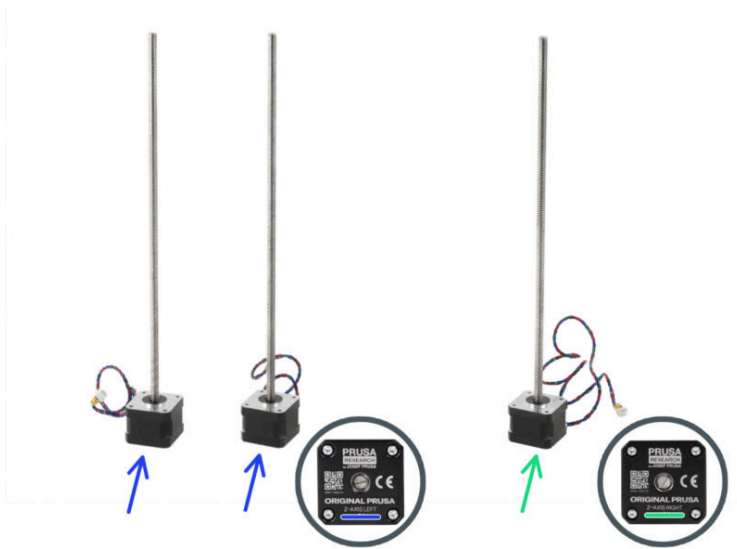


Table of Contents

How to replace Z motors (CORE One)	3
Step 1 - Introduction	4
Step 2 - Tools Required	5
Step 3 - Printer Preparation 1	6
Step 4 - Printer Preparation 2	6
Step 5 - xLCD Removal 1	7
Step 6 - xLCD Removal 2	8
Step 7 - L Side Panel Removal	8
Step 8 - Printer Positioning	9
Step 9 - Antivib Feet Removal	10
Step 10 - Cable Bundle Release	11
Step 11 - Splitter Removal 1	11
Step 12 - Splitter Removal 2	12
Step 13 - Rear Z Motor Removal 1	13
Step 14 - Rear Z Motor Removal 2	14
Step 15 - Rear Motor Disassembly	14
Step 16 - Rear Motor Preparation	15
Step 17 - Rear Motor Assembly	15
Step 18 - Rear Motor Installation	16
Step 19 - Rear Motor Attachment	17
Step 20 - Bottom Frame Disassembly	18
Step 21 - Bottom Frame Disassembly 2	19
Step 22 - Bottom Frame Disassembly 3	19
Step 23 - Front Z Motor Removal	20
Step 24 - Front Z Motor Removal 2	20
Step 25 - Front Motor Disassembly	21
Step 26 - Front Motor Preparation	21
Step 27 - Front Motor Assembly	22
Step 28 - Front Motor Installation	22
Step 29 - Front Motor Attachment	23
Step 30 - Motor Connection Check	24
Step 31 - Bottom Frame Assembly	25
Step 32 - Bottom Frame Alignment	26
Step 33 - Bottom Frame Attachment	26
Step 34 - Bottom Frame Attachment 2	27

Step 35 - Splitter Installation	27
Step 36 - Cable Management	28
Step 37 - Left Panel Installation	28
Step 38 - xLCD Installation	29
Step 39 - xLCD Installation 2	30
Step 40 - Printer Power Up	31
Step 41 - Selftest	31

How to replace Z motors (CORE One)



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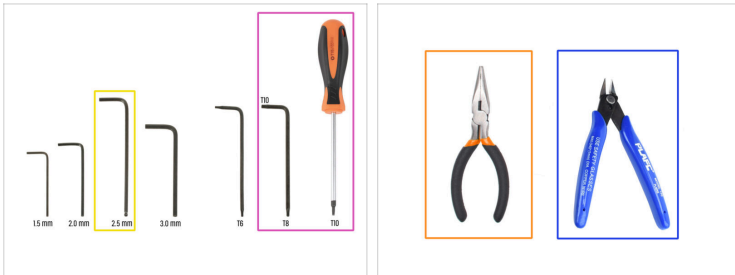
STEP 1 Introduction



This guide will take you through the Z motors replacement on the Prusa CORE One.

- Spare parts are available in our eshop prusa3d.com.
- There are two types of the Z-motors on the CORE One printer. These are the same types as used on the MK4/S printers.
 - The two of the front motors have a short cable and are labeled as LEFT.
 - The motor in the back is labeled as RIGHT.

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.

STEP 3 Printer Preparation 1



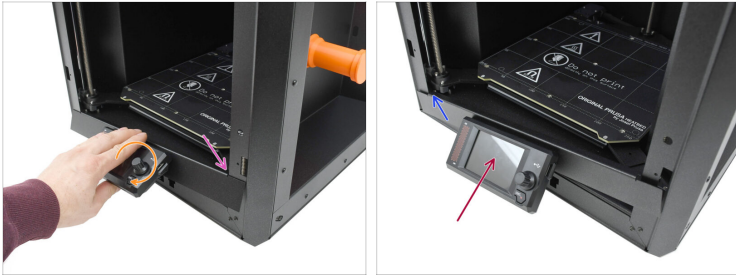
- i Before you begin, make sure the printer has cooled down to ambient temperature.
- On the printer, visit the menu **Control** and trigger the **Auto Home**.
- The heatbed should move all the way up.

STEP 4 Printer Preparation 2



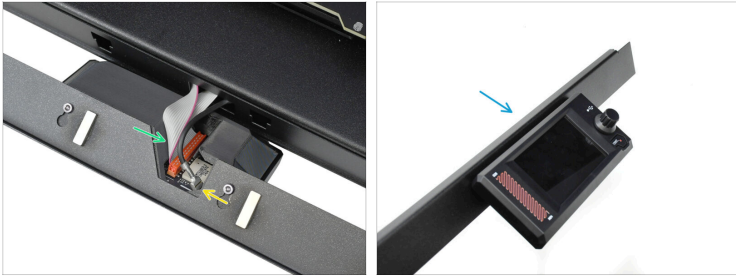
- Turn the printer off using the switch on the back.
- Disconnect the printer from power.

STEP 5 xLCD Removal 1



- We need to remove the xLCD. Start by lifting the bottom part of the LCD up, in order to tilt the assembly outward.
- Then, move the right side of the assembly until the hook on the right disengages from the side panel.
- Move the assembly outward.
- Make sure to disengage the hook on the left side from the left side panel.

STEP 6 xLCD Removal 2



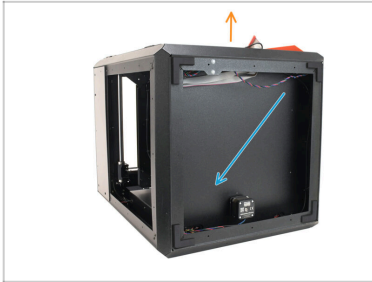
- ◆ Disconnect the main cable from the connector on the back of the xLCD.
- ◆ Disconnect the grounding faston.
- ◆ Move the xLCD assembly away and store it in an ESD-safe environment.

STEP 7 L Side Panel Removal



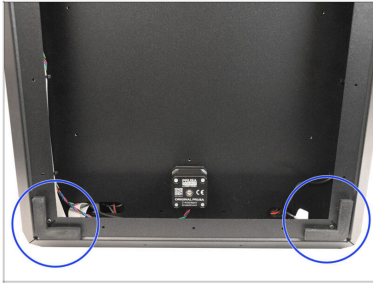
- ◆ Remove the 11 Nylon rivets holding the side panel on the left side.
- ◆ Remove the side panel.

STEP 8 Printer Positioning



- Lay the printer onto its back in order to access its bottom part.
- The front of the printer should face upward.

STEP 9 Antivib Feet Removal



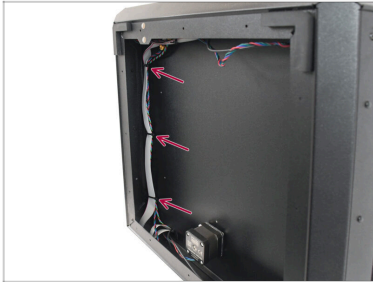
In case you will be replacing one of the front Z motors, the bottom frame will need to be partially disassembled and two of the rubber feet removed.

◆ Carefully peel off the two of the rear anti-vibration rubber feet.

ⓘ These are held in place with adhesive tape. Keep in mind that they will need to be reused, so store them carefully in the meantime.

⚠ Some early units may have anti-vibration feet with a different design. In that case, peel off only part of the bottom to allow the profiles to be separated.

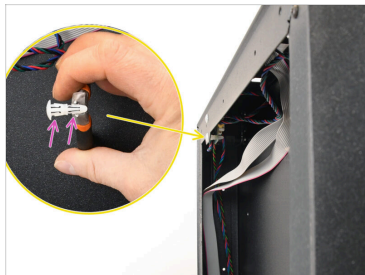
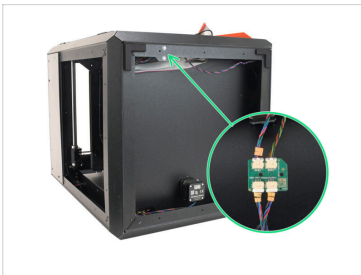
STEP 10 Cable Bundle Release



- Carefully cut off the zip-ties holding the cable bundle to the printer's frame.

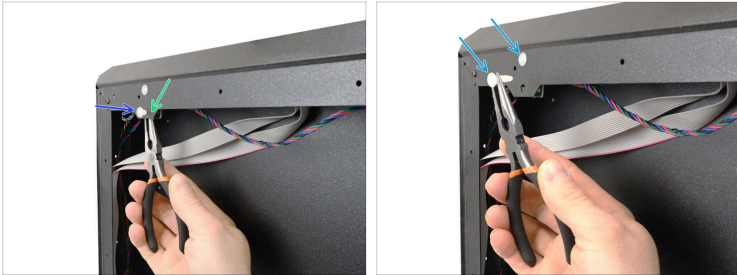
⚠ Proceed carefully to prevent damaging the cables!

STEP 11 Splitter Removal 1






- A stepper splitter board is attached to the bottom frame with two push pins.
- The push pins have plastic hooks that can be released using needle-nose pliers.
 - Each push pin has two sets of hooks: one secures the board, and the other secures it to the sheet metal profile.
- ⓘ To release the hooks, position the push pin so the pliers can effectively grip the hooks, then pull the push pin out to release it.

STEP 12 Splitter Removal 2

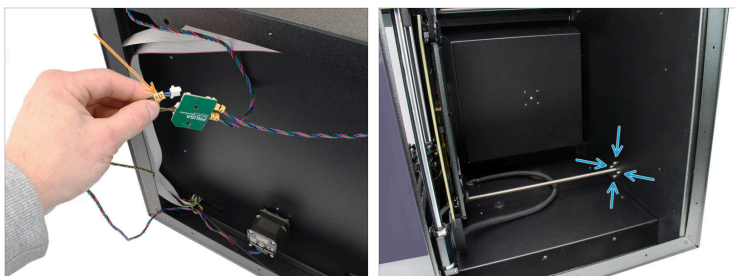


 Proceed carefully to prevent any damage to the connectors.

If you have difficulty removing the push pins, do not force them. The cables can still be disconnected with the splitter board attached, though space and cable length will be limited.

-  Push the hooks on the push pin together, then carefully disengage it from the splitter board.
-  Then, disengage the push pin from the sheet metal profile, while pulling it out.
-  Using the same technique, remove both push pins, releasing the splitter board.

STEP 13 Rear Z Motor Removal 1



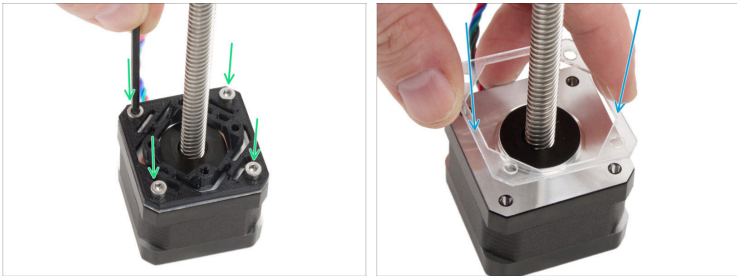
- ◆ First, we will be replacing the rear Z motor.
 - 📌 If you need to replace one of the front motors only, skip ahead to the appropriate step.
- ◆ Disconnect the rear Z motor from the splitter board. The connector is labeled as "Z R" Note that there is a safety latch on the connector, which must be pressed in order to release the plug.
- ◆ On the inside of the printer, remove the 4 M3x8 screws holding the motor to the chassis.

STEP 14 Rear Z Motor Removal 2



- ✦ Turn the motor shaft counter-clockwise to disengage it from the heatbed carriage.
- ✦ On the bottom of the printer, pull the motor out.

STEP 15 Rear Motor Disassembly



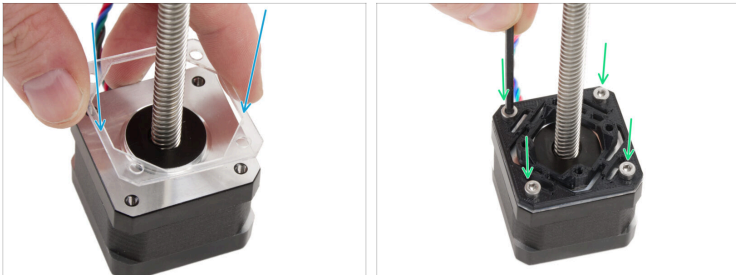
- ✦ On the motor assembly, remove the Z-motor mount plastic part held by four M3x8 screws.
- ✦ Remove the plastic washer from the motor.

STEP 16 Rear Motor Preparation



- ◆ For the following steps, prepare:
 - ◆ New Rear Z Motor (1x)
 - ⓘ The motor is labeled Z-Axis Right, as it is the same type used in the MK4/S printer series.

STEP 17 Rear Motor Assembly



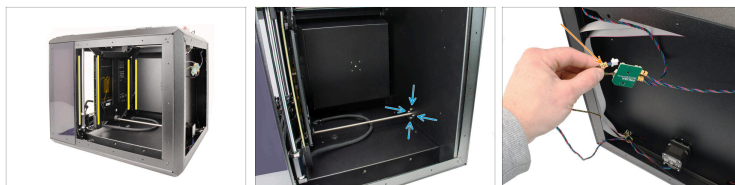
- ◆ Place the washer onto the motor.
- ◆ Align the motor mount plastic part with the assembly and fix it in place using the four M3x8 screws.

STEP 18 Rear Motor Installation



- ◆ Insert the motor into the corresponding opening.
- ◆ Align the threaded rod with the nut in the heatbed carriage and start threading it in.
- ⚠ Thread in the appropriate section of the rod until the motor is fully seated and the heatbed carriage is perpendicular to the printer's frame.
- ◆ Orient the motor so that the cable is pointing downward.

STEP 19 Rear Motor Attachment



- ◆ Once the heatbed carriage is aligned with the printer's frame and the motor is fully seated, proceed with attaching the motor.
- ◆ On the inside of the printer, fix the motor in place using the four M3x8 screws.
- ⚠ **Do not overtighten the screws, as they thread directly into the plastic part. For a final tightening, use the shorter part of the key as a handle to apply the correct amount of torque.**
- ◆ Plug the motor into the corresponding connector on the stepper splitter board.




STEP 20 Bottom Frame Disassembly



In the next steps, we will replace the front Z motor. The procedure is the same for either front Z motor. If you are replacing both, repeat the same steps for each side.



We will need to remove the bottom part of the frame.

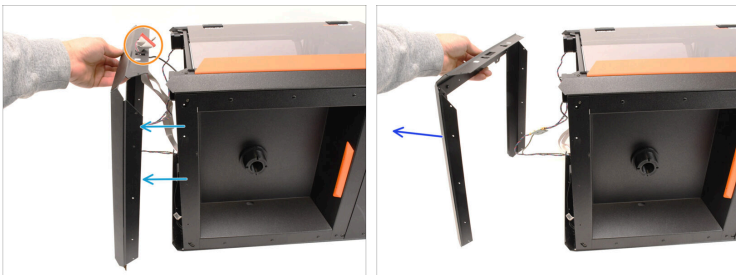
-  Remove two marked M3x4rT screws on the bottom.
-  Remove the two marked M3x4rT screws on the left side.
-  Remove two marked M3x4rT screws on the front of the printer.

STEP 21 Bottom Frame Disassembly 2



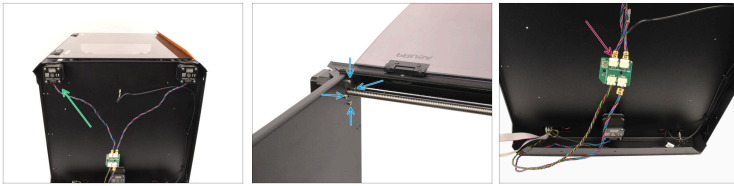
- On the right side of the printer, remove the three Nylon rivets holding the bottom part of the frame.
- Remove the two M3x4rT screws holding the bottom part of the frame.

STEP 22 Bottom Frame Disassembly 3



- Pull the bottom part of the frame away from the printer.
- Push the xLCD connectors through the opening to free them from the bottom frame.
- Carefully remove the bottom frame and store it away for later re-assembly.

STEP 23 Front Z Motor Removal



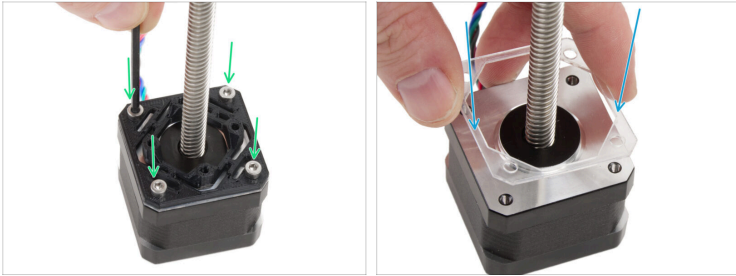
- ◆ Now we will show the removal process for the front left motor. The procedure for the front right motor is the same.
- ⓘ The procedure for the front right motor is the same.
- ◆ On the inside of the printer, remove the four M3x8 screws holding the motor.
- ◆ Disconnect the motor from the splitter board.

STEP 24 Front Z Motor Removal 2



- ◆ Rotate the motor shaft counter-clockwise to disengage it from the heatbed carriage.
- ◆ Remove the motor by pulling it out.

STEP 25 Front Motor Disassembly



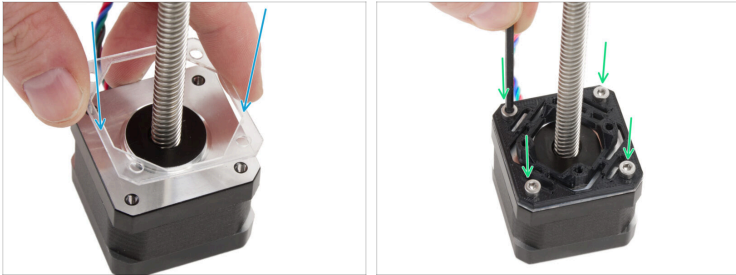
- ◆ On the motor assembly, remove the Z-motor mount plastic part held by four M3x8 screws.
- ◆ Remove the plastic washer from the motor.

STEP 26 Front Motor Preparation



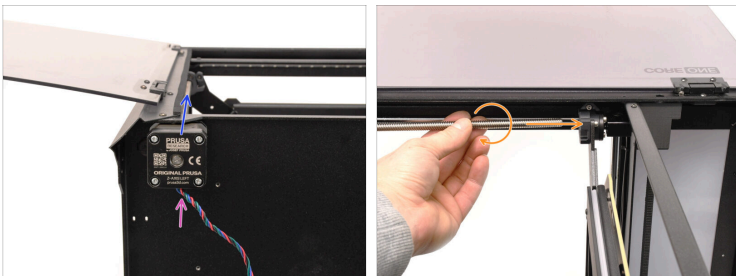
- ◆ **For the following steps, prepare:**
 - ◆ New Front Z Motor (1 or 2x)
 - ⓘ The motor is labeled Z-Axis Left, as it is the same type used in the MK4/S printer series.

STEP 27 Front Motor Assembly



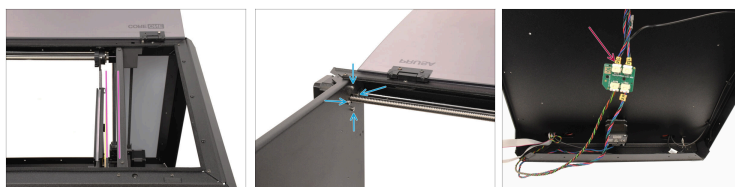
- Place the washer onto the motor.
- Align the motor mount plastic part with the assembly and fix it in place using the four M3x8 screws.

STEP 28 Front Motor Installation



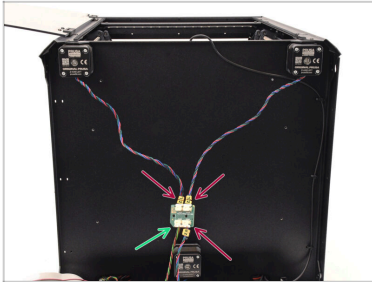
- Insert the motor shaft through the corresponding opening.
- Engage the threaded rod into the heatbed assembly by rotating it clockwise.
 - ⚠ Thread in the appropriate section of the rod until the motor is fully seated and the heatbed carriage is perpendicular to the printer's frame.**

STEP 29 Front Motor Attachment



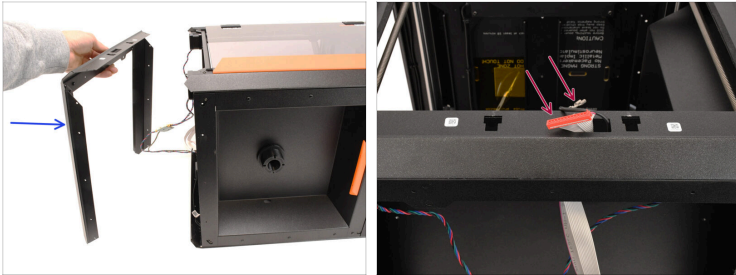
- ◆ Once the heatbed carriage is aligned with the printer's frame and the motor is fully seated, proceed with attaching the motor.
- ◆ On the inside of the printer, fix the motor in place using the four M3x8 screws.
- ⚠ Do not overtighten the screws, as they thread directly into the plastic part. For a final tightening, use the shorter part of the key as a handle to apply the correct amount of torque.
- ◆ Plug the motor into the corresponding connector on the stepper splitter board.

STEP 30 Motor Connection Check



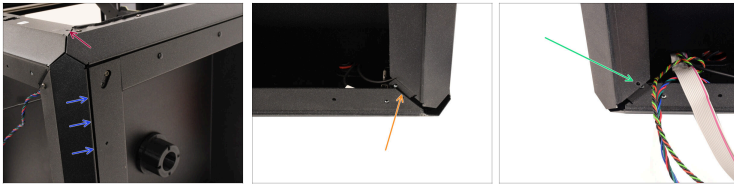
- Verify the proper connection of the motors, as seen in the picture.
- The cable connection from the xBuddy board is connected into the plug near the beveled edge of the Splitter board.
- The motor cables are connected to the remaining three connectors.

STEP 31 Bottom Frame Assembly



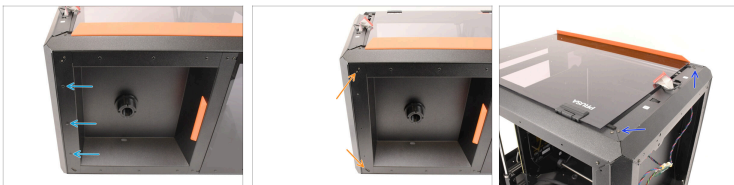
- ◆ Take the previously removed part of the bottom assembly and align it with the printer.
- ◆ Push the xLCD connector and the FE grounding Faston connector through the front center opening.

STEP 32 Bottom Frame Alignment



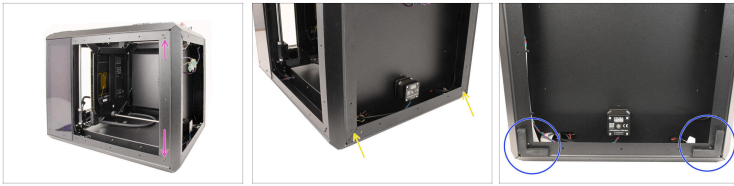
- ◆ Start precisely aligning the frame with the printer chassis.
- ◆ At the **front**, the bottom frame should rest **over** the printer chassis.
- ◆ On the **right** side, the bottom frame must be **sandwiched** between the printer chassis and the side panel.
- ◆ On the right far side, the bottom frame must sit **behind** the mounted panels.
- ◆ On the **left** side, the bottom frame goes **over** the mounted panels.

STEP 33 Bottom Frame Attachment



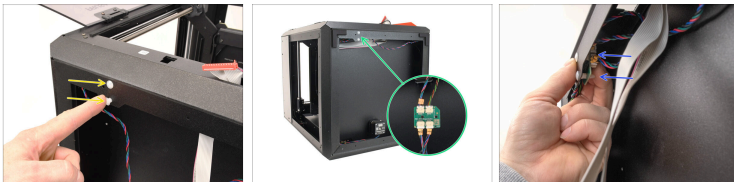
- ◆ On the right side of the printer, fix the parts together using three Nylon rivets.
- ◆ Install the two M3x4rT screws into the corresponding openings to fix the parts together.
- ◆ Install two M3x4rT screws into the front openings.

STEP 34 Bottom Frame Attachment 2



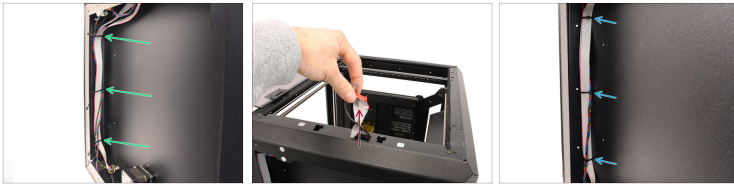
- ◆ On the left side, install the two M3x4rT screws into the corresponding openings.
- ◆ On the far bottom side of the printer, install the last two M3x4rT screws.
- ◆ Re-install the anti-vibration rubber feet.

STEP 35 Splitter Installation



- ◆ Re-install the two stepper splitter push pins into the corresponding openings.
- ◆ Now, we can re-clip the splitter board onto the push pins from the inside.
- ◆ Push the splitter board onto the push pins until it clicks into place.

STEP 36 Cable Management



- ◆ Reinstall three new zip ties through the openings and wrap them around the cable bundle.
- ◆ Make sure there is enough cable length exposed near the xLCD opening.
- ◆ Loosely tighten the zip ties, then trim off the excess.

STEP 37 Left Panel Installation



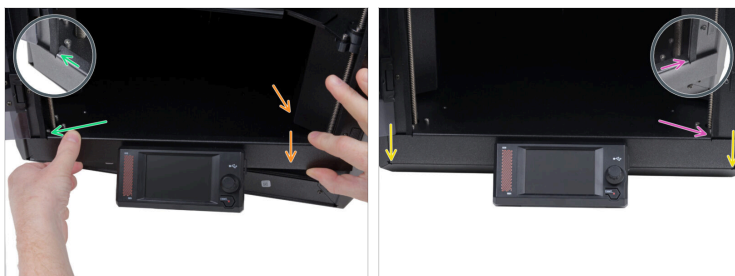
- ◆ Reinstall the left side panel onto the printer.
- ◆ Fix the panel in place using the 11 Nylon rivets.

STEP 38 xLCD Installation



- Connect the main connector into the xLCD assembly.
- ⓘ Ensure the latch on the connector is positioned on the same side as the triangle symbol on the xLCD board. Otherwise, the xLCD won't work.
- Connect the FE Grounding cable faston connector.

STEP 39 xLCD Installation 2



- Move the xLCD assembly towards the printer and raise its right side.
- Hook the left side of the bezel onto the left profile of the printer.
- Slowly lower the right side into place as well.
- Hook the right side of the bezel onto the right profile.
- Ensure the bezel is evenly seated at both ends along the bottom edge.

STEP 40 Printer Power Up



- Connect the printer to power.
- Turn the printer on using the switch on the back.

STEP 41 Selftest



- On the printer, visit the menu **Control** and trigger the **Auto Home**.
- Go to **Control > Move Axis > Move Z** and test if the Z Axis moves correctly.
- 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!
