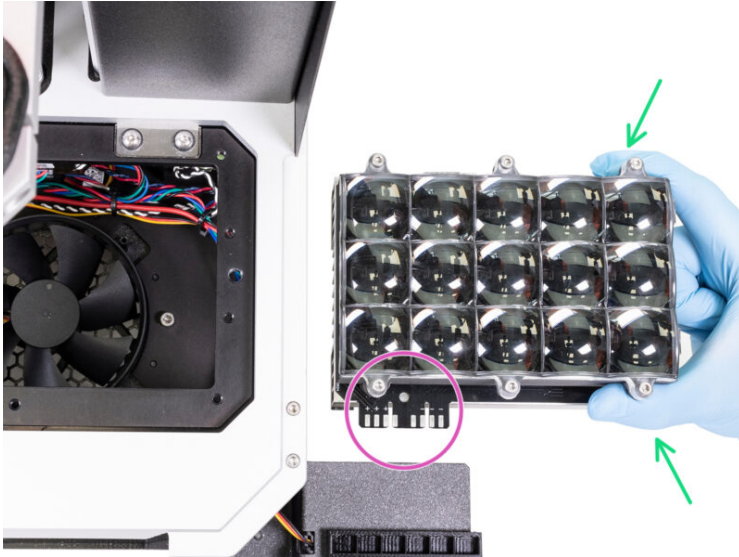


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# How to replace UV LED assembly (SL1S)

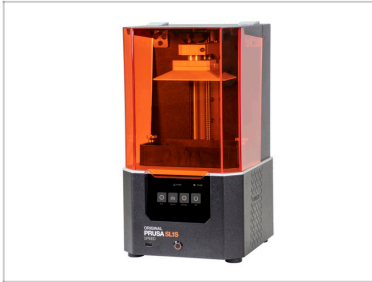


[help.prusa3d.com/g264599](https://help.prusa3d.com/g264599)

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



## STEP 1 Introduction



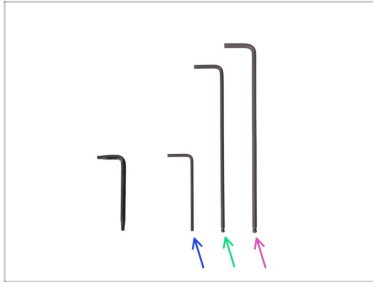
**i** This guide will take you through the replacement of the **UV LED assembly** on the **Original Prusa SL1S SPEED**. For the older SL1, please follow this guide.

**◆** All necessary parts are available in our shop [shop.prusa3d.com](http://shop.prusa3d.com)

**i** Note that you have to be logged in to have access to the spare parts section.

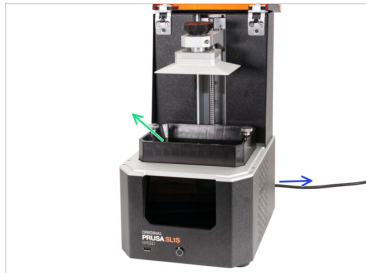
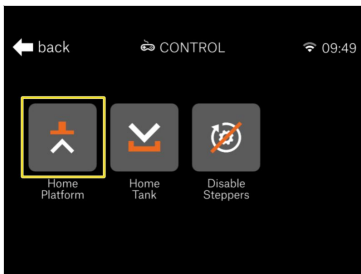
**⚠** **WARNING:** This device utilizes UV light, which can harm your eyesight or skin. Do not turn the device ON until it is fully reassembled with all the covers installed!!!

## STEP 2 Tools necessary for this chapter



- **For this chapter, please prepare:**
- 2.0mm Allen key
- 2.5mm Allen key
- 3.0mm Allen key
- Save all the screws removed from the printer. You will need them as these will be re-used.

## STEP 3 Preparing the printer











### ⚠ Before you start, do the following:

- Move the cantilever with the print platform up (Menu -> Control -> Home platform). You will need more space in the following steps.
- Remove the resin tank. If you have a resin inside, filter it back into the bottle and clean the tank.
- Turn the printer off and unplug it.

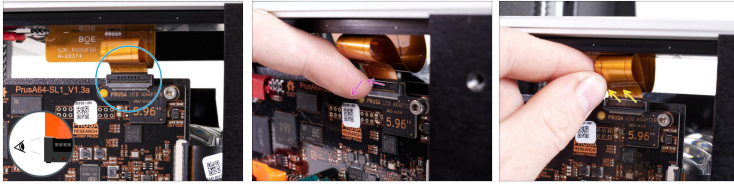
## STEP 4 Removing the cover



 **Proceed carefully with these screws, preferably use an Allen key with straight sharp edges, there is a risk of stripping the screw's head.**

-  Turn the left side of the printer towards you.
-  Locate, release and remove the four screws.
-  Turn the printer by 180° and remove the last four screws on the other side.
-  Slide the cover just a few cm/inches out.
-  There are two designs of USB and power button:
  -  **NEW DESIGN:** The USB and the power button share the same connector. Disconnect the cable and remove the cover completely.
  -  **OLD DESIGN:** The USB and the power button are separate. Disconnect the power button cable from the extension cable and remove the cover completely.

## STEP 5 Disconnecting the print display



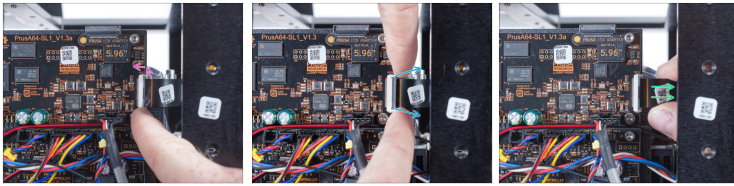
- ◆ Look at the printer from the left and locate the LCD cable connector on the electronics board.
- ◆ There is a safety latch on the LCD connector. Using your nail, gently flip out the safety latch. Note that it is not removable.
- ◆ Carefully remove the LCD cable from the connector.

## STEP 6 Removing the print display



- ✦ Using the 2.5mm Allen key remove all 4 screws holding the display assembly. Proceed carefully as you might strip the screw.
  - ⓘ Keep all the removed screws for a later use.
  - ✦ Using your index finger from below on the left side, push the display assembly up.
  - ✦ Remove the display assembly.
  - ✦ Find a protective material, cover up the display assembly and set it aside. The orange sticker which came on the display from the factory works the best for this.
- ⚠ **Make sure the LCD will not get scratched or cracked. Proceed very carefully. Watch out for the cable leading from the display assembly.**

## STEP 7 Disconnecting the touchscreen NEW vs OLD



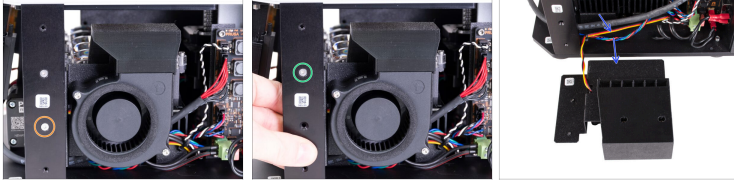
⚠ There are **TWO VERSIONS** of the LCD connector:

- ◆ **The new connector** has a safety latch, which has to be **flipped** before inserting the cable (board V1.3a). Gently flip out the black safety latch. Note that it is not removable.
- ◆ **The old connector** has a safety latch, which must be **pulled out** before inserting the cable (board V1.3). Gently pull out the black safety latch. Note that it is not removable.

⚠ **WARNING:** screen cables and connectors are fragile. Please proceed with extra caution.

- ◆ Carefully remove the cable from the connector. (both versions)

## STEP 8 Removing the blower fan



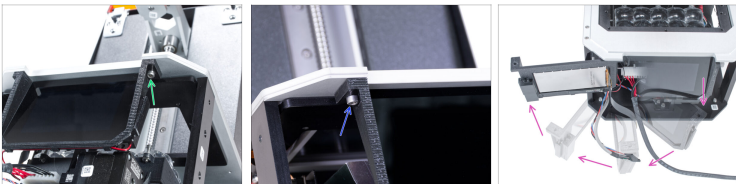
- ◆ Look at the right side of the printer.
  - ◆ Remove the lower M3x10b screw holding the blower fan assembly.
  - ◆ Remove the top M3x10b screw and hold the blower fan assembly by hand as it might fall off.
  - ◆ Remove the blower fan assembly and place it next to the printer, like in the picture. Do not pull the cable!
- ⚠ If the assembly does not reach a sufficient distance, try moving the zip tie to the right. If it's too tight, cut the zip tie (pliers from the SL1 kit, needle-nose pliers, nail scissors). **Be careful not to cut the cables!**

## STEP 9 Disconnecting the UV LED cable



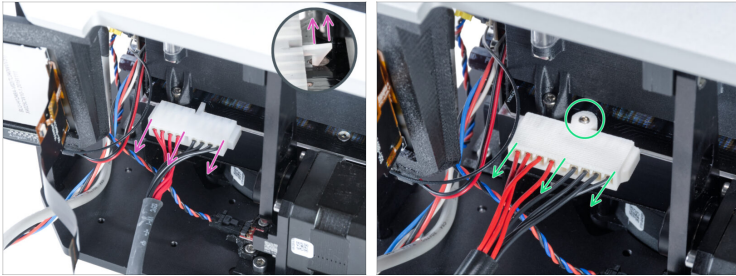
- While looking onto the right side of the printer, find the UV LED connector on the Boost board.
- Detach the UV LED cable from the boost board. Note there is a safety latch on the front side of the connector, which must be pressed so the cable comes out.

## STEP 10 Opening the touch screen



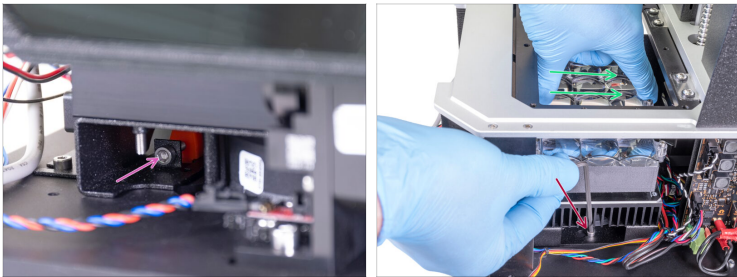
- Look from below and locate the screw on the right side of the touchscreen frame. Release the screw.
  - Slightly loosen the screw on the left side of the frame. Do not remove it.
  - Carefully rotate the touchscreen all the way to the left.
- i** If you can't rotate the screen easily, loosen the left screw a little more.

## STEP 11 Removing the UV LED cable



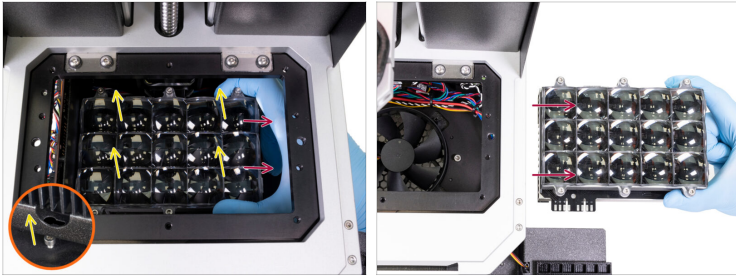
- ◆ **There are two types of the UV LED cable connectors with different locking methods. Take a closer look to compare which type you have and then select the appropriate instructions:**
  - ◆ **Type A** - There is a safety latch on the connector. Lift the latch and unplug the connector.
    - ⓘ Pro tip: You can use some small size Allen key to lift the latch.
  - ◆ **Type B** - The UV LED cable connector is locked by the grub screw. Release the grub screw with the 2.0mm Allen key and unplug the connector.
    - ⚠ **Do not lose the grub screw! You will need it later again.**

## STEP 12 Unmounting the UV LED Assembly



- ◆ From the front bottom left corner of your printer, remove the M3x18 lock screw and pull it out of the printer in case it falls off. **Do not throw the screw away**, you will need it again later on.
- ◆ From the right side of the printer, loosen the M4x5 screw until there is enough slack so that the UV LED assembly can be moved towards the back of the printer. **Do not remove the screw entirely!**
- ◆ Slide the UV LED assembly towards the back of the printer.

## STEP 13 Removing the UV LED Assembly



- ◆ Move the UV LED assembly towards the back of the printer so that it unlocks and then lift it up to detach it from the bottom of the printer.
- ◆ Gently move the UV LED Assembly outside of the printer.
- ◆ Set the old UV LED Assembly aside and mark it so you know which is the new one.

## STEP 14 New UV LED assembly: parts preparation



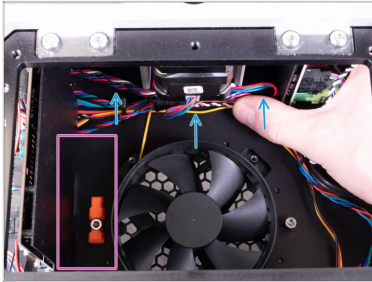
● For the following steps, please prepare:

● New UV LED assembly (1x)

⚠ Remove the protective foam from the bottom of the UV LED assembly and the protective transparent film from the lenses.

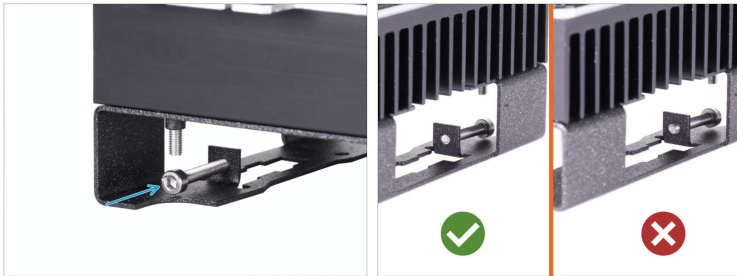
⚠ Avoid touching the lenses with bare hands to avoid fingerprints or any kind of grease. Grease or other impurities can cause problems during printing.

## STEP 15 Preparing the UV LED assembly area



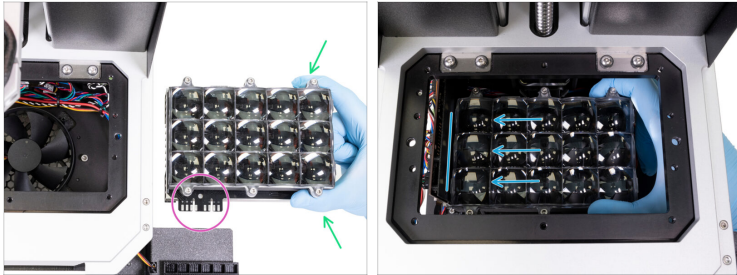
- ◆ Move the cable bundle backward as much as possible while being gentle to it. Do not push hard! The whole bundle should go to the furthestmost possible position.
- ◆ Make sure there are no cables in this area.


## STEP 16 Inserting the UV LED assembly






- ◆ Insert the M3x18 screw (the one you removed from the old UV LED assembly) into the heatsink holder, as seen in the picture. **Just start the thread so it doesn't protrude on the other side** - it must sit flush or recessed with the inner side. See the second picture.

## STEP 17 Inserting the UV LED assembly

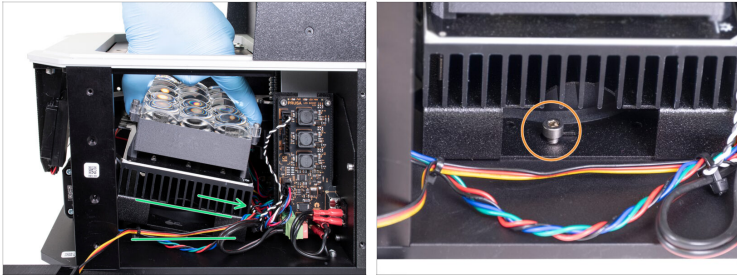


 **Use nitrile gloves for the following steps. It will protect the UV LED assembly from grease or other dirt.**

-  Hold the UV LED assembly by the heatsink. **Avoid touching the UV LED board** (black LED board between the heatsink and the lenses).
-  Make sure that the flat connector is facing the front of the printer.
-  Carefully insert the UV LED assembly into the printer from the right side. Stop when it almost reaches the electronics on the left.

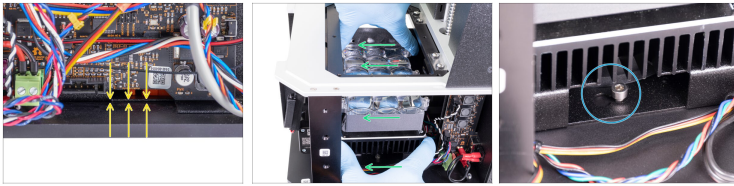
 **Make sure no cables are being pinched!**

## STEP 18 Mounting the UV LED assembly



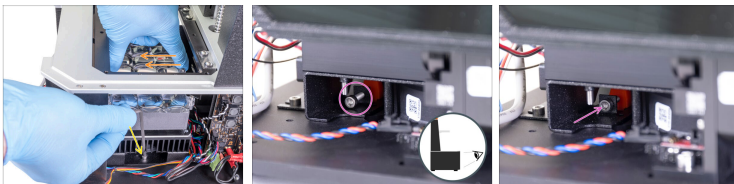
- ◆ Place the UV LED assembly so it touches the bottom plate by its back side. Keep it slightly tilted and press backwards until you align the "keyhole" on the heatsink holder (metal sheet) with the M4x5 screw head on the bottom plate.
- ⚠ **Make sure the cables are not pinched. All cables in the rear of the printer should be located behind UV LED Assembly. Check that no cable is being squished UNDER the metal sheet of the heatsink holder.**
- ◆ Push the assembly down until the screw head goes through the "keyhole" on the right side of the heatsink holder.

## STEP 19 Aligning the UV LED assembly



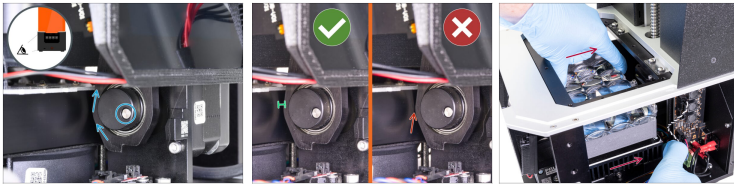
- Look from the electronics side of the printer and make sure there is no gap between the printer's base and the heatsink holder (sheet metal). It needs to sit flush against the bottom.
- Slide the LED assembly towards the front of the printer. Make sure it moves evenly on both sides. Use a reasonable force.
- The screw on the right side should slide easily into the oval groove.

## STEP 20 Securing the UV LED assembly



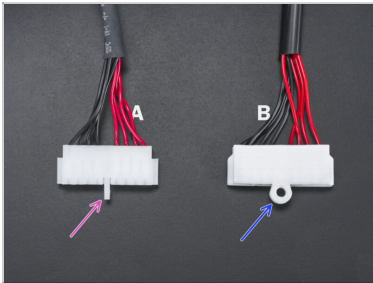
- Tighten the M4x5 screw in while maintaining a slight frontwards force onto the UV LED assembly with your other hand at the same time.
- From the front bottom left corner of your printer, tighten the M3x18 lock screw. Make sure the UV LED assembly sits flush all the way with the printer bottom plate. You can help it a little bit by pushing it downwards. Avoid touching the lenses.

## STEP 21 Checking the connecting rod



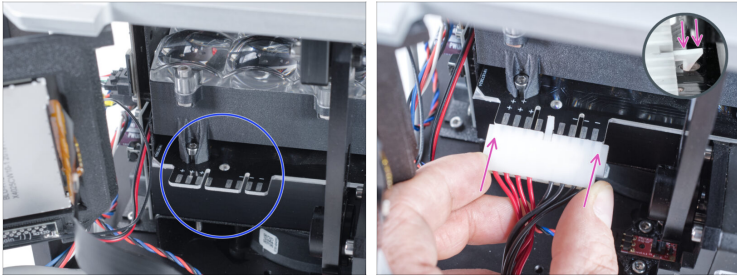
- ◆ Look from the left below the touchscreen to inside the printer.
- ◆ Move the connecting rod manually up and down several times and check if the connecting rod doesn't hit the heatsink. Then move the connecting rod to the upper position. The position of the shaft should be as shown.
- ◆ Take a closer look at the connecting rod and check the correct alignment of the UV LED assembly:
  - ◆ **Correct alignment:** The connecting rod doesn't hit the UV LED set assembly. There is a gap between both parts. Please, skip to Connecting the UV LED cable.
  - ◆ **Incorrect alignment:** The connecting rod hits the UV LED assembly. There is no gap between both parts. Loosen the lock screw and the UV LED assembly. Go to Securing the UV LED assembly and repeat the whole procedure again. Keep in mind that you must move the assembly a few millimeters toward the back of the printer to **create a gap between the connecting rod and the heatsink** and prevent them from colliding.

## STEP 22 Connecting the UV LED cable



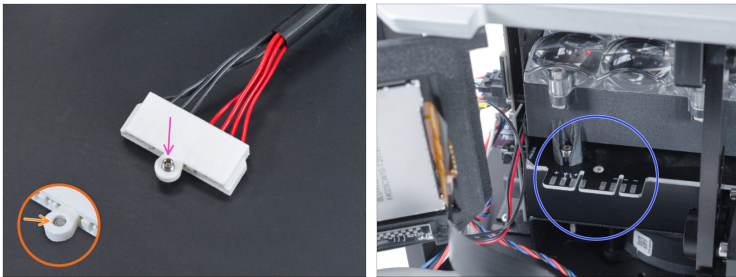
- ◆ Take the UV LED cable you have removed earlier. **Compare with the picture which type of the connector you have and follow the appropriate instructions:**
  - ◆ **Type A:** There is a safety latch on the cable connector. If you have this type of the cable connector, go to Connecting the UV LED cable Type A.
  - ◆ **Type B:** There is a rounded protrusion with a hole for the grub screw on the cable connector. If you have this type of the cable connector, go to Connecting the UV LED cable Type B.
- ⓘ There may be different color variations for this connector. However, the type is the same.

## STEP 23 Connecting the UV LED cable - Type A



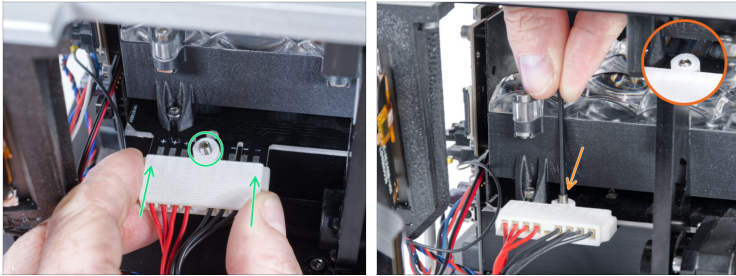
- ◆ Locate the connector of the UV LED assembly.
- ◆ Take the UV LED cable connector (Type A) and slide it all the way onto the UV LED assembly connector until you feel a slight "click". It means the safety notch fits into the hole and the connector is locked.
- ⚠ **To make sure, take a closer look from the side and check if the safety latch is in the hole.**
- Now, go to Closing the touch screen

## STEP 24 Connecting the UV LED cable - Type B



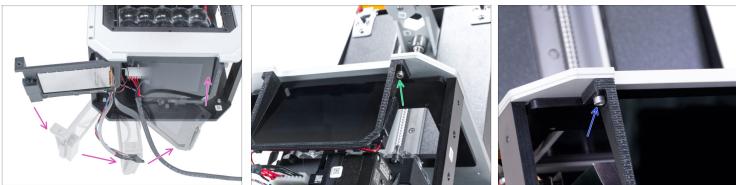
- ◆ Insert the M4x6 grub screw into the hole from the top of the connector and tighten by 2-3 turns. Make sure the connector is oriented correctly - for better orientation, note the colored cables in the picture
- ◆ On the "bottom" of the connector, make sure that the **grub screw is slightly countersunk in the hole** and does not protrude.
- ◆ Locate the connector of the UV LED assembly.

## STEP 25 Connecting the UV LED cable - Type B



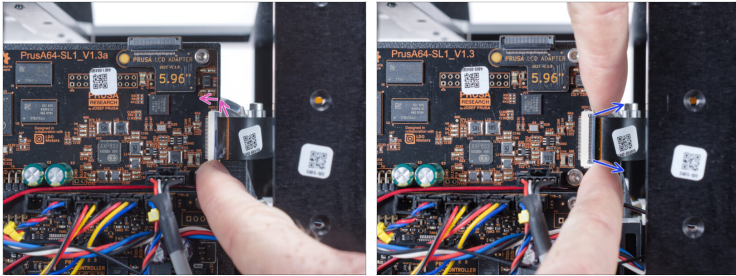
- ◆ Slide the connector of the UV LED cable completely onto the connector of the UV LED assembly. The grub screw must point upwards.
- ◆ Lock the connector by fully tightening the M4x6 grub screw. The grub screw must be flushed with the surface of the connector.
- ⓘ Tip: Tighten the grub screw through the print screen opening. **Avoid touching the lenses!**

## STEP 26 Closing the touch screen



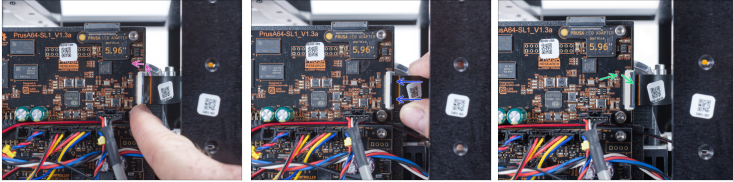
- ◆ Carefully close the touch screen back in its place.
- ◆ Insert and tighten the M4x10 screw on the right side of the touch screen frame.
- ◆ Tighten the screw on the left side of the touch screen frame.

## STEP 27 Connecting the touch screen NEW vs OLD



- ◆ There are **TWO VERSIONS** of the LCD connector:
  - ◆ **The new connector** has a safety latch, which has to be **flipped** before inserting the cable (board V1.3a). Go to Connecting the touch screen (new version)
  - ◆ **The old connector** has a safety latch, which must be **pulled out** before inserting the cable (board V1.3) Go to Connecting the touchscreen (old version).

## STEP 28 Connecting the touch screen (new version)



**WARNING:** screen cables and connectors are fragile. Please proceed with extra caution.



Gently flip out the black safety latch. Note that it is not removable.



Insert the cable from the touchscreen. Make sure the cable is straight and not twisted.

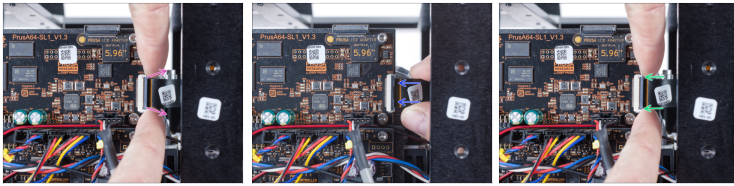


Lock the cable in place by pushing the safety latch back.



Now, go to Guiding the UV LED cable

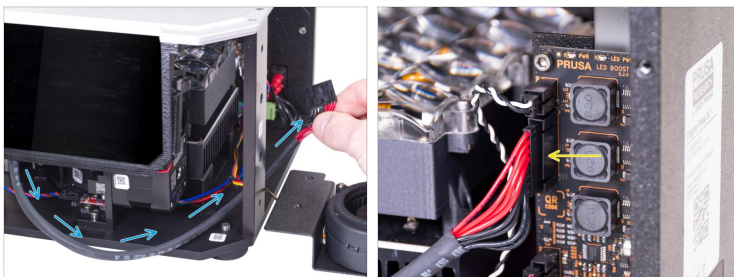
## STEP 29 Connecting the touchscreen (old version)



**⚠ WARNING:** screen cables and connectors are fragile. Please proceed with extra caution.

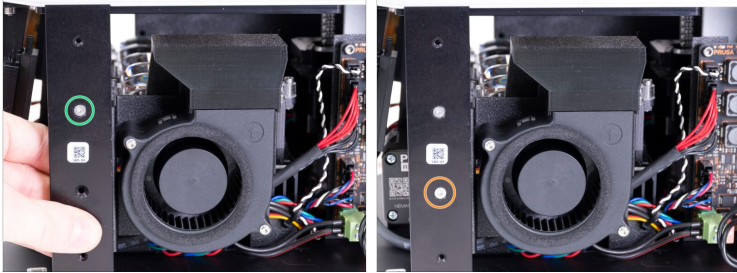
- ◆ Gently pull out the black safety latch. Note that it is not removable.
- ◆ Insert the cable from the touchscreen. Make sure the cable is straight and not twisted.
- ◆ Lock the cable in place by pushing the safety latch back.

## STEP 30 Guiding the UV LED cable



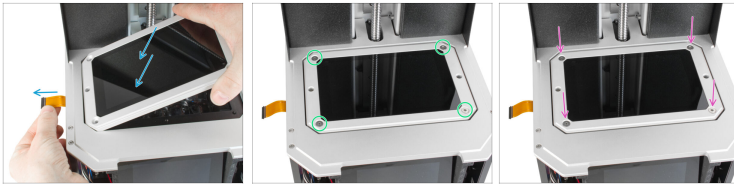
- ◆ Guide the UV LED cable according to the picture. The cable must go below the touch screen and behind the support bar.
- ◆ Connect the UV LED cable into the Boost board.

## STEP 31 Mounting the Blower fan assembly



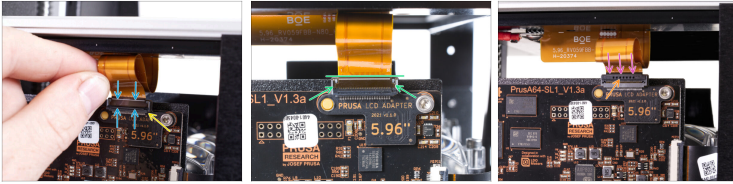
- ◆ Insert the blower fan assembly into the printer. The metal sheet (fan holder) has to be located behind the support bar.
- ◆ Hold the assembly by your hand and secure it with the M3x10b countersunk screw through the upper screw hole.
- ◆ Insert and tighten the second M3x10b countersunk screw in the lower screw hole.
- ⚠ **Make sure that no cable is pinched between the blower fan assembly and the UV LED assembly!**

## STEP 32 Installing the print display



- i** Keep the protective sticker on the outer side of the print display if you have applied one earlier.
- !** **Make sure the cable from the display is not bent or pinched before you tighten up the screws. The cable can be damaged easily by improper handling. Keep an eye on it.**
- **Carefully insert the display assembly into the printer, as seen in the picture. Make sure the cable is **ON THE LEFT** side under the black tilt frame and moving freely.**
- Carefully align the display with the tilt frame underneath. Use the M4x14b countersunk screws to fix it back in position.
- Now, tighten all 4 screws gradually in a cross-pattern using a reasonable force.

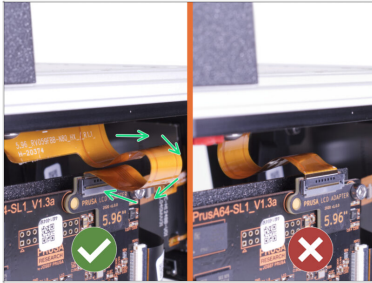
## STEP 33 Connecting the print display



**WARNING:** screen cables and connectors are fragile. Please proceed with extra caution.

- Make sure the safety latch is still open.
- Carefully insert the display cable into the connector. The white line on the cable must be aligned parallel to the connector.
- Align the cable into the connector so that the "tooth" on each side of the cable fits into the shaped slot.
- Close the safety latch using your finger.
- Verify that the white line on the display cable is slightly above the safety latch, and it's parallel to the connector body.

## STEP 34 Checking the print display cable



⚠ Make sure the bow on the display cable is inclined towards the electronics board side, not the display side.

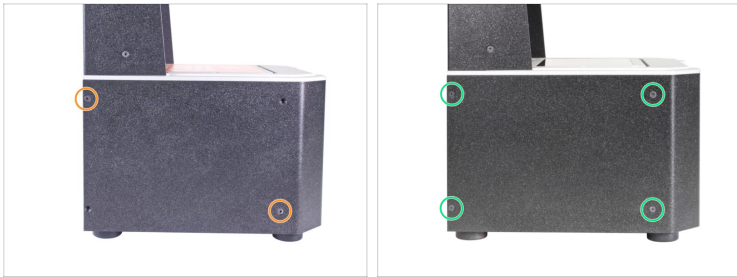
## STEP 35 Connecting the power button



⚠ **Avoid pinching the cables!**

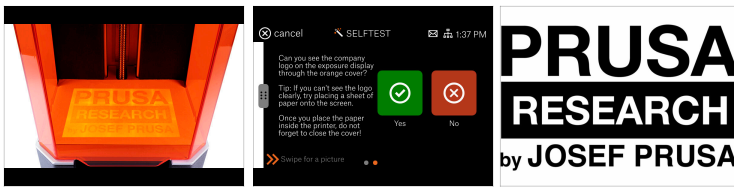
- Slide the cover halfway onto the printer. We need to connect the front USB and power button first.
- **NEW DESIGN:** Look from above at the front cover and connect the USB & Power cable. Make sure the safety pin "clicks in".
- **OLD DESIGN:** Connect the power cable button into the extension cable. Make sure the safety pin "clicks in".

## STEP 36 Attaching the cover



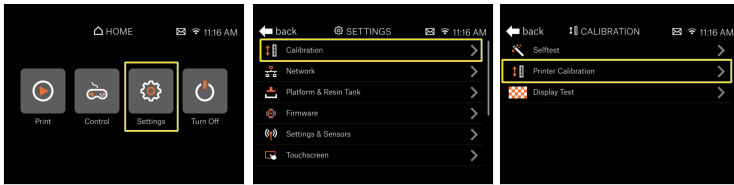
- Slide the cover onto the printer and secure it on one side using two M3x5b countersunk screws. Don't tighten them firmly yet. Move to the other side and repeat the procedure.
- As soon as the cover is aligned and partly secured, add the remaining screws and tighten them all on both sides.

## STEP 37 Checking the UV LED functionality



- Close the lid, plug in the printer and turn it ON.
- Go to Menu -> Settings -> Calibration -> Display test and follow the instructions on the display.
- ⚠ **Don't open the lid, keep it closed! There is a UV light inside, which may cause a damage to your eyes.**
- Look from the front side into the printer. Your eye level needs to be above the display. Otherwise, you won't be able to judge the result correctly.
- Check the entire screen, the whole area must be lit evenly and you must be able to see the details of our company logo across the whole screen. No parts (letters) should be missing.
- ⓘ **Tip: If you can't see the logo clearly, try placing a sheet of paper onto the screen. We recommend the A5 format with a density up to 80g/m<sup>2</sup>.**
- ⚠ **Don't forget to CLOSE THE COVER after inserting the sheet!**

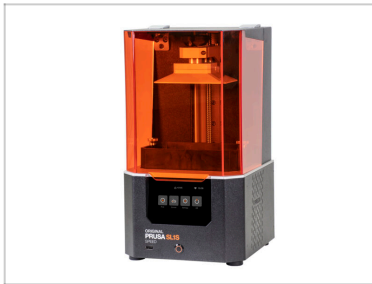
## STEP 38 Calibrating the print platform



**i** After replacing the print display, the height values of the new part may change slightly. Therefore, calibrate the print platform.

- On the touch screen, navigate to Home -> Settings -> Calibration -> Printer calibration and follow the instructions on the screen.

## STEP 39 It's done!



- You have just successfully replaced the UV LED Assembly on your SL1S SPEED printer.**
- Now fill the resin tank and test it out ;)



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