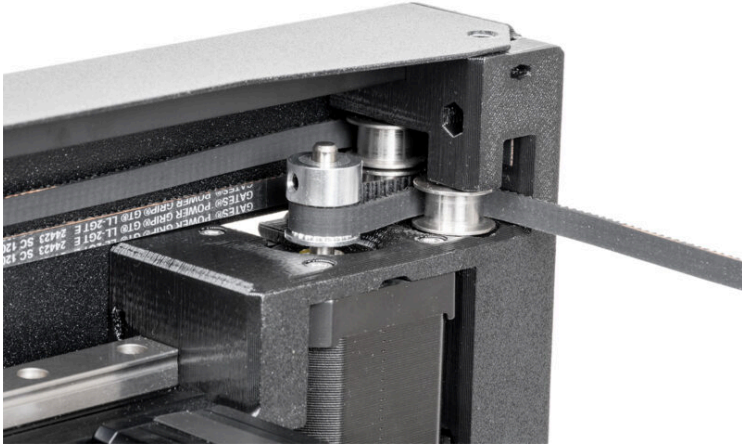


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How to change the belt (XL)

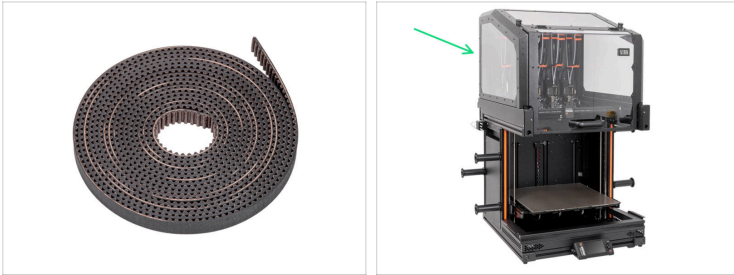


help.prusa3d.com/g729456

Scan the QR code to
display the latest
version of this
chapter.

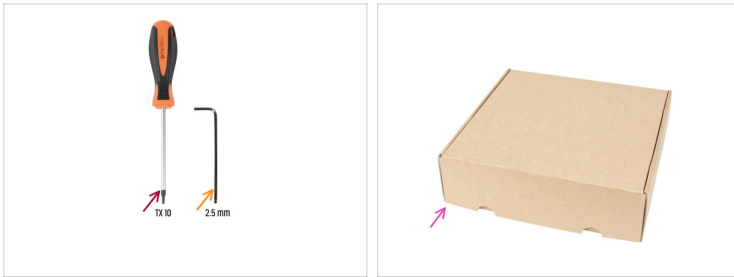


STEP 1 Introduction



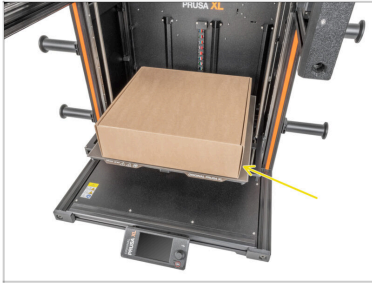
- ◆ This guide will take you through the installation of both **XL belts** on the **Original Prusa XL**.
- ⓘ The following instructions are compatible with all Original Prusa XL versions.
- ◆ All necessary parts are available in our eshop prusa3d.com.
- 📌 Note that you have to be logged in to have access to the spare parts section.
- This manual is compatible with the Original Prusa XL Enclosure.
- ⓘ This manual is compatible with all Original Prusa XL printers.

STEP 2 Tools necessary for this manual



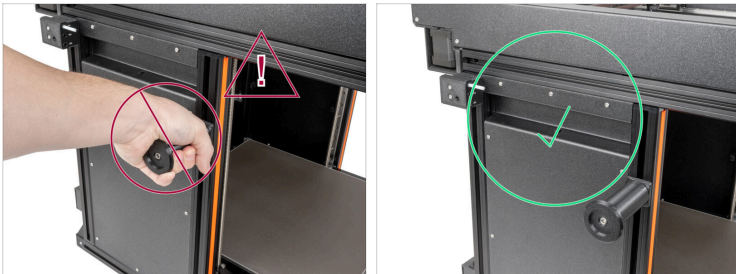
- **For the following manual, please prepare:**
- Torx T10 screwdriver
- 2.5mm Allen key
- A cardboard box for use as heatbed protection during the assembly. *Hint: use the Nextruder box.*

STEP 3 Protecting the heatbed



- i** 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.

STEP 4 Manipulating with the printer



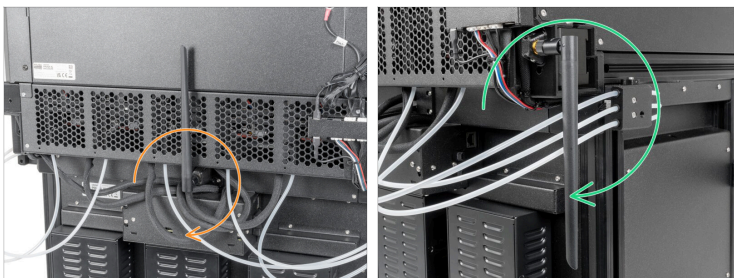
- ⚠** Never manipulate the printer by using the spoolholders or the upper metal flanges. You can damage the LED lights hidden inside.
- ◆** When assembling, handle the base using the extrusions.

STEP 5 Printer unplugging



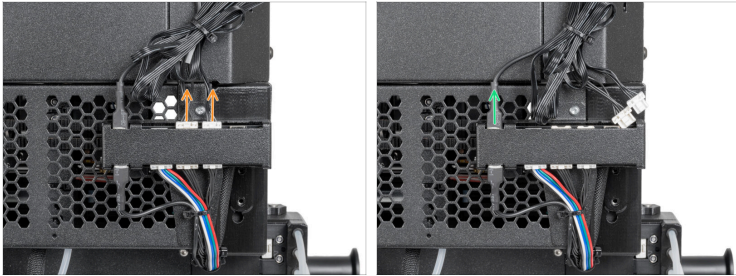
- Turn the power switch OFF (symbol "O").
- From the rear side of the printer, unplug the PSU cable.

STEP 6 Rotating the wifi antenna



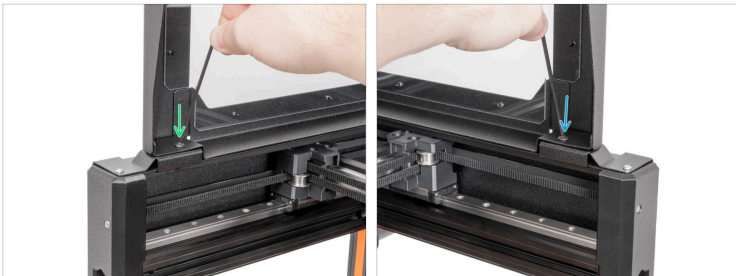
- Wi-Fi antenna on the back of the printer:
 - For the easiest installation, rotate the antenna downwards.
- Wi-Fi antenna on the side of the printer:
 - For the easiest installation, rotate the antenna downwards.

STEP 7 Optional: Cables disconnecting



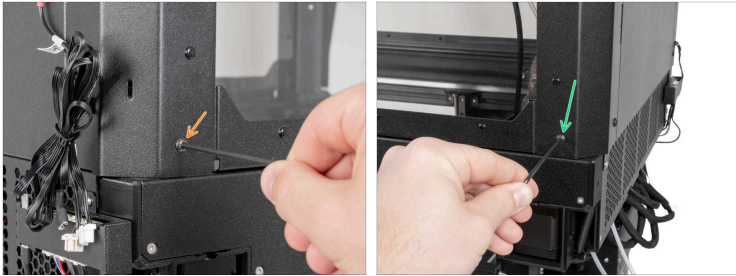
- i The next steps are for users who have an Original Prusa XL Enclosure add-on, otherwise skip to the **Belt release**
- Disconnect the FAN and LED cables from the board by **pressing the safety latch**.
- Unplug the PE faston from the connection box.

STEP 8 Optional: Front side releasing



- From the front side of the enclosure:
- Open the lid.
- Remove the M4x8r screw using a 2.5mm Allen key.
- Remove the M4x8r screw using a 2.5mm Allen key.

STEP 9 Optional: Rear side releasing



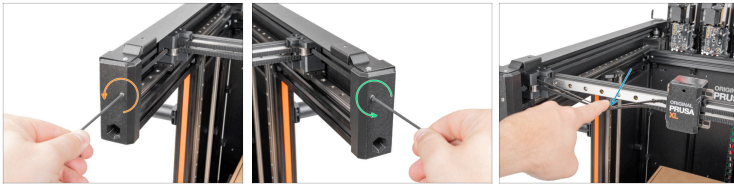
- From the rear side of the printer:
- Remove the M4x8r screw using a 2.5mm Allen key.
- Remove the M4x8r screw using a 2.5mm Allen key.

STEP 10 Optional: Enclosure removing



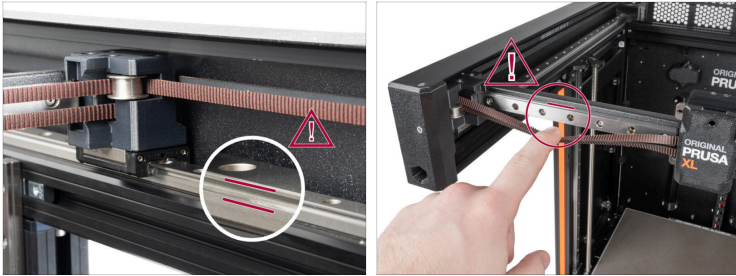
- Grasp the Enclosure on the front where is the support plate.
- Grasp the Enclosure on the back of where is the filtration cover.
- 1. Push the enclosure to the back of the printer.
- 2. Remove the Enclosure from the printer and place it on a flat surface.

STEP 11 Belt releasing



- On the front side of the printer:
- Using a 2.5mm Allen key, release the M3 screw holding the left CoreXY tensioner. **Do not remove the screw completely.**
- Using a 2.5mm Allen key, release the M3 screw holding the right CoreXY tensioner. **Do not remove the screw completely.**
- Gently tension the belt with your finger. If the belt has a similar degree of looseness as shown in the picture, proceed to the next step.

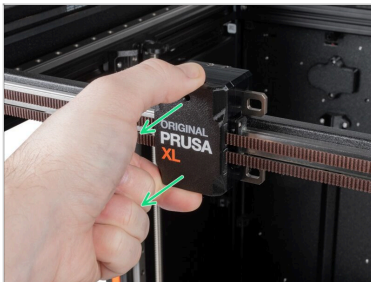
STEP 12 CAUTION: Lubricant Handling



⚠ 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.

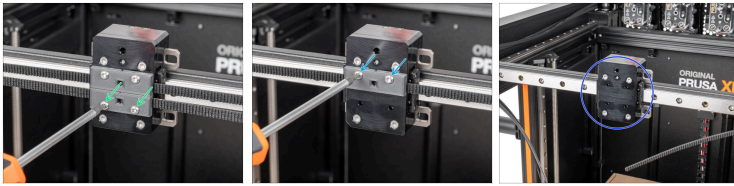
- ◆ Lubricant accumulates mainly in the linear rail channels on the linear sides.

STEP 13 X-carriage cover removing



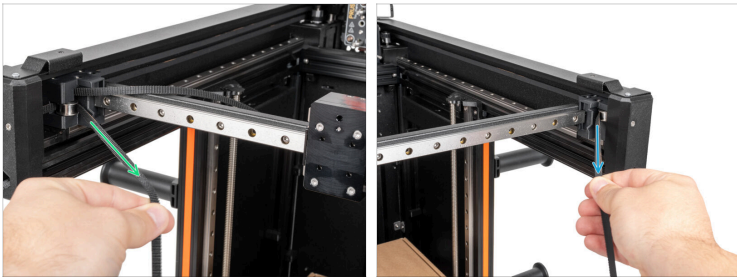
- ◆ Remove the X-carriage cover. **Don't throw the part away!**
- ⓘ The cover snaps onto the X-carriage. It is easily removable by hand.

STEP 14 Belt clamps removing



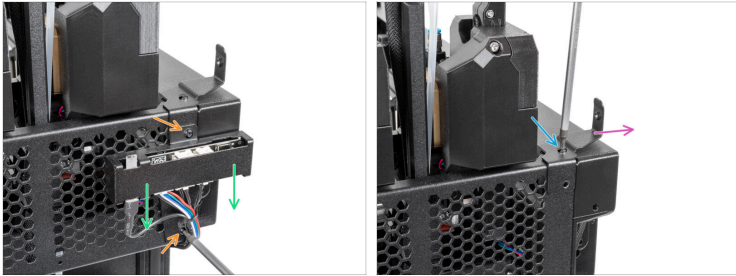
- i** The color of the belt-clamps may be different depending on if you have an Original Prusa XL Enclosure. **The procedure is the same, please continue.**
- ◆** Using the T10 Torx screwdriver, remove two M3x12rT screws holding the lower belt-clamp. Remove the belt-clamp. **Do not throw the parts away!**
- ◆** Using the T10 Torx screwdriver, remove two M3x12rT screws holding the upper belt-clamp. Remove the belt-clamp. **Do not throw the parts away!**
- ◆** With the belt-clamps removed, proceed to the next step.

STEP 15 Belts removing



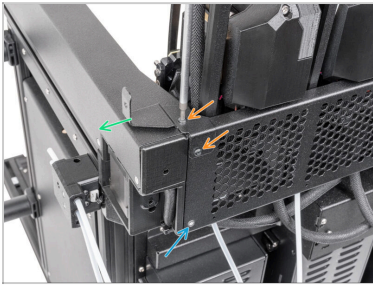
- ◆ Grasp the **bottom belt** on the **left side** of the CoreXY and pull the belt out of the printer.
- ◆ Grasp the **upper belt** on the **right side** of the CoreXY and pull the belt out of the printer.
- ◆ Throw old belts away!

STEP 16 Optional: Connection box removing



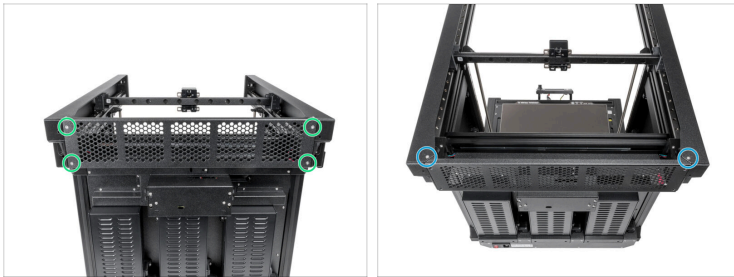
- On the rear side of the printer:
- ① If you don't have the Original Prusa XL Enclosure, please jump to **CoreXY releasing**
- Remove two M3x10rT screws using a T10 Torx screwdriver. **Don't throw the parts away!**
- Leave the connection box hanging freely on the cables.
- Remove the remaining M3x10rT screw using a T10 Torx screwdriver. **Don't throw the parts away!**
- Remove the fixing bracket rear left. **Don't throw the parts away!**

STEP 17 Optional: Rear right releasing



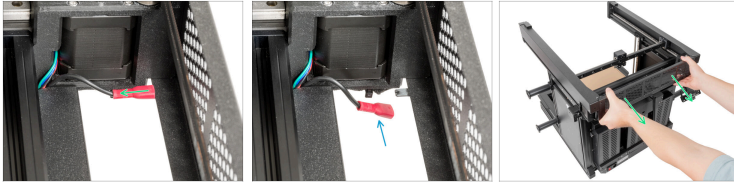
- Remove two M3x8bT screws using a T10 Torx screwdriver. **Don't throw the parts away!**
- Remove the fixing bracket rear left. **Don't throw the parts away!**
- Remove the M3x6bT using a T10 Torx screwdriver. **Don't throw the parts away!**
- ⓘ From now on, we will demonstrate belt replacement on the printer without the Nextruders for better visibility. **Please note, do not remove the Nextruders from your printer.** The printer in the pictures will be shown without Nextruders for improved visualization for the customers.
- Continue to the step **CoreXY cover removing**

STEP 18 CoreXY cover releasing



- i** From now on, we will demonstrate belt replacement on the printer without the Nextruders for better visibility. **Please note, do not remove the Nextruders from your printer.** The printer in the pictures will be shown without Nextruders for improved visualization for the customers.
- ◆** Using the T10 Torx screwdriver, remove four M3x6bT screws holding the CoreXY cover. **Do not throw the screws away!**
- ◆** Using the T10 Torx screwdriver, remove two M3x6bT screws holding the CoreXY cover. **Do not throw the screws away!**

STEP 19 CoreXY cover removing



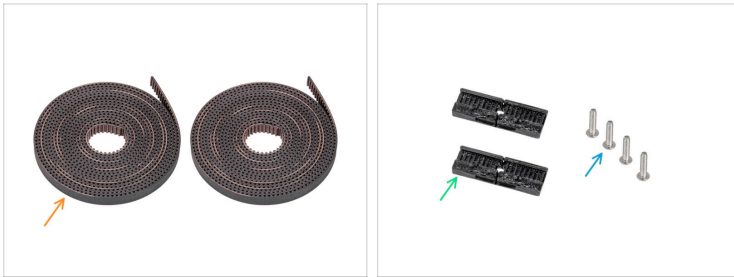
- ◆ On the inner side of the CoreXY cover, unplug the PE connector.
- ◆ Leave the PE connector free.
- ◆ Gently remove the CoreXY cover from the printer.
Do not throw the part away!

STEP 20 Belt attaching: important information



- ⚠ It is important to attach the belts correctly to the printer. Do not rush.
- ◆ Always Compare pictures with your printer.
- ⚠ Make sure, that no belt is twisted.

STEP 21 Belts attaching: parts preparation



i The color of the belt-clamps may be different depending on if you have an Original Prusa XL Enclosure. **The procedure is the same, please continue.**

■ For the following steps, please prepare:

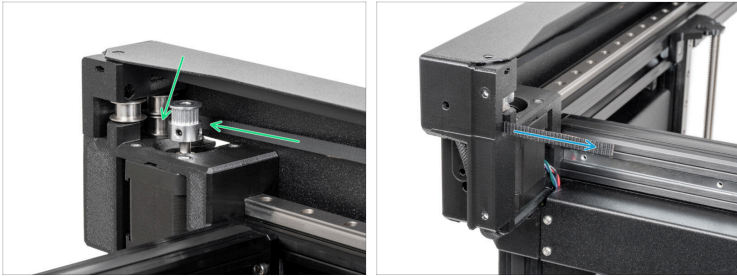
- New XY belts (2x)
- XL-belt-clamp (2x) *removed in previous steps*
- M3x12rT screws (4x) *removed in previous steps*

STEP 22 Lower belt attaching: right front side



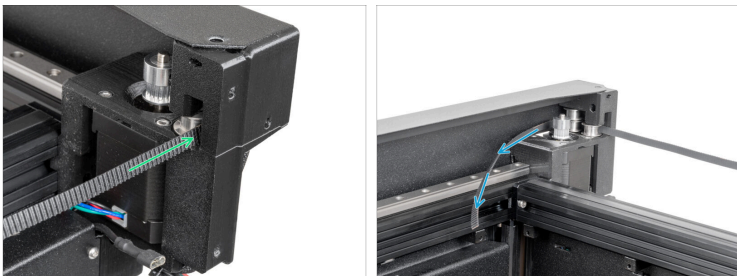
- ◆ From the front side of the printer:
- ◆ Take one of the belts.
- ◆ Insert the one end of the belt into the front lower section of the Y-carriage-right-base.
- ◆ The belt has to be facing toward the printer with the teeth showing (not the smooth side of the belt).
- ⓘ Double check, that you have the teeth showing side facing towards the machine.
- ◆ On the inner side of the Y-carriage-right-base pull the the belt.
- ⚠ **Don't pull the belt too much, it can fall out from the Y-carriage-right-base and the whole process of the belt attaching has to be repeated from the start.**

STEP 23 Lower belt attaching: right rear side



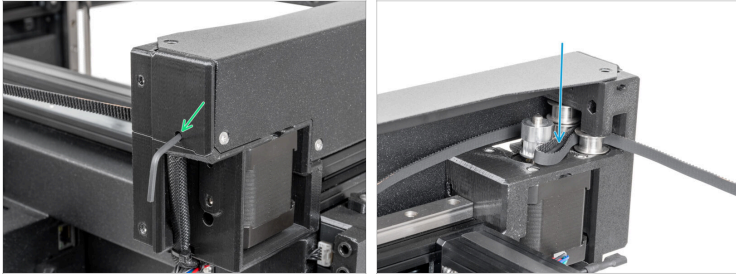
- ◆ Pull the belt some more and insert it behind the lower pulley.
- ◆ Pull the belt, which is now inserted through the lower pulley.

STEP 24 Lower belt attaching: left rear side



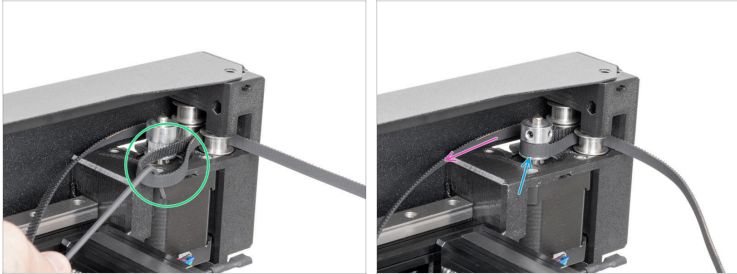
- ◆ Pull the belt some more and insert it behind the lower pulleys.
- ◆ Pull the belt, which is now inserted through the lower pulleys.

STEP 25 Lower belt attaching: motor pulley belt preparing



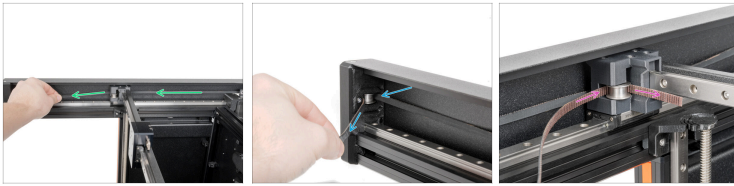
- From the rear side of the printer:
- Insert the 2.5 mm Allen key through the hole to create a loop on the belt.
- When the loop is created, you can remove the Allen key. **Do not pull the belt!**

STEP 26 Lower belt attaching: motor pulley belt securing



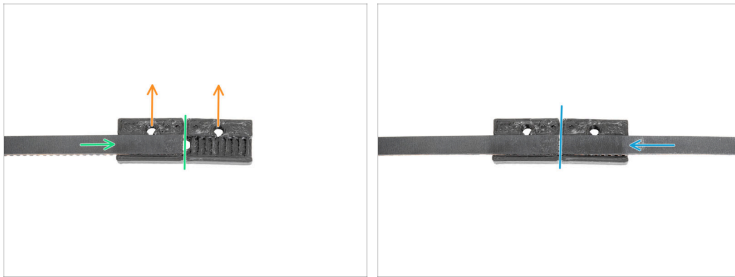
- From the front side of the printer:
- Using a shorter side of the 2.5 mm Allen key, pull gently the belt to create larger loop.
- Attach the loop on the motor pulley.
- Pull the belt to secure its position on the pulley.

STEP 27 Lower belt attaching: left side



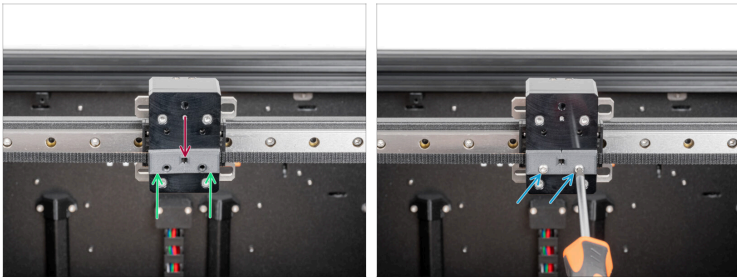
- i** When you pull on the belt you will feel more resistance from the XY motor, that's perfectly fine.
- ◆** Pull the belt some more and guide it behind the Y-carriage-left-base.
- ◆** Wrap the belt around the pulley on the front left side.
- ◆** Wrap the belt around the pulley in the Y-carriage-left-base.

STEP 28 Lower belt attaching: belt clamp



- i** The color of the belt-clamps may be different depending on if you have an Original Prusa XL Enclosure. The procedure is the same, please continue.
- i** This image has been taken outside the printer on a white background for better visibility and definition. Follow this step on your printer.
- ◆** Prepare one belt-clamp facing with the holes for the screws facing up.
- ◆** Attach the left end of the belt to the belt-clamp. The end of the belt must be on half of the belt-clamp.
- ◆** Attach the right end of the belt to the belt-clamp. The end of the belt must be on half of the belt-clamp.
- i** The belt-clamp with the belts will be turned by 180° and attached to the X-carriage.

STEP 29 Lower belt attaching: belt clamp securing



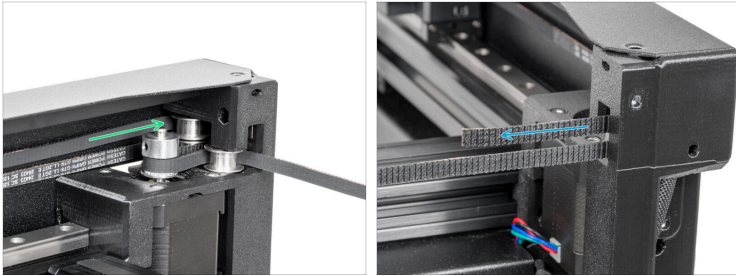
- ◆ Turn the prepared belt-clamp by 180° and attach the belt-clamp with the belts on the X-carriage.
- ◆ Check the belts if they are in their position. If not repair the position by the previous step.
- ◆ Insert two M3x12rT screws and secure them using a T10 Torx screwdriver.
- ◆ Well done! One of the belts is fastened. Let's try the second one.

STEP 30 Upper belt attaching: left front side



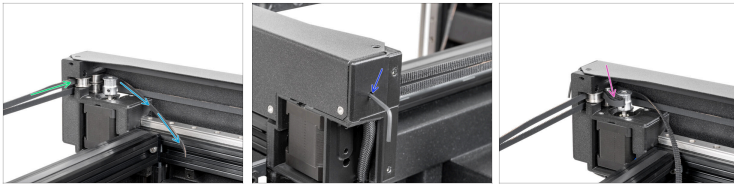
- ◆ From the front side of the printer:
- ◆ Take the second belt.
- ◆ Insert the one end of the belt into the front upper section of the Y-carriage-left-base.
- ◆ The belt has to be facing toward the printer with the teeth showing (not the smooth side of the belt).
- ⓘ Double check, that you have the teeth showing side facing towards the machine.
- ◆ On the inner side of the Y-carriage-left-base pull the belt.
- ⓘ Don't pull the belt too much, it can fall out from the Y-carriage-left-base and the whole process of the belt attaching has to be repeated from the start.

STEP 31 Upper belt attaching: left rear side



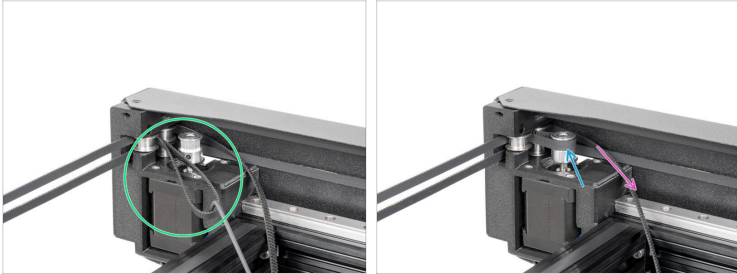
- ◆ Pull the belt more and insert it behind the upper pulley.
- ◆ Pull the belt, which is now inserted through the upper belt pulley.

STEP 32 Upper belt attaching: right rear side



- i** *Hint: For the simplest possible assembly, remove the fifth Nextruder (**for Five-head users only**) and place it on top of the box on the heating heatbed.*
- ◆** Pull the belt more and insert it behind the upper pulleys.
- ◆** Pull the belt, which is now inserted through the upper pulleys.
- ◆** From the rear side of the printer:
- ◆** Insert the 2.5 mm Allen key through the hole to create a loop on the belt.
- ◆** When the loop is created, you can remove the Allen key. Do not pull the belt!
- ◆** Proceed to the next step.

STEP 33 Upper belt attaching: motor pulley belt securing



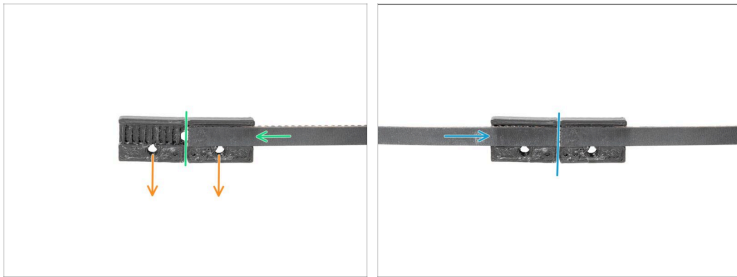
- From the front side of the printer:
- Using a shorter side of the 2.5 mm Allen key, pull gently the belt to create larger loop.
- Attach the loop on the motor pulley.
- Pull the belt to secure its position on the pulley.

STEP 34 Upper belt attaching: right side



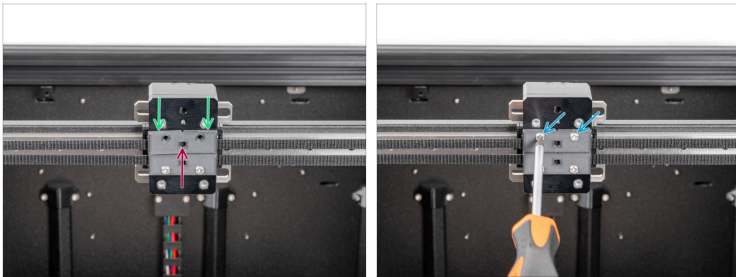
- i** When you pull on the belt you will feel more resistance from the XY motor, that's perfectly fine.
- ◆** Pull more the belt and stretch the belt behind the Y-carriage-right-base.
- ◆** Pull the belt around the pulley on the right front side.
- ◆** Pull the belt around the pulley in the Y-carriage-right-base.

STEP 35 Upper belt attaching: belt clamp



- i** The color of the belt-clamps may be different depending on if you have an Original Prusa XL Enclosure. The procedure is the same, please continue.
- i** This image has been taken outside the printer on a white background for better visibility and definition. Follow this step on your printer.
- Prepare one belt-clamp facing with the holes for the screws facing down.
- Attach the right end of the belt to the belt-clamp. The end of the belt must be on half of the belt-clamp.
- Attach the left end of the belt to the belt-clamp. The end of the belt must be on half of the belt-clamp.
- i** The belt-clamp with the belts will be turned by 180° and attached to the X-carriage.

STEP 36 Lover belt attaching: belt clamp securing



- ◆ Turn the prepared belt-clamp by 180° and attach the belt-clamp with the belts on the X-carriage.
- ◆ Check the belts if they are in their position. If not repair the position by the previous step.
- ◆ Insert two M3x12rT screws and secure them using a T10 Torx screwdriver.
- ◆ Well done! Both of the belts are fastened.

STEP 37 Belt tensioning



- On the front side of the printer:
- Using a 2.5mm Allen key, slightly tighten the M3 screw holding the left CoreXY tensioner.
- Using a 2.5mm Allen key, slightly tighten the M3 screw holding the right CoreXY tensioner.
- Do not fully tension the belt, proceed to the next step, where is a video about the adjusting of the belts tension.

STEP 38 Belt tensioning: video

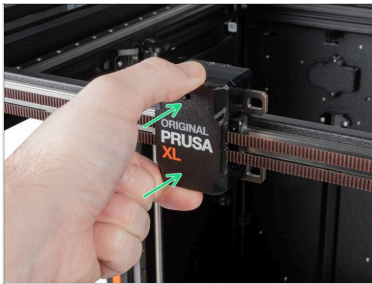
- On the Original Prusa XL, adjusting the belt to the optimal tension is crucial to achieving good quality on the prints. A loose belt can cause Layer shifting, Ghosting, or other print abnormalities, like getting an irregular shape instead of a perfect circle. An over-tightened belt can cause an irregular 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 39 X-carriage cover: parts preparation



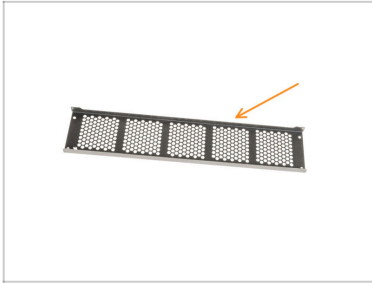
- For the following steps, please prepare:
- X-carriage-cover (1x)

STEP 40 X-carriage cover attaching



- Attach the X-carriage cover.

STEP 41 Core XY cover: parts preparation



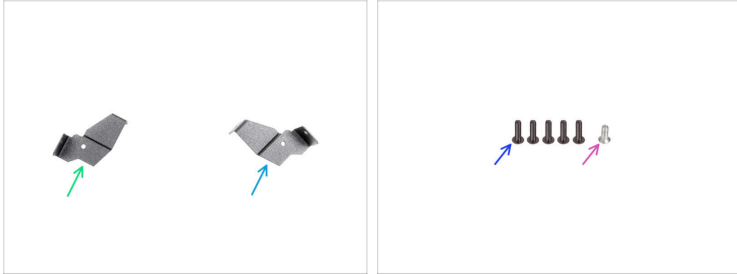
- For the next step, please prepare:
- CoreXY cover (1x)

STEP 42 CoreXY cover attaching



- Gently attach the CoreXY cover on the back of the CoreXY.
- On the inner side of the CoreXY cover, connect the PE connector.

STEP 43 Optional: Fixing brackets: parts preparation

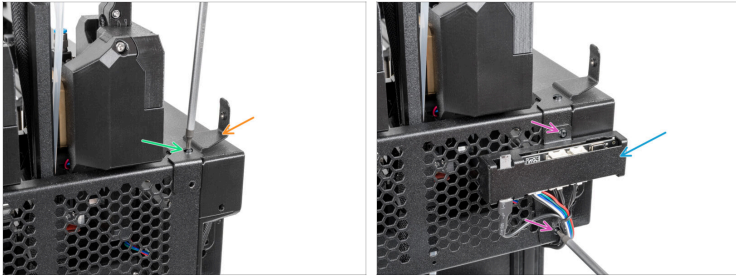


i The next steps are for users who have an Original Prusa XL Enclosure add-on, otherwise skip to the **CoreXY securing: parts preparation**

■ For the next steps, please prepare:

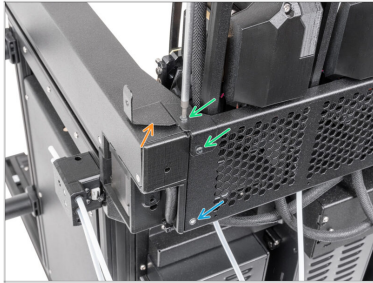
- Fixing bracket back left (1x)
- Fixing bracket back right (1x)
- M3x10rT screw (5x)
- M3x6bT (1x)

STEP 44 Optional: Rear left securing



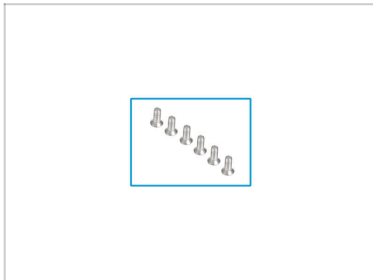
- Turn the printer so the rear side is facing you.
- Attach the fixing bracket rear left.
- Secure the fixing bracket rear left with the M3x10rT screw.
- Gently attach the XL enclosure board assembly.
Don't pinch any cable!
- Secure the XL enclosure board assembly with two M3x10rT screws.

STEP 45 Optional: Rear right securing



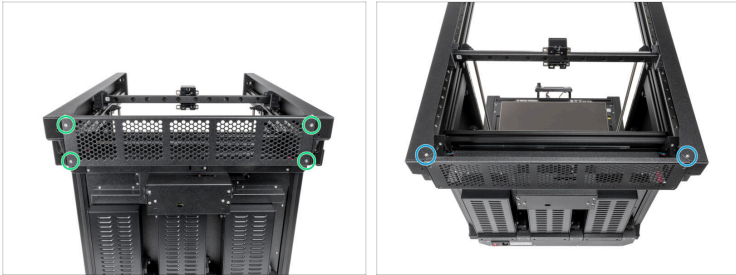
- Attach the fixing bracket rear left.
- Secure the fixing bracket rear left with two M3x10rT screws.
- Secure the M3x6bT screw using a T10 Torx screwdriver.

STEP 46 Core XY securing: parts preparation



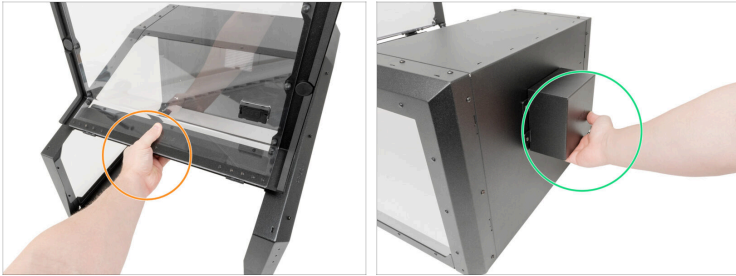
- **For the following steps, please prepare:**
- M3x6bT screws (6x) *removed in previous steps*

STEP 47 CoreXY cover securing



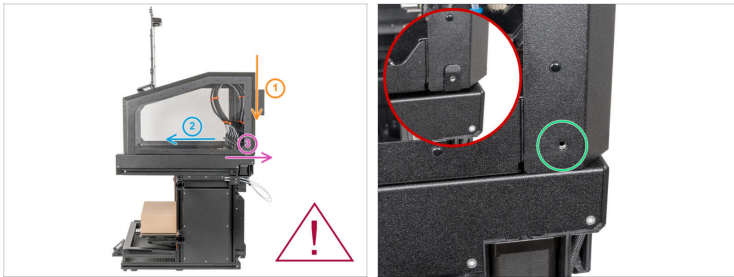
- ◆ Insert four M3x6bT screws and tighten them using a T10 Torx screwdriver.
- ◆ Insert two M3x6bT screws and tighten them using a T10 Torx screwdriver.
- ◆ If you have an Original Prusa XL Enclosure, please proceed to the next step. Otherwise proceed to the **Installing the Wi-Fi antenna**.


STEP 48 Optional: 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 49 Optional: Enclosure attaching




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

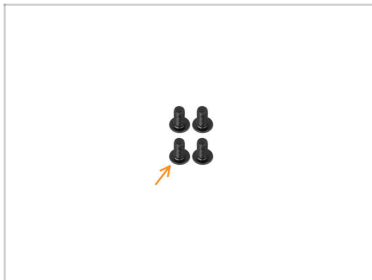
 **Don't pinch any Enclosure cable. Watch out for cables!**


 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.

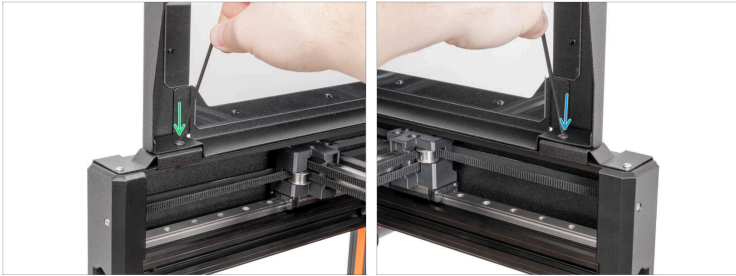
STEP 50 Optional: Enclosure securing: parts preparation




 **For the next steps, please prepare:**

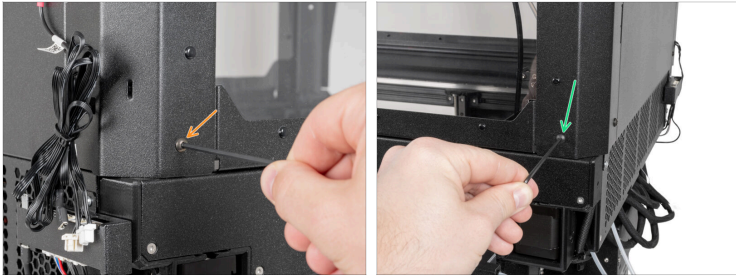
 M4x8r screw (4x)

STEP 51 Optional: Front side securing



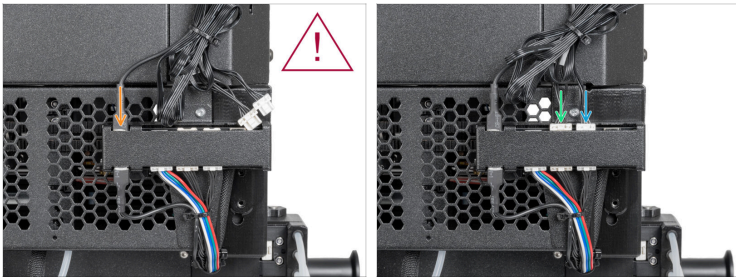
- From the front side of the enclosure:
 - Secure the left bottom corner with an M4x8r screw to the fixing-bracket-front-left using a 2.5mm Allen key.
 - Secure the right bottom corner with an M4x8r screw to the fixing-bracket-front-right using a 2.5mm Allen key.
-  **Close the lid.** This prevents the lid from closing by gravity during handling.

STEP 52 Optional: Rear side securing



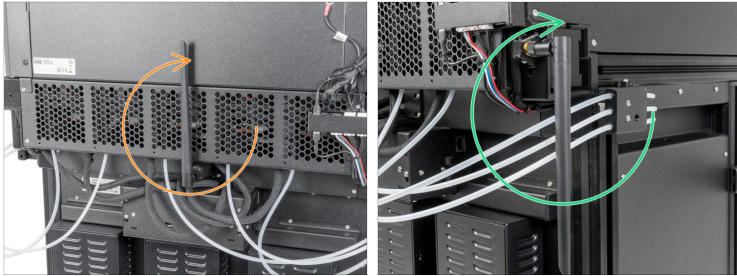
- From the rear side of the printer:
- Secure the left bottom corner with an M4x8r screw to the fixing-bracket-back-right using a 2.5mm Allen key.
- Secure the left bottom corner with an M4x8r screw to the fixing-bracket-back-left using a 2.5mm Allen key.

STEP 53 Optional: Enclosure cables connecting



- Attach the PE faston to the connection box.
- ⚠ **Fully secure the PE cable to the XL Enclosure board cover.**
- Take the LED cable (5 wires) and connect the end of the cable to the left connector on the FDM XL Enclosure splitter.
- Take the fan cable (4 wires) and connect the end of the cable to the right connector on the FDM XL Enclosure splitter.

STEP 54 Rotating the Wi-Fi antenna



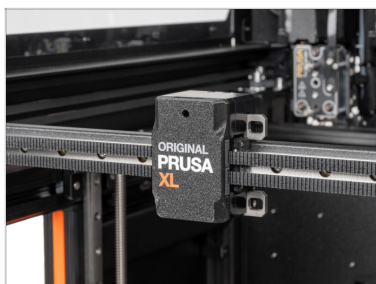
- Wi-Fi antenna on the back of the printer:
 - Turn the back antenna upwards.
- Wi-Fi antenna on the side of the printer:
 - Turn the side antenna upwards.

STEP 55 Printer connecting



- Turn the power switch ON (symbol "I").
- From the rear side of the printer, plug the PSU cable.

STEP 56 The job is done!



- ◆ Well done! You've replaced the XY belts on your Original Prusa XL.
