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How to replace the Belt Tensioner Left (CORE One)

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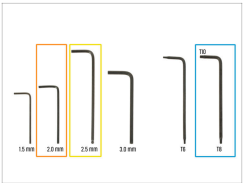
STEP 1 Introduction

- This guide will take you through the **Belt-tensioner-left** and the **Belt-tensioner-pulley** assemblies replacement on your Prusa **CORE One**.
- 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.

Warning: You will be handling metal sheets in this guide. Be careful!

STEP 2 Tools necessary for this guide

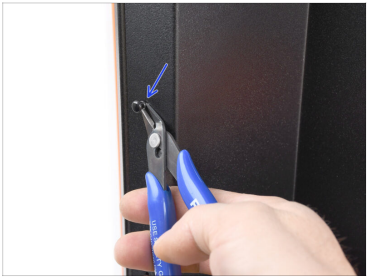


- **Please prepare tools for this guide:**
  - 2mm Allen key
  - 2.5mm Allen key
  - T10 Torx key
  - Flush cutters are recommended as an optional tool.
  - Prusa lubricant or another suitable grease (available in e-shop)

STEP 3 Printer Preparation

- On the printer, visit the menu **Control** and trigger the **Auto Home**.
- Turn the printer off using the switch on the back.
- Disconnect the printer from power.

STEP 4 Side Cover Removal

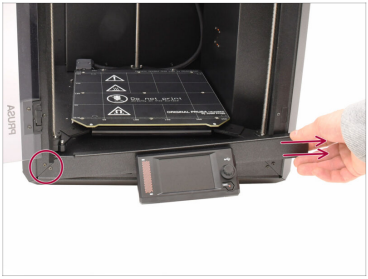


- Remove the five Nylon rivets holding the plastic side cover.
  - We recommend using flush cutters to lift the top part of the rivet, unlocking it. Then, remove the bottom part of the rivet.
- Remove the plastic side cover.

STEP 5 Side Panel Removal

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

STEP 6 Front Panel Disengage



- Lift the front sheet metal panel with the LCD upward on the right side to unhook it from the corner profile.

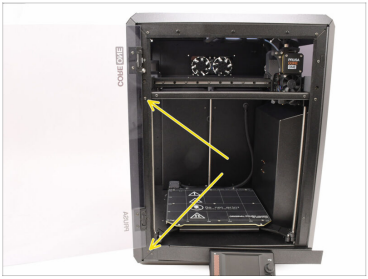
  ⓘ The panel is held by magnets.

- Once unhooked from the corner profile, pull the panel forward slightly to keep it unhooked.

⚠ Be very careful when moving the front panel assembly, as there are cables connected to the LCD. Ensure you do not disconnect or damage them!

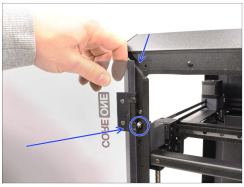
- Move the front panel assembly to the right. Move it just so that you gain access to the two screws on the left.

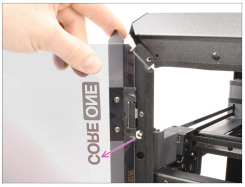
STEP 7 Corner Profile Removal (Part 1)



- On the side of the printer, remove the three screws holding the corner profile.
- From the front of the printer, **remove only the two marked screws** securing the corner profile.

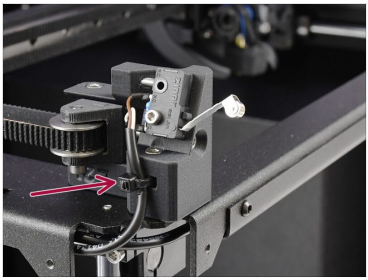
STEP 8 Corner Profile Removal (Part 2)

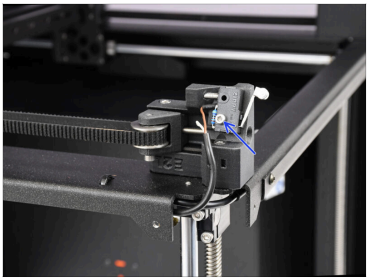




- Leave the top screw holding the corner profile in place for now.
- Notice the door switch lever poking through an opening in the profile.
- Hold the printer's door with one hand while removing the top screw holding the profile. After removing the screw, carefully unhook the corner profile from the top part, **ensuring the door switch is not damaged during the process.**
- Then, remove the corner profile along with the door, ensuring the lever of the door switch is not damaged.

STEP 9 Door Sensor Removal

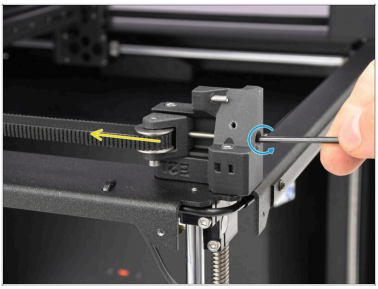




- Carefully cut off the zip-tie holding the door sensor cable. Do not damage the cable!
- Remove the M2.5x10 screw and the door sensor.

  ⓘ You can leave the door sensor hanging by the cable for now, but since it is a precise mechanical component, handle it carefully to avoid damage.

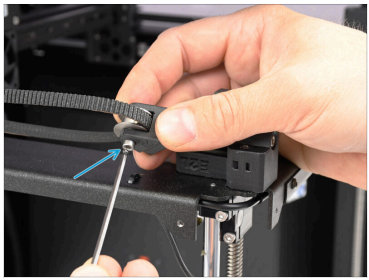
STEP 10 Belt-tensioner-pulley Removal

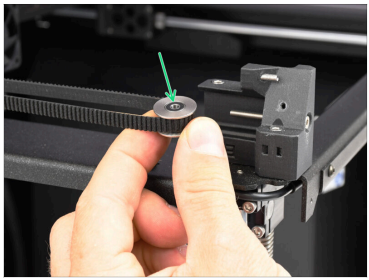


- Fully loosen the belt tensioning screw.
- Disengage the belt-tensioner-pulley assembly from the tensioner-left.

  ⓘ If the pulley assembly can't be removed this way, skip this step and disassemble it after removing the entire tensioner assembly.

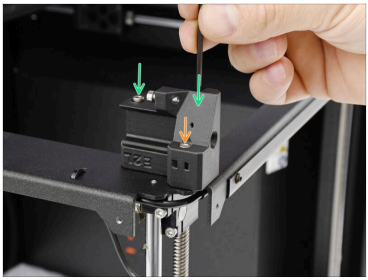
STEP 11 Pulley Removal





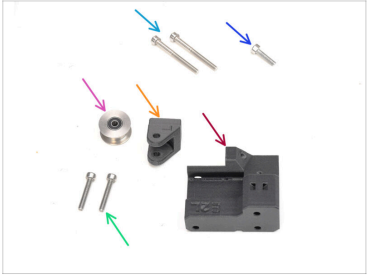
- On the pulley assembly, remove the M3x18 screw.
- The plastic part and the GT2-20 Idler Pulley will separate.
- Remove the GT2-20 Idler Pulley from the belt.

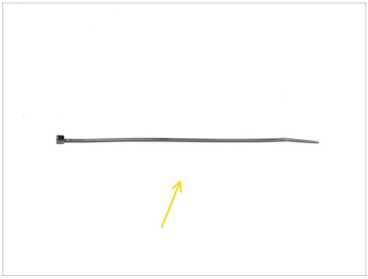
STEP 12 Belt-tensioner-left Removal



- Remove the two M3x30 screws hoding the tensioner-left.
- Undo the M3X18 screw and remove the plastic part from the printer.
- Remove the M3x12 door sensor tensioning screw from the plastic part.

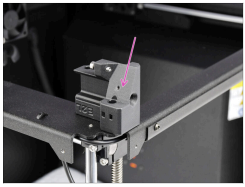
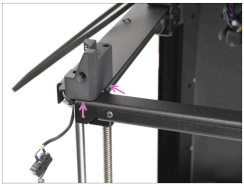
STEP 13 Tensioner Preparation





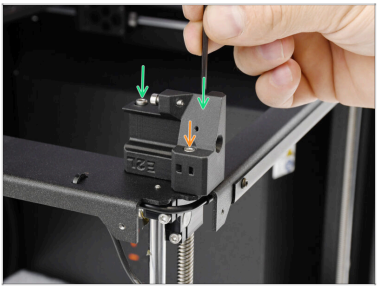
- **For the following steps, prepare:**
- M3x30 screw (2x)
- M3x12 screw (1x)
- GT2-20 pulley (1x)
- Belt-tensioner-puley (1x)
- Belt-tensioner-left (1x)
- M3x18 screw (1x)
- Zip-tie (1x)

STEP 14 Belt-tensioner-left Installation

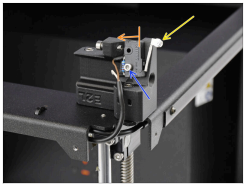
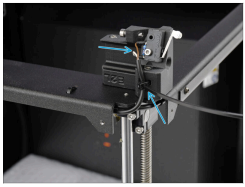
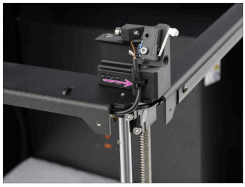
- Install the M3x12 door sensor tensioning screw into the plastic part and tighten it until the tip just begins to protrude from the other side.
- Add the new belt-tensioner-left part into the printer. Align it with the Core-XY assembly.

STEP 15 Belt-tensioner-left Installation 2



- Fix the part in place using the two M3x30 screws.
  - Continue with the M3x18 screw into the corner.

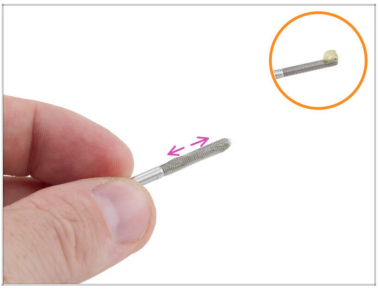
STEP 16 Sensor Installation

- Add the door sensor to the tensioner-left part. The roller switch must be pointing up and towards the front of the printer.
- Secure the sensor with the M2.5x10 screw, tightening only until snug so the sensor can still pivot on the screw.
- Move the sensor body towards the back of the printer.

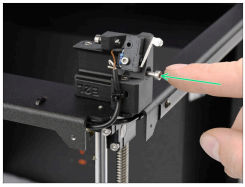
  ⓘ This is the starting position; the sensor will be calibrated and adjusted in the following steps.
- Secure the sensor cable with a zip tie, leaving some slack near the sensor to avoid strain.
- Carefully trim the excess zip tie without cutting the cable.

STEP 17 Tensioning Bolt Lubrication



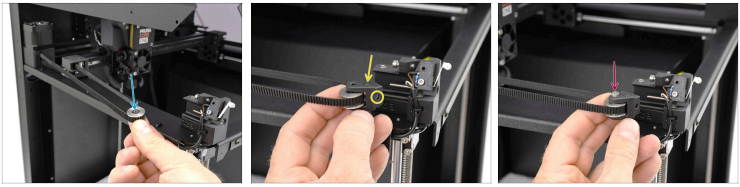
- Before re-installing the M3x30 **belt tensioning bolt**, it should be lubricated to ensure smooth belt adjustment and to prevent the tensioner from seizing.
  - Apply a small amount of Prusa lubricant to the tip of the M3x30 screw.
  - Spread the lubricant evenly around the entire thread.

STEP 18 Tensioner Preparation



- Insert the M3x30 tensioning bolt into the belt-tensioner-left part on the printer.
- Note that the Belt-tensioner-pulley part has "R" and "L" markings; for use on the left side, ensure the "L" is facing up.
- Insert the M3nS nut into the corresponding opening in the plastic part and push it all the way in.

STEP 19 Belt-tensioner-pulley Assembly



- Hook the Idler Pulley by the belt on the inside of the printer.

  ⚠ Make sure the belt is straight and not twisted!

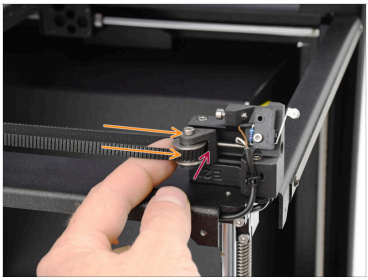
- Attach the Belt-tensioner-pulley plastic part onto the pulley itself.

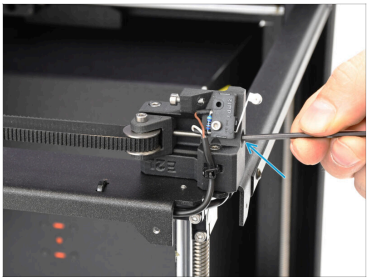
  ⚠ Make sure the part with the nut is pointing towards the center of the printer!!

- Align both parts and fix them together using the M3x18 screw.

  The "L" marking should be visible on top.

STEP 20 Belt-tensioner-pulley Installation

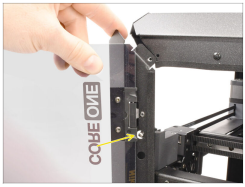


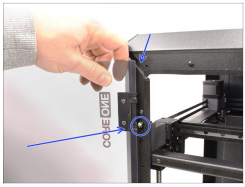


- Push the assembly into the belt-tensioner plastic part in the printer.
- The opening with the nut on the pulley assembly should align with the tensioning bolt.
- Tighten the M3x30 tensioning bolt to fix the assembly in place.

Do not tighten the screw fully yet.

STEP 21 Corner Profile Installaton



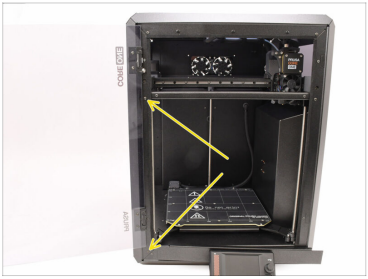


- Now, reattach the corner profile with the door.

  ⚠ We need to align the profile without damaging the door sensor lever.

- First, position the tabs with the threaded openings **behind** the top profiles on both the front as well as on the side. While moving the profile, keep a close eye on the door switch!!
- Fix the profile using the top M3x4bT screw only, for now.
- Push the switch lever to verify if it fits the opening and clicks correctly, when pressed.

STEP 22 Corner Profile Attachment



- Fix the corner profile in place using the three M3x4bT screws on the left side.

  ⚠ Ensure the tab on top of the corner profile is positioned behind the top part of the printer's frame, as seen in the picture.

- Fix the corner profile using two M3x4bT screws on the front.

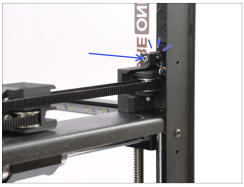
STEP 23 Front Panel Attachment

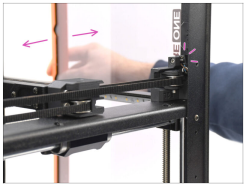
- Move the front panel to the left, until it engages into the corner profile.

⚠ There are cables connected to the LCD. Ensure you do not disconnect or damage them!

- With the right side of the panel lifted, push it toward the printer until it is flush with the front of the printer.
- Then, move the right side of the panel down to engage it into the corner profile on the right side.
- Align the front panel with the printer's frame.

STEP 24 Sensor Initial Calibration





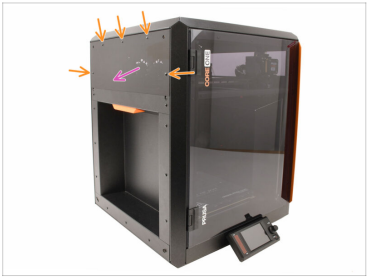
- Close the printer's door.

  ⚠ When closing the door, the sensor should make an audible click, indicating it has been activated.

  - If the sensor does not click, start tightening the calibration screw slowly, until the sensor clicks.

- Test the sensor by opening and closing the door. It should click each time the door closes.

STEP 25 Side Cover Installation

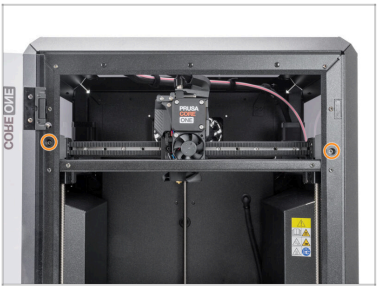


- Add the side sheet metal panel to the printer and align it with the opening.
- Secure the panel in place with 11 Nylon rivets in the marked spots.
- Add the plastic cover onto the top part and align it with the opening.
- Fix it in place using 5 Nylon rivets.

STEP 26 Door Sensor Test

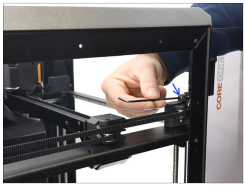
- Connect the printer to power.
- Turn the printer on using the switch on the back.
- On the printer's display, navigate to the menu **Info > Sensor Info > Door Sensor**
  - Repeatedly open and close the printer's door and check if the reading on the display changes accordingly between the **open** and **closed** states.

STEP 27 Belt Tensioning



- Visit the Adjusting belt tension article and tighten both the belts to the correct tension.

STEP 28 Finish



- Congratulations. Your left belt tensioning assembly has been successfully replaced.
  - If further adjustment of the door sensor is needed, you can access the door sensor calibration screw from inside the printer.
  - To finish the repair, we recommend to visit the menu ***Control -> Calibrations & Tests***

    and run the Selftest.

Notes:

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