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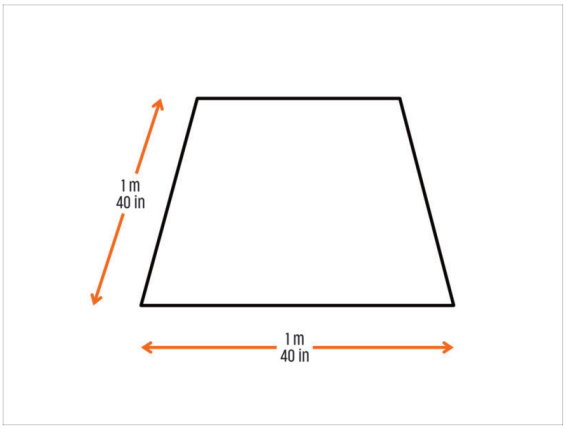
1. Introduction

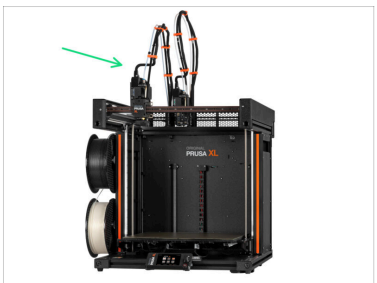
STEP 1 Preparing the Enclosure kit

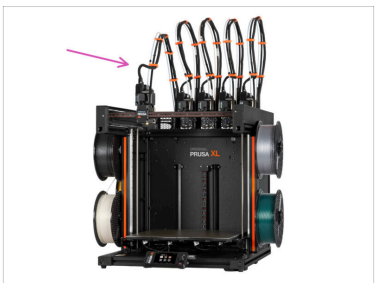


- Welcome to the manual on how to assembly the Original Prusa XL Enclosure.
- Please prepare the Original XL Enclosure received from Prusa Research.
- For the assembly, prepare a clean workbench with a space of at least 1 m x 1 m (40 in x 40 in).

⚠ **If children are involved in assembly, always supervise them to avoid injury.**

STEP 2 Printer compatibility

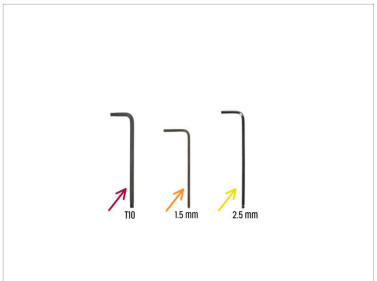


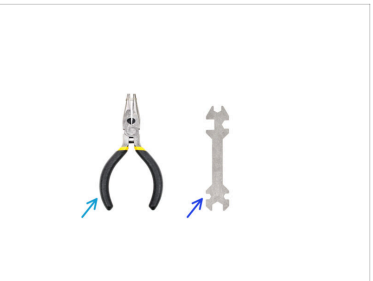


ⓘ The XL Enclosure assembly manual is specifically intended for these devices:

- Original Prusa XL Single-Tool
- Original Prusa XL Dual-Head
- Original Prusa XL Five-Head

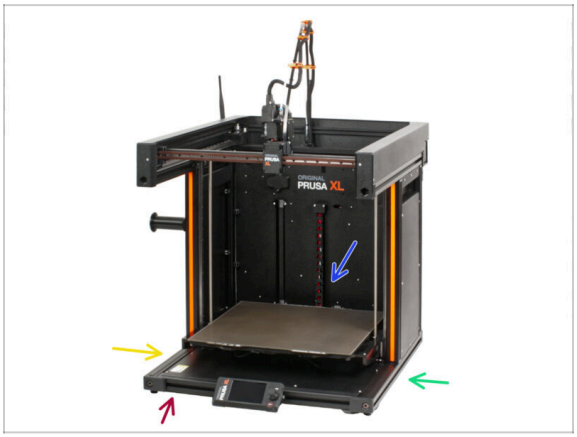
STEP 3 Tools necessary for this guide





- **For this guide, please prepare:**
- T10 Torx key (screwdriver)
- 1.5 mm Allen key
- 2.5 mm Allen key
- Needle-nose pliers
- Universal wrench
- A cardboard box for use as heatbed protection during the assembly. *Hint: use the Nextruder box.*

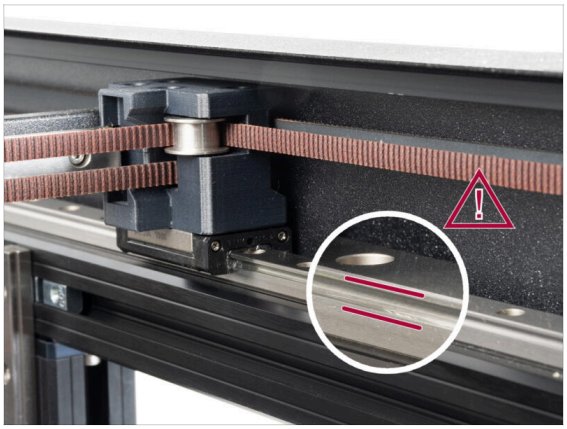
STEP 4 Front, left, right and rear side

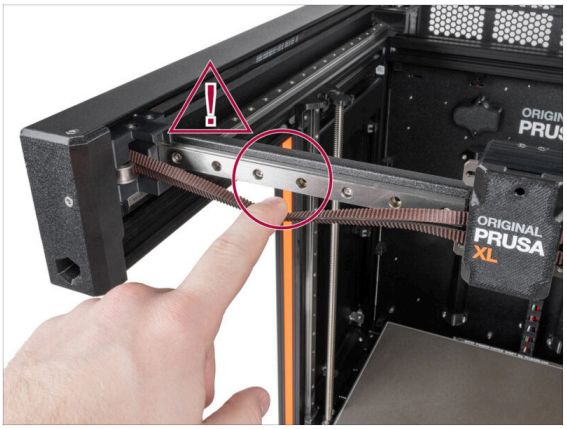


⚠ **IMPORTANT:** The XL printer is large and it is almost impossible to have the entire body in every single picture. Throughout the manual, there will used terms to **describe the side you will be working on:**

- **Front side** - the location featuring the **xLCD screen**.
- **Left side** - identifiable by the **safety sticker** positioned along its edge.
- **Right side** - in contrast to the left side, **lacks a safety sticker**.
- **Rear side** - the remaining section housing the **PSU** (Power Supply Unit).

STEP 5 CAUTION: Lubricant Handling

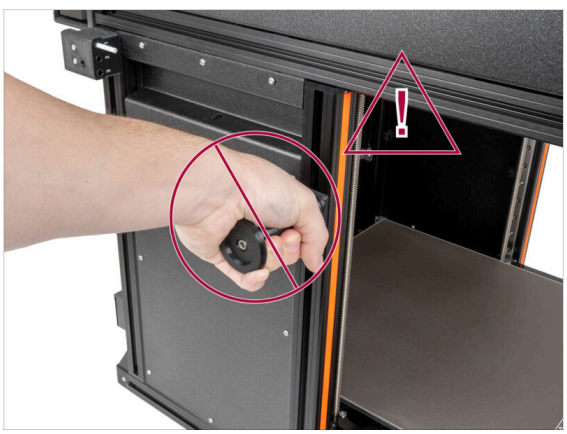


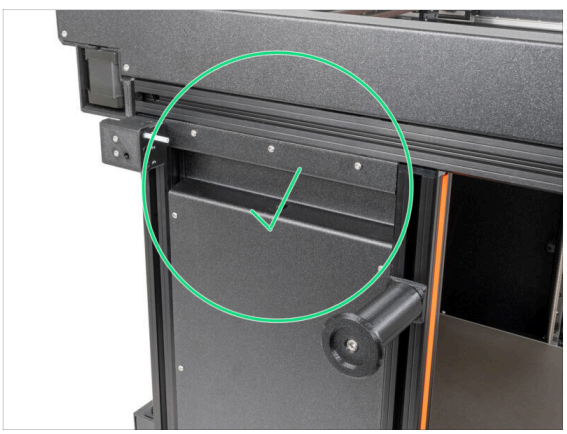


⚠ **CAUTION: Avoid direct skin contact with the lubricant used for the linear rails** in this printer. If a contact occurs, **wash your hands immediately. Especially before eating, drinking, or touching your face.**

- Lubricant accumulates in the printer's bearings, mainly in the linear rail channels.

STEP 6 Manipulating with the printer





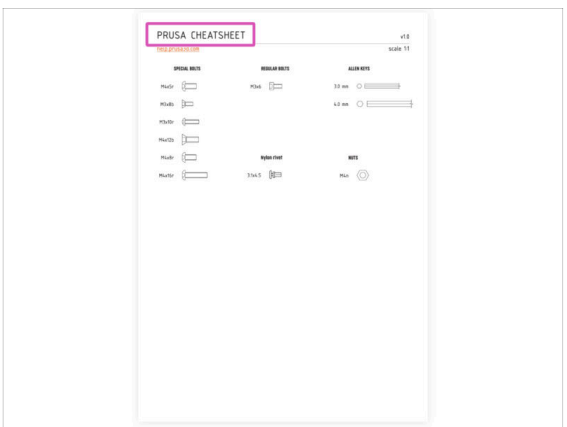
⚠ **Never manipulate the printer by using the spoolholders or the upper metal flanges. You can damage the LED lights hidden inside.**

- When assembling, handle the base using the extrusions.

STEP 7 Manipulating with the enclosure

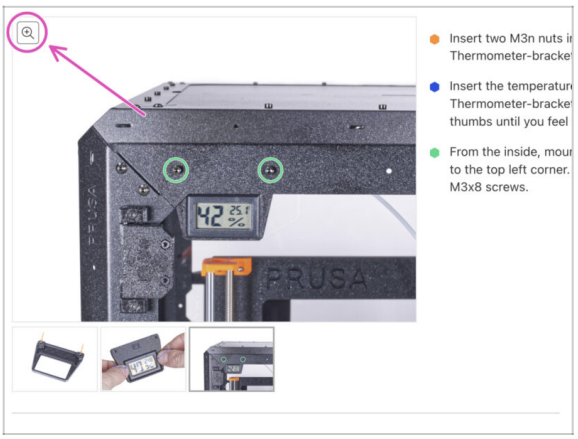
- During the assembly, peel off all protective films from the plastic panels.
- ⚠ After removing the protective film, the side panel is more susceptible to scratches. Please proceed with caution.
- ⚠ Metal frames can be sharp, so be careful and handle them with care.

STEP 8 Use labels for reference



- Fasteners on the labels has a scale of 1:1 and can be used to identify parts :-)
- ⓘ The numbers in parentheses below the fastener picture indicate the number of extra pieces added to the SPARE package.
- For the most common screws and nuts you can also use the enclosed letter, which contains Prusa Cheatsheet on the other side.
- ⓘ You can download it from our site help.prusa3d.com/cheatsheet. Print it at 100 %, don't rescale it, otherwise, it won't work.

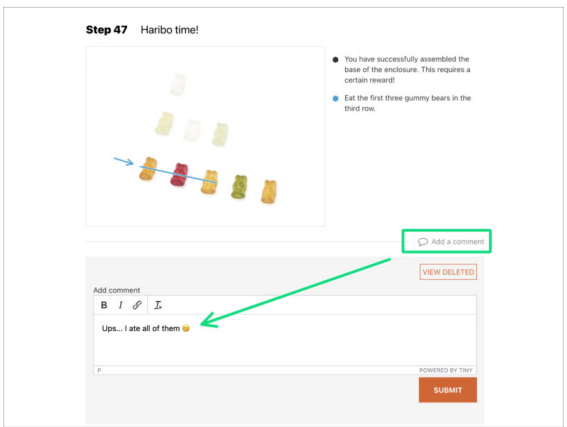
STEP 9 View high resolution images

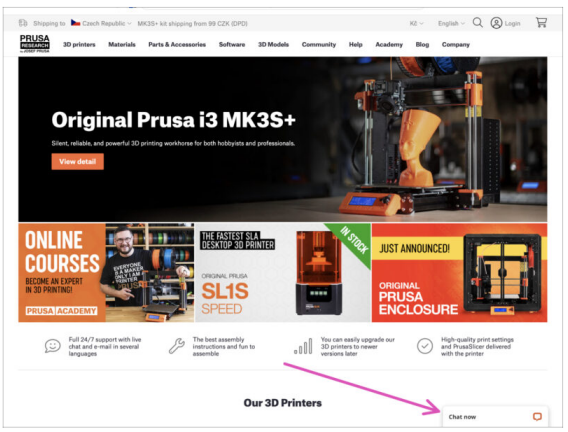


When you browse the guide on help.prusa3d.com, you can view the original images in high resolution for clarity.

- Just hover your cursor over the image and click the Magnifier button ("View original") in the top left corner.

STEP 10 We are here for you!



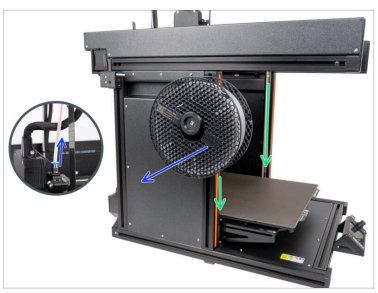


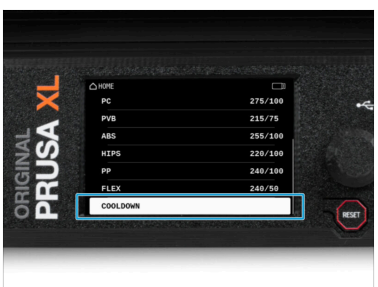
- Lost in the instructions? Missing screw or cracked printed part? **Let us know!**
- You can contact us using following channels:
  - Using comments under each step.
  - Using our 24/7 live chat at prusa3d.com
  - Writing an email to info@prusa3d.com

STEP 11 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.

STEP 12 Preparing the printer





- Plug the printer into the wall outlet and turn it ON.
- If you have loaded the filament, unload it from the hotend.

  ⓘ **Multi-tool** -> Unload all filaments. On the screen, navigate to *Filament -> Unload Filament and select the tool-head*.
- Remove the filament from the PTFE tube. It is necessary to completely remove it from the printer.

⚠ **WARNING: The hotend and heatbed are very HOT. Do not touch these parts!!!**

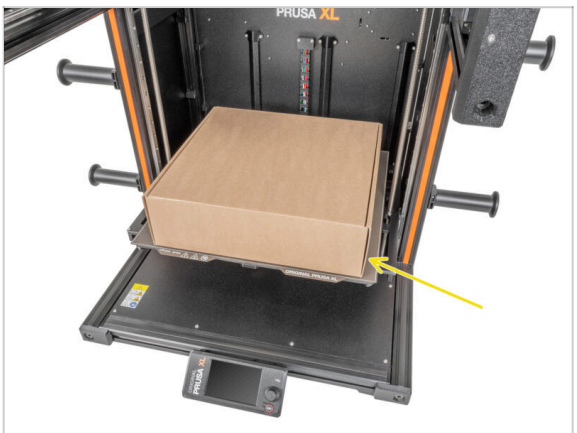
- Move the Z-axis down. On the screen, navigate to *Control -> Move axis -> Move Z.* **Leave the Z-axis at least 10cm above the bottom panel.**
- Cool down the printer. On the screen, navigate to *Preheat -> Cooldown.*

⚠ **Wait until the hot parts are cooled down** to ambient temperature. It takes approximately 10 minutes.

STEP 13 Printer unpluging

- Turn the power switch OFF (symbol "O").
- From the rear side of the printer, unplug the PSU cable.

STEP 14 Protecting the heatbed

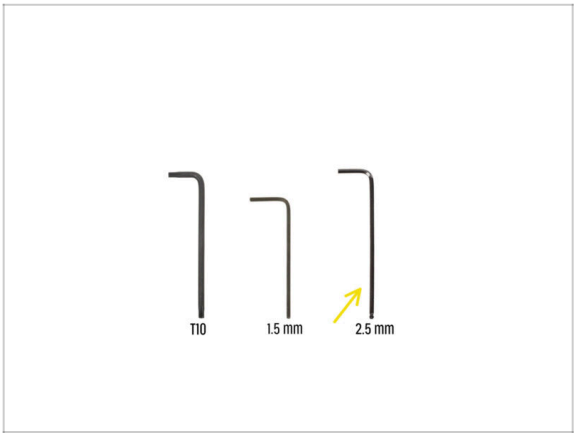


Before you proceed, it is recommended to protect the heatbed.

- **Make sure the heatbed is cooled down** to ambient temperature. Place the empty cardboard box approximately to the front center part of the heatbed.

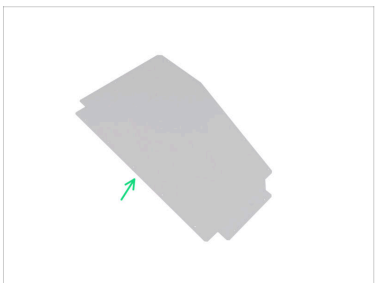
2. Enclosure assembly

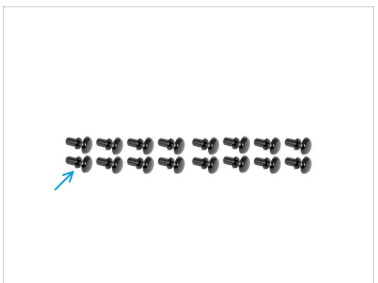
STEP 1 Tools necessary for this chapter



- **For this chapter, please prepare:**
- 2.5mm Allen key

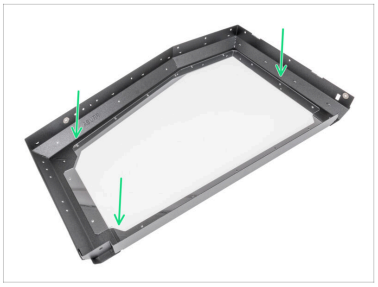
STEP 2 Left frame: parts preparation





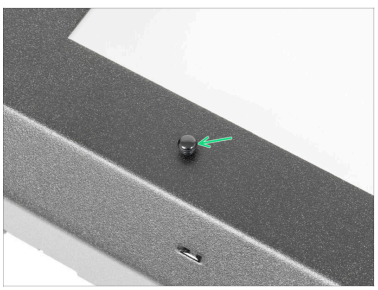
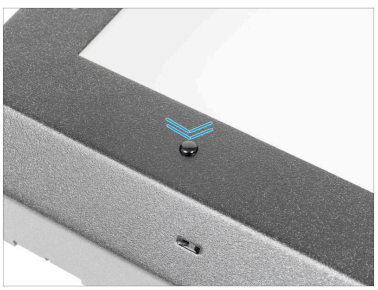
- **For the next steps, please prepare:**
- Frame left (1x)
- Side panel (1x)
- Nylon rivet (16x)

STEP 3 Left panel installing

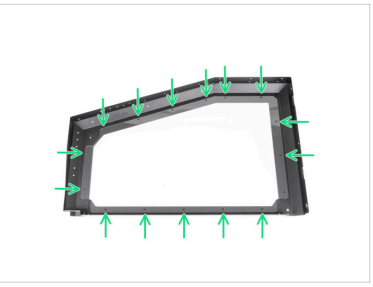
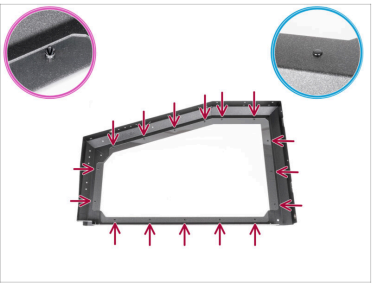

- Peel off the protective film from both sides of the side panel.
- ⚠ After removing the protective film, the side panel is more susceptible to scratches. Please proceed with caution.
- Insert the side panel into the left-frame.
- Align up the side panel holes with left frame holes.

STEP 4 How to install nylon rivets

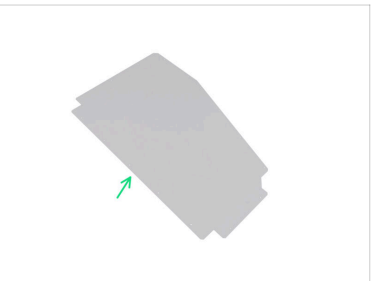
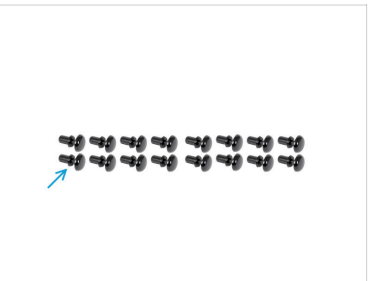
- ⓘ In this step, we will demonstrate how to secure the panels using the nylon rivets. Please familiarize yourself with this procedure, as it will be repeated several times throughout the manual.
- ⚠ **Do not insert any rivets yet**; wait for further instructions in the next step. This step is just a demonstration.
- Align the hole in the side frame and the hole in the side panel.
- Insert the rivet through both the side frame and the panel.
- Push on the nylon rivet to secure the back panel in the frame.

STEP 5 Left panel securing

- Insert the nylon rivet from the outside through the left frame and side panel.
- Secure the side panel with remaining 15 nylon rivets.
- ⚠ **Double check that all the nylon rivets are fully inserted and secured in the holes.**
  - From the inside.
  - From the outside.

STEP 6 Right frame: parts preparation

- **For the next steps, please prepare:**
- Frame right (1x)
- Side panel (1x)
- Nylon rivet (16x)

STEP 7 Right panel installing

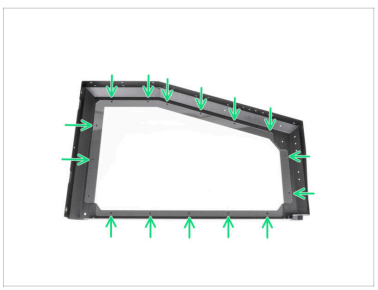


- Peel off the protective film from both sides of the side panel.

⚠ After removing the protective film, the side panel is more susceptible to scratches. Please proceed with caution.

- Insert the side panel into the right frame.
- Align the side panel holes with right frame holes.

STEP 8 Right panel securing

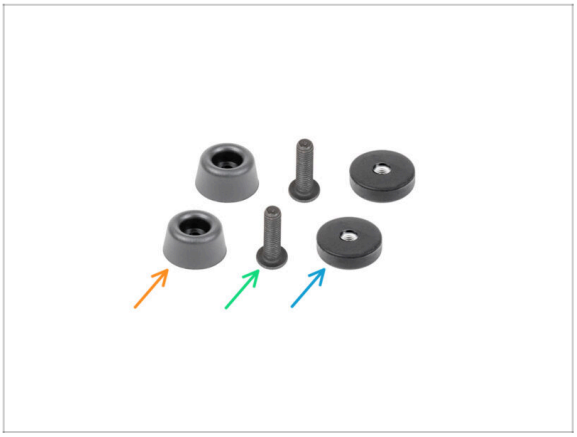




- Insert the nylon rivet from the outside through the right frame and side panel.
- Secure the side panel with remaining 15 nylon rivets.

⚠ **Double check that all the nylon rivets are fully inserted and secured in the holes.**

- View from the inside.
- View from the outside.

STEP 9 Magnetic bumpers: parts preparation

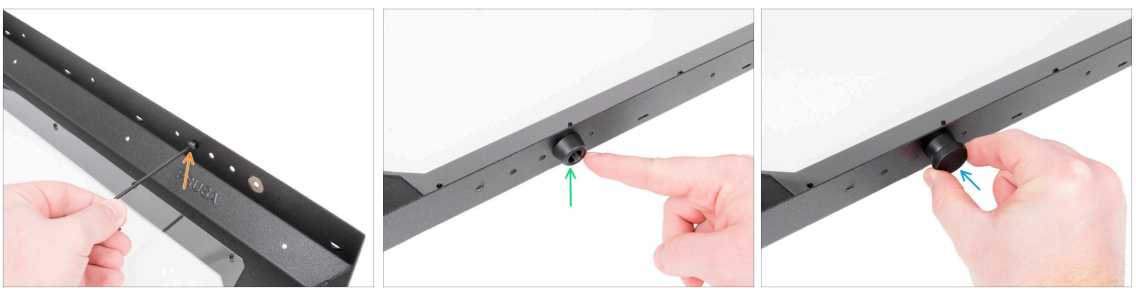


- **For the next steps, please prepare:**
- Protective bumper 20x10x4.3 (2x)
- M4x16r screw (2x)
- Magnetic bumper 22x6 (2x)

STEP 10 Left bumper installing

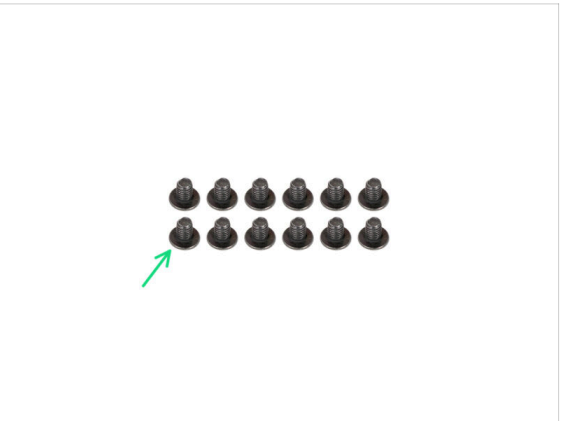
- From the inside of the side frame, insert the M4x16r screw into the threaded hole and tighten fully.
- Slide the protective bumper onto the screw from the outside of the side frame.
- Insert the magnetic bumper onto the screw and tighten it.

STEP 11 Right bumper installing



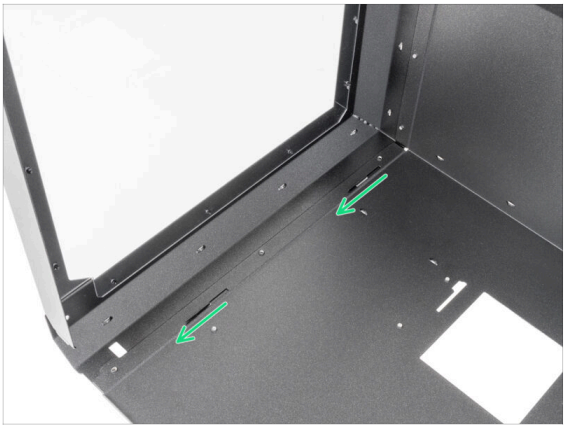
- From the inside of the side frame, insert the M4x16r screw into the threaded hole and tighten fully.
- Slide the protective bumper onto the screw from the outside of the side frame.
- Insert the magnetic bumper onto the screw and tighten it.

STEP 12 Back frame: parts preparation



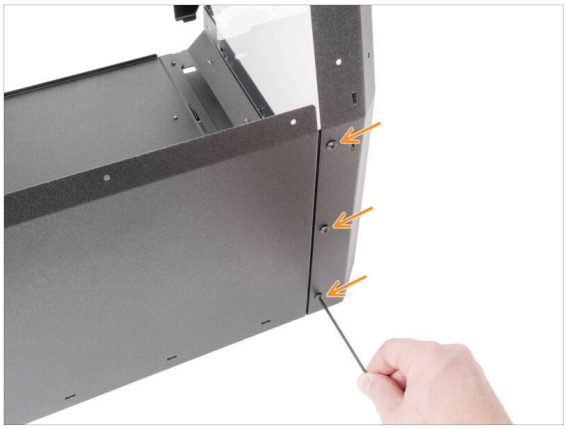
- **For the next steps, please prepare:**
- Back panel (1x)
- M4x5r screw (12x)

STEP 13 Left frame installing



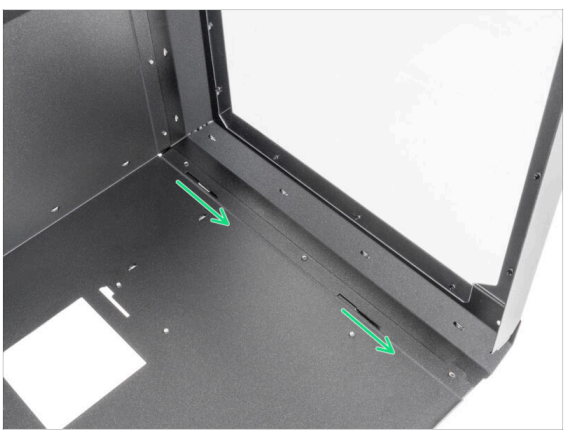
- Put the left frame next to the back panel.
- Fit the perforation of the left frame into the cut-out on the back panel, and slide both pieces together as illustrated in the image to secure them.

STEP 14 Left frame securing



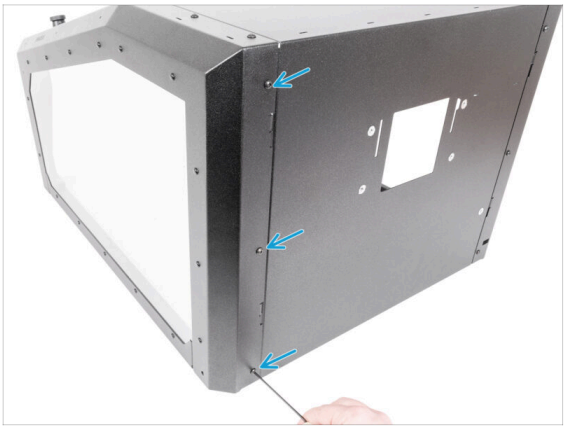
- Secure the panels with three M4x5r screws from the other side using a 2.5mm Allen key.
- Carefully turn the assembly and secure the panels with three M4x5r screws from the back side of the panels using a 2.5mm Allen key.

STEP 15 Right frame installing



- Gently turn the back panel back onto the larger side.
- Put the right frame next to the back panel.
- Fit the perforation of the right frame into the cut-out on the back panel, and slide both pieces together as illustrated in the image to secure them.

STEP 16 Right frame securing

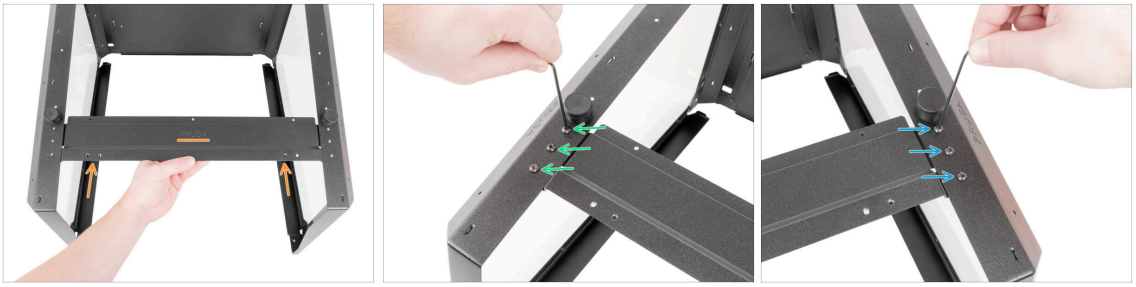


- Secure the panels with three M4x5r screws from the other side using a 2.5mm Allen key.
- Carefully turn the assembly and secure the panels with three M4x5r screws from the back side of the panels using a 2.5mm Allen key.

STEP 17 Frame support: parts preparation

- **For the next steps, please prepare:**
- Frame support (1x)
- M4x5r screw (6x)

STEP 18 Frame support securing

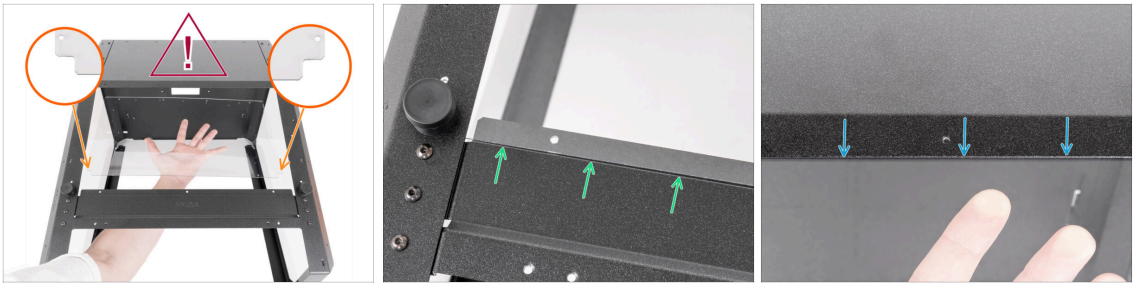


- Insert the frame support **from the bottom side** of the side frames. **Note the logo orientation!**
- Secure the left side with three M4x5r screws using a 2.5mm Allen key.
- Secure the right side with three M4x5r screws using a 2.5mm Allen key.

STEP 19 Top panel: parts preparation

- **For the next steps, please prepare:**
- Top panel (1x)
- Nylon rivet (13x)

STEP 20 Top panel installing

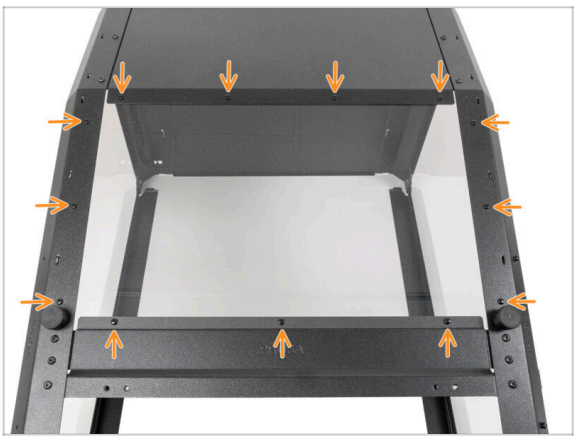


- **Peel off the protective film from both sides of the top panel.**

⚠ After removing the protective film, the side panel is more susceptible to scratches. Please proceed with caution.

- Insert the top panel into the frame assembly.
- Place the top panel, so the bottom edge is on top of the frame support.
- Place the top panel, so the top edge is under the top frame of the back panel.

STEP 21 Top panel securing



- **While holding the top panel**, insert the nylon rivets from the outside through the holes to secure the top panel in its position.

STEP 22 Filter and fan holder: parts preparation



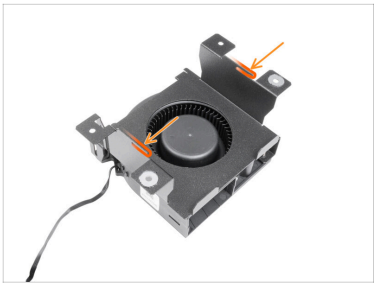
- **For the next steps, please prepare:**
- Filter and fan holder (1x)
- Blower (1x)
- M4x12b screw (2x)
- Zip-tie (1x)

STEP 23 Filter and fan holder assembly



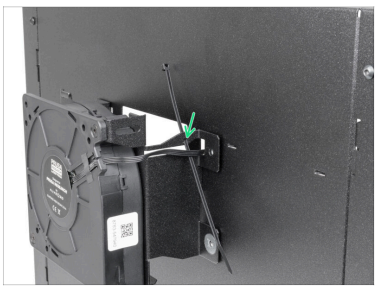
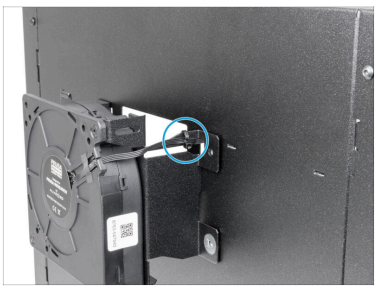
- Place the fan holder with metal cutouts towards you.
- Place the blower onto the filter-and-fan-holder.
- Secure the blower with two M4x12b using a 2.5mm Allen key.

STEP 24 Filter and fan holder installing



- The fan and filter holder has two metal perforations, which fit into the back-panel cut-outs.
- Fit the perforation on the fan and filter holder into the cut-out on the back panel, and slide it down as shown in the image to secure them.

STEP 25 Blower cable securing

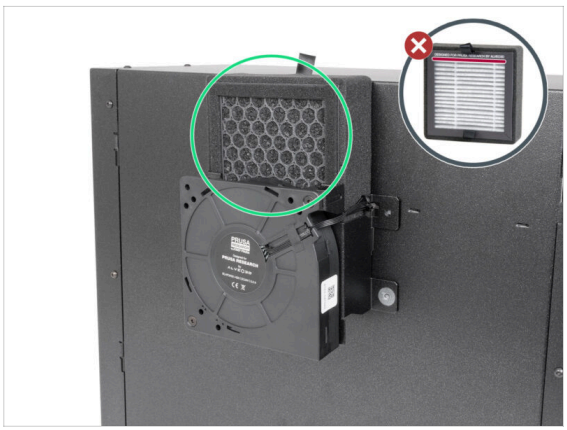




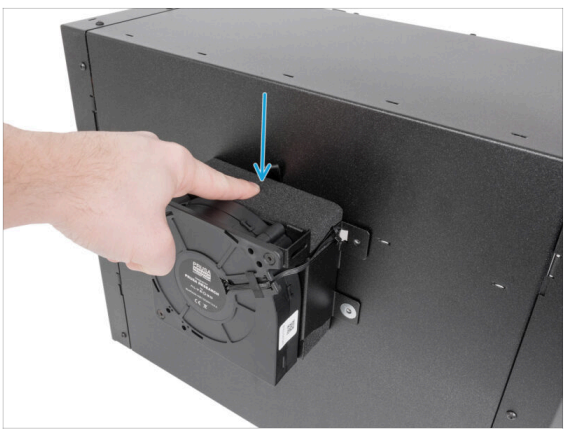
- Insert the whole blower cable through the hole in the back panel.
- Take the zip-tie and insert it through the metal cut-out in the filter and fan holder.
- Secure the blower cable with the zip-tie. **Do not overtighten the zip-tie!** Cut the end of the zip-tie.

STEP 26 HEPA filter: parts preparation

- **For the next steps, please prepare:**
- HEPA filter (1x)

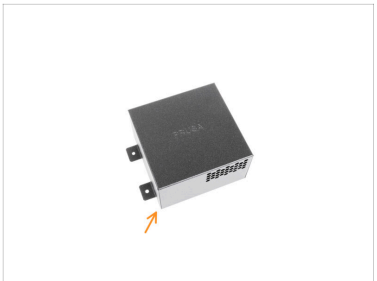
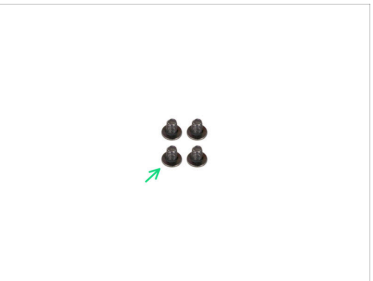
STEP 27 HEPA filter installing





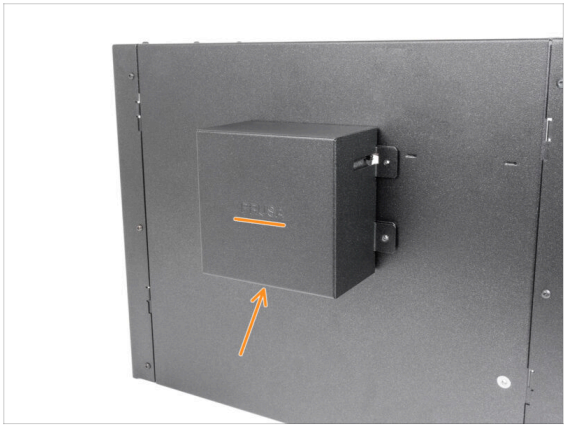
- Insert the HEPA filter between the fan holder and the back panel, ensuring that the darker side of the filter (the side without the company text) is facing towards you.
- Push the HEPA filter all the way in.

STEP 28 Filtration cover: parts preparations

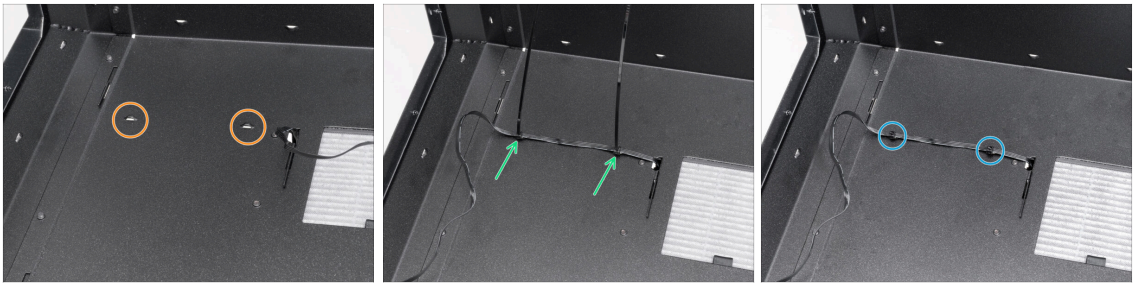

- **For the next steps, please prepare:**
- Filtration cover (1x)
- M4x5r screw (4x)
- Zip-tie (2x)

STEP 29 Filtration cover installing




- Attach the filtration cover to the fan holder assembly. **Note the logo orientation!**
- Secure the cover with four M4x5r screws using a 2.5mm Allen key.

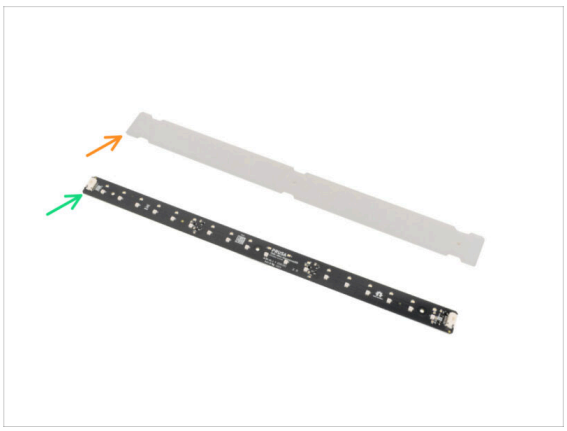
STEP 30 Fan cable securing

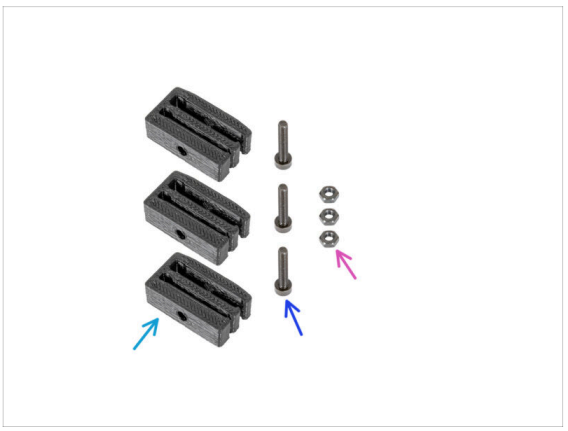


- From the inside:
- Locate metal perforations.
- Insert two zip-ties through the perforations and secure the cable. **Do not overtighten the zip-ties!**
- Cut the ends of the zip-ties.

ⓘ The end of the fan cable will be secured later with LED strip add-on cable.

STEP 31 LED strip: parts preparation

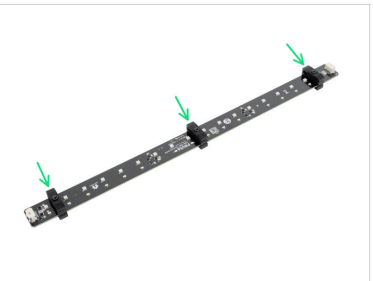




ⓘ From November 2024, you may receive a new LED Stick Board, which can be supplemented with an additional LED strip.

- **For the next steps, please prepare:**
- LED diffuser (1x)
- LED Stick Board (1x)
- LED Stick Bracket (3x)
- M3x18 screw (3x)
- M3n nut (3x)

STEP 32 LED strip assembly


- Insert the M3n nut into the nut hole in the led-stick-bracket.
- Prepare all three led-stick-brackets.
- Attach the brackets onto the LED stick board. Mind the orientation of the LED stick board and the LED-stick-bracket. **Look at the picture.**

  ⚠ **Avoid sliding the bracket over chips and diodes!** It can be fatally damaged.
- Remove the protective foil from the both sides of LED diffuser.
- Slide the LED diffuser into the upper place in the LED-stick-brackets.

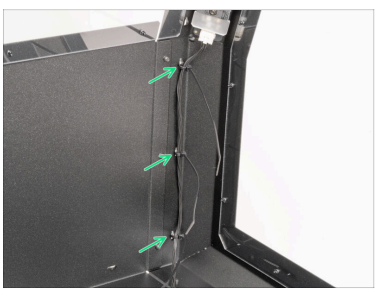
STEP 33 LED strip installing

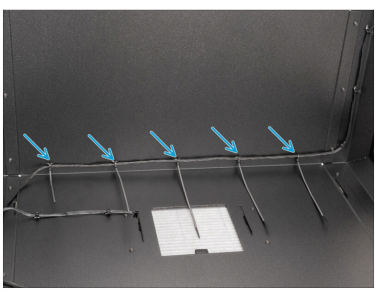

- Attach the assembled LED panel on the inner side of the right frame as shown.
- Secure the LED panel from the outside of the right frame with three M3x18 screws using a 2.5mm Allen key.

STEP 34 LED strip cable: parts preparation

- **For the next steps, please prepare:**
- LED strip cable 1100 mm (1x)
- Zip-tie (12x)

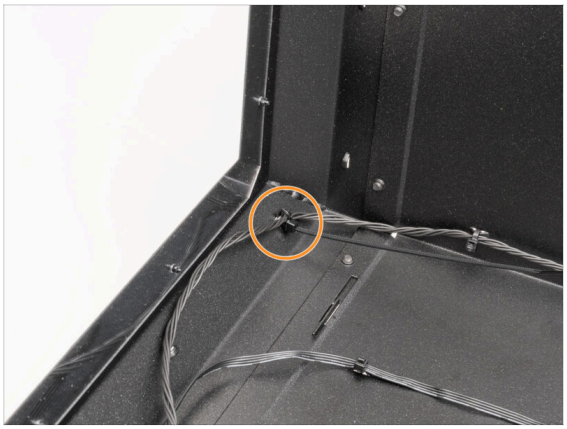
STEP 35 LED strip cable securing

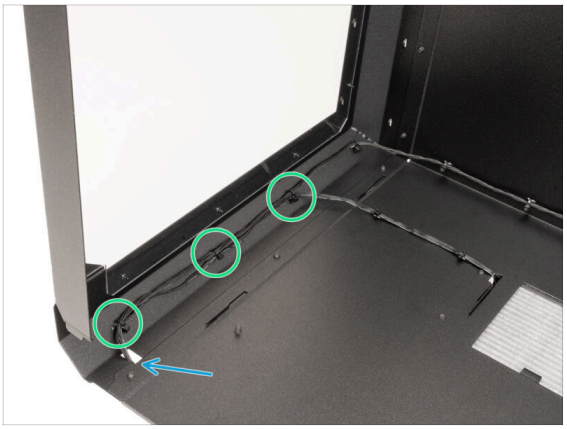




- Take the LED strip cable and connect one end to the LED stick board.
- Insert three zip-ties through the perforations and secure the cable. **Do not overtighten the zip-ties.** Cut the ends of the zip-ties.
- Insert five zip-ties through the perforations and secure the cable. **Do not overtighten the zip-ties.** Cut the ends of the zip-ties.

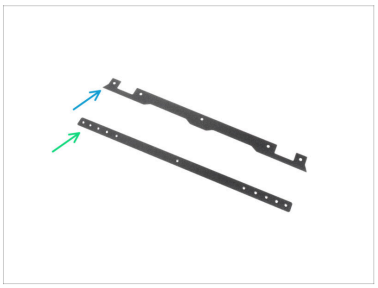
STEP 36 Enclosure cables securing

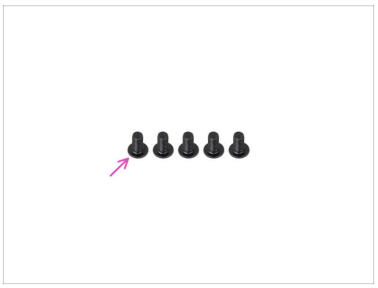




- Insert zip-tie through the perforations and secure the cable. **Do not overtighten the zip-tie.** Cut the end of the zip-tie.
- Secure the LED strip cable and the fan cable with three zip-ties. **Do not overtighten the zip-tie.** Cut the end of the zip-tie.
- Insert the ends of the cables through the cut-out in the metal.

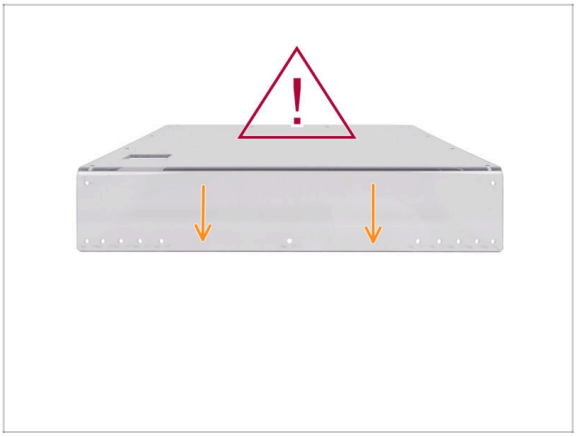
STEP 37 Door frame top: parts preparation





- **For the next step, please prepare:**
- Front panel (1x)
- Door frame support (1x)
- Door frame top (1x)
- M4x8r screw (5x)

STEP 38 Door frame top orientation

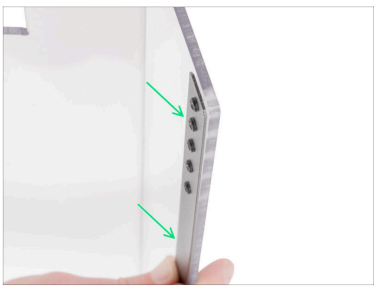


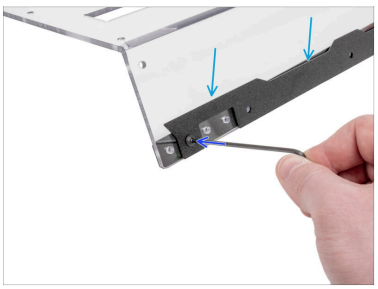
- **Peel off the protective film from both sides of the front panel.**

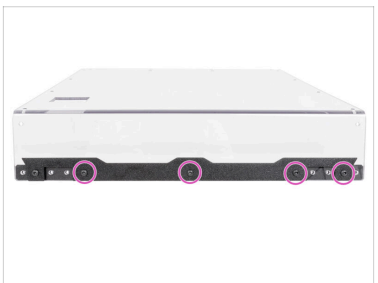
⚠ After removing the protective film, the side panel is more susceptible to scratches. Please proceed with caution.

- Place the front panel with a short side towards you as illustrated in the image.

STEP 39 Door frame top assembly





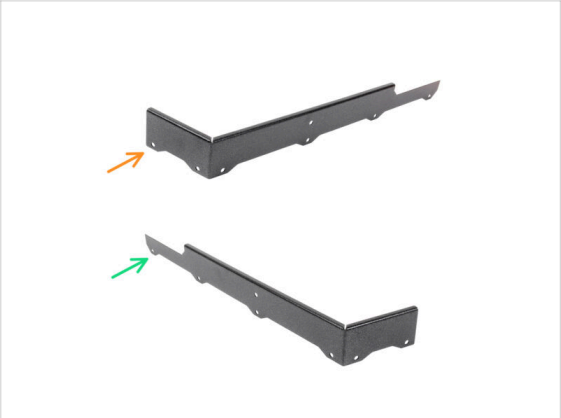


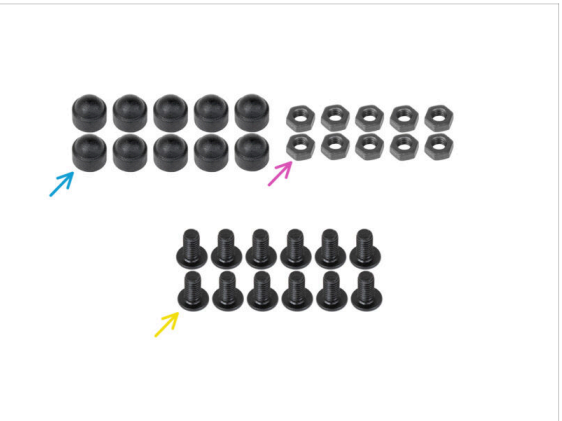
- Attach the door frame support from the inside as described in the picture.
- Attach the door frame top from the outside.

⚠ **Do not overtighten the screws as this may cause the panel to crack!**

- Secure the support and the top with a M4x8r screw using a 2.5mm Allen key.
- Secure the support and the top with remaining M4x8r screws using a 2.5mm Allen key.

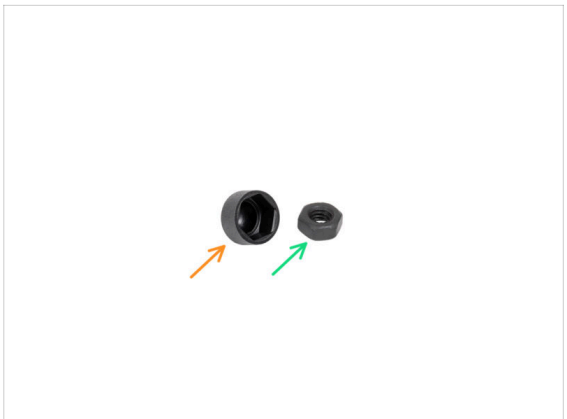
STEP 40 Door frame left & right: parts preparation

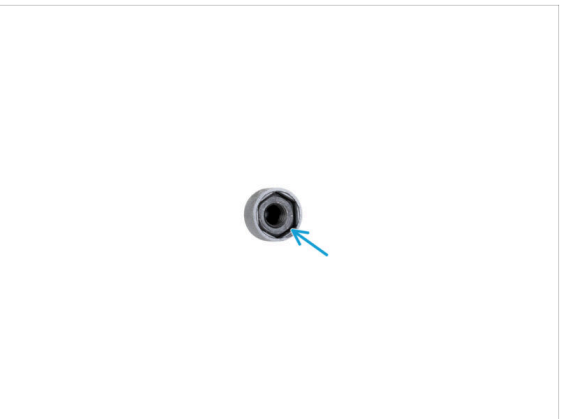




- **For the next steps, please prepare:**
- Door frame right (1x)
- Door frame left (1x)
- M4 nut cover (10x)
- M4n nut (10x)
- M4x8r screw (12x)

STEP 41 Nut cover assembly



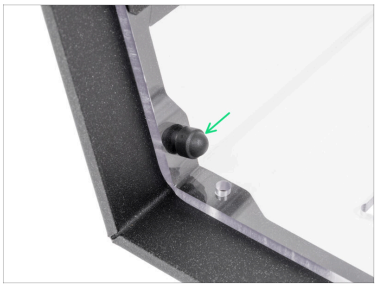


- Prepare one M4 nut cover.
- Prepare one M4n nut.
- Insert the M4n nut into the M4n nut cover.
- Repeat this process for all remaining M4n nuts and M4n nut covers.

STEP 42 Door frame right installing

- Attach the door frame right onto the front panel.
- ⚠ **Do not overtighten the screws as this may cause the panel to crack!**
- Secure the panel with the M4x8r screw using a 2.5mm Allen key.

STEP 43 Door frame right securing: short side

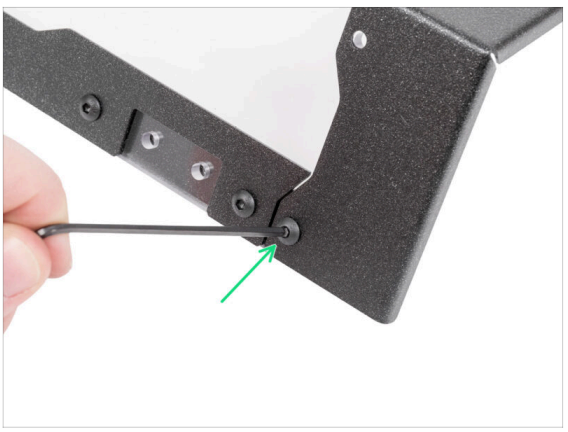


- Insert the M4x8r screw into the hole.
- ⚠ **Do not overtighten the screws as this may cause the panel to crack!**
- From the inside of the front panel, insert the M4n nut onto the screw.
- Secure the screw using a 2.5mm Allen key.

STEP 44 Door frame right securing: long side

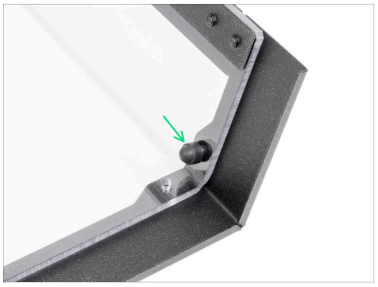
- With same method, insert four M4x8r screws into the holes and secure them with the M4n nuts using a 2.5mm Allen key.

STEP 45 Door frame left installing



- Attach the door frame left onto the front panel.
- ⚠ **Do not overtighten the screws as this may cause the panel to crack!**
- Secure the panel with an M4x8r screw using a 2.5mm Allen key.

STEP 46 Door frame left securing: short side

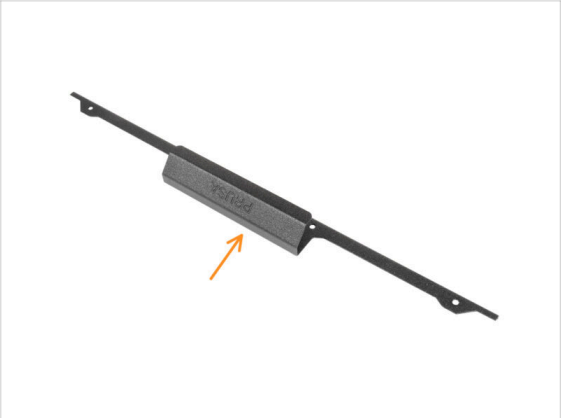



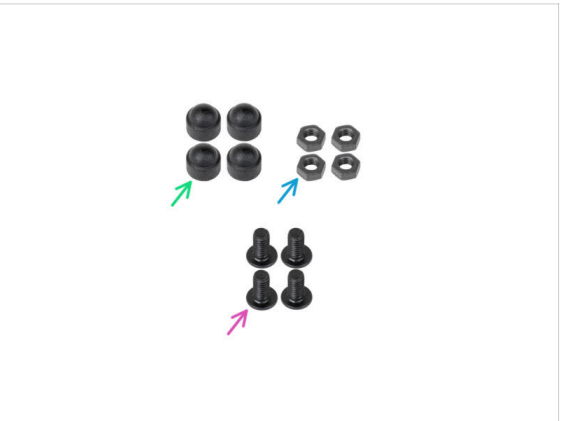

- Insert the M4x8r screw into the hole.
- ⚠ **Do not overtighten the screws as this may cause the panel to crack!**
- From the inside of the front panel, insert the M4n nut onto the screw.
- Secure the screw using a 2.5mm Allen key.

STEP 47 Door frame left securing: long side

- Insert four M4x8r screws into the holes and secure them with the M4n nuts using a 2.5mm Allen key.

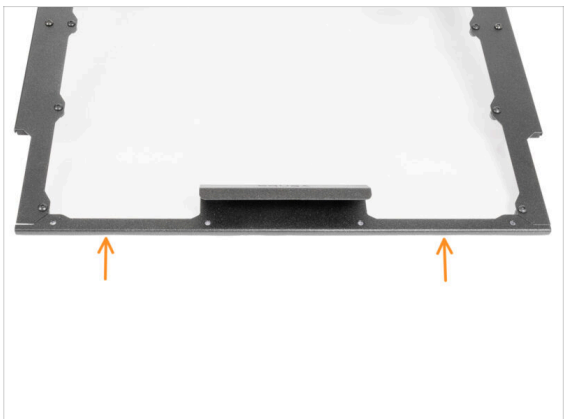
STEP 48 Door frame bottom: parts preparation

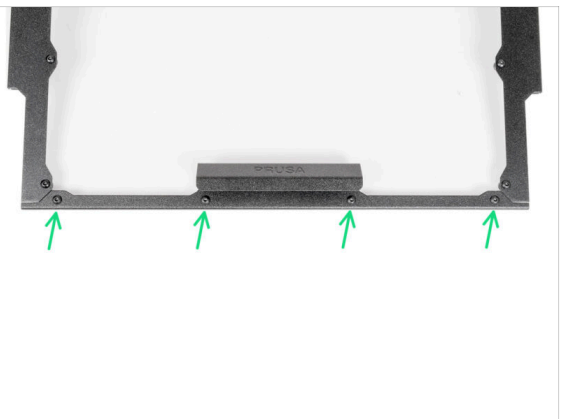




- **For the next steps, please prepare:**
- Door frame bottom (1x)
- M4n nut cover (4x)
- M4n nut (4x)
- M4x8r screw (4x)

STEP 49 Door frame bottom installing



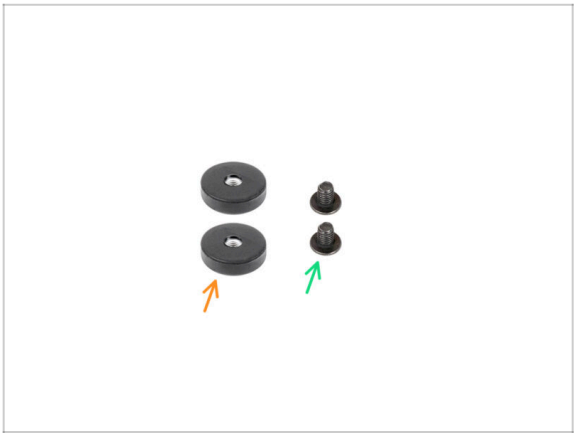


- Attach the door frame bottom onto the front panel.

⚠ **Do not overtighten the screws as this may cause the panel to crack!**

- Insert four M4x8r screws into the frame and secure them with M4 nuts using a 2.5mm Allen key.

STEP 50 Front panel magnets: parts preparation



- **For the next step, please prepare:**
- Magnetic bumper 22x6 (2x)
- M4x5r screw (2x)

STEP 51 Right magnetic bumper installing

- Insert the M4x5r screws into the hole.
- From the bottom side of the front panel, insert the magnetic bumper onto the screw and tighten it.

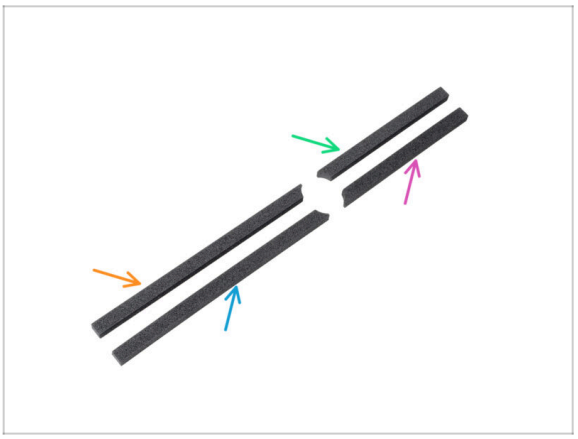
Hint: Use a 2.5mm Allen key for tightening the M4 screw.

STEP 52 Left magnetic bumper installing

- Insert the M4x5r screws into the hole.
- From the bottom side of the front panel, insert the magnetic bumper onto the screw and tighten it.

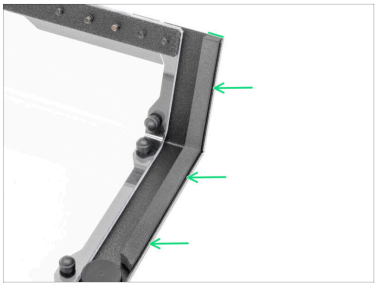
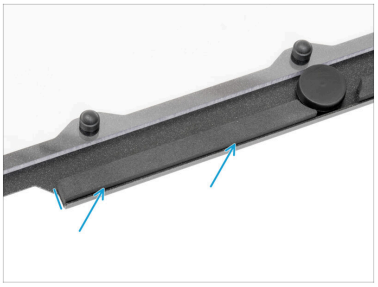
ⓘ Hint: Use a 2.5mm Allen key for tightening.

STEP 53 Foam seal: parts preparations



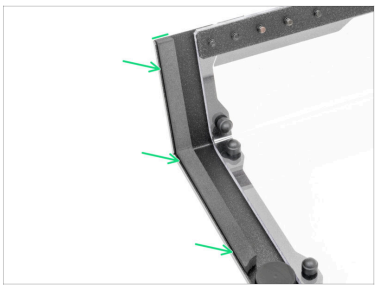
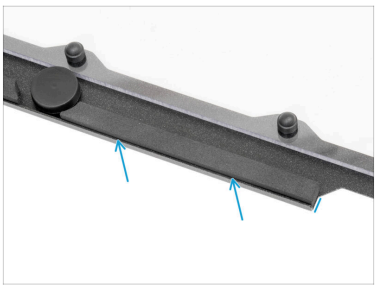
- **For the next steps, please prepare:**
- Front door - left seal 1 (1x)
- Front door - left seal 2 (1x)
- Front door - right seal 2 (1x)
- Front door - right seal 1 (1x)

STEP 54 Left foam seal installing

- Remove the protective film from the front door left seal 1.
- Align the flat end with the door frame's left edge and apply the front door left seal 1 to the panel. **Look at the picture.**
- Remove the protective film from the front door left seal 2.
- Align the flat end with the door frame left edge and Apply the front door left seal 2 to the panel. **Look at the picture.**

STEP 55 Right foam seal installing

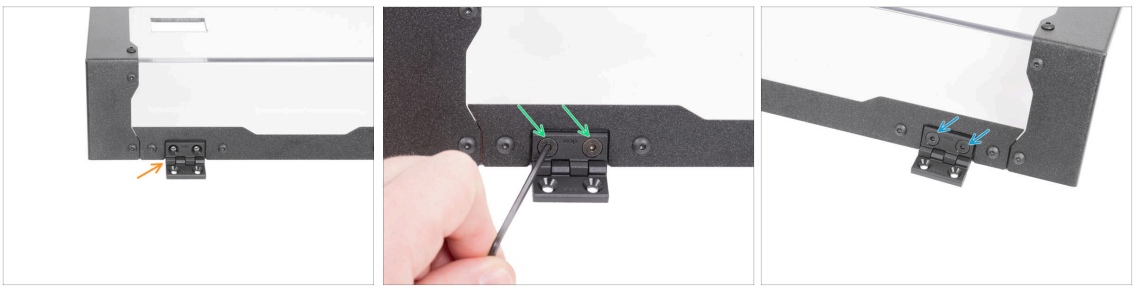




- Remove the protective film from the front door right seal 1.
- Align the flat end with the door frame's left edge and apply the front door right seal 1 to the panel. **Look at the picture.**
- Remove the protective film from the front door right seal 2.
- Align the flat end with the door frame left edge and apply the front door right seal 2 to the panel. **Look at the picture.**

STEP 56 Hinges: parts preparation

- **For the next steps, please prepare:**
- Hinge (2x)
- M4x12b screw (8x)

STEP 57 Hinges installing



ⓘ The hinges are installed on the outside of the front panel.

Attach the first hinge on the front panel.

⚠ Note the orientation of the screw holes.

Secure the hinge with two M4x12b screws using a 2.5mm Allen key.

Attach the second hinge on the frontpanel and secure it with two M4x12b screws using a 2.5mm Allen key.

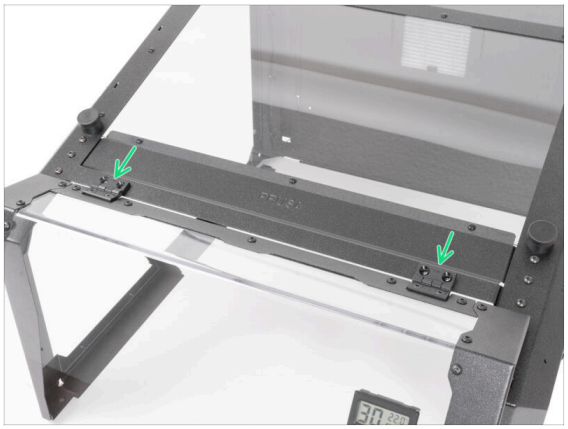
STEP 58 Temperature sensor: parts preparation

- **For the next steps, please prepare:**
- Temperature sensor (1x)

STEP 59 Temperature sensor installing

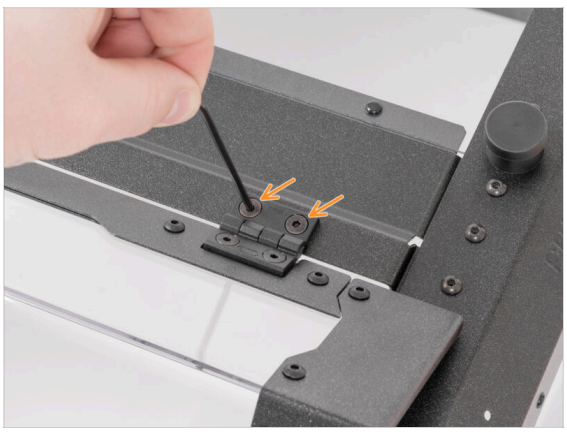
- Pull out the protective battery foil.
- Insert the temperature sensor CORRECTLY into the front panel.

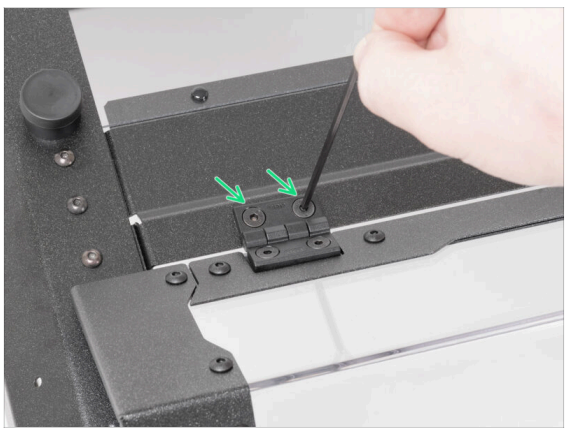
STEP 60 Opening cover attaching



- Place the assembled front panel to the enclosure assembly.
- Align the hinge screw holes with the support frame holes.

STEP 61 Opening lid securing





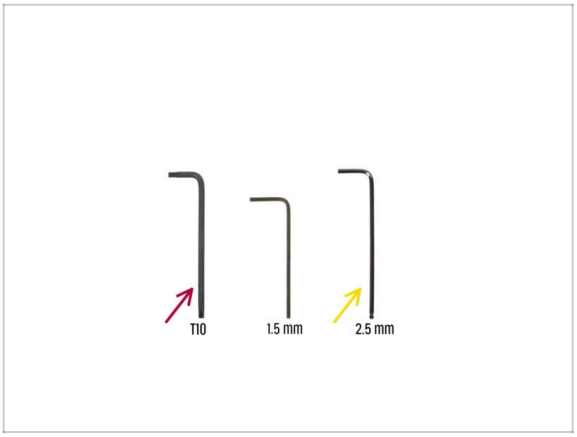
- On the right side of the lid, insert and secure two M4x12b screws using a 2.5mm Allen key.
- On the left side of the lid, insert and secure two M4x12b screws using a 2.5mm Allen key.

STEP 62 Good job!

- Well done! The Enclosure is assembled. Please proceed to the next chapter.

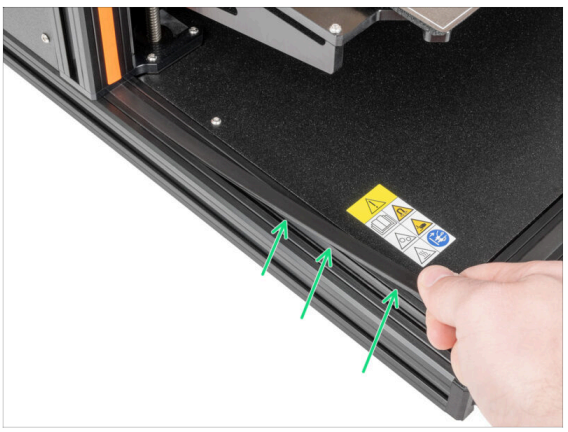
3. Printer upgrade

STEP 1 Tools necessary for this chapter



- **For this chapter, please prepare:**
- T10 Torx key (screwdriver)
- 2.5mm Allen key

STEP 2 XL base covers removing

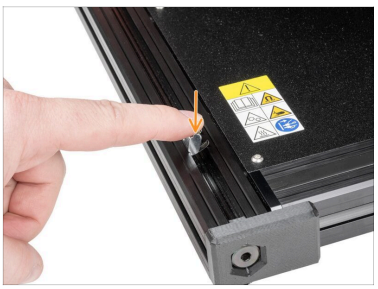


- From the front face of the printer:
- Pull out the right extrusion cover.
- Pull out the left extrusion cover.

STEP 3 XL Base nuts: parts preparation

- **For the next steps, please prepare:**
- M3nEs nut (4x)

STEP 4 How to insert the nuts

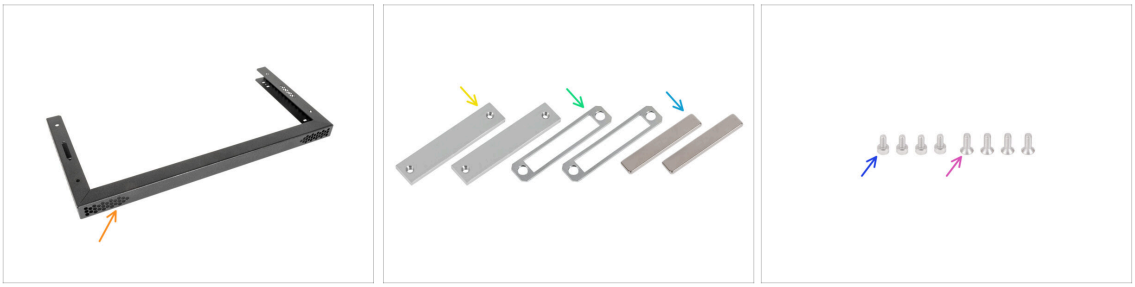


- Fit the M3nE nut and push it into the profile in the direction of the pins.
- Turn the M3nE nut into the profile to secure it.
- Good job, the nut is secured.

STEP 5 XL base nuts inserting

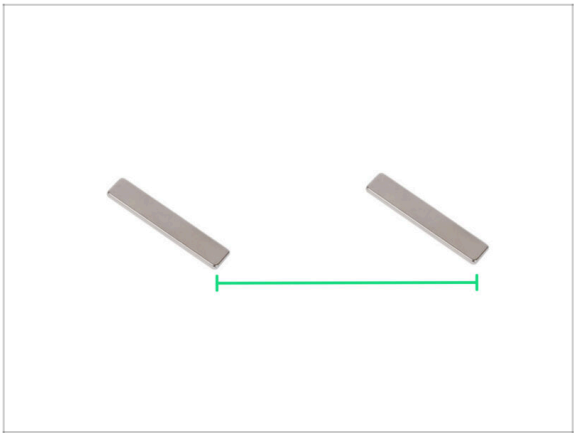
- Insert two M3nEs inserts into the left profile.
- Insert two M3nEs inserts into the right profile.
- Insert the nuts approximately as shown in the photo.

STEP 6 Lower bellows holder: parts preparation



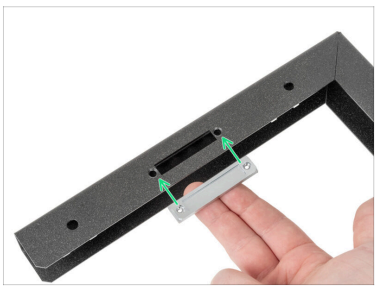
- **For the next steps, please prepare:**
- Lower bellows holder (1x)
- Bellows magnet holder (2x)
- Bellows magnet spacer (2x)
- Magnets 40x6x2 (2x)
- M3x6 screw (4x)
- M3x8bT screw (4x)

STEP 7 Few tips before we start



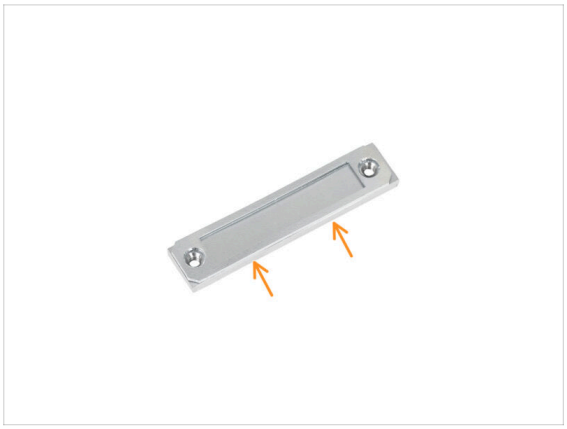
- **Keep the magnets apart at a sufficient distance.** They can break each other!

STEP 8 Right bellows magnet spacer



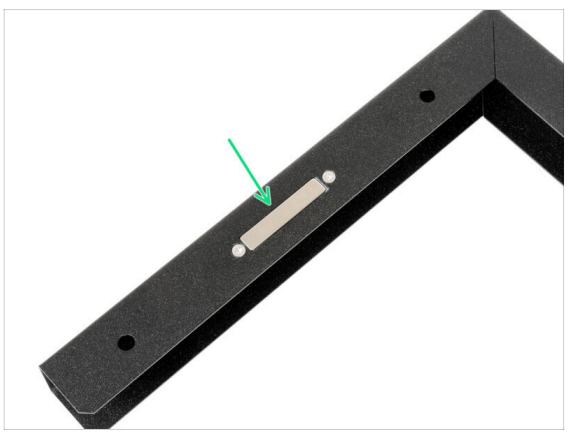
- Take bellows magnet spacer and place in on the bellows magnet holder.
- Insert the bellows magnet spacer with bellows magnet holder under the cutout in the lower bellows holder.
- Secure the assembly with two M3x8bT using a T10 Torx screwdriver.

STEP 9 Left bellows magnet spacer



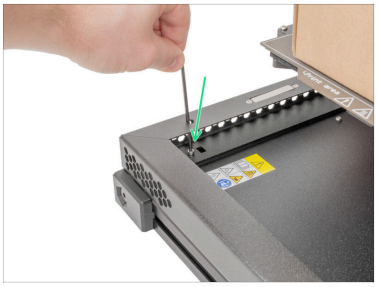
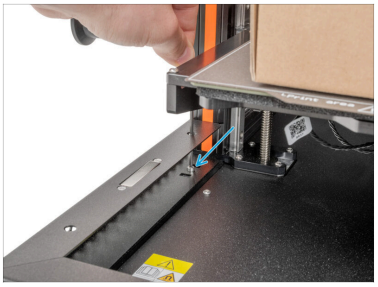
- Take bellows magnet spacer and place in on the below magnet hoder.
- Insert the bellows magnet spacer with bellows magnet holder under the cutout in the lower bellows holder. Secure the assembly with two M3x8bT using a T10 Torx screwdriver.

STEP 10 Lower magnets



- Take a magnet and **carefully and slowly** place it in the left cut-out. **The polarity of the magnet is not important.**
- Take a magnet and **carefully and slowly** place it in the right cut-out. **The polarity of the magnet is not important.**

STEP 11 Lower bellows holder securing: left side

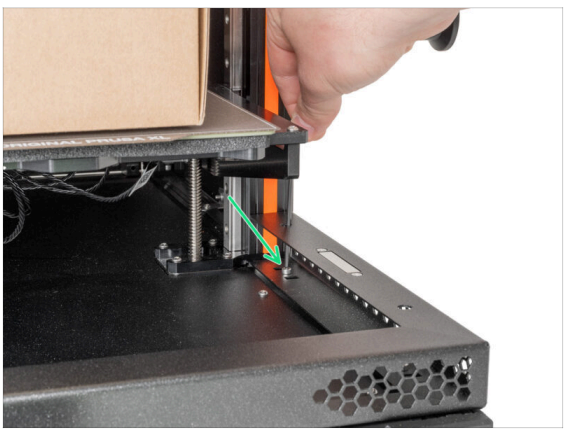




- Attach the lower bellows holder assembly on the XL base with magnets facing up.

ⓘ Hint: You can align the M3nEs nuts with the M3 hole in the lower bellows holder using the square holes and an Allen wrench.

- Insert the M3x6 screw to the left front hole and tighten the screw using a 2.5 mm Allen key.
- Insert the M3x6 screw to the left rear hole and tighten the screw using a 2.5 mm Allen key.

STEP 12 Lower bellows holder securing: right side



ⓘ Hint: You can align the M3nEs nuts with the M3 hole in the lower bellows holder using the square holes and an Allen wrench.

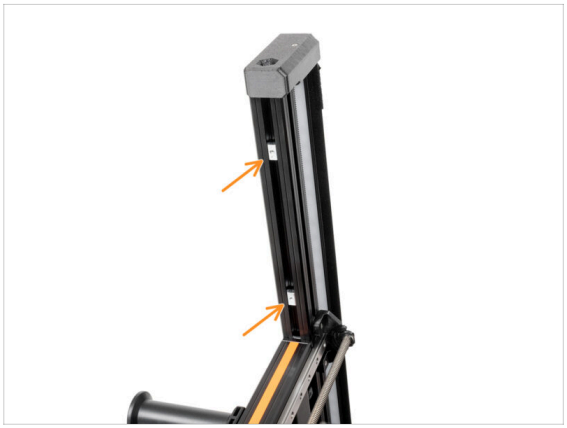
- Insert the M3x6 screw into the right front hole and tighten the screw using a 2.5 mm Allen key.
- Insert the M3x6 screw into the right rear hole and tighten the screw using a 2.5 mm Allen key.

ⓘ The bellows will be attached to the printer at the end of the assembly manual.

STEP 13 CoreXY inserts: parts preparation

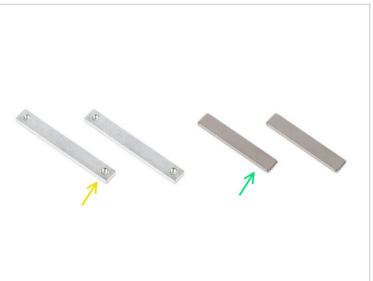
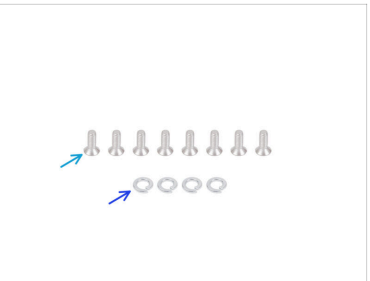
- **For the next steps, please prepare:**
- M3nEs nut (4x)

STEP 14 CoreXY inserts



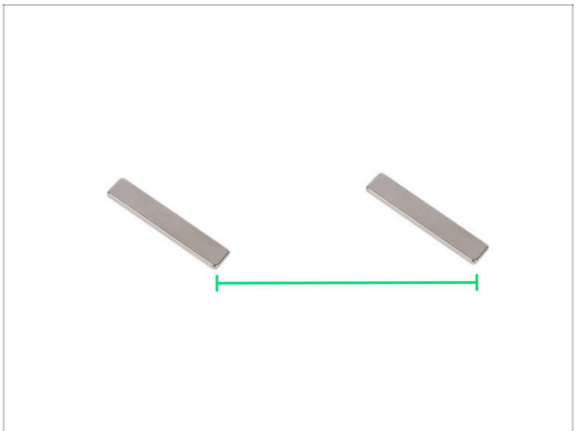
- From the bottom side of the CoreXY:
- Insert two M3nEs inserts into the left extrusion.
- Insert two M3nEs inserts into the right extrusion.
- Insert the nuts approximately as shown in the photo.

STEP 15 Upper magnet cover: parts preparation

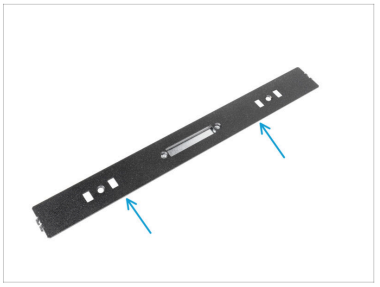
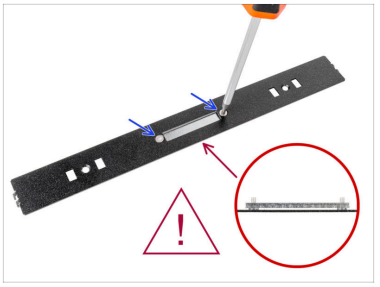
- **For the next steps, please prepare:**
- Upper magnet cover (2x)
- Upper magnet holder (2x)
- Magnets (4x)
- M3x8bT screw (8x)
- Lockwasher (4x)

STEP 16 Few tips before we start



- **Keep the magnets apart at a sufficient distance.** They can break each other!

STEP 17 Upper magnet cover assembly

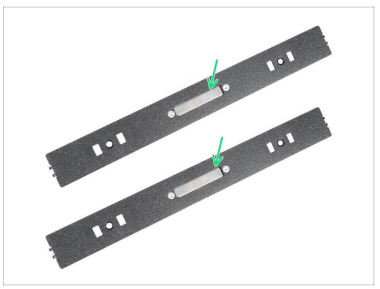
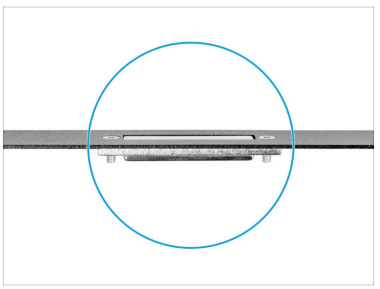




- Take two Lockwashers and place them on the upper magnet holder.
- Place the upper magnet cover on the washers with the upper magnet holder.
- Secure the assembly with two M3x8bT screws using a T10 Torx screwdriver.

⚠ The Lockwasher have to be flattened by the tightening.

- Follow the same procedure to assemble the second upper magnet cover.

STEP 18 Upper magnets attaching

⚠ **Be careful, the magnets are strong!**

- **Carefully and slowly** attach the magnets on the bottom side of the upper magnet holder on both upper magnet covers. **The polarity of the magnet is not important.**
- **Carefully and slowly** insert the magnets into the cut-out in the upper magnet covers. **The polarity of the magnet is not important.**
- **There are two magnets on each upper magnet holder.** Check that the assembly looks as shown.

STEP 19 Upper magnet cover securing: right side

- Insert the first upper magnet cover assembly into the right CoreXY extrusion.

  Hint: You can align the M3nEs nuts with the M3 hole in the upper magnet cover using the square holes and an Allen wrench.

- Insert two M3x8bT screws and secure them with the T10 Torx screwdriver.

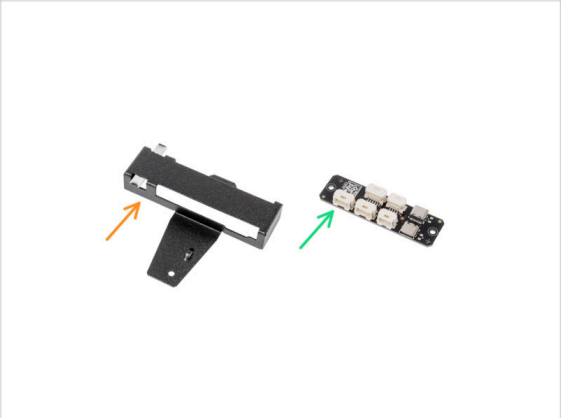
STEP 20 Upper magnet cover securing: left side

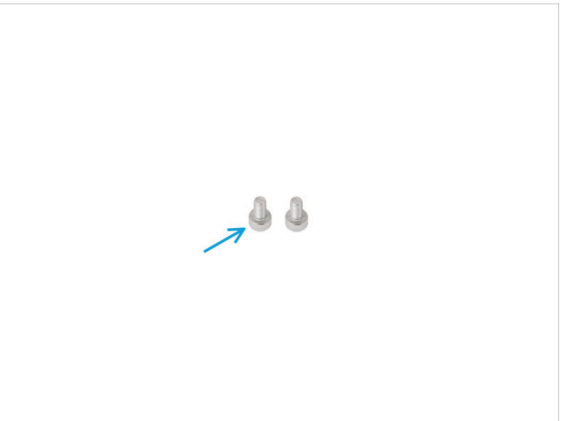
- Insert the second upper magnet cover assembly into the left CoreXY extrusion.

  Hint: You can align the M3nEs nuts with the M3 hole in the upper magnet cover using the square holes and an Allen wrench.

- Insert two M3x8bT screws and secure them with the T10 Torx screwdriver.

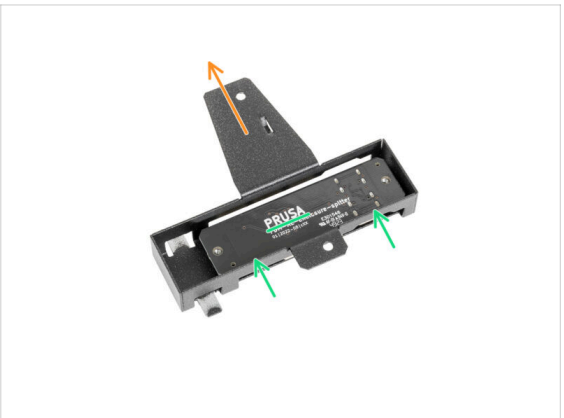
STEP 21 Connection box: parts preparation





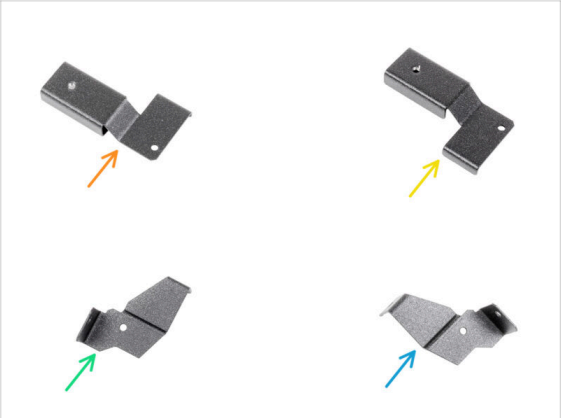
- **For the next steps, please prepare:**
- XL Enclosure board cover (1x)
- XL Enclosure splitter (1x)
- M3x6 screw (2x)

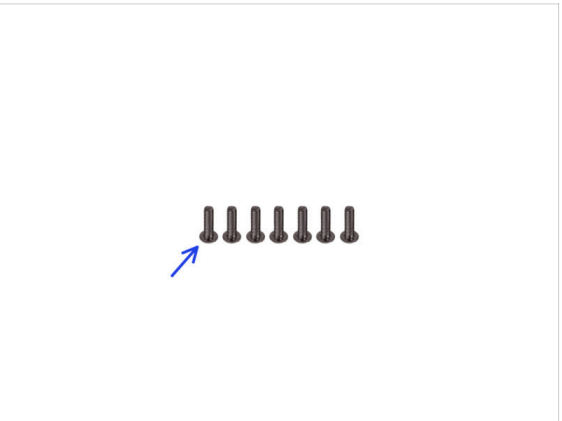
STEP 22 Connection box assembly



- Ensure that the longer metal section is facing away from you.
- Insert the XL Enclosure splitter as shown in the picture (PRUSA logo facing you).
- Secure the XL Enclosure splitter with two M3x6 screws.

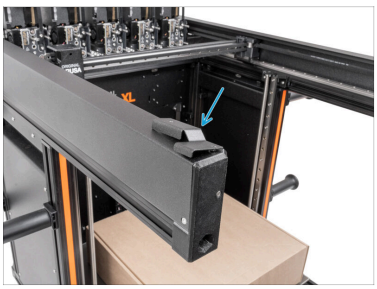
STEP 23 Fixing brackets: parts preparation

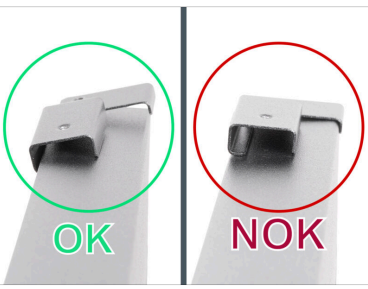




- **For the next steps, please prepare:**
- Fixing bracket front right (1x)
- Fixing bracket front left (1x)
- Fixing bracket back left (1x)
- Fixing bracket back right (1x)
- M3x10rT screw (7x)

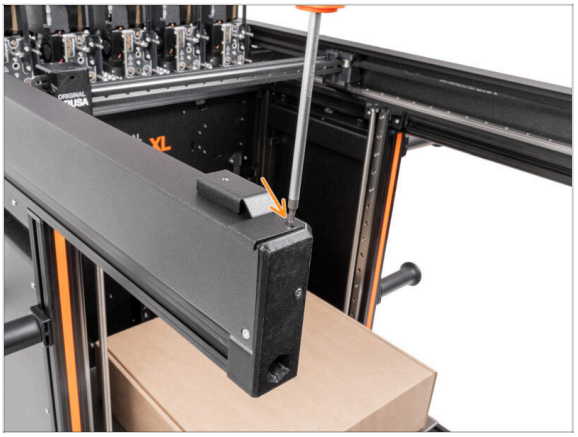
STEP 24 Fixing bracket front left attaching





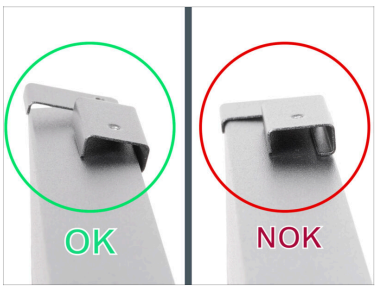
- On the upper left side CoreXY:
- Using a T10 Torx screwdriver, remove the M3x8bT screw.
- Attach the fixing bracket front left onto the metal cover.
- **Ensure the front left fixing bracket is correctly positioned:**
  - The fixing bracket front left **slips under LED cover lip**.
  - **This is wrong**, please align the fixing bracket front left correctly.

STEP 25 Fixing bracket front left securing



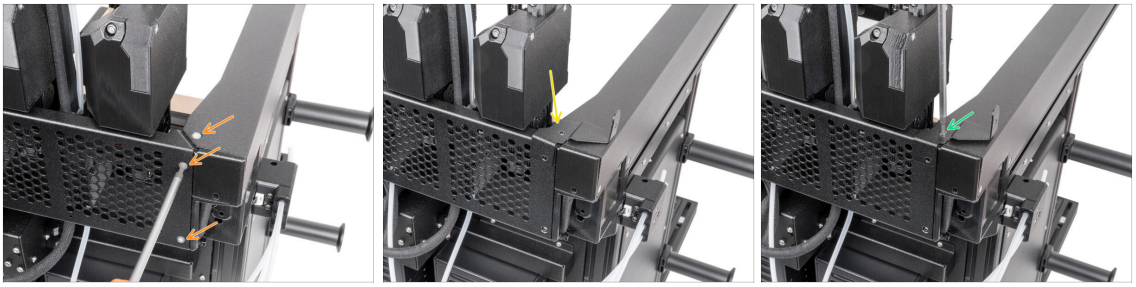
- Insert the M3x10rT screw and secure it with the T10 Torx screwsdriver.

STEP 26 Fixing bracket front right securing



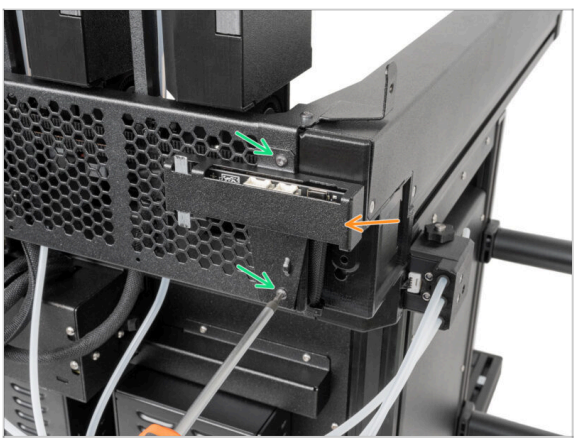
- On the upper right side CoreXY:
- Using a T10 Torx screwdriver, remove the M3x8bT screw.
- Attach the fixing bracket front right onto the metal cover. Bracket slips under LED cover lip.
- Ensure the front left fixing bracket is correctly positioned:
  - The fixing bracket front left slips under LED cover lip.
  - This is wrong, please align the fixing bracket front left correctly.
- Insert the M3x10rT screw and secure it with the T10 Torx screwsdriver.

STEP 27 Fixing bracket rear left securing



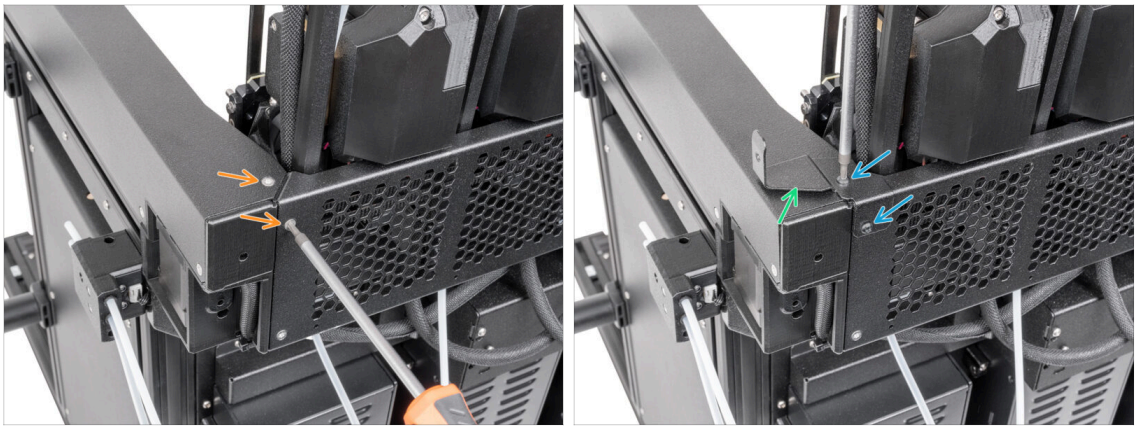
- Turn the printer so the rear side is facing you.
- Remove three M3x8bT screws.
- Attach the fixing bracket rear left.
- Secure the fixing bracket rear left with the M3x10rT screw.

STEP 28 Connection box securing



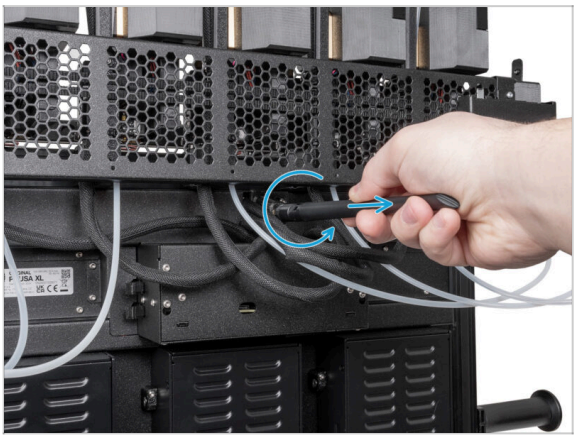
- Attach the XL enclosure board assembly.
- Secure the XL enclosure board assembly with two M3x10rT screws.

STEP 29 Fixing bracket rear right securing



- Remove two M3x8bT screws.
- Attach the fixing bracket rear right.
- Secure the fixing bracket rear right with two M3x10rT screws.

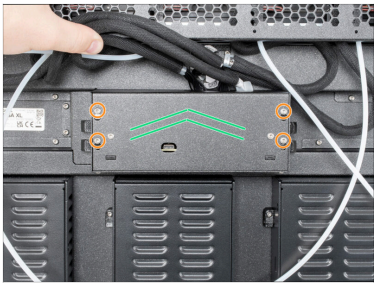
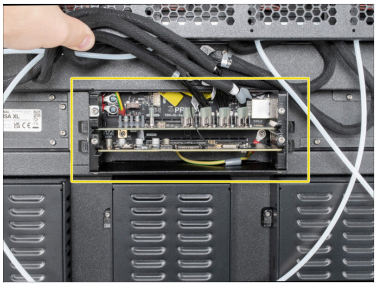
STEP 30 Removing the rear Wi-Fi antenna



This step only applies to printers that have the Wi-Fi **antenna on the back** of the printer. Otherwise, skip to the next step.

- Unscrew the antenna from the antenna connector.

STEP 31 XL buddy box

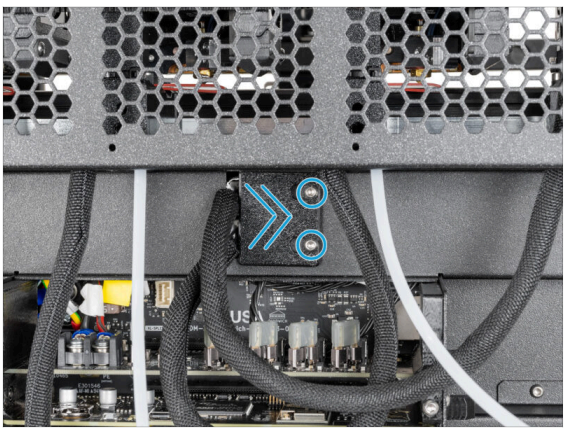




- Release (a few turns are enough) four M3 screws on the XL buddy box.
- Slide up and remove the XL buddy cover.

ⓘ The next line is only for five-head printers. Otherwise, skip to the next step.

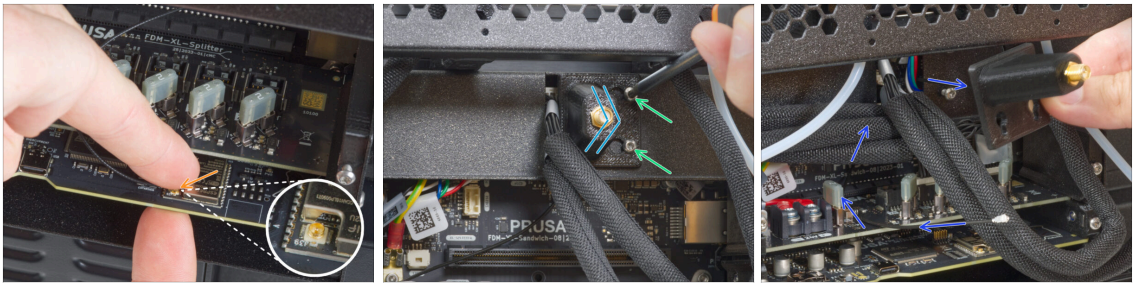
- By pressing the security latch, unplug the DWARF3, DWARF4 and DWARF5 from the board.

STEP 32 Side antenna: cover removing

- This step applies only if your printer has a side antenna. **If not, proceed to the next step.**
- Loosen two screws on the cover slightly. No need to remove them completely. Push the cover to the right and remove it from the printer.
- Now proceed to the **Nextruder unpluging**

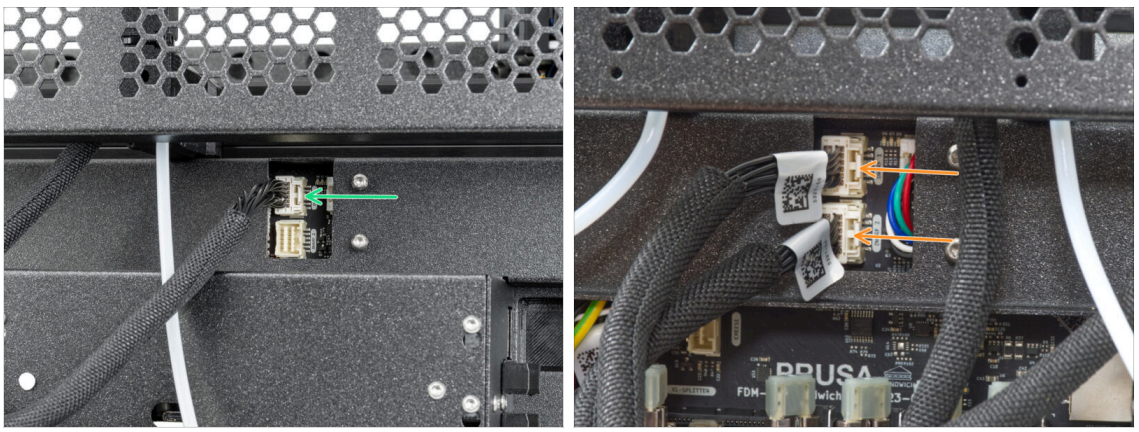
STEP 33 Rear antenna: connector removing



If you have the antenna on the side of the printer -> **remove the cover** and proceed to the next step.

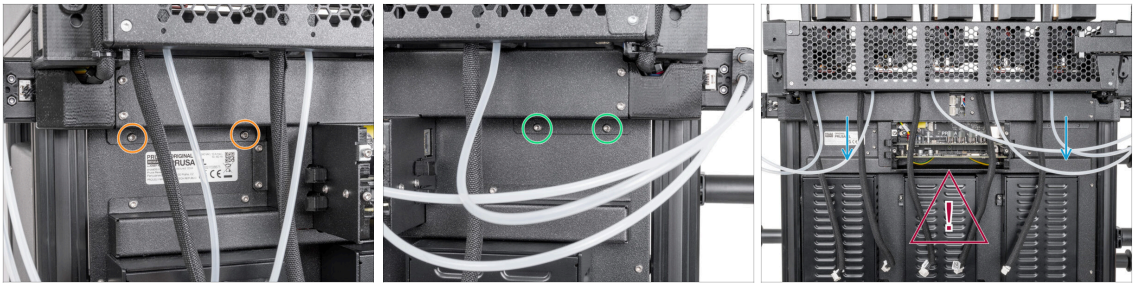
- Gently unplug the antenna connector from the board.
- Release (a few turns are enough) two M3 screws on antenna-holder.
- Push the cover to the right.
- Carefully remove the antenna-holder with the cable from the printer.

STEP 34 Nextruder unplugging



- In this step, select the appropriate option based on your XL printer variant:
  - **Single-tool**: There is only one cable. By pressing the security latch, remove the DWARF1 cable and proceed to the next step.
  - **Dual-Head & Five-Head**: There are two cables. By pressing the security latch, remove the DWARF1 and DWARF2 connectors from the board.

STEP 35 Back cover removing

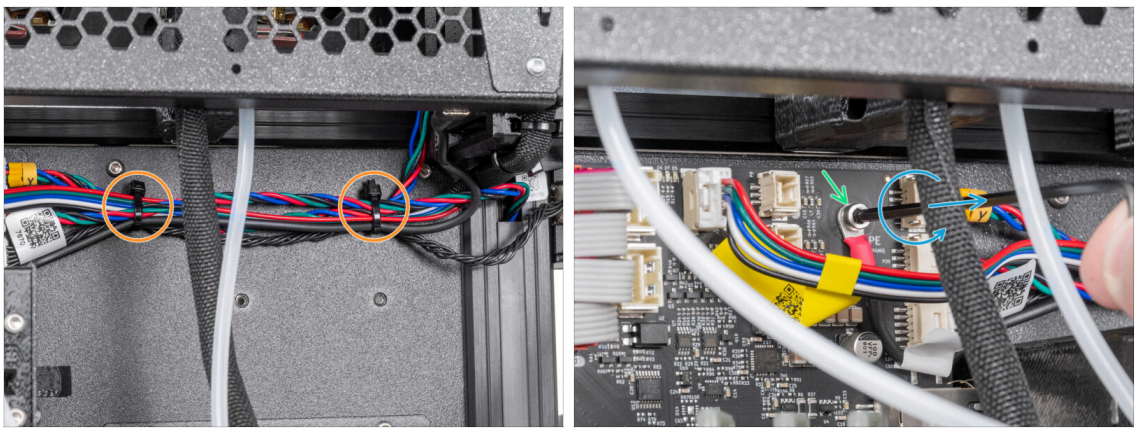


- From the left side of the rear cable management upper, remove two M3x4rT screws. **Do not throw them away!**
- From the right side of the rear cable management upper, remove two M3x4rT screws. **Do not throw them away!**

⚠ Watch out for cables!

- Carefully remove the rear cable management cover from the printer by pulling it toward you.

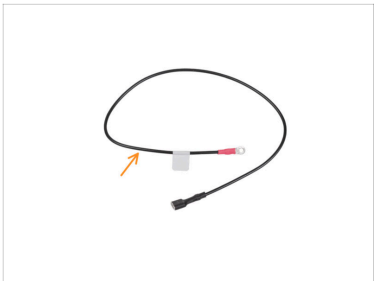
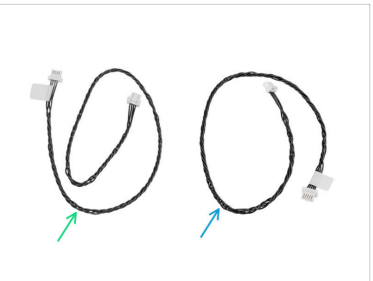
STEP 36 Back cables releasing



⚠ **Watch out for the cables!**

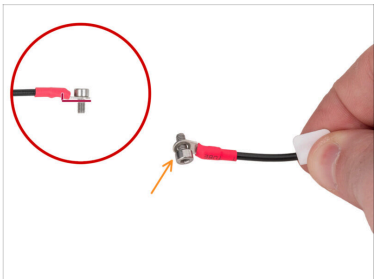
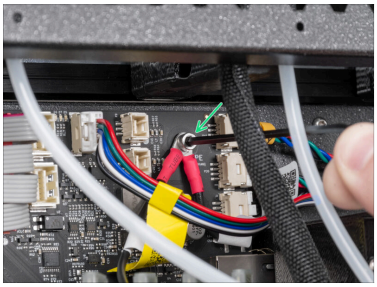
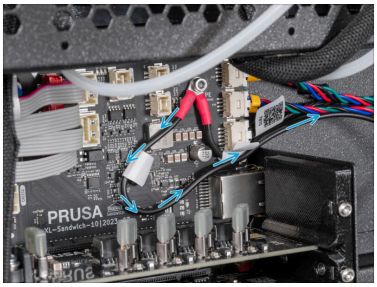
- On the right side, cut off two zip-ties.
- Locate the right PE screw on the board.
- Remove the M3x5 screw and leave the cable there. **Do not throw away the screw!**

STEP 37 Fan & PE cable: parts preparation


- **For the next steps, please prepare:**
- PE cable (the longest one) - 350 mm (1x)
- Fan cable (4 wires)- 450 mm (1x)
- LED cable (5 wires) - 400 mm (1x)
- M3x5 screw (1x) *you removed in the previous steps*
- Zip-tie (4x)

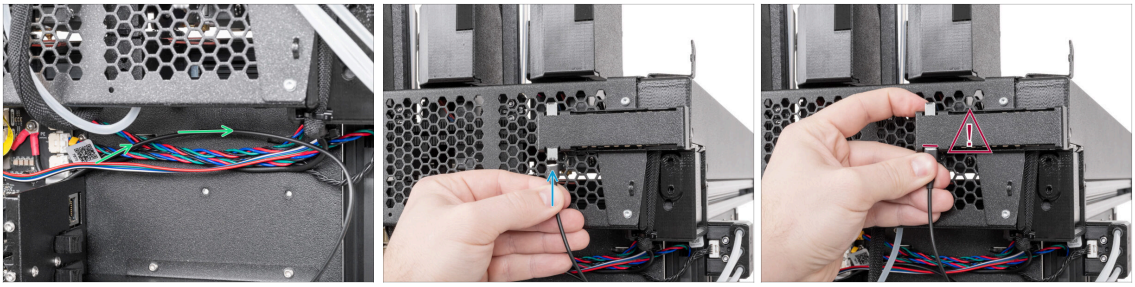
STEP 38 PE cable securing

⚠ Note the correct orientation of the PE cable connector.

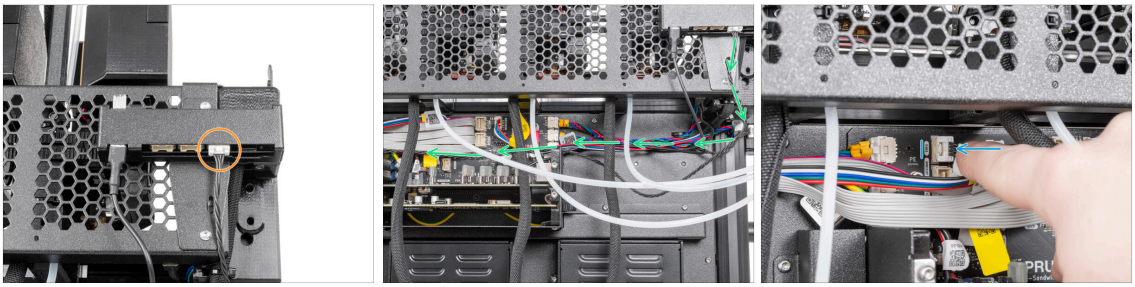
- Insert the M3x5 screw through the red end of the PE cable.
- Attach the PE cable with the M3x5 screw through the free PE cable (which we released in the previous step). Secure both cables using a 2.5mm Allen key.
- Adjust the cable routing as shown in the picture.

STEP 39 PE cable connecting



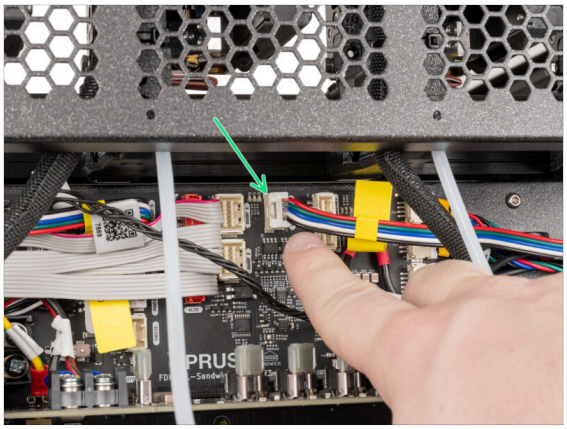
- Adjust the cable routing as shown in the picture.
- Slide the connector onto the metal sheet protrusion.
- ⚠ Fully secure the PE cable to the XL Enclosure board cover.

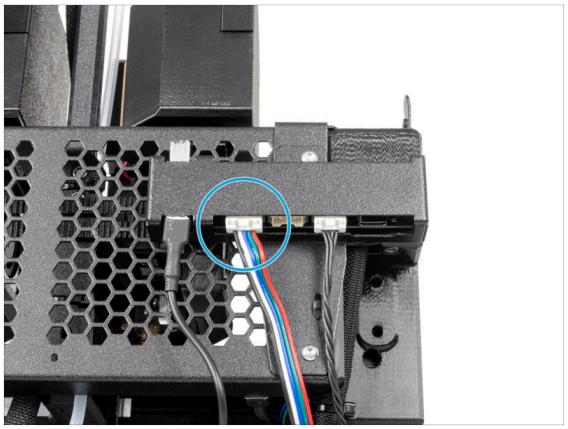
STEP 40 Fan cable connecting



- Connect the fan cable to the right connector on the FDM XL Enclosure splitter.
- Adjust the cable routing as shown in the picture.
- Connect the second end to the **FAN1** connector on the XL sandwich board.

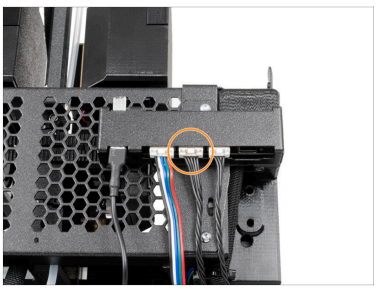
STEP 41 Installing LED cable

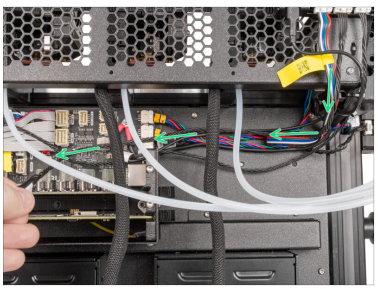


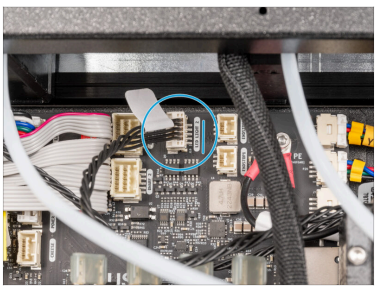


- By pressing safety latch, disconnect the LED cable from the XL sandwich.
- Connect the LED cable to the left connector on the FDM XL Enclosure splitter.

STEP 42 Installing LED cable

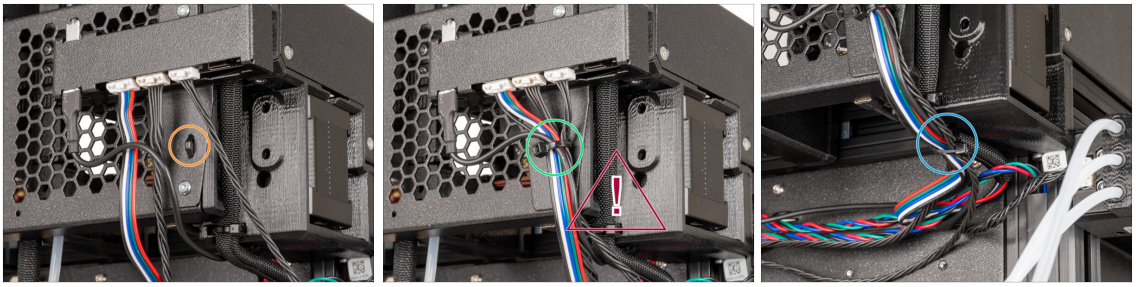






- Connect the black LED cable to the middle connector on the FDM XL Enclosure splitter.
- Lead the cable behind the Nextruders cables.
- Connect the second end to the **LED Light 2** connector on the XL sandwich board.

STEP 43 Enclosure cables securing

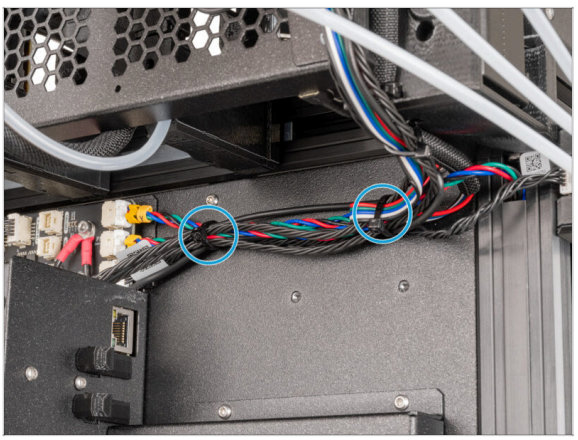


- Locate the metal perforation on the XL enclosure board assembly.

⚠ **Watch out for the cables!**

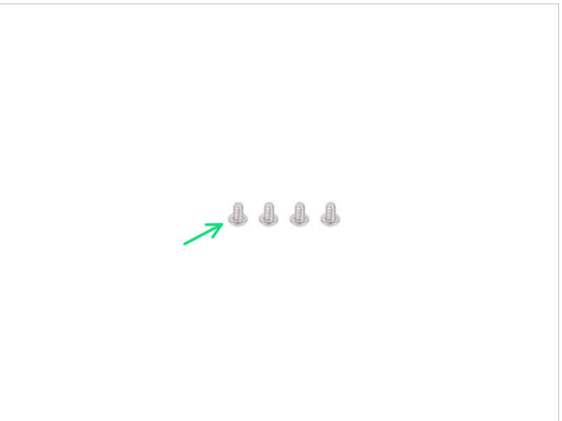
- Secure the cables carefully to the XL enclosure board cover. **Do not overtighten the zip-tie.** Cut the end of the zip-tie.
- Attach the cables to the black sleeve with a zip-tie and secure carefully. **Do not overtighten the zip-tie.** Cut off the end of the cable tie.

STEP 44 Securing the cables



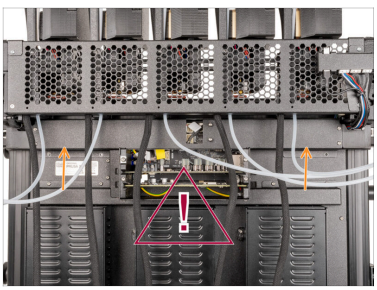
- Insert the zip-tie through the metal cut-out and secure all cables. **Do not overtighten the zip-tie.** Cut the ends of the zip-ties.

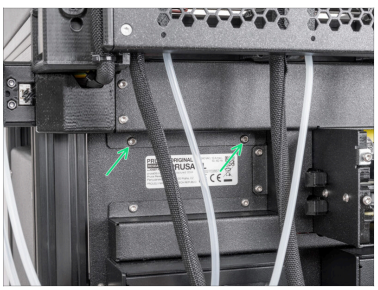
STEP 45 Back cover: parts preparation



- **For the next steps, please prepare:**
- Rear cable management upper (1x) *you removed in the previous steps*
- M3x4rT screws (4x) *you removed in the previous steps*

STEP 46 Back cover attaching





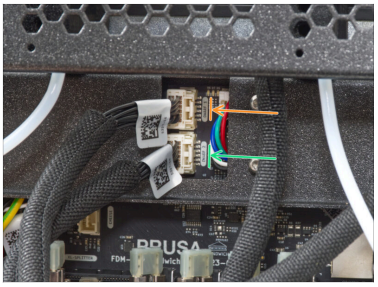
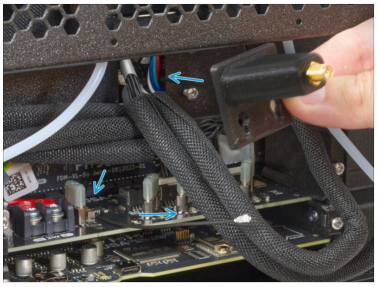
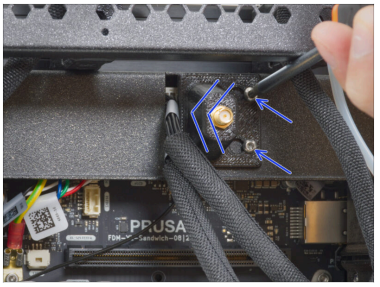
⚠ **Don't pinch any cables!**

- Attach the rear cable management upper to the printer.

⚠ **Double-check the cables, there are a lot of them.**

- Secure the left side with two M3x4rT screws.
- Secure the right side with two M3x4rT screws.

STEP 47 Antenna cover attaching

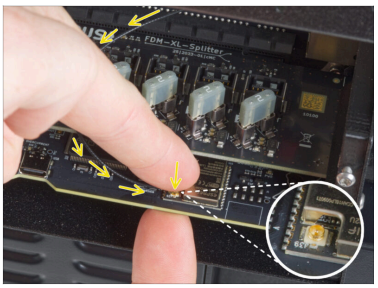




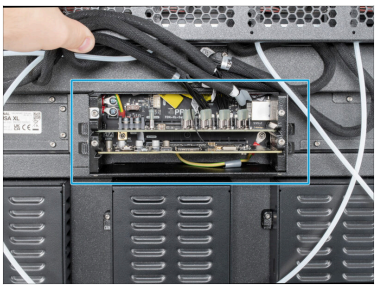
- Connect the first dock (from the right side) cable to the upper slot labeled DWARF 1.
- Connect the second dock (from the right side) cable to the lower slot labeled DWARF 2.

ⓘ If you have the antenna on the side of the printer -> attach the cover, secure the screw and proceed to the next step.

- Push the antenna cable through the opening in the cable cover (metal sheet) and guide it behind the cover to the electronics box.
- Attach the antenna-holder on the screws and push the cover to the left. Tighten the screws.

STEP 48 Antenna & Nextruder connecting





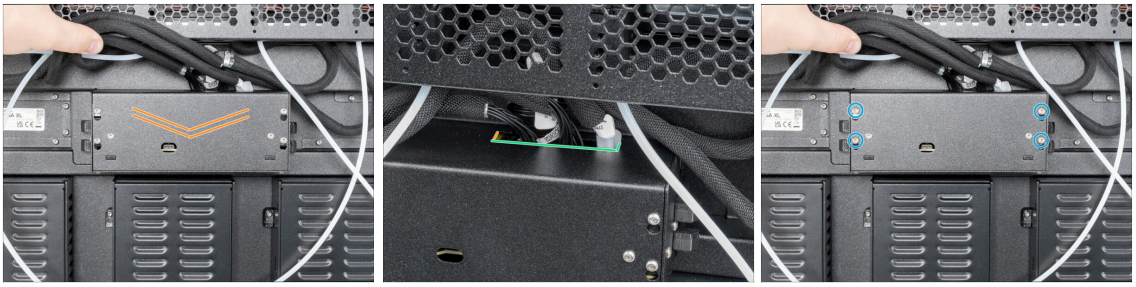
ⓘ If you have the antenna on the side of the printer -> **skip to the black line**.

- Connect the antenna cable to the antenna connector on the board.

ⓘ The next line is only for printers with more than 2 Nextruders. **Otherwise go to the next step.**

- Connect the third, fourth and fifth (from the right) Nextruder to the splitter:
  - Third Nextruder.
  - Fourth Nextruder.
  - Fifth Nextruder.
- XL splitter with connected Nextruders has to look like this.

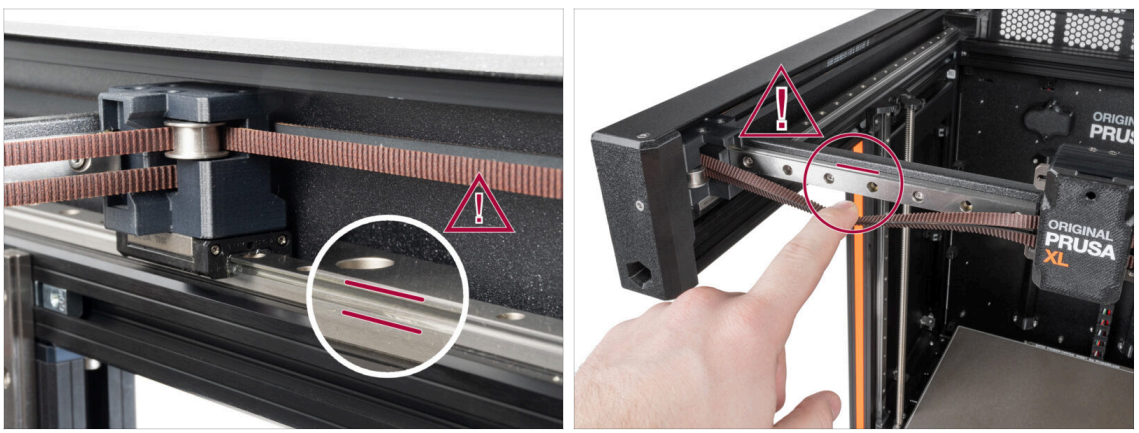
STEP 49 XL buddy box covering



⚠ **Be carefull, do not pinch any cables!**

- Put the XL buddy box cover back on the printer.
- Check Nextruders cables, they have to be inside the cutout in the cover.
- With a T10 key tighten the four screws.

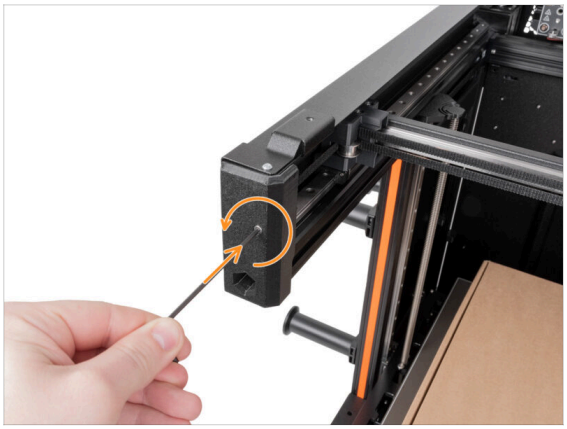
STEP 50 CAUTION: Lubricant Handling

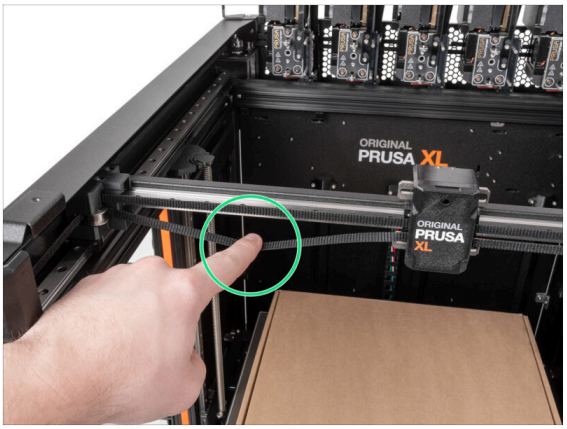


⚠ **CAUTION: Avoid direct skin contact with the lubricant used for the linear rails** in this printer. If a contact occurs, **wash your hands immediately. Especially before eating, drinking, or touching your face.**

- Lubricant accumulates mainly in the linear rail channels on the linear sides.

STEP 51 Lower belt release



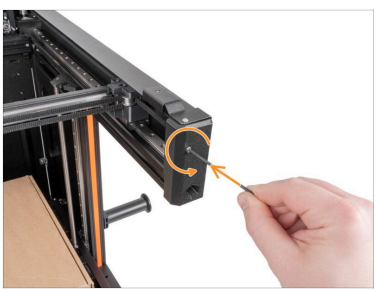


⚠ The belt clamps must be replaced as the original parts are **not suitable for the higher temperatures** they will experience inside the Enclosure. **The new parts are high temperature rated.**

⚠ **You don't need to change the belt clamp if you have an Original Prusa XL shipped from June 2024.**
You can skip to the **Bellows: parts preparation**

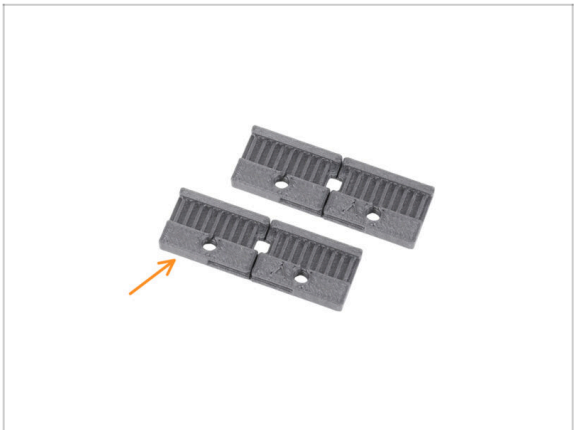
- Turn the printer, so the front side is facing you.
- Loosen the M3 screw holding the left CoreXY tensioner, approximately 4 full turns. **Do not remove the screw completely.**
- Gently stretch the belt with your finger. If the belt feels loose as shown in the picture, proceed to the next step.

STEP 52 Upper belt release



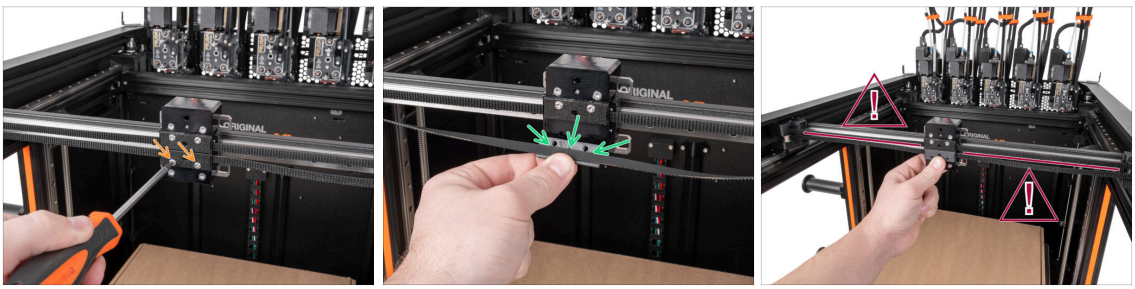
- Loosen the M3 screw holding the right CoreXY tensioner, approximately 4 full turns. **Do not remove the screw completely.**
- Gently stretch the belt with your finger. If the belt feels loose as shown in the picture, proceed to the next step.
- Remove the x-carriage-cover.

STEP 53 Belt clamp: parts preparation



- **For the next steps, please prepare:**
- Belt clamp (2x)

STEP 54 Lower belt clamp replacing



⚠ **Do not confuse PETG belt-clamp with PCCF belt-clamp**. It is important to install a new belt-clamp shipped in the Enclosure package.

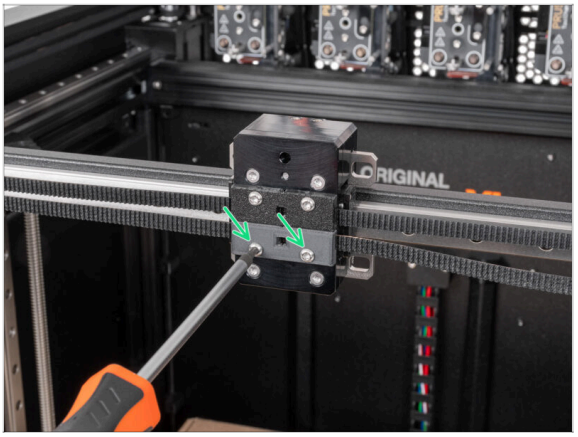
- Remove two M3x12rT screws and remove the PETG belt-clamp. **Do not throw the screws away.**
- Take the new (PCCF) belt-clamp and attach the belts. The belts must touch in the middle.

⚠ **Check that the belt is not twisted!**

- Attach the belt-clamp with the belts to the x-carriage.

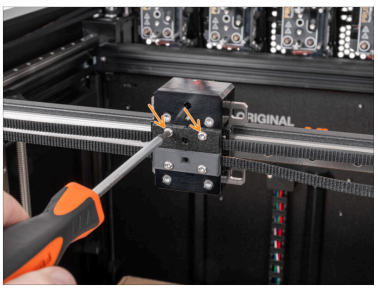
⚠ **Check that the belt is not twisted!**

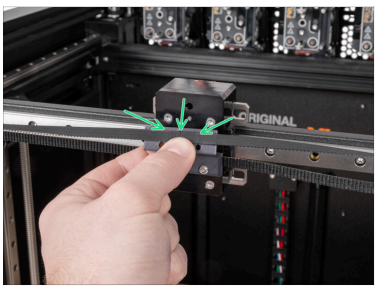
STEP 55 Lower belt securing

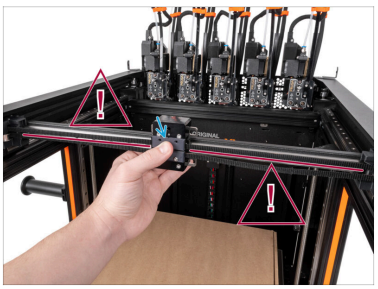


- Secure the belt-clamp with two M3x12rT screws (*which you removed in the previous step*) with a T10 Torx screwdriver.

STEP 56 Upper belt clamp replacing







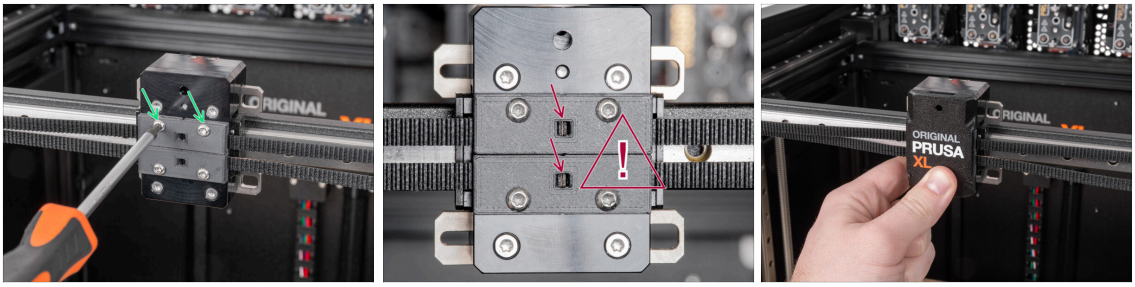
- Remove two M3x12rT screws and remove the PETG belt-clamp. **Do not throw the screws away.**
- Take the new (PCCF) belt-clamp and attach the belts. The belts must touch in the middle.

⚠ **Check that the belt is not twisted!**

- Attach the belt-clamp with the belts to the x-carriage.

⚠ **Check that the belt is not twisted!**

STEP 57 Upper belt securing



- Secure the belt-clamp with two M3x12rT screws (which you removed in the previous step) with a T10 Torx screwdriver.

⚠ Make sure that the belts touch each other in the belt clamps.

- Snap the x-carriage-cover back onto the X-carriage. You must feel a slight "click" to ensure the cover fits on the part.

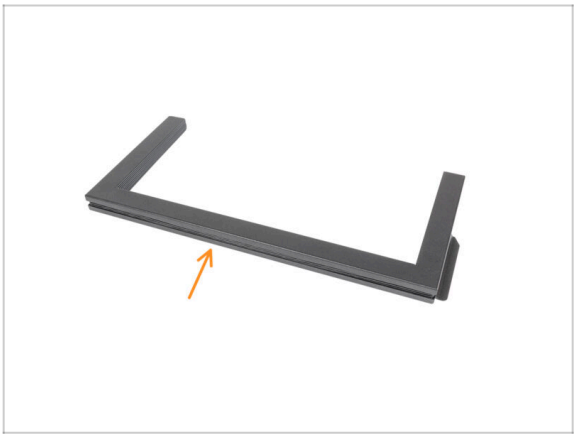
STEP 58 Belt tightening

- Tighten the belts on both sides, approximately 4 full turns.

STEP 59 Belt tensioning: video

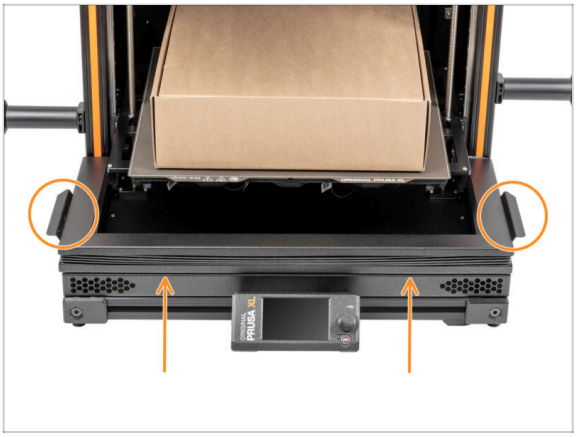
- On the Original Prusa XL, adjusting the belt to the optimal tension is crucial to achieving good quality on the prints. A loose belt can cause Layer shifting, Ghosting, or other print abnormalities, like getting an irregular shape instead of a perfect circle. An over-tightened belt can cause an irregular movement in the X and Y axes.
- We have our own belt tuner. The application determines the belt tension by measuring the frequency of the vibration generated by strumming it. Follow the instructions in the video below to adjust the belt.

STEP 60 Bellows: parts preparation:



- **For the next step, please prepare:**
  - Bellows (1x)

STEP 61 Bellows installation

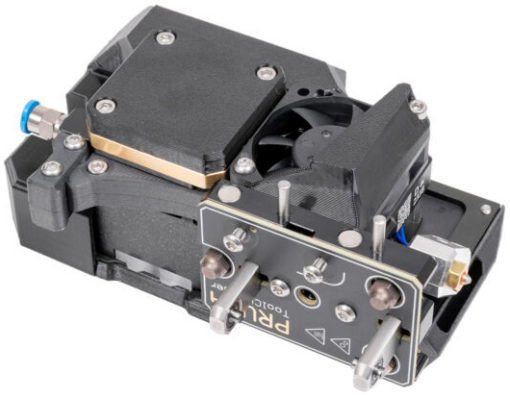


- Attach the bellows on the lower belows holder with handles facing up.

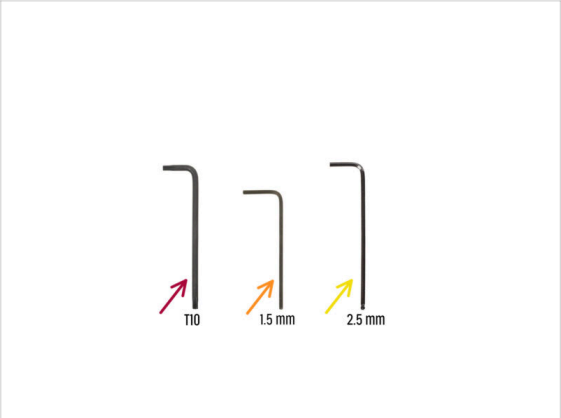
STEP 62 Good job

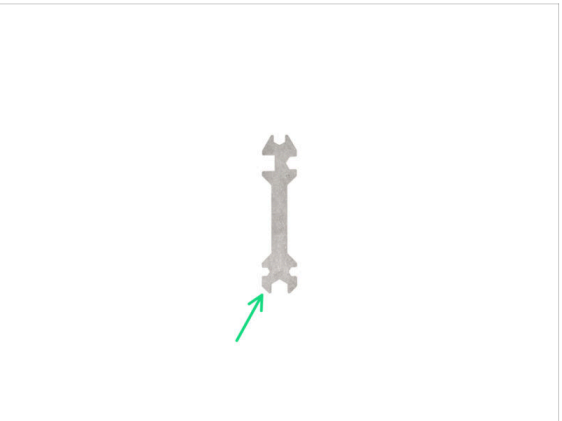
- Well done, the printer has been upgraded. Now go to the Nextruder upgrade and select the type of printer you have:
  - **Original Prusa XL Single-Tool Nextruder upgrade**
  - **Original Prusa XL Dual-Head (also for Five-head) Nextruder upgrade**

4. Nextruder upgrade (Multi-Tool)



STEP 1 Tools necessary for this chapter





- **For this chapter, please prepare:**
- T10 Torx key (screwdriver)
- 1.5mm Allen key
- 2.5mm Allen key
- Universal wrench

STEP 2 Nextruder cable bundle releasing

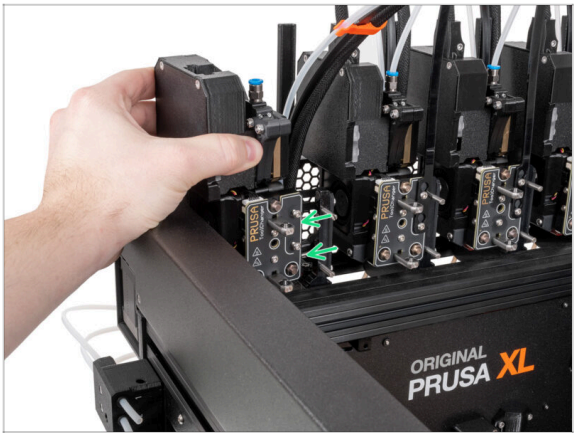
⚠ **If you have an Original Prusa XL or an Original Prusa XL Upgrade dispatched on or after June 1, 2024, you do not need to upgrade the Multi-Tool Nextruder.** Skip to this chapter: **Enclosure secure**

- On the first Nextruder:
- From the front side of the Nextruder, using a T10 screwdriver, loosen (a few turns are enough) two M3x8r screws and take off the cable support.
- Locate the FESTO fitting, push the blue collet down and remove the PTFE tube from the Nextruder. Leave the PTFE hanging freely.

ⓘ Starting from September 2024, you may receive a new black Fitting M5-4. The assembly and functionality remain identical to the blue one.

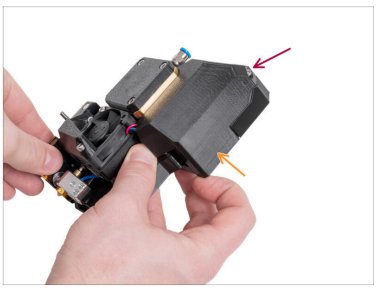
- Locate the Nextruder cable, press the secure pin and unplug the cable from the first Nextruder. Leave the cable hanging.

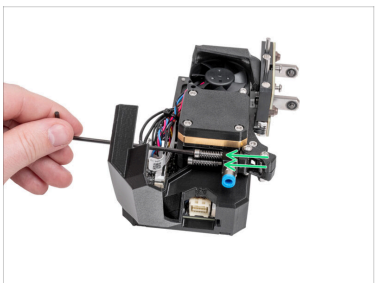
STEP 3 Nextruder undocking

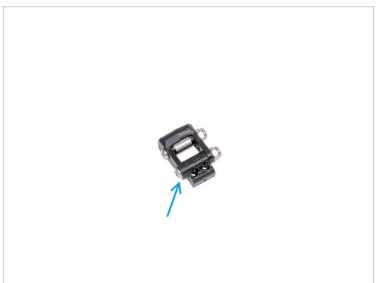


- Gently undock the Nextruder and put it aside.

STEP 4 Idler-swivel releasing

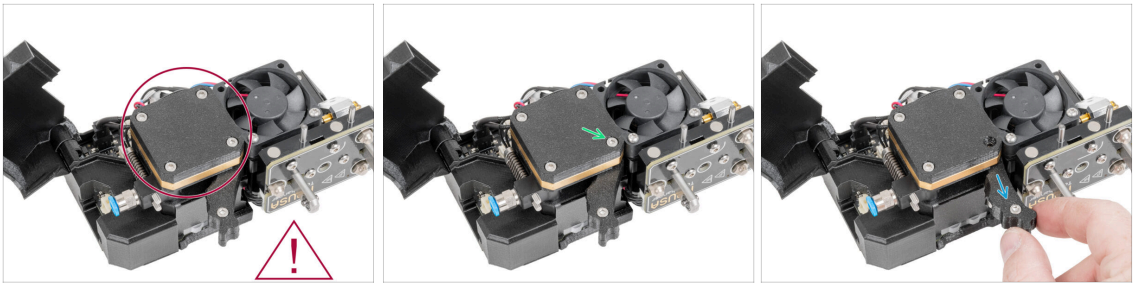






- Release an M3 screw with a 2.5 mm Allen key. **A few turns are enough.**
- Open the cover by swiveling the cover 90 degrees.
- Release the two M3x30 screws and remove the idler-swivel from the Nextruder. **Leave the screws in the heatsink.**
- Place the idler-swivel nearby, we'll disassemble it later.

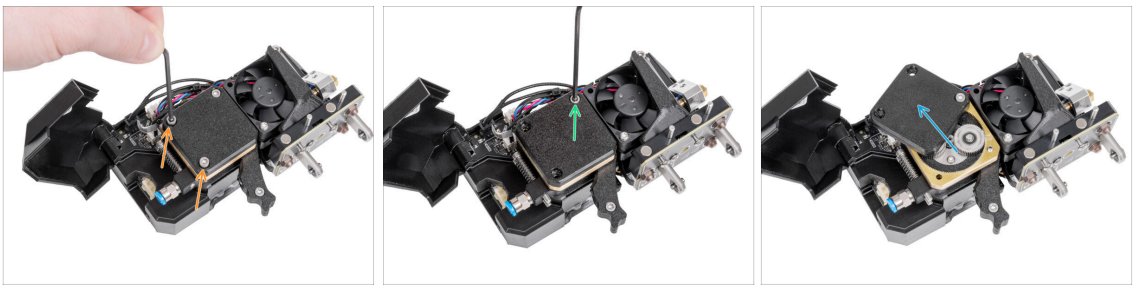
STEP 5 PG case releasing: four screws



⚠ If your Nextruder has four screw cover, proceed to the next line. **If your Nextruder has three screw cover, please proceed to the next step.**

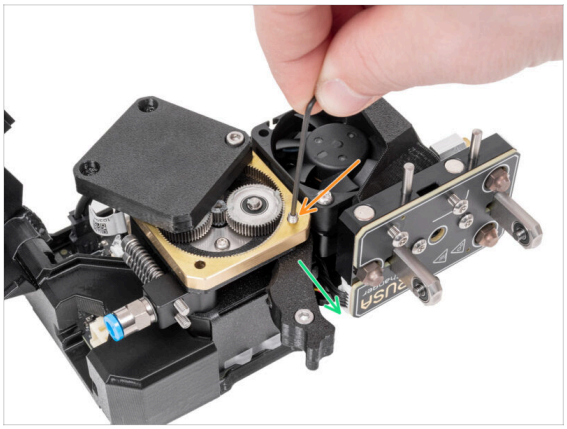
- Remove the M3x25 screw using the 2.5mm Allen key. **Don't throw the screw away!**
- Remove the idler from the Nextruder and place it nearby.

STEP 6 PG case releasing: three screws



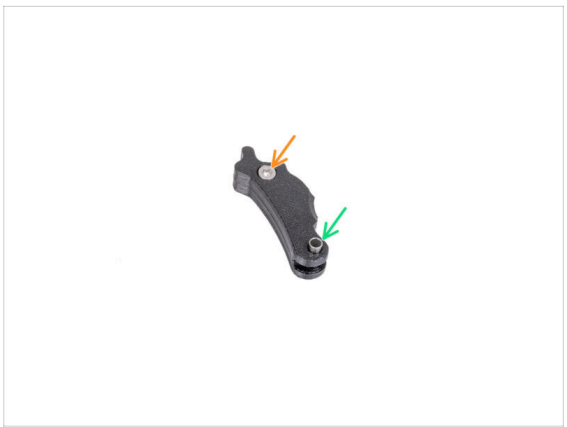
- Unscrew and remove two M3x25 screws. **Do not throw them away!** Loosen the last screw, do not remove it!
- Loosen the last screw, **do not remove it!**
- Open the cover by turning it slightly to the side.

STEP 7 Idler releasing



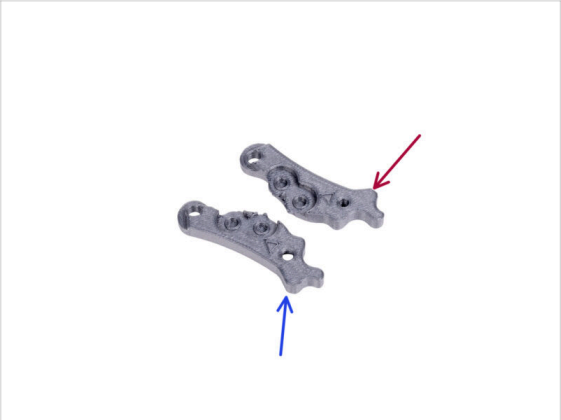
- Using a 1.5mm Allen key, remove the grub screw. **Do not throw it away!**
- Remove the idler from the Nextruder.
- Good job, now we have the idler and idler-swivel. Let's upgrade them!

STEP 8 Idler disassembly



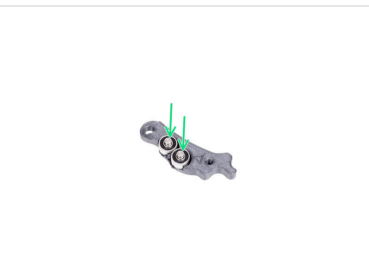
- Release and remove the M3x6 screw from the idler using a 2.5mm Allen key. **Do not throw it away!**
- Remove the tubular spacer from the idler. **Do not throw it away!**
- Remove the bearing from the idler, it's not connected with the pin. **Do not throw them away!**
- Remove the pins from the idler. **Do not throw them away!**
- **Throw the old Idler-levers to the bin.**

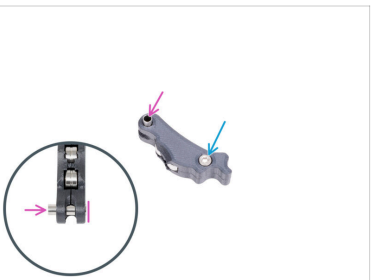
STEP 9 Nextruder idler: parts preparation



- **For the next steps, please prepare:**
- Idler-lever-a (1x)
- Idler-lever-b (1x)
- Bearing 693 2RS (2x) *you removed in the previous steps*
- M3x6 screw (1x) *you removed in the previous steps*
- Pin 2.9x8.5 (2x) *you removed in the previous steps*
- Tubular spacer 13.2x3.8x0.35 (1x) *you removed in the previous steps*

STEP 10 Assembling the extruder idler

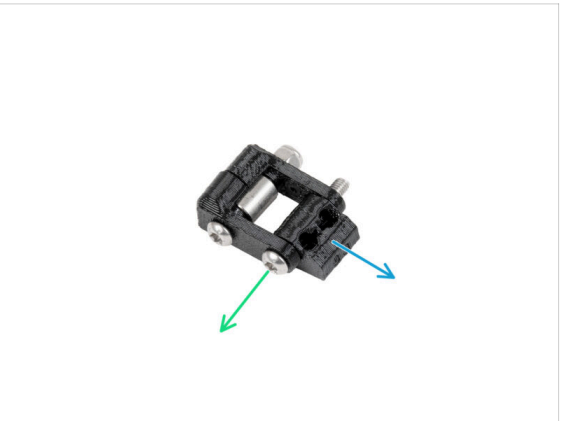




ⓘ The next assembly steps for the idler and idler swivel are copy and paste. Continue with these steps, the assembly is the same - just with the PCCF parts.

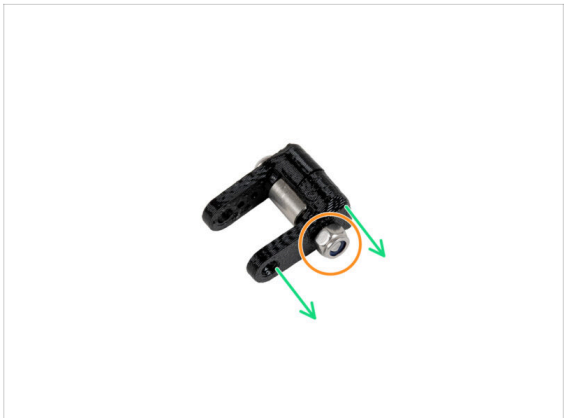
- Insert the pins 2.9x8.5 into each hole in the Idler-lever-a as seen in the picture.
- Attach both bearings onto the pins into the Idler-lever-a.
- Close it up with the Idler-lever-b part and secure it with the M3x6 screw. **Do not overtighten the screw**. Both bearings must be able to rotate without significant resistance.
- From the same side, push the tubular spacer into the assembly. The "bottom" of the tubular spacer must be flush with the bottom part of the Idler assembly.

STEP 11 Idler-swivel disassembly



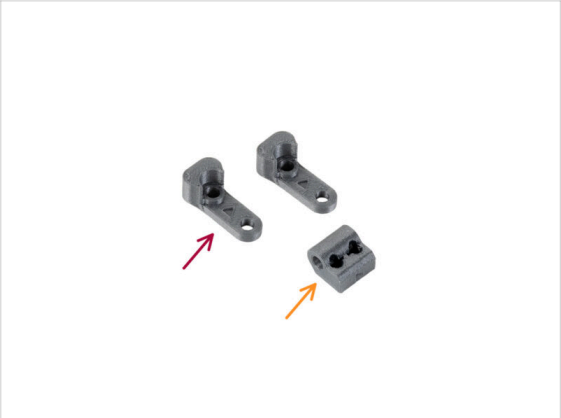
- Release and remove the M3nN nut. **Do not throw it away!**
- Remove the M3x20rT screw. **Do not throw it away!**
- Remove the idler-nut. **Throw it into the bin!**

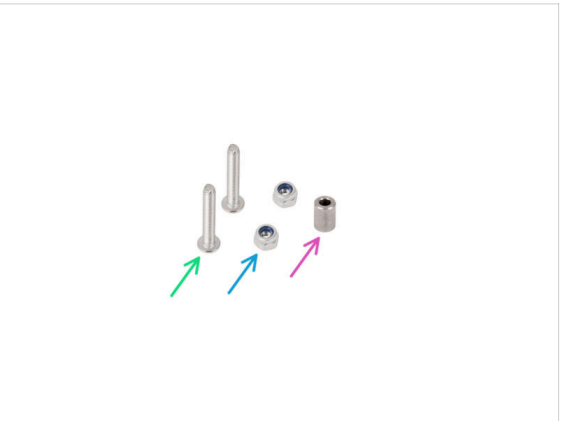
STEP 12 Idler-swivel disassembly



- Release and remove the M3nN nut. **Do not throw it away!**
- Remove the idler-swivel from the screw. **Throw it into the bin!**
- Remove the M3x20rT and spacer from the second idler-swivel. **Do not throw them away!**
- **Throw** the second **idler-swivel into the bin**.

STEP 13 Idler-swivel: parts preparation





- **For the following steps, please prepare:**
- Idler-swivel (2x)
- Idler-nut (1x)
- M3x20rT screw (2x) *you removed in the previous steps*
- M3nN nut (2x) *you removed in the previous steps*
- Spacer 6x3.1x8 (1x) *you removed in the previous steps*

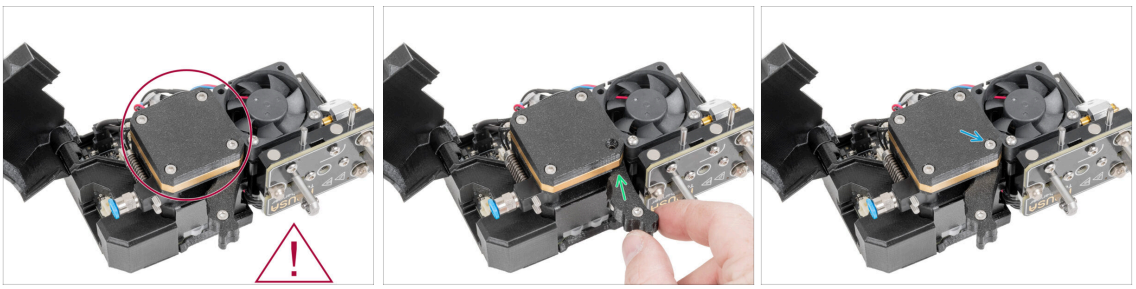
STEP 14 Assembling the Idler-swivel

- Push the M3x20rT screw all the way through one of the idler-swivel.
- Slide the spacer onto the screw.
- Place the second idler-swivel from the opposite side on the screw.
- From the other side, attach the M3nN nut onto the screw. Hold the nut using the universal wrench and tighten the screw. **Tighten just lightly!** The spacer must rotate freely.

STEP 15 Assembling the Idler-nut

- Insert the idler-nut into the idler-swivel assembly. Make sure that both parts are oriented correctly according to the picture.
- Secure both parts together by inserting the M3x20rT screw from the same side, like the first screw.
- Secure the screw with M3nN nut. **Do not overtighten the nut.** It must be possible to move with the Idler-swivel on the Idler-nut.

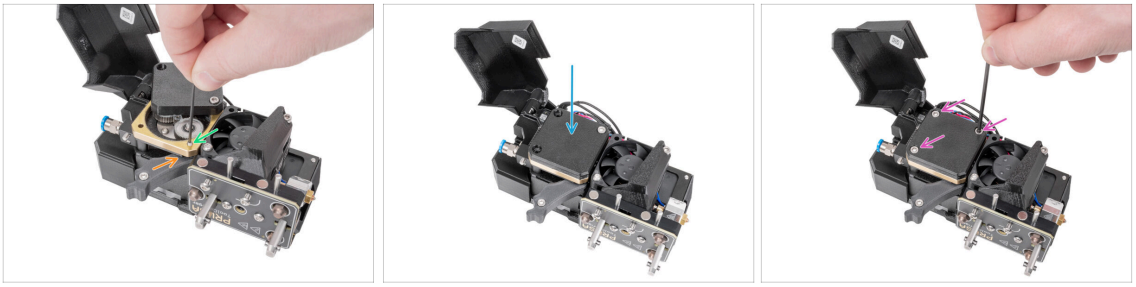
STEP 16 Idler attaching: four screws



If your Nextruder has four screw cover, proceed to the next line. **If your Nextruder has three screw cover, please proceed to the next step.**

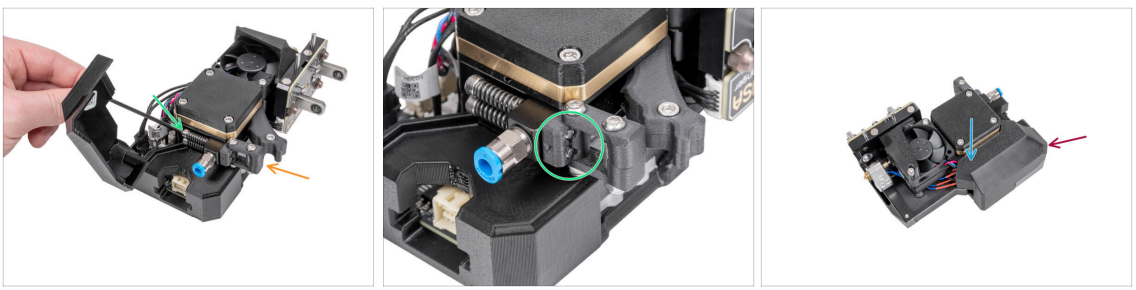
- Insert the assembled idler to its place.
- Secure the idler with the M3x25 screw using a 2.5mm Allen key. **Do not overtighten the screw! The screw protrudes from the PG-ring after tightening.**

STEP 17 Idler attaching: three screws



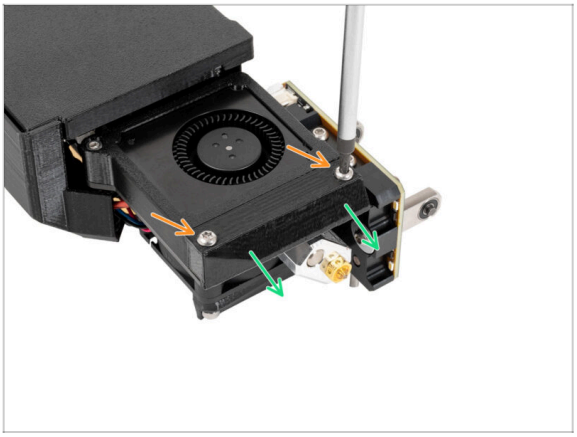
- Insert the assembled idler to its place.
- Secure the idler with the M3 grub screw using a 1.5mm Allen key. **Do not overtighten the screw! The screw protrudes from the PG-ring after tightening.**
- Turn the PG-cover back.
- Insert two M3x25 and secure all three screws using a 2.5mm Allen key.

STEP 18 Idler-swivel attaching



- Fit the assembled idler-swivel with two M3x30 screws.
- Tighten both M3x30 screws. **Stop tightening as soon as the screw tips reach the front face of the idler nut.**
- Close the cover.
- Tighten a M3 screw using a 2.5 mm Allen key.

STEP 19 Fan shroud removing



⚠ The next steps apply only, if your Nextruder has a PETG fan-shroud. If not, please proceed to the **Nextruder docking**

- Remove two M3x13rT screws using a T10 Torx screwdriver. **Don't throw the screws away!**
- Remove the PETG fan-shroud. **Throw it into the bin (trash can).**

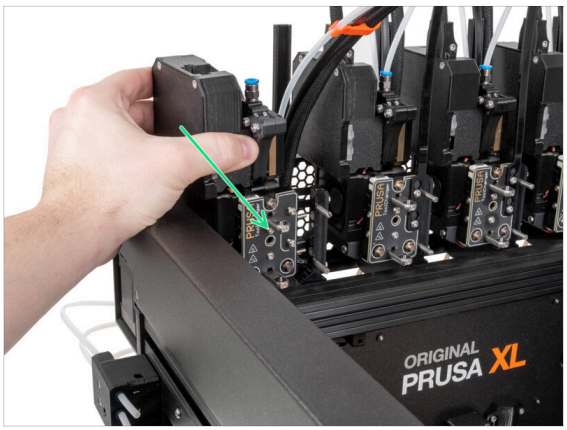
STEP 20 Fan shroud: parts preparation

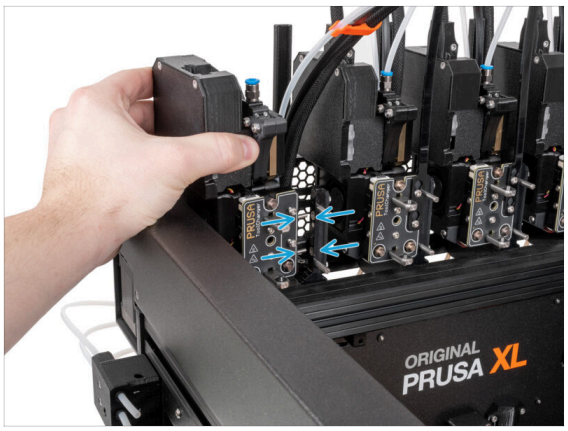
- **For the next steps, please prepare:**
- PCCF fan shroud (1x)

STEP 21 Fan shroud securing

- Attach the new PCCF fan-shroud onto the Nextruder.
- Insert and secure two M3x14rT screws using a T10 Torx screwdriver.
- Good job, the Nextruder is upgraded. We can attach it to the printer.

STEP 22 Nextruder docking

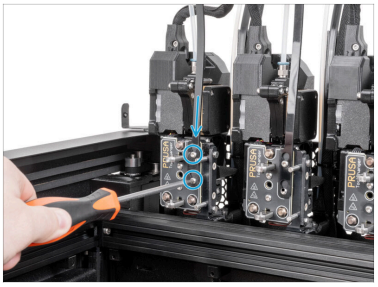




- Take the Nextruder and place it carefully next to the dock.
- Carefully dock the Nextruder.

STEP 23 Nextruder connecting





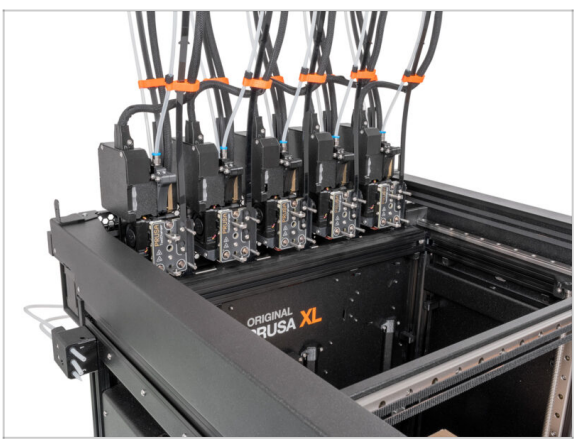
⚠ Check that the cable bundle is not twisted!

- Attach the cable connector into the top of the Nextruder.
- Insert the semi-transparent PTFE tube into the fitting on the Nextruder. Push it all the way in.

ⓘ Starting from September 2024, you may receive a new black Fitting M5-4. The assembly and functionality remain identical to the blue one.

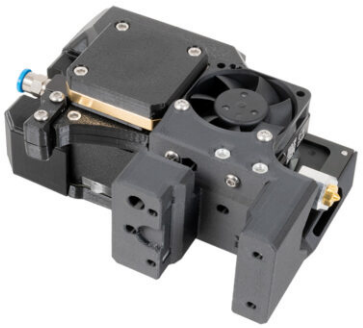
- Hook up the keyhole openings in the flexible plate of the cable bundle onto the screw heads and push it up to correct the position and tighten the marked two screws.

STEP 24 Good job

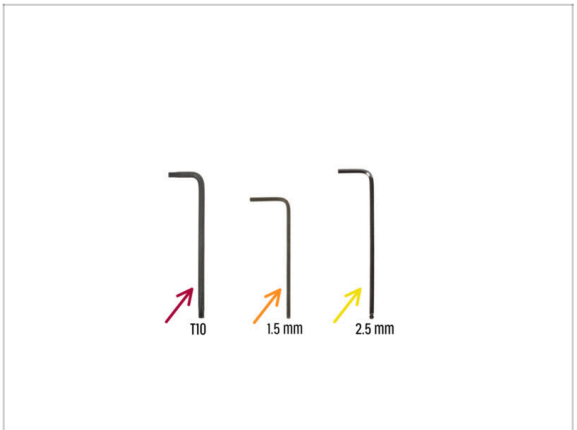


- Well done. The first Nextruder is finished. All of your Nextruders have to be upgraded to the PCCF parts! After the upgrade, proceed to the next chapter.

5. Nextruder upgrade (Single-Tool)

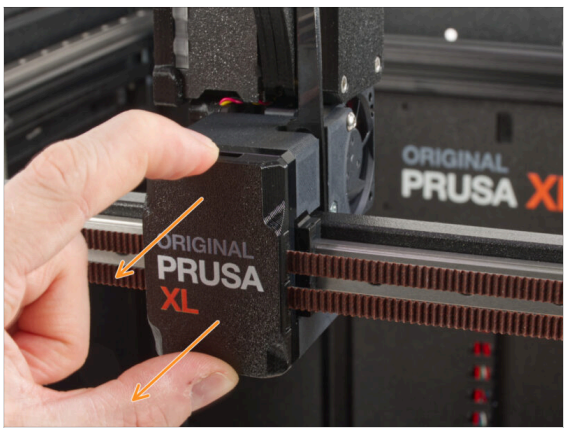


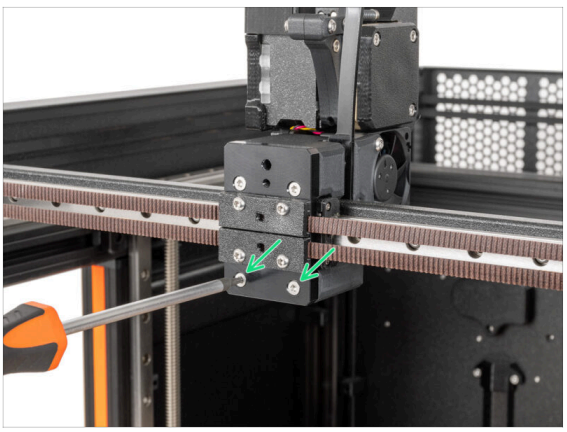
STEP 1 Tools necessary for this chapter



- **For this chapter, please prepare:**
- T10 Torx key (screwdriver)
- 1.5mm Allen key
- 2.5mm Allen key

STEP 2 Nextruder detaching

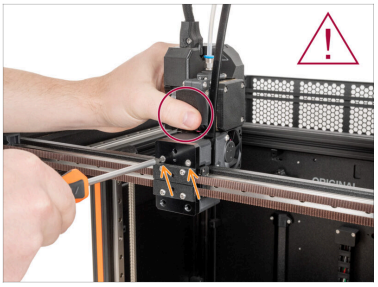
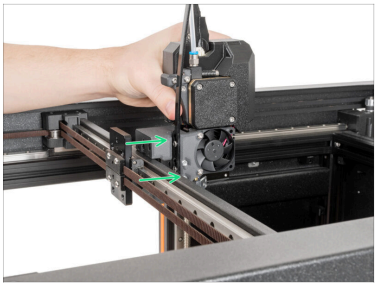
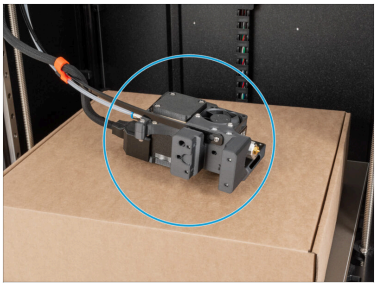




⚠ **You don't need to upgrade the Single-Tool Nextruder if you have an Original Prusa XL from June 2024. Skip to this chapter: Enclosure secure**

- Pull out the x-carriage-cover from the X-carriage.
- Remove two lower M3x12bT screws from the X-carriage using a T10 Torx screwdriver.

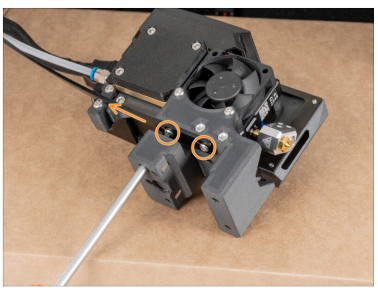
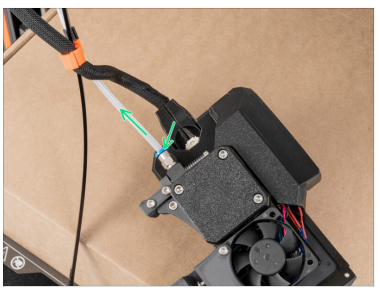
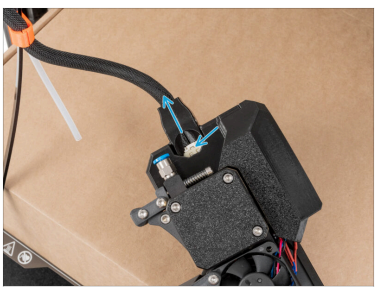
STEP 3 Nextruder releasing

⚠ Grasp the Nextruder with your hand to prevent it from falling.

- Remove two upper M3x12bT screws using a T10 Torx screwdriver.
- Pull out the Nextruder from the X-carriage.
- Place the Nextruder on the box on the heatbed.

STEP 4 Nextruder cable bundle releasing

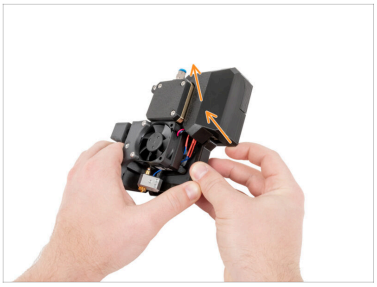
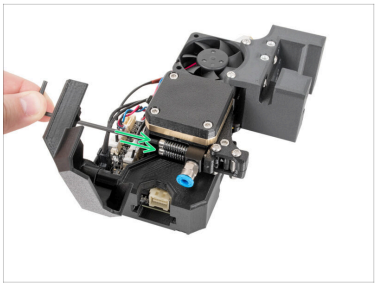




- From the front side of the Nextruder, using a T10 screwdriver, loosen (a few turns are enough) two M3x8r screws and take off the cable support.
- Locate the FESTO fitting, push the blue collet down and remove the PTFE tube from the second Nextruder. Leave the PTFE hanging freely.

ⓘ Starting from September 2024, you may receive a new black Fitting M5-4. The assembly and functionality remain identical to the blue one.

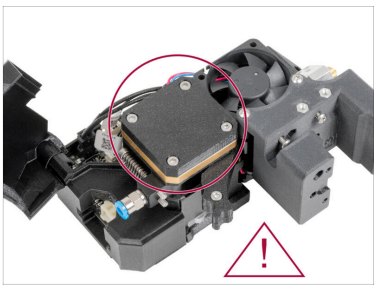
- Locate the Nextruder cable, press the secure pin and unplug the cable from the second Nextruder. Leave the cable hanging.
- Place the Nextruder nearby.

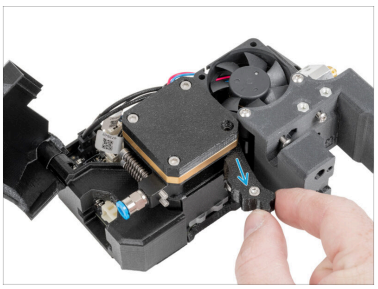
STEP 5 Idler-swivel releasing


- Open the cover.
- Release the two M3x30 screws and remove the idler-swivel from the Nextruder. **Leave the screws in the heatsink.**
- Place the idler-swivel nearby, we'll disassemble it later.

STEP 6 PG case releasing: four screws

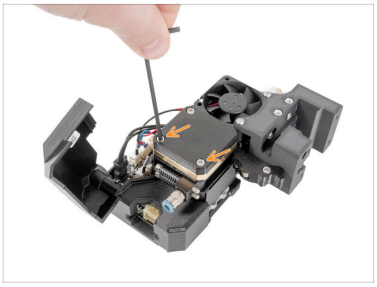
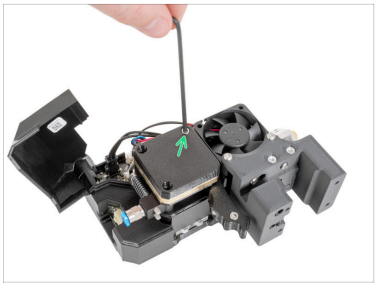
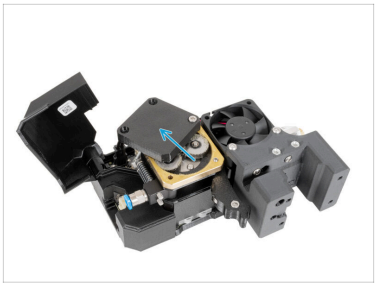




⚠ If your Nextruder has four screw cover, proceed to the next line. **If your Nextruder has three screw cover, please proceed to the next step.**

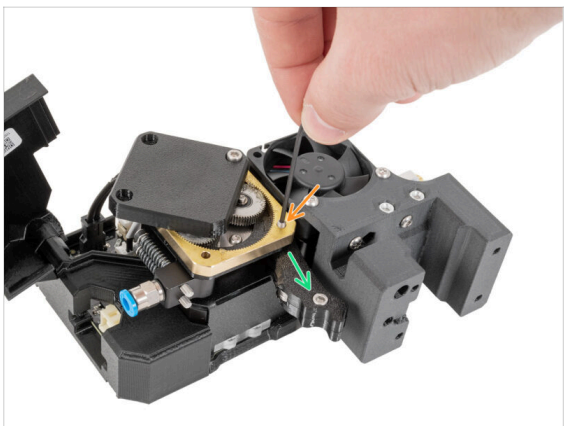
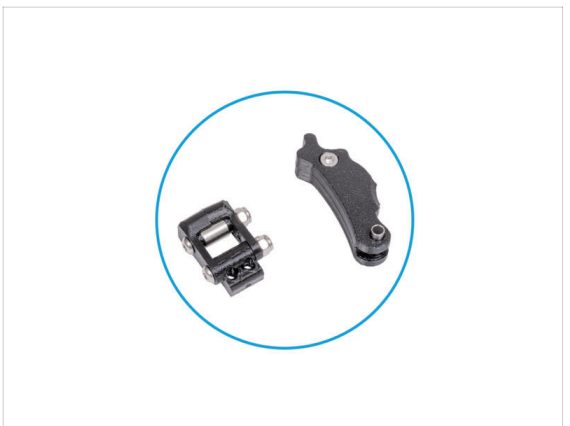
- Remove the M3x25 screw using the 2.5mm Allen key. **Don't throw the screw away!**
- Remove the idler from the Nextruder and place it nearby.

STEP 7 PG case releasing: three screws

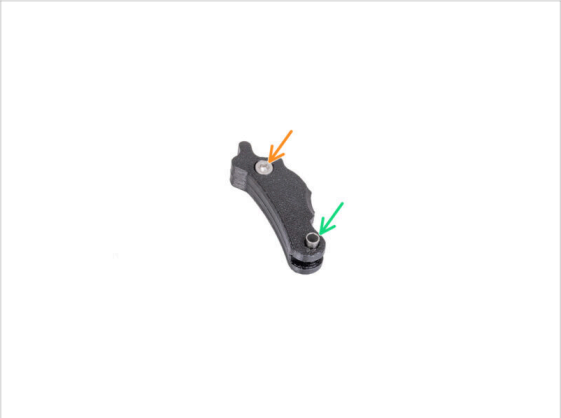
- Unscrew and remove two M3x25 screws. **Do not throw them away!** Loosen the last screw, do not remove it!
- Loosen the last screw, **do not remove it!**
- Open the cover by turning it slightly to the side.

STEP 8 Idler releasing

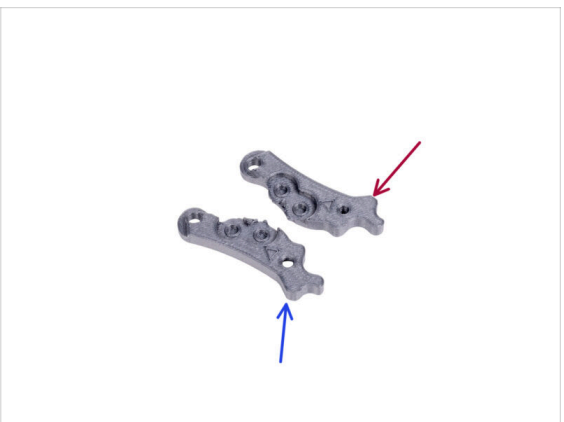
- Using a 1.5mm Allen key, remove the grub screw. **Do not throw it away!**
- Remove the idler from the Nextruder.
- Good job, now we have the idler and idler-swivel. Let's upgrade them!

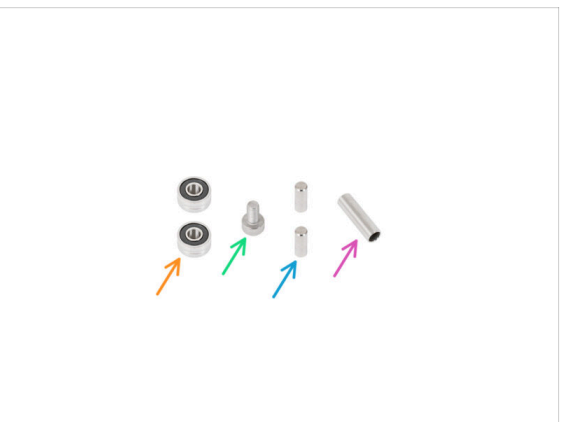
STEP 9 Idler disassembly



- Release and remove the M3x5 screw from the idler using a 2.5mm Allen key. **Do not throw it away!**
- Remove the tubular spacer from the idler. **Do not throw it away!**
- Remove the bearing from the idler, it's not connected with the pin. **Do not throw them away!**
- Remove the pins from the idler. **Do not throw them away!**
- **Throw the old Idler-levers to the bin.**

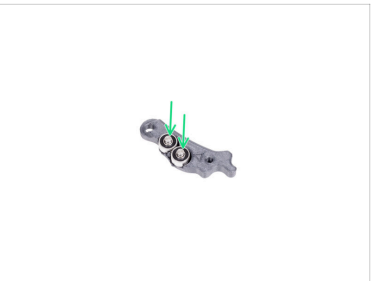
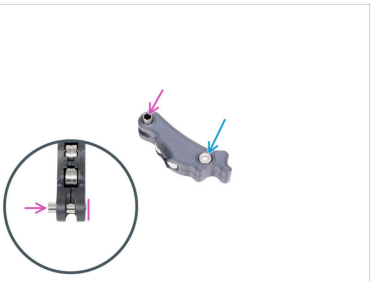
STEP 10 Nextruder idler: parts preparation





- **For the next steps, please prepare:**
- Idler-lever-a (1x)
- Idler-lever-b (1x)
- Bearing 693 2RS (2x) *you removed in the previous steps*
- Pin 2.9x8.5 (2x) *you removed in the previous steps*
- M3x6 screw (1x) *you removed in the previous steps*
- Tubular spacer 13.2x3.8x0.35 (1x) *you removed in the previous steps*

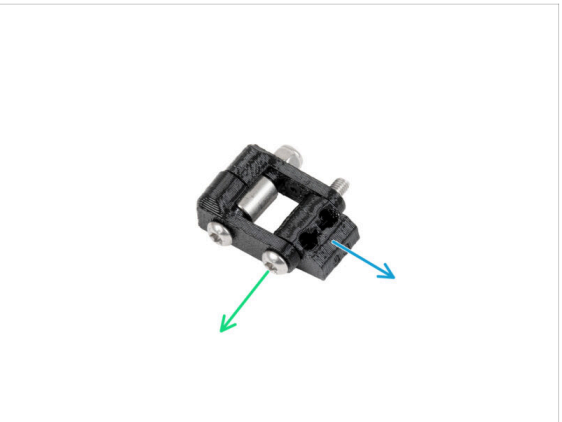
STEP 11 Assembling the extruder idler

ⓘ The next assembly steps for the idler and idler swivel are copy and paste. Continue with these steps, the assembly is the same - just with the PCCF parts.

- Insert the pins 2.9x8.5 into each hole in the Idler-lever-a as seen in the picture.
- Attach both bearings onto the pins into the Idler-lever-a.
- Close it up with the Idler-lever-b part and secure it with the M3x6 screw. **Do not overtighten the screw**. Both bearings must be able to rotate without significant resistance.
- From the same side, push the tubular spacer into the assembly. The "bottom" of the tubular spacer must be flush with the bottom part of the Idler assembly.
- Good job, now the idler-swivel.

STEP 12 Idler-swivel disassembly

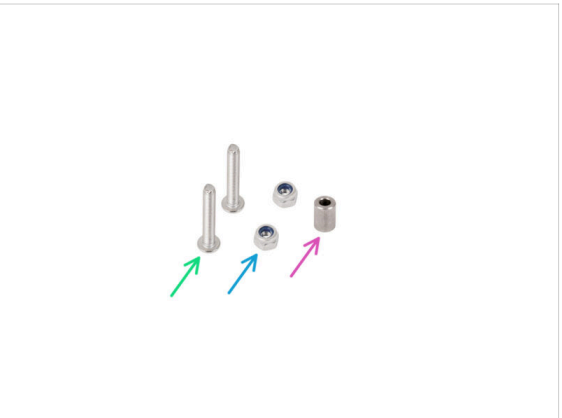



- Release and remove the M3nN nut. **Do not throw it away!**
- Remove the M3x20rT screw. **Do not throw it away!**
- Remove the idler-nut. **Throw it into the bin!**

STEP 13 Idler-swivel disassembly

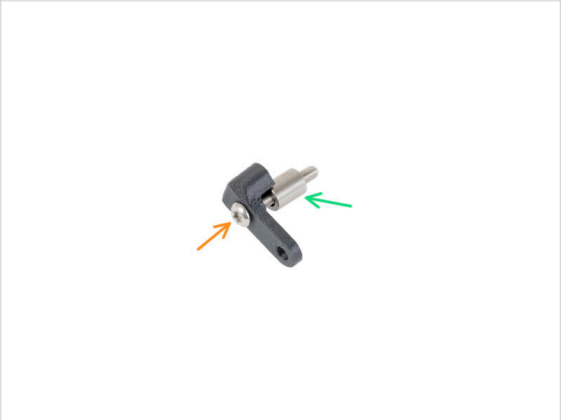
- Release and remove the M3nN nut. **Do not throw it away!**
- Remove the idler-swivel from the screw. **Throw it into the bin!**
- Remove the M3x20rT and spacer from the second idler-swivel. **Do not throw them away!**
- **Throw** the second **idler-swivel into the bin**.

STEP 14 Idler-swivel: parts preparation



- **For the following steps, please prepare:**
- Idler-swivel (2x)
- Idler-nut (1x)
- M3x20rT screw (2x) *you removed in the previous steps*
- M3nN nut (2x) *you removed in the previous steps*
- Spacer 6x3.1x8 (1x) *you removed in the previous steps*

STEP 15 Assembling the Idler-swivel

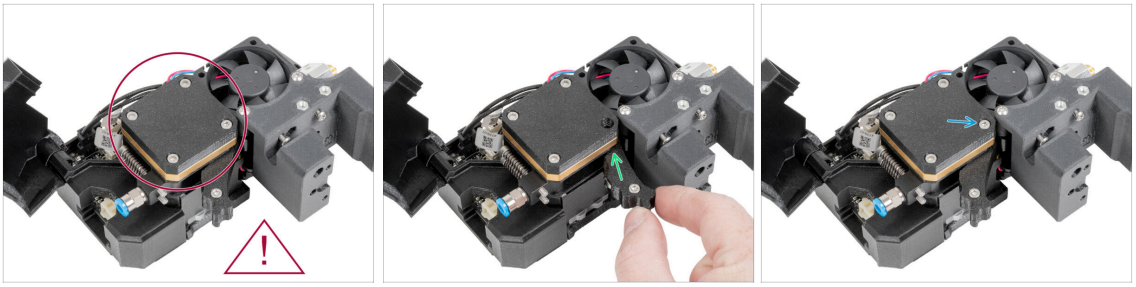


- Push the M3x20rT screw all the way through one of the idler-swivel.
- Slide the spacer onto the screw.
- Place the second idler-swivel from the opposite side on the screw.
- From the other side, attach the M3nN nut onto the screw. Hold the nut using the universal wrench and tighten the screw. **Tighten just lightly!** The spacer must rotate freely.

STEP 16 Assembling the Idler-nut

- Insert the idler-nut into the idler-swivel assembly. Make sure that both parts are oriented correctly according to the picture.
- Secure both parts together by inserting the M3x20rT screw from the same side, like the first screw.
- Secure the screw with M3nN nut. **Do not overtighten the nut.** It must be possible to move with the Idler-swivel on the Idler-nut.

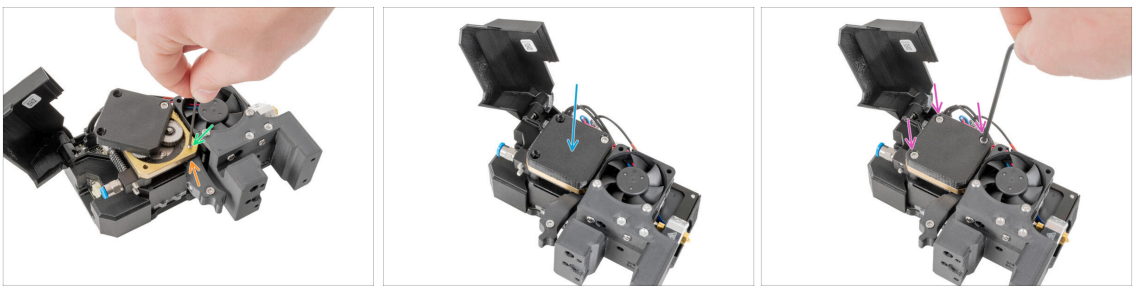
STEP 17 Idler attaching: four screws



⚠ If your Nextruder has four screw cover, proceed to the next line. **If your Nextruder has three screw cover, please proceed to the next step.**

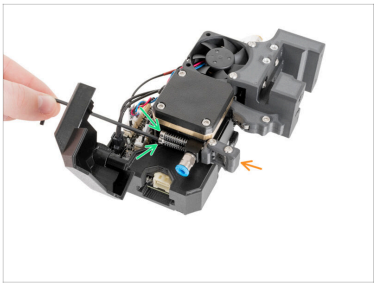
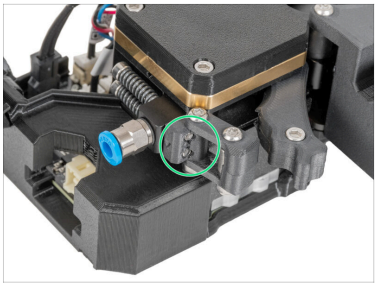
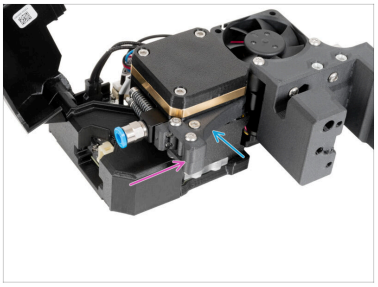
- Insert the assembled idler to its place.
- Secure the idler with the M3x25 screw using a 2.5mm Allen key. **Do not overtighten the screw! The screw protrudes from the PG-ring after tightening.**

STEP 18 Idler attaching: three screws



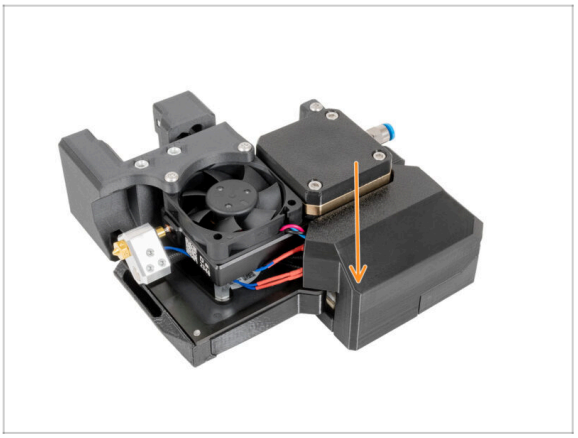
- Insert the assembled idler to its place.
- Secure the idler with the M3 grub screw using a 1.5mm Allen key. **Do not overtighten the screw! The screw protrudes from the PG-ring after tightening.**
- Turn the PG-cover back.
- Insert two M3x25 and secure all three screws using a 2.5mm Allen key.

STEP 19 Idler-swivel attaching

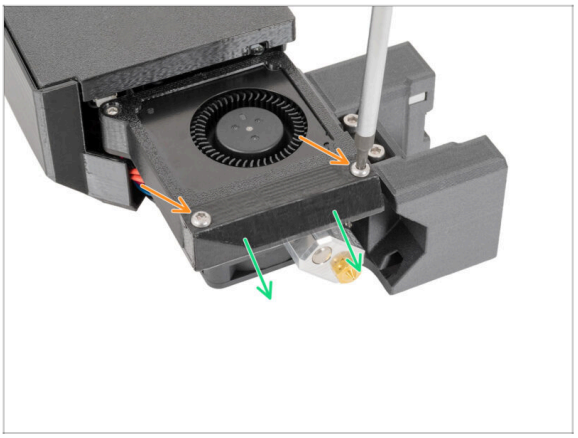
- Fit the assembled idler-swivel with two M3x30 screws.
- Tighten both M3x30 screws. **Stop tightening as soon as the screw tips reach the front face of the idler nut.**
- Close the extruder idler to the extruder.
- Close the idler-swivel and lock it over the extruder idler assembly.

STEP 20 Nextruder cover closing



- Close the cover.

STEP 21 Fan shroud removing



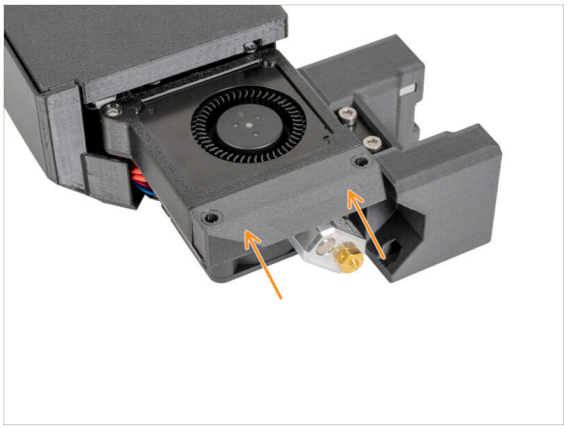
⚠ The next steps apply only, if your Nextruder has a PETG fan-shroud. If not, please proceed to the **Nextruder connecting**

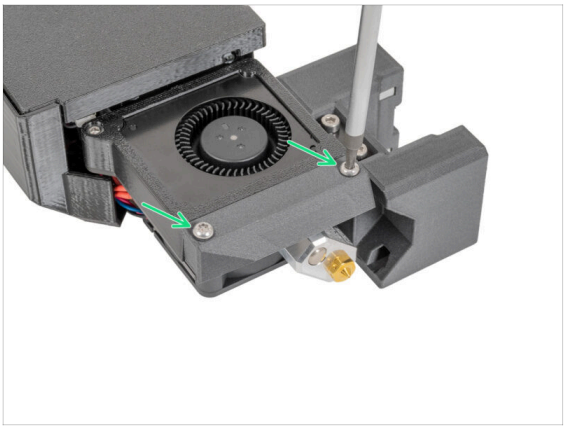
- Remove two M3x13rT screws using a T10 Torx screwdriver. **Don't throw the screws away!**
- Remove the PETG fan-shroud. **Throw it into the bin (trash can).**

STEP 22 Fan shroud: parts preparation

- **For the next steps, please prepare:**
- PCCF fan shroud (1x)

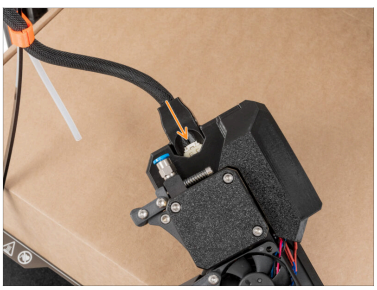
STEP 23 Fan shroud securing

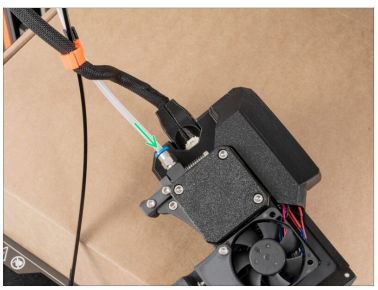


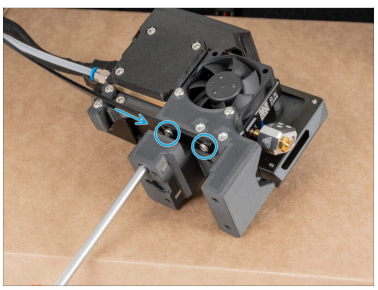


- Attach the new PCCF fan-shroud onto the Nextruder.
- Insert and secure two M3x14rT screws using a T10 Torx screwdriver.
- Good job, the Nextruder is upgraded. We can attach it to the printer.

STEP 24 Nextruder connecting







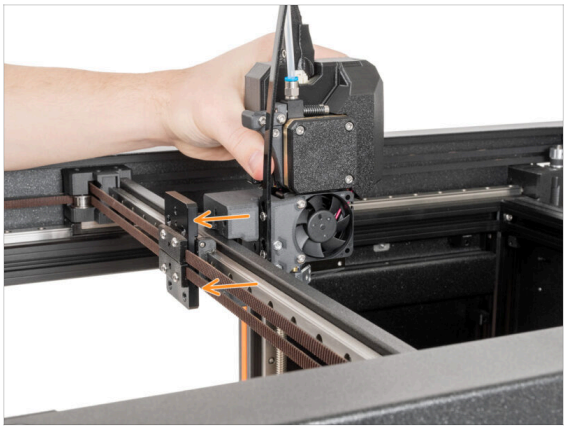
⚠ Check that the cable bundle is not twisted!

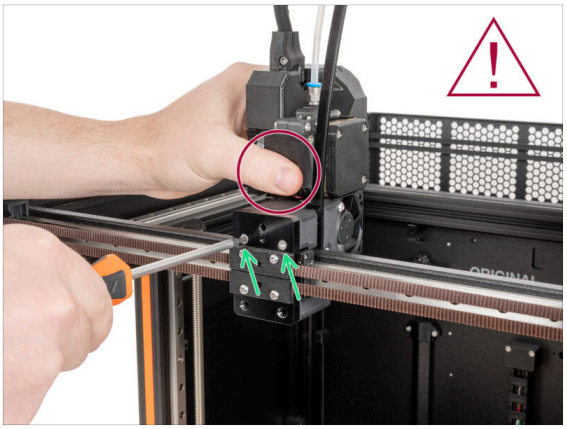
- Attach the cable connector into the top of the Nextruder.
- Insert the semi-transparent PTFE tube into the fitting on the Nextruder. Push it all the way in.

ⓘ Starting from September 2024, you may receive a new black Fitting M5-4. The assembly and functionality remain identical to the blue one.

- Hook up the keyhole openings in the flexible plate of the cable bundle onto the screw heads and push it up to correct the position and tighten the marked two screws.

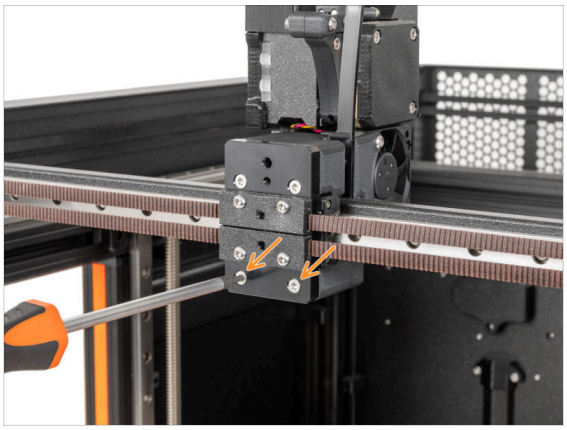
STEP 25 Attaching the nextruder

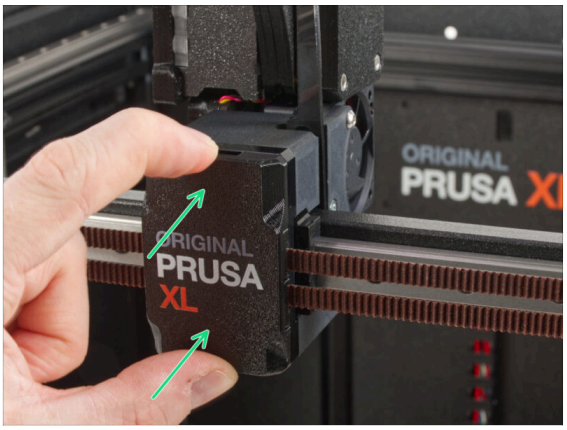




- Attach the Nextruder to the X-carriage.
- ⚠ Hold the Nextruder by hand until the screws are tightened.
- Insert and secure two upper M3x12bT screws using a T10 Torx screwdriver.

STEP 26 Securing the nextruder





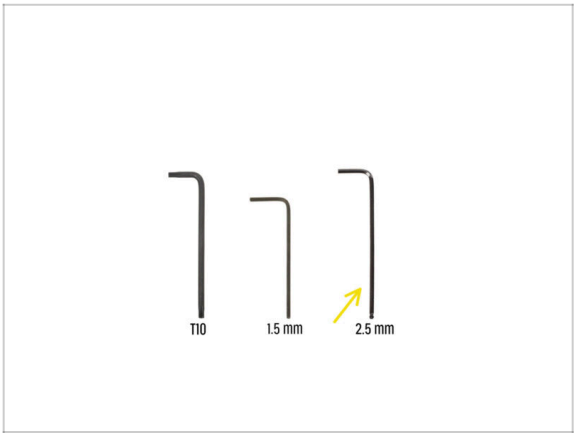
- Insert and secure two M3x12bT screws using a T10 Torx screwdriver.
- Snap the x-carriage-cover back onto the X-carriage. You must feel a slight "click" to ensure the cover fits on the part.

STEP 27 Good job

- Well done. The Nextruder is finished, proceed to the next chapter.

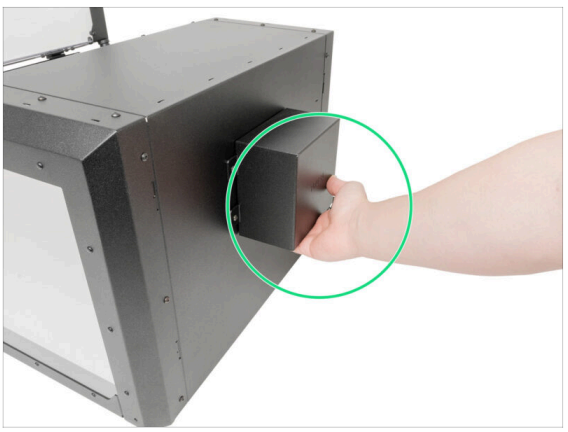
6. Enclosure secure

STEP 1 Tools necessary for this chapter



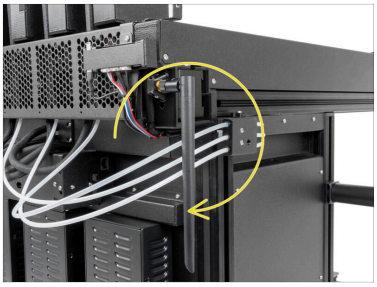
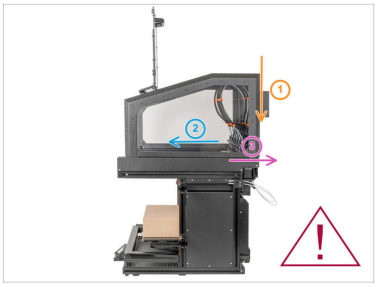
- **For this chapter, please prepare:**
- 2.5mm Allen key

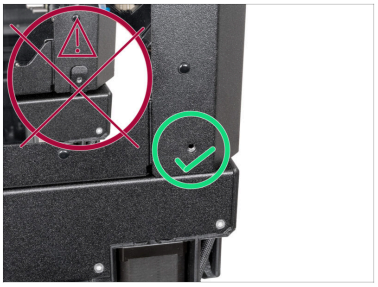
STEP 2 Enclosure preparing



- On the assembled Enclosure, open the lid.
- Grasp the Enclosure on the front where is the support plate.
- Grasp the Enclosure on the back of where is the filtration cover.

STEP 3 Enclosure attaching

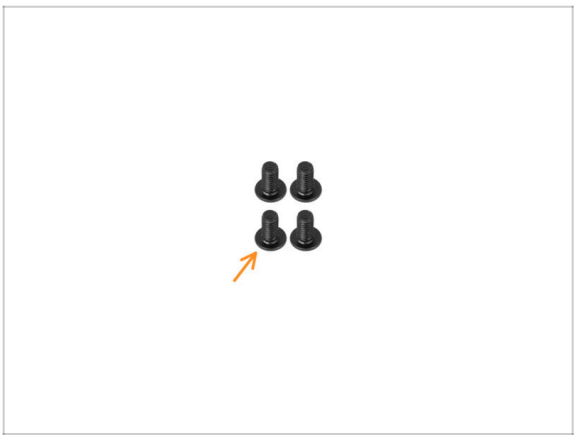


⚠ For this step, call somebody to help you attach the enclosure to the printer.

⚠ **Don't pinch any Enclosure cable.** Watch out for cables!

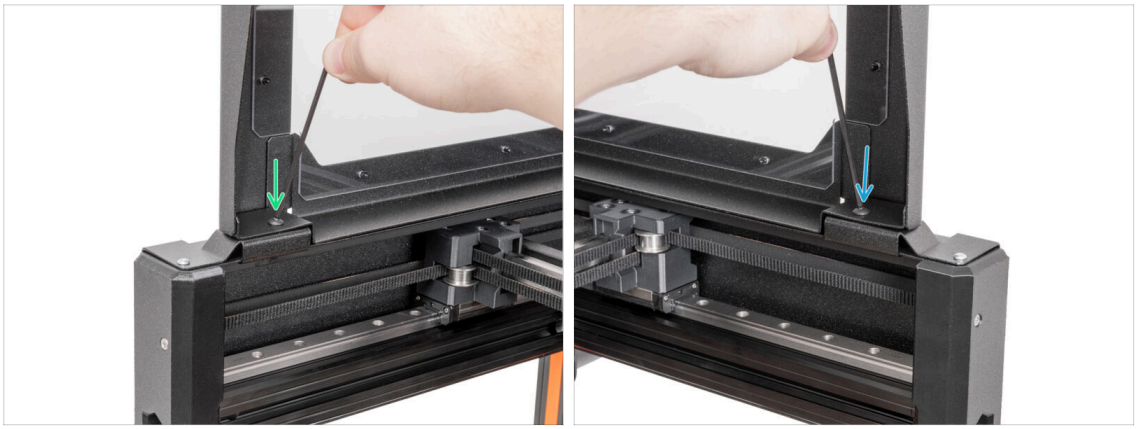
- Turn the antenna downwards if you have a side-mounted antenna.
- Carefully attach the enclosure to the printer in three steps:
  - 1. Place the enclosure on the printer.
  - 2. Push the enclosure to the front of the printer.
  - 3. Push the enclosure to the back of the printer.
- Align the holes for the screws.

STEP 4 Enclosure securing: parts preparation



- **For the next steps, please prepare:**
- M4x8r screw (4x)

STEP 5 Front side securing



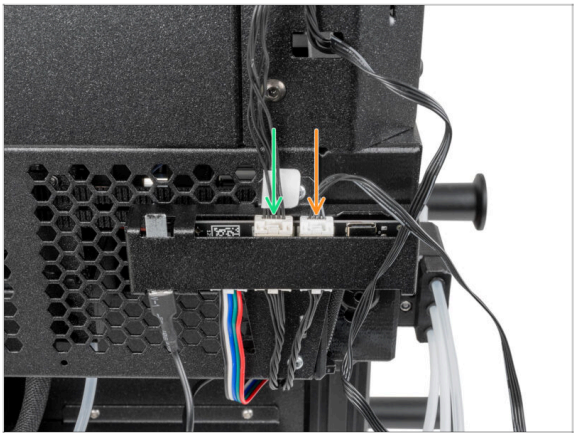
- From the front side of the enclosure:
- Secure the left bottom corner with an M4x8r screw to the fixing-bracket-front-left using a 2.5mm Allen key.
- Secure the right bottom corner with an M4x8r screw to the fixing-bracket-front-right using a 2.5mm Allen key.

⚠ **Close the lid.** This prevents the lid from closing by gravity during handling.

STEP 6 Rear side securing

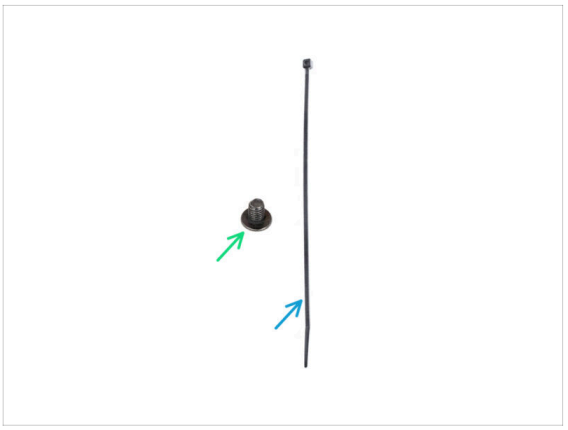
- From the rear side of the printer:
- Secure the left bottom corner with an M4x8r screw to the fixing-bracket-back-right using a 2.5mm Allen key.
- Secure the left bottom corner with an M4x8r screw to the fixing-bracket-back-left using a 2.5mm Allen key.

STEP 7 Enclosure cables connecting



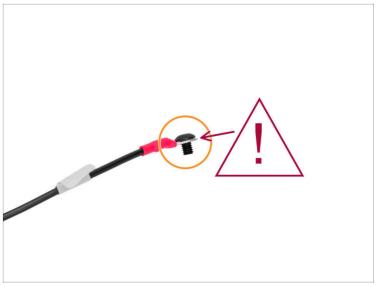
- Take the fan cable (4 wires) and connect the end of the cable to the right connector on the FDM XL Enclosure splitter.
- Take the LED cable (5 wires) and connect the end of the cable to the left connector on the FDM XL Enclosure splitter.

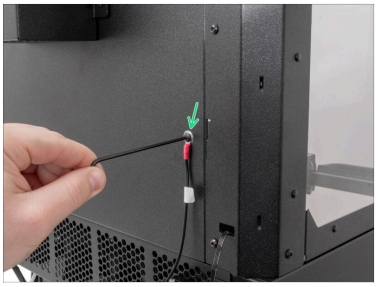
STEP 8 Enclosure PE cable: parts preparation

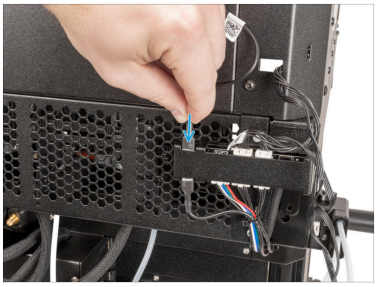


- **For the next steps, please prepare:**
- PE cable (1x)
- M4x5r screw (1x)
- Zip-tie (1x)

STEP 9 PE cable securing

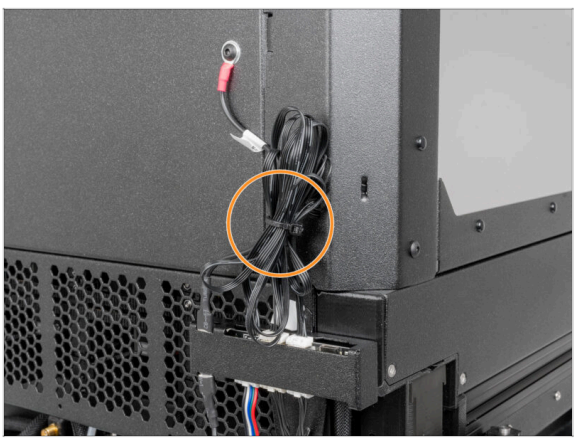






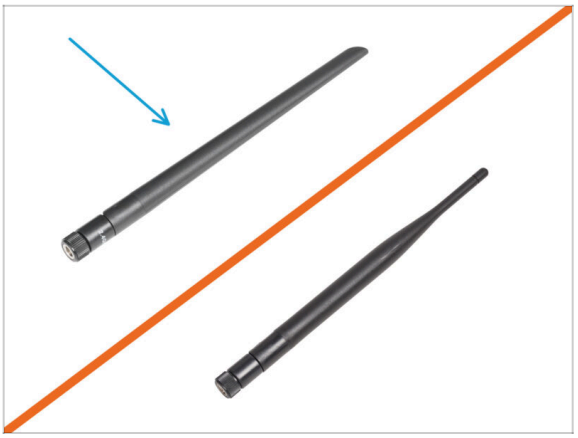
- Insert an M4x5r screw through the terminal as shown in the image.
- ⚠ **Note the orientation of the PE cable terminal!**
- Secure the PE cable by tightening the M4x5r screw using a 2.5mm Allen key.
- Attach the PE faston to the XL Enclosure board cover.

STEP 10 Cables securing



- Secure all cables together with a zip-tie. **Do not overtighten the zip-tie.** Cut the end of the zip-tie.

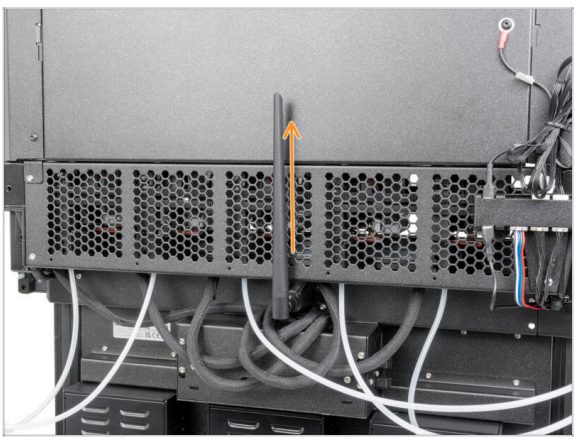
STEP 11 Installing the Wi-Fi antenna: parts preparation



- **For the following steps, please prepare:**
- Wi-Fi antenna (1x)

ⓘ The Original Prusa XL is shipped with two versions of the Wi-Fi antenna, each with a different shape. The functionality is the same.

STEP 12 Installing the Wi-Fi antenna



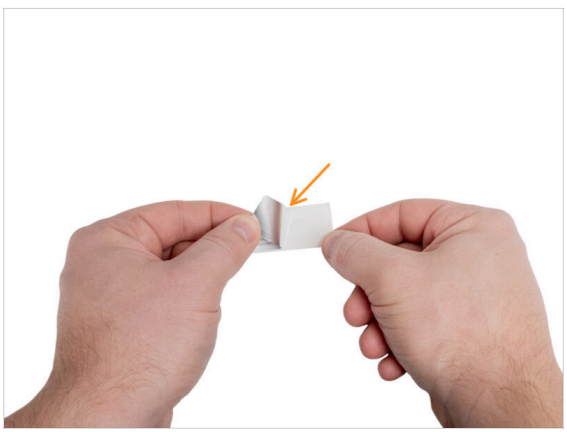
ⓘ This step is only for the printer, which has a Wi-Fi antenna on the back of the printer.

- Secure the Wi-Fi antenna to the connector in the middle of the printer and adjust it to point straight upwards for optimal signal strength.

STEP 13 Serial number sticker: parts preparation

- **For the next step, please prepare:**
- Serial number sticker (1x)

STEP 14 Serial number sticker



- Peel off a piece of the protective layer from the serial number sticker.
- Stick the sticker on the lower left rear corner of the XL Enclosure.

STEP 15 First run

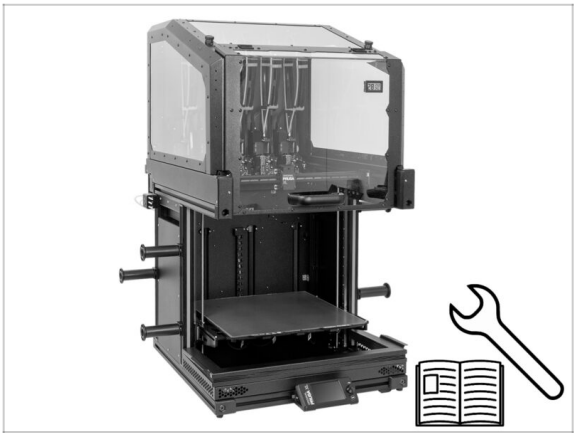
- From the rear side of the printer, plug in the PSU cable.
- Turn the power switch ON (symbol "I").
- Upgrade to the latest firmware.
- On the screen, go to *Control -> Enclosure* and turn it on.
- Adjust belt tension on your XL

STEP 16 Good job!

- Well done, your Original Prusa XL is now ready to print something great!

Manual changelog XL Enclosure kit

STEP 1 Version history



- Versions of the Original Prusa XL Enclosure manual:
- 05/2024 - Initial version 1.00

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