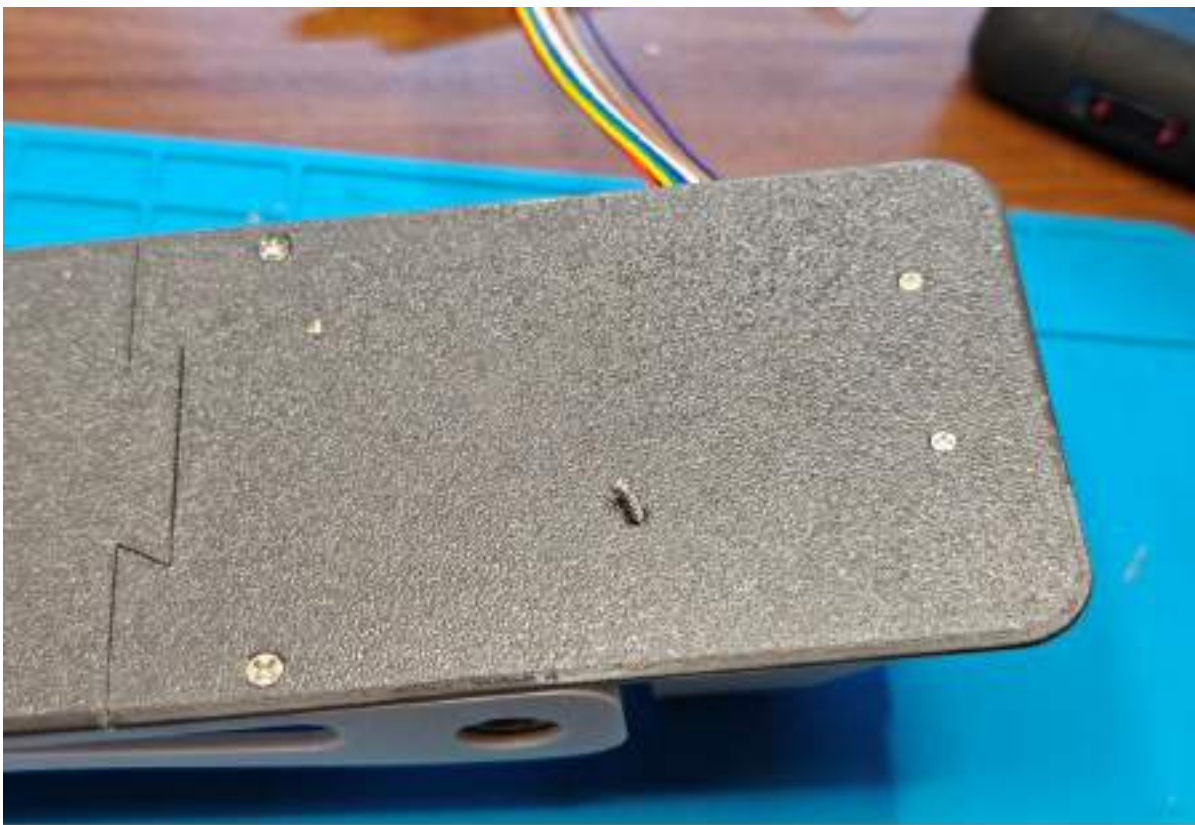


00MMX200M

OPPO Find X7 Ultra

HASSELBLAD

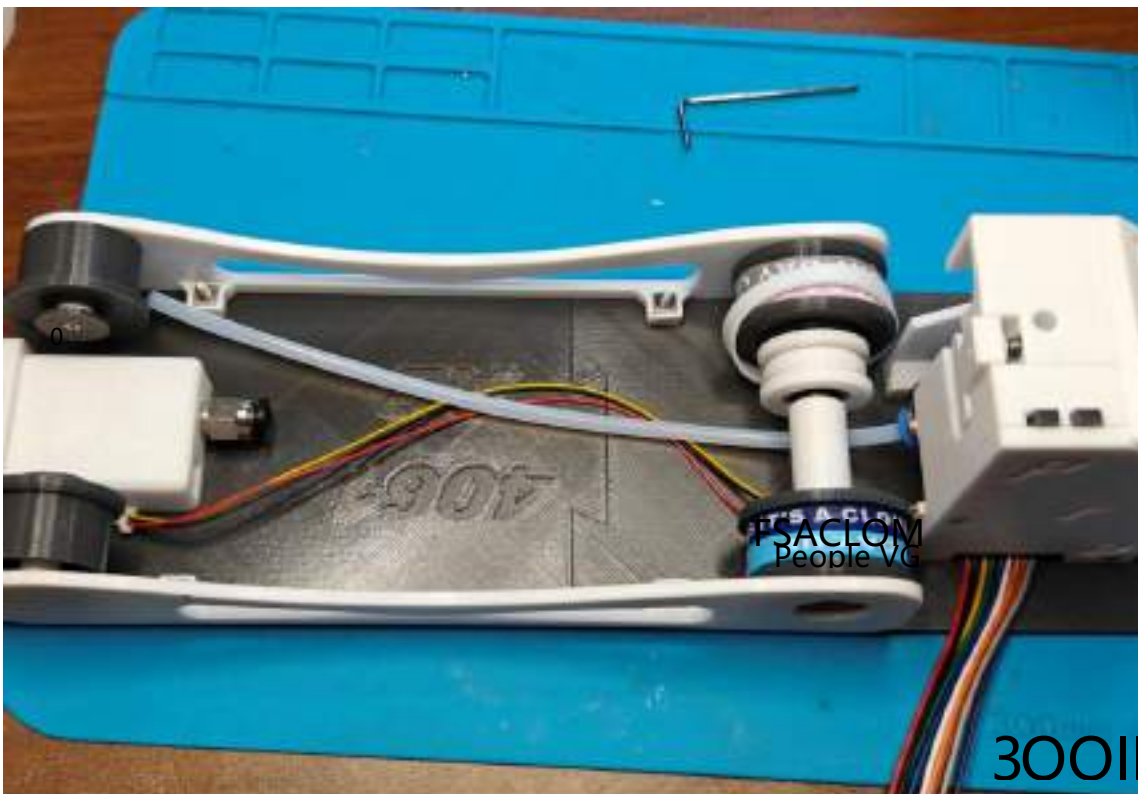
47mm f/1.8 1/100s ISO320



OPPO Find X7 Ultra

HASSELBLAD

● 67mm f/1.8 1/100s ISO640



OPPO Find X7 Ultra

HASSELBLAD

● 67mm f/1.8 1/100s ISO320

30011C

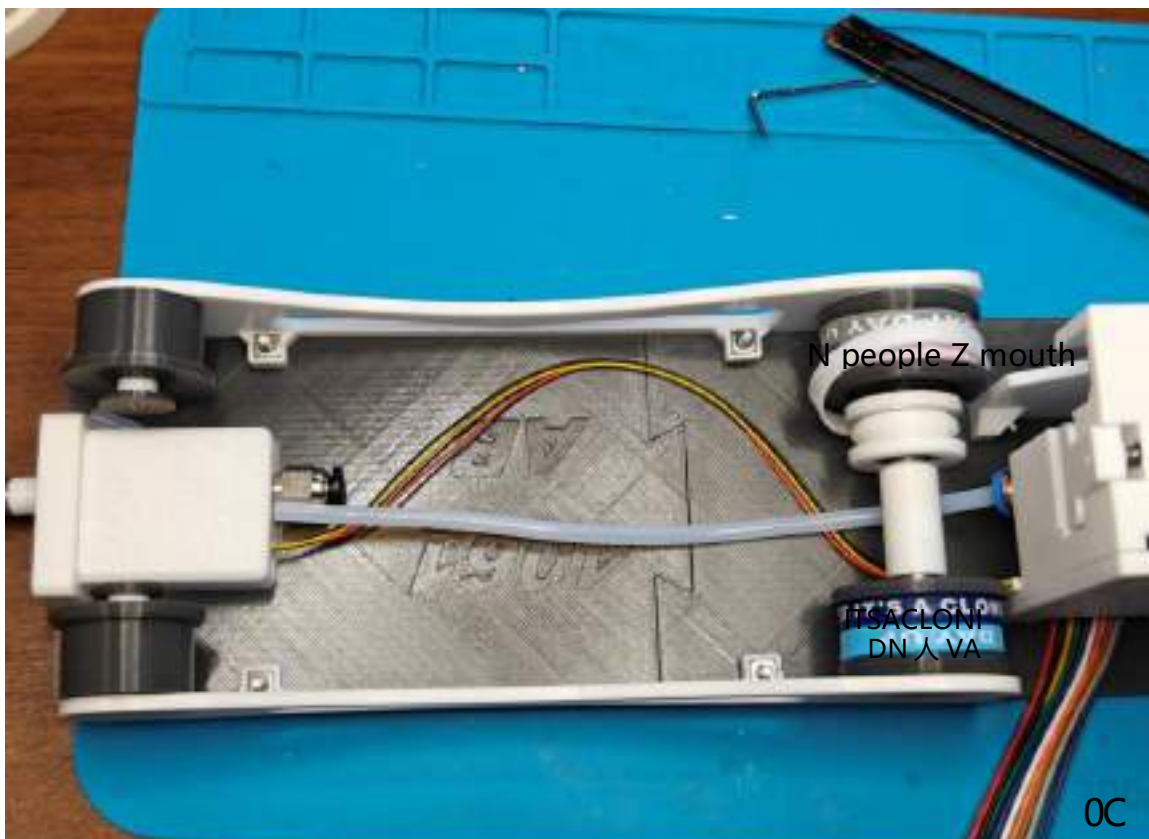
Next is the installation part of the Hall wire and Teflon pipe



OPPO Find X7 Ultra

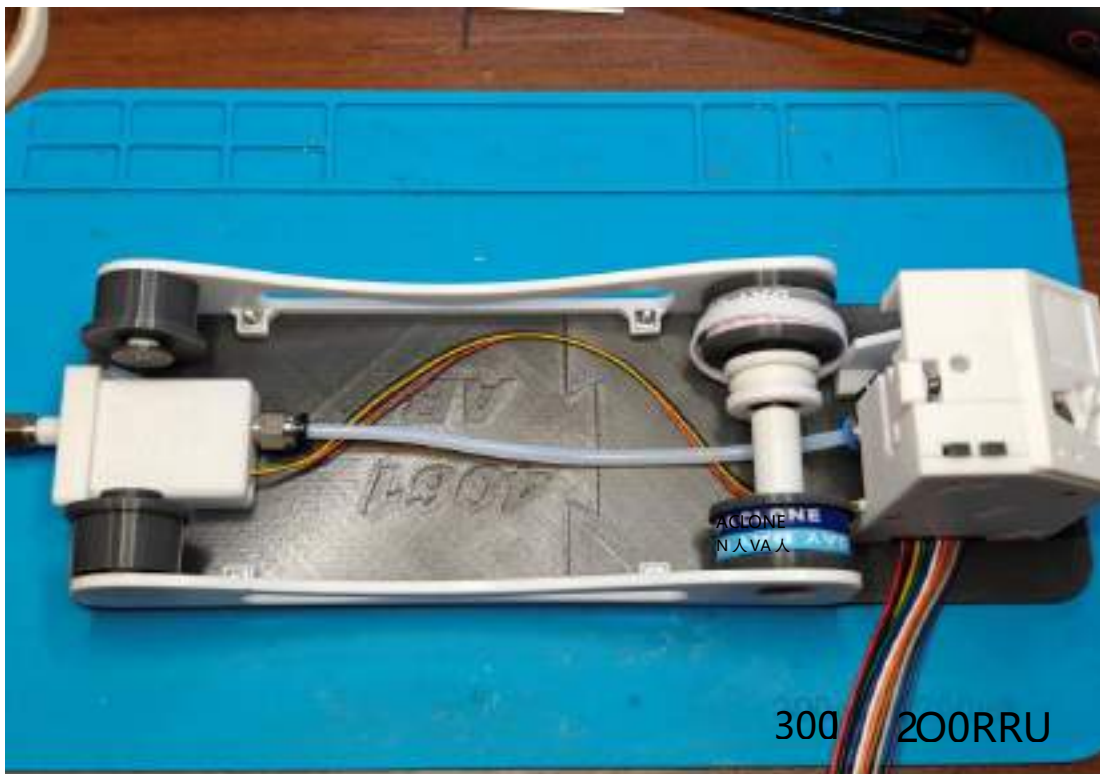
HASSELBLAD
47mm f/1.8 1/100s ISO320

The Teflon tube is cut to make slight contact with the top of the buffer shell



OPPO Find X7 Ultra

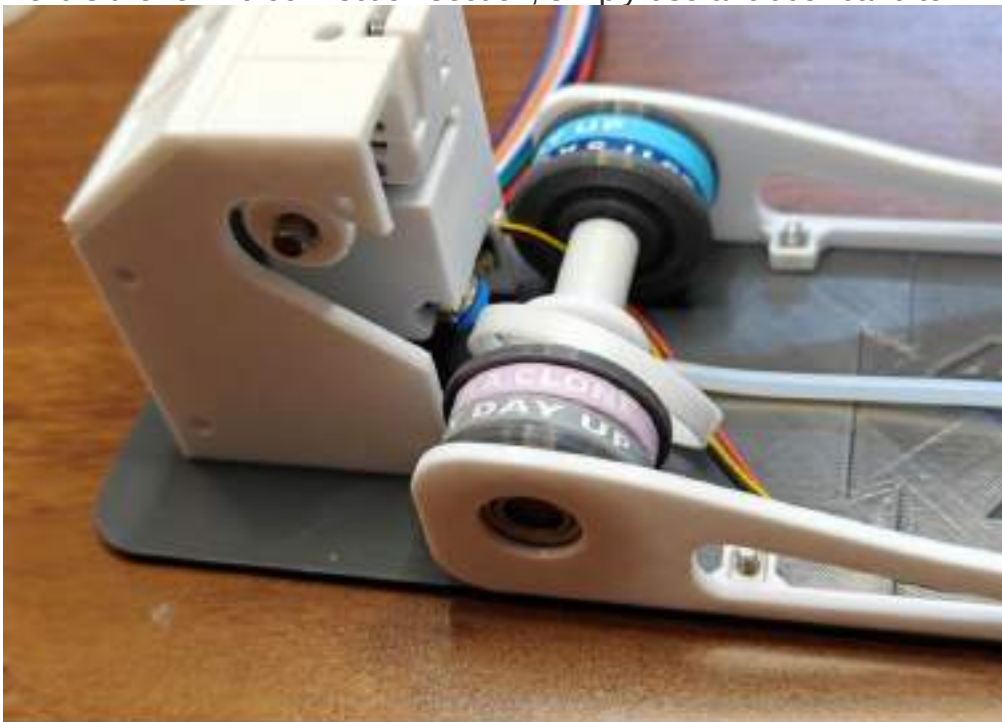
HASSELBLAD
47mm f/1.8 1/100s ISO320



OPPO Find X7 Ultra

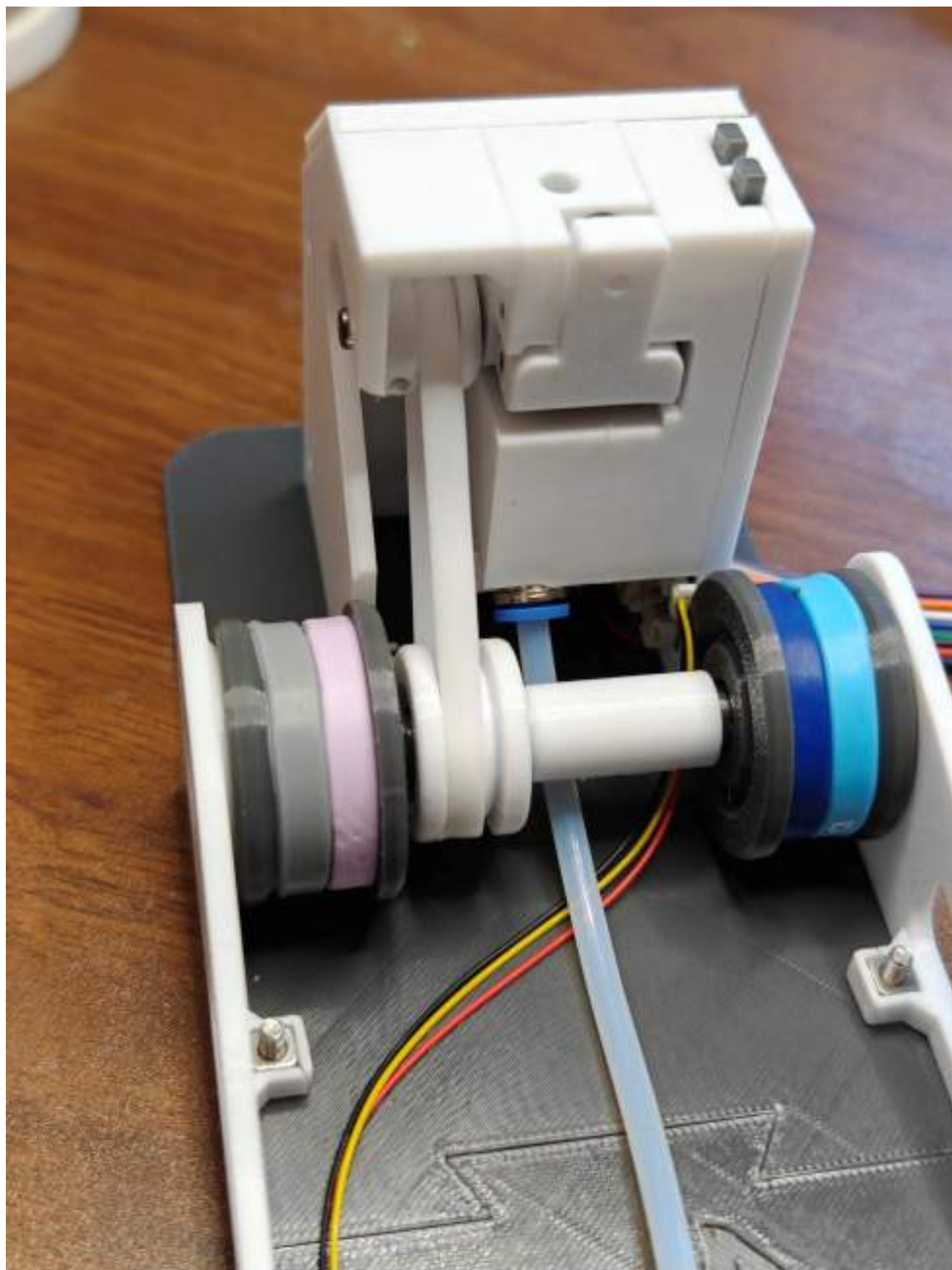
HASSELBLAD
 47mm f/1.8 1/100s ISO320

Next is the rewind connection section; simply use a rubber band to link it to the small timing pulley.



OPPO Find X7 Ultra

HASSELBLAD
 47mm f/1.8 1/100s ISO640

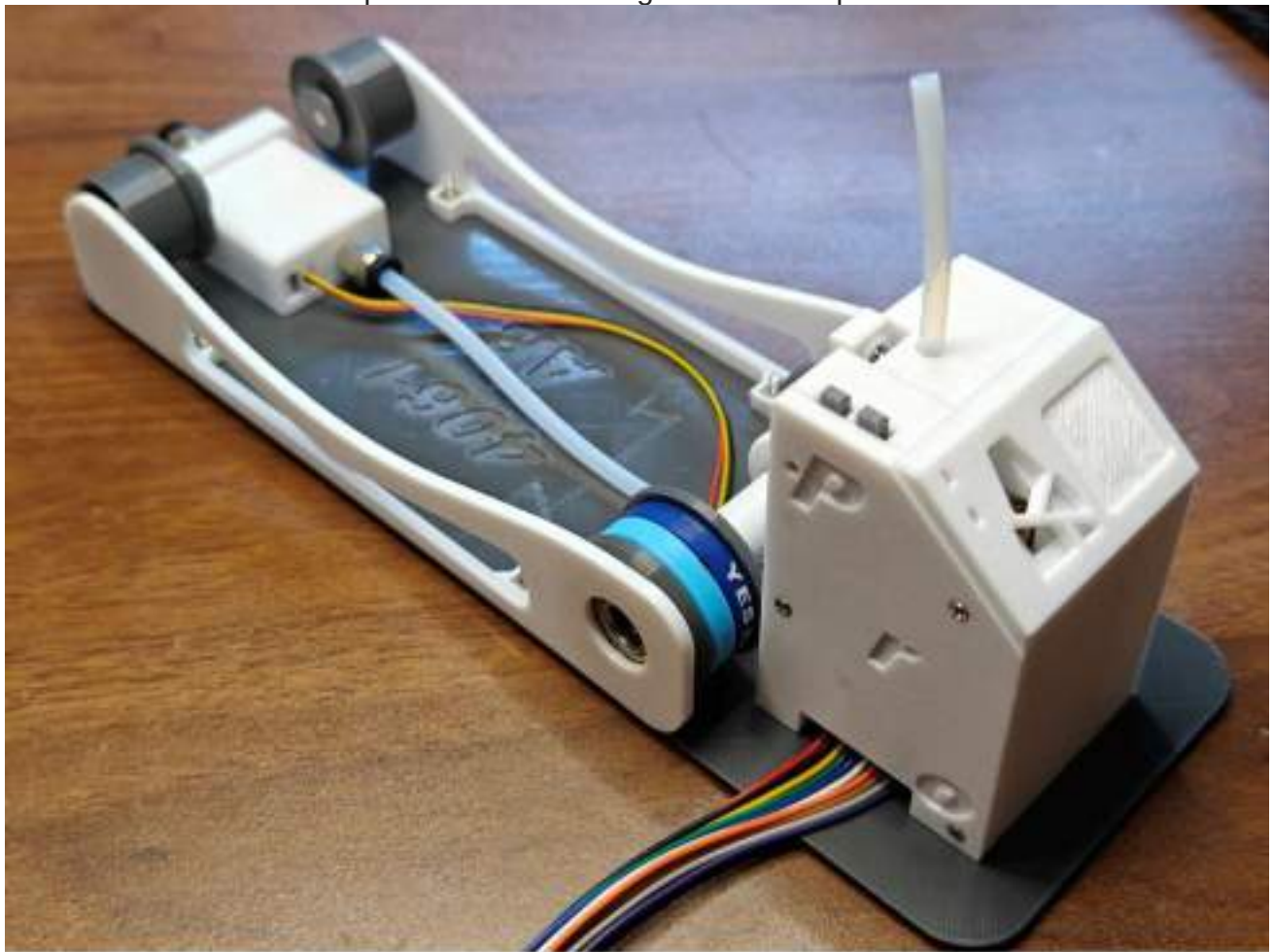


OPPO Find X7 Ultra

HASSELBLAD

● 47mm f/1.8 1/100s ISO500

Remember to add a short piece of PTFE tubing for abrasion protection.



OPPO Find X7 Ultra

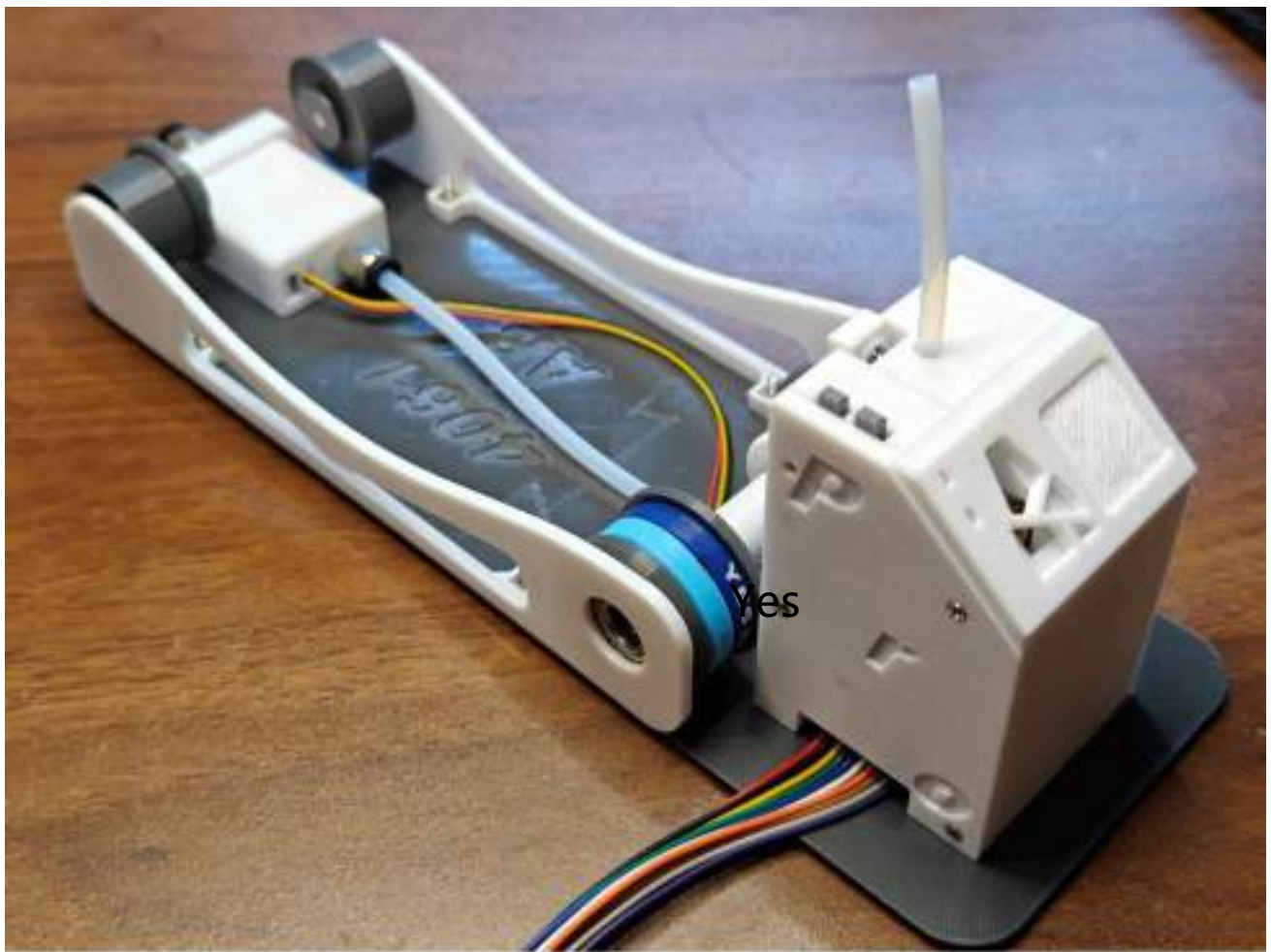
HASSELBLAD

47mm f/1.8 1/100s ISO500

Next, let's connect the printer and give it

Connect the printer for testing

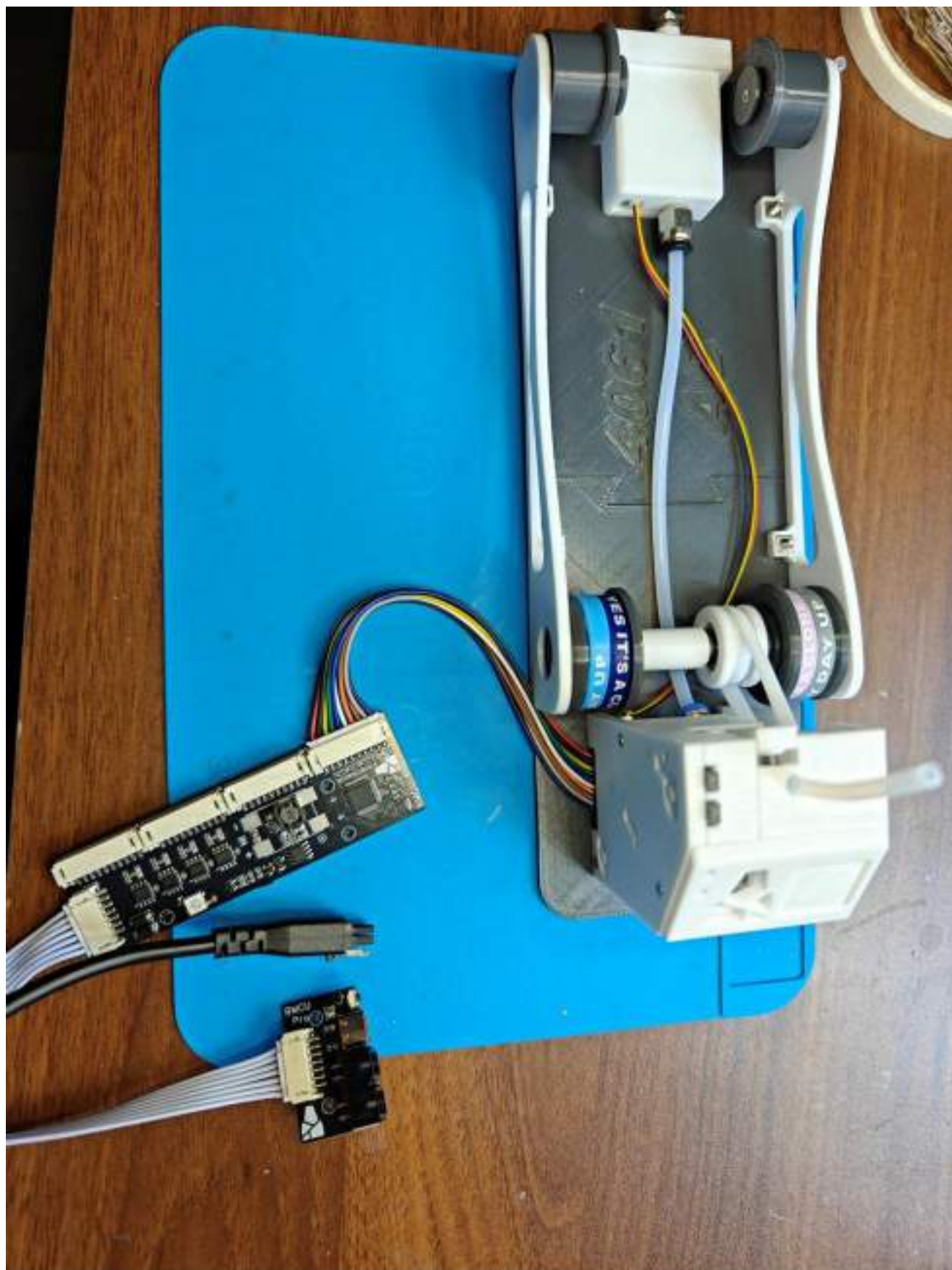
Take out the channel you just installed and connect it to the motherboard



Yes

OPPO Find X7 Ultra

HASSELBLAD
● 47mm f/1.8 1/100s ISO500



OPPO Find X7 Ultra

HASSELBLAD

● 23mm f/1.8 1/100s ISO320

If the 4P power supply line is plugged upside down, it will burn the communication, and in severe cases, all the motherboards of the bmcu will be burned



300MMX200N

OPPO Find X7 Ultra

HASSELBLAD

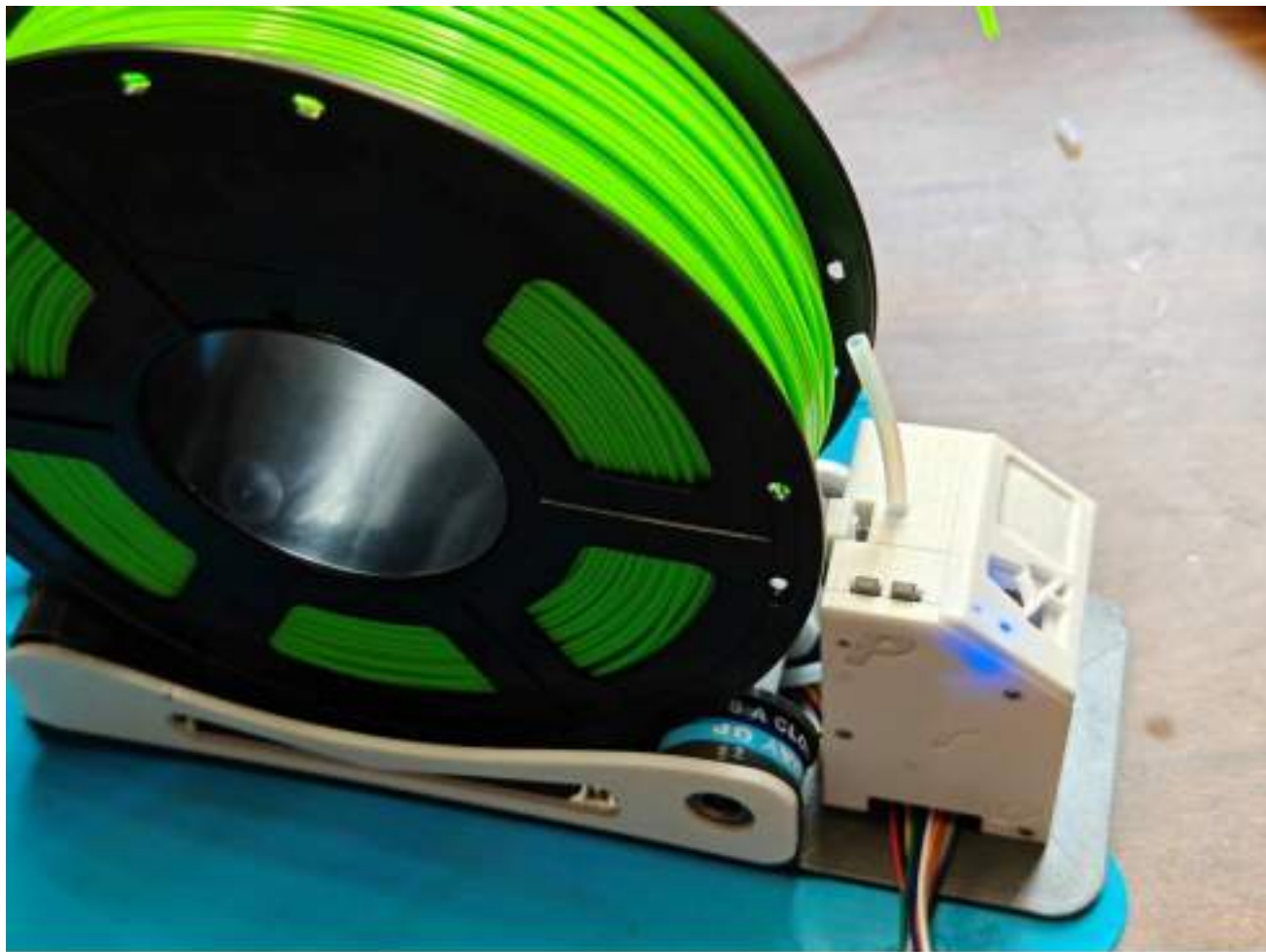
● 47mm f/1.8 1/100s ISO320

See clearly
Do you see clearly???

Then turn on the motherboard to see if there is a white light, whether there is a blue light under the channel, and it will not light up without consumables on it

If this is not the case above, you can check out the lighting indicators for frequently asked questions

 [Light indication](#)



OPPO Find X7 Ultra

HASSELBLAD

47mm f/1.8 1/100s ISO800

Start inserting consumables below, the beginning is white, the above is the current color display of the consumables, you can go to the printer's consumables position to select the color in front of the order, remember to insert a Teflon tube at the buffer position, otherwise it will get stuck in the buffer



OPPO Find X7 Ultra

HASSELBLAD

47mm f/1.8 1/100s ISO250

Start adding gear oil below, tutorial

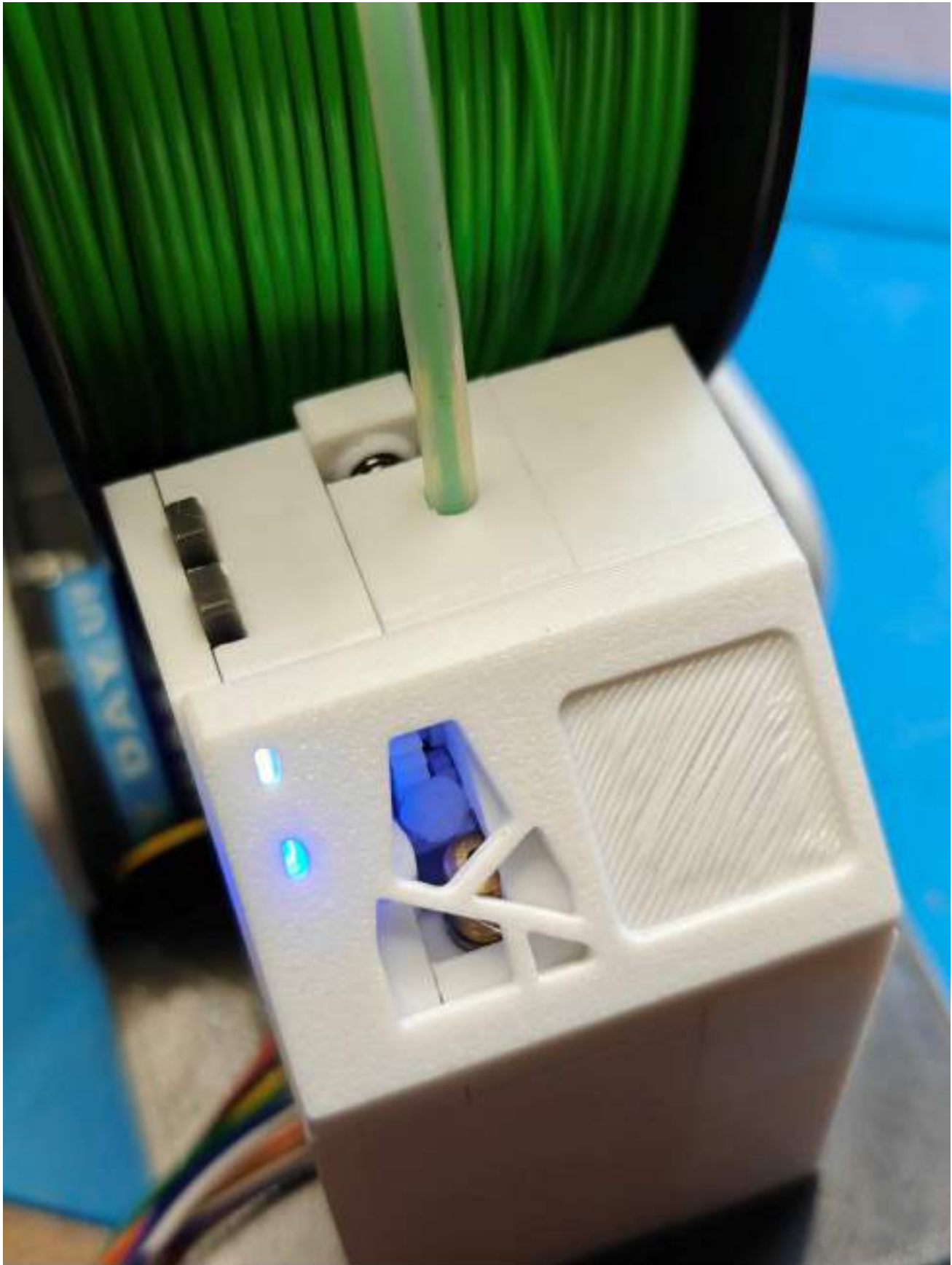
A small amount of time and many times, add a little and press the feed button, and then add a little more to press the return button



OPPO Find X7 Ultra

HASSELBLAD

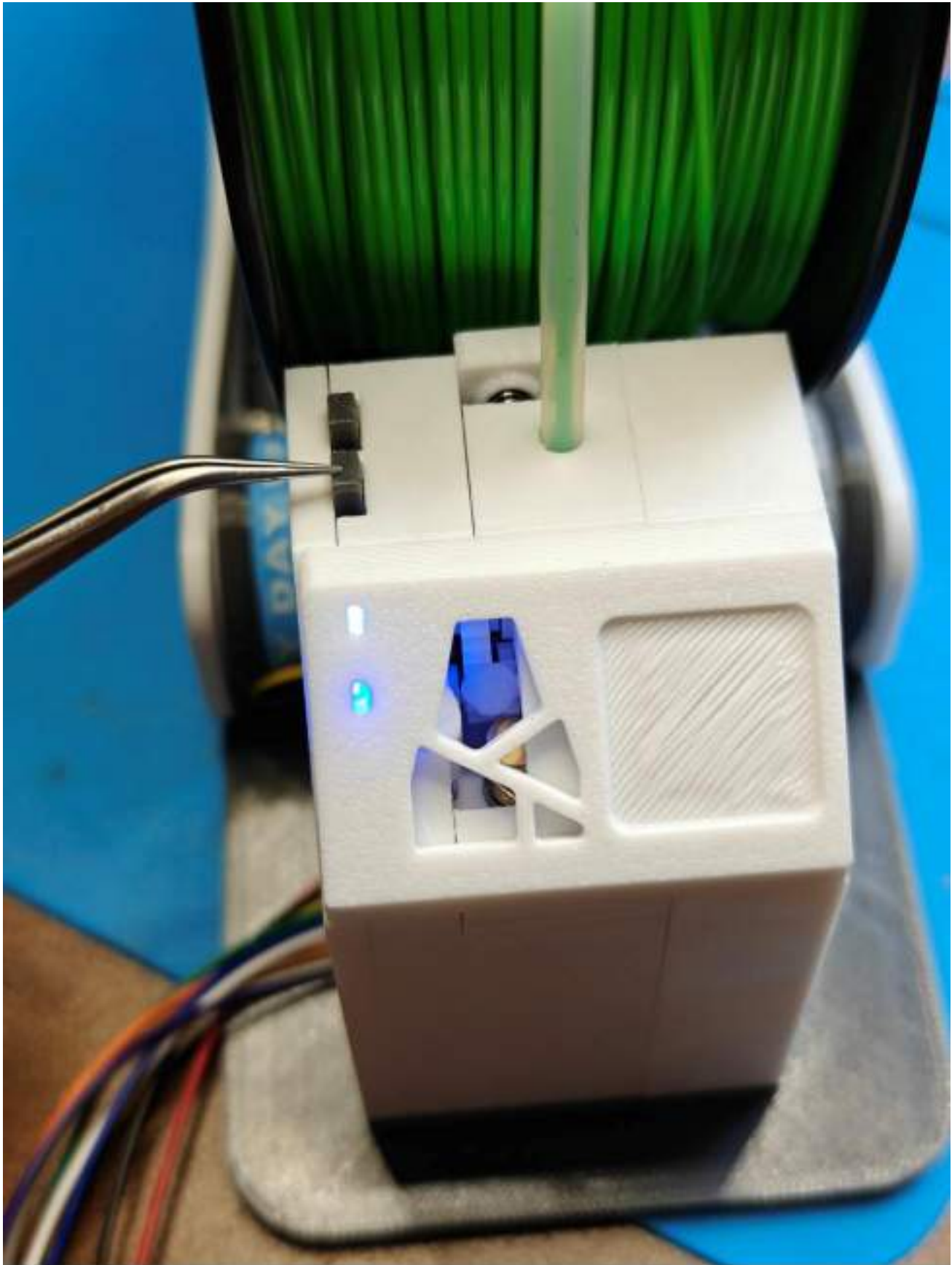
● 47mm f/1.8 1/100s ISO320



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● 47mm f/1.8 1/100s ISO320



OPPO Find X7 Ultra

HASSELBLAD

● 47mm f/1.8 1/100s ISO320

Behind is the rendering of adding gear oil



OPPO Find X7 Ultra

HASSELBLAD
23mm f/2.0 1/100s ISO320

Alright, you've mastered the installation of a single channel—now go ahead and assemble the other three!
Keep it up

Teflon tubes

Wrong tube placement

The tube is straightened and cannot work properly, so leave enough room for the tube to move



Correct placement of Teflon tubes

Please see the direction of the red line

Light indication

BMCU pro

Feedback on motherboard lighting effects

Not bright (5050 is not soldered well, the main control is virtually soldered, or the firmware is not flashed)

Red light communication fails (check whether the main control is falsely soldered)

(The new firmware 0027A series printers need to set the AMS model instead of Lite mode in the AMS settings.)

If you can't find the ams type, please update the printer to version 01.07.00)



OPPO Find X7 Ultra

HASSELBLAD

72mm f/1.8 1/82s ISO200

Normal (white light)

Secondary board light feedback

- Light up

Dark blue

(Trigger buffer feed, or push button feed.)

, check whether the components are falsely soldered, such as Hall virtual soldering, diode failure, etc.)

Deep red

(Trigger buffer discharge, or button discharge, check whether the component is falsely soldered, such as Hall virtual soldering, diode failure)

- Automatic adsorption indication

Yellow

(The first micro triggers the auxiliary feeding, and the second micro will turn into a consumables display color light (printer set the color), if it is always yellow, it means that the second micro will be infinitely fed)

Cyan

(No consumables are inserted, the second micro movement is triggered, but the first one is not triggered, the inserted consumables will directly change the consumables display light, and the feeding will not be triggered)

Consumable Color: The color of the consumable will be displayed here once the corresponding color has been configured within the AMS settings.

- Bottom Light

Off

(The light may remain off immediately after a firmware update;

inserting a consumable will activate the "Online" status.)

Deep Blue: The current channel is active and online.

Red: Radial magnet not detected; unable to activate (this may also be caused by a cold solder joint on the 4020 LED bead).

Green light

Consumables are being fed

Purple light

Consumables are being returned

The white light flashed

After the printer bites the consumables, it will turn white and flash to indicate that the material has been fed

- motor

Just after brushing the machine and powering on, the motor will be started to identify the motor in reverse (if it is reversed, please flash the machine again, or reverse the motor wire)

If the motor does not respond, please check whether the 8P terminal is soldered well and the wire is soldered

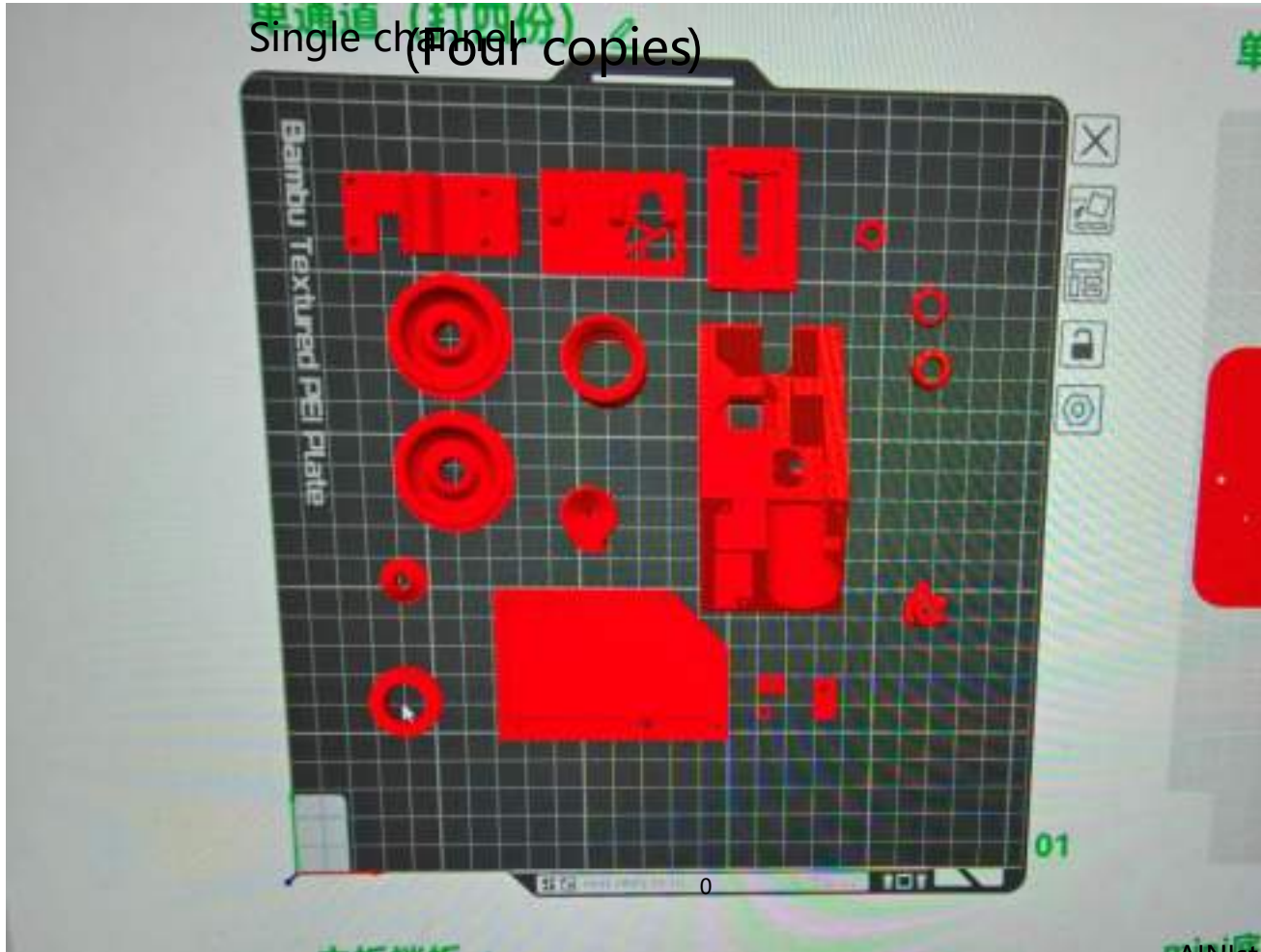
- Inserting consumables does not assist in feeding, and directly displays the color of the consumables, indicating that the second card has moved slightly and needs to be adjusted
Iterative explanation

2026.2.7

Update the problem of extruder getting stuck gears with overly thick gears

Update The short contact stroke of the wrench is causing the touch breaking problem

Single channel (Four copies)



AINIst

Firmware Description:

BMCU0027 firmware version

It is recommended to use the 01.07.00 printer firmware version

- 0027-1.6 updated

Consumables color accuracy

Reduced brightness

The sub-plate status indicator is changed to a white breathing light after feeding

The heating of the motor causes the housing to deform (a little more noise, remember to lube it)

Reduce feed errors

Updated on March 14, 2026