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# 1. MMU3 Kit Core One Introduction



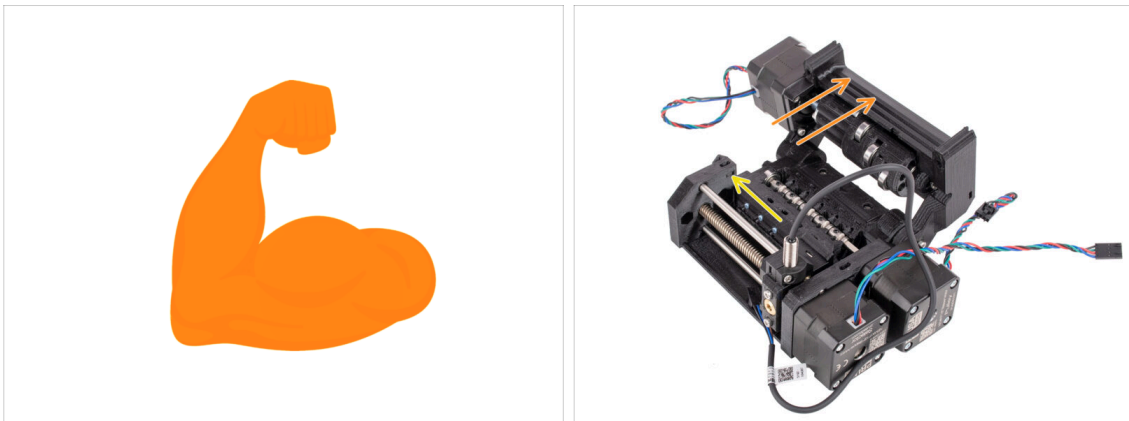
## STEP 1 Intro



- ◆ Welcome to the **MMU3 Assembly & Installation** guide.
- ◆ This guide covers assembling the **MMU3 Kit** and installing it on your **CORE One** printer. However, note that the MMU3 is also compatible with other printer models.
- ⓘ For more info, visit the [MMU3 Compatibility](#) article.

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## STEP 2 Disclaimer



- ◆ **Make sure your printer** is fully assembled and **works perfectly** before you proceed to attach the MMU3 onto it. Make a few single material prints. If it has any issues, fix the issues first. Diagnosing printer issues can be harder with the MMU attached.
- ◆ As you embark upon the assembly process, we cannot stress enough the importance of carefully following each and every step.

## STEP 3 Tools required



● The **tools needed** for the MMU3 Kit assembly are available as an **optional bundle**.

- Needle-nose pliers (1x)
- Universal wrench (1x)
- Philips PH2 screwdriver (1x)
- Allen key 1.5mm (2x) *the short and long one*
- Allen key 2mm (1x)
- Allen key 2.5mm (1x) *the short and ball-end long one.*
- T8/T10 Torx Key (1x)
- T10 Screwdriver (1x)



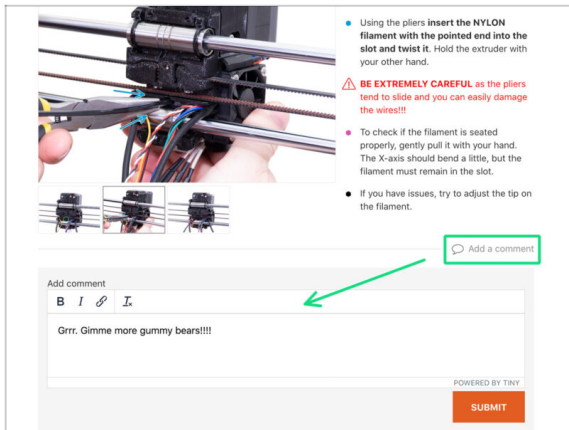
For some steps, we recommend having the following extras: - A measurement tool, preferably a caliper or digital caliper Or - you can print one. - Flush cutters, which can be useful during assembly.

## STEP 4 Labels guide



- All the boxes and bags containing the parts for the build are labeled.
- Most of the part drawings on the labels are scaled 1:1 and can be used to identify a part.
- You can download and 2D print a Prusa Cheatsheet with the 1:1 scaled fastener drawings. [help.prusa3d.com/cheatsheet](http://help.prusa3d.com/cheatsheet). Print it at 100 %, don't rescale it, otherwise, it won't work.

### STEP 5 We are here for you!




• Using the pliers insert the NYLON filament with the pointed end into the slot and twist it. Hold the extruder with your other hand.

⚠️ **BE EXTREMELY CAREFUL** as the pliers tend to slice and you can easily damage the wires!!!

• To check if the filament is seated properly, gently pull it with your hand. The X-axis should bend a little, but the filament must remain in the slot.

• If you have issues, try to adjust the tip on the filament.

Add comment

**B** *I*  **I**

Grrr. Gimme more gummy bears!!!

POWERED BY TINY

SUBMIT

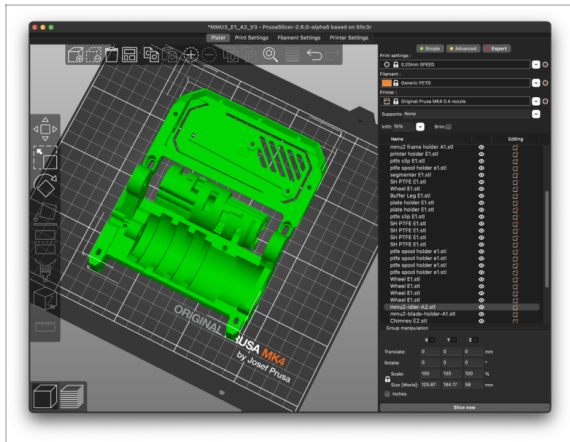
- ◆ Lost in the instructions, missing screw or cracked printed part? **Let us know!**
- ◆ You can contact us using following channels:
  - ◆ Using our 24/7 live chat
  - ◆ Or by writing an email to [info@prusa3d.com](mailto:info@prusa3d.com)
  - ◆ Or, you can use the comments under each step.

### STEP 6 Pro tip: inserting the nuts



- ◆ During the MMU3 kit assembly, some screws require tightening with an angled Allen key. Ensure the screw stays perfectly perpendicular to the thread. If it's difficult to turn, fully release it, realign, and start again to avoid cross-threading.
- ◆ For deep openings, use a long screw like the M3x30 as a handle to help position the nut.
- ◆ If a hex nut won't fit, use a fully threaded screw (e.g., M3x10, M3x18) and insert it from the opposite side to drive the nut into place.

## STEP 7 Printed parts



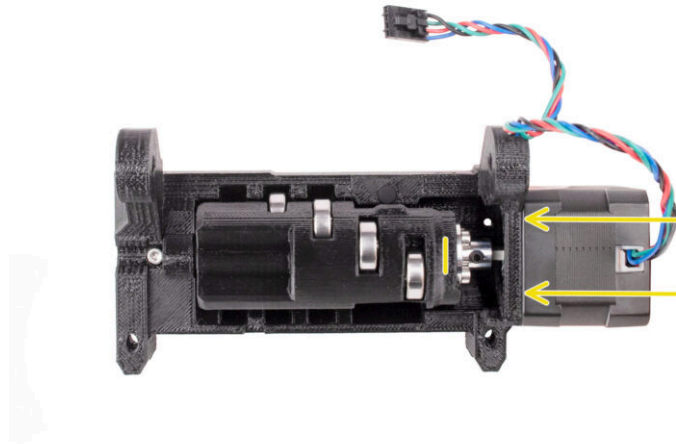
- If you ordered the MMU3 Kit without plastic parts, you will need to print them using the pre-sliced G-codes before you can proceed with the assembly.
  - ⚠ The parts **must be printed perfectly** in order for the MMU3 to work correctly: no warping or lifted corners, stringing or other irregularities. If you can't guarantee the parts being flawless, get the MMU3 kit with the factory-printed plastic parts instead.
- In case some parts get broken during the assembly, you can reprint them. Please check all plastic parts before starting your build to make sure there are no issues.
- The MMU3 printable parts are available at Prusa3D.com Printables profile More info is available at: [Prusa3D.com/prusa-i3-printable-parts/](https://Prusa3D.com/prusa-i3-printable-parts/)

## STEP 8 Prepare your desk



- ◆ Tidy up your desk! Tidying up decreases the probability of losing small parts.
- ◆ **Clear your workspace.** Make sure you have enough room. A nice clear flat workbench will get you the results you are aiming for.
- ◆ **Let there be light!** Make sure you are in a well-lit environment. Another lamp or even an extra flashlight will probably come in handy.
- ◆ Prepare something to contain the plastic bags and the removed packing materials so you can recycle them afterwards. Make sure there are no important parts being discarded.
- ◆ OK, we are ready. Let's start!

## 4. Idler Body Assembly



## STEP 1 Tools necessary for this chapter



### ● Please prepare tools for this chapter:

- ◆ Needle-nose pliers
- ◆ 1.5mm Allen key for possible nut alignment
- ◆ 2mm Allen key for M4 grub screws
- ◆ 2.5mm Allen key for M3 screws

## STEP 2 Idler versions



### ● There were two versions of the Idler:

- ◆ 1. The **MMU3 Idler** to be used with the metal **Coupler**
  - This is the correct part bundled in the MMU3 Kit.
- ◆ 2. The old **MMU2S Idler** with a printed coupling part.
  - This is an obsolete version which shouldn't be used in MMU3.

### STEP 3 Idler parts preparation



- ◆ For the following steps, please prepare:
- ◆ Idler (1x)
- ◆ 625 Bearing (6x)
- ◆ 5x16sh Shaft (5x)
- ⓘ Note you need 6 bearings, but only 5 shafts ;)

### STEP 4 Idler bearings assembly (part 1)



⚠ **WARNING:** read the instructions carefully, you have to **assemble bearings in the correct order**, otherwise you will encounter problems later!

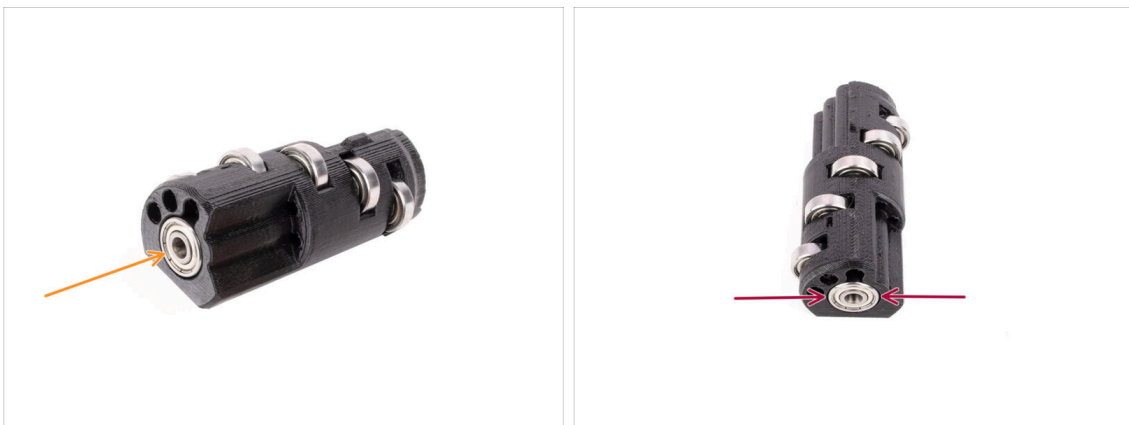
- ◆ Insert one of the bearings into the **middle** slot in the idler. Insert the shaft from the side as seen in the picture. Make sure you are inserting it from the correct side and into the correct opening.
- ◆ Push the shaft all the way in using the 2.5 mm Allen key. **Make sure the shaft is all the way in** and not blocking the other bearing slots.
- ◆ Install the second bearing and the shaft in the same way as the first one. Make sure you are inserting the parts into the exact same openings as seen in the picture.
- ◆ Install the third bearing and the shaft into the corresponding opening using the same technique.

### STEP 5 Idler bearings assembly (part 2)



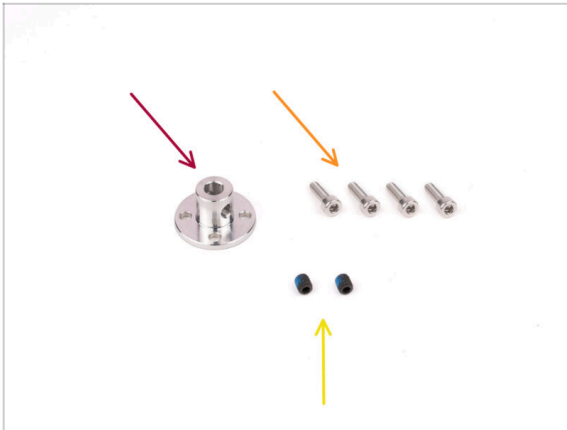
- ◆ Turn the idler around to continue with the bearing assembly from the other side.
  - ◆ Insert a bearing and then a shaft into the empty slot closer to the center of the idler.
  - ◆ Finish bearing assembly with the last slot on the side.
  - ◆ Ensure all bearings can rotate freely. You shouldn't feel significant friction or bumps while rotating the bearing.
- ⓘ There are small openings, which can be used to push a shaft out in case of a disassembly. Shafts can be pushed out using a 2mm Allen key in the opposite order from the installation.

### STEP 6 Idler center bearing assembly



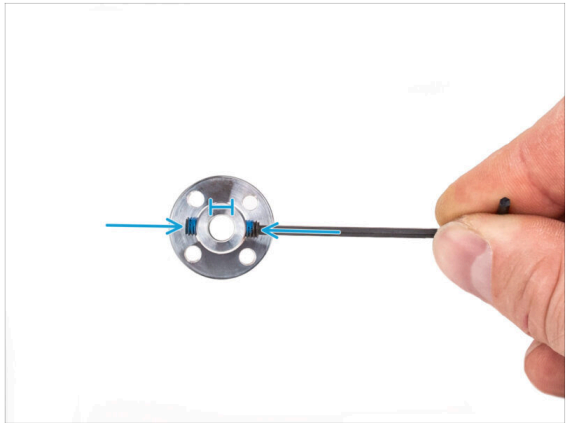
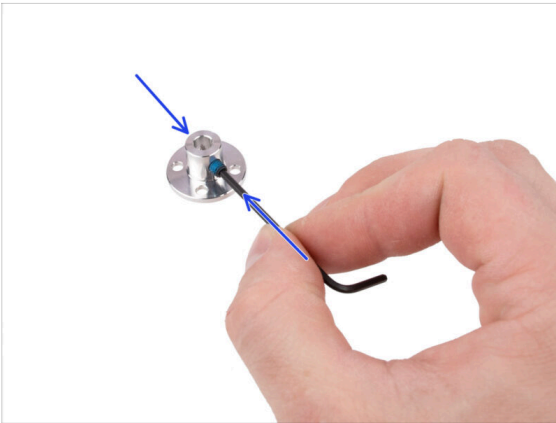
- ◆ Take the remaining bearing and push it into the opening on the side of the idler.
- ◆ Make sure the bearing is flush (aligned) with the surface.

## STEP 7 Coupler parts preparation



- For the following steps, please prepare:
- Coupler 5mm (1x)
- M3x10 screws (4x)
- M4x5 grub screws (2x)
- Labeled M4x5. Color may vary.

## STEP 8 Coupler preparation



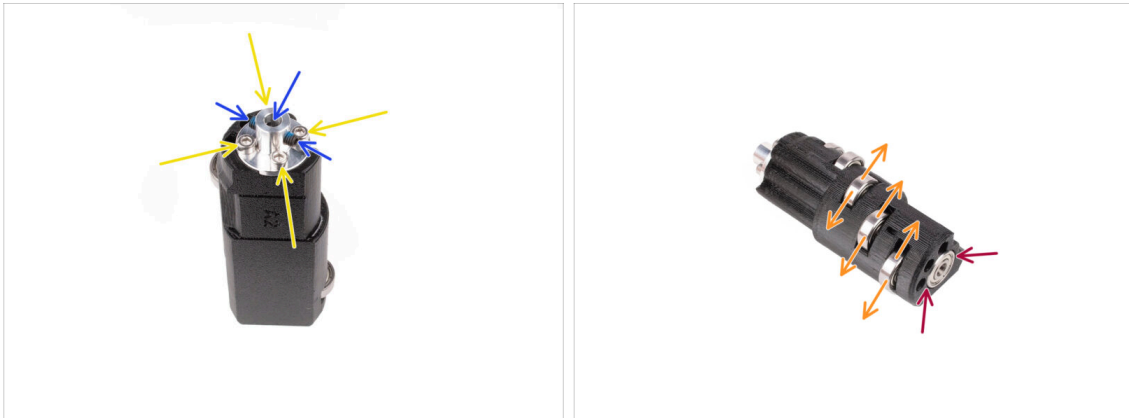
- Using the 2mm Allen key, install the M4 grub screws into the threaded openings on the sides of the coupler. Just start the thread so that the grub screw holds in.
- Make sure none of the two grub screws is protruding into the opening in the center. Otherwise, the coupler will be hard to slide onto the motor shaft later on.

## STEP 9 Coupler assembly



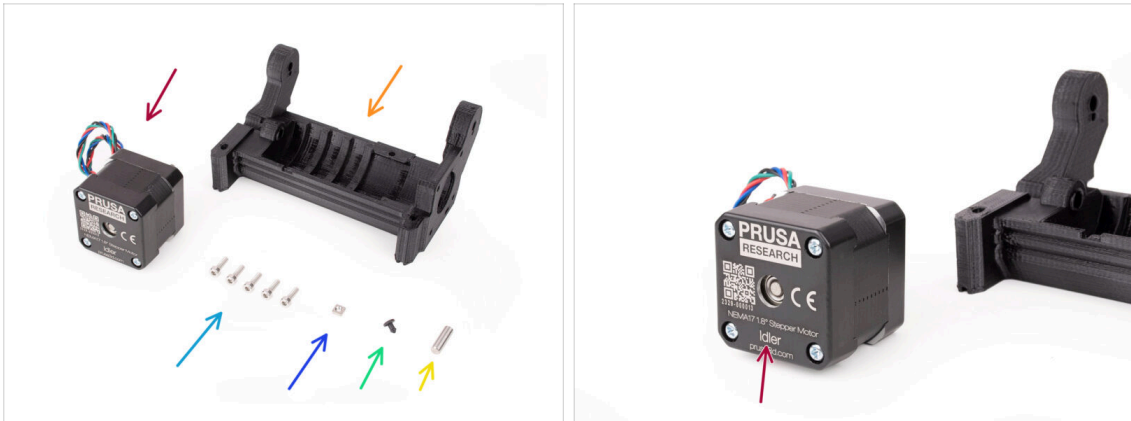
- Before we install the Coupler onto the Idler, Take a look at both parts. There are four screw openings that must line-up.
- Orient the coupler so that the two grub screws are oriented exactly as in the picture.
- Add the Coupler onto the side of the Idler in a way so that all four screw openings line up.
- Before proceeding, make sure the M4 grub screws are oriented as seen in the picture.
- Fix the Coupler to the Idler using four M3x10 screws.

## STEP 10 Final check



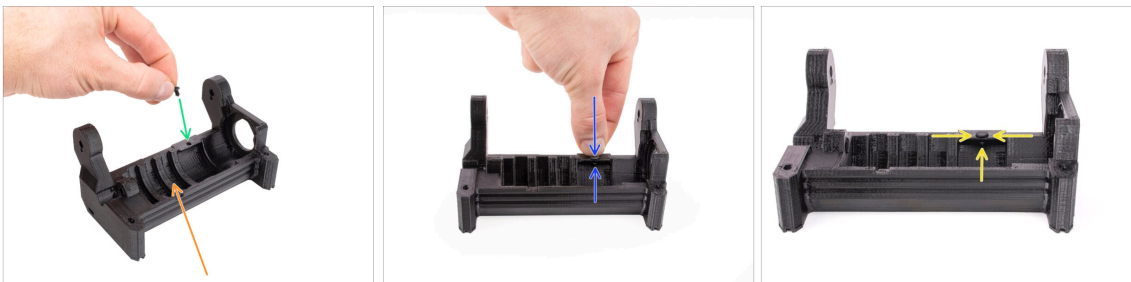
- **Before you proceed, check the following:**
  - All M3x10 screws are tight.
  - The grub screws are oriented properly and not protruding into the center opening in the coupler.
  - ⚠ **The grub screw orientation is important so that the grub screws remain accessible even after the Idler is installed inside the MMU unit.**
  - All five bearings are able to rotate.
  - The sixth bearing is flush with the surface.

## STEP 11 Idler Body parts preparation



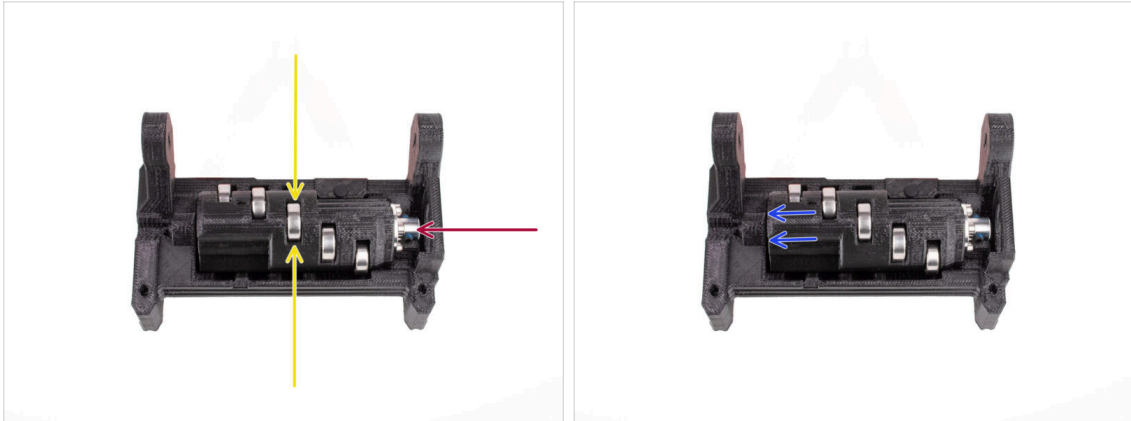
- For the following steps, please prepare:
- Idler motor (1x) *(the one with a short shaft)*
- Idler Body (1x)
- M3x10 screw (5x)
- M3nS nut (1x)
- Silicone stopper (1x)
- Shaft 5x16sh (1x)

## STEP 12 Silicone stopper instalation



- Orient the Idler body as seen in the picture.
- Insert the silicone stopper into the small opening on the Idler body.
- Push it in and keep it pressed with your finger until you feel it fully engage into the opening. If it doesn't engage, try cleaning up the opening with an Allen key and rotating the stopper while inserting.
- ⓘ If it doesn't engage, try cleaning up the opening with an Allen key and rotating the stopper while inserting.
- Verify it is seated properly and doesn't fall out. When fully inserted, the bottom part of the stopper should be visible from the side.

### STEP 13 Idler installation



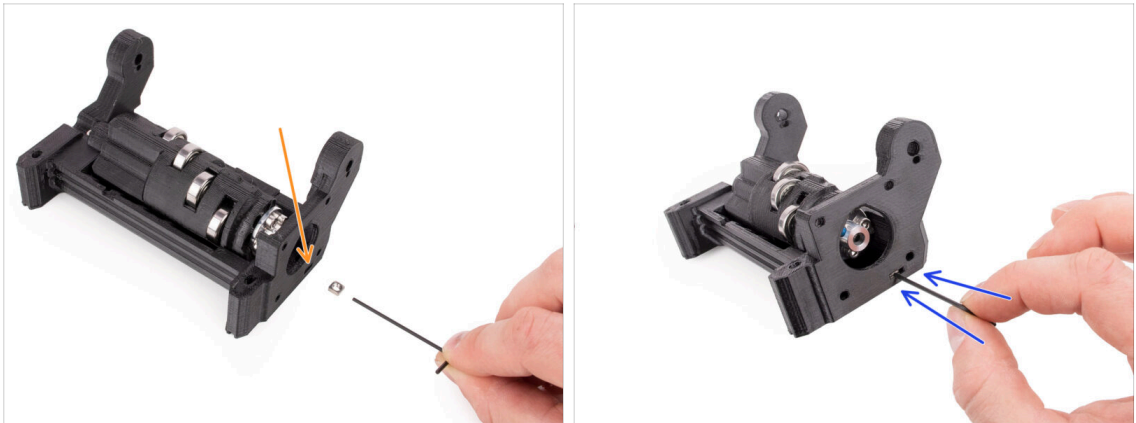
- Insert the Idler into the Idler body. Correct orientation is important. Make sure the middle bearing is pointing to the top.
- Make sure the metal coupler is pointing to the large opening in the Idler body.
- Push the Idler to the left so that there is as small gap as possible.

### STEP 14 Idler center shaft assembly



- Hold the Idler in place with your hand and keep pushing it to the left side.
- Insert the 5x16 shaft into the opening on the left side of the idler body and push it in all the way through.
  - 📌 The shaft must engage into the bearing in the Idler. Press the shaft all the way in using the 2.5mm Allen key.
- Secure the shaft in place by attaching an M3x10 screw into the marked position. Tighten it up.

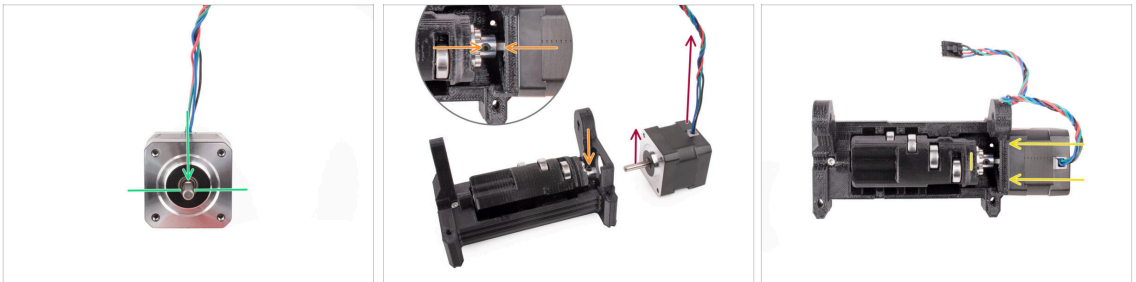
### STEP 15 Idler body M3nS nut



**i** This will be easy!

- Insert the M3nS nut into the marked opening on the Idler body.
- Using the 1.5mm Allen key, push the nut all the way in.

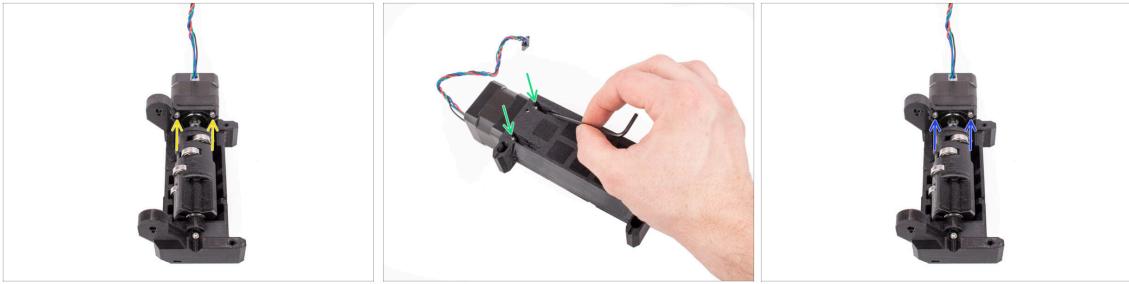
### STEP 16 Idler motor assembly (part 1)



**i** Before we add the motor to the assembly, we need to align the motor shaft and the idler coupler.

- Notice there is a flat part on the motor shaft.
- Orient the motor as seen in the picture, so that both the flat part of the shaft and the cable are pointing up.
- Before you start installing the motor, the flat part of the motor shaft must be aligned with one of the two grub screws in the metal coupler. Orient the coupler so that one of the grub screws is pointing up.
- Insert the motor shaft into the metal coupler on the Idler. Push the motor towards the Idler body until flush.

## STEP 17 Idler motor assembly (part 2)



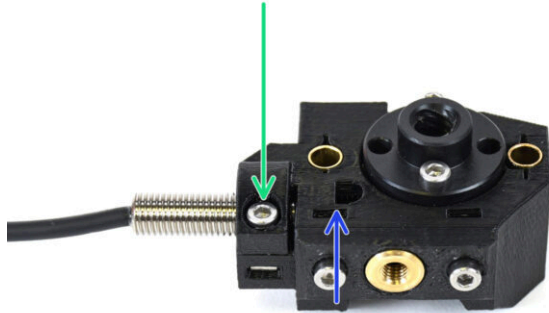
- Insert two M3x10 screws into the marked openings. Start the thread so that the screws engage into the motor. Don't tighten them up all the way yet!
- Turn the unit around.
- From the opposite side, add another two M3x10 screws into the openings. Push them towards the motor. Using the ball-end 2.5mm Allen key at an angle, tighten them up fully.
- ⚠ Make sure the screw is **perfectly perpendicular** to the motor while tightening it. If it is hard to turn, release the screw fully, re-align it, and start tightening it **from the beginning** to avoid cross-threading it.
- Now, tighten the first two M3x10 screws fully.

## STEP 18 Idler motor assembly (part 3)



- Pull the idler to the side all the way away from the motor. There should be just a very small gap on the left side.
- ⚠ A substantial gap could cause the MMU to experience difficulties with filament loading/unloading, as the idler bearings might not align correctly with the filaments.
- Make sure the grub screw in the metal Coupler is still aligned to the flat part of the motor shaft. Tighten it up fully using the 2mm Allen key.
- Rotate the idler so that the second grub screw on the metal coupler is accessible. Tighten the other grub screw fully too.

## 5. Selector Assembly

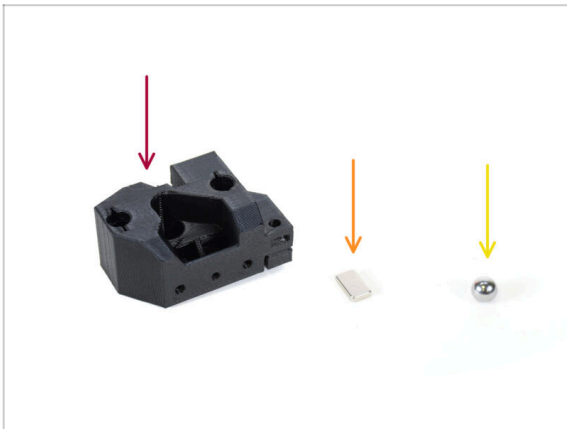


## STEP 1 Tools necessary for this chapter



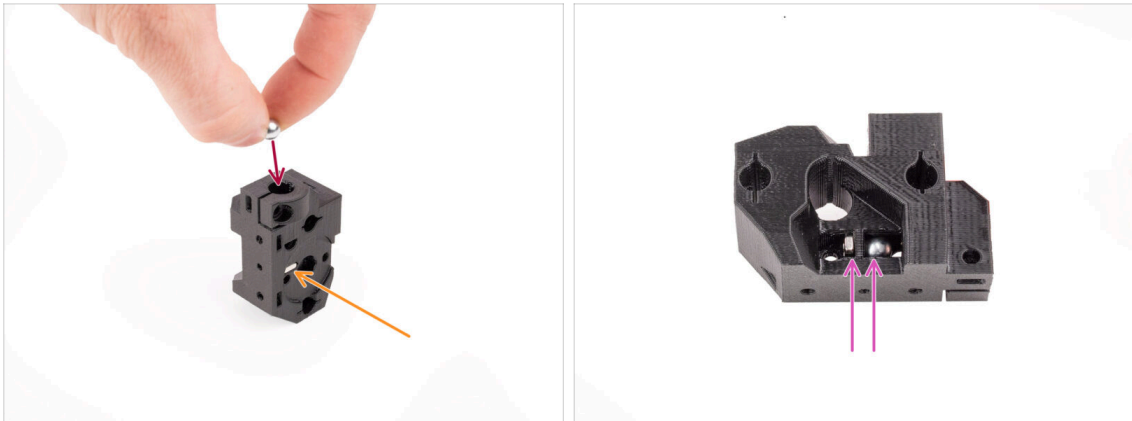
- ◆ **Please prepare tools for this chapter:**
  - ◆ 1.5mm Allen key for possible nut alignment
  - ◆ 2.5mm Allen key for M3 screws

## STEP 2 Selector assembly: Parts preparation



- ◆ **For the following steps, please prepare:**
  - ◆ Selector (1x)
  - ◆ 10x6x2 Magnet (1x)
  - ◆ Magnetic steel ball (1x)
- ⓘ When upgrading from the MMU2S, ensure you use the new ball provided in the upgrade kit, not the old one.
- 📌 The new ball is made of a ferromagnetic material.

### STEP 3 Selector assembly: Magnetic ball



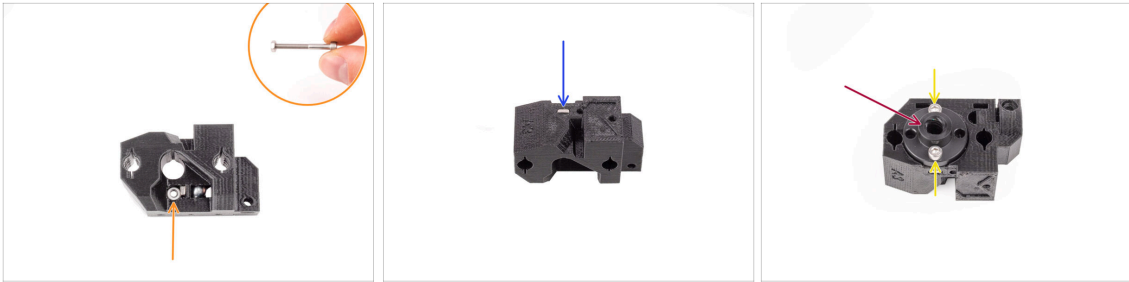
- Insert the magnet into the marked opening on the selector. Push it in until it is flush with the surrounding surface.
  - i The orientation of the magnet doesn't matter.
- Insert the magnetic ball into the marked hole on the top of the selector.
- The steel ball should be attracted to the magnet below and stay in place. If not, verify you are using a correct ball.
  - i There is an opening on the side of the selector through which you can observe the ball's position.
- 📌 The selector ball from the older MMU2S can't be re-used as it is non-magnetic. Use only the supplied MMU3 magnetic version.

### STEP 4 Selector assembly: Trapeze nut parts preparation



- **For the following steps, please prepare:**
- Trapeze nut (1x)
  - 📌 In case you're assembling the unit from scratch, the nut is inside the *Motor kit* box, attached to the selector motor.
- M3n nut (1x)
- M3nS nut (1x)
- M3x10 screw (2x)

## STEP 5 Selector assembly: Trapeze nut installation



- Insert the M3n nut into the marked opening in the selector, just below the magnet. Push it all the way in. Make sure the magnet doesn't get pushed out.
  - i The easiest way of inserting the M3n nut is by an M3x30 screw used as a handle.
- Insert the M3nS nut into the marked opening on the other side of the selector.
- Attach the trapeze nut onto the selector. There is a recess into which it should fit nicely.
- Fix the trapeze nut in place with two M3x10 screws. Tighten them just slightly for now. We will tighten them up fully later on.

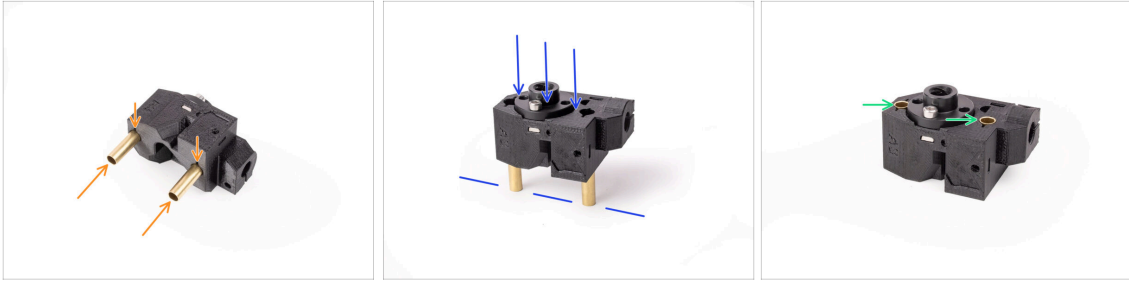
## STEP 6 Selector assembly: Rods and Cover parts preparation



- **For the following steps, please prepare:**
- M3nS nuts (2x)
- Bushing tube 5x6x25bt (2x)
- M3x10 screws (2x)
- Selector front plate (1x)

---

### STEP 7 Selector assembly: Bronze bushing tubes



- Insert the bronze bushing tubes into the marked openings on the selector as far as you can, using your hand. Make sure you are inserting them from the correct side.
- Press the tubes in by carefully pushing the assembly against a flat surface.
- In the end, the tubes should end up flush with the surface on the other side.

---

### STEP 8 Selector assembly: Rods and Cover



- Insert the two M3nS nuts into the marked openings on the side of the selector. Push the nuts all the way in using the 1.5mm Allen key.
- Add the front plate onto the selector. Make sure the side of it is flush with the flat part of the selector.
- Attach the front plate with two M3x10 screws. Tighten them up.

## STEP 9 Selector assembly: Finda parts preparation



◆ For the following steps, please prepare:

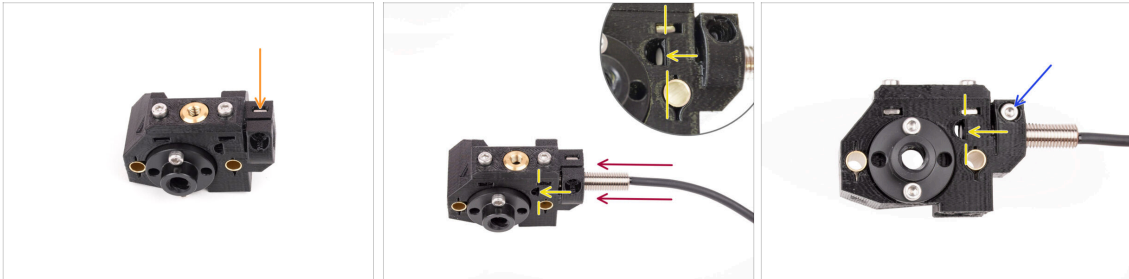
◆ SuperFINDA sensor (1x)

ⓘ Your sensor might look slightly different if you are re-using the older FINDA sensor. But don't worry, it will work just as good.

◆ M3x10 screw (1x)

◆ M3nS nut (1x)

## STEP 10 Selector assembly: SuperFINDA probe



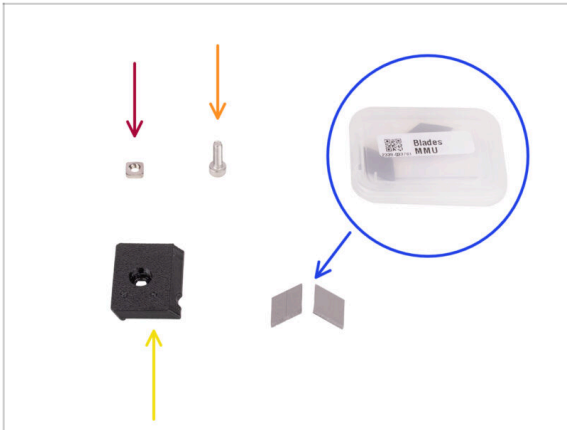
- ◆ Insert the M3nS nut into the marked opening on the front of the selector.
- ◆ Insert the SuperFINDA sensor into the corresponding opening in the selector.
- ◆ Adjust the position of the sensor so that it ends flush or slightly above the inner surface of the D-shaped opening on the side of the selector.

⚠ **Ensure the sensor's bottom part is aligned and doesn't protrude into the D-shaped opening!** Even though the SuperFINDA sensor's height might need further adjustment, this is usually a good starting point.

- ◆ Fix the probe in place with M3x10 screw. Tighten the screw up just so that the sensor can no longer be moved.

📌 Avoid over-tightening the screw; if SuperFINDA is securely held in place, that's sufficient.

## STEP 11 Selector assembly: Cutter parts preparation



◆ For the following steps, please prepare:

- ◆ M3nS nut (1x)
- ◆ M3x10 screw (1x)
- ◆ Blade holder (1x)
- ◆ Blade (2x) - stored in the little plastic box

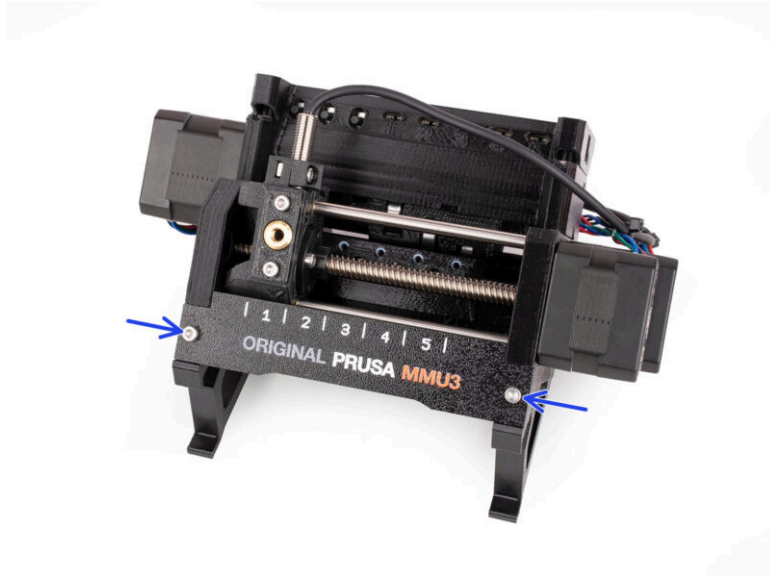
⚠ Be very careful while handling the blades! You might easily harm yourself!

## STEP 12 Selector assembly: Cutter assembly

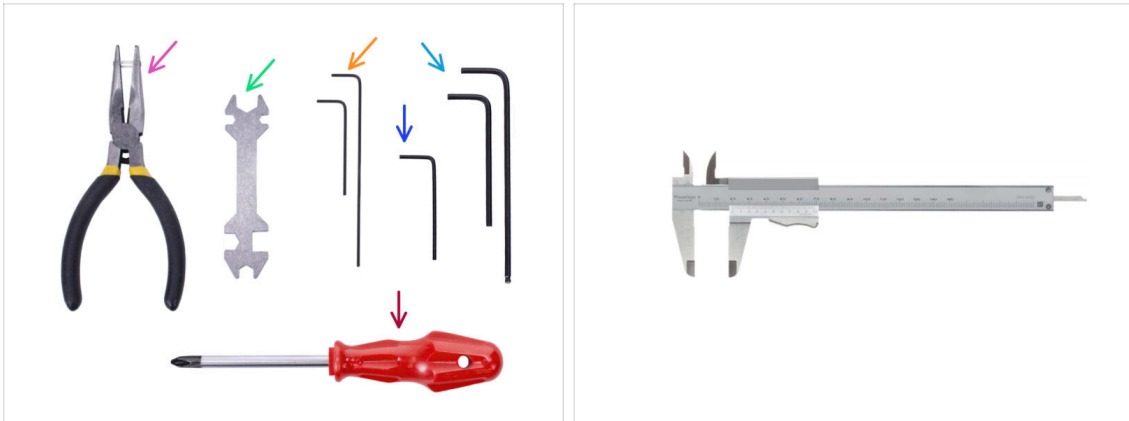


- ◆ Insert the M3nS nut into the marked opening on top of the selector. Push it all the way in.
- ◆ Insert the two blades into the recess on the back of the selector. **Make sure the blades are seated nicely.**
  - ⓘ There have been several versions of this part available, which might look slightly different. However, the assembly process remains the same. Markings on the part may be different than the ones seen in the photo.
- ◆ Cover the blades with the blade holder. Verify the blades are still seated perfectly in place while attaching the cover.
- ◆ Fix the blade holder in place with M3x10 screw. Tighten it up fully.

## 6. Pulley Body Assembly



## STEP 1 Tools necessary for this chapter



● Please prepare tools for this chapter:

- Needle-nose pliers
- 1.5mm Allen key for nut alignment
- 2.5mm Allen key for M3 screws
- A measurement tool (optional), a digital caliper would work the best.

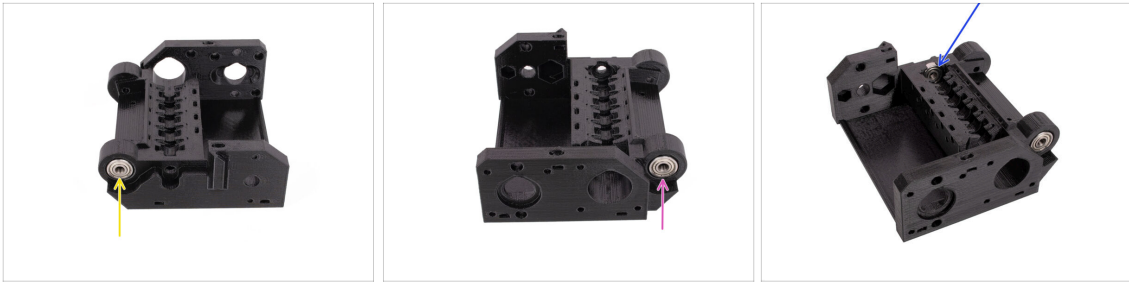
## STEP 2 Pulley-body parts preparation



● For the following steps, please prepare:

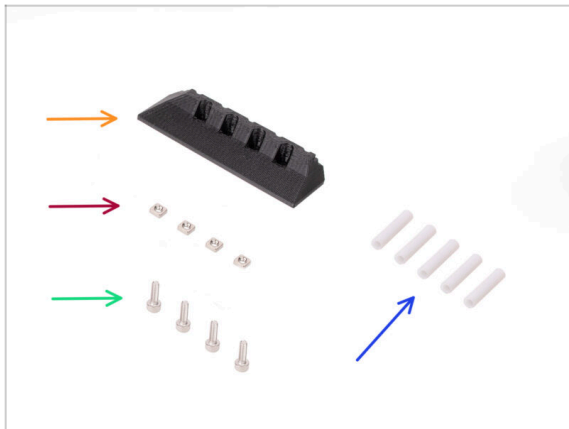
- Pulley body (1x)
- 625 bearing (3x)

### STEP 3 Pulley body: Inserting bearings



- Insert one of the 625Z bearings into the marked side opening on the back of the Pulley body. Push it in until flush with the surface.
  - i In case you have trouble getting the bearing inserted fully, try pushing it in against a side of a table.
- Insert the second bearing into the groove on the opposite side of the pulley-body.
- Insert the third bearing into the marked groove on the inside of the Pulley body. Insert it at an angle and tilt it in place.

### STEP 4 Pulley-body parts preparation



● **For the following steps, please prepare:**

- Front PTFE-holder (1x)
- M3nS nut (4x)
- M3x10 screw (4x)
- PTFE tube 19mm (5x)

i MMU2S and MMU3 PTFE tubes differ. If you are upgrading your MMU, Make sure you are not re-using the MMU2S PTFE tubes.

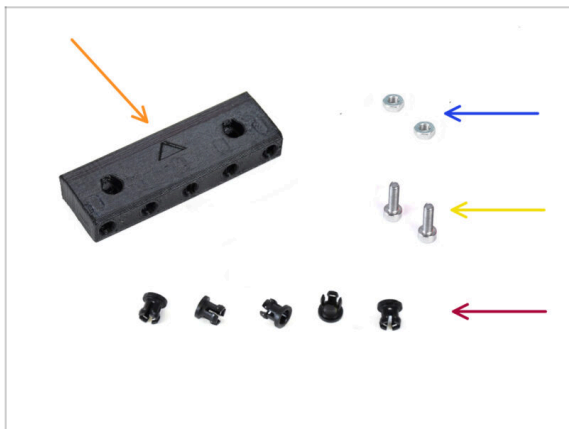
📌 All the PTFE tubes are supplied pre-cut to the correct size. There is no need to cut the tubes.

## STEP 5 Front-PTFE-holder assembly



- ◆ Insert the four M3nS nuts into the marked openings on the idler body. Push the nuts all the way down with the 1.5mm Allen key.
- ◆ Insert the five 19mm PTFE tubes into the marked openings in the pulley body.
  - i There is a small chamfer on one side of the PTFE tubes. The chamfer should be facing out.
- ◆ Attach the Front PTFE holder onto the PTFE tubes and **push it all the way towards the Pulley body**. Mind the correct orientation seen in the picture.
- ◆ Secure the holder with four M3x10 screws from the front.

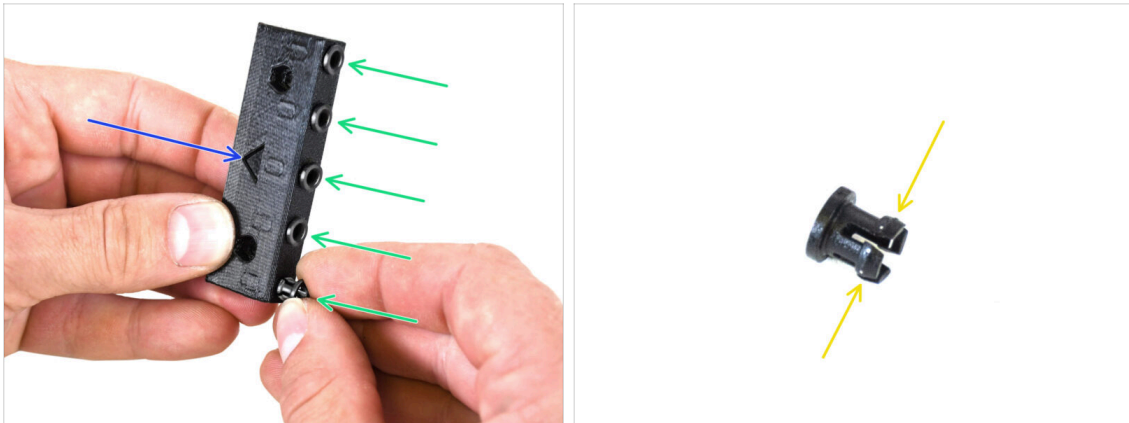
## STEP 6 Collet holder parts preparation



◆ **For the following steps, please prepare:**

- ◆ Collet holder (1x)
- ◆ M3n nut (2x)
- ◆ M3x10 screw (2x)
- ◆ Collet (5x)

## STEP 7 Collets installation

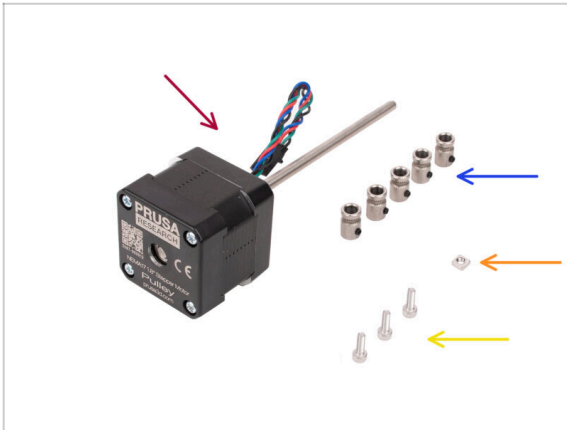


- ◆ Take the collet holder. Note the correct part orientation marked by the imprinted arrow.
- ◆ Insert the collets into the marked openings on the collet holder.
- ◆ For the sake of easier installation, you might need to squish the fins on the collet with your fingers while you insert the collet. Then it will click in easily.

## STEP 8 Collet holder installation



- ◆ Insert two M3n nuts into the marked openings on the bottom of the pulley body. Push the nuts all the way in.
- ◆ Attach the nut to the end of the M3x30 screw. Use the screw as a handle for inserting the nut.
- ◆ Attach the collet holder into the pulley body. Note the correct part orientation marked by the arrow.
- ⓘ The arrow on the collet holder should be pointing towards the pulley body.
- ◆ Secure the collet holder in place by two M3x10 screws.

**STEP 9** Pulley motor parts preparation

◆ For the following steps, please prepare:

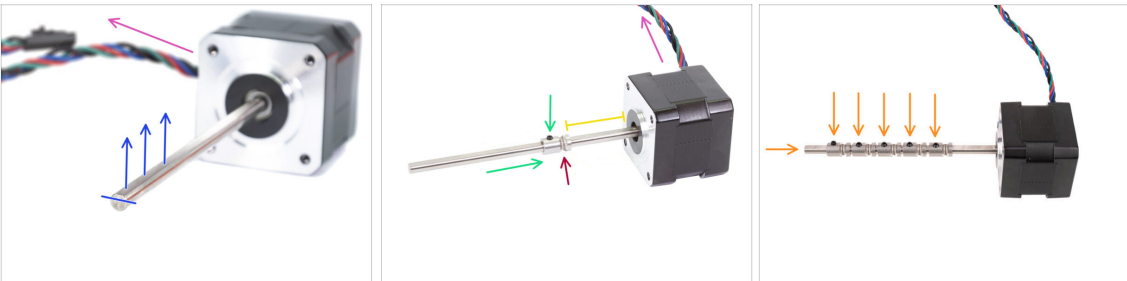
◆ Pulley motor (1x)

◆ Pulley (5x)

ⓘ In case you're upgrading from the MMU2S, the pulleys might be already attached to the motor.

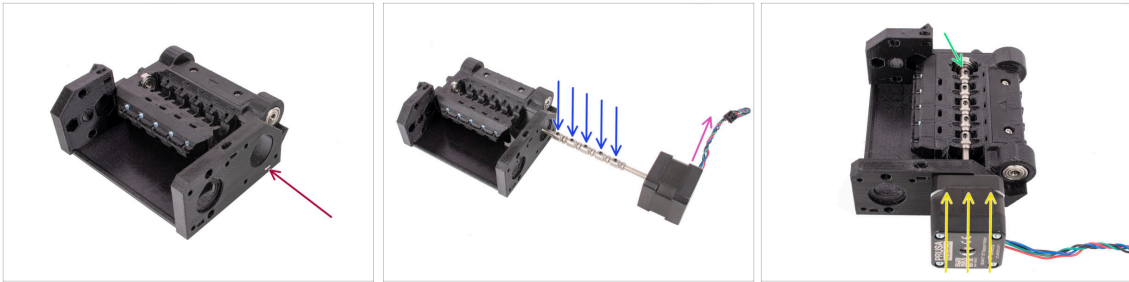
◆ M3nS nut (1x)

◆ M3x10 screw (3x)

**STEP 10** Pulley assembly

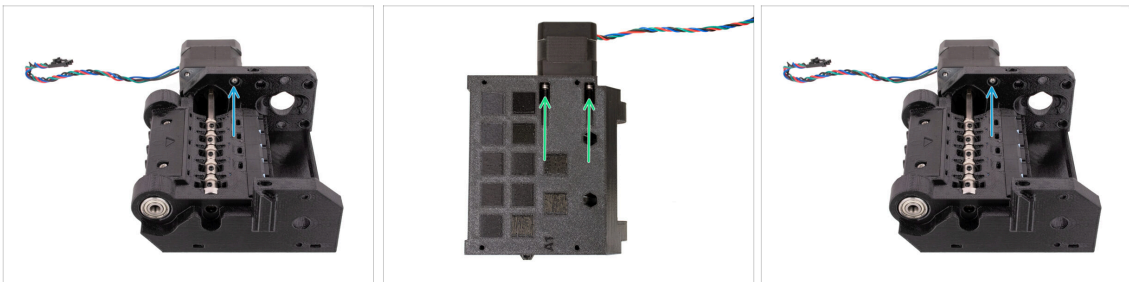
- ◆ Orient the motor as seen in the pictures. Make sure the motor cable is facing to the back.
- ◆ Rotate the motor shaft so that the flat part is facing up.
- ◆ Slide the first pulley onto the shaft. Ensure the lock screw is on top (facing the flat part of the shaft). Tighten the grub screw just slightly.
- ◆ The first pulley should be around 30 mm (1.18 inches) from the motor. Don't tighten the grub screw fully yet!
- ◆ Ensure the grooved part of the pulley is on the motor side.
- ◆ Slide the other pulleys onto the shaft using the same technique. Tighten the grub screws just slightly for now.

### STEP 11 Pulley motor assembly (part 1)

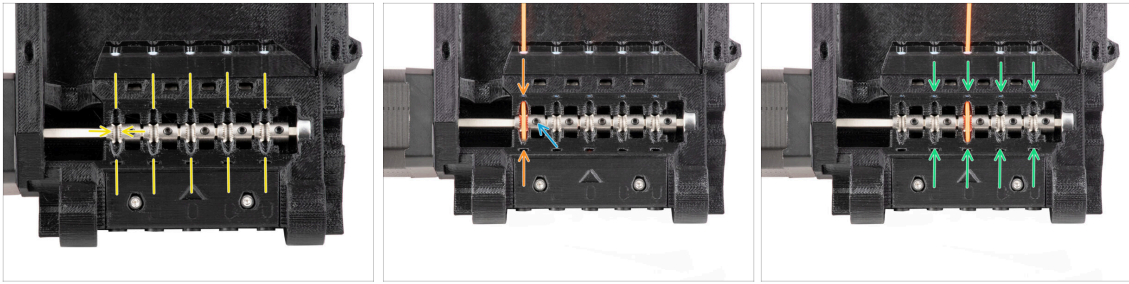


- ◆ **Insert the M3nS nut** into the marked slot on the pulley body. Push it all the way in.
- ◆ Orient the motor shaft so that all the **grub screws on the pulleys are facing up**.
- ◆ Make sure the motor cable is facing to the right (to the back of the MMU unit)
- ◆ Insert the motor into the pulley body as seen in the picture.
- ◆ Make sure the motor shaft has engaged into the bearing at the end of the groove.

### STEP 12 Pulley motor assembly (part 2)

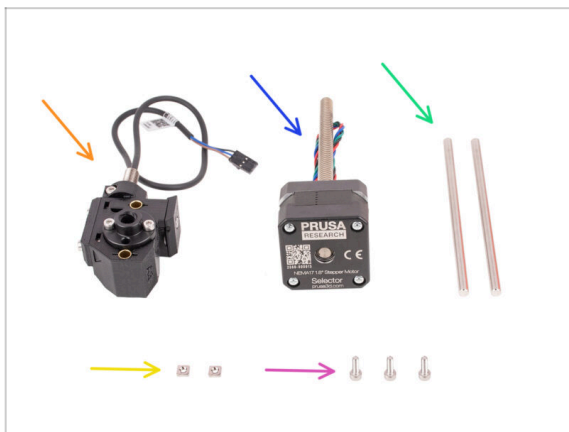


- ◆ Attach the motor with one M3x10 screw on top. **Just start the thread so that it holds in, don't tighten it up yet!**
- ◆ Turn the unit around and attach the motor with the other two M3x10 screws at the bottom. Use the ball-end 2.5mm Allen key at an angle to tighten up the screws fully.
- ⓘ Make sure, the screw is **perfectly perpendicular** to the motor while tightening. If it is hard to turn, release the screw fully, re-align it, and start tightening it from the beginning to avoid cross-threading it.
- ◆ Now, turn the unit around again to tighten up the top screw fully too.

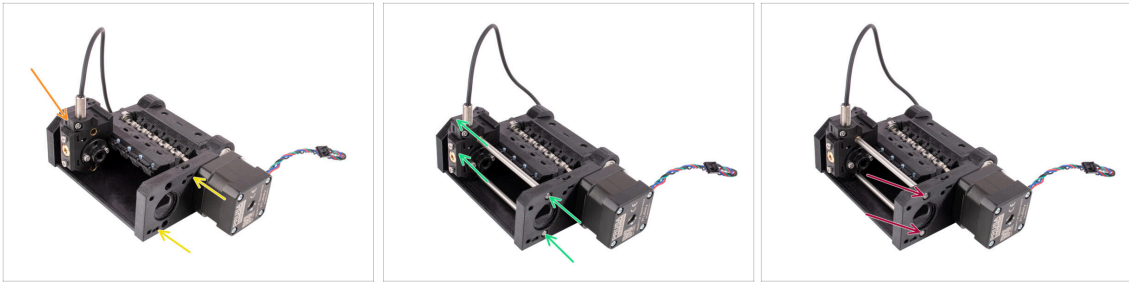
**STEP 13** Pulley alignment

**⚠ WARNING:** this step is crucial in order for the MMU unit to work properly! **Please check your pulley alignment multiple times!!!**

- The groove inside the pulley must be perfectly aligned with the filament openings in the pulley body. Align the pulleys one by one.
- Take a perfectly straight piece of filament and guide it through the first opening. Align the pulley so that the filament is perfectly centered.
- Make sure the lock screw is still perpendicular to the flat part of the shaft. Then tighten it. Use reasonable force as you might strip the screw.
- Align and tighten the remaining four pulleys using the same technique.
- ⚠ Check the proper positioning of all of the pulleys again. Adjust it if necessary.

**STEP 14** Selector: parts preparation

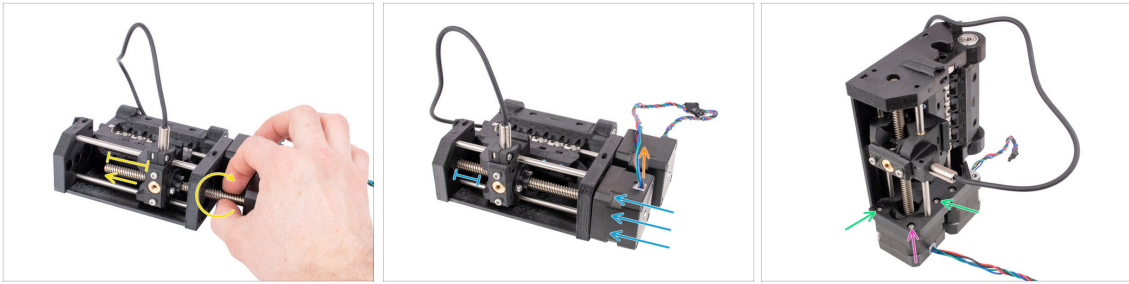
- **For the following steps, please prepare:**
- Selector assembly (1x) *you prepared earlier.*
- Selector motor (1x)
- 5x120sh Shaft (2x)
- M3nS nut (2x)
- M3x10 screw (3x)

**STEP 15** Selector installation

- ◆ Insert two M3nS nuts into the marked openings in the pulley body. Push the nuts all the way in.
- ◆ Insert the selector into the pulley body as seen in the picture.
- ◆ Insert the two shafts through the marked openings in the pulley body. The shafts must pass through the selector and engage into the other side of the pulley body.
- ◆ Push the shafts in until they are fully inserted - slightly below the surface on the side.

**STEP 16** Selector movement check / motor prep

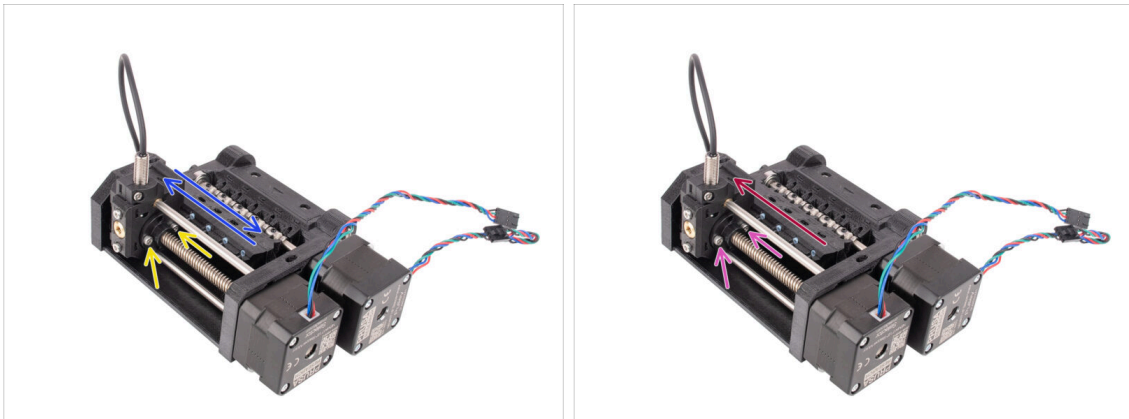
- ◆ Verify the selector can move around freely while the rods are in place.
- ◆ Insert the selector motor so that its trapezoidal shaft goes through the pulley body as seen in the picture.
- ◆ Make sure the selector motor cable is pointing up before you proceed to attach the motor.

**STEP 17** Selector motor installation

- Rotate the threaded rod while pushing it towards the selector to engage it into the trapeze nut.

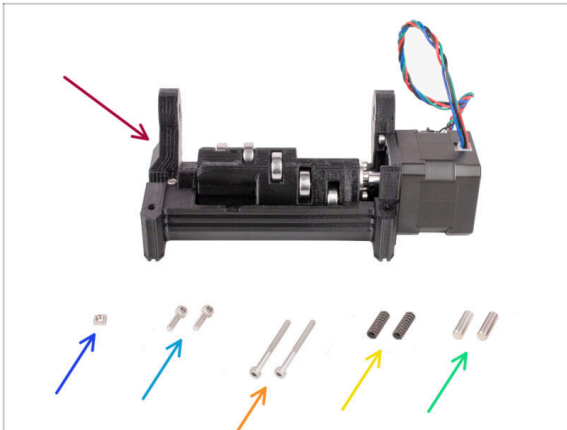
Continue rotating the rod until it passes entirely through, leaving around 2cm / 1in. of the shaft exposed on the left side of the selector.

- Ensure that the selector motor cable is oriented upwards.
- Push the motor all the way in. Check there is some clearance between the selector and the end of its travel on the left.
- Attach the selector motor to the pulley body with **two** M3x10 screws in the marked openings. Tighten them up using the ball-end 2.5mm Allen key.
- Add the last M3x10 screw in the corner. Tighten it snugly. **Don't overtighten the screw in the corner!** Otherwise, you might tilt the selector motor.

**STEP 18** Trapezoid nut positioning

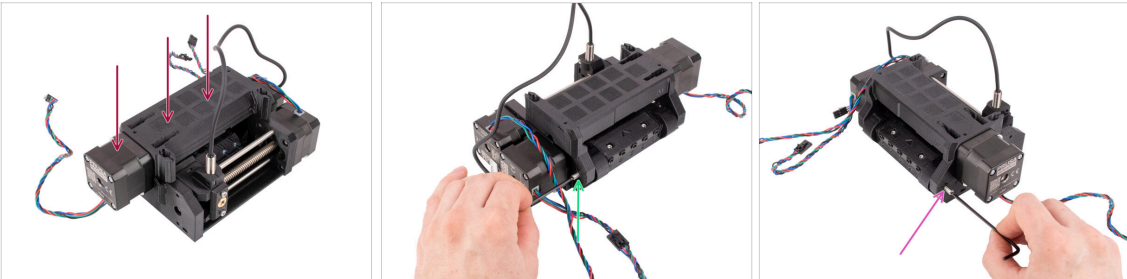
- Using the ball-end 2.5mm Allen key, slightly loosen the two screws holding the trapezoid nut on the selector. **Don't remove them completely.**
- Verify the selector can move when forced left and right. There should be no hiccups along the way. Note that you have to exert some force to move it as the motor has physical resistance.
- Move the selector all the way to the left.
- Fully tighten the two screws that secure the trapezoid nut.

## STEP 19 Idler body installation parts preparation

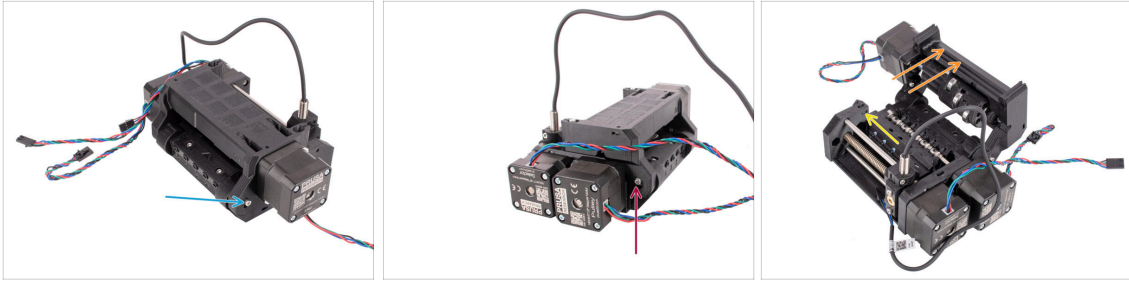


- Idler assembly(1x) *with the idler and motor installed*
- M3nS nut (1x)
- M3x10 screws (2x)
- M3x30 screws (2x)
- 15x5 Springs (2x)
- 5x16sh Shaft (2x)

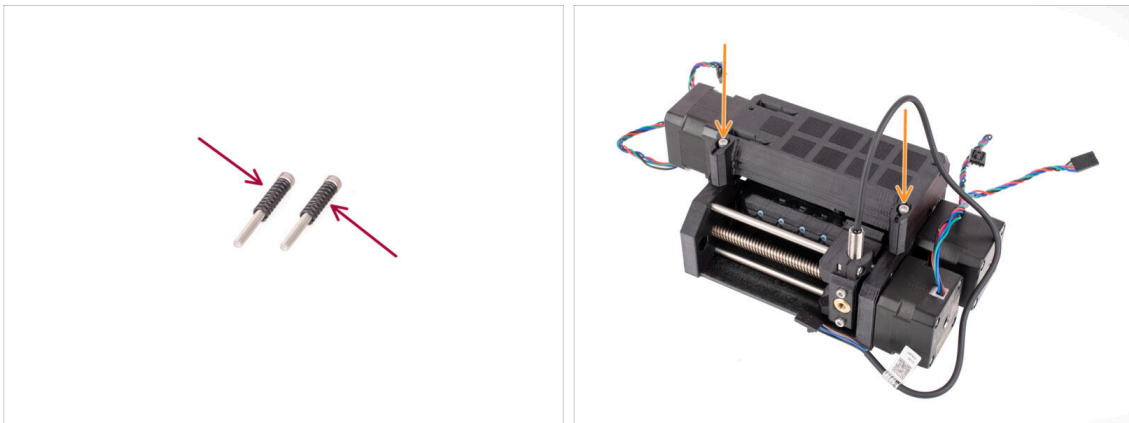
## STEP 20 Idler body installation (part 1)



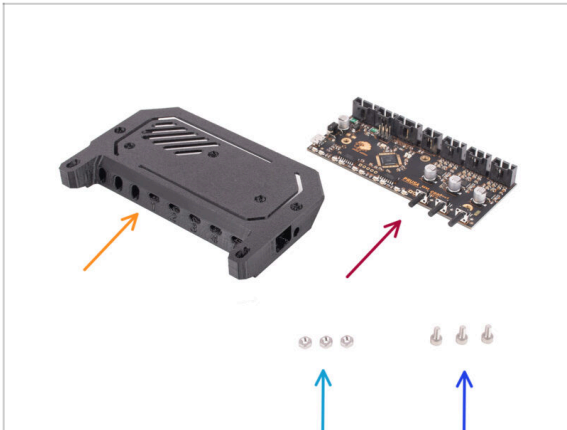
- Attach the Idler assembly onto the pulley body as seen in the picture. The Idler motor should be on the left.
- Now, take a look from the opposite side of the unit.
- Insert the 5x16 shaft into the marked opening and push it all the way in until it engages into the bearing in the pulley body.
- Insert the other 5x16 shaft into the marked opening on the other side. Push it all the way in.

**STEP 21** Idler body installation (part 2)

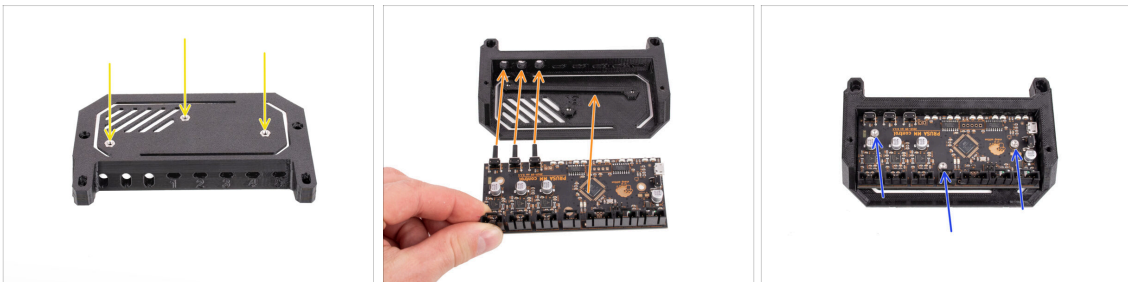
- ◆ Fix **the shaft** in place by attaching the **M3x10** screw into the opening above it.
  - ◆ Fix the shaft on the other side in place by attaching the **M3x10** screw into the opening above it too.
  - ◆ Open up the Idler body.
  - ◆ Insert the **M3nS nut** into the marked opening on the inside of the Pulley body. Push it all the way in.
- ⚠ You may need to move the selector away slightly, in order to access the opening.

**STEP 22** Idler body installation (part 3)

- ◆ Attach both **springs** onto the two **M3x30** screws.
  - ◆ Close the Idler, insert the **M3x30** screws with the springs into the marked openings. Tighten them until the screws are just above the surface.
- ⚠ **Do not tighten the screws too much. The top of the screw heads shouldn't be below the surface.**  
**Later on, we will use these screws to set the Idler tension.**

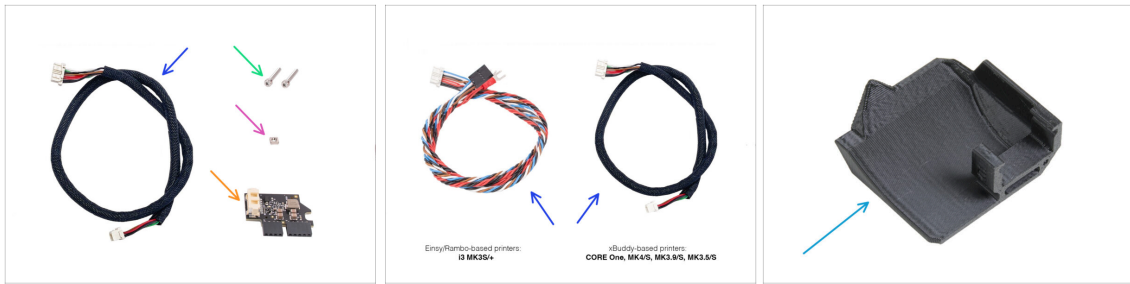
**STEP 23** Control board parts preparation

- ◆ For the following steps, please prepare:
- ◆ Electronics cover (1x)
  - ⓘ There have been several versions of this part available, which might look slightly different. The version shipped after April 2024 is slightly taller to comply with ESD regulations.
- ◆ MMU Electronics - Control Board (1x)
- ◆ M3n nuts (3x)
- ◆ M3x6 screws (3x)

**STEP 24** Control board assembly

- ◆ Insert the three M3n nuts into the marked openings on top of the electronics cover. Push them all the way in.
- ◆ Slide in the Control board into the cover. Note the three buttons in the front have to go in first.
  - ⚠ To prevent electrostatic discharge (ESD) damage, handle the board by its sides during manipulation. Avoid touching the chips, capacitors, and other electronic components.
- ◆ Fix the board in place with three M3x6 screws.
  - ⓘ Be careful not to damage any of the small components on the board.

## STEP 25 PD-board parts preparation



● For the following steps, please prepare:

● MMU / printer cable (1x)

⚠ Use the correct cable for your printer type e.g. **CORE One, MK4/S etc. or MK3S+**

● M3x18 screw (2x)

● M3nS nut (1x)

● PD-board add-on (1x)

● PD-board-cover (1x) *Used to not be present on the early MMU3 kits. If you don't have it, you can proceed without it.*

## STEP 26 Installing the PD-board-cover



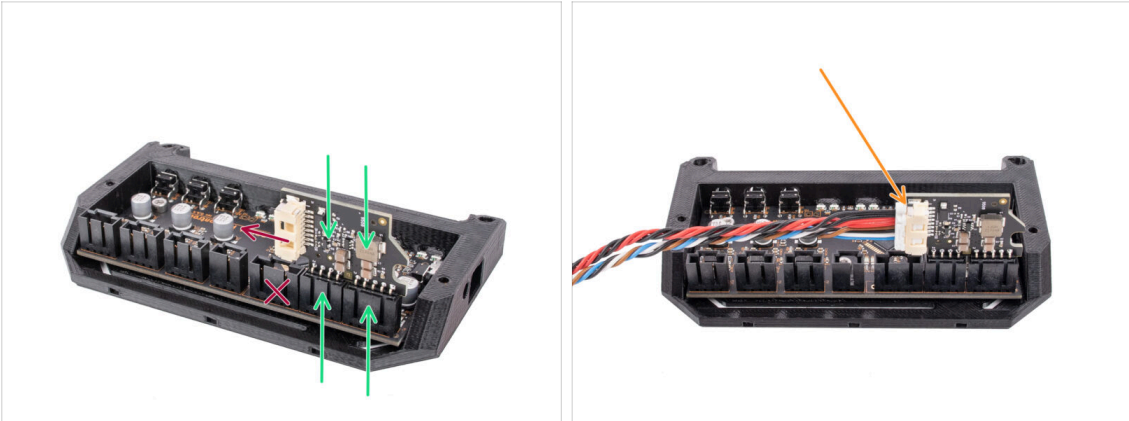
● This step is for those units that have the PD-board-cover in the package. If your package does not contain this part, skip this step.

● Slide the PD-board into the brackets on the PD-board-cover. Note the correct orientation of the parts.

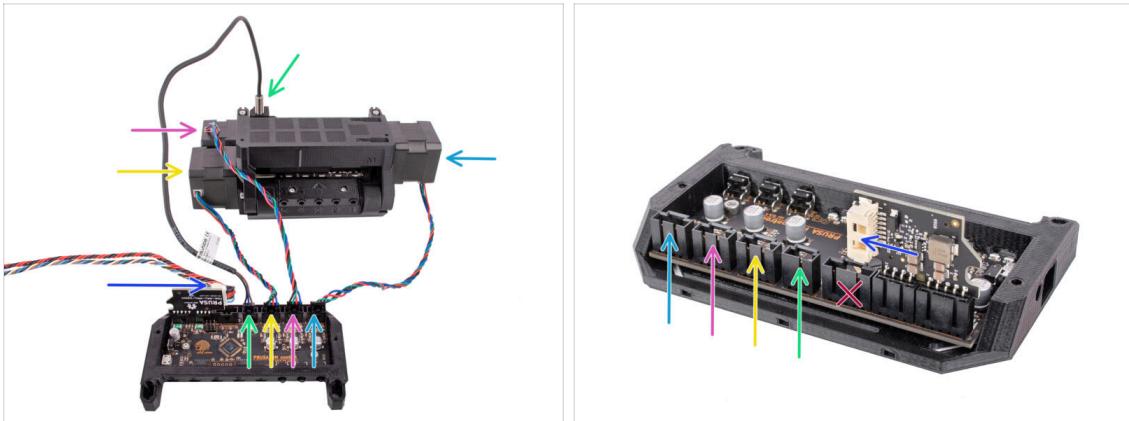
ⓘ Start sliding in at a slight angle.

● Plug the PD-board into the leftmost connectors on the electronics board. Gently push down on the PD-board.

## STEP 27 PD-board installation



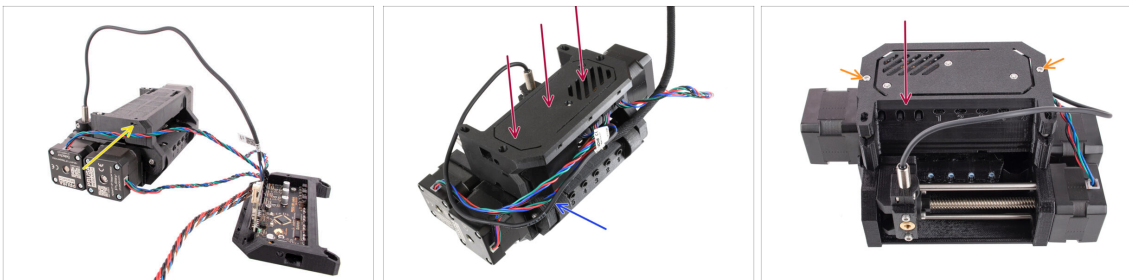
- Attach the **PD-board** into the marked connectors on the electronics board so that it occupies the two connectors on the side of the control board
- The white connector on the PD-board is pointing inwards.
- ⚠ **Make sure the PD-board is connected the exact same way as seen in the picture.** If you plug in the PD-board incorrectly, you will damage the electronics. Any damage caused to the printer due to an incorrect electronics assembly is not covered by warranty.
- ⚠ Don't connect or disconnect the cable if the printer is connected to the power outlet or is powered on.
- Connect the **MMU/printer cable** into the PD-board.

**STEP 28** Connecting the cables

● Prepare the unit and the electronics board assembly as seen in the picture. Follow the cables to plug them in the correct order.

- MMU/Printer cable
- SuperFINDA sensor cable
- Pulley motor cable
- Selector motor cable
- Idler motor cable

ⓘ Rule of thumb for the motor cables is; if you look from the back of the unit, the motor connectors are on the same sides as the motors, while the motor at the front (selector) occupies the middle connector.

**STEP 29** Electronics assembly

- Insert the **M3nS nut** into the marked opening and press it all the way in.
- Attach the electronics assembly to the MMU unit. Make sure the side with the buttons is pointing to the front.
- Look at the back to see if the PD-board doesn't interfere with the cables. The cables should be guided **over** the PD-board, not beneath.
- Fix the electronics in place by two M3x18 screws.

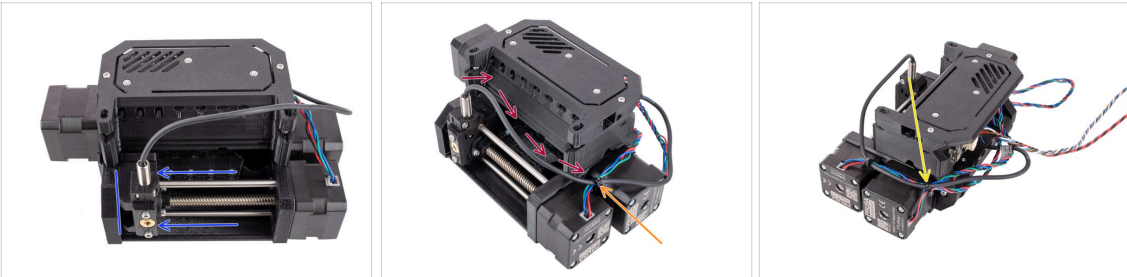
ⓘ Use the correct type of screws. In case you used longer ones, the unit might not work as expected.

### STEP 30 Textile sleeve parts preparation



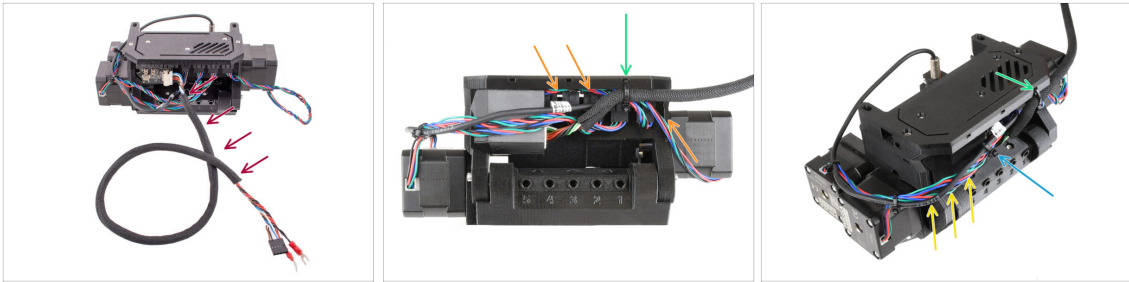
- ◆ For the following steps, please prepare:
- ◆ Textile sleeve 5x450 (1x) *In case of MK3S/+ cable*
- ⓘ The textile sleeve isn't required for the CORE One / MK4 / MK3.9 / MK3.5 Cable, as it already comes pre-installed.
- ◆ Zip-tie (4x)

### STEP 31 Cable management (part 1)



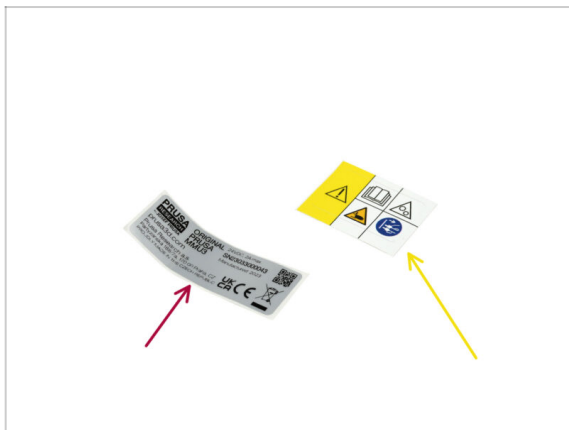
- ◆ Ensure that the selector is fully moved to the left.
- ◆ Arrange the **SuperFINDA cable** so that it joins the motor cables on the side of the unit as seen in the picture.
- ⚠ Leave enough slack in the cable so that it doesn't bend too much with the selector reaching even the first filament position!
- ◆ Join the **Selector motor cable** with the SuperFINDA cable using a **zip-tie** in the marked position, as seen in the picture.
- ◆ Join the cables together with the **Pulley motor cable** in the marked position using a **zip-tie**.

## STEP 32 Cable management (part 2)



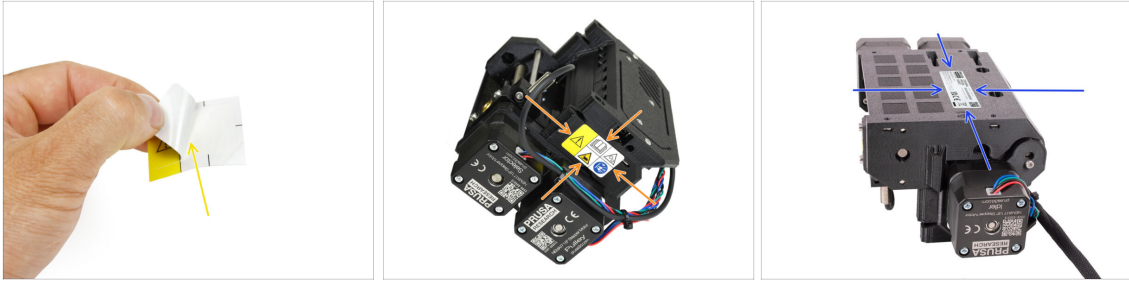
- Wrap the MMU/Printer cable in the **textile wrap** if it isn't wrapped already.
- Join the **Idler** motor cable with the MMU/Printer cable on the right side. Tuck any excess cable length under the electronics cover.
- Fix these cables to the marked **attaching point** on the ele-cover using a zip-tie.
  - ⚠️ **Ensure there is enough slack in the cables so that the zip-tie does not pull by them when tightened.**
- **Leave as much slack as possible** in the cable bundle between the motors and the electronics so the unit can be opened up later on without the risk of damaging the cables!
- Bundle the loose cables together using a zip tie.

## STEP 33 Stickers parts preparation



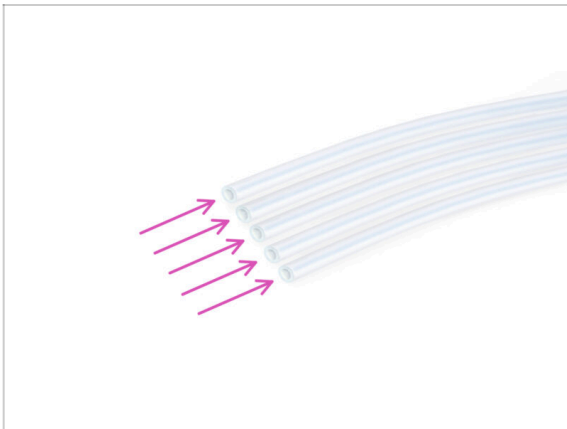
- **For the following steps, please prepare:**
- Serial number sticker (1x)
- Safety sticker (1x)

## STEP 34 Applying the stickers



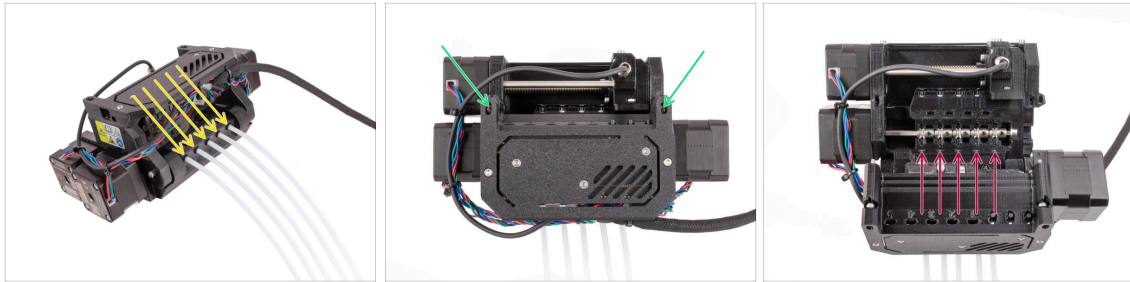
- ◆ Remove the safety sticker from the protective layer.
- ◆ Apply the **safety sticker** onto the right side of the MMU3 unit. The correct position is depicted in the second picture.
- ◆ Apply the **serial number sticker** to the bottom of the MMU3 unit using the same method as before. Ensure it adheres securely and does not obstruct the screw openings.

## STEP 35 Rear PTFE parts preparation



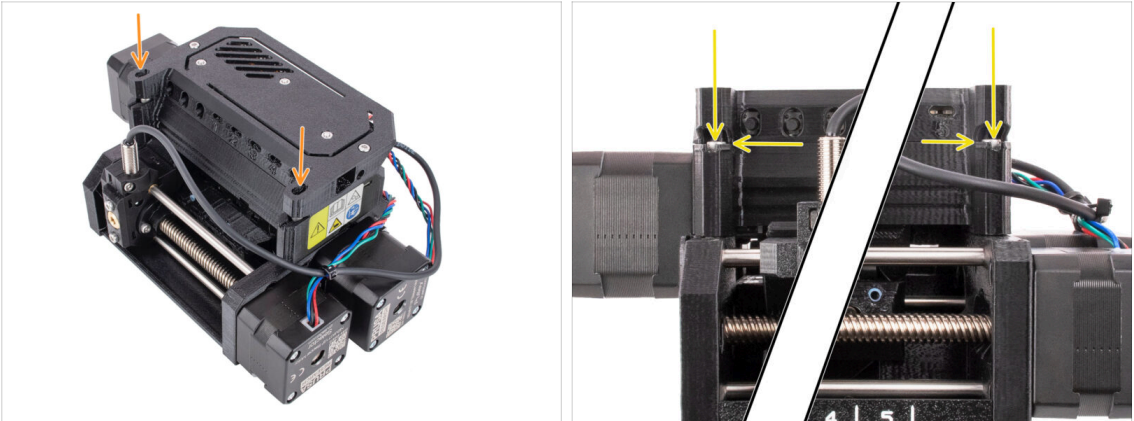
- ◆ For the following steps, please prepare:
- ◆ PTFE tube 4x2.5x650 (5x) *five of the ten long ones.*

## STEP 36 Rear PTFE installation



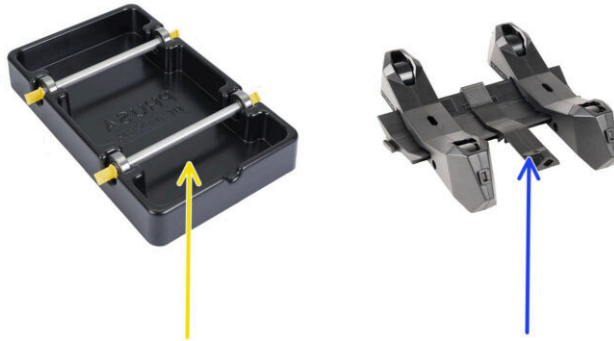
- Insert the five long PTFE tubes into the openings with the black collets on the back of the MMU unit.
- ⓘ From now on, if you need to remove the PTFE tube, push the black collet in, and pull the PTFE tube out.
- Undo the two idler tension screws and open up the unit.  
🔧 Don't worry, the screws won't fall out.
- There are small windows next to each of the pulley positions. Verify the PTFE tube is fully inserted and its end is visible inside the window. If not, push the tube in some more.

## STEP 37 Setting the Idler tension

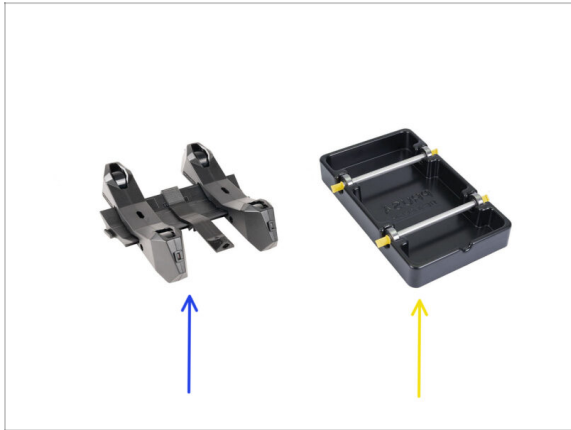


- Close the unit and tighten the idler **tension screws** slightly.
- Adjust both of the idler tension screws so that the top of the **screw head is slightly above** the top surface of the idler-body.
- ⓘ This is the setting which works for the majority of materials. Some specific filaments might require a slightly different idler tension setting.
- ⚠ **The correct idler tension is crucial and might require further adjustment on your MMU unit.**
  - With **too low** idler tension, the MMU unit might struggle with grabbing the filaments properly.
  - With **too high** idler tension, the idler will struggle with determining its home position and the MMU unit won't work properly.

## 7. Spool holder Assembly



## STEP 1 Two Spoolholder types



**!** In this chapter, we will assemble the **spool holders**. Before proceeding, note that there are two types:

**1. Current Injection-molded spoolholder**

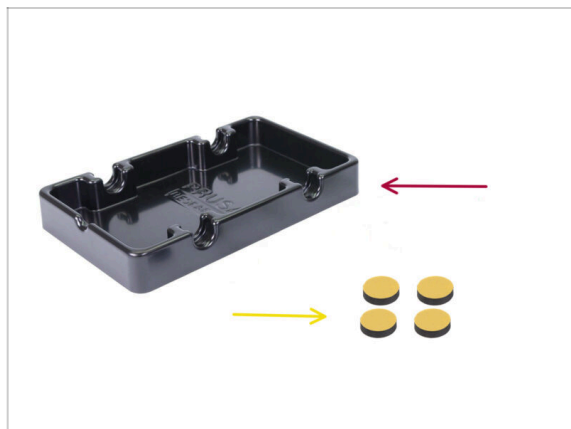
**📌** Currently shipped in the MK4/S or CORE One versions. Continue to Injection molded spoolholder: parts preparation

**2. Legacy vacuum-formed spoolholder**

**📌** This old version used to come with the first MK3S versions or older upgraded units. Continue to the Vacuum formed holder parts preparation

**i** If the large portion of the box is occupied by the rectangular black trays, you have the first version, the older vacuum-formed spoolholders.

## STEP 2 Vacuum formed holder parts preparation



**◆** For the following steps, please prepare:

**◆** Spoolholder base (1x)

**◆** Foam pad (4x)

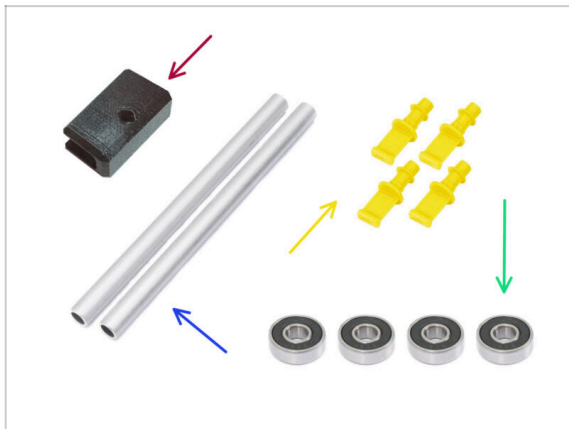
**i** Note, this is a legacy version of the spool holder. If you have the newer injection-molded spool holders, skip these steps.

### STEP 3 Foam pads installation



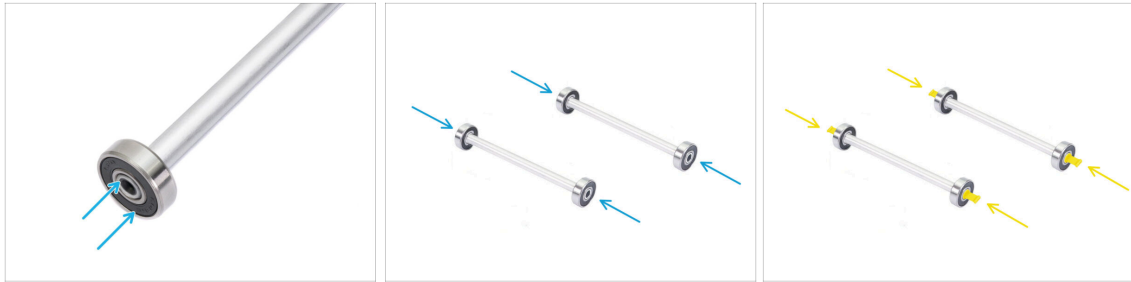
- Turn the spoolholder base upside down.
- Peel off the yellow protective layer off the foam pads.
- Attach the four foam pads into the bottom corners of the spoolholder base.

### STEP 4 Rods, Bearings parts preparation



- **For the following steps, please prepare:**
- PTFE holder (1x)
- Shaft (2x)
- Plug (4x)
- Bearing (4x)

### STEP 5 Rods and bearings assembly



- Attach a bearing onto each end of both rods.
- Attach the plugs onto the rod ends to fix the bearings on each rod.

### STEP 6 Finishing up the Spoolholders (vac. form.)



- Attach the rods with bearings into the base part so that the bearings engage into the corresponding grooves on the base.
- There is a notch on the front part of the spoolholder.
- Attach the PTFE holder onto the notched front part of the spoolholder.
- Repeat the same steps to build the remaining spool holders until you finish all five.

## STEP 7 Injection molded spoolholder: parts preparation



**⚠ If you have the injection-molded spoolholders instead, continue from here.**

- If you already assembled your **rectangular vacuum-formed spoolholders**, please, **skip to the next chapter**.

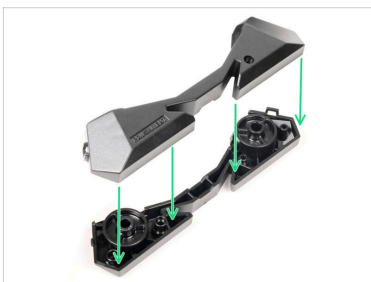
## STEP 8 Injection molded holder parts preparation



● **For the following steps, please prepare:**

- Spool holder Base (4x)
- Spool holder Guide (1x)
- Spool holder Wheel (4x)
- ⓘ Wheels shipped after April 2024 are made of POM. We recommend using this version over the earlier models made from ABS.
- sheet of Foam Pads (1x)
- PTFE holder (1x)

## STEP 9 Base assembly (part 1)



- Take one Base part. Arrange it as seen in the picture.
- Insert two wheels into the Base.
- Cover the assembly with another Base part on top.

### STEP 10 Base assembly (part 2)



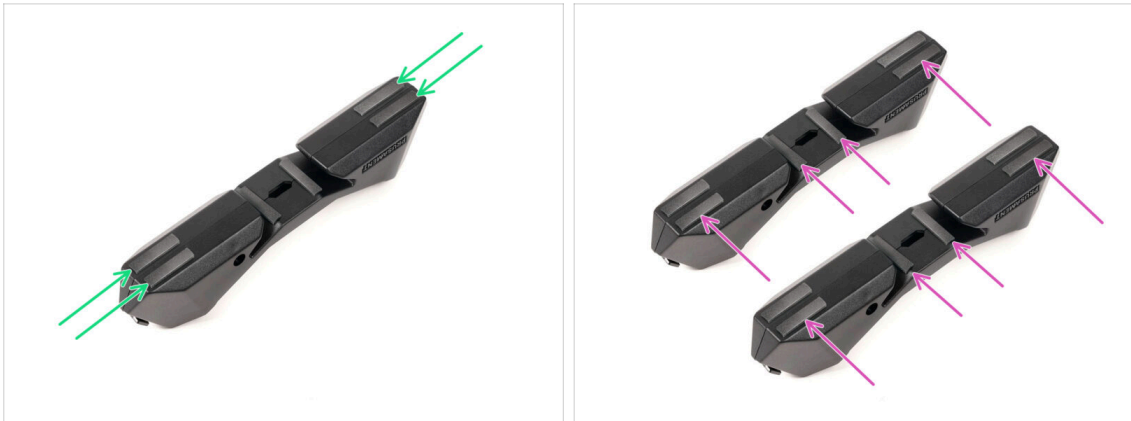
- ◆ Push both Base parts together until they fully engage one into the other.
- ◆ Verify the Base parts hold together properly.
- ◆ Repeat the same steps for the other side part of the spool holder, until you get two of these.

### STEP 11 Foam pads installation (part 1)



- ◆ Take the foam pad sheet. Bend it to separate the individual foam pad strips.
- ◆ There is a bending line inside the inner opening on the bottom of the spoolholder side part.
- ◆ Attach an individual foam pad strip onto the middle of the bending line inside the opening, as seen in the picture.

## STEP 12 Foam pads installation (part 2)



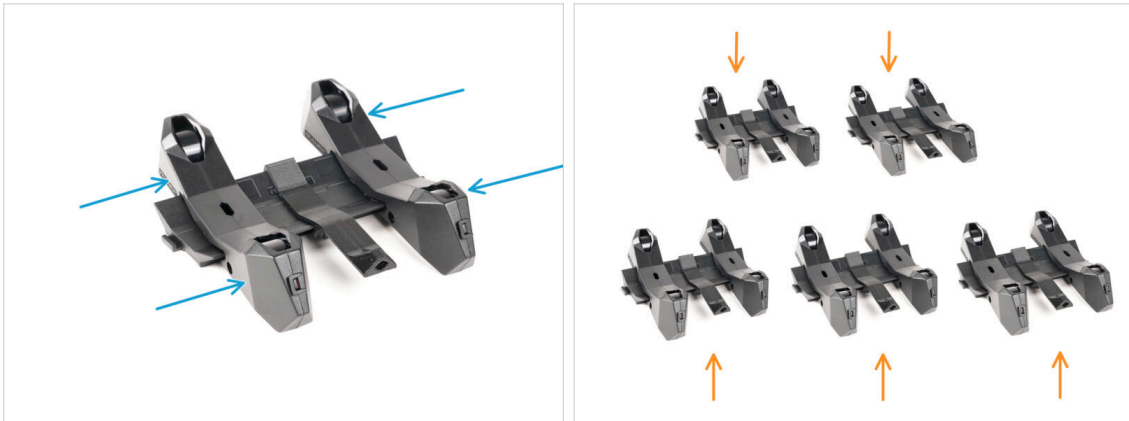
- Attach another four foam pad strips onto the marked positions on the bottom of the spool holder side part.
- Install another six foam pad strips onto the other side part of the spool holder.

## STEP 13 PTFE holder assembly



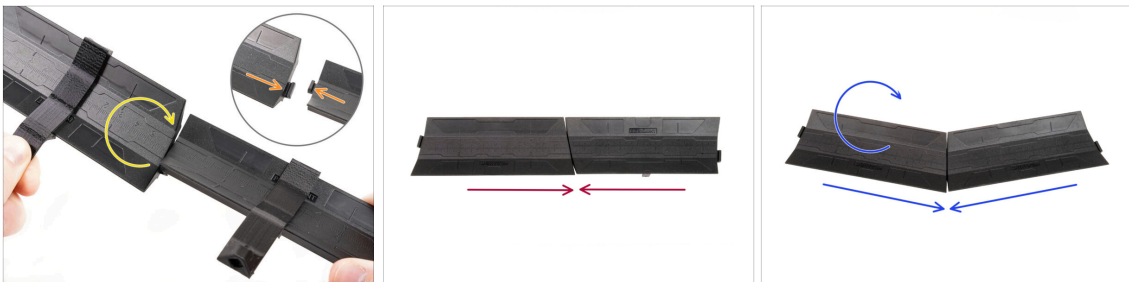
- Take the spoolholder Guide part. Hook the end of the PTFE holder onto the Guide
- Make sure the longer part of the PTFE holder is located at the narrower side of the Guide part.
- Push the PTFE holder down onto the Guide until it fully engages and locks in place.

## STEP 14 Finishing up the Spoolholders (inj. mol.)



- ◆ Slide the side parts onto the Guide part.
- ◆ Repeat the same steps for the remaining Spool holders, until you assemble all five. (Don't forget about the foam pads on the bottom!)

## STEP 15 Joining the Spoolholder Guides



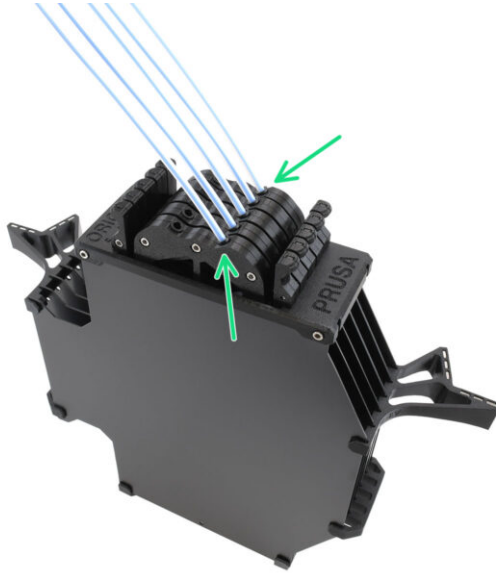
- ◆ There are protrusions on each side of the Guide part.
- ◆ Using these protrusions, the Guide parts can be joined together. To join them together, simply tilt in the Guide parts one into the other until the protrusions click in.
- ◆ The Guides can be joined together in form of a straight line.
- ◆ Or, if you flip one of the Guides around, they can be joined in an arc pattern. This is handy to form an arc of spool holders around the Buffer so that each filament path is as straight as possible.

## STEP 16 Buffer Types



- ◆ In the upcoming chapter, we will be assembling the **Buffer**. There are two basic types, depending on your printer.
- ⓘ **Important note:** If you ordered the assembled Original Prusa MMU3 for CORE One, **your package contains parts for both buffer variants** (for CORE One and for the MK4/S). This is done to simplify production. The correct parts for the CORE One are in a separate box.
  - ◆ If you have the CORE One printer, continue to the 8B. Core One Buffer Assembly
  - ◆ If you have the MK4/S, MK3.9/S, MK3.5/S or MK3S/+, continue to the 8A. Cassette Buffer Assembly

## 8B. CORE One Buffer Assembly

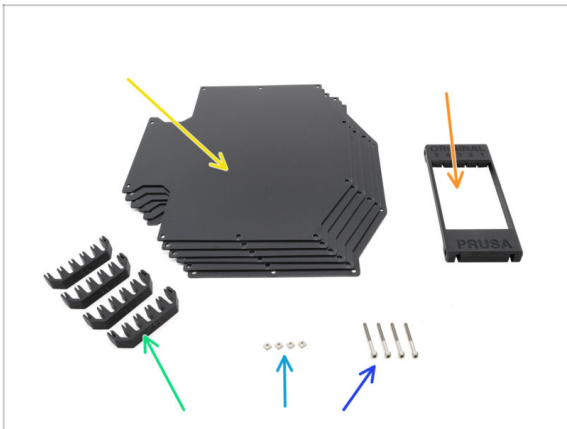


## STEP 1 Tools necessary for this chapter



- **Please prepare tools for this chapter:**
  - 1.5mm Allen key for possible nut alignment
  - 2.5mm Allen key for M3 screws

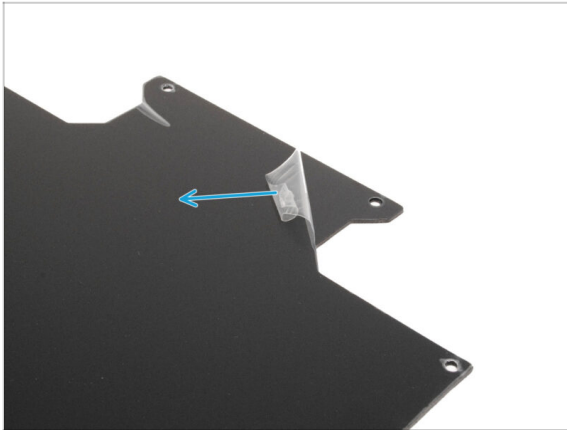
## STEP 2 Buffer Plates Preparation



- **For the following steps, prepare:**
  - Buffer plate (6x)
  - Segmenter (1x)
  - Plate Holders (4x)
  - M3x30 Screw (4x)
  - M3nS nut (4x)

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### STEP 3 Plates Peeling



- Peel the **protective layers off the both sides** of the buffer plates.

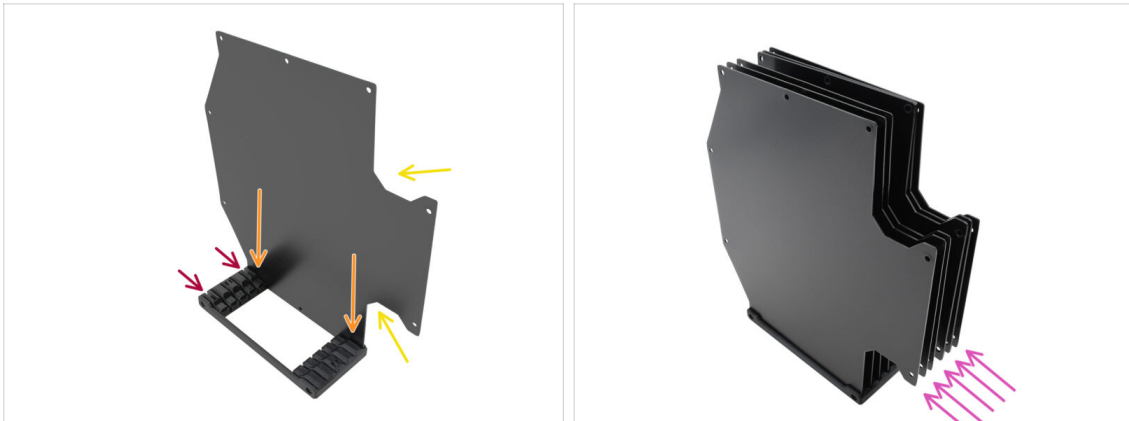
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### STEP 4 Segmenter Nuts



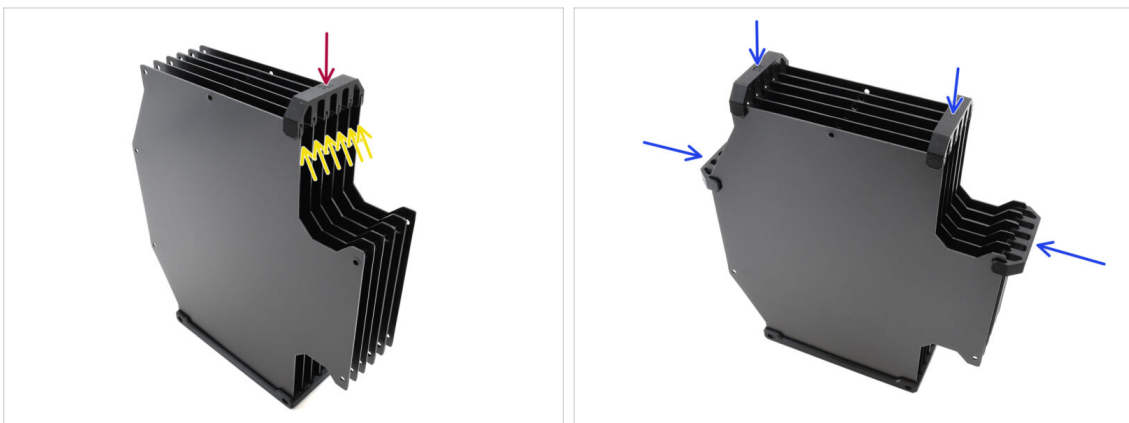
- Take the Segmenter part and position it as shown in the picture. Lay it on its flat side and rotate it so the **larger cutouts face away** from you.
- Insert the four M3nS nuts into the corresponding pockets in the center. Push them all the way in.

## STEP 5 Plates Installation



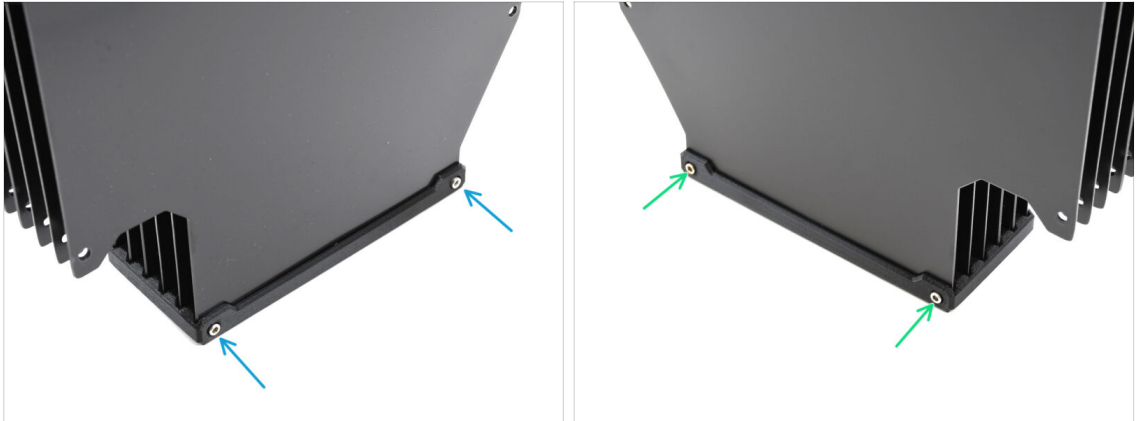
- Install the first buffer plate into the Segementer.
- Make sure the large cutouts in the plate are facing you.
- Make sure the two larger slits in the Segementer are facing away from you.
- Insert the remaining five sheets into the corresponding openings in the Segementer.

## STEP 6 Plate Holder Installation



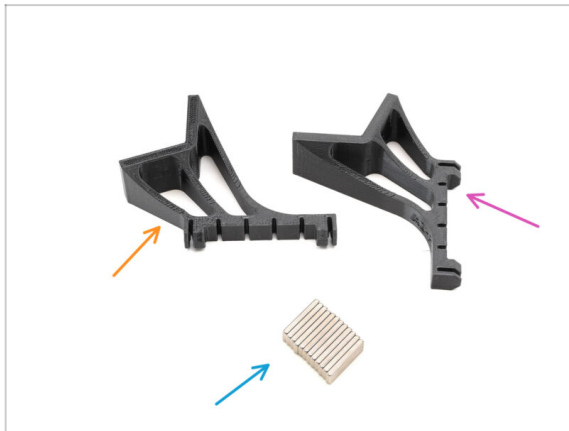
- Fix the plates together using the Plate holder in the marked position.
- Make sure all the plates are seated properly.
- Install the remaining plate holders so that the assembly is held together in the marked positions.

## STEP 7 Segmenter Screws



- Secure the plates to the Segementer part using two M3x30 screws from one side.
  - i Tighten the screws in the position shown to prevent the M3nS nuts from falling out of the Segementer part.
- Tighten the remaining two M3x30 screws from the other side.

## STEP 8 Plate Holder L & R Preparation



**■ For the following steps, prepare:**

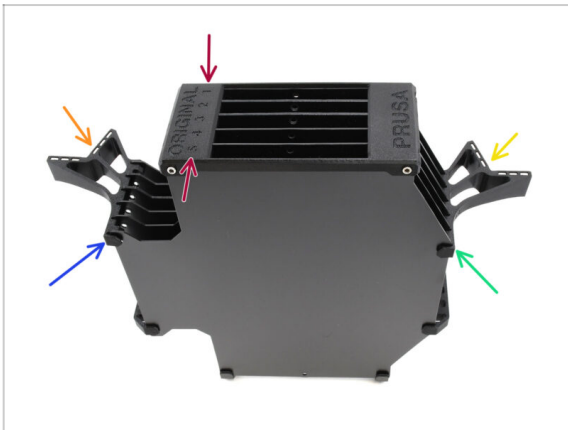
- Plate holder L (1x)
- Plate holder R (1x)
- Magnet 2x6x20 (12x)

## STEP 9 Magnet Installation



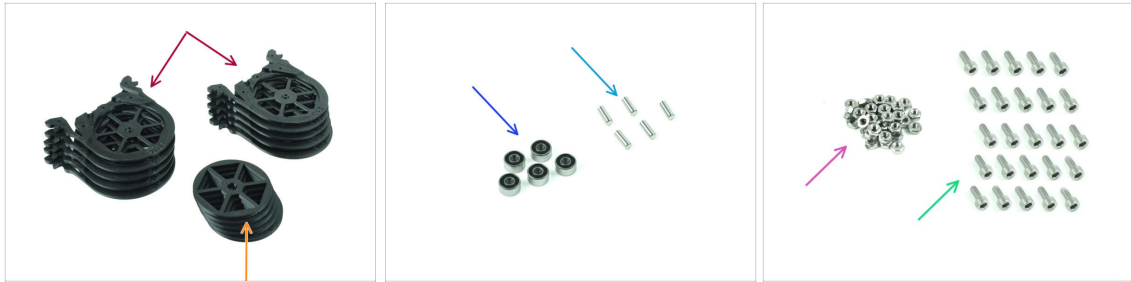
- ◆ Install all twelve magnets into the marked openings on both the Plate holder L and R parts.
- ⓘ Make sure all the magnets are fully inserted. The orientation of the magnets is not important.

## STEP 10 Plate Holder L & R Installation



- ◆ Orient the assembly so that the segmenter is on top, with the position labeled 1 facing away from you and position 5 toward you.
- ◆ Install the Plate Holder L onto the left side of the assembly.
  - ◆ The magnets should face away from you, toward position 1.
- ◆ Install the Plate Holder R onto the right side of the assembly.
  - ◆ The magnets should face away from you, toward position 1.

## STEP 11 Buffer segment preparation



### For the following steps, prepare:

Buffer Segment (10x)

**⚠ Make sure you are using the latest version of the Buffer segment.**

Wheel (5x)

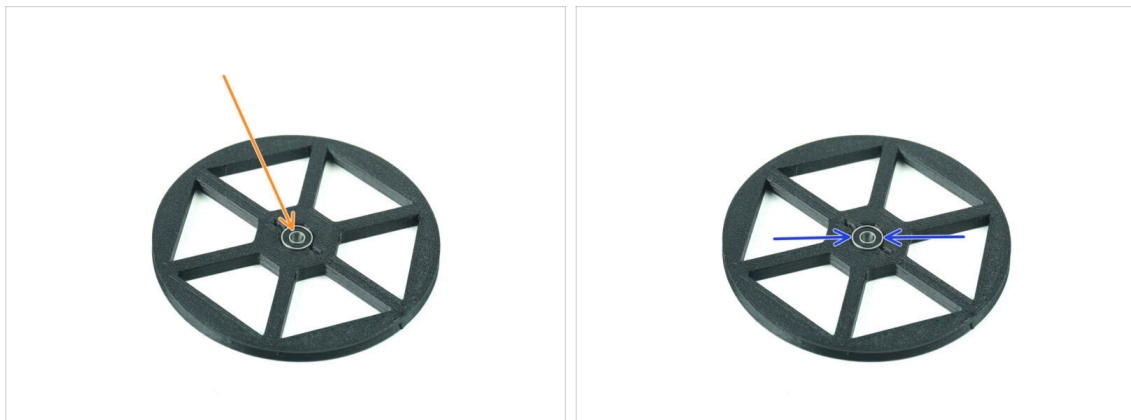
Ball Bearing 693-2rs (5x)

Shaft 2.9x8.5 (5x)

M3n nut (15x)

M3x6 screw (25x)

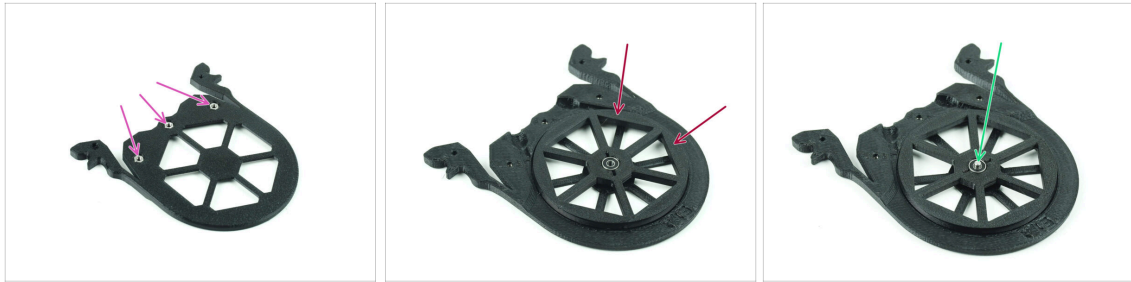
## STEP 12 Segment assembly (part 1)



Insert the bearing into the center opening in the wheel.

Make sure the bearing is inserted all the way in, until flush with the surface.

Repeat for the remaining four wheels.

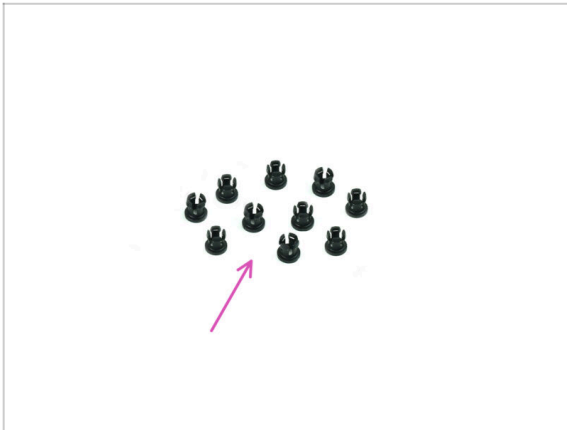
**STEP 13** Segment assembly (part 2)

- ◆ Insert three M3n nuts into the marked openings on the Segment and push them all the way in.
- ◆ Add the wheel into the center of the segment.
- ◆ Push the Shaft all the way through the middle of the bearing, until it engages into the segment below.

**STEP 14** Segment assembly (part 3)

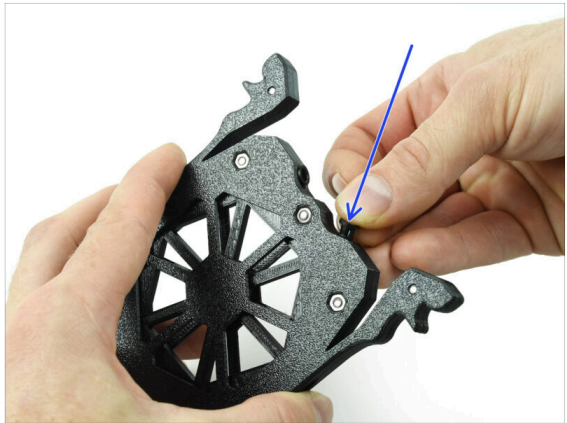
- ◆ Cover the assembly with another Segment part. Push both parts together to make sure the center shaft engaged into the top segment too.
- ◆ Join both parts together using four M3x6 screws.
- ◆ Turn the assembly around.
- ◆ Add the fifth M3x6 screw from the other side.
- ◆ Assemble all the remaining segments, using the same technique.

## STEP 15 Collets: parts preparation



- For the following steps, prepare:
- Collet (10x)

## STEP 16 Collet installation



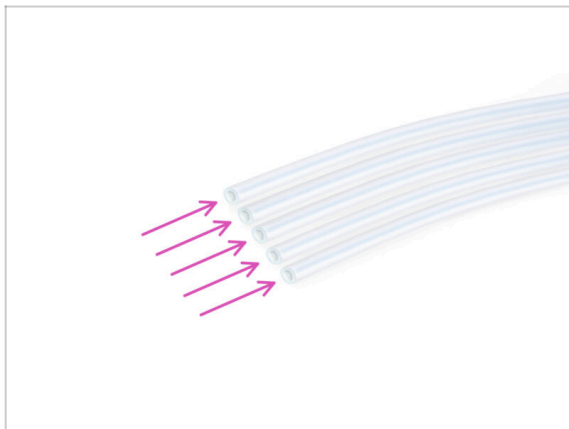
- Insert one of the collets into the marked position on the cartridge.
- ⚠ Note, for an easier installation, you might want to squish the small fins together while you insert the collet into the opening. Otherwise, one of the fins might spread outwards, resulting in a damaged collet.
- Insert another collet into the other opening.
- Install collets into the remaining four cartridges too.

## STEP 17 Cartridge installation



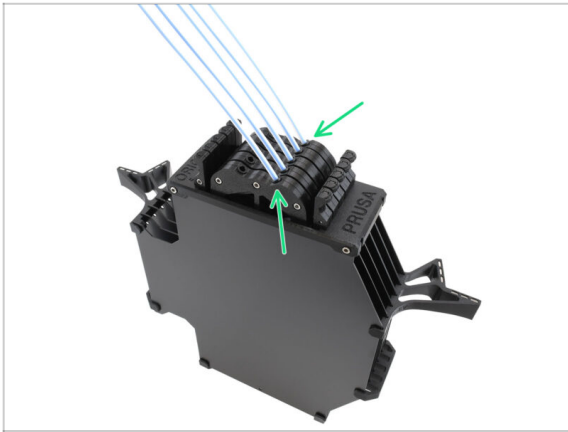
- ◆ Now, prepare all 5 cartridges and the buffer body.
- ◆ Take one of the cartridges and hold it by the two handles. Squish the handles together for insertion.
- ◆ Insert the cartridge into the buffer body.
- ◆ Make sure the cartridge is properly inserted.
- 🔧 For a later cartridge removal, squish the two handles together and pull it out.
- ◆ Insert all the cartridges into the buffer body.

## STEP 18 PTFE tubes parts preparation



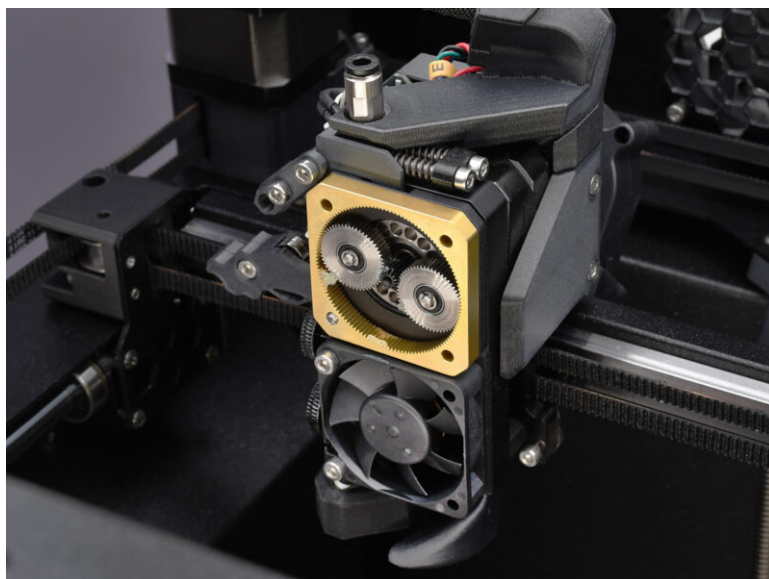
- ◆ For the following steps, prepare:
- ◆ PTFE 650mm (5x)

## STEP 19 PTFE tubes installation



- Insert the PTFE tubes into the row of collets on the right of the cartridges. Push them all the way in.

## 9D. CORE One Nextruder mod



## STEP 1 Introduction



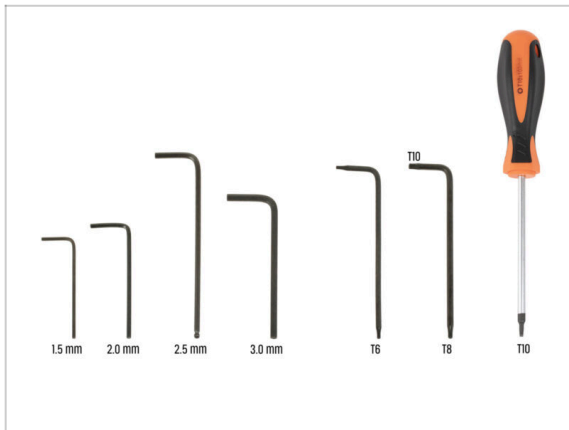
- In this guide, we're going to **modify the Nextruder** on your **CORE One** to accommodate the MMU functionality.
- ⚠ **Before continuing, make sure there is no filament loaded in the printer.**
- Power off your printer and disconnect it from the power.

## STEP 2 Spare parts bag



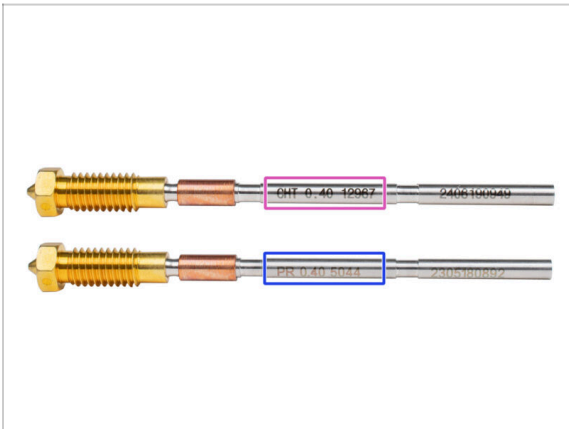
- During the conversion of the Nextruder to the multi-material version, you'll encounter similar but distinct parts. We suggest keeping a spare parts bag for components that will no longer be used.
- 📌 Don't worry, our guide will clearly show which parts to reuse and which to set aside.
- Let's begin!

### STEP 3 Tools Necessary



- For this chapter, please prepare:
- 2.5mm Allen key
- T8 / T10 Torx key
- T10 Torx Screwdriver

### STEP 4 Prusa Nozzle Info



- There are two main versions of the Prusa Nozzle that we ship with the printers:
    - **High Flow** Prusa Nozzle brass CHT (marked CHT)
    - **Regular** Prusa Nozzle brass (marked PR)
  - The **CORE One** comes with the Prusa Nozzle CHT by default. However, for best MMU3 performance, **we recommend switching to a standard Prusa Nozzle.**
  - ① High-flow nozzles are also usable, but they need specific HF Nozzle Slicer profiles with large purge volumes.
  - To replace the nozzle, please follow the Nozzle Replacement guide.
- ⚠ **Once completed, return to this manual to continue with the assembly.**

## STEP 5 Silicone Sock Info



**⚠** An optional **silicone sock** is installed on the **hotend** assembly by default.

- ◆ The CORE One series printers are equipped with a high-performance part cooling fan. The silicone **sock must remain** installed on the hotend to ensure stable thermal conditions and proper MMU operation.

## STEP 6 Top Cover Removal



- ◆ Open the printer. From the inside, reach for the nylon rivets on the front right of the top cover. Push it out to unlock it.
- ◆ Then, remove the rivet from the outside.
- ◆ Remove the remaining nylon rivets on the top cover using the same technique.
- ◆ Remove the top cover and store it as a spare part.

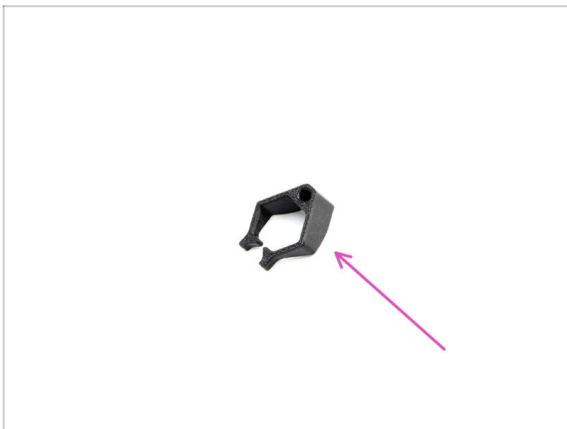
## STEP 7 Heatbed Protection



**⚠** Before proceeding any further, it is recommended to protect the heatbed first!

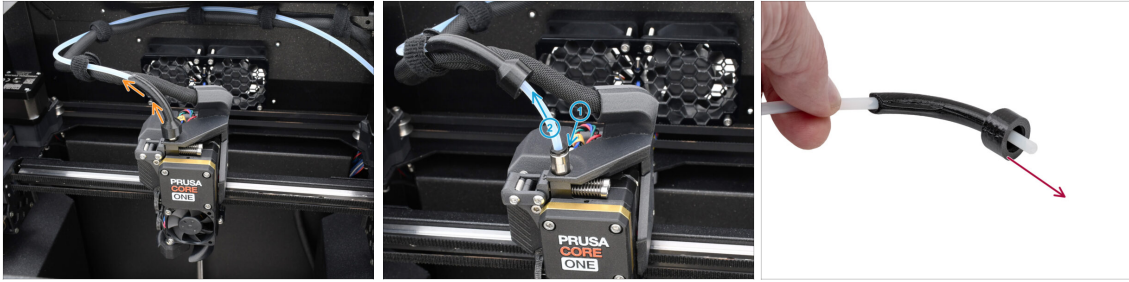
- Use a piece of fabric or other material thick enough to cover the heatbed. This will ensure you won't damage (scratch) the surface during the process.

## STEP 8 PTFE Holder Preparation



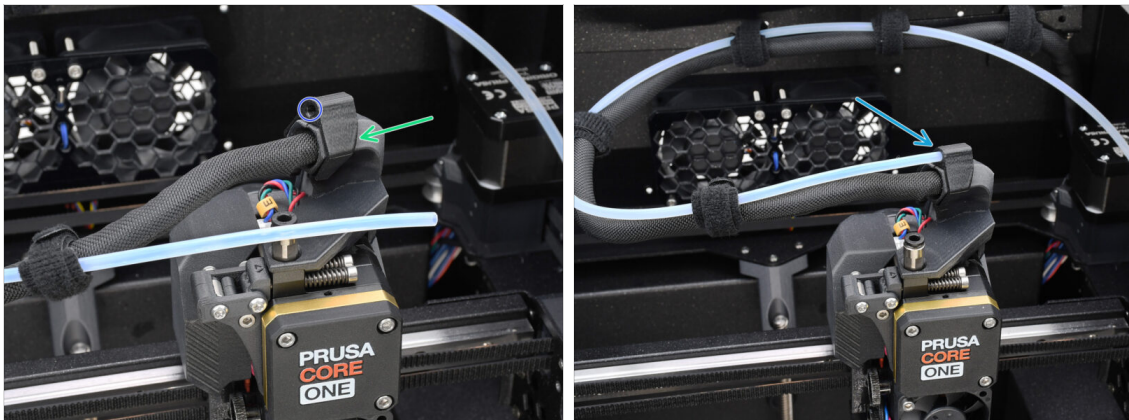
- For the following steps, prepare:**
- extruder\_PTFE\_holder (1x)

## STEP 9 PTFE Tube Removal



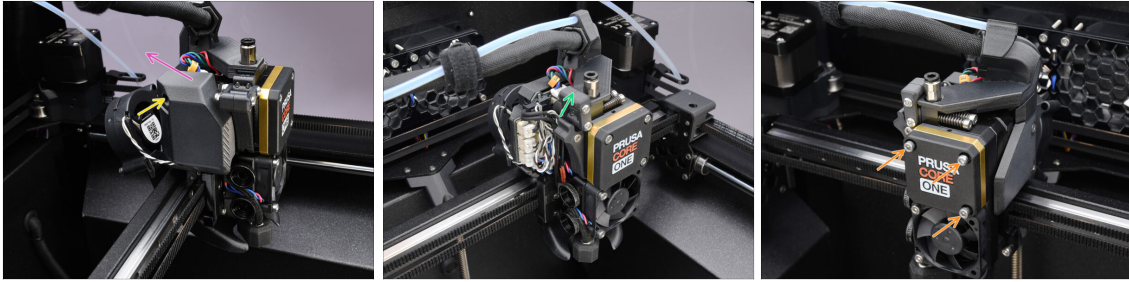
- 🟠 Lift the bowden-bend plastic part.
- 🟡 Remove the PTFE tube from the extruder. by pushing the collet on the fitting, while pulling the PTFE tube.
- 🔗 Press and hold the collet on the fitting. While holding it down, push the PTFE tube in, then pull it out.
- 🟢 Remove the bowden-bend part and store it as a spare part.

## STEP 10 PTFE Holder Installation



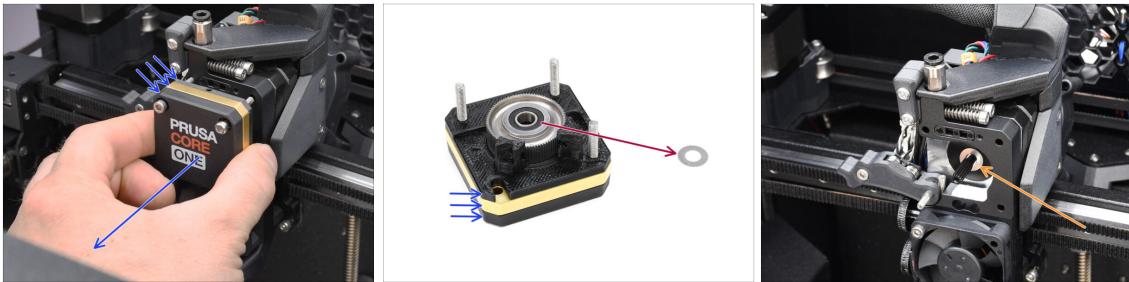
- 🟢 Install the extruder\_PTFE\_holder onto the main cable holder.
- 🟡 Make sure the part with the round opening faces the cable.
- 🟡 Push the end of the PTFE tube into the holder.
- 📄 This way, the original single-material PTFE tube stays in place and can be reattached if you convert the printer back to a single-material setup.

## STEP 11 Nextruder disassembly (part 1)



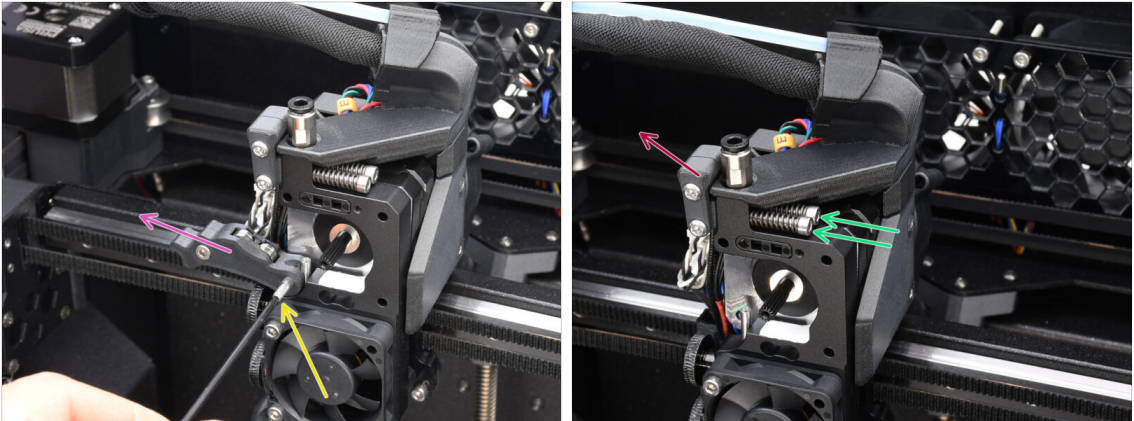
- ◆ Using the 2.5mm Allen key, remove the M3x10 screw holding the side cover.
  - i Some older printer versions might have two screws with a T10 head.
- ◆ Remove the cover.
- ◆ Open the Idler swivel.
- ◆ Fully loosen the M3x25 screws holding the gearbox cover. Leave the screws in place. Do not remove them entirely yet.

## STEP 12 Nextruder disassembly (part 2)



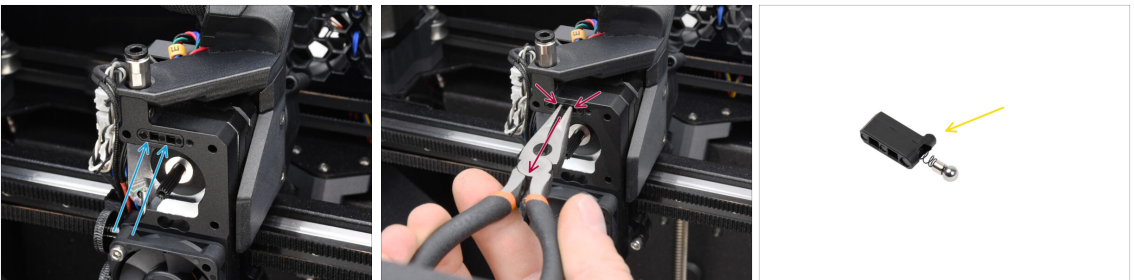
- ◆ Remove the whole **gearbox assembly** from the Nextruder.
- ◆ Locate the **metal washer** that should be between the gearbox and the motor. It might be stuck to the gearbox assembly.
- ◆ Reseat the washer / spacer on the motor shaft, in case it has come off the shaft.
- 📌 The parts might be greasy. Clean off any excess grease.

### STEP 13 Nextruder disassembly (part 3)



- Using the 1.5mm Allen key, remove the **set screw**.
- Remove the Idler.
- Remove the two M3x30 screws with the springs.
- Remove the idler swivel assembly.

### STEP 14 Nextruder disassembly (part 4)



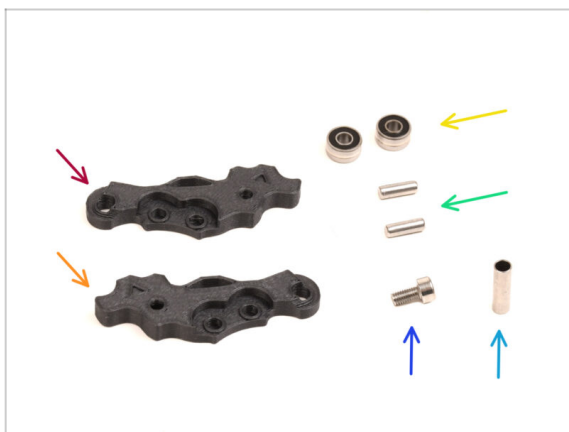
- On top of the **Nextruder heatsink**, there is a **filament sensor assembly**. We will need to remove it.
- Using the needle-nose pliers, gently pull the filament sensor assembly out of the heatsink.
- ⓘ Proceed very carefully, there is a spring and a very tiny ball that can fall out!
- 📌 In case the filament sensor assembly is hard to pull out, reach into the filament opening on top with the 2.5mm Allen key to push the steel ball inside the assembly in. Then, pull the filament sensor assembly out.
- This filament sensor assembly will not be used with the multi-material Nextruder. Store it in a spare parts bag.

## STEP 15 Idler disassembly



- We will need to take the Idler assembly apart.
- Remove the M3x6 screw.
- Split the printed parts to open it up.
- Set aside for later use: **Bearings, pins, spacer and the screw.**
- The printed parts won't be re-used. Set them aside so that they don't mix up with the new parts.

## STEP 16 New Idler parts preparation



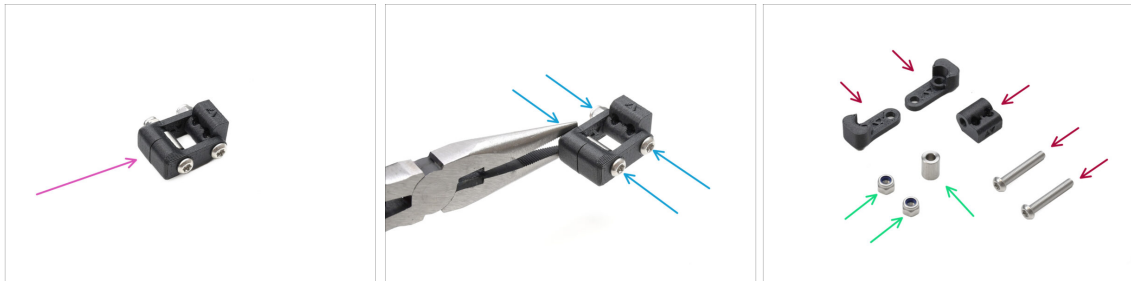
- **For the following steps, please prepare:**
- Idler-lever-a (1x) *the new part*
- Idler-lever-b (1x) *the new part*
- Bearing 693 2RS (2x) *you removed earlier*
- Pin 2.9x8.5 (2x) *you removed earlier*
- M3x6 screw (1x) *you removed earlier*
- Spacer tube 13.2x3.8x0.35 (1x) *you removed earlier*

## STEP 17 New Idler assembly



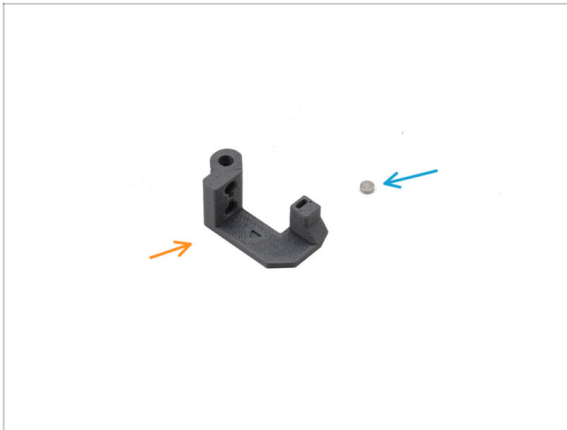
- ◆ Take the new Idler-lever-a part.
- ◆ Insert the two pins into the corresponding openings.
- ◆ Mount the bearings onto the pins.
- ◆ Cover the assembly with the Idler-lever-b part.
- ◆ Insert the spacer tube into the corresponding opening.
- ◆ Fix the assembly together using the M3x6 screw.

## STEP 18 Swivel disassembly



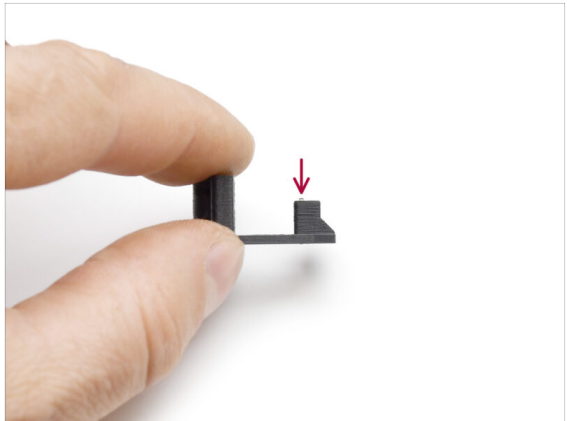
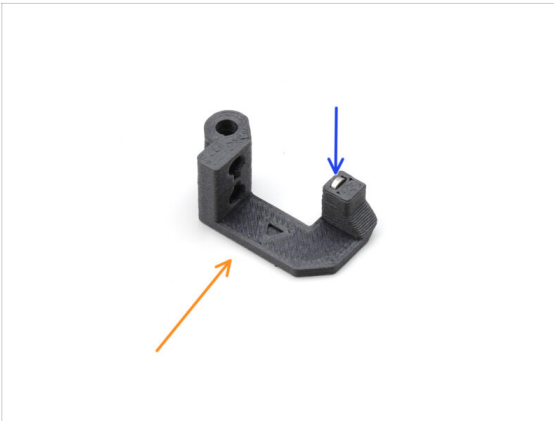
- ◆ We will need to take the Swivel assembly apart.
- ◆ Using the T10 Torx key, remove the screws while you hold the nuts using the needle-nose pliers.
- ◆ Set aside for later use: **M3nN nuts and spacer.**
- ◆ The printed parts and the screws won't be re-used. Set them aside so that they don't mix up with the new parts.

## STEP 19 Idler nut FS parts preparation



- ◆ For the following steps, please prepare:
- ◆ Idler nut FS (1x) the new part
- ◆ Magnet 3x1mm (1x)
- ⓘ Two tiny magnets are included. Separate them and use only one; the other is a spare.

## STEP 20 Idler nut FS assembly



- ◆ Arrange the **Idler nut FS** part as seen in the picture.
- ◆ Install the tiny 3x1mm magnet into the marked opening on the Idler nut FS part.
- ◆ Push the magnet all the way in, until it stops.
- ⓘ The polarity / orientation of the magnet isn't important. The printer will automatically adapt to it during the filament sensor calibration process.

## STEP 21 New Swivel Preparation



◆ For the following steps, please prepare:

- ◆ Idler nut FS (1x) with the 3x1mm magnet installed
- ◆ Swivel B (1x) the new part
- ◆ Swivel A (1x) the new part
- ◆ M3nN nut (2x)
- ◆ Spacer 6x3.1x8 (1x) you removed earlier
- ◆ M3x22 screw (2x)

⚠ This screw is a new type not previously used on a printer! Do not reuse old screws, as they are a different size and would not fit properly!

## STEP 22 New Swivel Assembly 1



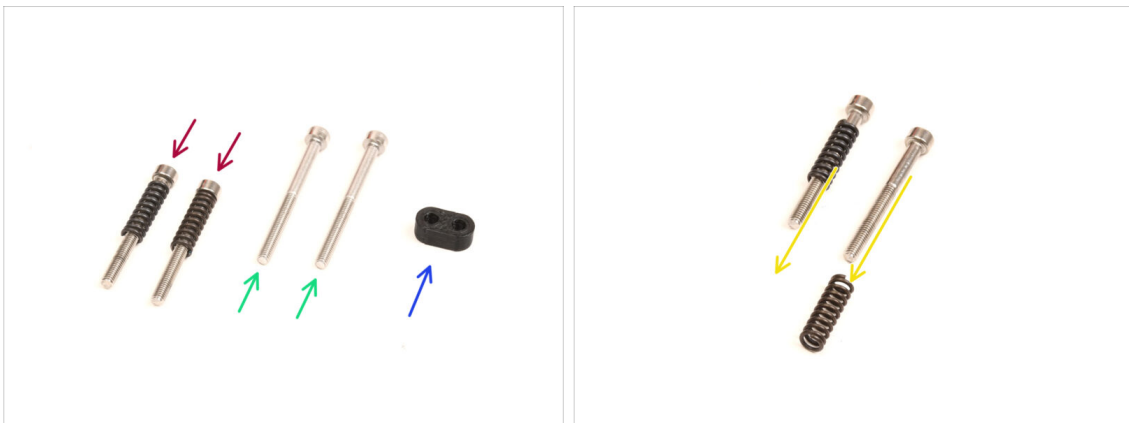
- ◆ Take the Swivel A part and orient it as seen in the picture.
- ◆ Insert the **M3x22 screw** into the opening near the thick part of the Swivel A.
- ◆ Slide the **spacer** onto the screw.
- ◆ Insert the second **M3x22 screw** into the other opening on the side.
- ◆ Slide the **Idler nut FS** part onto the other M3x22 screw.

## STEP 23 New Swivel Assembly 2



- ◆ Orient the Swivel assembly as seen in the picture.
- ◆ There is a tiny magnet in the Idler nut FS part. Make sure it is in place.
  - ⓘ In case the magnet has fallen out, there is a replacement one in the package.
- ◆ Slide the **Swivel B** part onto the screws.
- ◆ Attach the M3nN nuts onto the screws. Tighten the screws gently while holding the nuts using the needle-nose pliers.
  - ⚠ Do not overtighten the nuts. The Swivel must be able to move freely.

## STEP 24 Tension screws parts preparation



- ◆ For the following steps, please prepare:
  - ◆ **M3x30** screws with the springs (2x) *you have removed earlier*
    - ⓘ We will need the **springs alone**. The old M3x30 screws won't be re-used.
      - ◆ Remove the springs from the old M3x30 screws.
    - ◆ **M3x35** screws (2x) *the new, slightly longer ones*.
    - ⚠ This screw is a new type not previously used on a printer! Do not reuse old screws, as they are a different size and would not fit properly!
  - ◆ Screw guide (1x)

## STEP 25 Tension screws assembly



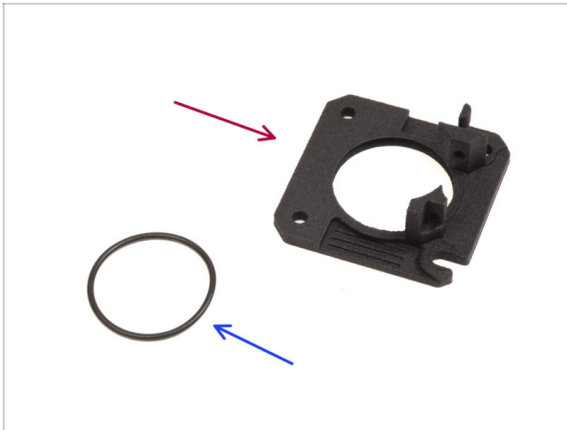
- Take the new M3x35 screws.
- ⚠ Compare the size of the screws. Set the old M3x30 and the new M3x35 screws apart so that they don't mix up.
- The old shorter M3x30 screws won't be re-used.
- Push the M3x35 screws through the screw guide.
- Attach the springs onto the end of both the screws.

## STEP 26 Gearbox disassembly



- Take the gearbox assembly and split it apart.
- The parts might be greasy. Clean off any excess grease.
- Set aside for later use: PG-case, PG-ring, PG-assembly, M3x25 screws.
- The printed main-plate won't be re-used. Set it aside so that it doesn't mix up with a new part.

## STEP 27 Main Plate Preparation



◆ For the following steps, please prepare:

◆ new Main Plate (1x)

⚠ We will need the newly supplied main-plate. It is different than the original one in the gearbox assembly, printed from PETG. Do not reuse the old main plate, as it may cause the printer to malfunction!

ⓘ The new main plate is 3D printed using MJF technology. It cannot be replicated with the same quality using FDM printing.

◆ O-ring 24,5x1,5 (1x)

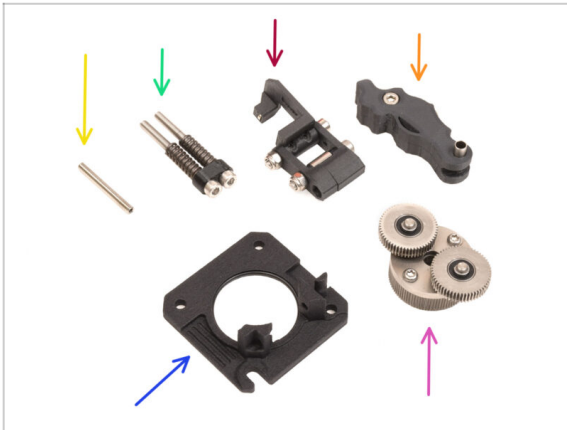
## STEP 28 Main Plate Assembly



◆ The new main plate has a V-shaped groove inside its large round opening.

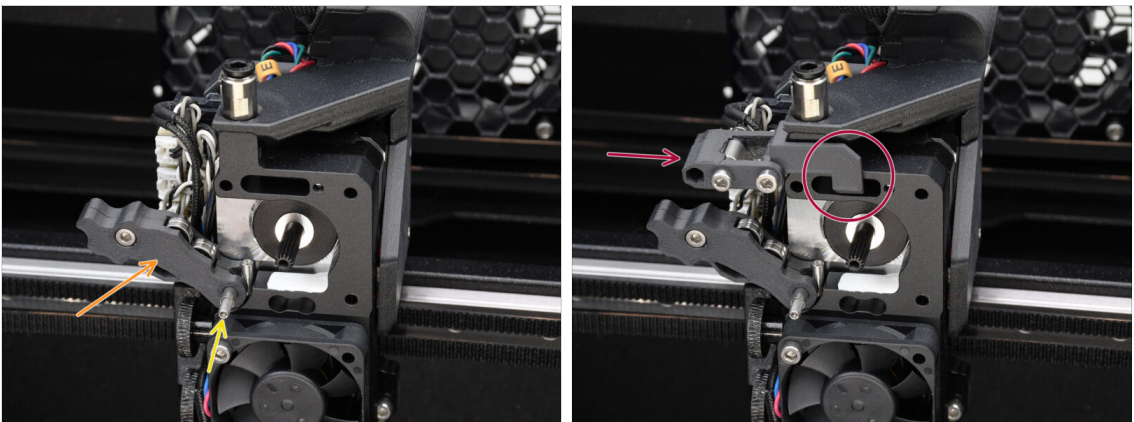
◆ Insert the O-ring into the groove, ensuring it's seated correctly.

## STEP 29 MMU Nextruder Preparation



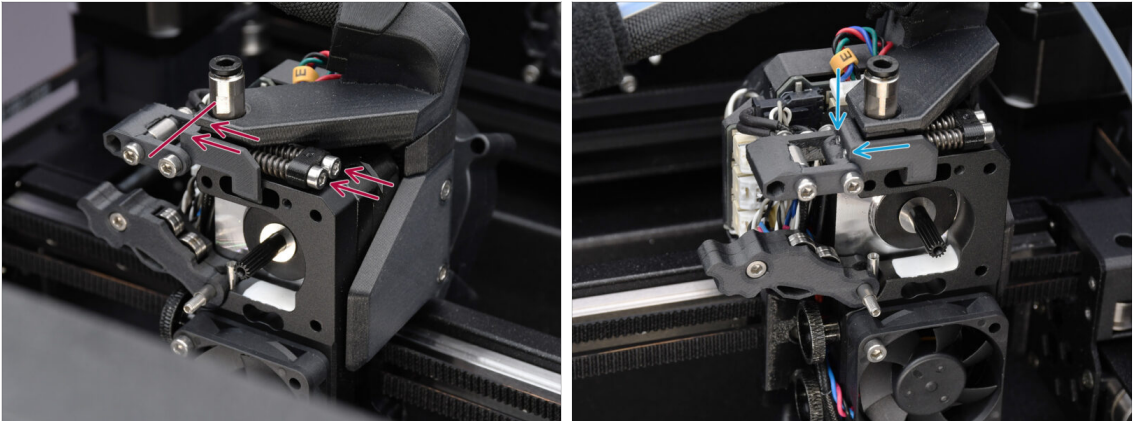
- ◆ **For the following steps, please prepare:**
- ◆ Set screw M3x25 (1x)
  - ⓘ If you own the 4-screw version of the Nextruder, this specific type of set screw is not included.
- ◆ MMU Tension screws assembly (1x)
- ◆ MMU Swivel assembly (1x)
- ◆ MMU Idler assembly (1x)
- ◆ Main plate assembly (1x)
- ◆ PG-assembly (1x)

## STEP 30 MMU Nextruder Assembly 1



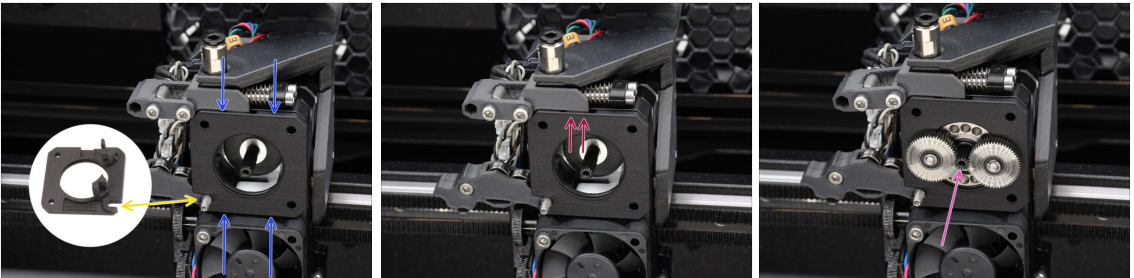
- ◆ Add the **Idler assembly** onto the extruder.
- ◆ Fix it in place using the **M3x25 Set screw**.
  - ⓘ In case you have the 4-screw version of the Nextruder, you might use the M3x25 screw to temporarily hold the Idler assembly in place.
- ◆ Add the **Swivel assembly** onto the extruder. The protruding part of the Idler nut FS component should fit inside the filament sensor pocket in the heatsink, as seen in the picture.

## STEP 31 MMU Nextruder Assembly 2



- ◆ Insert the tension screw assembly through the heatsink and guide it towards the Swivel assembly.
- ◆ Gradually tighten the tension screws one at a time until their ends are flush with the surface of the Idler nut part on the other side, as shown.

## STEP 32 MMU Nextruder Assembly 3



- ◆ Attach the new **main plate assembly** to the extruder, ensuring the protruding parts fit correctly into the heatsink.
  - ◆ The **notch** in one of the corners is designed to fit over the Idler spacer / set screw.
- ◆ Ensure the lever on the Swivel assembly fits correctly into the cutout on the main plate.
- ◆ Attach the **PG-assembly** to the motor shaft. Be very careful when inserting the assembly into the opening with the O-ring.
  - ⚠ **Watch out for any deformation or damage to the O-ring. Ensure the O-ring stays properly seated in its groove on the main plate. A slight wiggling motion, while inserting, can assist.**

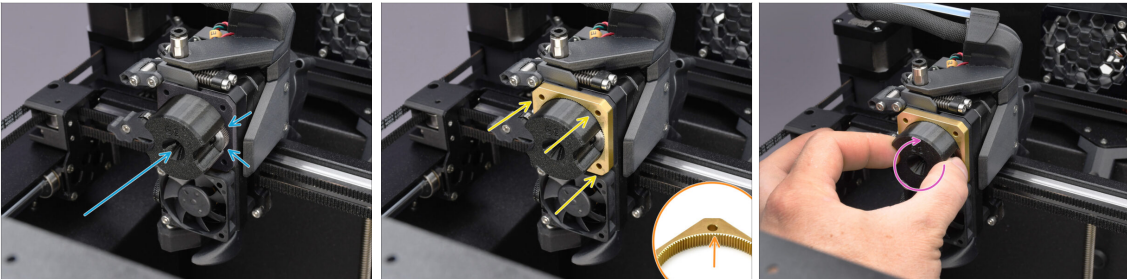
## STEP 33 Gearbox Assembly Preparation



◆ For the following steps, prepare:

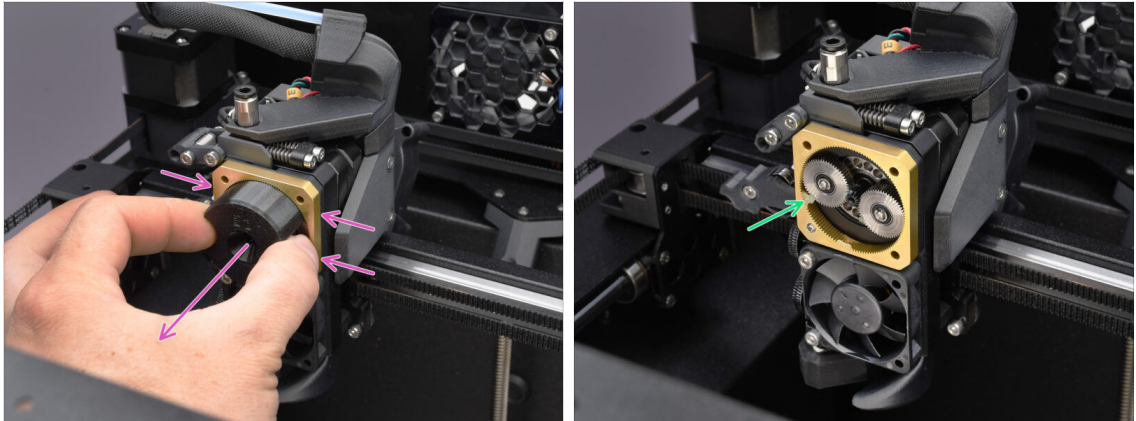
- ◆ PG-case assembly (1x)
- ◆ PG-ring (1x)
- ◆ M3x25 screws (3x)
- ◆ PG-assembly adapter (1x)

## STEP 34 Gearbox Assembly 1



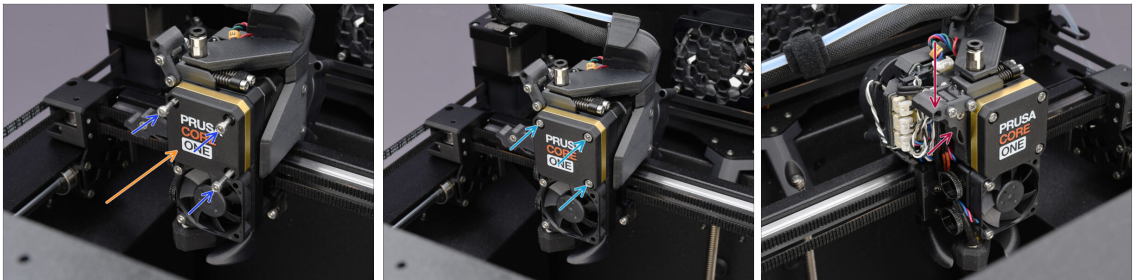
- ◆ Attach the **adapter** to the PG-assembly, making sure the spur gears are correctly aligned and fit snugly into the pockets on the adapter.
- ◆ Carefully slide the **PG-ring** onto the adapter, pushing it all the way in gently, until it locks onto the gears.
  - ◆ Note that the PG-ring has a chamfer on one side. This side should face the gears during insertion for easier assembly.
  - ◆ Gently rotate the adapter while sliding the PG-ring onto the gears to ensure proper gearbox alignment.

## STEP 35 Gearbox Assembly 2



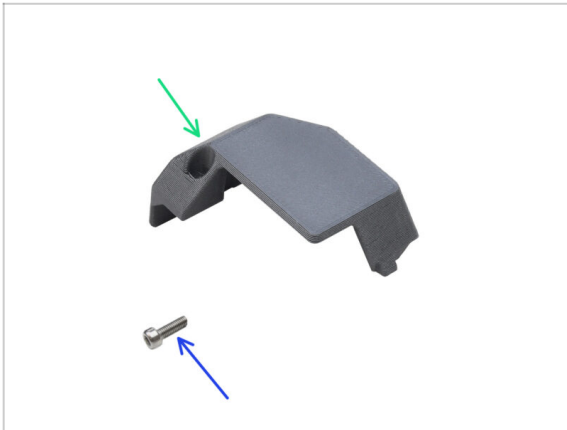
- ◆ Remove the adapter, while maintaining the gearbox assembly in place.
- ◆ Check the PG ring for adequate lubrication. If necessary, apply a slight amount of grease, as explained in the Nextruder Assembly guide.

## STEP 36 Gearbox Assembly 3



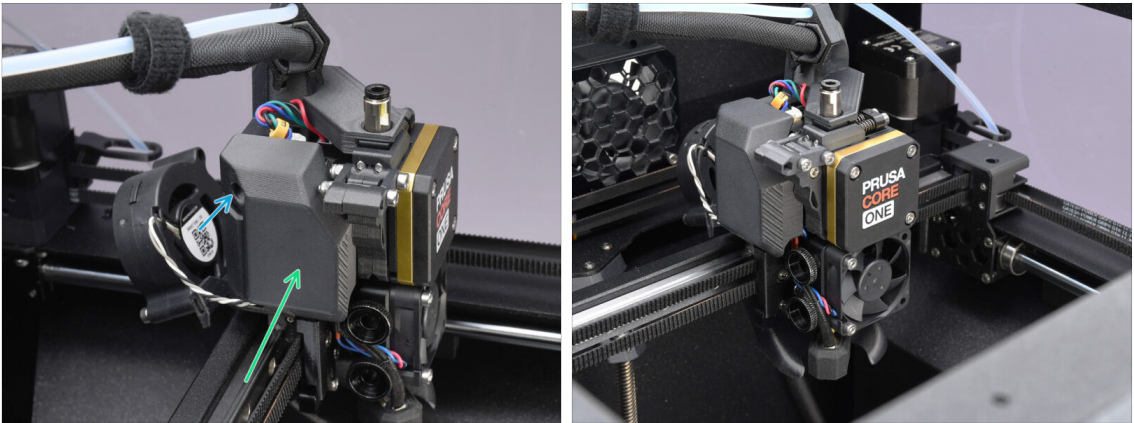
- ◆ Cover the gearbox using the **PG-case**.
  - ◆ Fix it in place using the three M3x25 screws.
  - ◆ Tighten the screws just lightly, for now.
- ◆ Close the Idler and secure it using the Swivel.

## STEP 37 Nextruder Side Cover Preparation



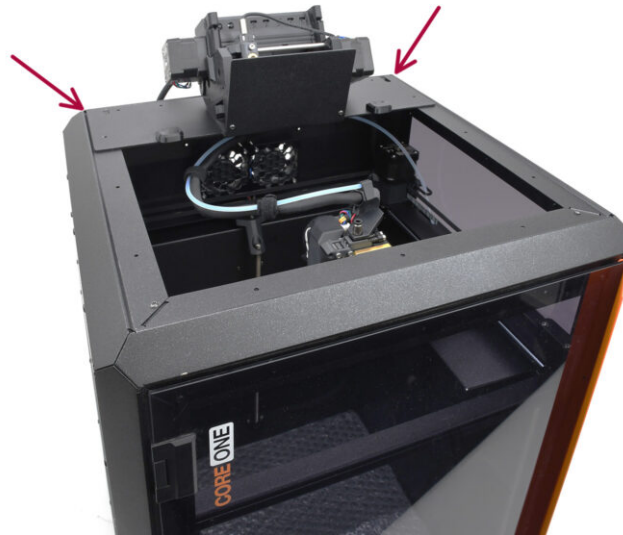
- ◆ For the following steps, prepare:
- ◆ Nextruder Side Cover (1x) *you removed earlier*
- ◆ M3x10 screw (1x) *you removed earlier*

## STEP 38 Nextruder Side Cover Installation



- ◆ Re-install the side cover. First, hook it on the bottom, then push the top towards the Nextruder.
  - ◆ Fix it in place using the M3x10 screw.
- ⚠ **Congratulations. Your Nextruder has been successfully reworked into the MMU version.**

## 10D. CORE One Setup and Calibration



## STEP 1 Top Cover



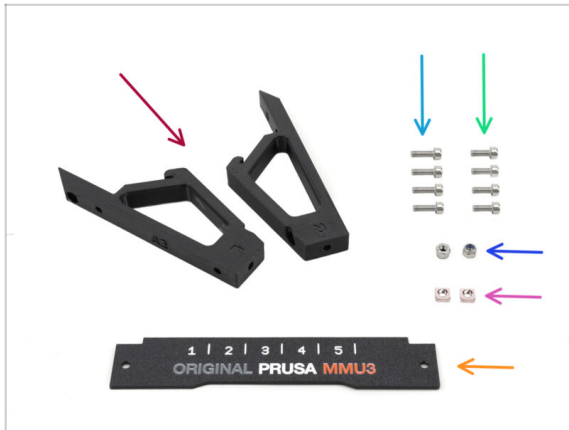
- Before installing the MMU unit, remove the printer's top cover if it hasn't been removed already.

## STEP 2 Core One MMU3 Types



- ⚠ There are **two official versions** of the MMU3 for CORE One:
  - the **Lite**
    - ⚠ If you have this version, continue to the next step.
  - the **Enclosed with the Top Cover**.
    - ⚠ If you have this version, continue to the Top Cover Preparation.

### STEP 3 (LITE) MMU Holder Preparation



**⚠** These steps are valid for the Lite version.

**■** For the following steps, prepare:

- CO\_MMU\_Holder (2x)
- M3x10 screw (4x)
- M3x8 screw (2x)
- M3nS nut (2x)
- M3nN nut (2x)
- Label Plate (1x)

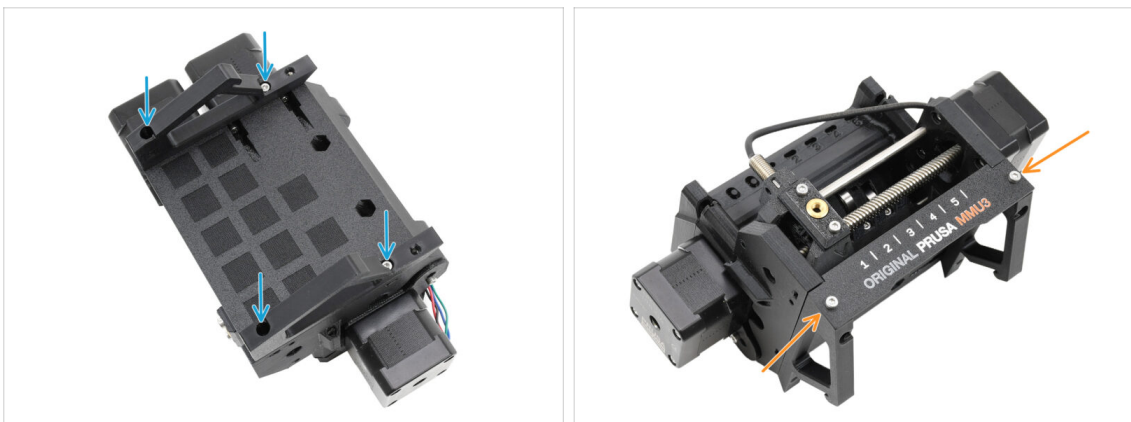
### STEP 4 (LITE) M3nS Installation



- Turn the unit around.
- Insert the two **M3nS** nuts into the marked openings on the side of the unit. Push the nuts all the way in using the 1.5mm Allen key.
- Check the nut alignment from above. Use the 1.5mm Allen key to center the nut, if necessary.

**STEP 5 (LITE) MMU Holder Installation 1**

- Insert the M3nN nuts into the hexagonal openings in the Holders. Make sure the flat part goes in first!
- Add the Holders onto the unit and align them with the assembly.
  - Ensure the holder marked R is on the unit's right side (sides are reversed when the unit is upside down).
  - Ensure the part with the M3nN nuts faces the back.
- ⚠ Watch out! the nuts might keep falling out.

**STEP 6 (LITE) MMU Holder Installation 2**

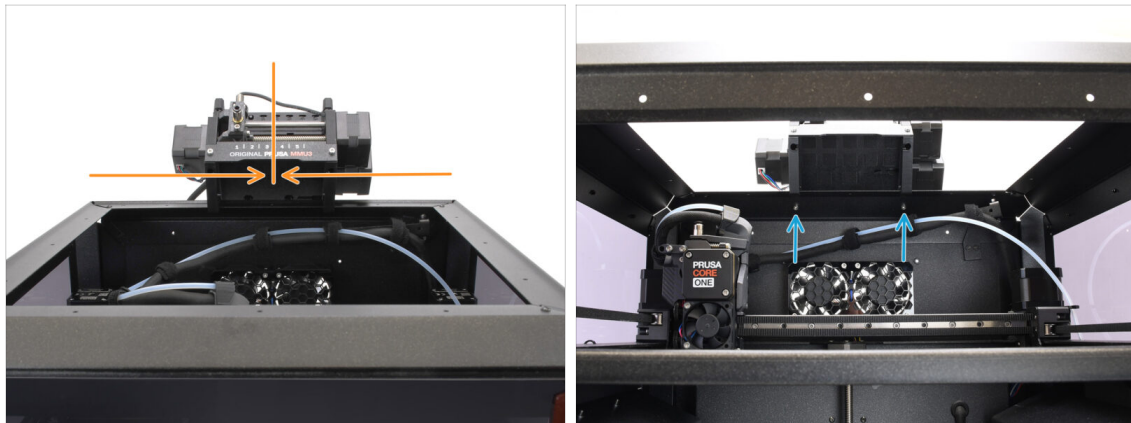
- Fix the holders to the unit using four M3x10 screws.
- Align the Label plate with the front part of the MMU unit. Fix it to the holders using two M3x8 screws.

## STEP 7 (LITE) MMU Placement 1



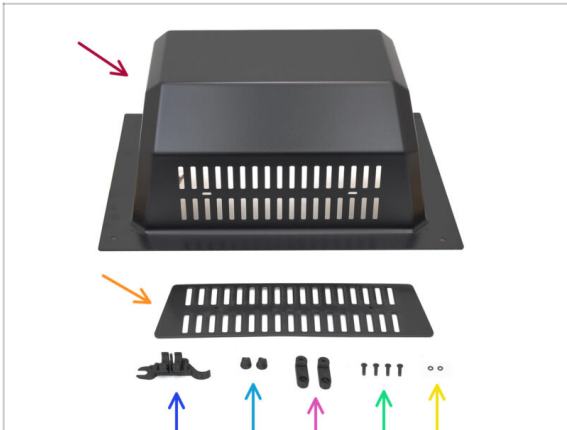
- ◆ Now, we will place the MMU assembly onto the top back part of the printer.
- ◆ Hook the notch on the MMU holders to the front part of the metal profile.
- ◆ Lean the MMU against the profile.

## STEP 8 (LITE) MMU Placement 2



- ◆ Center the unit on the printer to align the screw holes.
  - ◆ Reach inside the printer to secure the unit with the two M3x8 screws.
- ⚠ **Your MMU3 Lite is now securely attached. Continue to the Back Cover Removal step.**

## STEP 9 (ENC) Top Cover Preparation



**!** These steps are valid for the Enclosed version.

**Skip if you use the Lite.**

- For the following steps, prepare:
  - MMU Top Cover (1x)
  - Vent Cover (1x)
  - CORE ONE ASSEMBLY MULTI TOOL (1x) *version E2 or newer*
  - Vent Nut (2x)
  - Top Cover Lock (2x)
  - M3x10rT (4x)
  - O-ring (2x)

## STEP 10 (ENC) Top Cover Assembly 1



- Take the Vent Cover part.
  - Push the two M3x10rT screws through the openings.
- Install the Vent Cover to the inside of the Top Cover, making sure the screws go all the way through.
  - From the other side, attach the o-rings onto the screws.

## STEP 11 (ENC) Top Cover Assembly 2



- ◆ Tighten the screws against the Vent Nuts
- ◆ Use the Assembly Multi Tool to hold the nuts while tightening.
- ◆ Tighten the screws just so that the vent cover holds in place when moved to a side. Make sure it is still easy to slide.

## STEP 12 (ENC) Top Cover Assembly 3



- ◆ Attach the Locks onto the bottom part of the Top Cover.
- ◆ Make sure the Locks are oriented as seen in the picture. Then, fix them in place using two M3x10rT screws.
- ◆ Tighten the locks just until snug. They should be movable with reasonable force.

## STEP 13 (ENC) MMU Holder Preparation



For the following steps, prepare:

CO\_MMU\_Holder (2x)

M3nS nuts (2x)

M3x10 screw (4x)

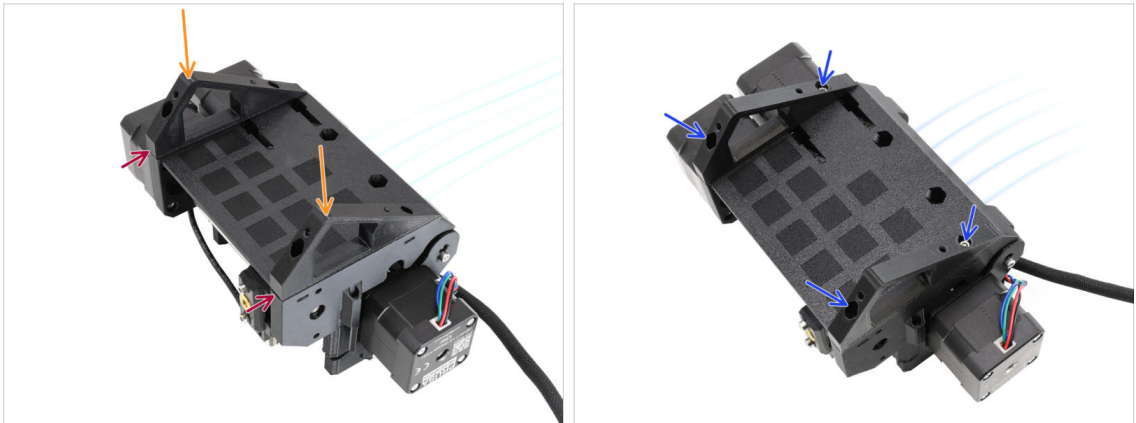
⚠ Some versions of the assembled unit may already have these holders pre-installed. If so, you can skip the holder installation steps.

## STEP 14 (ENC) M3nS Installation



- Turn the MMU unit around.
- Insert the two **M3nS** nuts into the marked openings on the side of the unit. Push the nuts all the way in using the 1.5mm Allen key.
- Check the nut alignment from above. Use the 1.5mm Allen key to center the nut, if necessary.

## STEP 15 (ENC) MMU Holders Installation



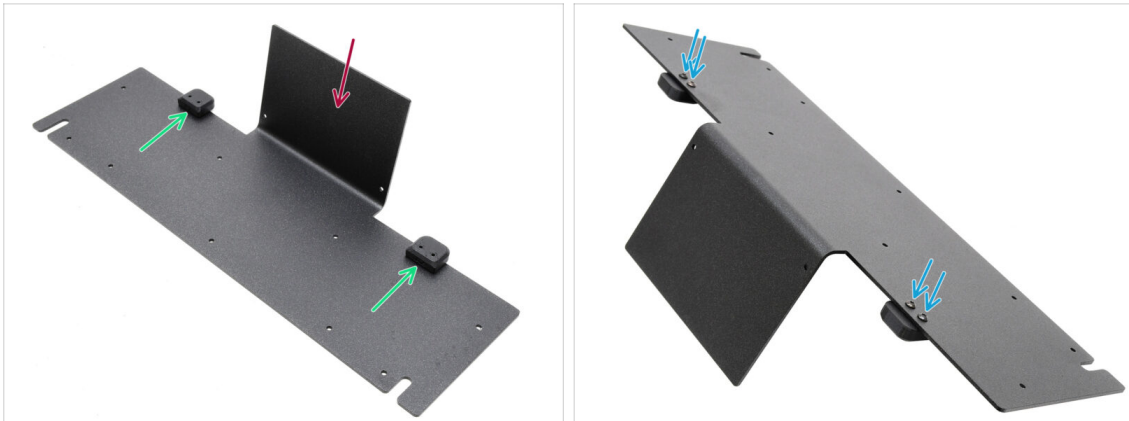
- Take the MMU unit and flip it upside down.
- Add the holders onto the bottom part.
- Align the flat front of the holders with the unit.
- Attach the holders using four M3x10 screws.

## STEP 16 (ENC) Metal Holder Preparation



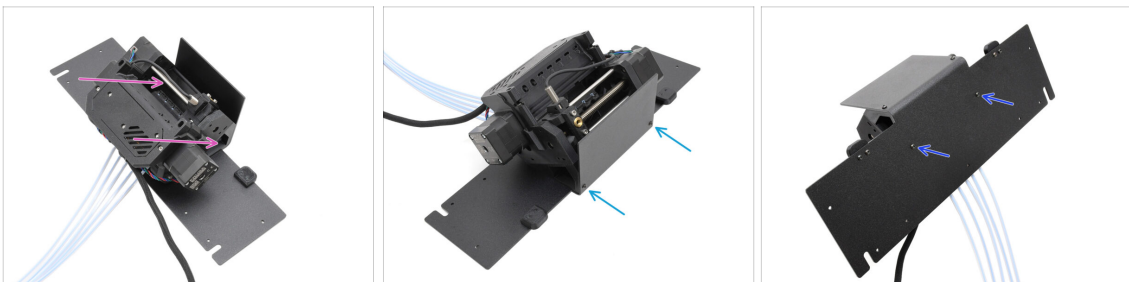
- **For the following steps, prepare:**
- MMU Metal Holder (1x)
- Top Cover Holder (2x)
- M3x10rT screws (8x)

## STEP 17 (ENC) Metal Holder Assembly



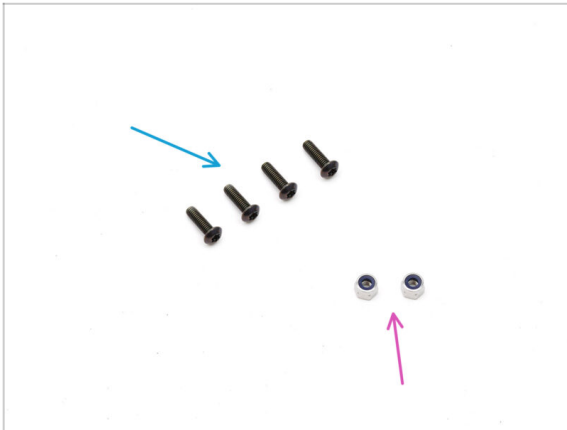
- Orient the metal holder with the bent part facing up as shown.
- Install the plastic holders onto the metal using the four M3x10rT screws.
  - ⌘ Ensure the rounded part overhangs, as in the picture.
- Tighten the screws.

## STEP 18 (ENC) Unit Assembly



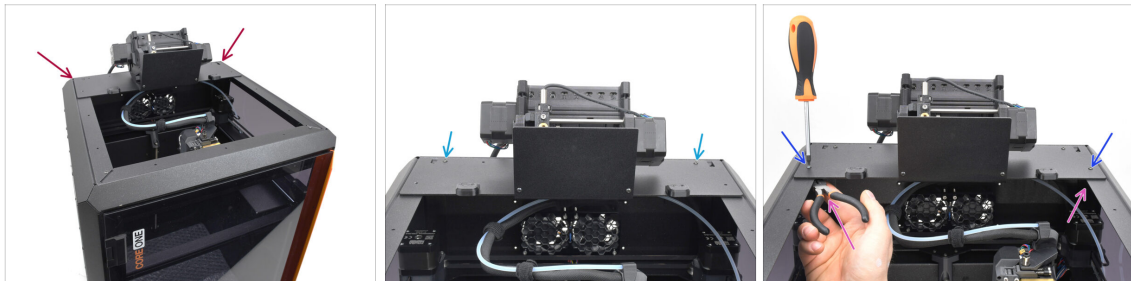
- Move the MMU unit onto the Metal holder, aligning its plastic holders with the bent part.
- Attach the MMU unit to the metal with two M3x10rT screws at the front.
  - ⓘ Tighten the screws with reasonable force to avoid stripping the self-tapped plastic thread.
- Fix the unit using the other two M3x10rT screws at the bottom.

## STEP 19 (ENC) MMU Placement Preparation



- For the following steps, prepare:
- M3x10rT screws (4x)
- M3nN nuts (2x)

## STEP 20 (ENC) MMU Assembly Placement



- Place the MMU assembly with the metal holder onto the printer. Make sure it sits in the back of the top recess, with the MMU facing the front of the printer.
- Fix it to the metal profiles in the back using two M3x10rT screws.
- Tighten two M3x10rT screws on sides against the M3nN nuts held with needle-nose pliers.

## STEP 21 Back Cover Removal 1



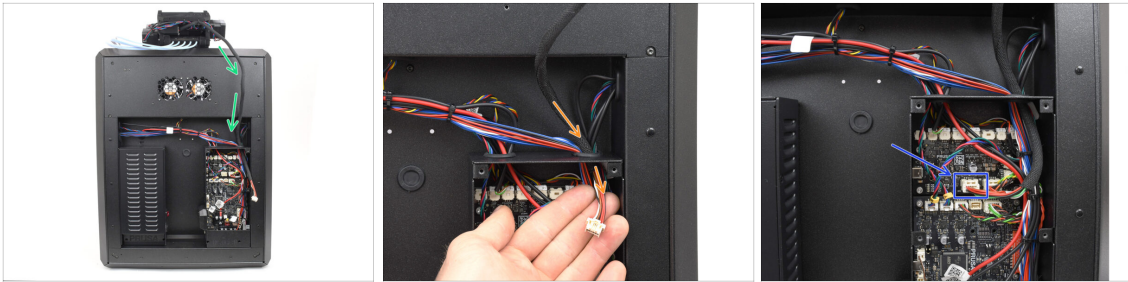
- On the inside of the printer, remove the two screws holding the back cover.
- On the back of the printer, slide the center cover downwards.
- Pull the bottom part of the cover outward while tilting the top toward the printer. This will unhook it from the cable bundle behind. Remove the cover.

## STEP 22 Back Cover Removal 2



- Remove the six screws holding the xBuddy cover.
- Remove the cover by sliding it out.

## STEP 23 MMU Cable Connection



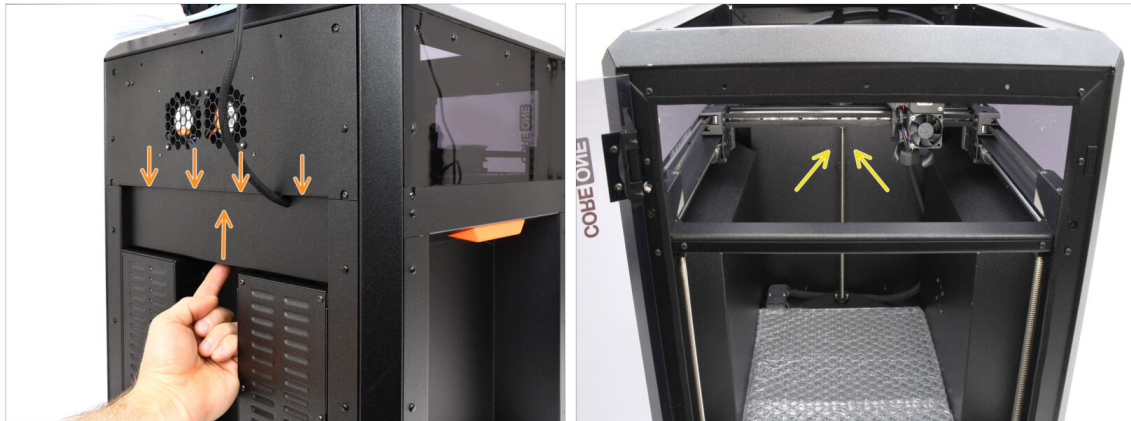
- ◆ Guide the MMU cable towards the electronics box.
- ◆ Pull the cable through the top cable opening into the xBuddy box.
- ◆ Connect the cable to the dedicated MMU port on the xBuddy Extension board.

## STEP 24 Back Cover Installation 1



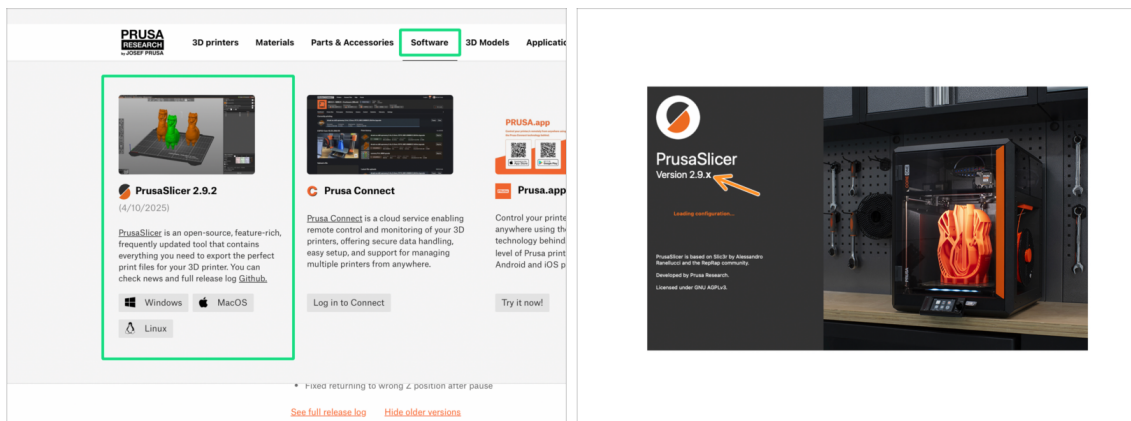
- ◆ Attach the xBuddy box cover using the 6 M3x4rT screws.
- ⓘ Make sure no cable is getting pinched.
- ◆ Re-install the back cover, making sure the MMU cable fits through the mousehole opening on top.

## STEP 25 Back Cover Installation 2



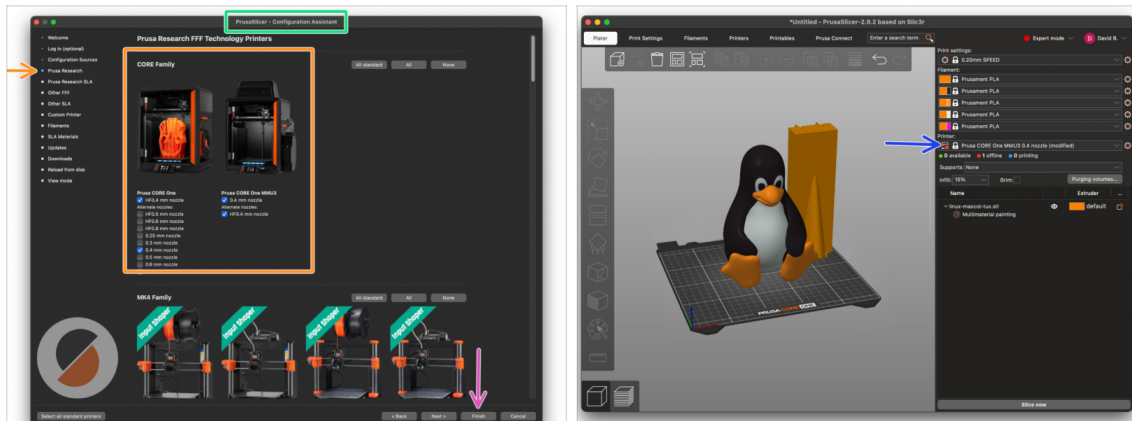
- 🟠 Push the cover up, so that the four tabs on top engage into the recesses.
- 🟡 While pushing the cover up, fix it in place using two M3x4bT screws from the inside of the printer.

## STEP 26 Software Download



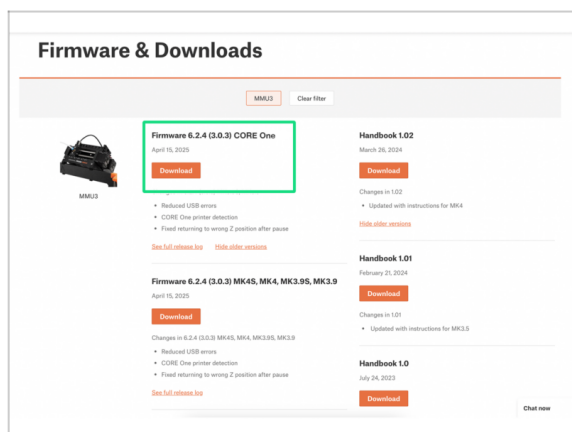
- 🟡 Visit Prusa3D.com
- 🟢 Download the latest **PrusaSlicer** from the Software tab.
- ⚠️ **MMU3 on CORE One** requires PrusaSlicer version 2.9.2 or newer.
- 🟠 Install the latest **PrusaSlicer** and open it.

## STEP 27 PrusaSlicer setup for MMU3



- 🟢 Open the PrusaSlicer Wizard/Assistant. (from the menu **Configuration > Configuration Wizard/Assistant**)
- 🟠 Open the **Prusa Research** printer list and select **MMU version** of your printer.
  - ⬛ **Select the nozzle type and size in the list below.**
- 🟣 Click Finish to save the settings.
- 🟦 In **Printer:** menu, select the **MMU3** printer profile for future slicing.

## STEP 28 Firmware files download



⚠️ You will need to update the **firmware** for both the **printer** and the **MMU** unit. Each device has a **separate firmware file** that needs to be flashed. Always use only the **newest compatible firmware versions together**.

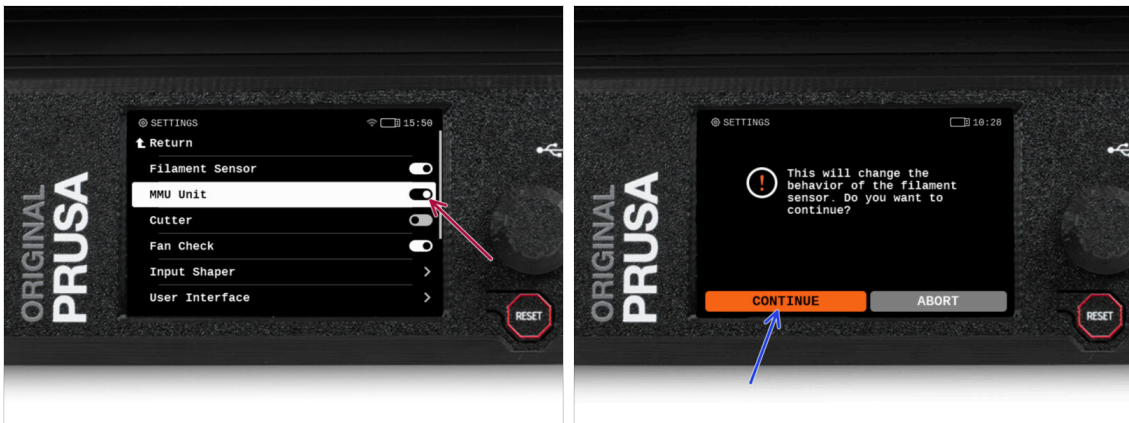
⚠️ For more info, see the **MMU3 Firmware Compatibility** article.

- ⬛ Visit the **MMU3 Downloads** page on [Help.Prusa3D.com](https://Help.Prusa3D.com)
- 🟢 Download the **latest Firmware** package **for your printer model**.

## STEP 29 Firmware Upgrade: Printer



- ◆ **Printer's firmware - .bbf file**  
 for the CORE One control board:  
 (e.g. COREONE\_firmware\_6.x.x.bbf)
- ◆ **MMU3 control board firmware:**  
 (e.g. MMU3\_FW3.0.3+896.hex)
  - ◆ This firmware update must be applied directly to the MMU unit using a computer. **We will flash the MMU unit firmware in the upcoming steps.**
- ◆ Update the printer's firmware. First, transfer the firmware file onto a USB drive.
- ◆ Turn on the printer and connect the USB drive into it. Press the RESET button to restart it. Then, select the FLASH option on the screen to begin the update.

**STEP 30** Turning the MMU on

⚠ After finishing the firmware update, **make sure there are no filaments loaded** neither in the extruder, or in the MMU unit.

- Navigate to the **LCD menu > Settings > MMU**

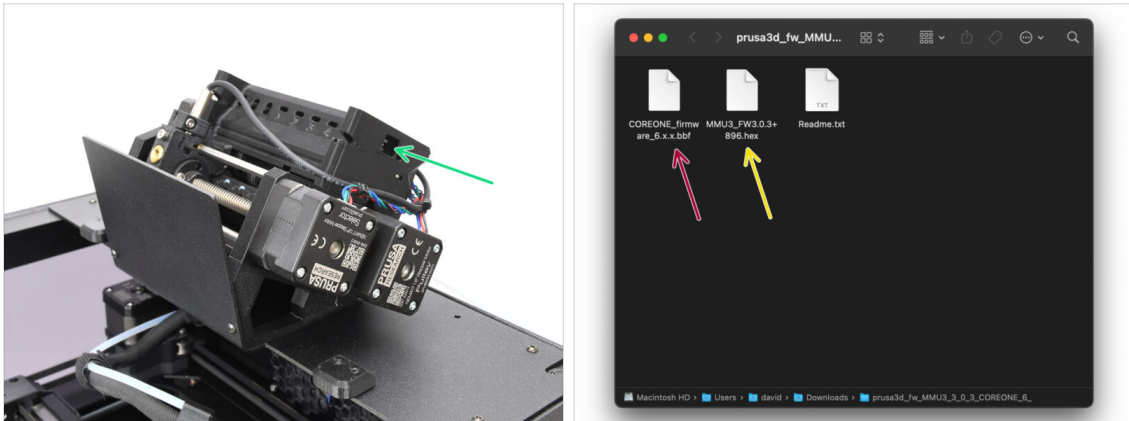
and make sure the **MMU** is turned **on**.

📌 This option enables the MMU functionality in the firmware and turns on the power for the MMU unit, which is needed for a firmware update.

📘 The MMU unit will now perform a self-test (flashing LEDs). **Wait until it boots up completely** before issuing any commands. By the way, from now on, the printer's reset button will also reset the MMU unit.

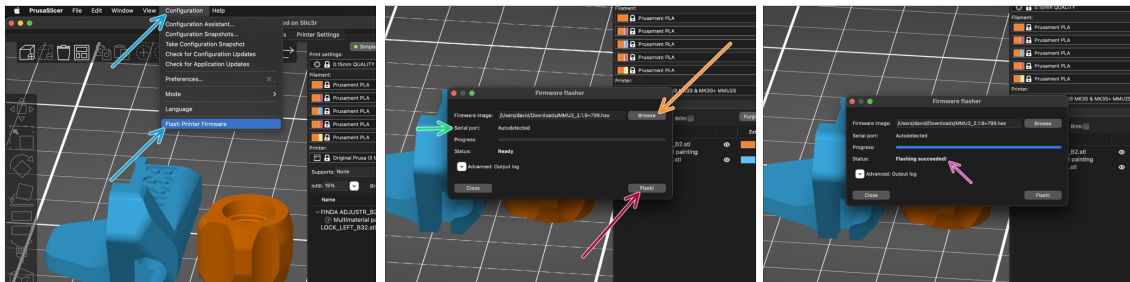
- Since you've converted the extruder to the MMU version, when prompted to reconfigure the filament sensor's behavior, which should appear immediately, choose '**Continue**'.

## STEP 31 MMU3 Firmware flashing (part 1)



- ◆ The MMU3 firmware file needs to be flashed into the MMU unit itself. Find the **microUSB** connector on the right side of the MMU3 unit.
- ◆ Connect the unit to your computer using the bundled microUSB cable.
- ◆ On your computer, select the appropriate **MMU firmware** file compatible with your printer model.

## STEP 32 MMU3 Firmware flashing (part 2)



- ◆ Open PrusaSlicer and select **Configuration -> Flash Printer Firmware** from the top menu.
- ◆ Hit **Browse** and select the MMU3 firmware image file on your computer. (e.g. MMU3\_FW3.0.3+895.hex)
- ◆ Serial port should be auto-detected.
  - 📌 Hit **Rescan** if your printer is not listed in the Serial port: column
- ◆ Hit the **Flash** button.
- ◆ Wait until the **Flashing Succeeded!** message appears.
- ◆ After the flashing finishes, disconnect the USB cable.
- (i) In case of any issues with flashing the firmware please visit our troubleshooting article.

## STEP 33 Gears calibration



- Now, we need to calibrate the planetary gearbox in the Nextruder.
- Go to the Home screen and navigate to *Control* -> *Calibrations & Tests*, scroll down and select **Gears Calibration**.
- Once you get to the Gearbox Alignment part, select **Continue** and follow the on-screen instructions.

## STEP 34 Gearbox Alignment



- During the **Gear calibration** process, you will be prompted to:
  - Make sure the **Idler lock** (swivel) is in the open position - lifted up.
  - Loosen the three screws on the front of the gearbox by 1.5 turns.
  - ⓘ The printer will go through the automatic gearbox alignment. This process can't be seen from the outside.
  - Once prompted, tighten the screws in the pattern indicated on the screen.

## STEP 35 MMU Filament sensor calibration

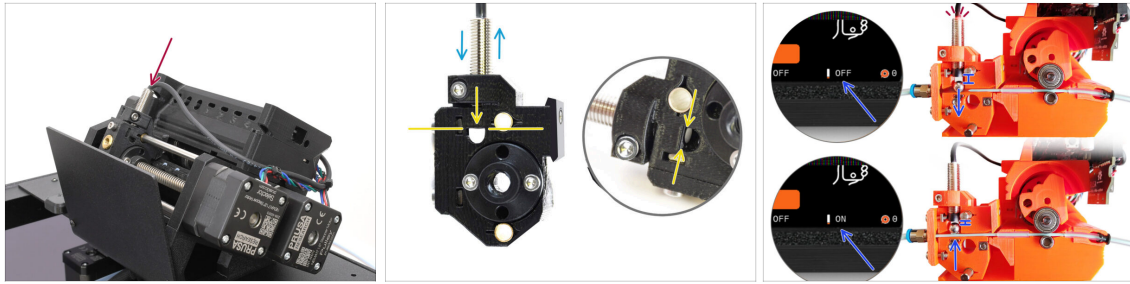


- ◆ After completing the Gearbox Alignment, you should be prompted to continue to the **filament sensor calibration**.
- ① Start with no filament in the extruder.
- ◆ Close the **Idler lock** (swivel).
- ◆ For the calibration, prepare a filament and hit **Continue**.
- ⚠ **Don't insert the filament before being prompted to do so!**
- ◆ Once prompted to, insert the filament.
- ◆ After successful calibration, remove the filament.

## STEP 36 Footer Status Bar

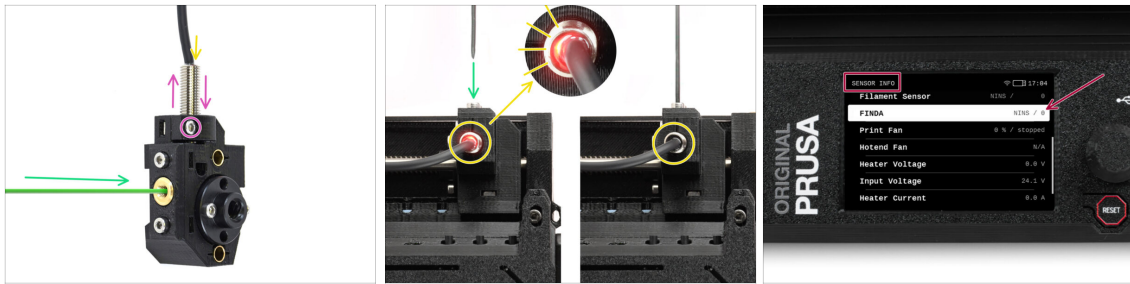


- ◆ Turning on the MMU unit automatically displays the filament sensor and Finda sensor information on the footer status bar.
- ◆ To change the settings, visit **Settings > User Interface > Footer** menu.
- ◆ The sensor values are also shown in the **Info > Sensor Info** menu.

**STEP 37** SuperFINDA sensor calibration info

- ◆ If you built the MMU3, the **SuperFINDA sensor** inside the selector must be calibrated.
- i For **factory-assembled MMU3** units, you can skip the calibration steps.
- ◆ In the next step, we'll calibrate the sensor's position.
- ⚠ **It is CRITICAL** that both the **filament sensor in the extruder** and the **SuperFINDA sensor function accurately**. Otherwise, you will have trouble with the device.
- ◆ Use the inspection window on the selector to align the bottom of the sensor with the top of the window, as a starting point.
- ◆ When filament is in the selector, the steel ball rises and should be detected by the SuperFINDA sensor. Ensure the distance between the ball and the sensor is perfectly calibrated.

## STEP 38 SuperFINDA calibration



- ◆ Insert filament with a sharp tip into the brass opening at the front.
- ◆ Take a look at SuperFINDA from above and watch for the little red light inside the sensor to turn off when the filament raises the steel ball inside.
  - **Red light** = no filament detected = **FINDA 0 / OFF**
  - **No light** = filament detected = **FINDA 1 / ON**
- ◆ If the light is still on, lower the SuperFINDA slightly.
 

If the light doesn't ever go on, raise the SuperFINDA probe by releasing the screw by its side, moving the probe, and tightening the screw back up.
- ◆ Watch the **sensor readings on the LCD** (Info > Sensor Info -> FINDA ) Note, there is a slight lag in the sensor's readings on the LCD; proceed slowly.
- ⚠ Repeat the test, adjusting SuperFINDA height **until consistent readings occur when inserting and removing filament.**

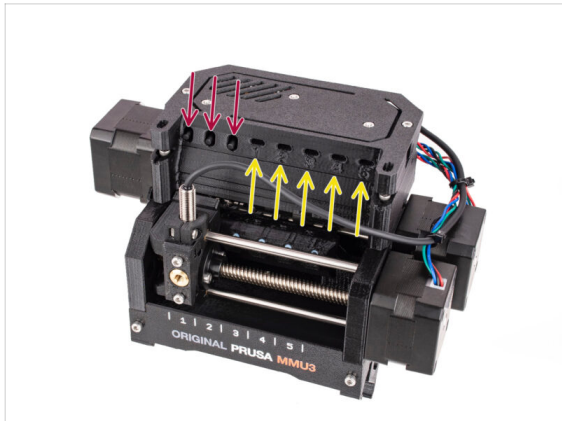
## STEP 39 Side Filament Sensor Check



- ◆ Visit the menu **Settings > Filament Sensors** and verify the **Side Filament Sensor** is turned on.
  - ⓘ Even if the sensor is not used, it must remain enabled; otherwise, the printer may falsely trigger the FSENSOR TOO EARLY error.
- ◆ Make sure no filament is physically inserted into the side sensor.

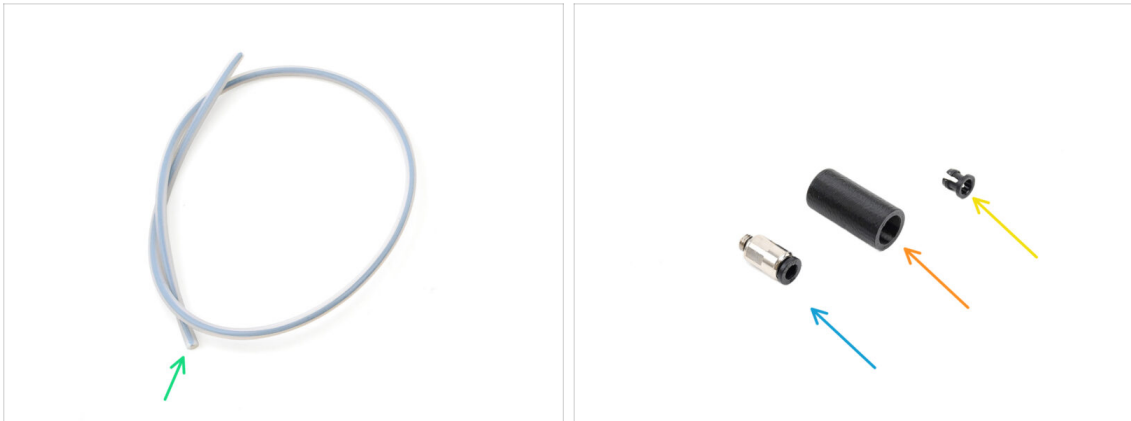
**STEP 40** Error code details (Part 1)

- ◆ Later on, an **MMU error screen** will show up if something goes wrong during the operation. See the example image; the first line describes briefly, what's the error about.
  - ◆ [prusa.io/04101](https://prusa.io/04101) is a web address, where you can view a detailed article about the exact issue, and how to fix it.
  - i The QR Code gets you the detailed description.
  - ◆ The status of the filament sensor is always displayed in the Footer section of the error screen to assist in diagnosis.
  - ◆ Adjacent to it, you will find the status of the Finda sensor.
    - 📌 (Note the FINDA status reading on the LCD has a slight delay.)

**STEP 41** Error code details (Part 2)

- The bottom line are the **solution buttons**. Some errors have multiple solutions.
  - You can also visit a detailed error description page via the QR code.
  - MMU unit being in an **error state** is also indicated by its LED lights flashing.
  - While in an ERROR state, the buttons on the MMU unit can be used to resolve the error too.
  - The **middle button** usually replicates the LCD solution buttons function.
- ⚠ **Note, if the MMU unit is in IDLE state, the buttons have a different functions; For example; If there is no filament loaded, the side buttons can be used to move the selector right and left. But more on that later.**

## STEP 42 MMU-to-Extruder PTFE tube parts preparation



### For the following steps, please prepare:

- MMU-Extruder PTFE tube (1x)

**⚠ Use only the supplied PTFE tube. Enclosed version: 390mm. Lite version: 450mm. Do not reuse the shorter 360mm tube from MK4/S or other printers!**

- M5-4 fitting (1x)

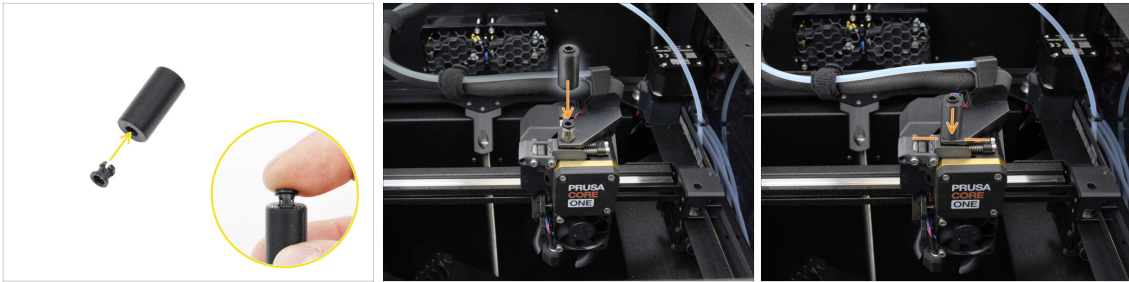
**i** The fitting might look slightly different if you are reusing the one from the MK4S.

- Fitting Cover (1x) *required for the Enclosed version only.*
- Collet (1x) *required for the Enclosed version only.*

## STEP 43 MMU-to-Extruder PTFE tube 1



- Attach the M5-4 fitting onto the Selector and tighten it up using the Uniwrench.
- Connect the MMU-Extruder PTFE tube into the Selector. Make sure to push the tube all the way into the fitting.
- Quick tip: **If you need to remove the PTFE tube** from the fitting, press the collet in. While the collet is pressed, first press the PTFE tube in, then pull it out entirely.

**STEP 44** Fitting Cover. (ENC)

**⚠** This step is required for the Enclosed version only.

- ◆ Insert the collet into the smaller opening on the Fitting cover.
- ⓘ The individual fins on the collet must be pressed together in order to fit into the fitting cover.
- ◆ Attach the fitting cover onto the fitting on the extruder.

**STEP 45** MMU-to-Extruder PTFE tube 2

- ◆ Attach the end of the tube into the extruder.
- ◆ Make sure it is pushed all the way in.

## STEP 46 PTFE Length Calibration



**⚠** The MMU-to-Extruder PTFE tube length needs to be set in the firmware.

➤ Visit the menu **Settings>Hardware>MMU**

➤ Set the length:

**📌** Enclosed version: **390mm**.

**Lite** version: **450mm**.

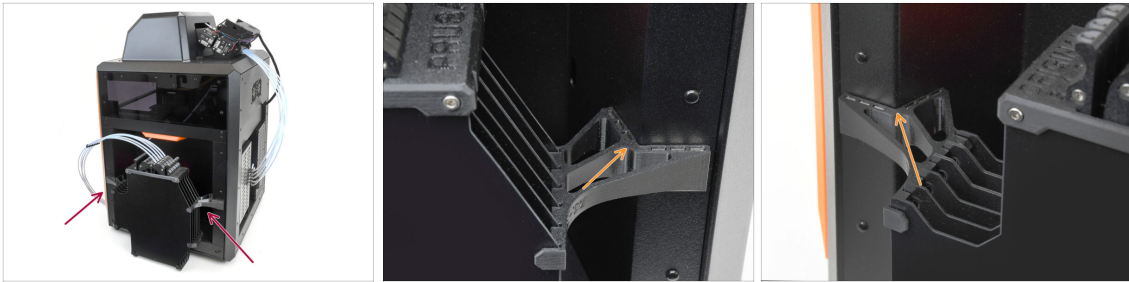
## STEP 47 (ENC) Top Cover Installation



➤ If you use the Enclosed version, cover the printer with the Top Cover.

➤ First, hook it at the back, then lean it onto the printer.

## STEP 48 Buffer Attachment



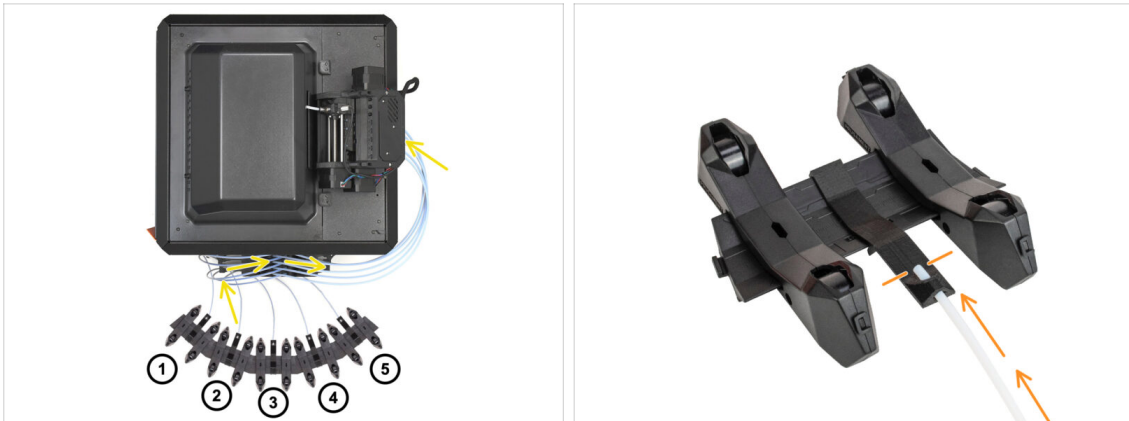
- ◆ Attach the buffer assembly onto the right side of the printer.
- ◆ Make sure the magnets are attached properly into the recessed side panel on the printer.


## STEP 49 PTFE tubes connection



- ◆ Connect the five PTFE tubes **from the MMU unit** to the **free row of collets** on the buffer, ensuring you match the numbering on both the buffer and the MMU unit.
- ◆ The other PTFE tubes from the Buffer go to the Spool holders.
- ⓘ We will attach the spool holders in the upcoming step.

## STEP 50 Spoolholders setup




 Congratulations! The hardest part is over.

● The Buffer and spools setup in the picture is the one we will be trying to achieve. Arrange the **spool holders** and the **buffer** as seen in the picture.

● The PTFE tubes should go from the spoolholders to the buffer. Then, from the buffer to the back of the MMU.

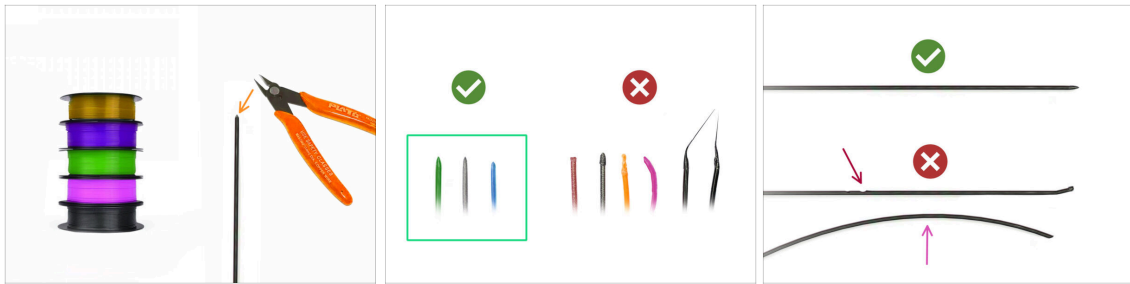
● Connect the PTFE tubes from the buffer onto each of the spool holder.

 **Note the spool holder positioning. It is important that filament has as straight path as possible and that nothing interferes. PTFE tubes should not be bent too much. Otherwise, the filaments will jam.**

## 11. First Flight



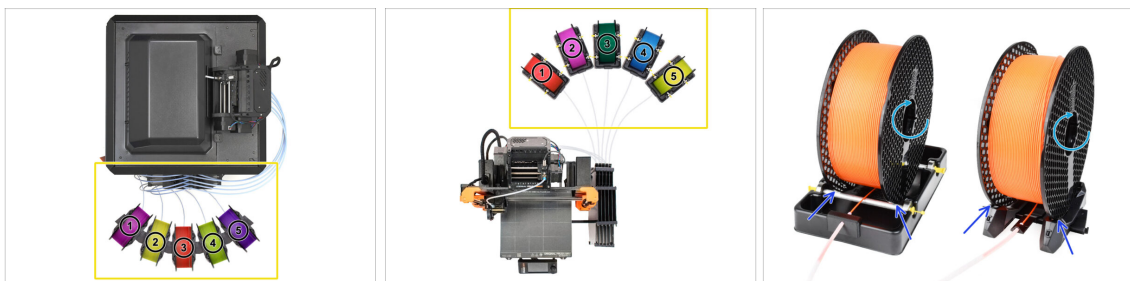
## STEP 1 Filament preparation



We can now move on to loading the filaments in and printing the test object! But first;

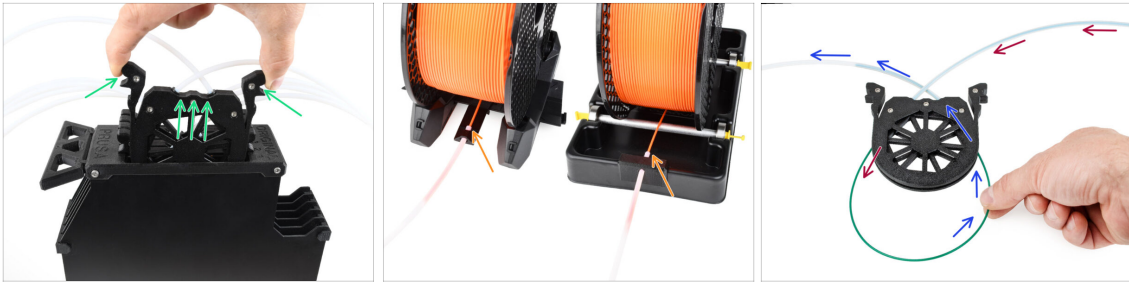
- Please prepare at least **five different PLA filaments** and **cut off the ends** to form a round **sharp tip** on each - as seen in the picture.
- The filaments must have a **sharp tip** in order to load properly into the MMU as well as into the printer. If the tip is deformed, bent or larger in diameter, it won't load properly.
- Inspect the last **40cm (15")** of each filament. Make sure there are **no dents** in it. Sometimes, if filament got jammed before, the pulley wheel makes an indent in it. This part of the filament can no longer be grabbed and moved by the MMU unit and must be cut off.
- If the filament end is bent, straighten it. **It must be perfectly straight.**
- ⚠ Use only high-quality filament with guaranteed low diameter deviation. In case you have filament loading / unloading issues in the future, re-visit this step as well. Make sure the filament is dried up. Moisture-sensitive filaments can be problematic during the MMU operation.

## STEP 2 Suggested filament layout



- Lay down the five filaments onto the spool holders. Make sure the spools do not interfere one with another.
- Adjust each spool holder so that the spool fits the rollers correctly.
- Verify the spool is **able to rotate freely** and nothing interferes.
- i Keep in mind that the MMU3 works with several printer models, so the parts in the pictures might look slightly different from yours. However, the general steps are the same.

### STEP 3 Loading a filament through the buffer



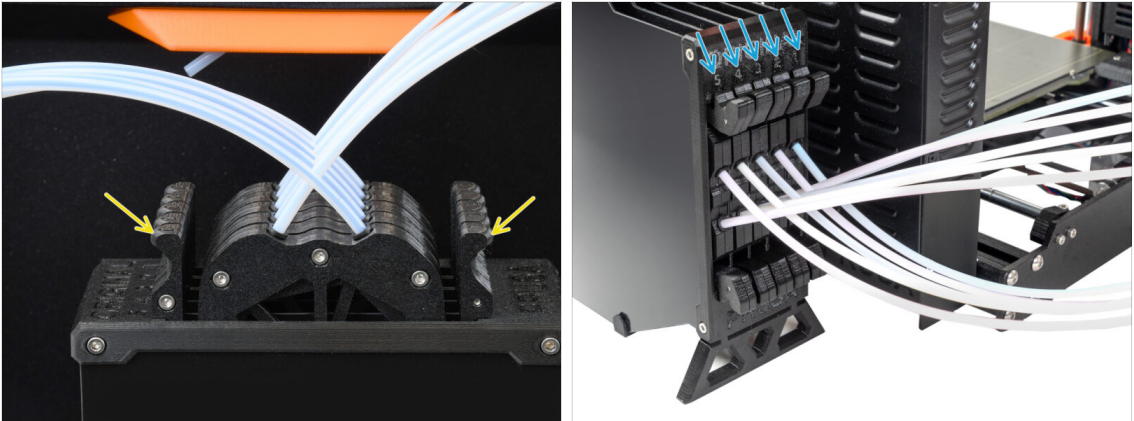
- Take the cassette for **filament 1** out of the buffer.
- Insert the **tip of the filament** into the bottom PTFE tube attached to the spoolholder.
- Keep pushing the filament into the PTFE tube until it appears in the corresponding buffer cassette.
- Take the tip and insert it through the cassette into the other PTFE tube, which goes into the MMU unit. Don't push it all the way into the MMU yet.

### STEP 4 Preloading a filament to MMU

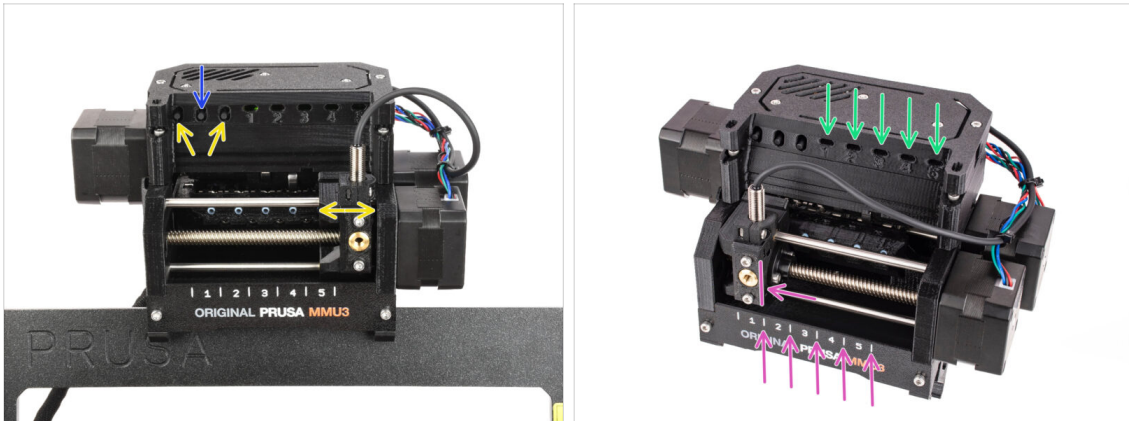


- On the printer, go to the **Filament -> Preload to MMU** (Menu -> Preload to MMU on MK3S/+)
  - Select **Filament slot 1**. The MMU unit will engage the idler into the first position and start rotating the pulley until the filament is loaded in.
  - Keep pushing the corresponding filament end into the PTFE tube from the buffer into the MMU, until you feel the filament being pulled in.
- ⚠ **Remember, the filament tip must be straight and sharp in order to load it properly.**

## STEP 5 Closing the buffer



- After a given filament is successfully loaded into the MMU, return its cassette back into the buffer.
- Repeat the same process for the other filament positions, until you successfully load **all five filaments** into the MMU.

**STEP 6** Pro tip: Loading using the buttons.

- You can also load a filament into the MMU using the buttons on the unit. Next time you load a filament, use the method you prefer. Either from the LCD menu, or using the physical buttons.

- **While the MMU is idle;** (indicated by ALL LED lights OFF)

- **The middle button** starts or aborts the filament preloading to MMU.

- **The side buttons** move the selector left and right to switch filament positions.

- Use the side buttons to move the selector onto the desired filament position indicated by the selector being aligned with one of the lines on the label-plate.

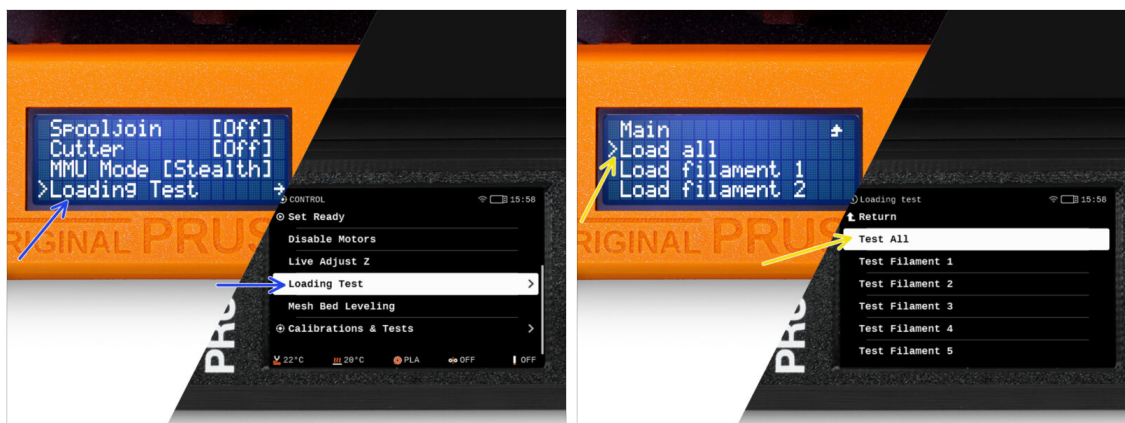
- The ongoing **loading** process is indicated by a **blinking green LED** light for the respective filament position.

- **(i)** **Stable green LED** light means the given filament is loaded to extruder.



Note, after you issue a command to the MMU unit, wait and let it finish the operation. Don't rush. Don't play around with the printer in the meanwhile. **Let it finish first if the MMU unit does something (homing, loading, unloading).**

## STEP 7 Loading test (part 1)



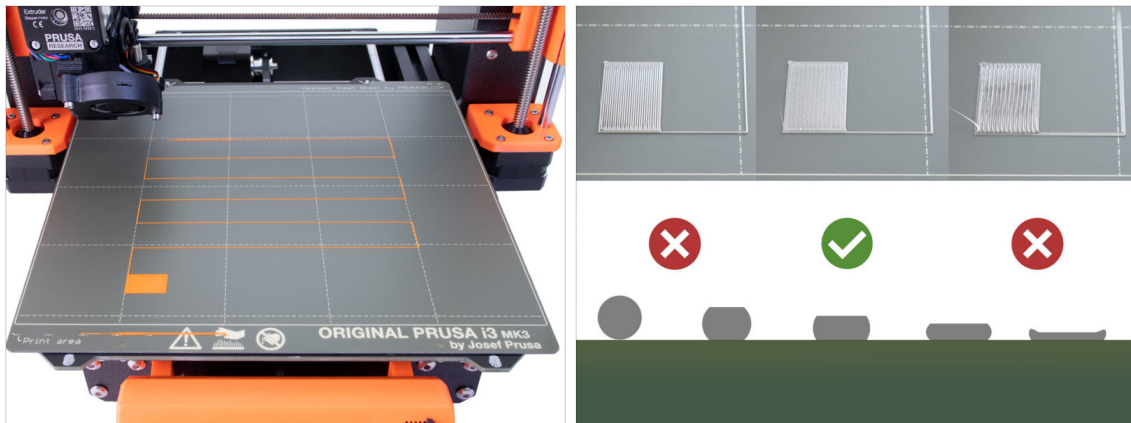
- Go to the **Control > Loading test** (Menu > Settings > Loading Test on MK3S/+)
- Select the filament type to preheat (PLA)
- Select **Test All** / Load all Or test all the filaments from 1 to 5 manually
- 📌 The MMU unit will now load and then unload all five filaments to see if all work correctly.

## STEP 8 Loading test (part 2)



- You can check the **filament sensor** status in the "footer" area of the LCD screen to see if it's detecting the filament correctly.
- On **MK3S+**, while loading a filament into the extruder, the loading check displays **solid blocks** at the bottom of the LCD if the IR filament sensor detects filament.
  - If **lines** appear instead of solid blocks, the filament sensor in the extruder is providing an intermittent reading and **may require additional tuning**.
  - In case several loading retries fail, a corresponding error screen is shown.

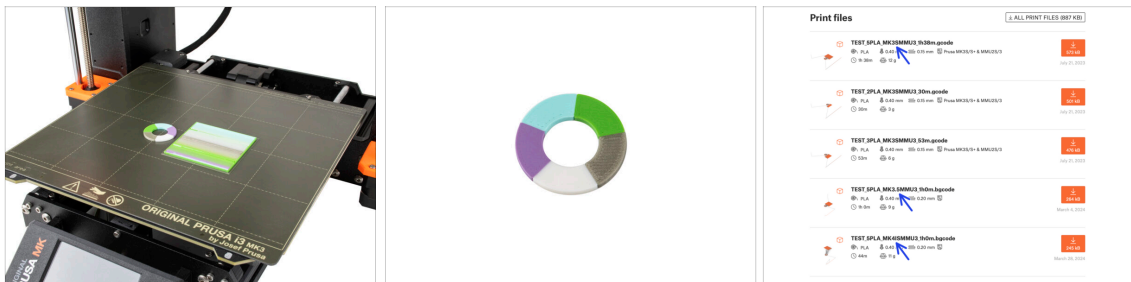
## STEP 9 Z axis and first layer calibration (optional)



**⚠ IMPORTANT:** This step is necessary for the **MK3S+ / MK3.5** if you worked on the extruder head previously. If you only upgraded the old chimney to the new one, you can skip to the next step and use the **Live Adjust Z** function as usual to fine-tune the first layer.

- Go to **LCD Menu - Calibration - Calibrate Z**.
- Then run the **First Layer Calibration**.

## STEP 10 Printing a test object



**i** We need to print a test object to verify that everything works correctly. Don't worry, it will be a quick print.

- Visit **MMU3 Test objects on Printables.com**
  - In the **Print files** section, download a G-code file pre-sliced for your **printer model**.
  - Save the **.gcode** or **.bgcode** file onto a storage media and print the test object.

## STEP 11 Tools Mapping (CORE/ MK3.5 / MK4S)



- ◆ When you start a print, the **Tools Mapping** screen appears. This allows you to reassign the extruders with the specified color to another one as needed.
  - ◆ On the left side, you'll see a list of the required materials and their colors, as specified in the G-code file.
  - ◆ On the right side, you'll find a list of materials currently available on the printer, that will be used to print the object.
- 📌 For example, if the G-code requires orange filament in the first position, but you have orange loaded in the fifth position, select the first position on the left menu and then assign it to the fifth position on the right.
  - ❶ Double-tap the filament positions or use the encoder to select the filament number.

## STEP 12 Printable 3D models



- ◆ To further test your new MMU3, have a look at MMU3 Test Objects Collection on [Printables](#).

We recommend printing the cute sheep, which has been the MMU mascot since the beginning.

## STEP 13 Print & Follow the Handbook.

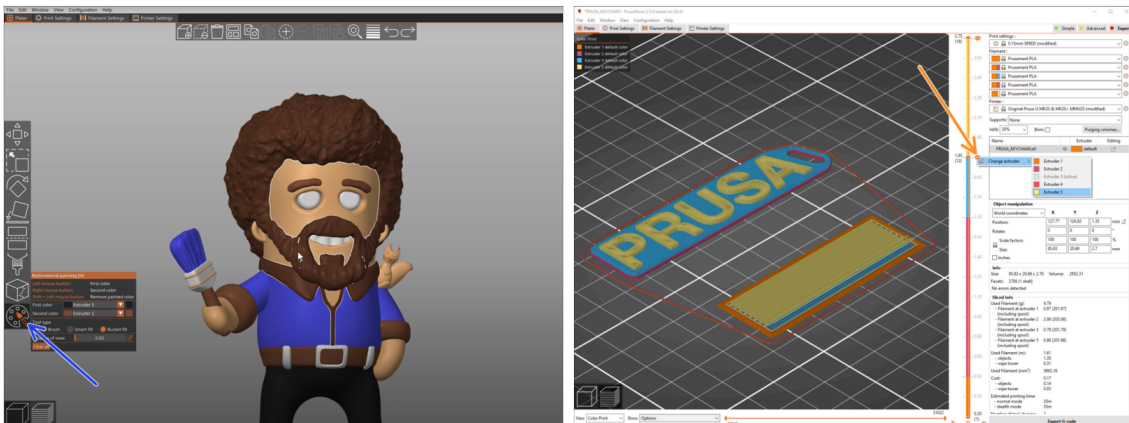


- Start the print and wait until it finishes. In the meantime you can take a look at the **printed Handbook**.
- All the information regarding calibration, how to organise the printer, buffer, spools, or troubleshooting tips are all in the printed or online Handbook.

To download the **Handbook** or if you encounter any issues, please visit our knowledge base at: <http://help.prusa3d.com/en/tag/mmu3/>

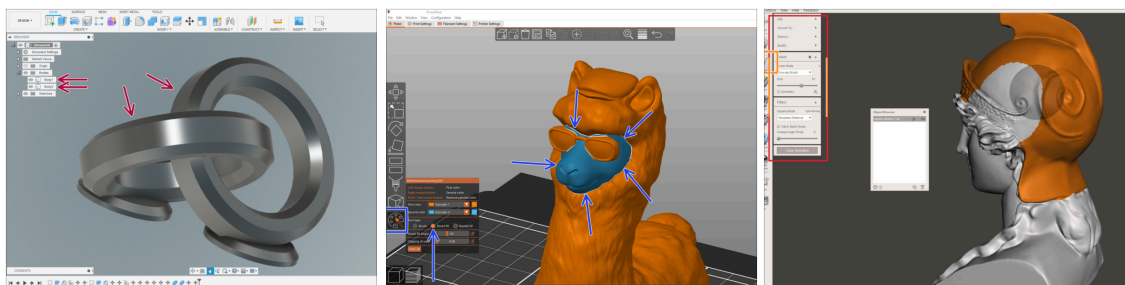
- If you are having any issues while printing, follow the on-screen instructions or visit the link from the LCD screen.

## STEP 14 G-code preparation / Custom model preparation



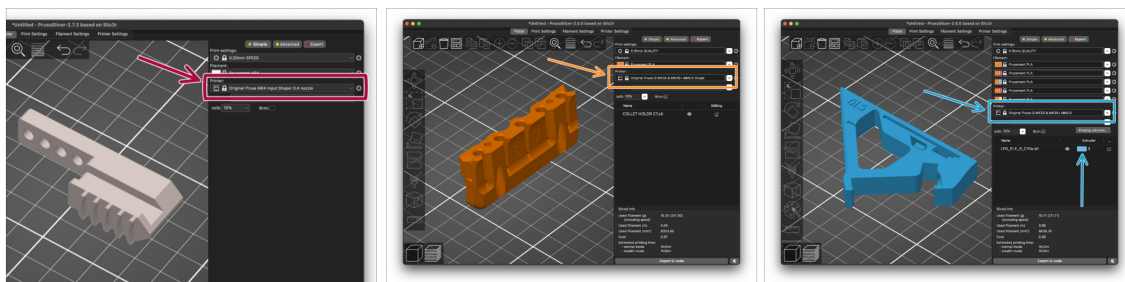
- Already printed all the bundled multi-material models from us as well as those seen at <http://Printables.com?> **Time to print your own designs!**
- The simplest way of making a single-body object colorful is the MMU Painting function in PrusaSlicer.
- Basic steps for the manual method are described in our [G-code preparation for multi material print](#) section.
- For printing logos or text labels, you might also find the automatic color change at a given layer height useful. Simply, slice an object, select a certain layer height, click the small orange "+" icon next to the height marker and select the desired MMU filament position (Extruder number).

## STEP 15 Making your own Multi-material models



- ◆ If you have designed a model with multiple bodies, you may find the Exporting model from Fusion 360 guide useful.
- ◆ If you are designing a single-body model, part of which should be MMU-Painted, make sure there is a sharp line surrounding each distinct part so that you can use the **MMU Painting's Smart-fill** function later on in **PrusaSlicer**.
- ◆ If you have an intricate STL file that can't be MMU-Painted easily, you can try the more sophisticated way of Splitting STL with single compact part or Splitting STL into multiple parts using MeshMixer.

## STEP 16 MMU Single material operation



Did you know that MMU3 unit can also be used to make **single-material printing** more convenient too?

- ◆ You can keep up to five of your favorite materials loaded into the MMU unit.
  - ◆ On the **CORE/MK3.5/MK4S**, use the regular **CORE/MK3.5/MK4S profile**, when slicing. The printer will allow you to choose which filament to use.
  - ◆ On the **MK3S+**, Slice an object with the MMU3 Single profile and start the print. Then, choose which filament to use from the LCD.
- ◆ If you know which of the five materials to use already while slicing, you can use the **MMU3 profile** and assign a single color (Extruder number) to the object.
- ◆ If a filament runs out, your print can continue automatically using the **SpoolJoin** function. For more information, refer to the SpoolJoin article.

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## STEP 17 Give us feedback



- ◆ We know you're eager to start printing, but we'd really appreciate it if you could take 3–4 minutes to **share your thoughts** on this manual: how clear it was, how easy it was to follow, and any ideas to improve it.
- ⓘ This feedback is a little different from the usual comments you might leave on individual steps.
- ◆ **Share your feedback here.**
- ◆ Thank you for helping us make our manuals even better!

---

## STEP 18 Reward yourself



- ⚠ We know you've been waiting for this! Sounds like a well-deserved break! Enjoy those Haribos and watching your printer in action. By the way, what are you printing?











