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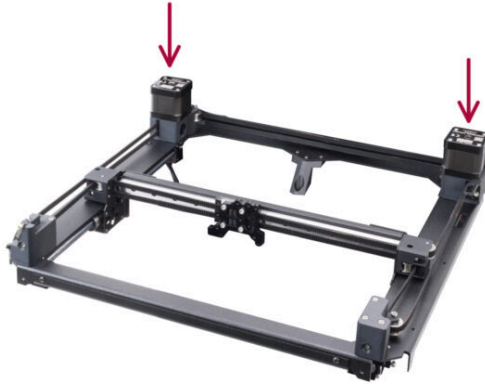
How to replace X and Y Motors (CORE One) ..

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How to replace X and Y Motors (CORE One)



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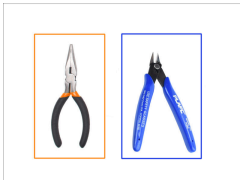
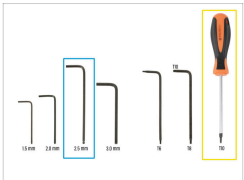


STEP 1 Introduction



- ◆ This guide will take you through the **X and Y motors** replacement on the Prusa CORE One.
- ◆ Spare parts are available in our eshop prusa3d.com.
- 📌 Note that you have to be logged in to have access to the spare parts section.

STEP 2 Tools Required



- ◆ **Please prepare tools for this guide:**
 - ◆ 2.5mm Allen key
 - ◆ T10 Torx key / screwdriver
 - ◆ Needle-nose pliers
 - ◆ Flush cutters are recommended as an optional tool.
- ◆ Prusa lubricant or another suitable grease (available in e-shop)

STEP 3 Printer Preparation 1



- ⚠ Before you begin, make sure the **printer has cooled down** to ambient temperature.
- 🔵 On the printer, visit the menu **Control** and trigger the **Auto Home**.
- 🟠 Go to **Control > Move Axis > Move Z** and enter a value around 200 mm
- 🟢 Lower the heatbed so it is easily reachable from the top, while still leaving enough clearance underneath.

STEP 4 Printer Preparation 2



- 🟢 Turn the printer off using the switch on the back.
- 🟡 Disconnect the printer from power.
- 🟠 Remove the steel sheet, in case it's still in place.

STEP 5 Top Cover Removal



- Open the printer. From the inside, reach for the nylon rivet on the front left of the top cover. Push it out to unlock it.
- Then, remove the rivet from the outside.
- Remove the remaining nylon rivets on the top cover using the same technique.
- Remove the top cover.

STEP 6 L Side Cover Removal



- Remove the five Nylon rivets holding the plastic side cover.
- We recommend using flush cutters to gently lift the top part of the rivet, unlocking it. Then, remove the bottom part of the rivet.
- Remove the plastic side cover.

STEP 7 L Side Panel Removal



- Remove the marked Nylon rivets holding the Side Sheet Metal Panel.
- Remove the panel.

STEP 8 Back Cover Removal 1



- On the inside of the printer, remove the two screws holding the back cover.
- On the back of the printer, slide the center cover downwards.
 - If it's difficult to move, use a screwdriver as a lever through the opening to assist.
- Ensure the four hooks on top of the cover have disengaged from the metal chassis.

STEP 9 Back Cover Removal 2



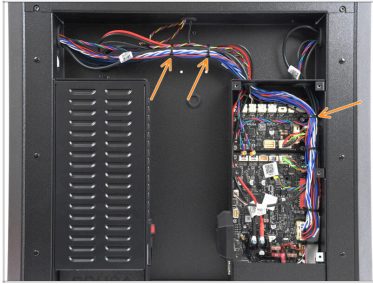
- Move the cover slightly towards the back.
- Pull the bottom part of the cover outward while tilting the top toward the printer. This will unhook it from the cable bundle behind.

STEP 10 xBuddy Cover Removal




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

STEP 11 Cable bundle Disassembly



- On the back of the printer, carefully cut off the marked zip-ties holding the cable bundles.

 Proceed extremely carefully to avoid damaging any cables.

STEP 12 Y Motor (Right) Disconnecting



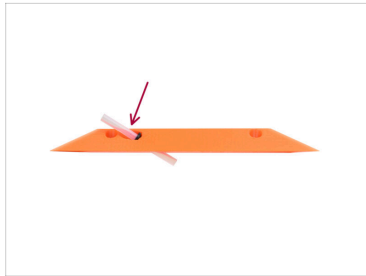
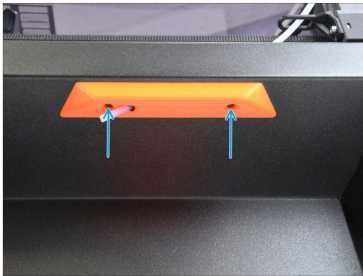
- ⚠ First, we will be replacing the **motor on the right side** (when viewed from the printer's front)
- ⓘ Although a given motor drives both the X and Y axes in the Core-XY configuration, the one on the right side is **labeled as "Y"** on the printer.
- 🟡 Disconnect the Y-motor cable from the xBuddy board.
- 📌 There is a safety latch on the connector, which must be pressed in, in order to disconnect it.
- 🟠 Guide the Y-motor cable out of the xBuddy box and let it hang freely, for now.

STEP 13 R Side Cover Removal



- Let's move onto the right side of the printer.
- Remove the five Nylon rivets holding the plastic side cover.
- Remove the plastic side cover.

STEP 14 Side Handle Removal




- Using the T10 Torx key, remove both screws from the handle.
- Remove the handle together with the short PTFE tube. Leave the tube inserted, for now.

STEP 15 R Side Panel Removal

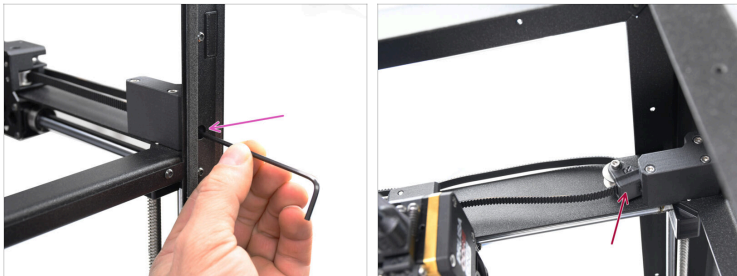


- Remove 11 Nylon rivets holding the sheet metal side panel.

 Proceed carefully to avoid cutting the rivet into pieces.

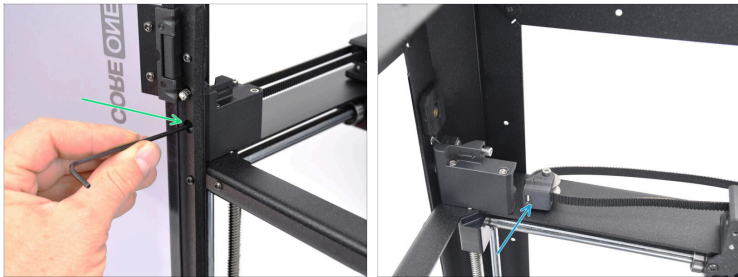
- Remove the side panel from the printer.

STEP 16 Belts Loosening 1



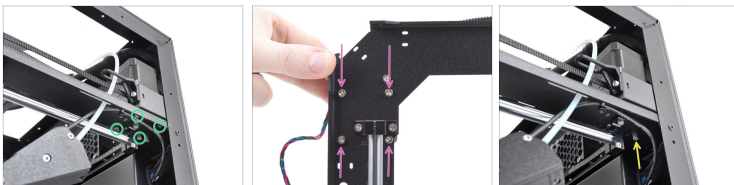
- On the front right side of the printer, fully loosen the belt tensioning screw.
- Keep loosening the screw until the pulley assembly disengages from the tensioner part.

STEP 17 Belt Loosening 2



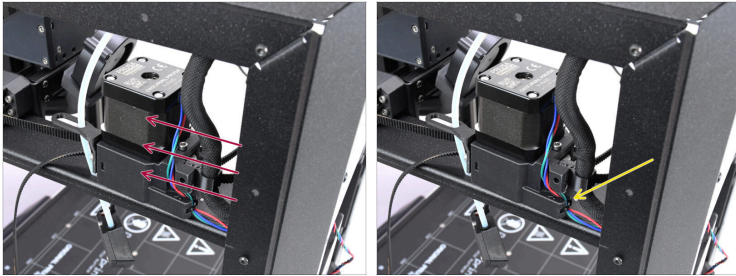
- On the front left side of the printer, fully loosen the belt tensioning screw.
- Keep loosening the screw until the pulley assembly disengages from the tensioner part.

STEP 18 Y Motor Assembly Removal



- On the right side of the printer, remove the four marked M3x35 screws holding the motor.
- These screws can be identified from below by their square pattern.
- Remove the M3x10 screw holding the motor assembly.

STEP 19 Y Motor Removal



- ◆ Move the motor assembly towards the front.
 - ⓘ Make some space at the back to access the cable. Proceed carefully to avoid damaging any cables.
- ◆ Carefully cut off the zip-tie holding the motor cable to the motor assembly.
 - ⚠ Proceed extremely carefully to avoid damaging the cable, as this spot is tight with limited space behind it!

STEP 20 Y Motor Removal 2



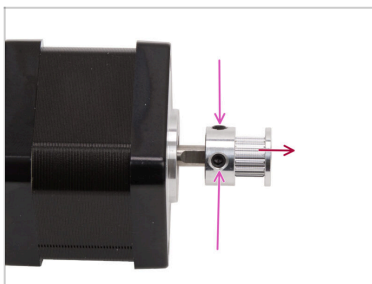
- Lift the motor from the plastic assembly, in order to remove it.



Note that the belt is still wrapped around the motor pulley. Proceed carefully to disengage the motor, keeping the belt in its original shape to simplify reinstallation later.

- Guide the motor cable out of the rear plate.
- Guide the motor cable upward, behind the XY assembly. Then, remove it from the printer entirely.

STEP 21 Y Pulley Removal



- Using the 2mm Allen key, loosen the two grub screws on the motor pulley.
- Remove the pulley from the motor and save it for later use.

STEP 22 Y Motor Preparation



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

⬛ **Y-motor (1x)**

⬛ **Assembly-multi-tool (1x) *Supplied with the printer kit.***

⬛ **Zip-tie (1x)**

STEP 23 Y Pulley Installation



- Note the flat part on the motor shaft. Rotate the motor shaft with the flat part facing you.
 - ⚠ Slide the Pulley on, and **note the CORRECT orientation**. The Y-axis pulley orientation is **DIFFERENT** from the X-axis. Make sure the pulley teeth face away from the motor. Use the wider hook on the assembly tool.
- Using the hook on the Assembly-multi-tool, place the thicker curved part between the pulley and the motor.
 - 📌 Do not try to hook it around the shaft. Just rest the tool against the motor and make sure the hook tip slides between the motor and the pulley.
- Push the pulley towards the tool and firmly tighten one of the screws against the flat part on the shaft.
- Rotate the pulley and firmly tighten the second grub screw.
- ⚠ **Double-check the pulley orientation. The teeth must face away from the motor.**

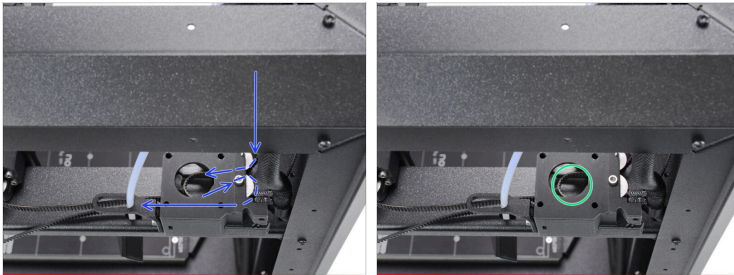
STEP 24 XY belts INFO



- i** The next steps cover the motor installation where belt guidance is an integral part of the work. Before starting, refer to the illustration for an overview and better understanding of each belt's path.

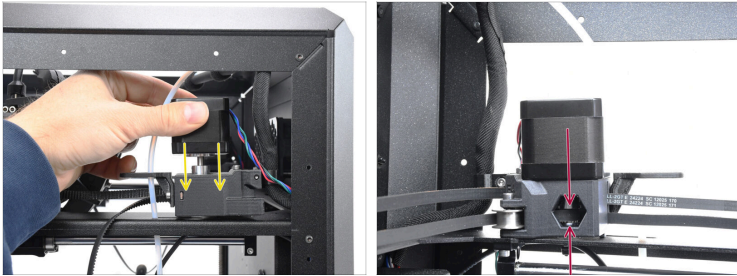
- ◆ Y-motor belt is at the **bottom position**.

STEP 25 Y Motor Belt Preparation



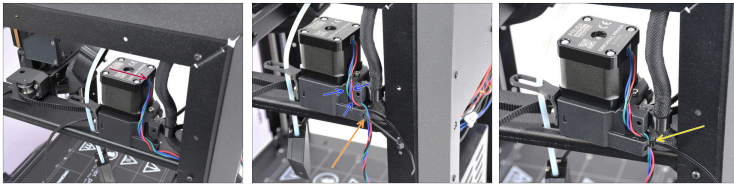
- ◆ Arrange the belt inside the plastic part as shown in the diagram.
- ◆ Create a loop on the inside where the motor pulley will be inserted.

STEP 26 Y Motor Installation



- ✦ Insert the Y motor into the motor assembly so that the belt wraps around the pulley.
- ✦ Check through the inspection window on the inside of the printer, that the belt has wrapped properly around the pulley.

STEP 27 Y Motor Installation 2



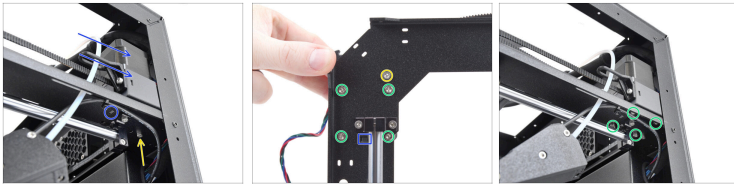
- ◆ Orient the motor so that its cable is pointing to the back of the printer.
- ◆ Guide the cable through the dedicated channel on the side of the plastic part.
- ◆ Insert a zip tie into the opening on the back of the plastic part.
- ◆ Secure the cable with a zip tie, but do not overtighten it—the cable should still be able to move slightly behind it.
- ◆ Carefully trim the excess zip tie and position the knot toward the inside of the printer to prevent it from obstructing part placement.

STEP 28 Y Motor Installation 3



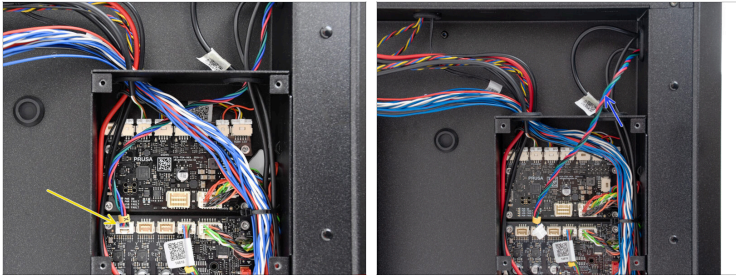
- ◆ Guide the motor cable through the dedicated opening, towards the back of the printer.

STEP 29 Y Motor Installation 4



- ◆ Move the motor assembly back into its original position, until the small protruding tab aligns with the opening in the Core-XY assembly.
- ◆ Fix the assembly in place using the M3x10 screw in the outermost hole.
- ⚠ **Make sure the assembly is well seated, no cable is getting pinched.**
- ◆ Secure the assembly together using the four M3x35 screws.

STEP 30 X Motor (Left) Disconnecting



 Next, we will be replacing the **motor on the left side**. (when viewed from the printer's front)

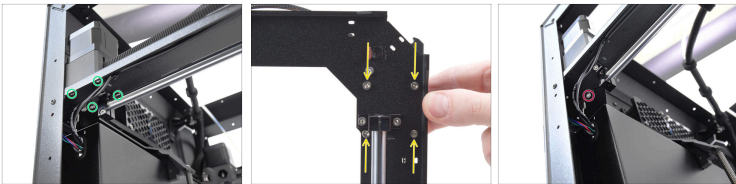
- Disconnect the X motor cable from the xBuddy board.



There is a safety latch on the connector, which must be pressed in, in order to disconnect it.

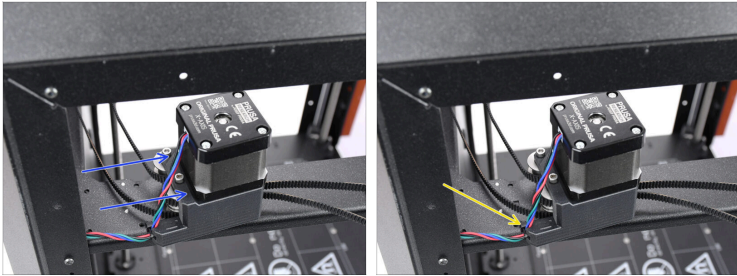
- Guide the X motor cable out of the xBuddy box and let it hang freely, for now.

STEP 31 X Motor Assembly Removal



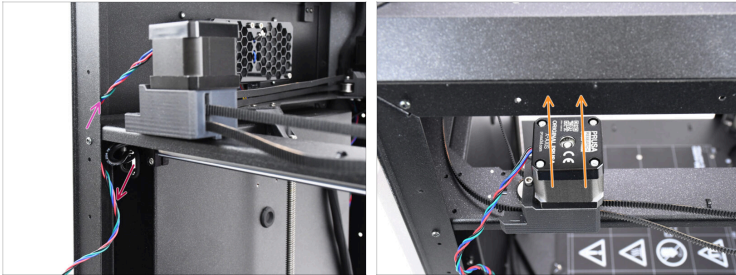
- On the left side of the printer, remove the four marked M3x35 screws holding the motor.
- These screws can be identified from below by their square pattern.
- Remove the M3x10 screw holding the motor assembly.

STEP 32 X Motor Removal



- ◆ Move the motor assembly towards the front.
 - ⓘ We need to make some space at the back to work with the cable; proceed carefully to avoid damaging any of the cables.
- ◆ Carefully cut off the zip-tie holding the motor cable to the motor assembly.
 - ⚠ **Proceed extremely carefully to avoid damaging the cable, as this spot is tight with limited space behind it!**

STEP 33 X Motor Removal 2

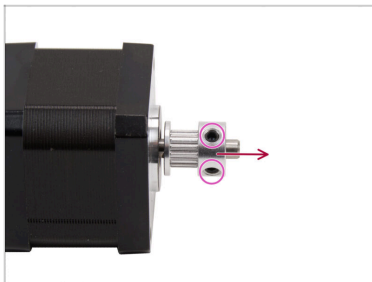


- Guide the motor cable out of the rear plate.
- Guide the motor cable upward, behind the XY assembly. Then, remove it from the printer entirely.
- Lift the motor from the plastic assembly, in order to remove it.



Note that the belt is still wrapped around the motor pulley. Proceed carefully to disengage the motor, keeping the belt in its original shape to simplify reinstallation later.

STEP 34 X Pulley Removal



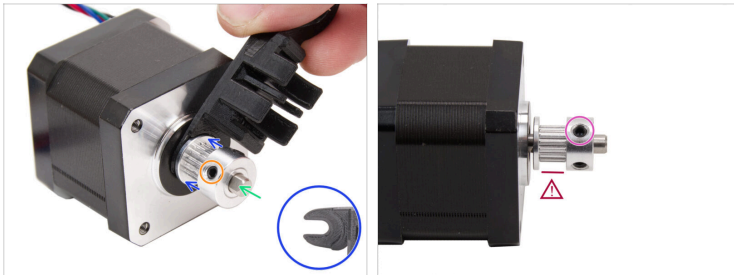
- Using the 2mm Allen key, loosen the two grub screws on the motor pulley.
- Remove the pulley from the motor and save it for later use.

STEP 35 X Motor Preparation



- For the following steps, please prepare:
- X motor (1x)
 - Zip-tie (1x)

STEP 36 X Pulley Installation



- ◆ Note the flat part on the motor shaft.
- ⚠ Slide the Pulley on, **note the CORRECT orientation.**
- ◆ Rotate the motor shaft with the flat part facing you.
- ◆ Using the fork on the Assembly-multi-tool set a gap between the pulley and the motor.
- ◆ Push the pulley toward the tool and firmly tighten the screw against the flat part on the shaft.
- ◆ Tighten the other screw on the pulley.
- ⚠ **Double-check the pulley orientation. The toothed side of the pulley must be on the motor side.**

STEP 37 XY belts INFO

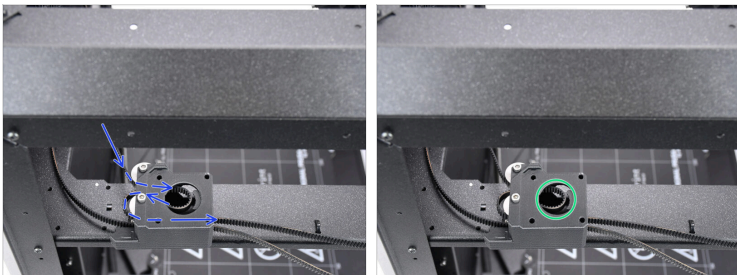


i The next steps cover the motor installation where belt guidance is an integral part of the work.

Before starting, refer to the illustration for an overview and better understanding of each belt's path.

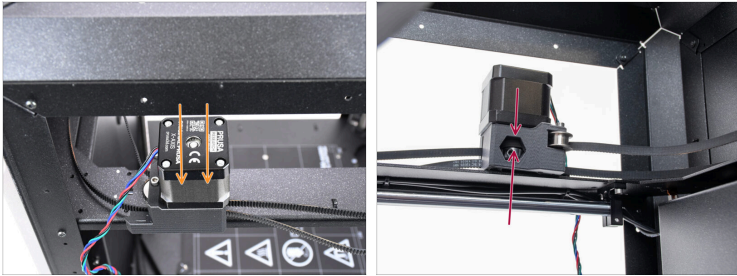
◆ X-motor belt is at the **top position**.

STEP 38 X Motor Belt Preparation



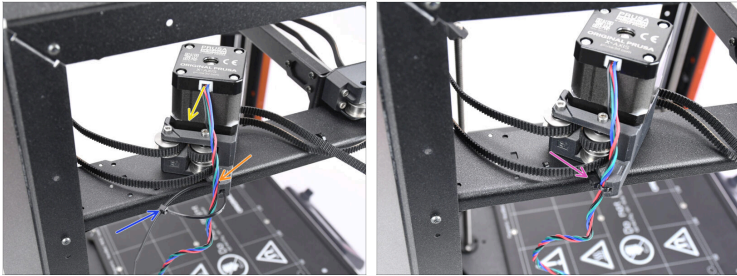
- ◆** Arrange the belt inside the plastic part as shown in the diagram.
- ◆** Create a loop on the inside where the motor pulley will be inserted.

STEP 39 X Motor Installation



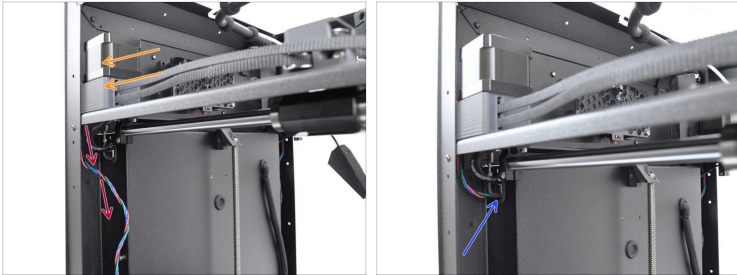
- ✦ Insert the X motor into the motor assembly so that the belt wraps around the pulley.
- ✦ Check through the inspection window on the inside of the printer, that the belt has wrapped properly around the pulley.

STEP 40 X Motor Installation 2



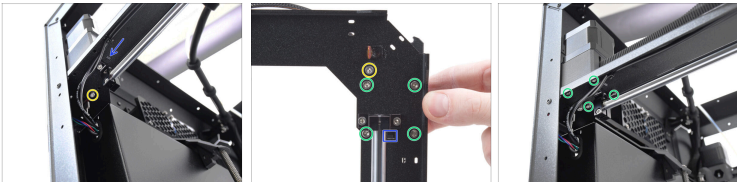
- Orient the motor so that its cable is pointing to the back of the plastic part / back of the printer.
- Guide the cable around the dedicated channel on the back of the plastic part.
- Secure the cable with a zip tie, but do not overtighten it—the cable should still be able to move slightly behind it.
- Carefully trim the excess zip tie and position the knot toward the inside of the printer to prevent it from interfering with the printer frame later on.

STEP 41 Y Motor Installation 3



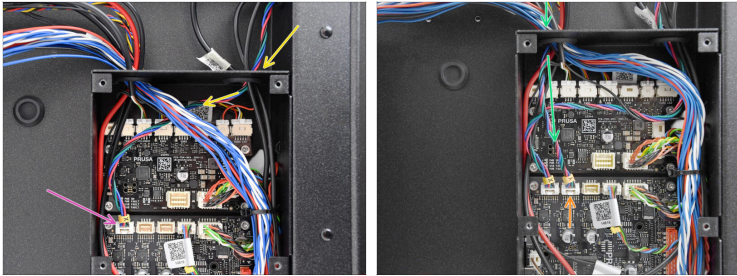
- ◆ Guide the motor cable through the corner opening, down behind the Core-XY assembly frame.
- ◆ Move the motor assembly back.
- ◆ Guide the cable through the dedicated opening, towards the back of the printer.

STEP 42 Y Motor Installation 4



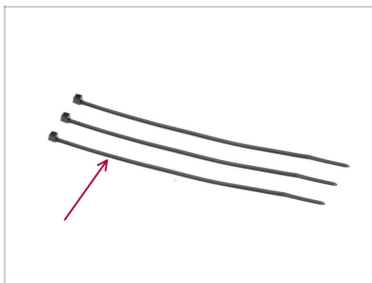
- ◆ Move the motor assembly back into its original position, until the small protruding tab aligns with the opening in the Core-XY assembly.
- ◆ Fix the assembly in place using the M3x10 screw in the outermost hole.
- ⚠ **Make sure the assembly is well seated, no cable is getting pinched.**
- ◆ Secure the assembly together using the four M3x35 screws.

STEP 43 Motors Connection



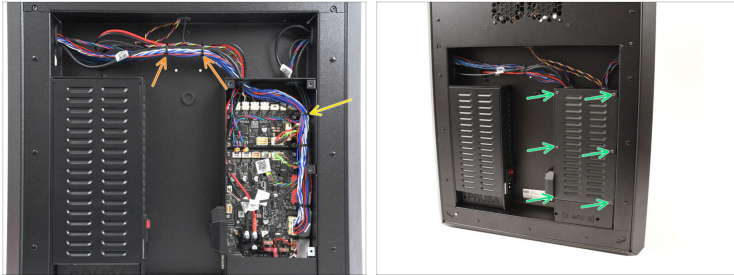
- Guide the **X motor** cable to the inside of the xBuddy box.
- Connect the X motor cable into the top left connector on the xBuddy board
- Guide the **Y motor** cable to the inside of the xBuddy box.
- Connect the X motor cable into the second connector on top of the xBuddy board.

STEP 44 Zip-Tie Preparation



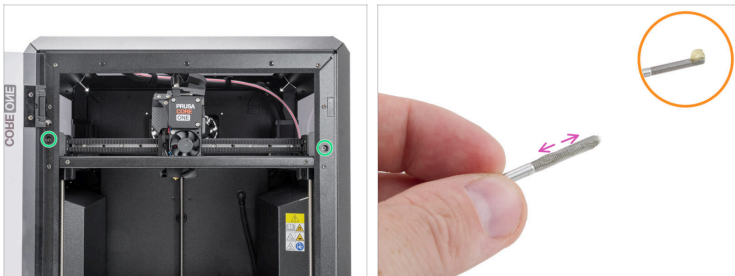
- **For the following steps, prepare:**
- Zip-tie (3x)

STEP 45 Cable Bundle Tidying Up



- Fix the cable bundle in the middle using two zip-ties. Do not overtighten the zip-ties.
 - ⚠ On the back of the printer, move the cable bundle upward as much as possible to create space below the cables; this will make installing the metal cover easier later.
- Fix the cable bundle inside the xBuddy box to its side.
- Reinstall the xBuddy box cover and fix it in place using the six M3x4bT screws. Make sure none of the cables is getting pinched behind the cover!

STEP 46 Tensioning Bolt Lubrication



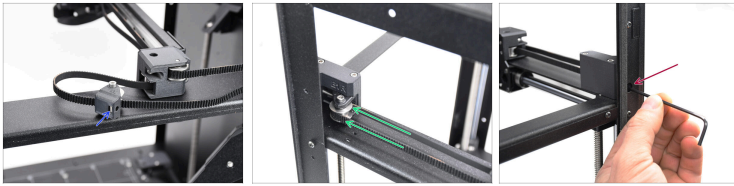
- ◆ Before reinstalling the M3x30 belt tensioning bolts, lubricate them to ensure smooth belt adjustment and prevent the tensioners from seizing.
- ◆ Remove both the M3x30 belt tensioning screws. Apply a small amount of Prusa lubricant to the tip of both the screws.
- ◆ Spread the lubricant evenly around the entire thread.
- ◆ Reinstall the tensioning bolts into their original positions.

STEP 47 Belt Tensioner L Installation



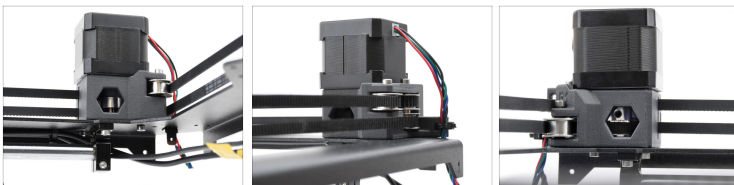
- ◆ On the left side of the printer, check that the M3nS nut is present inside of the belt tensioner pulley assembly.
- ◆ Push the pulley assembly into the tensioner, so that the M3x30 tensioning bolt reaches the nut.
 - ⚠ **Make sure all belts are properly aligned and not twisted.**
- ◆ Fix the pulley assembly in place by tightening the tensioning bolt just a few turns.
 - ⚠ **Do not tighten the belt fully yet!**

STEP 48 Belt Tensioner R Installation



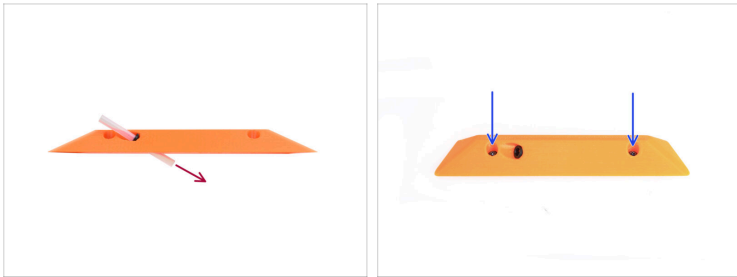
- ◆ On the right side of the printer, check that the M3nS nut is present inside of the belt tensioner pulley assembly.
- ◆ Push the pulley assembly into the tensioner, so that the M3x30 tensioning bolt reaches the nut.
 - ⚠ Make sure all belts are properly aligned and not twisted.
- ◆ Fix the pulley assembly in place by tightening the tensioning bolt just a few turns.
 - ⚠ Do not tighten the belt fully yet!

STEP 49 Belt Guidance Check



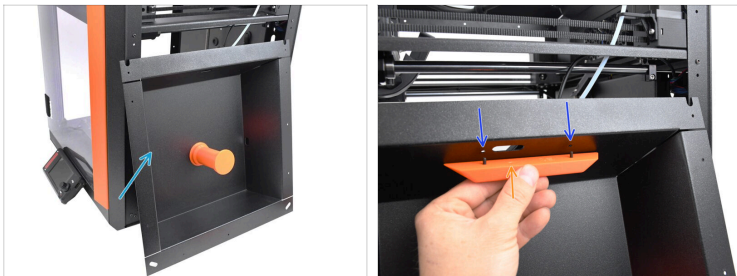
- ⚠ Before continuing, it's a good idea to check the belt routing while the printer is still partially disassembled, as all belts are clearly visible for inspection.
 - ◆ Verify the belts are guided straight.
 - ◆ Verify the belts align with the pulleys properly.

STEP 50 Side Handle Preparation



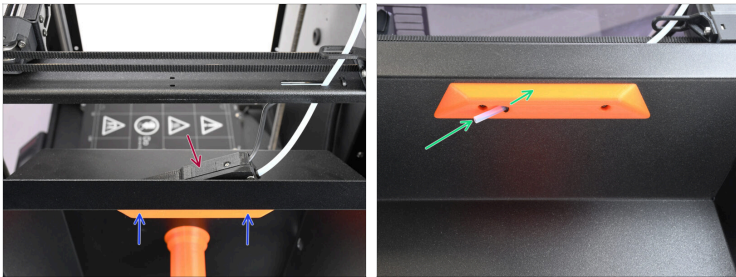
- Take the handle with the PTFE tube.
- Push the PTFE tube all the way through the handle and the collet, in order to remove it.
- Reinstall the two M3x10rT screws into the handle.


STEP 51 Side Handle Installation



- Take the right side panel and place it just next to the right side of the printer.
- Align the bolts in the handle with the openings in the panel.
 - Make sure the filament PTFE tube opening aligns with the larger hole in the panel.

STEP 52 Side Filament Sensor Installation



- ◆ Align the side filament sensor assembly with the side panel.
 - ◆ Tighten the M3x10rT screws inside the handle, through the side panel, into the sensor assembly.
 - ◆ Push the short PTFE tube through the collet in the side handle. Press it all the way in, until it reaches the sensor assembly on the other side.
-  Push it until it reaches the sensor assembly on the other side.

STEP 53 R Side Panel Installation



- Push the side panel into its original position.
- Fix the side panel in place using the 11 Nylon rivets.
- Reinstall the plastic sheet side cover.
- Fix the side cover in place using the 5 Nylon rivets.

STEP 54 Rear Cover Installation



- ◆ Reinstall the rear sheet metal cover onto the printer.

Make sure none of the cables is getting pinched behind it.

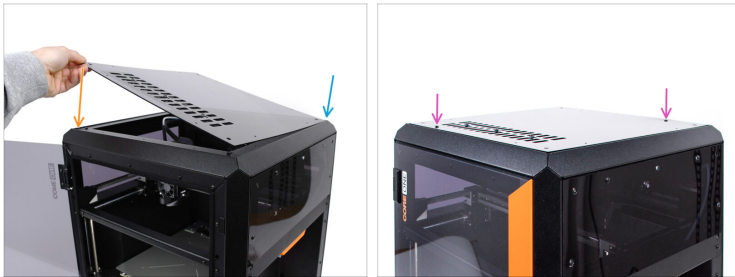
- ◆ Push the cover upwards until the four metal tabs engage into the slots on the rear part of the printer.
- ◆ While pushing the cover on the back upwards, reach to the inside of the printer and fix the cover in place using the two M3x4bT screws.

STEP 55 L Side Cover Installation



- Add the left side sheet metal panel to the printer and align it with the opening.
- Secure the panel in place with 11 Nylon rivets in the marked spots.
- Add the plastic cover onto the top part and align it with the opening.
- Fix it in place using 5 Nylon rivets.

STEP 56 Top Cover Installation



- Now, we can reinstall the top cover.
- Align the cover with the metal frame in the far-right corner.
- Align the cover with the recess in the front part as well
- Secure the cover in place using at least two nylon rivets in the marked openings.

STEP 57 Belt Tensioning



- Connect the printer to power.
- Turn the printer on using the switch on the back.
- Visit the Adjusting belt tension article and tighten both the belts to the correct tension.

STEP 58 Selftest



- ◆ To finish the repair, visit the menu Control -> Calibrations & Tests

and run the Selftest from the start.

- ◆ After passing the Selftest, your printer is ready for use again. Hooray!
