

# Table of Contents

<b>1. Introduction</b>	5
Step 1 - All the required tools are included	6
Step 2 - Boxes and bags are labelled	6
Step 3 - Use labels for reference	7
Step 4 - Spare bag	7
Step 5 - View high resolution images	8
Step 6 - We are here for you!	8
Step 7 - Unpacking the SL1 kit	9
Step 8 - Important: Electronics protection	10
Step 9 - Regular rewards are crucial!	11
Step 10 - How to successfully finish the assembly	12
<b>2. Base &amp; Tower</b>	13
Step 1 - Tools and bags for this chapter	14
Step 2 - Preparing parts from the package	14
Step 3 - Preparing parts from the package	15
Step 4 - Tower and PSU parts preparation	15
Step 5 - Arranging the back plate	16
Step 6 - Connecting the tower	16
Step 7 - Connecting the tower	17
Step 8 - Connecting the SL1 PSU	17
Step 9 - Tower and PSU parts preparation	18
Step 10 - Mounting the bottom plate	18
Step 11 - Mounting the supports	19
Step 12 - Mounting the adjustable feet	20
Step 13 - Preparing PSU cables	20
Step 14 - Connecting the cables	21
Step 15 - Preparing the tilt motor parts	21
Step 16 - Preparing the tilt motor parts	22
Step 17 - The tilt motor assembly	22
Step 18 - The tilt motor assembly	23
Step 19 - The tilt motor assembly	23
Step 20 - Preparing the reflector	24
Step 21 - Mounting the reflector	24
Step 22 - Right blower fan parts preparation	25
Step 23 - Right blower fan parts preparation	25
Step 24 - Blower fan gasket	26
Step 25 - Fan assembly (new version)	26
Step 26 - Fan assembly (old version)	27
Step 27 - Blower assembly	27
Step 28 - Mounting the fan assembly	28
Step 29 - Tilt preassembly parts preparation	28
Step 30 - Resin sensor cable assembly	29
Step 31 - Tilt parts preparation	29
Step 32 - Mounting the tilt assembly	30
Step 33 - Optical sensor calibration	31
Step 34 - Haribo time!	31
Step 35 - Final check	32
<b>3. Covers &amp; Platform</b>	33
Step 1 - Tools and bags for this chapter	34
Step 2 - Preparing parts from the package	34

Step 3 - Tower covers - parts preparation .....	35
Step 4 - Mounting the left tower sheet .....	35
Step 5 - Sensors parts preparation .....	36
Step 6 - Assembling the sensors .....	37
Step 7 - Assembling the covercheck .....	37
Step 8 - Sensors cable management .....	38
Step 9 - Tower covers - parts preparation .....	38
Step 10 - Mounting the right tower sheet .....	39
Step 11 - Filtration assembly parts preparation .....	39
Step 12 - Filtration assembly parts preparation .....	40
Step 13 - Assembling the filtration fan .....	40
Step 14 - Gasket preparation .....	41
Step 15 - Glueing the gasket .....	41
Step 16 - Removing parts of the gasket .....	42
Step 17 - Installing the housing .....	42
Step 18 - Preparing the second gasket .....	43
Step 19 - Glueing the second gasket .....	43
Step 20 - Assembling the housing lid .....	44
Step 21 - Preparing the rear cover parts .....	44
Step 22 - Mounting the filtration assembly .....	45
Step 23 - Mounting the filtration assembly .....	45
Step 24 - Cable management - the rear cover .....	46
Step 25 - Mounting the rear cover .....	46
Step 26 - Print platform part preparation .....	47
Step 27 - Assembling the platform .....	47
Step 28 - Knob parts preparation .....	48
Step 29 - Inserting adjustable screws .....	48
Step 30 - Mounting the eccentric .....	49
Step 31 - Assembling the knob .....	49
Step 32 - Mounting the print platform .....	50
Step 33 - Haribo time! .....	50
Step 34 - Final check .....	51
<b>4. Electronics &amp; Lid .....</b>	<b>52</b>
Step 1 - Tools and bags for this chapter .....	53
Step 2 - Tools and bags for this chapter .....	53
Step 3 - Preparing parts from the package .....	54
Step 4 - Cable management parts preparation .....	54
Step 5 - Cable management .....	55
Step 6 - Cable management .....	55
Step 7 - UV LED parts preparation .....	56
Step 8 - Removing the cover .....	57
Step 9 - Mounting the UV LED assembly .....	57
Step 10 - Preparing the touchscreen parts .....	58
Step 11 - Mounting the touchscreen assembly .....	58
Step 12 - Preparing the electronics .....	59
Step 13 - Glueing the thermal pad .....	59
Step 14 - Inserting the electronics holder .....	60
Step 15 - Connecting both boards .....	60
Step 16 - Connecting Wi-Fi & Speaker .....	61
Step 17 - Mounting the electronics .....	61
Step 18 - Cable management parts preparation .....	62
Step 19 - Connecting the electronics .....	62
Step 20 - Connecting the electronics .....	63
Step 21 - Connecting the electronics .....	63

Step 22 - Removing the protective film .....	64
Step 23 - Preparing the print display parts .....	64
Step 24 - Inserting the print display in the printer .....	65
Step 25 - Fixing the display in place .....	65
Step 26 - Display cable holder parts preparation .....	66
Step 27 - Connecting the print display .....	66
Step 28 - Connecting the touchscreen (new version) .....	67
Step 29 - Connecting the touchscreen (old version) .....	67
Step 30 - Final check .....	68
Step 31 - Cable management parts preparation .....	68
Step 32 - Final cable management .....	69
Step 33 - Preparing the cover parts .....	69
Step 34 - Connecting the power button and USB .....	70
Step 35 - Assembling the cover .....	70
Step 36 - Preparing resin tank parts .....	71
Step 37 - Preparing the resin tank frame .....	71
Step 38 - Preparing the FEP film .....	72
Step 39 - Preparing the resin tank frame .....	72
Step 40 - Inserting the torx screws .....	73
Step 41 - Assembling the resin tank .....	73
Step 42 - Assembling the resin tank .....	74
Step 43 - Installing the resin tank .....	74
Step 44 - Preparing acrylic lid parts .....	75
Step 45 - Mounting the acrylic lid .....	75
Step 46 - Returning the print platform .....	76
Step 47 - Haribo time! .....	76
Step 48 - Final check .....	77
<b>5. Preflight check .....</b>	<b>78</b>
Step 1 - Printer calibration .....	79
Step 2 - Unboxing Wizard .....	79
Step 3 - Setup Wizard 1-2 .....	80
Step 4 - Setup Wizard 3 .....	80
Step 5 - Setup Wizard 4 .....	81
Step 6 - Display test .....	81
Step 7 - Setup Wizard 5 .....	82
Step 8 - Setup Wizard 6 .....	82
Step 9 - Setup Wizard 7 .....	83
Step 10 - Setup Wizard 8 .....	83
Step 11 - Setup Wizard 9 .....	84
Step 12 - Setup Wizard 10 .....	84
Step 13 - Calibration 1 .....	85
Step 14 - Calibration 2 .....	85
Step 15 - Calibration 3 .....	86
Step 16 - Calibration 4 .....	86
Step 17 - Calibration 5 .....	87
Step 18 - Calibration 6 .....	87
Step 19 - Calibration 7 .....	88
Step 20 - Calibration 8 .....	88
Step 21 - Calibration 9 .....	89
Step 22 - Calibration 10 .....	89
Step 23 - Calibration 11 .....	90
Step 24 - Finalising the calibration .....	90
Step 25 - Haribo time! .....	91
Step 26 - Quick guide for your first prints .....	91

Step 27 - Printable 3D models .....	92
Step 28 - Prusa knowledge base .....	92
Step 29 - Join PrusaPrinters! .....	93
<b>Manual changelog SL1</b> .....	94
Step 1 - Versions history .....	95
Step 2 - Changes to the manual (1) .....	95
Step 3 - Changes to the manual (2) .....	96

# 1. Introduction



## STEP 1 All the required tools are included



### ● The assembly kit includes:

- Cutting pliers
- Wrench
- Torx key
- Allen keys
- IPA cleaning pad
- Cardboard

**i** The cardboard will be used to make the assembly easier and protect some parts of the printer. Don't throw it away until the printer is fully built! Handle it carefully the edges might be sharp.

## STEP 2 Boxes and bags are labelled



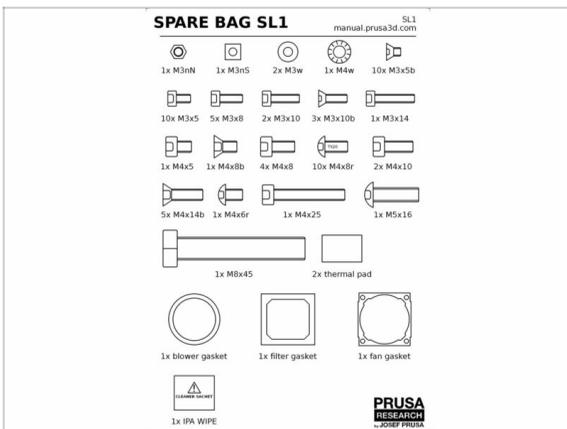
- All the boxes and bags including parts for the build are labelled.
- Number (or numbers) in the header tells you for which chapter you'll need that bag (or box).
- i** Note the displayed label of the bag is just an example, the content of the bag might differ. This is valid for the entire assembly manual.

### STEP 3 Use labels for reference



- i** Most of the labels are scaled 1:1 and can be used to identify the part :-)
- ◆ For the most common screws, nuts and PTFE tubes you can also use the enclosed letter, which contains Prusa Cheatsheet on the other side.
- i** You can [help.prusa3d.com/cheatsheet](https://help.prusa3d.com/cheatsheet) from our site. Print it at 100 %, don't rescale it, otherwise, it won't work.
- i** Note the displayed label of the bag is just an example, the content of the bag might differ. This is valid for the entire assembly manual.

### STEP 4 Spare bag



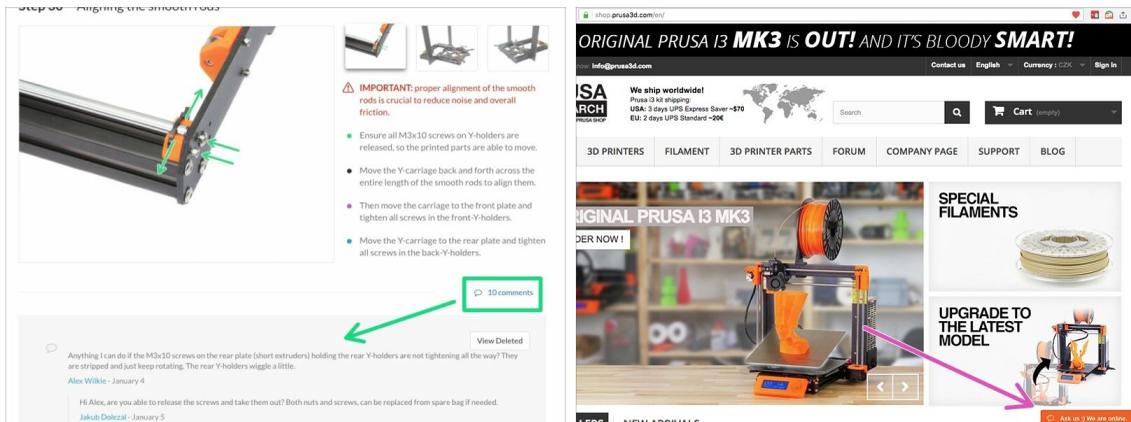
- ◆ Every type of fastener is included in a separate special bag.
- i** If you lose a screw when building, use one from this bag.
- i** Note the displayed label of the spare bag is just an example, the content of the bag might differ.

## STEP 5 View high resolution images



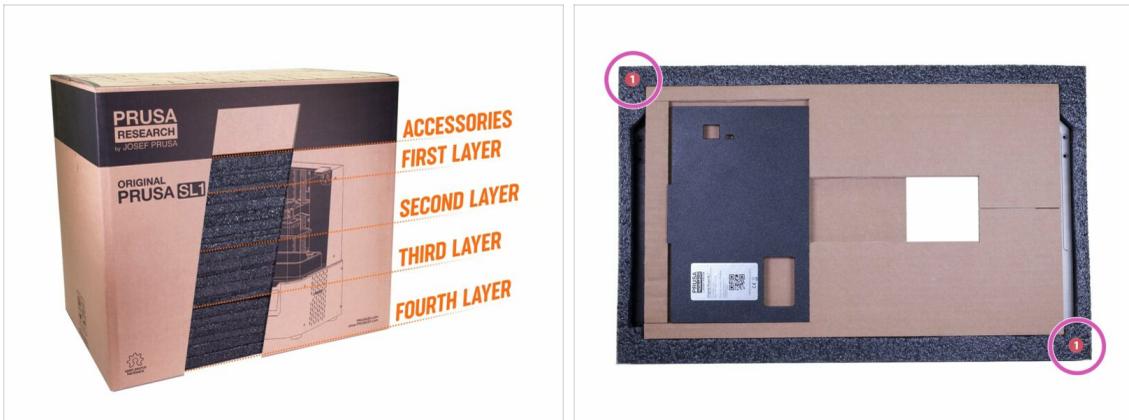
- When you browse any guide on [help.prusa3d.com](https://help.prusa3d.com), you can view the original images in high resolution for clarity.
- Just hover your cursor over the image and click the Magnifier button ("View original") in the top left corner.
- The picture is used as an example.

## STEP 6 We are here for you!



- Lost in the instructions, missing screw or damaged part? **Let us know!**
- You can contact us using the following channels:
  - Using comments under each step.
  - Using our 24/7 live chat at [shop.prusa3d.com](https://shop.prusa3d.com)
  - Writing an email to [info@prusa3d.com](mailto:info@prusa3d.com)

## STEP 7 Unpacking the SL1 kit



- The SL1 kit parts are separated into several layers of protective foam, which mostly comply with the chapters. However, some parts had to be moved into different layers due to their dimensions.
- The manual will inform you, which layers are necessary for each chapter.
- **You can remove all parts from the protective foams, but:**
  - Keep all electronics in the ESD bags until you have to mount or plug them to the printer.
  - Make sure the print platform is protected from scratches. Place it on a soft cloth.
  - Protect the acrylic lid against possible scratches.
- ⓘ To increase protection of the printer parts, the order of the foams was changed. However, it doesn't affect the assembly procedure. Parts moved together with foams.

## STEP 8 Important: Electronics protection



**⚠ WARNING:** Make sure to **protect the electronics against electrostatic discharge (ESD)**. Always unpack the electronics right before you need them!

● Here are some **tips to prevent damage to the electronics:**

● **Keep the electronics inside the ESD bag** right until you are asked to install them.

● **Always touch the sides of the board** while manipulating with it. Avoid touching the chips, capacitors and other parts of the electronics.

● **Before you touch the electronics** use any conductive (steel) structure nearby to discharge yourself.

● **Be extra cautious in the rooms with carpets**, which are a source of electrostatic energy.

● Clothes from wool and certain synthetic fabrics can easily gather static electricity. It is safer to wear **cotton clothing**.

**⚠ 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 9 Regular rewards are crucial!



- ◆ Building the SL1 printer is a challenge unlike any other and you should treat yourself for every milestone you reach. **That is why a bag of Haribo Bears is included!**
- ◆ After you finish each stage of this assembly guide, you will be given a specific amount of sweets to eat.
- ◆ **Don't eat all the bears before you start or at once!** Not following instructions will have serious consequences, we are currently assembling **Prusa Haribo tactical squad** for this matter.
- ◆ Eating more or fewer bears than prescribed in the manual might lead to fatigue or nausea. Please consult a professional in the closest candy store.
- ⚠ **Hide the Haribo for now!** From our experience, an unattended bag with sweets tends to suddenly disappear. We are still investigating this phenomenon.
- ⓘ All information provided in this step is based on a long-term very serious research study ;)

## STEP 10 How to successfully finish the assembly

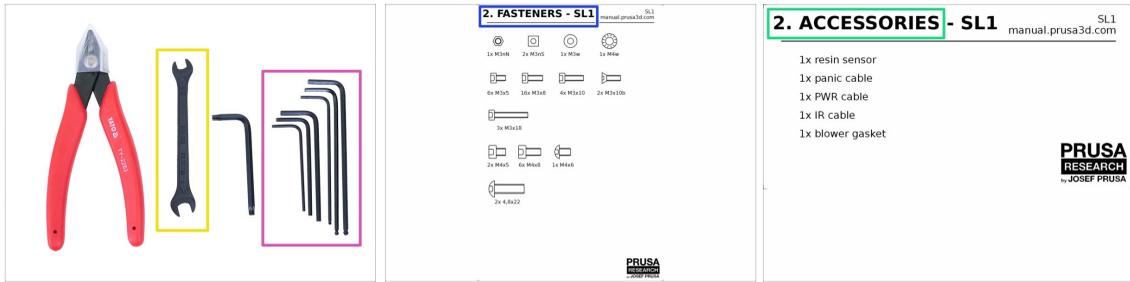


- ◆ **Always read all the instructions at the current step first**, it will help you to understand, what you need to do. **Don't cut or trim unless you are told to!!!**
- ◆ **Don't follow pictures only!** It is not enough, the written instructions are as brief as they could be. Read them.
- ◆ **Read the comments** from the other users, they are a great source of ideas. We read them too and based on your feedback, we improve the manual and the entire assembly process.
- ◆ **Use a reasonable force**, the printed and aluminium parts are tough, but not unbreakable. If it doesn't fit, check your approach twice.
- ◆ **Eat the gummy bears as instructed!** Disobedience won't be tolerated :D
- ◆ **Most important: Enjoy the build, have fun.** Cooperate with your kids, friends or partners. *However, we take no responsibility for possible fights ;)*
- ◆ **You can use your own tools** (e.g. pliers for easier screw insertion). In the case of electronic screwdriver, make sure the torque is set to low and proceed carefully.
- ◆ **READY?** You can start by assembling the printer in the next chapter - **2. Base & Tower**

## 2. Base & Tower



## STEP 1 Tools and bags for this chapter



For the chapter, please prepare:

2.0mm Allen key

2.5mm Allen key

3.0mm Allen key

Wrench

Bag 2. Fasteners

Bag 2. Accessories

Note that the content of the depicted labels in this manual might differ from the ones in the package.

## STEP 2 Preparing parts from the package



You will find parts for this chapter in the following protective foams:

**First layer** note that this layer includes also cardboard, which will be used during the assembly. Don't throw it away ;)

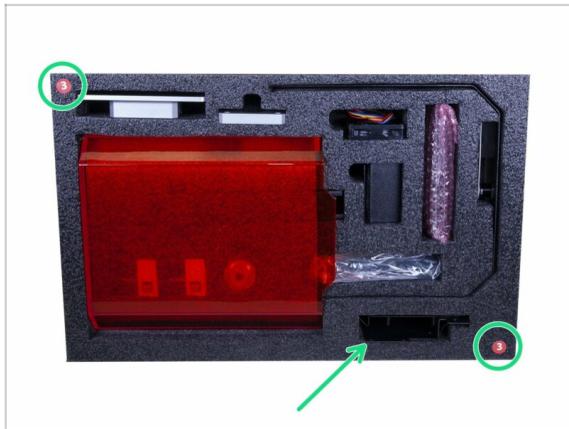
**Second layer** includes parts for the majority of this chapter.

**Fasteners for the entire printer** are included in the second layer, see the picture.

Remember to keep all electronics in their ESD bags, until you have to assemble them to the printer.

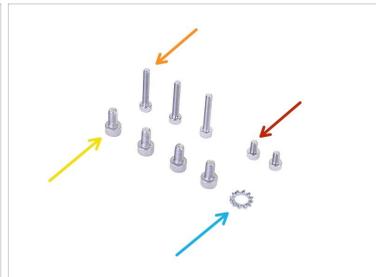
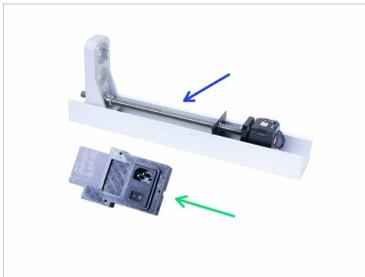
**WARNING: Handle the tower with care!!!** If you drop it or skew it, it will affect the print quality.

### STEP 3 Preparing parts from the package



- ◆ The blower fan holder (steel sheet) is placed in the **protective foam number 3**.

### STEP 4 Tower and PSU parts preparation



- ◆ **For the following steps, please prepare:**
- ◆ Back plate (1x) *including the cardboard*
- ◆ Tower (1x)
- ◆ SL1 PSU (1x)
- ◆ M4x8 screw (4x)
- ◆ M3x18 screw (3x)
- ◆ M3x5 screw (2x)
- ◆ M4w serrated lock washer (1x)

## STEP 5 Arranging the back plate



- ◆ Due to the safety reasons, the back plate is rotated during the transport. Let's rotate it back to the "assembly position".
- ◆ Flip the back plate 180 °. The notch must be facing up.
- ◆ The correct position of the back plate for the assembly. Make sure the "notch" is facing up.

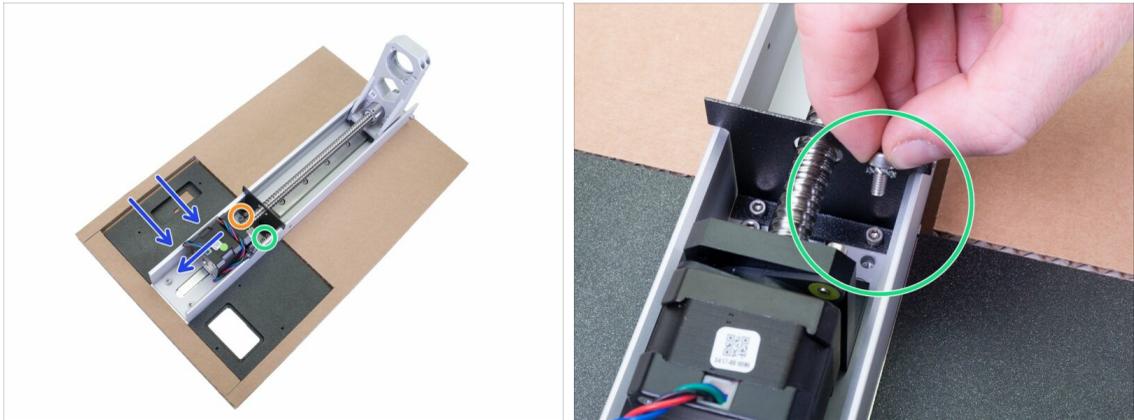
## STEP 6 Connecting the tower



**⚠ WARNING:** Proper assembly of the tower is **SUPER CRUCIAL**. If you misalign the tower, you will have issues with the prints. **Follow the instructions and use the included cardboard!**

- ◆ First, place the tower on the back plate like in the picture. See the four holes on both parts, which have to match each other.
- ◆ Rotate the tower on the back plate, then align the holes and insert two screws M4x8 in the lower row. **Don't tighten them yet!**
- ◆ Push the tower **DOWN** and to the **RIGHT** and then tighten:
  - ◆ First the screw on the left
  - ◆ Second the screw on the right

## STEP 7 Connecting the tower



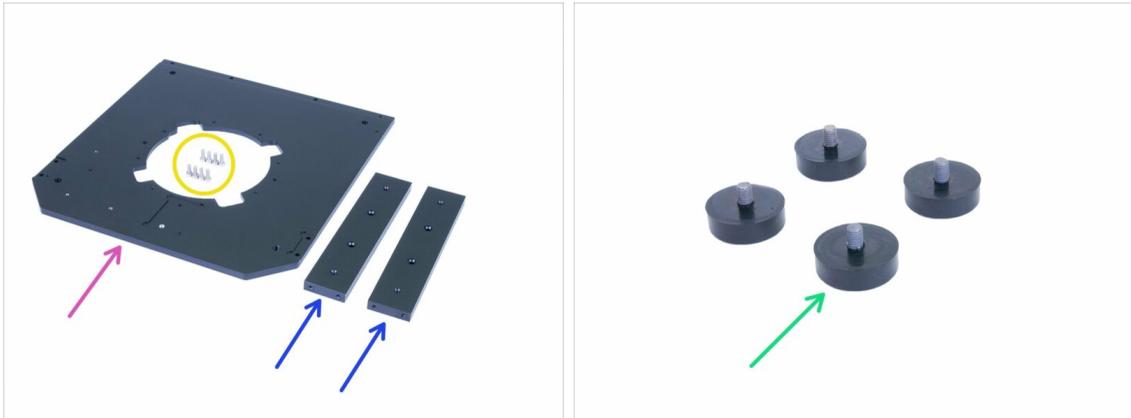
- Continue with the upper row, take the second pair of M4x8 screws.
- Push the tower **DOWN** and to the **RIGHT** and then tighten:
  - First the screw on the left
  - Second the screw on the right **with the M4w**
- ⚠ **Ensure all four screws are tightened properly, no wobble is allowed. Both parts must act as one.**

## STEP 8 Connecting the SL1 PSU



- ⚠ **IMPORTANT:** Continue using the enclosed cardboard to have the back plated lifted from the desk. The reason is that the power button on the PSU, which will be facing down might get damaged.
- PSU is mounted using three holes, check the first picture to see where is their location.
- Mount the PSU using three M3x18 screws. Tighten them all the way down.
- Take the M3x5 screws and screw them in the back plate, 2-3x turns are enough. We will slide a sheet in later on, so don't tighten them. Make sure each screw is perpendicular to the back plate in both axes.

## STEP 9 Tower and PSU parts preparation



● For the following steps, please prepare:

● Bottom plate (1x)

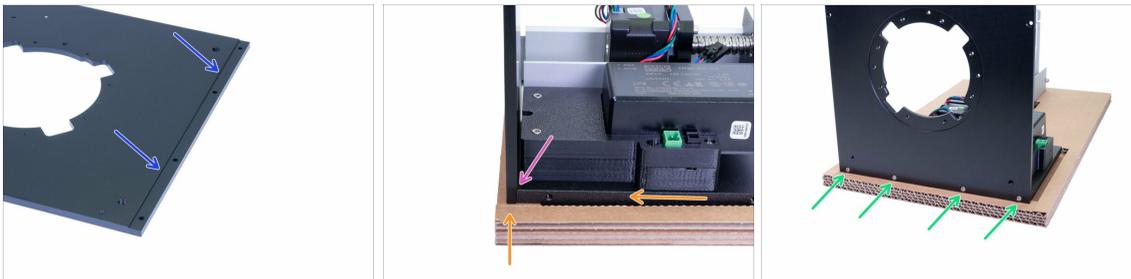
● Support (2x)

● M3x8 screw (8x)

● Adjustable foot (4x)

ⓘ Don't install any foot before being told to, you would block yourself access to some screws.

## STEP 10 Mounting the bottom plate



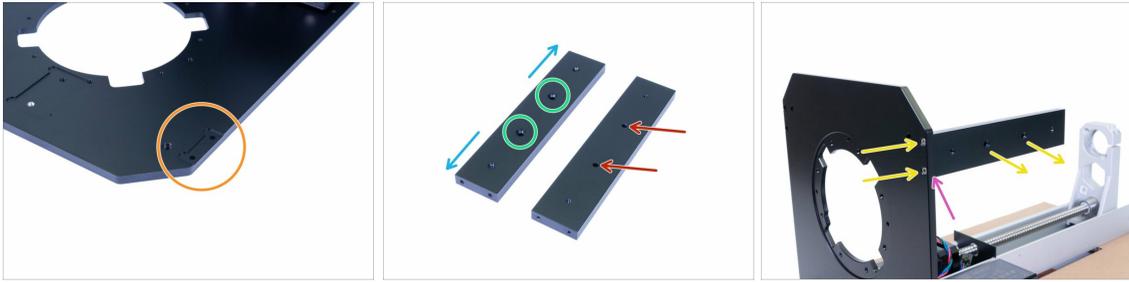
● Before we connect the bottom plate to the rest of the printer, let's find the groove, which will be used to align both parts together.

● Lift and slightly slide the current assembly to the edge of the cardboard to get access to the lower edge of the back plate. Keep some space for adding the bottom plate.

● Place the side of the bottom plate with the groove on the back plate. Make sure both parts are aligned properly and no wires are pinched.

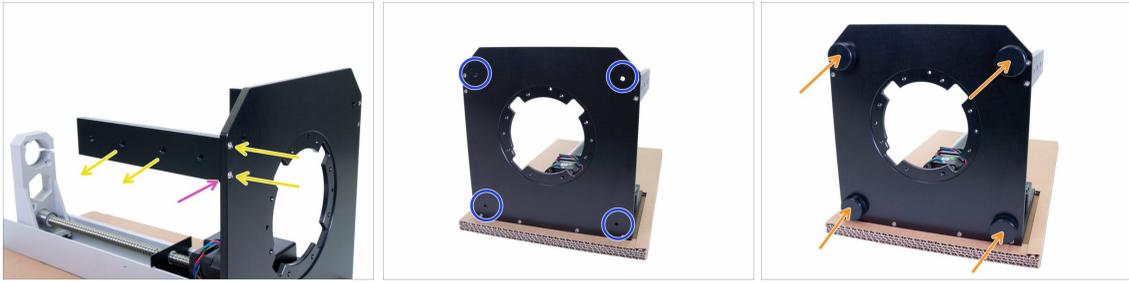
● Secure both parts together using four M3x8 screws.

## STEP 11 Mounting the supports



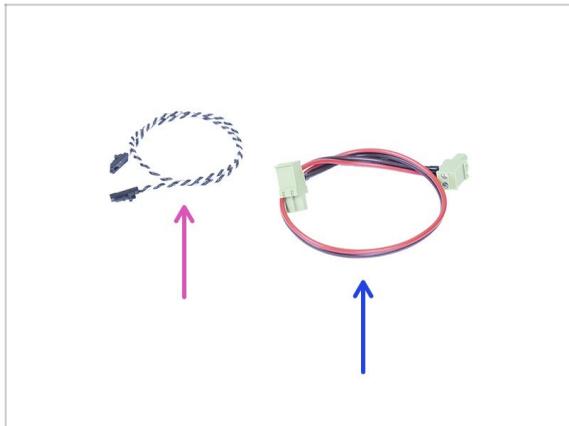
- ◆ Before you mount the support, please take a closer look at:
- ◆ The bottom plate, which has two special grooves for the supports. The picture is showing just one, the second is on the opposite side and completely identical.
- ◆ Each support has two holes with countersink from one side, this side has to be facing outwards from the printer.
- ◆ The other side of the support is without countersink and must be facing inwards to the printer.
- ◆ All the holes are symmetrical, therefore apart from the countersink holes, you can rotate them either way.
- ◆ Take the first support and mount it to the bottom plate. Ensure the countersink holes are facing outwards, then secure the support using two M3x8 screws from the bottom.
- ◆ Check the bottom plate and support outer surfaces are aligned. If not, release the screws a little bit and readjust the support. Then tighten the screws again.
- i Continue in the next step...

## STEP 12 Mounting the adjustable feet



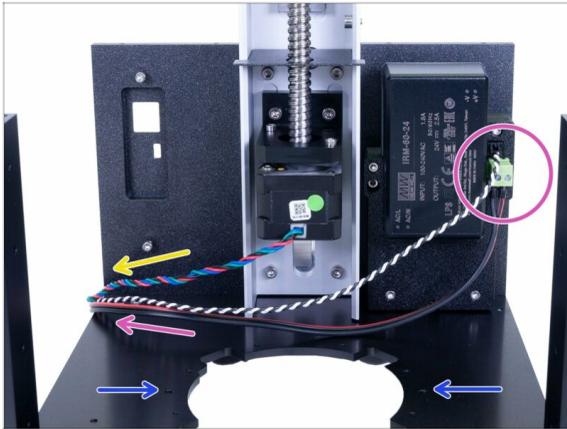
- ◆ Install the second support from the other side of the printer. Again, ensure the countersink is facing outwards and secure the support using two M3x8 screws.
- ◆ Check the bottom plate and support outer surfaces are aligned. If not, release the screws and readjust the support. Then tighten the screws again.
- ◆ Turn the bottom of the printer towards you and locate the holes for the adjustable feet.
- ◆ Screw the adjustable feet all the way in.
- i Now you can place the printer on its feet and remove the cardboard. However, keep it for later use.

## STEP 13 Preparing PSU cables



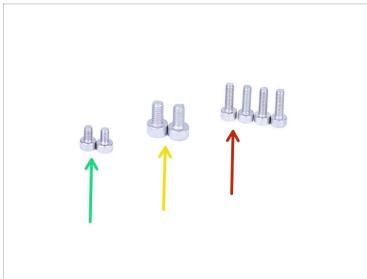
- ◆ **For the following steps, please prepare:**
- ◆ Power panic cable (1x)
- ◆ Power cable (1x)

## STEP 14 Connecting the cables



- ◆ Connect both cables to the PSU and guide them to the left side of the printer. Cables are symmetrical, use any side with the connector.
- ◆ See the holes, which will be used later on to mount the reflector.
- ◆ Guide the cable from the tower motor in the indicated direction.

## STEP 15 Preparing the tilt motor parts

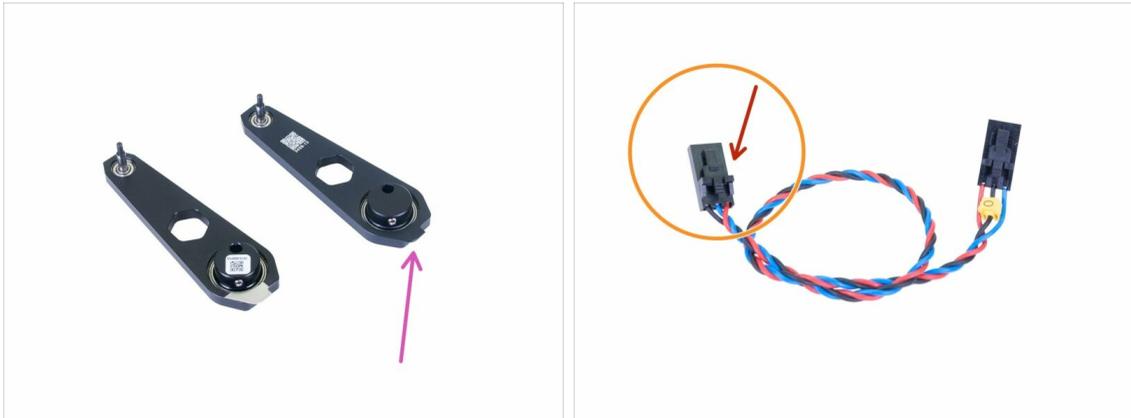


◆ For the following steps, please prepare:

- ◆ Tilt motor (1x)
- ◆ Tilt motor holder (1x)
- ◆ M3x10 screw (4x)
- ◆ M4x8 screw (2x)
- ◆ M3x5 screw (2x)
- ◆ Optical IR-sensor (1x) *can be black or red, functionality is the same*

ⓘ The list continues in the next step...

## STEP 16 Preparing the tilt motor parts



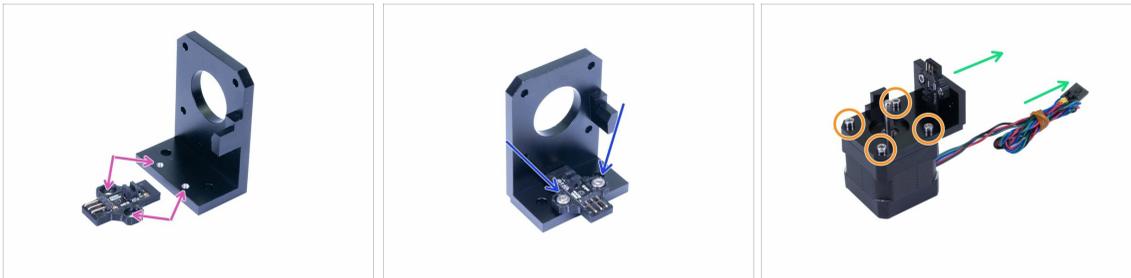
◆ For the following steps, please prepare:

- ◆ Connecting rod (1x)
- ◆ Optical sensor cable (1x)

⚠ **The connectors of the optical sensor cable differ in wiring! Make sure you follow the instructions and connect it correctly! The side marked with the red arrow must be connected to the optical sensor.**

ⓘ There are two versions of the connecting rod. They differ in the manufacturing process, assembly is the same.

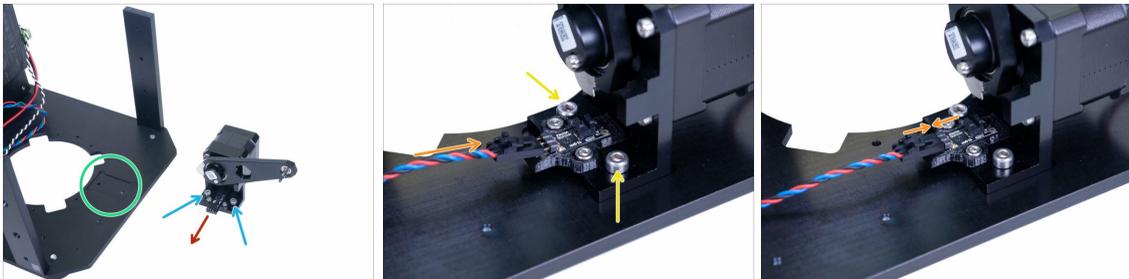
## STEP 17 The tilt motor assembly



- ◆ Check the tilt motor holder for mounting points, which will be used for the optical sensor.
- ◆ Place the optical sensor on the holder and secure it using two M3x5 screws. **Don't tighten the screws, we need to adjust the position of the sensor.**
- ◆ Place the holder on the tilt motor. See the picture for the correct orientation. Use the motor cable as a guide.
- ◆ Connect the holder with the tilt motor using four M3x10 screws.

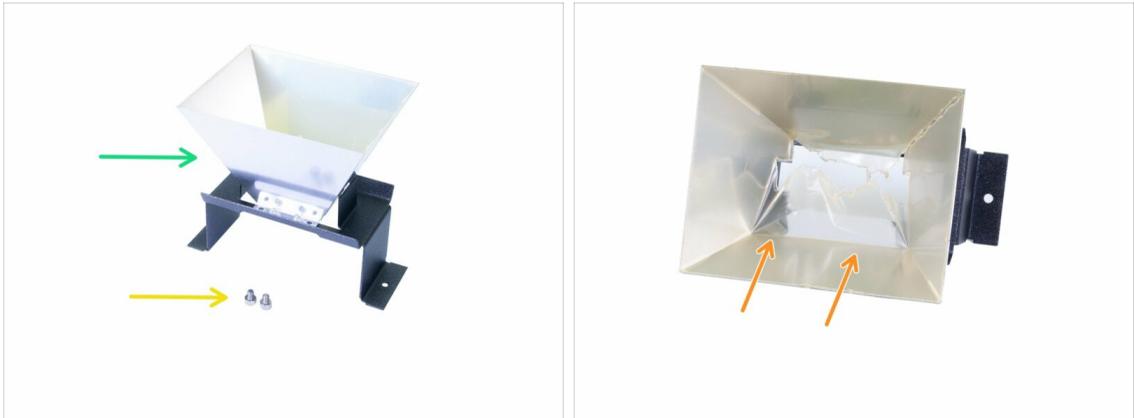
**STEP 18** The tilt motor assembly

- 🟠 Rotate the flat part of the shaft as in the picture.
- 🟡 Slide the connecting rod on the motor shaft and align it with the tip of the shaft. Make sure the orientation is like in the picture.
- 🟢 **IMPORTANT:** Align the connecting rod with the protrusion on the holder. Both surfaces should be flush. This will ensure the rod will be vertical.
- 🟣 Tighten the grub screw against the flat part of the shaft.

**STEP 19** The tilt motor assembly

- 🟢 Before we install the assembly into the printer, let's find the correct mounting spot. There is a groove in the printer's bottom plate.
- 🟣 Insert two M4x8 screws in the tilt motor holder, which will be used to secure it to the bottom plate.
- 🟠 Make sure the pins are facing to the left side of the printer (see the arrow), this will ensure correct orientation.
- 🟡 Place the entire assembly in the printer and make sure it is aligned with the groove. Then tighten both M4x8 screws.
- 🟠 Connect the cable to the sensor, ensure you aren't using the side with the yellow marker. In the beginning, while connecting the cable the connector has to be slightly inclined.
- 🟡 Before you leave to the next step, make sure the connector is all the way in.

## STEP 20 Preparing the reflector



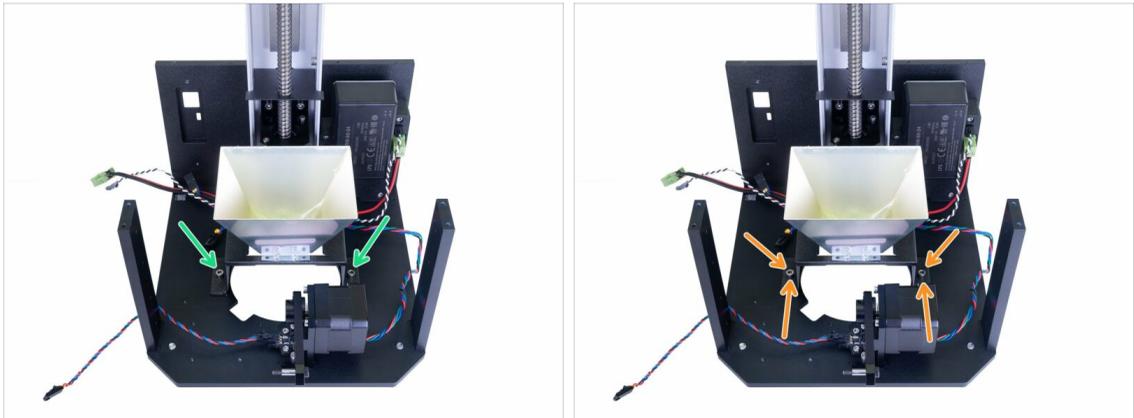
● For the following steps, please prepare:

● Reflector (1x)

● M4x5 screw (2x)

● Inside the reflector, there is a protective film, don't peel it off for now! Wait for the last chapter.

## STEP 21 Mounting the reflector



● Place the reflector inside the printer and slightly secure it using two M4x5 screws. The reflector is symmetrical, orientation doesn't matter.

● Gently push the reflector towards the back of the printer (tower). Use the lower part of the reflector, avoid pressing the upper part. Tighten both screws firmly.

⚠ **Don't peel off the protective film from the reflector. Wait for the last chapter!**

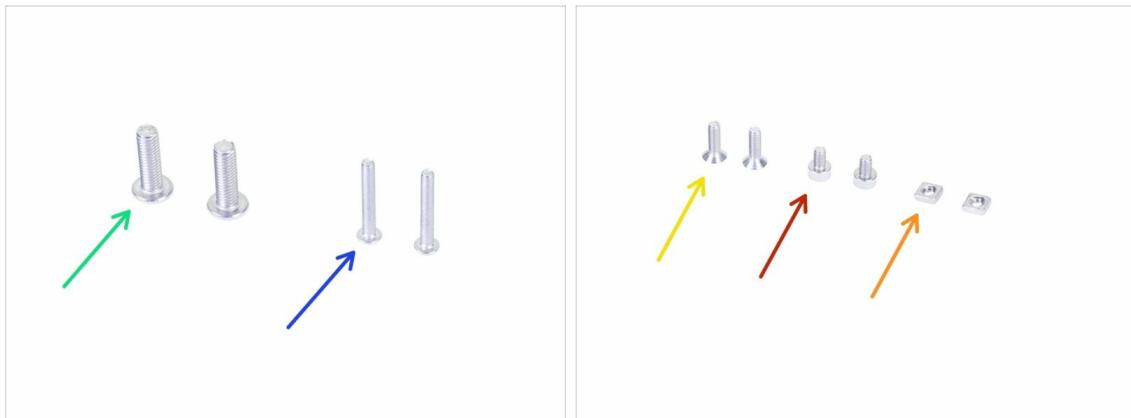
## STEP 22 Right blower fan parts preparation



### For the following steps, please prepare:

- Right blower fan (1x)
- Blower fan holder (1x)
  - New version (with columns)
  - Old version (without columns)
- Blower (1x)
- Blower gasket (1x)
- i The list continues in the next step...

## STEP 23 Right blower fan parts preparation



### For the following steps, please prepare:

- M3x20r screw (2x) *new blower fan holder*
- M5x10r screw (2x) *old blower fan holder*
- M3x10b countersunk screw (2x)
- M3x5 screw (2x)
- M3nS nut (2x)
- i Note that your package contains either M3x20r or M5x10r screws based on the blower fan holder version.

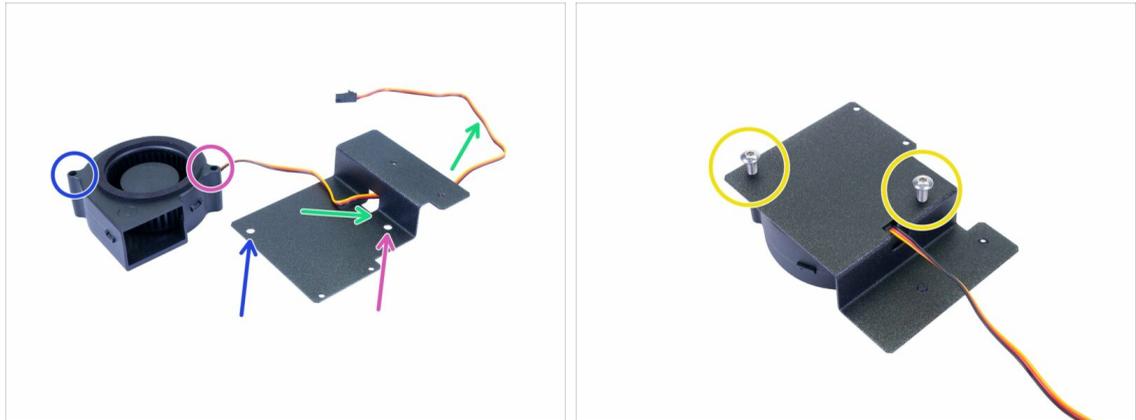
**STEP 24** Blower fan gasket

- ◆ Use the IPA cleaning pad from the package to clean the surface of the fan (the side with the turbine), before you apply the gasket. Keep the pad for later use.
  - ◆ Remove the centre part of the gasket, you will need just the outer "rim".
  - ◆ Peel off the protective film (paper).
  - ◆ Place the gasket on the fan as in the picture, with the glue facing down. Press it all around to ensure full contact between the gasket and the fan.
- ⚠ **Make sure no part of the gasket is interfering with a spinning (central) part of the fan!**

**STEP 25** Fan assembly (new version)

- ◆ Place the fan and the fan holder like in the picture. See the arrows to ensure correct orientation of the fan.
  - ◆ The left side of the fan.
  - ◆ The right side of the fan.
  - ◆ Guide the cable through the hole.
  - ◆ Place the fan on the columns and slide it carefully all the way down. Try to push equally to ensure the fan is always levelled.
  - ◆ Secure the fan using two M3x20r screws. Tighten them very carefully, or you might break the fan's casing.
- ⓘ You can skip the next step.

## STEP 26 Fan assembly (old version)



- Place the fan and the fan holder like in the picture. See the arrows to ensure correct orientation of the fan.
- The left side of the fan.
- The right side of the fan.
- Guide the cable through the hole.
- Turn the assembly around and insert two screws M5x10r (previously M5x16r). **Tighten them very carefully**, or you will break the fan's casing.

## STEP 27 Blower assembly



- First, prepare the blower by inserting two M3x5 nuts, all the way in. Ensure the alignment using the Allen key.
- Rotate the fan assembly like in the picture and assemble the blower from the top, while:
  - The front edge has to fit inside the fan's casing.
  - The left and right edges will be outside the fan's casing.
- ⓘ The assembly must be smooth, don't apply unnecessary force or you will break the fan or the printed part.
- Once the blower is seated, ensure there is no visible gap or deformation.
- To mount the blower, turn the assembly carefully around and secure it with the M3x5 screws.

## STEP 28 Mounting the fan assembly



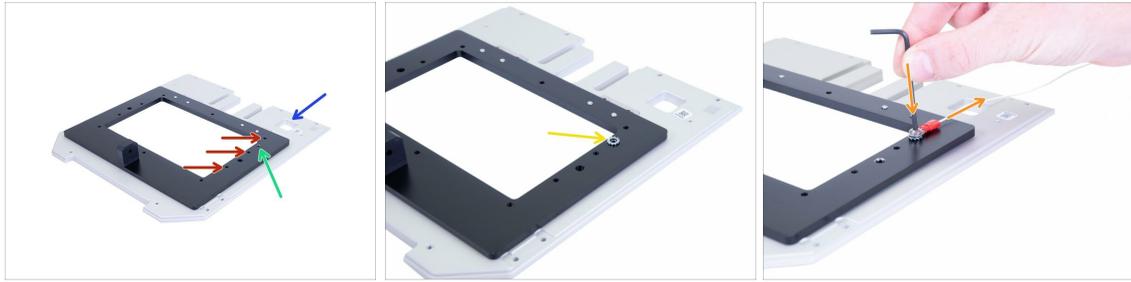
- ◆ Move the cable from the tilt motor around the reflector like in the picture.
- ◆ Insert the fan assembly inside the printer. The metal sheet (fan holder) has to be behind the support.
- ◆ Secure the assembly using two M3x10b countersunk screws.
- ◆ Flip the cable from the fan inside the printer. First, guide it between the fan and the reflector, then turn to the left and guide it between the reflector and the tower.

## STEP 29 Tilt preassembly parts preparation



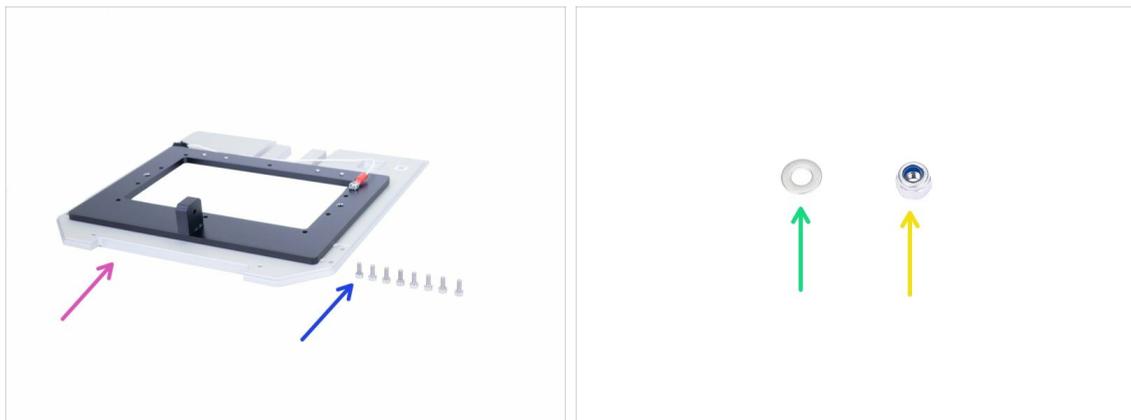
- ◆ **For the following steps, please prepare:**
- ◆ Tilt preassembly (1x)
- ◆ Resin sensor cable (1x)
- ◆ M4x6r screw (1x)
- ◆ M4w serrated lock washer (1x)
- ⓘ *In case you are missing the second washer, use the spare bag.*

## STEP 30 Resin sensor cable assembly



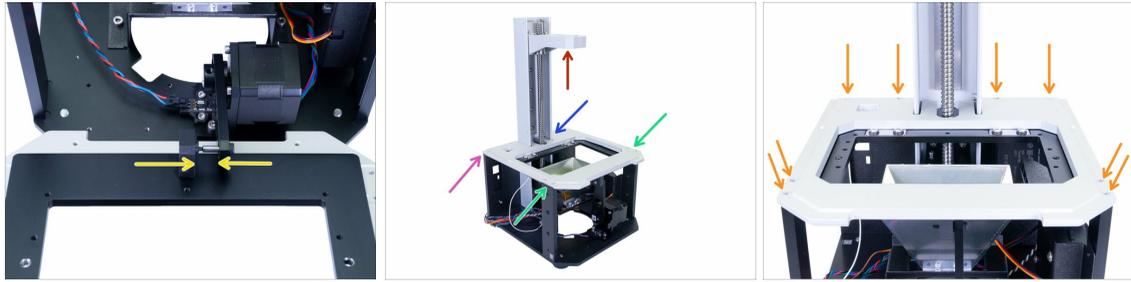
- ◆ Rotate the tilt preassembly with the hole being on the right side.
  - Before you attach the cable, make sure you are using the correct hole:
    - ◆ **The correct hole** for the resin sensor cable.
    - ◆ Incorrect holes, avoid using them.
  - ◆ **Place the M4 washer on the correct hole first.** Don't place the cable on the tilt, otherwise, you will have issues later!
  - ◆ Add the cable on the top of the washer and secure it using an M4x6r screw. Make sure the cable is facing to the back. Tighten the screw properly, we need the washer to "bite" in the surface of the tilt, but be careful not to damage the screw.
- ⚠ **It is very important that the washer is in direct contact with the surface of the tilt. Make sure you didn't switch the order!**

## STEP 31 Tilt parts preparation



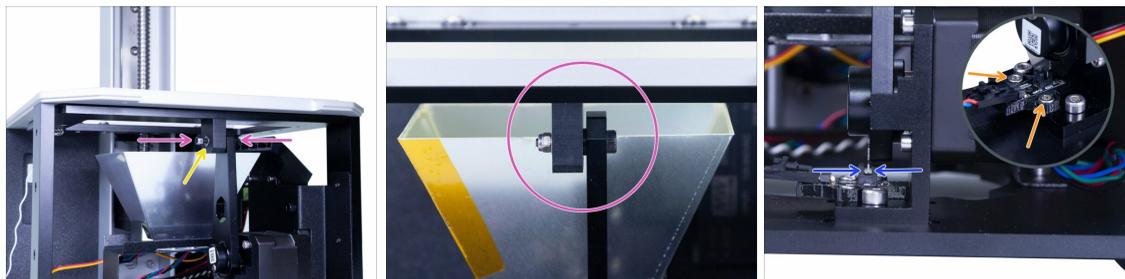
- **For the following steps, please prepare:**
  - ◆ Tilt assembly (1x)
  - ◆ M3x8 screw (8x)
  - ◆ M3w washer (1x)
  - ◆ M3nN nyloc nut (1x)

## STEP 32 Mounting the tilt assembly



- ◆ First, make sure the cantilever is close to the top of the tower. You will need space to flip the tilt assembly in.
- ◆ Pull the connecting rod outside the printer and slide the tilt assembly on the pin, all the way in. Both parts have to be in direct contact.
- ◆ Carefully flip the tilt assembly on the printer and check the following:
  - ◆ The tilt assembly is properly aligned with the edge of the back plate.
  - ◆ No wire is pinched.
  - ◆ The tilt assembly fits "around" the tower.
  - ◆ The tilt assembly fits on top of both supports.
- ◆ After the tilt assembly is properly seated, secure it using eight M3x8 screws.

## STEP 33 Optical sensor calibration



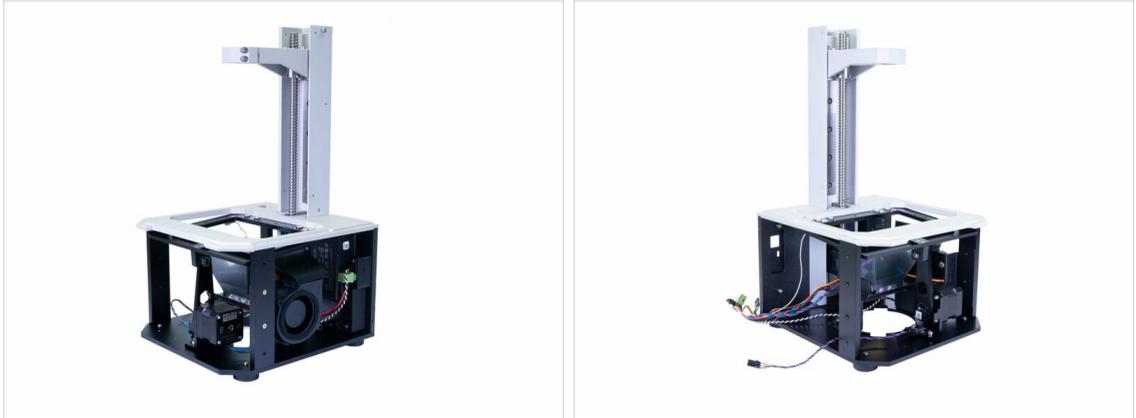
- ⚠ WARNING:** take your time during this step and ensure the sensor is calibrated properly. This will help you avoid possible issues during the prints.
- 🟡 Place the M3w washer on the screw together with the M3nN nyloc nut.
  - 🟣 **Carefully tighten** the nut to ensure direct contact between both parts. It is recommended to use the spanner to hold the nut and an Allen key from the other side.
  - ⬛ For the last step, push the connecting rod down, so the silver steel plate on the rod reaches the optical sensor.
    - 🟠 Align the optical sensor according to the steel notch of the connecting rod. It has to be within the brackets, ideally in the middle.
    - 🟡 Hold the sensor and tighten the screws.
- ⚠ Double-check the entire tilt mechanism to comply with the instructions above and if necessary adjust any part!**

## STEP 34 Haribo time!



- ⚠** It is time to treat yourself! However, open the bag with the Haribo sweets **carefully and quietly**. High level of **noise might attract nearby predators!**
- ⬛ Arrange the bears according to the picture. First three chapters will be the most demanding, the fourth will take just a few minutes.
  - 📘 You can use the resin tank to organise the bears, but keep in mind the bottom is missing for now ;)
  - 🟡 Eat the first row to replenish the energy lost during this chapter.

## STEP 35 Final check



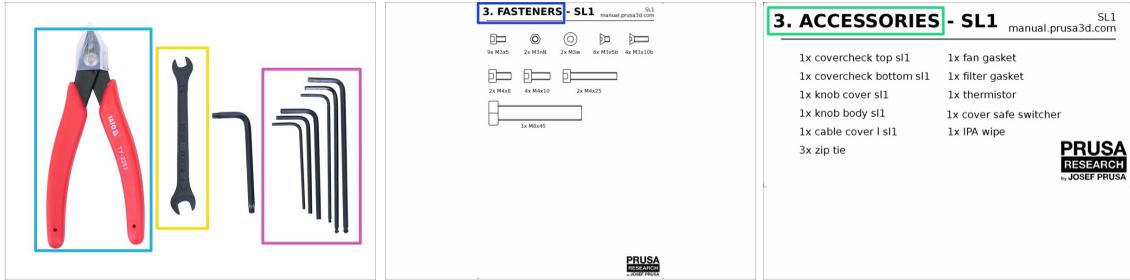
 From now on, please always use the lower part of the printer while moving with the printer. **Avoid using the tower or the cantilever!**

- Compare the look of the assembly with the picture.
- Ready? Let's build the upper part of the printer **3. Covers & Platform**

### 3. Covers & Platform



## STEP 1 Tools and bags for this chapter



● For this chapter, please prepare:

- 2.0 mm Allen key
- 2.5 mm Allen key
- 3.0 mm Allen key
- Wrench
- Cutting pliers
- Bag 3. Fasteners
- Bag 3. Accessories

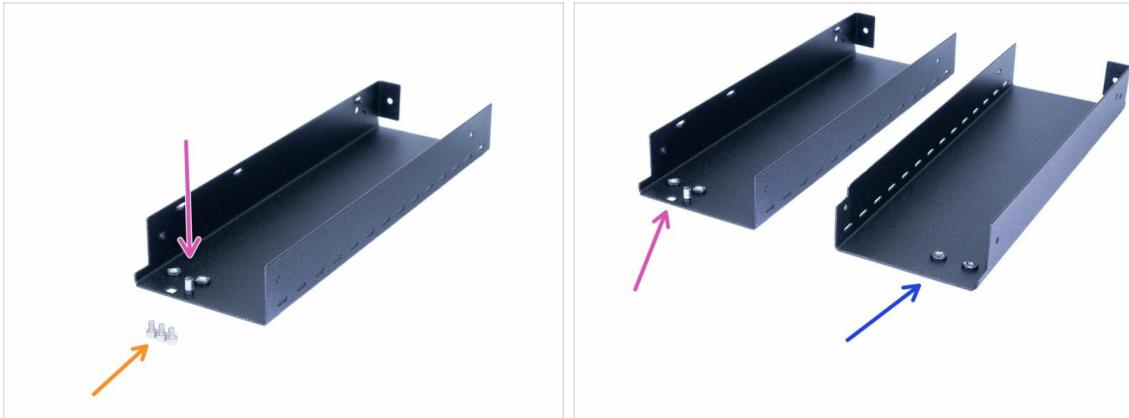
## STEP 2 Preparing parts from the package



● You will find parts for this chapter in the following protective foams:

- **Third layer** includes the majority of the parts for this chapter. Some parts will be used in the next.
- **Fourth layer** hides a cover, which has to be used in this chapter. To get access to the cover, you have to first remove the middle part of the fourth layer.

### STEP 3 Tower covers - parts preparation



● For the following steps, please prepare:

● Tower sheet left (1x)

● M3x5 screw (3x)

⚠ There are two sheets in the package, left and right. Learn how to distinguish between them.

● The left sheet has a hole and "extension" nut near its top edge. Use this sheet now.

● The right sheet has nothing near its top edge. This sheet will be used later.

### STEP 4 Mounting the left tower sheet



● Rotate the printer like in the picture, with the back plate facing towards you.

● Focus on the right side and find three holes, which will be used to mount the sheet.

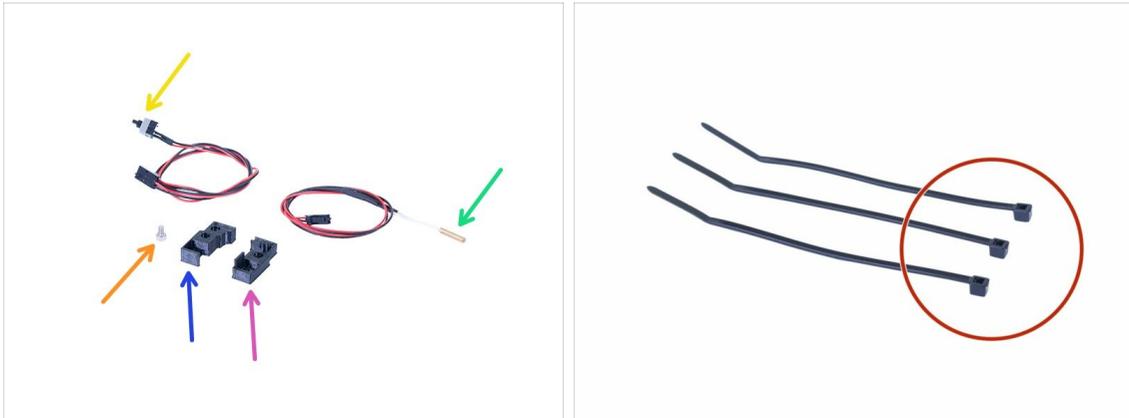
● Now, the tricky part :) Take the left tower sheet (with the hole and nut) and place it on the printer.

● Use the M3x5 screws to fix it to the tower.

ⓘ Use the hole in the lower part of the sheet for easier access to the screw.

● Finish fixing the sheet to the tilt (horizontal part) using the M3x5 screw.

## STEP 5 Sensors parts preparation



● For the following steps, please prepare:

● Covercheck top SL1 (1x)

● Covercheck bottom SL1 (1x)

● Thermistor (1x)

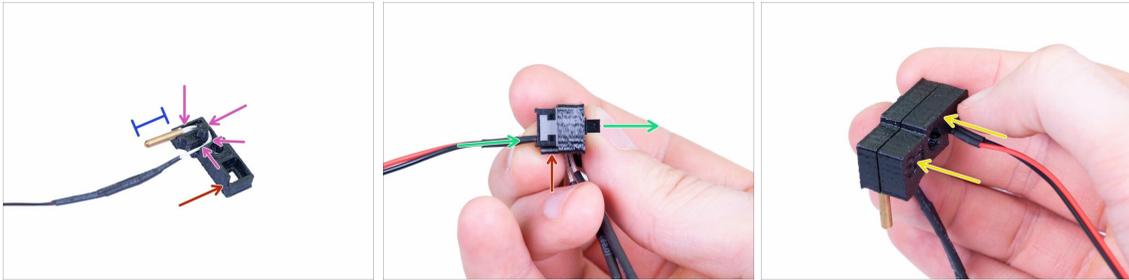
● Lid safety switch (1x)

● M3x5 screw (1x)

● Zip tie (3x)

ⓘ Don't worry about recognising which printed part is top and which bottom, it will be clear from the next step.

## STEP 6 Assembling the sensors



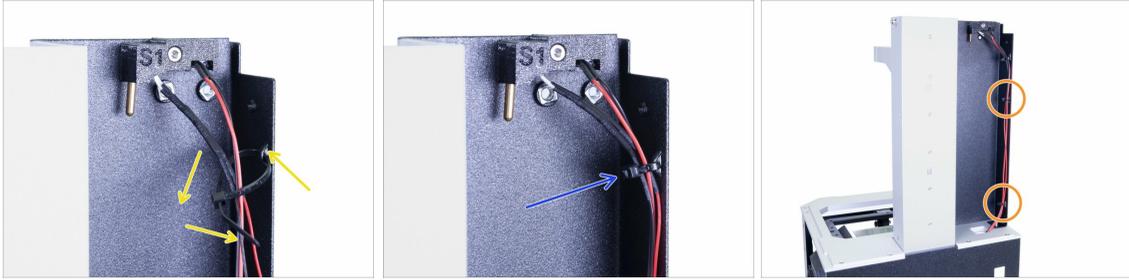
- Let's start with the thermistor, **take the covercheck top** and insert the thermistor in. The cable channel is only in this top part.
- For easier assembly let's assume that the bottom side is marked with the red colour.
- Guide the cable using the channel and make sure it is entirely inside. If not, you might pinch it after adding the opposite printed part.
- About 80 % of the thermistor's tip should be outside the printed part to measure the temperature properly.
- Now, insert the lid safety switch. Insert it from the same side as the thermistor. In other words, both sensors will have cables on the same side of the printed part. Also, ensure that the cables are closer to the lower edge of the printed part.
- Finish the assembly using the second printed part. This time it is the covercheck bottom. **Ensure no wire is pinched or bent!!!**

## STEP 7 Assembling the covercheck



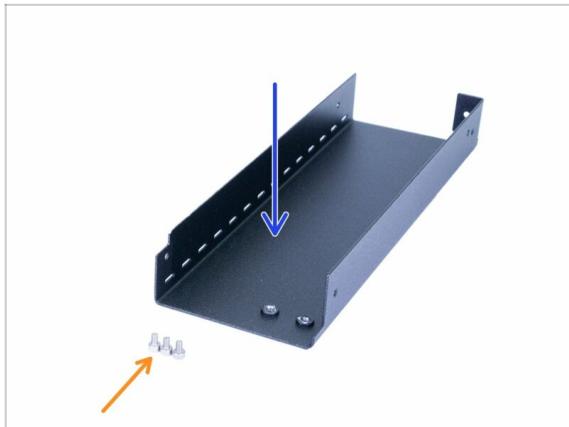
- Assemble the covercheck onto the left tower sheet. Use the following tips:
  - The button of the switch has to go through the hole.
  - The circular hole in the printed parts must fit on the "extension" nut welded to the sheet.
- Secure the covercheck assembly using the M3x5 screw.
- Guide the cable down through the hole in the printer. Don't pull the cable, leave it hanging.
- Check the three perforations in the steel sheet we will use them in the next step for cable management.

## STEP 8 Sensors cable management



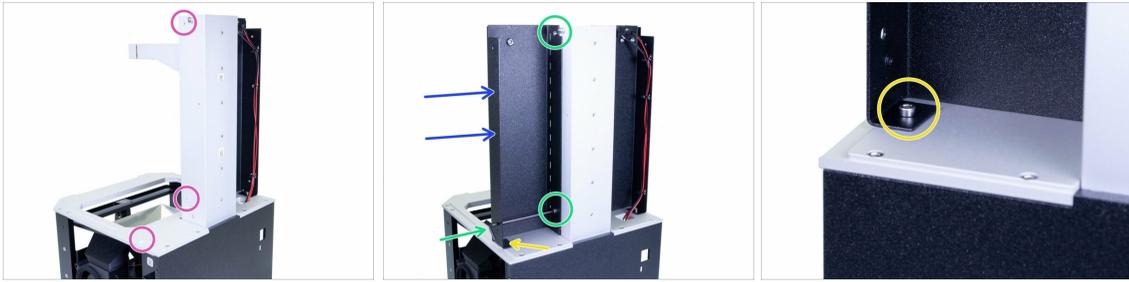
- Slide the first zip tie in the perforation and create a loop around the cables.
- Tighten the zip tie, but just slightly. The cables might break if you use too much force. Cut the remaining part using the pliers.
- Apply the same procedure on the remaining two perforations.
- ⓘ No need to stretch the cable, leave it hanging down.

## STEP 9 Tower covers - parts preparation



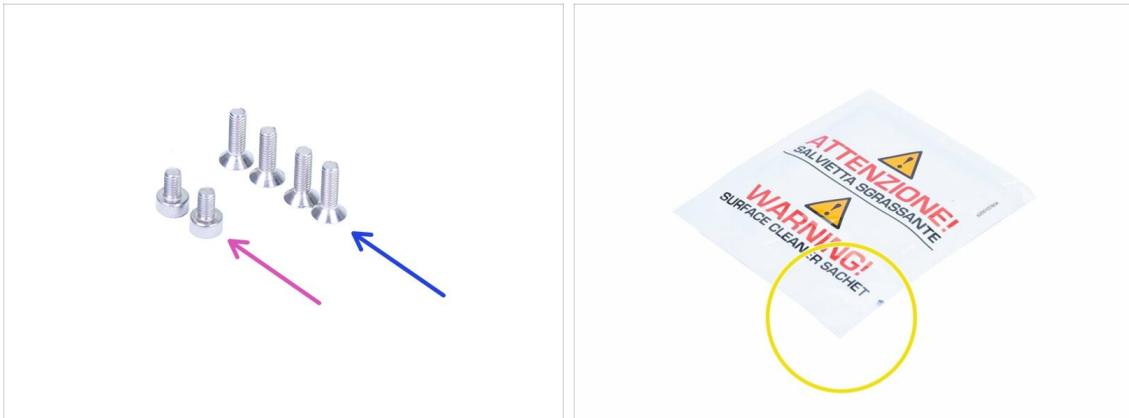
- **For the following steps, please prepare:**
- Tower sheet right (1x)
- M3x5 screw (3x)

## STEP 10 Mounting the right tower sheet



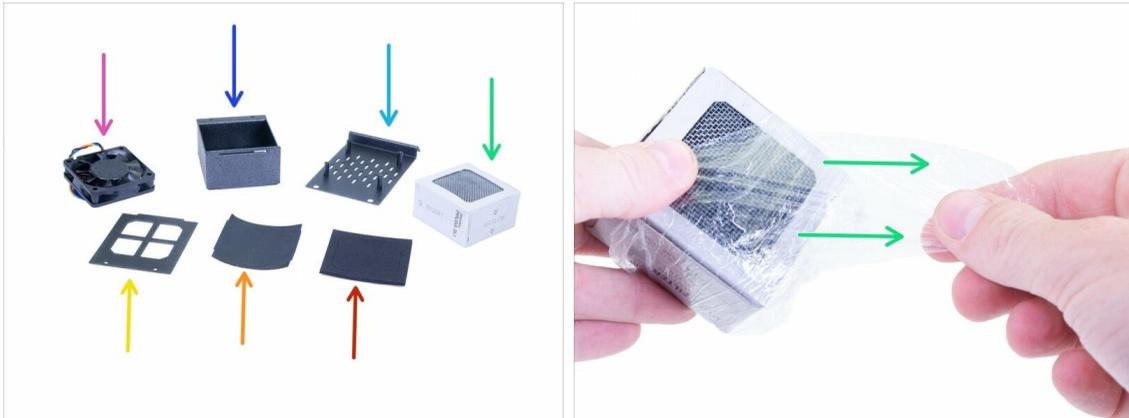
- Rotate the printer like in the picture, with the back plate facing towards you.
- Focus on the left side and find three holes, which will be used to mount the sheet.
- Take the remaining (right tower) sheet and place it on the printer.
- Use the M3x5 screws to fix it to the tower.
- Use the hole in the lower part of the sheet for easier access to the screw.
- Finish fixing the sheet to the tilt (horizontal part) using the M3x5 screw.

## STEP 11 Filtration assembly parts preparation



- **For the following steps, please prepare:**
- M3x5 screw (2x)
- M3x10b countersunk screw (4x)
- Cleaning pad
- The list continues in the next step...

## STEP 12 Filtration assembly parts preparation



● For the following steps, please prepare:

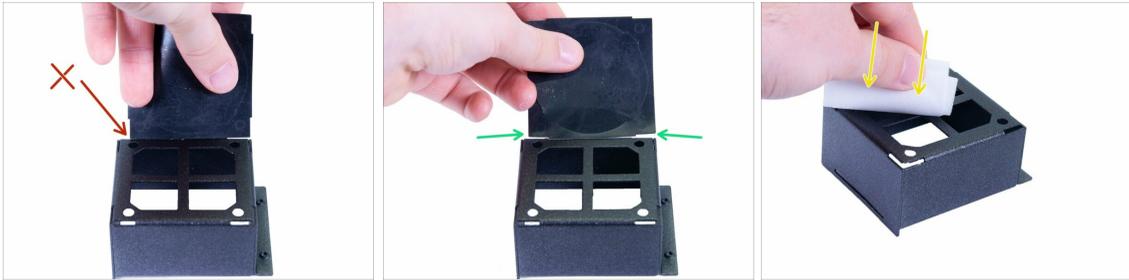
- Filter fan (1x)
- Filter housing (1x)
- Filtration cover (1x)
- Filter (1x) *Remove the plastic film, but don't tear the paper cover.*
- Filter housing lid (1x)
- Filter gasket (1x)
- Filter fan gasket (1x)

## STEP 13 Assembling the filtration fan



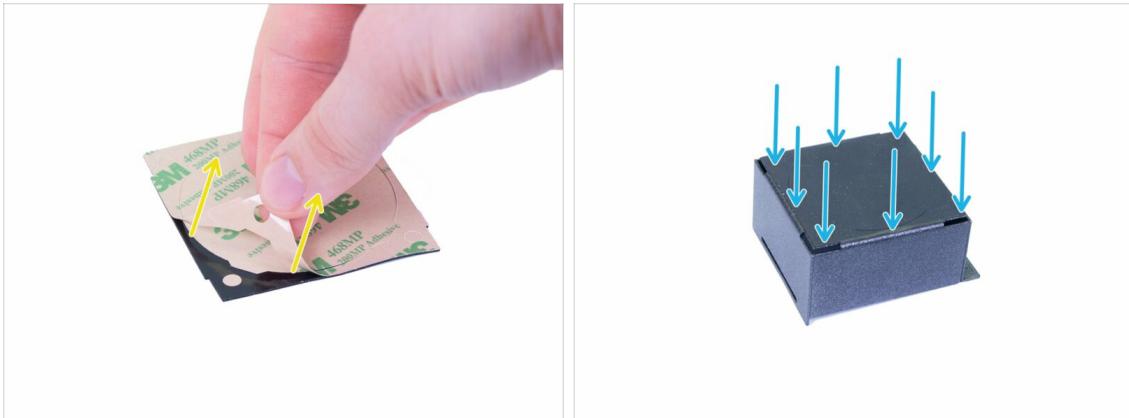
- Align the fan on "columns" of the filtration cover with the sticker fan casing facing down.
- Make sure the cable is on the lower-left corner, see the picture.
- Press the fan all the way down. Use a reasonable force, the case is made from plastic.

## STEP 14 Gasket preparation



- Compare the size of the filter gasket with the filter housing. It is not a square!
- Wrong orientation, this side is too short.
- Correct orientation.
- Use the cleaning pad to remove grease from the housing. Avoid touching this surface. Keep the pad for later use.

## STEP 15 Glueing the gasket



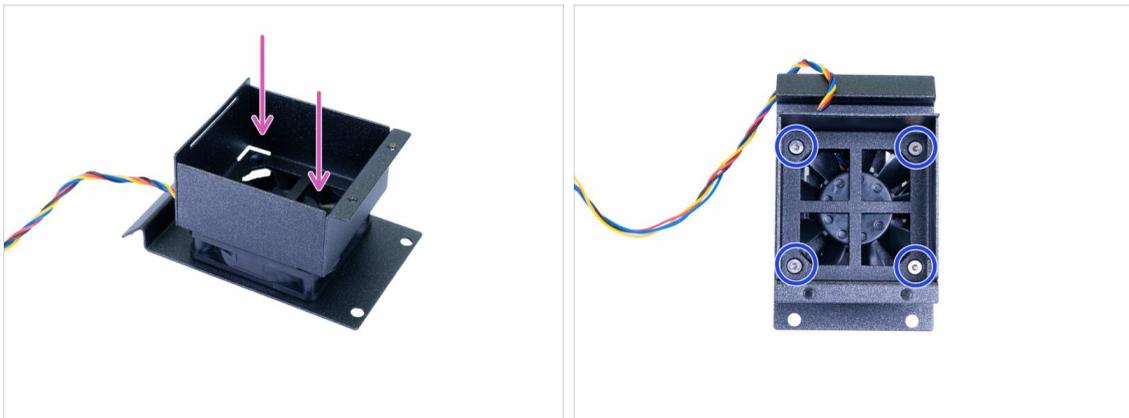
- Peel the protective film from the filter gasket, leave the circular part in the middle untouched.
- Glue the gasket on the housing. Press it firmly all around the housing.
- ⓘ In case you will damage the gasket during the installation, there is spare one in the spare bag ;)

## STEP 16 Removing parts of the gasket



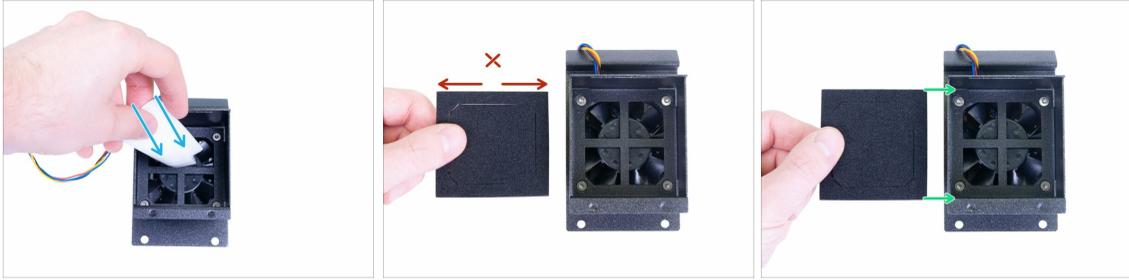
- ◆ Using an Allen key, carefully punch through all four holes in the corners. Make sure you have removed the circular cutouts of the gasket.
- ◆ Carefully press the circular part in the middle to lift off the edge.
- ◆ Hold the outer part of the gasket and very gently tear the middle (circular part) off.

## STEP 17 Installing the housing



- ◆ Place the housing on the fan. See the photo for the correct orientation.
- ◆ Secure the housing using M3x10b countersunk screws. **TIGHTEN** the screws only **SLIGHTLY** to ensure both parts are properly connected but don't over-tighten as you might squish the gasket between them.
- ⓘ Squished gasket might interfere with the blades of the fan. In such case remove the gasket and replace it with the spare one. This time tighten the screws slightly less than before.

## STEP 18 Preparing the second gasket



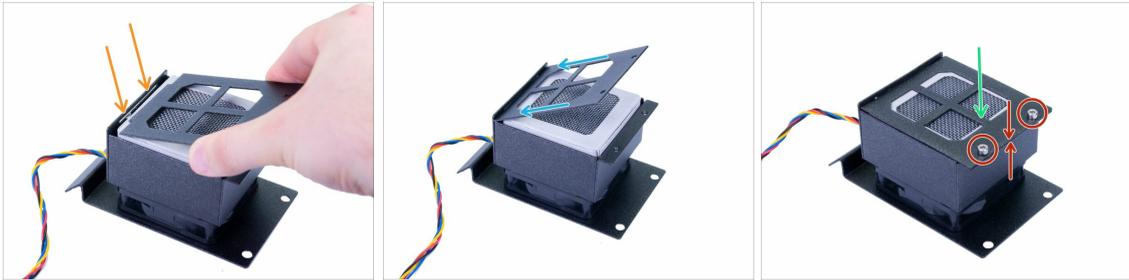
- Wipe the inner surface of the housing. Avoid touching this surface.
- Compare the size of the filter fan gasket with the filter housing. It is not a square!
  - Wrong orientation, this side is too long.
  - Correct orientation.

## STEP 19 Glueing the second gasket



- Remove the square part in the middle. Peel the protective film from the filter fan gasket.
- Glue the gasket inside the housing. Press it firmly all around the housing.
- Slide the filter in, see the marks on the side. If the filter is packed in a thin plastic film, remove it first.

## STEP 20 Assembling the housing lid



- See the opening for the filter housing lid.
- Slide the lid in.
- Push the lid carefully down to close it.
- Secure it using two M3x5 screws. Make sure the lid and the housing are in contact.

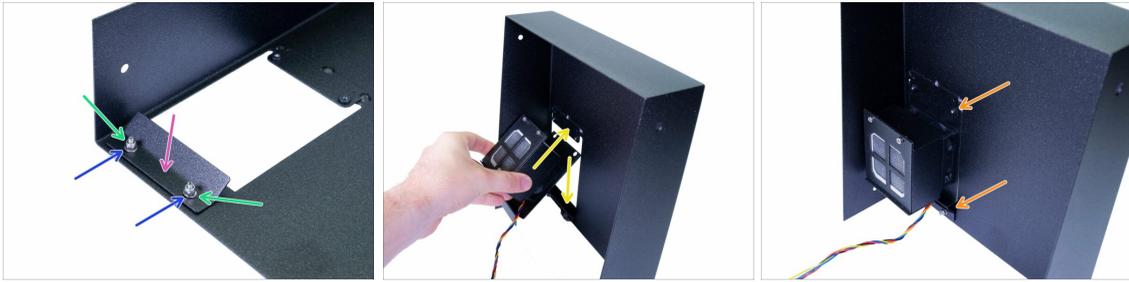
## STEP 21 Preparing the rear cover parts



● For the following steps, please prepare:

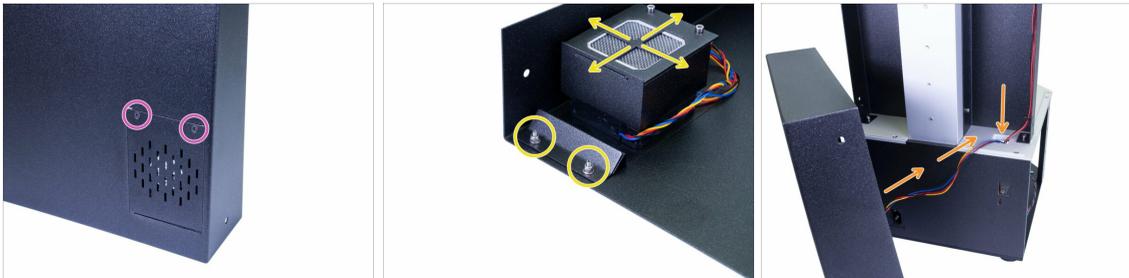
- Filtration hinge (1x)
- M3nN nut (2x)
- M3w washer (2x)
- M3x5b countersunk screw (6x)
- Cable cover (1x)
- Rear cover (1x)

## STEP 22 Mounting the filtration assembly



- ◆ Slide the filtration hinge in the cover.
- ◆ Place the washers on both fixed screws.
- ◆ Insert M3nN nuts, but tighten them slightly. The sheet must be able to move.
- ◆ Slide/swing the filtration assembly in. Between the hinge and the cover. The best way is from the inside of the rear cover.
- ◆ Orient the filtration assembly like in the picture. Make sure it fits properly all around.

## STEP 23 Mounting the filtration assembly



- ◆ Turn the cover, use two M3x5b countersunk screws. Tighten firmly.
- ◆ Align the assembly, tighten the nuts.
- ◆ Slide the cable from the assembly in the printer.

## STEP 24 Cable management - the rear cover



- ◆ Use the printed cover, slide all the cables in one by one. Be careful, don't push them too hard in the cover or you might pinch them.
- ◆ For each cable leave a small slack inside the cover. Don't stretch them, they are long enough to reach their sockets in the electronics.
- ◆ Push the printed cover down.

## STEP 25 Mounting the rear cover



- ◆ Slide the rear cover on the printer. Ensure no wire is pinched!
- ◆ Align the cover, make sure the holes in the cover match the holes in the left/right tower sheets.
- ◆ Secure it with M3x5b countersunk screws on both sides.

## STEP 26 Print platform part preparation



**⚠ ALWAYS PROTECT** the surface of the print platform, use a Microfiber cloth or similar soft fabric (not included in the kit).

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

- Print platform holder (1x)
- Print platform (1x)
- M4x10 screw (4x)

## STEP 27 Assembling the platform



● **Pay attention** to the correct orientation of the parts, before you use the screws to connect them together.

- The **incorrect assembly** the groove is visible (facing up)
- The **correct assembly** the groove is hidden (facing down)
- Make sure the edges of both parts are aligned. In this plane, the part can be rotated 180 ° (its orientation doesn't matter).
- Secure both parts using M4x10 screws.

## STEP 28 Knob parts preparation



● For the following steps, please prepare:

- Eccentric (1x)
- Knob body SL1 (1x)
- Knob cover SL1 (1x)
- M8x45 screw (1x)
- M4x25 screw (2x)
- M4x8 screw (2x)

## STEP 29 Inserting adjustable screws



- Insert two M4x25 screws. Don't screw them all the way in. It is enough to reach the threads behind the gap. We need to ensure the screws won't fall out.
- ⓘ Your printer might have only one screw, the procedure is the same.
- ⓘ There is a grease inside the thread(s), don't remove it.

## STEP 30 Mounting the eccentric



**⚠ WARNING:** This step involves inserting parts from below and it might be slightly more difficult. You can lay the printer on its back, but use the cardboard to protect the PSU power button.

- ◆ Look from below the cantilever, check the two holes for the screws.
- ◆ Insert the eccentric and hold it.
- ◆ Use two M4x8 screws to secure it. The eccentric will be still able to wobble, but won't fall down.
- ◆ We will tighten the screw(s) in the cantilever later on during the calibration process.

## STEP 31 Assembling the knob



- ◆ Slide the M8x45 screw in the printed part. The top surface of the screw should be flush with the surface of the printed part.
- ◆ Close the assembly using the cover. Make sure both parts are aligned. If not, the screw isn't properly seated inside.
- ◆ Screw slightly the "knob" assembly in the printer.

## STEP 32 Mounting the print platform



- ◆ Slide the platform on the eccentric, if it doesn't fit, rotate the eccentric.
- ◆ Tighten the knob and ensure the platform holds.
- ⓘ Since the screw(s) in the cantilever isn't/aren't tightened, the eccentric might wobble, but that is ok for now.

## STEP 33 Haribo time!



- ◆ Eat the second row to regain energy for the next chapter.

## STEP 34 Final check



- ◆ Compare the look of the assembly with the pictures.
- ◆ **WARNING:** for safety reasons, release the knob and remove the platform. Make sure the platform is placed on a soft surface.
- ◆ Ready? Let's build the upper part of the printer [4. Electronics & Lid](#)

## 4. Electronics & Lid



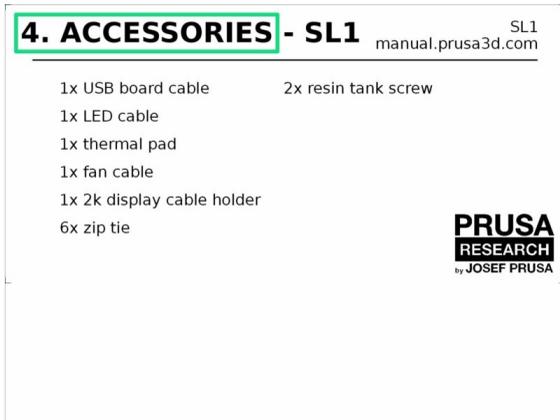
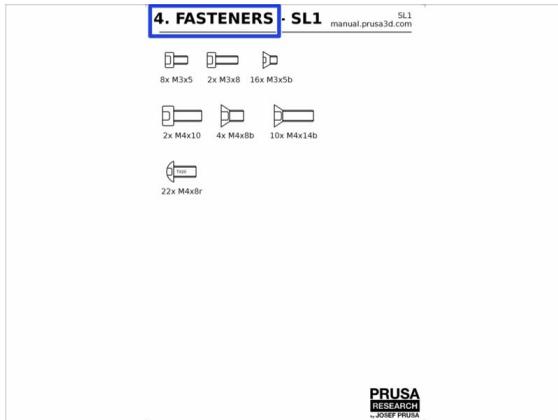
## STEP 1 Tools and bags for this chapter



### For this chapter, please prepare:

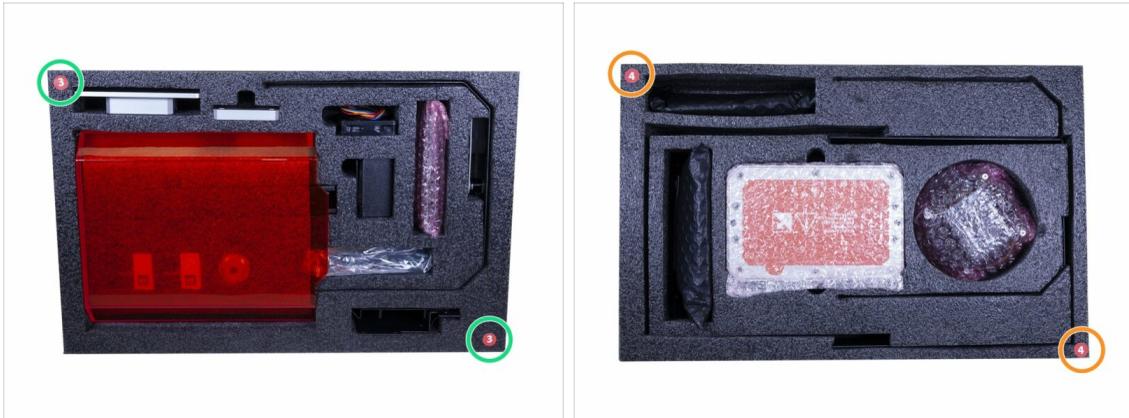
- ◆ 2.0 mm Allen key
- ◆ 2.5 mm Allen key
- ◆ 3.0 mm Allen key
- ◆ 4.0 mm Allen key
- ◆ TX20 Torx key
- ◆ Cutting pliers
- ◆ **i** The list continues in the next step ...

## STEP 2 Tools and bags for this chapter



- ◆ Bag 4. Fasteners
- ◆ Bag 4. Accessories

### STEP 3 Preparing parts from the package



◆ You will find parts for this chapter in the following protective foams:

● **Third layer** includes some parts for this chapter.

● **Fourth layer** includes all the remaining parts for this chapter.

ⓘ Remember to keep all electronics in their ESD bags, until you have to assemble them to the printer.

### STEP 4 Cable management parts preparation

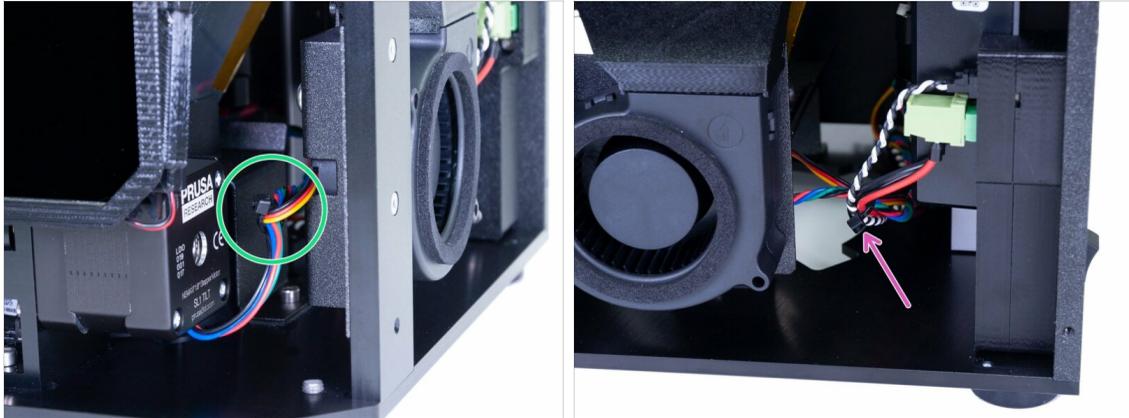


◆ For the following steps, please prepare:

● Zip tie (4x)

● Cardboard (1x) *used earlier*

## STEP 5 Cable management



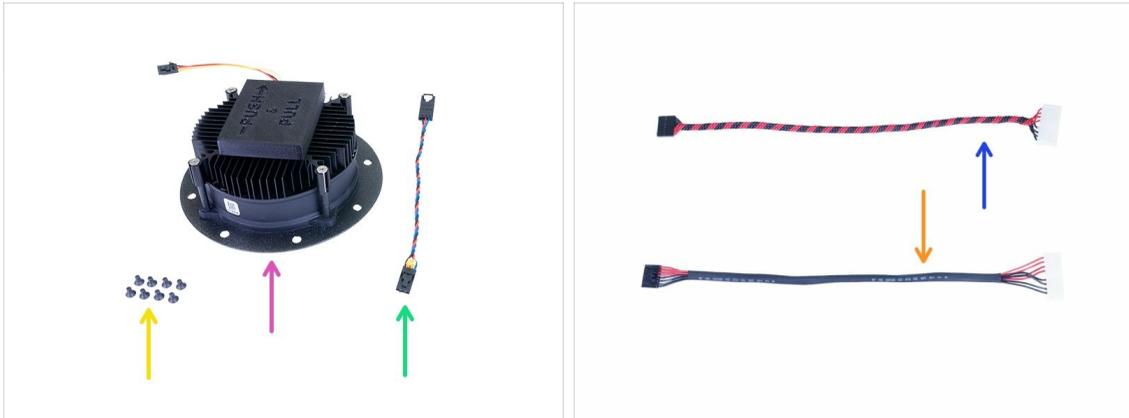
- ◆ Start on the front side of the printer and tie together cable from the tilt motor and right blower fan.
- ◆ Continue on the right side and add the cables from the PSU (power + power panic) to the bundle.
- ⓘ Don't pull the cables, also don't over-tighten the zip tie.

## STEP 6 Cable management



- ◆ Use the cardboard and place the back of the printer on it. Make sure the PSU power button isn't touching anything.
- ◆ Gently pull the cables out and place zip tie around them near the right edge of the circular opening.
- ◆ Use another zip tie on the other side.
- ◆ Put the cable bundle back inside the printer, make sure it is all the way back and won't interfere with the UV LED, which will be mounted to the circular opening in the upcoming steps.
- ⓘ That is all for now regarding the cable management, we will continue later on in this chapter.

## STEP 7 UV LED parts preparation



● For the following steps, please prepare:

● UV LED assembly (1x)

● UV LED fan cable (1x)

● UV LED cable (1x)

● with shrink tubing (new version)

● with twisted wires (old version)

● M3x5b countersunk screw (8x)

ⓘ Note that the UV LED cables have the same properties, only difference is a manufacturing method.

## STEP 8 Removing the cover



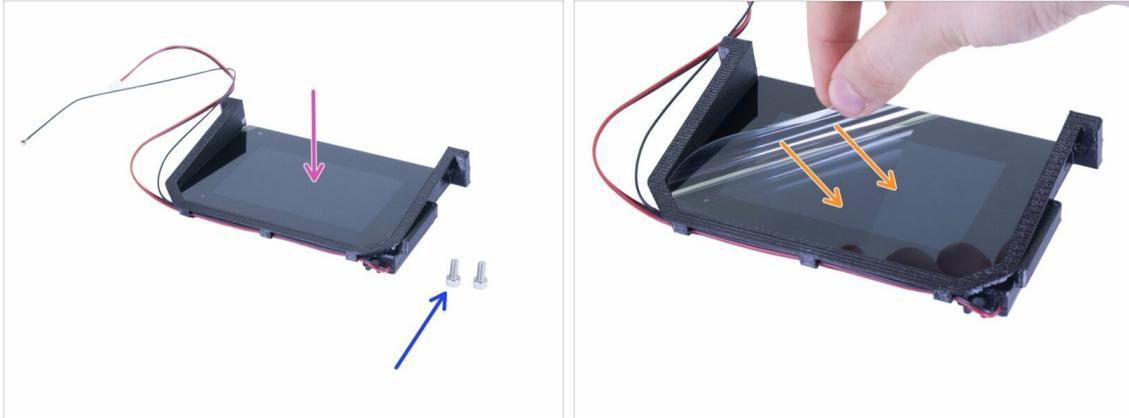
- ⚠ **WARNING:** After you remove the cover from the UV LED, please avoid touching the diodes. Any dirt or grease on the surface might result in print artefacts.
- 🟢 UV LED is protected with a plastic cover. To remove it, push it down, then pull slightly in the indicated direction and remove it.
- ⚠ **While connecting the UV LED cable proceed carefully. The cooling fins are sharp, you can hurt yourself.**
- 🟡 Connect the UV LED cable. Make sure the safety pin on the connector "clicks" in the UV LED.
- 🟠 Check all the wires are all the way in the connector.
- 🟢 Connect the UV LED fan cable extension. Make sure both cables are properly connected.

## STEP 9 Mounting the UV LED assembly



- 🟠 Lay the printer on its right side to get access to the bottom part. The rear part is facing to the left.
- 🟢 Before you insert the UV LED assembly in the printer, insert both cables and align them to the back.
- 🟡 Slide the assembly up with the cables facing to the back and secure it using M3x5b countersunk screws. Tighten on a diagonal to ensure proper seating of the assembly.
- ⚠ **Make sure the cables are facing to the back of the printer and no wire is pinched.**

## STEP 10 Preparing the touchscreen parts



● For the following steps, please prepare:

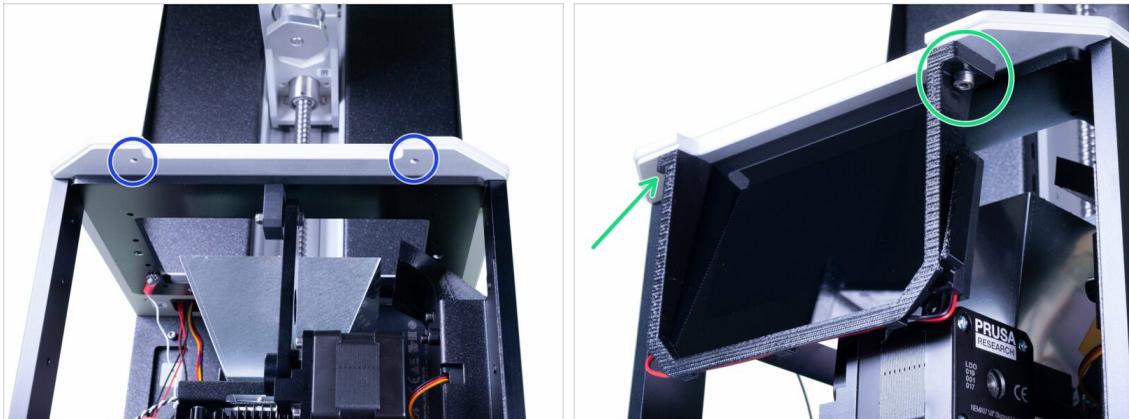
● Touchscreen assembly (1x)

● M4x10 screw (2x)

● You can peel off the protective film, but keep that in mind and avoid scratching it during the assembly of the surrounding parts.

⚠ **Be careful with all the cables while assembling the touchscreen. Make sure none gets pinched or bent.**

## STEP 11 Mounting the touchscreen assembly

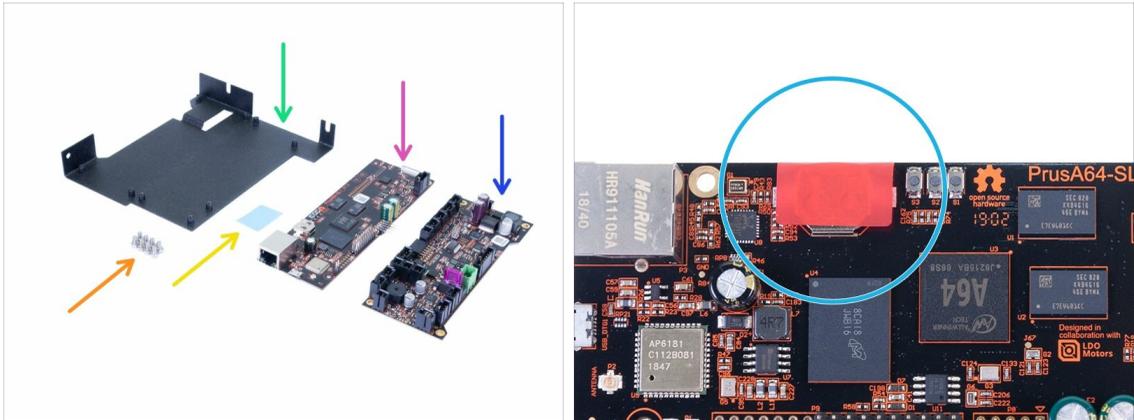


● Take a look from below the printer to find two holes in the tilt assembly. We will use them to mount the touchscreen.

● Place the touchscreen in the printer and secure it using two M4x10 screws.

ⓘ Note: The touchscreen assembly contains three cables: for the touchscreen, then Wi-Fi antenna and a speaker. **Handle them with care!**

## STEP 12 Preparing the electronics

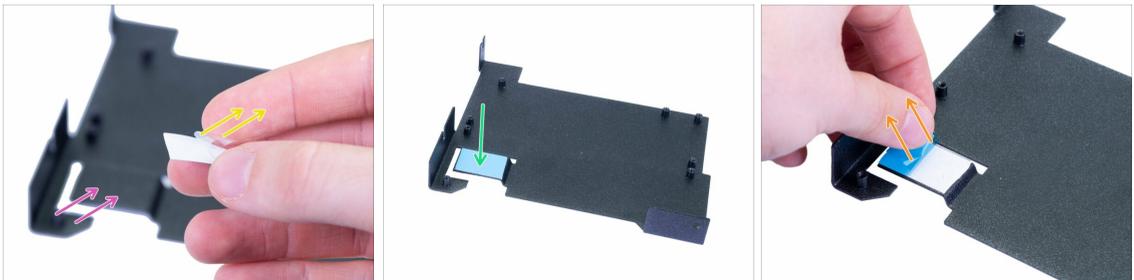


**⚠ Handle electronics with extreme care.** Avoid touching chips and capacitors on both boards, always use the edges. **Keep it in the ESD bag for now.**

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

- PrusA64-SL1 board (1x)
- Motion controller (1x)
- Electronics holder (1x)
- M3x5 screw (8x)
- Thermal pad (1x)
- There is a **RED sticker** on the PrusA64-SL1 board, **don't peel it off!**

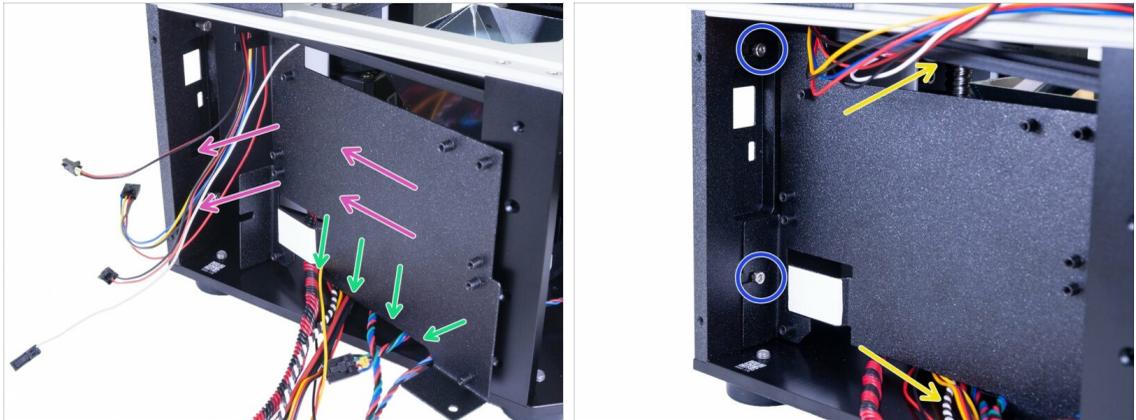
## STEP 13 Glueing the thermal pad



- Before you continue, please clean the bent part of the holder with IPA cleaning pad.
- Take the thermal pad and carefully peel off the clear protective film from the white side.
- Glue the pad to the electronics holder with the exposed side. Press the entire surface of the pad to ensure proper connection.
- Carefully peel off the second (blue) protective film. The pad is now quite sticky, **avoid touching it.**

ⓘ There is an extra pad in the spare bag ;)

## STEP 14 Inserting the electronics holder



- ◆ Slide the electronics holder in the printer.
- ◆ Use the cutout in the lower part for all the cables laying on the bottom plate.
- ⚠ **Make sure NO WIRE IS PINCHED!**
- ◆ First, ensure the electronics holder is all the way in, then tighten the screws, you have inserted earlier.
- ◆ Arrange the cables similarly to the picture to create a space for an easier installation of the electronics.

## STEP 15 Connecting both boards



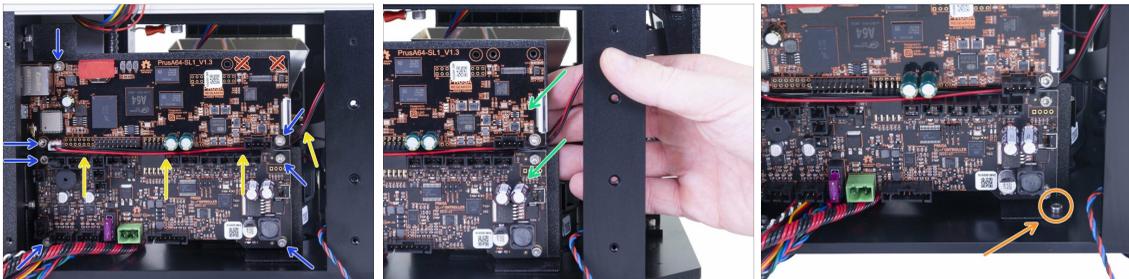
- ◆ Now, remove the boards from the ESD bags.
- ⚠ **Remember to touch the boards only at the edges, avoid touching the chips or capacitors.**
- ◆ Both boards have to be connected before assembling them to the printer.
- ◆ Look for the connectors on both boards.
- ◆ Carefully connect the boards together, make sure the pins are properly aligned.

## STEP 16 Connecting Wi-Fi & Speaker



- ◆ Place the electronics closer to the left side of the printer so that the Wi-Fi and speaker cables can reach the connectors. **Avoid stretching the cables!**
- ◆ Guide the Wi-Fi cable inside the printer between the electronics holder and the support, then connect it to the board.
- ◆ Guide the speaker cable inside the printer between the electronics holder and the support, then connect it to the board. **Black wire must be on the left!**
- ⓘ Make sure the Wi-Fi connector is properly connected. Lightly press the connector into the board with your finger. You will feel a slight "click".
- ◆ Before you move to the next step, please ensure you have removed the blue protective film from the thermal pad, otherwise, the cooling system won't work properly.

## STEP 17 Mounting the electronics



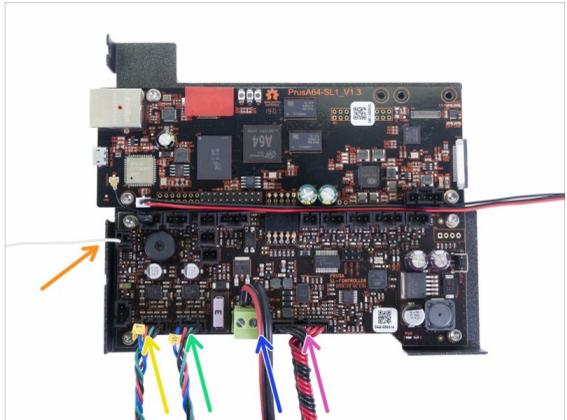
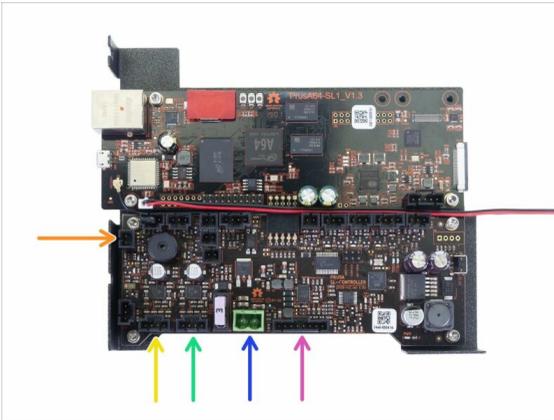
- ◆ Insert the board inside the printer and secure it with the M3x5 screws. Tighten them carefully!
- ⚠ **WARNING:** Insert the board carefully. Avoid damaging or pinching both Wi-Fi and speaker cables!
- ◆ Guide Wi-Fi and speaker cables in the gap between both boards as shown in the picture.
- ◆ Avoid using holes in the top right corner. We will use them later on.
- ◆ While tightening screws on the right side, hold the steel sheet.
- ◆ After both boards are secured, insert and tighten the M3x5 screw in the lower right corner. **Be careful, you might damage the electronics if your tool slips.**
- ⓘ Tip: For more convenient installation, you can also lay the printer on its right side, but make sure no wire is pinched or any part deformed.

## STEP 18 Cable management parts preparation



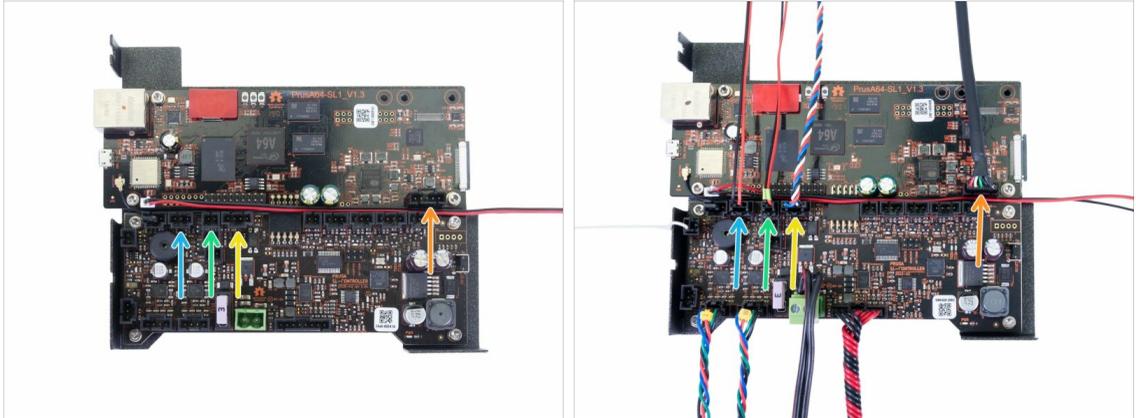
- ◆ For the following steps, please prepare:
- ◆ USB & Power cable (1x)
- ⓘ Connect this cable to the electronics, when asked. Cable management will be done later on.

## STEP 19 Connecting the electronics



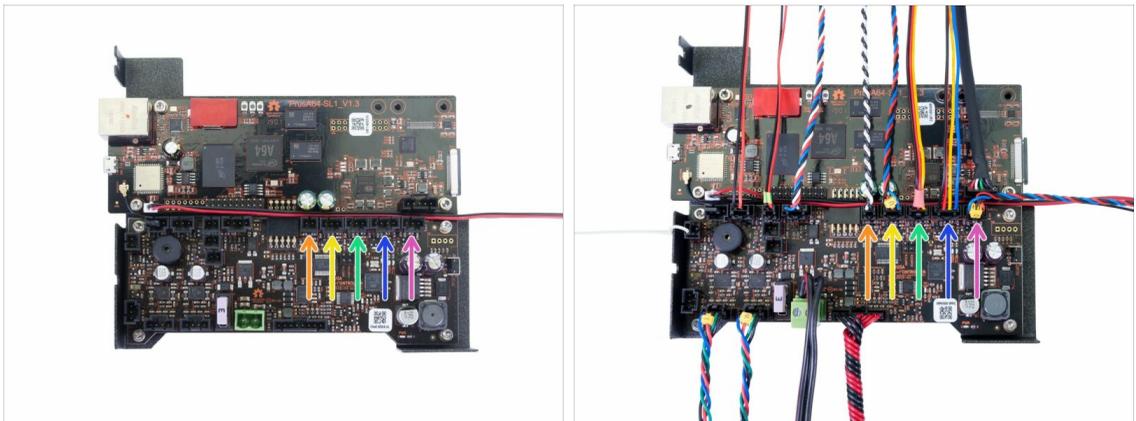
- ◆ Let's connect the cables to the electronics. Start in the bottom and proceed "clockwise" according to the instructions. **Some ports will remain unused, also don't remove any jumpers from the board. Don't peel the RED sticker off.**
- ⚠ **Proceed carefully, some cables and connectors are fragile and you might damage them.**
- ◆ LED UV cable
- ◆ PSU power cable
- ◆ Tower motor (labelled "W")
- ◆ Tilt motor (labelled "T")
- ◆ Resin sensor cable
- ⓘ Continue in the next step...

## STEP 20 Connecting the electronics



- ◆ Cover trigger (3pin connector)
- ◆ Thermistor (2pin connector)
- ◆ Power button
- ◆ Front USB
- i Continue in the next step...

## STEP 21 Connecting the electronics



- ◆ Optical sensor (labelled "O")
- ◆ Filtration fan
- ◆ Right blower fan
- ◆ UV LED cooling fan (labelled "U")
- ◆ Power panic
- i LCD screens will be connected in separate steps.

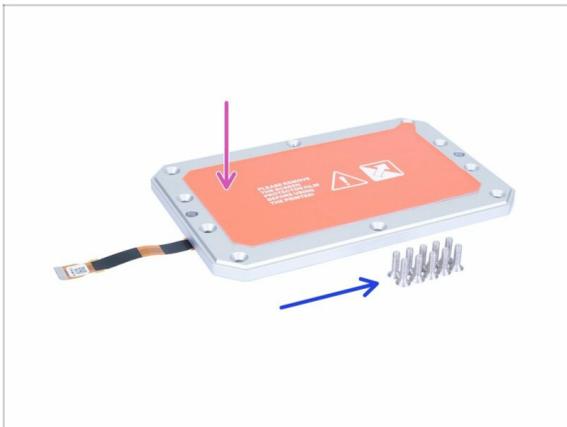
## STEP 22 Removing the protective film



- Carefully peel off the protective film from the reflector. Avoid touching the inner surface of the reflector.

⚠ **IMPORTANT:** Avoid touching the reflector from now on. Any stain on the inner surface will lead to issues with the prints!

## STEP 23 Preparing the print display parts



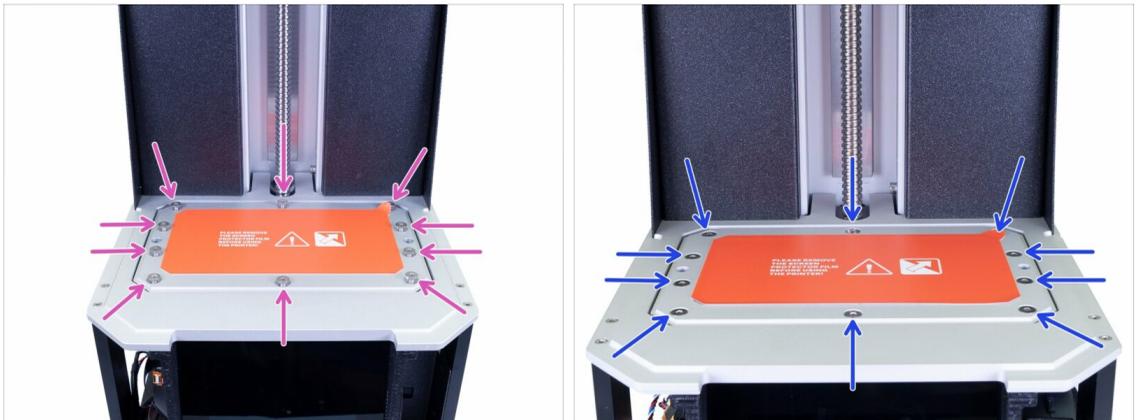
- **For the following steps, please prepare:**
- Print display assembly (1x)
- M4x14b countersunk screws (10x)
- ⚠ Be careful with the cable while assembling the display. Make sure it doesn't get pinched or bent.

## STEP 24 Inserting the print display in the printer



-  **WARNING:** make sure the cable leading from the print display is not bent or pinched before you tighten the screws. Always ensure the cable is alright.
-  **DON'T PEEL OFF THE PROTECTIVE FILM!** Wait for the instructions!
-  **Carefully insert the LCD assembly in the printer**, like in the picture. Make sure the cable is **ON THE LEFT** side and not bent.
-  Carefully lay the assembly down, make sure it is aligned with the printer.

## STEP 25 Fixing the display in place



-  Use the M4x14b countersunk screws to fix the LCD back in place. Don't tighten them, first make sure the LCD is seated properly.
-  Now, tighten all 10 screws firmly, but with a reasonable force. You might strip the screw.

## STEP 26 Display cable holder parts preparation



- ◆ For the following steps, please prepare:
- ◆ Print display cable holder (1x)
- ◆ M3x8 screw (2x)

## STEP 27 Connecting the print display



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

- ◆ Connect the print display to the connector. Be careful with the alignment. You should hear a click.
- ◆ Make sure the cable is facing to the "front" and not stuck between the reflector and the electronics holder.
- ◆ Secure the print display cable with the printed part. Be careful while tightening the M3x8 screws.

## STEP 28 Connecting the touchscreen (new version)



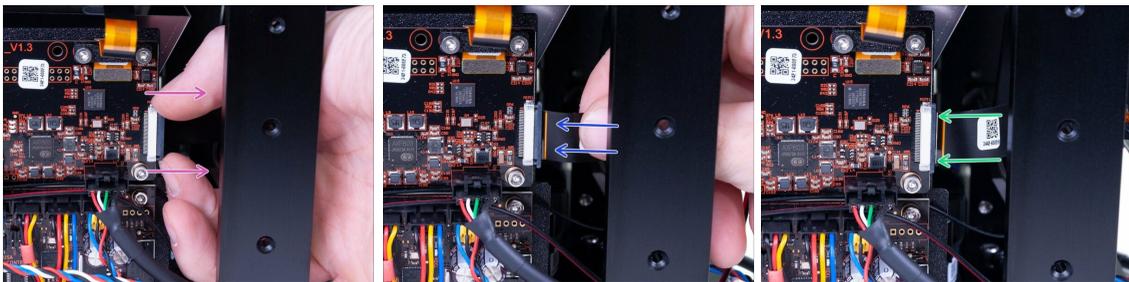
⚠ There are **TWO VERSIONS** of the LCD connector:

- ⬢ **The new connector** has a safety latch, which has to be **flipped** before inserting the cable (board V1.3a). **Use this step.**
- ⬢ **The old connector** has a safety latch, which must be **pulled out** before inserting the cable (board V1.3) Skip to the next step.

⚠ **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.

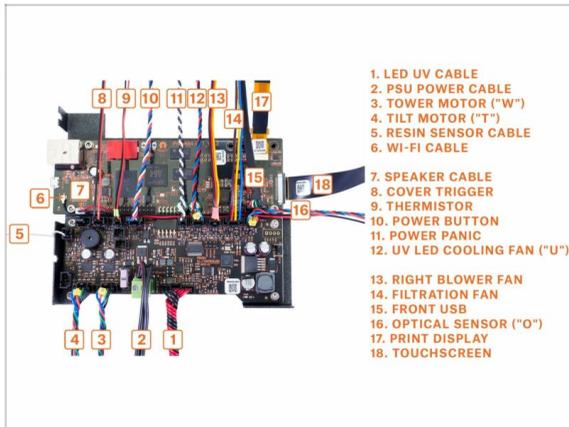
## STEP 29 Connecting the touchscreen (old version)



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

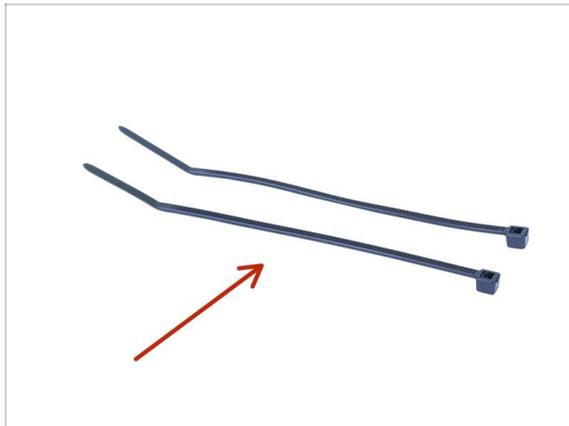
- 🟣 Gently pull out the black safety latch. Note that it is not removable.
- 🟢 Insert the cable from the touchscreen. Make sure the cable is straight and not twisted.
- 🟢 Lock the cable in place by pushing the safety latch back.

## STEP 30 Final check



- ◆ Check once again, your cables are connected according to the picture.

## STEP 31 Cable management parts preparation



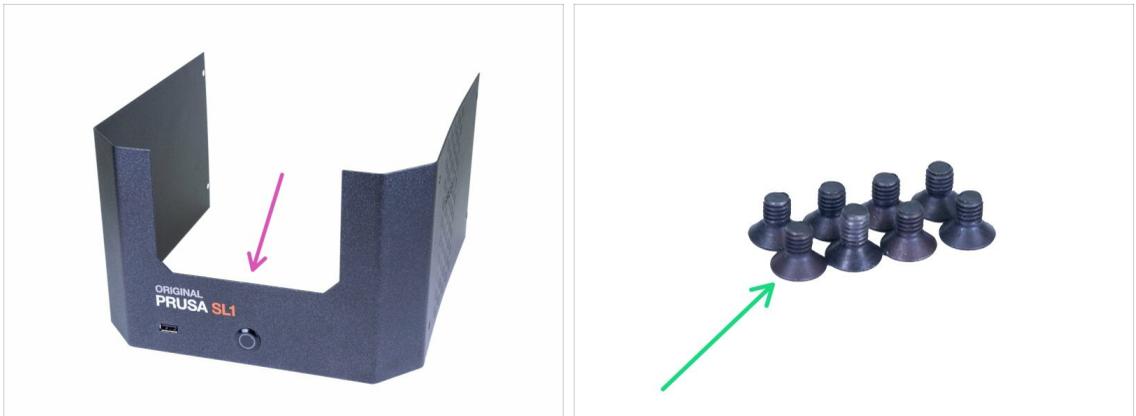
- ◆ For the following steps, please prepare:
- ◆ Zip tie (2x)

## STEP 32 Final cable management



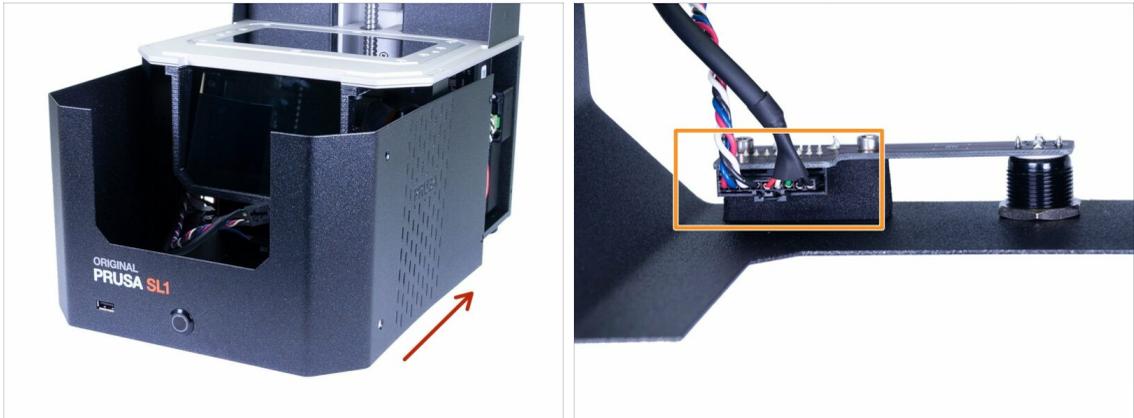
- To finalise the cable management, please do the following:
  - Arrange all the cables similar to the picture. In the online version click on the picture for fullscreen.
  - Tie together cables in the top left corner of the board.
  - Push the USB & Power cable through the printer to the front.
  - Make sure no cable is near the edge or overlapping on the left side of the printer. This will avoid pinching any cable after adding the cover.
  - Tie together the USB & Power, optical and touchscreen cables.

## STEP 33 Preparing the cover parts



- For the following steps, please prepare:
  - Bottom cover (1x)
  - M3x5b countersunk screw (8x)

## STEP 34 Connecting the power button and USB



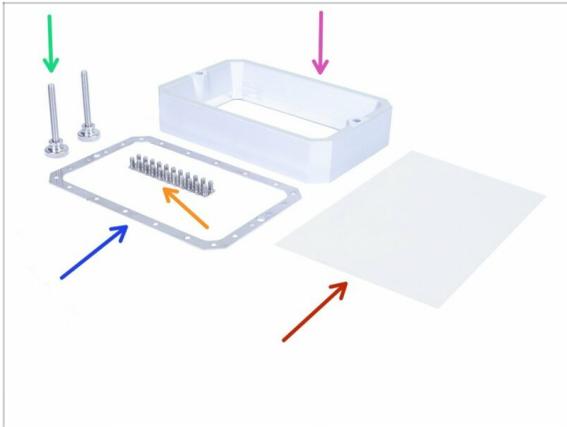
- Slide the cover half-way to the printer and stop, we need to connect the front USB and power button first.
- Look from above in the front cover and connect the USB & Power cable. Make sure the safety pin "clicks"

## STEP 35 Assembling the cover



- Slide the cover on the printer and secure it on one side using two M3x5b countersunk screws. Don't tighten them firmly and move on the other side, repeat the procedure.
- As soon as the cover is aligned and partly secured, add the remaining screws and tighten them all.
- ⓘ Tighten carefully, if you can't reach the holes in the printer, realign the cover.

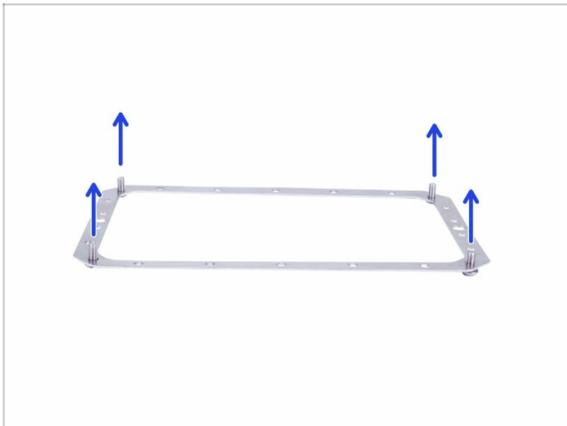
### STEP 36 Preparing resin tank parts



◆ For the following steps, please prepare:

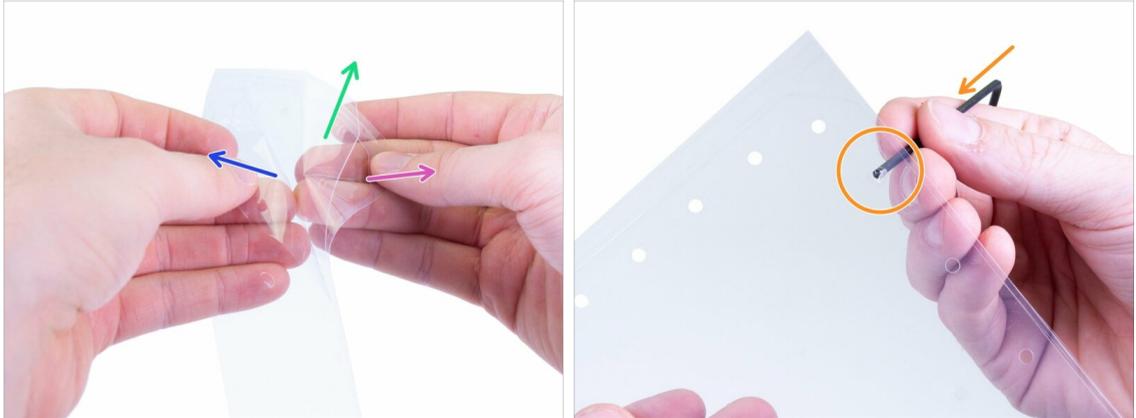
- ◆ Resin tank (1x)
- ◆ Resin tank frame (1x)
- ◆ Resin tank screw (2x)
- ◆ M4x8rt Torx screw (22x)
- ◆ FEP film (1x)

### STEP 37 Preparing the resin tank frame



- ◆ Take the resin tank frame (orientation doesn't matter) and push through four M4x8rt Torx screws in the corners.

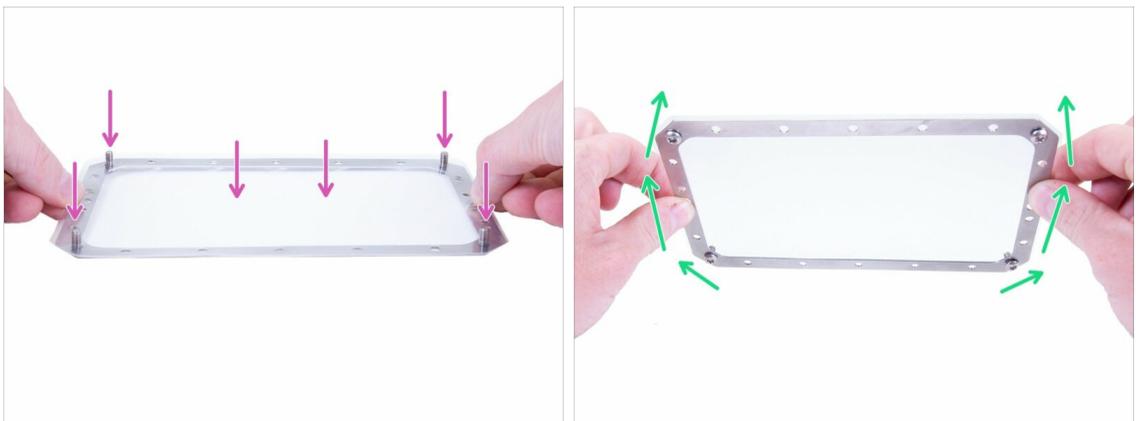
## STEP 38 Preparing the FEP film



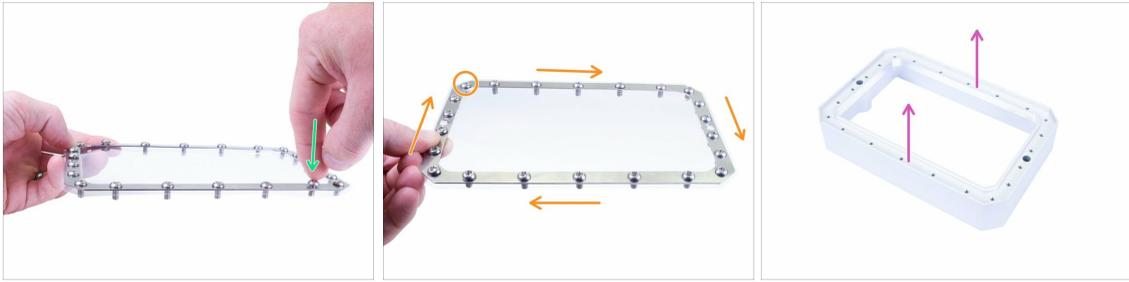
**⚠ WARNING:** the following procedure is crucial. Make sure you read the instructions first! The FEP film consists of three layers. Two layers are for the protection of the middle layer, which is the actual FEP film.

- ◆ Separate all layers slightly apart to recognise them:
  - ◆ Semi-thick outer layer (protection)
  - ◆ Thick inner layer (FEP film)
  - ◆ Thin outer layer (protection)
- ◆ **FIRST**, remove completely the **SEMI-THICK** outer layer. Make sure all the **circular holes are free** of the remains of the film.
- ◆ **Only after** you have successfully removed the thick layer and the "circular" remains, remove the **THIN** outer layer.
- ◆ You should end up with the middle layer, which is without both outer layers. Also, double-check you have removed all the remains.

## STEP 39 Preparing the resin tank frame



- ◆ Carefully place the FEP film on the frame and on the screws, use them to stretch and align the film.
- ◆ Carefully rotate the frame upside down.

**STEP 40** Inserting the torx screws

- ◆ Check the holes in the frame and in the foil are aligned.
- ⚠ **DON'T PUNCH** through new holes for the Torx screws!
- ◆ Start inserting the remaining screws. **Don't push hard**, or you might bend the frame.
- ◆ Check you have used twenty-two M4x8rt Torx screws.
- ◆ Prepare the resin tank, place it on a flat surface with the bottom facing up.

**STEP 41** Assembling the resin tank

- ◆ Place the frame with the film and screws on the tank and start tightening M4x8rt screws with the Torx tool. Follow the indicated direction, tighten one by one. **Screw them only halfway in!**
- ◆ Reseat the parts if needed and tighten the screws, this time just near the surface.
- ⚠ **Final tightening of the screws, but BE CAREFUL.** If the Torx tool slips, you might damage your FEP film.
- ⓘ **Pro tip:** Turn the tank upside down to its "normal position" and fill it with tap water to its max level. Watch the tank and ensure no water is leaking.

### STEP 42 Assembling the resin tank



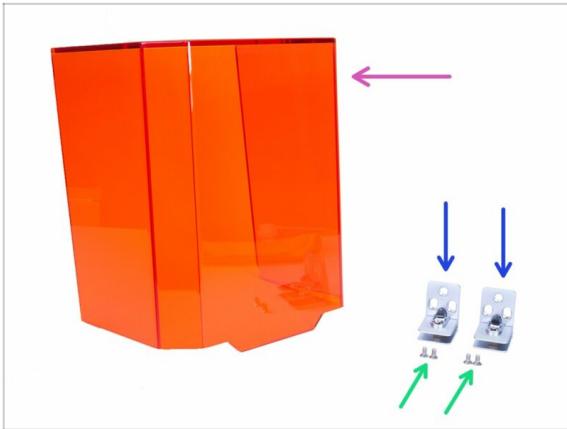
- Take any knife with a sharp tip (not included in the package).
  - Carefully punch two holes in the FEP film, as indicated in the picture.
  - Punch each hole in two directions to create a cross.
- ⚠ Don't use a knife with a blunt tip or you might accidentally overstretch the FEP film.**

### STEP 43 Installing the resin tank



- Remove the protective film from the print display.
- Insert the tank in the printer and secure it using two screws.

## STEP 44 Preparing acrylic lid parts



● For the following steps, please prepare:

- Acrylic lid (1x)
- Lid hinge (2x)
- M4x8b countersunk screws (4x)

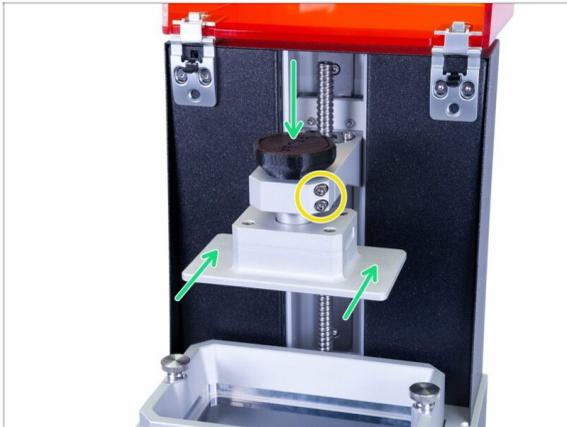
## STEP 45 Mounting the acrylic lid



⚠ **Make sure you won't drop the hinges during the assembly. You can use any fabric to protect the FEP film and the print display below the hinges.**

- Open the hinge and place it on the top of the printer.
- Secure each hinge with prepared M4x8b countersunk screws.
- Slide the lid all the way in and tighten the screws in the hinges to secure it (use 4mm Allen key). Don't over-tighten the screws or you might crack the lid and the hinge.
- Try closing the lid, in case you will find any significant gap, reseal the cover or the hinges.

### STEP 46 Returning the print platform



- Slide the print platform back in and secure it using the knob.
- The platform is now still able to move (wobble on the cantilever), it is ok. Final tightening will be done during the calibration process by adjusting the marked screw(s).

### STEP 47 Haribo time!



- Phew! Connecting all the cables was quite demanding right? **Immediately eat the third row** and take a short break ;)

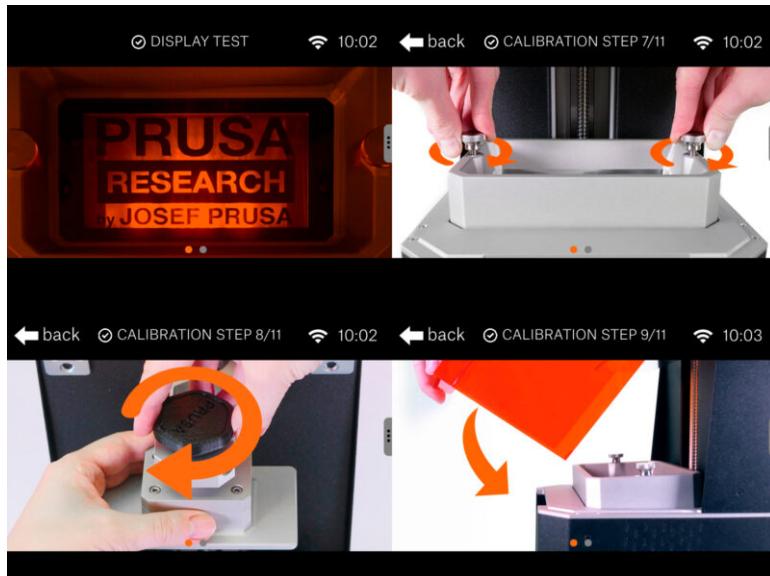
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## STEP 48 Final check



- ◆ **...and it's done! Great job ;) Your Original Prusa SL1 is fully assembled.**
- ◆ Follow the next chapter to calibrate the printer and run first print **5.**  
**Preflight check**

## 5. Preflight check

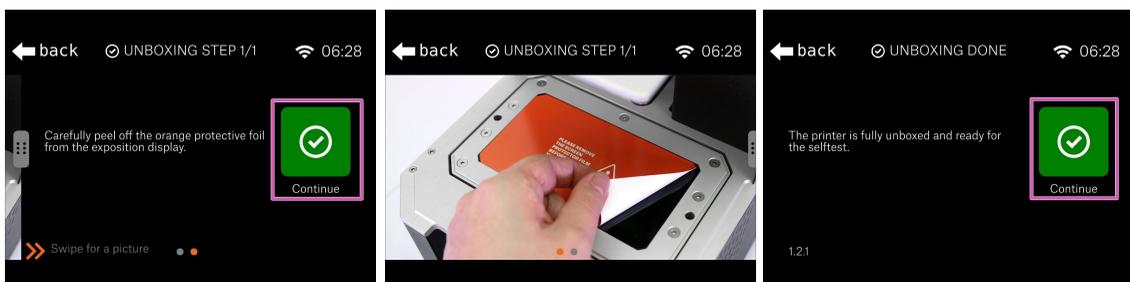


## STEP 1 Printer calibration



- In the following steps, we will go through the entire process of the calibration.
- Plug the printer in, ensure the PSU switch is on and press the button on the front to turn the printer on.
- Follow the instructions on the touchscreen and use this chapter to get extra information regarding each step.
- ⚠ **DON'T POUR THE RESIN** in the tank until you are asked to by the printer!
- ⚠ **Never service the printer with the resin inside!**
- Spilling the resin inside the printer will most probably end up damaging the SL1. Be careful!
- ⚠ **Never look inside the printer during the calibration of the screen or UV LED.** There is a risk of **PERMANENT DAMAGE** to your eye(s).

## STEP 2 Unboxing Wizard



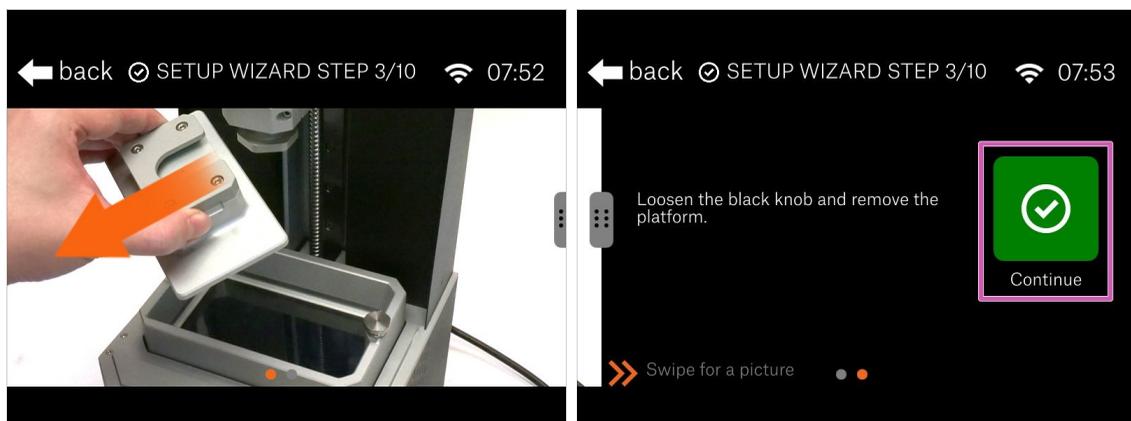
- Please make sure you have removed the protective film.
- Confirm and then end this short unboxing Wizard by pressing "Continue"

### STEP 3 Setup Wizard 1-2



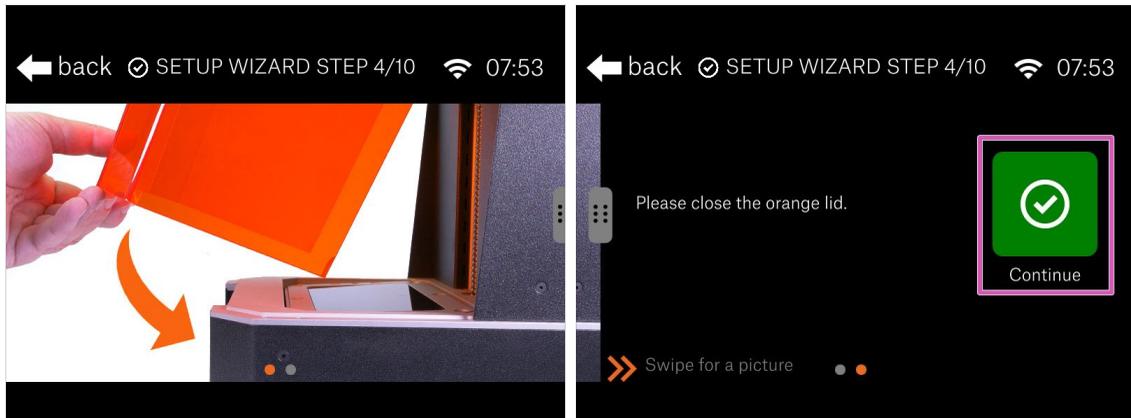
- **Welcome to the initial Setup Wizard**, which will guide you through the basics of the initial setup.
- Open the acrylic lid all the way up.
- If the resin tank is present, please unscrew the screws, remove them and then remove the tank.
- Click on Continue.

### STEP 4 Setup Wizard 3



- In this step, it is time to remove the printing platform.
- Loosen the black knob and remove the platform.
- ⚠ **Place the platform on a soft piece of fabric! You can use the same as during the assembly. Never place the platform directly on the table!**
- Press "Continue" and wait until all the checks are done.

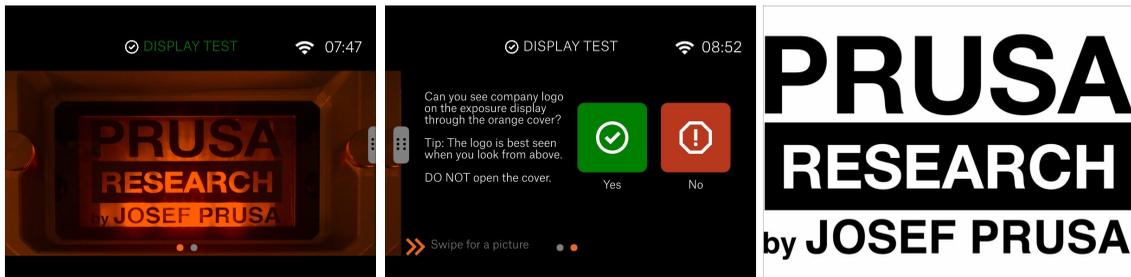
## STEP 5 Setup Wizard 4



**⚠ MAKE SURE THERE IS NO TANK AND NO RESIN inside the printer!!!**

- ◆ We are going to test the UV LED, any resin present in the tank will be hardened. This test takes around 2 minutes.
- ◆ Before you continue, close the lid.
- ◆ Press "Continue"

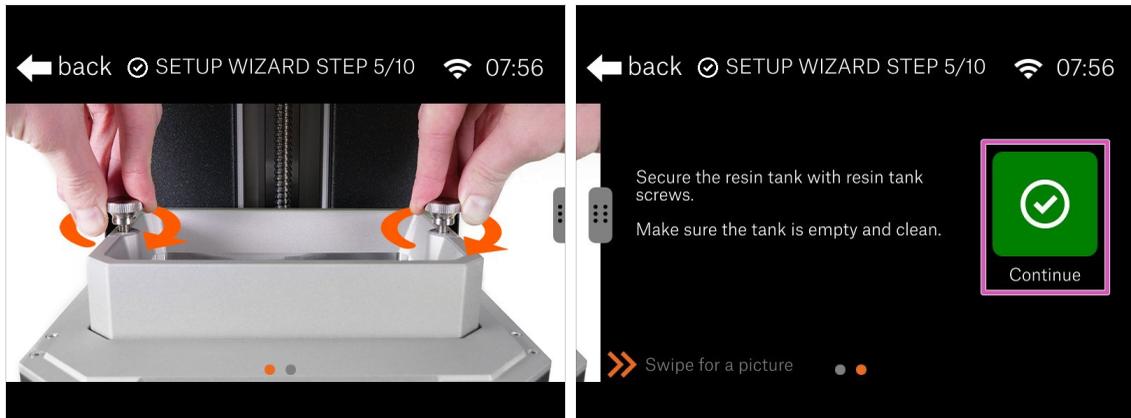
## STEP 6 Display test



**⚠ Don't open the lid under any circumstances, keep it closed! There is a UV light inside, which will cause damage to your eyes.**

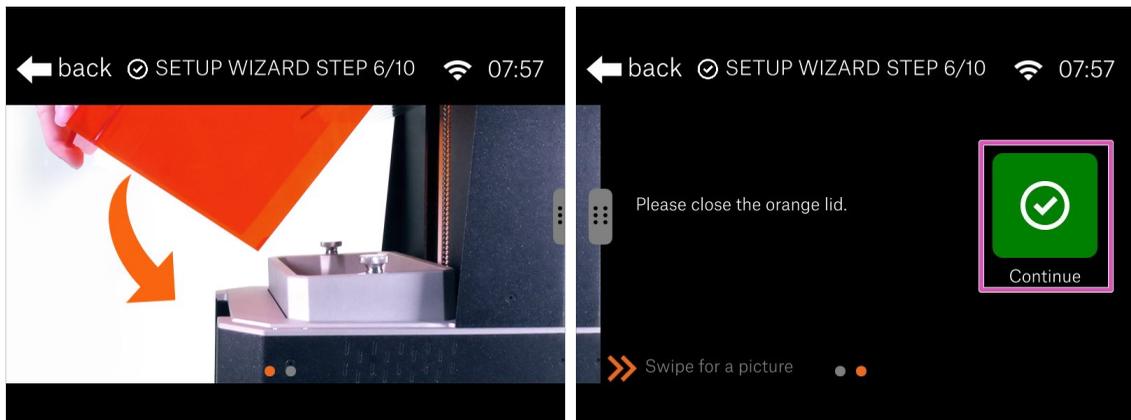
- ◆ Take look from above the printer. Your eye level needs to be above, not in front. Otherwise, you won't be able to judge the result correctly.
- ◆ Check the entire screen, you must be able to see our company logo in full. No parts (letters) should be missing.

## STEP 7 Setup Wizard 5



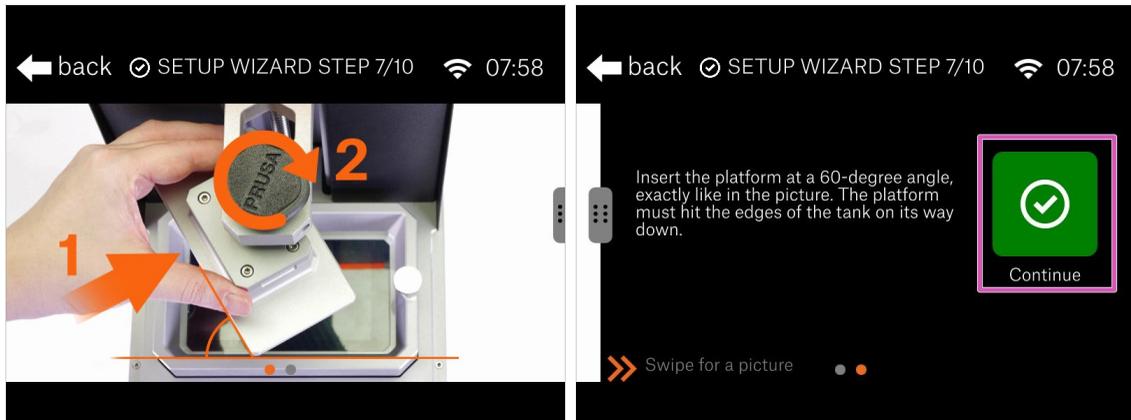
- Open the acrylic lid to get access to the printer.
- Insert the resin tank in and tighten it using the screws. **Make sure the tank is clean and empty (no resin inside)!**
- Click "Continue" to proceed.

## STEP 8 Setup Wizard 6



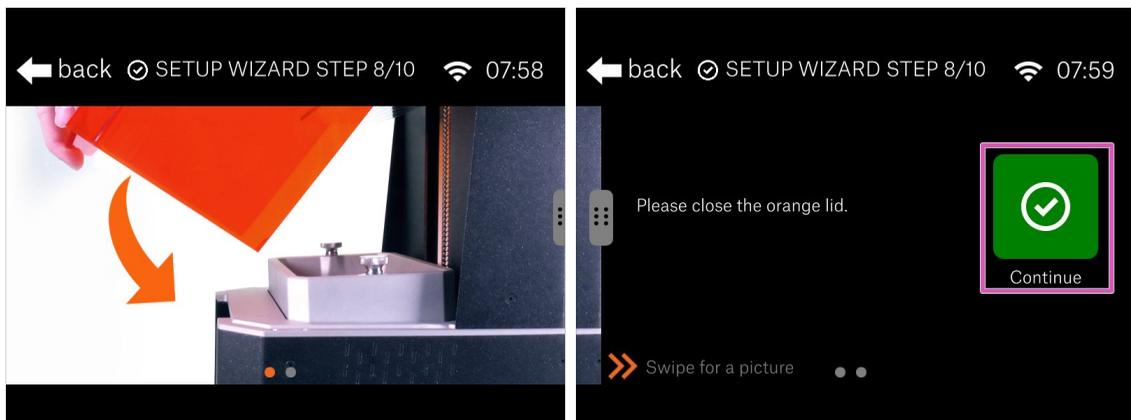
- Now, the tower axis check will take place.
- Close the lid and press "Continue" and wait until the process is finished, then proceed to the next step.

## STEP 9 Setup Wizard 7



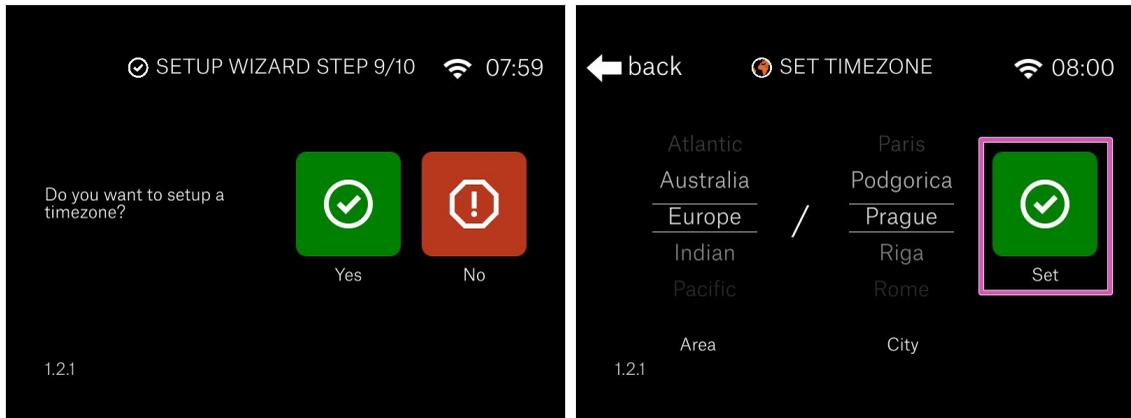
- Open the cover to get access inside the printer.
- Insert the platform, but for this step rotate it at 60° angle. See the picture.
- When ready hit "Continue".

## STEP 10 Setup Wizard 8



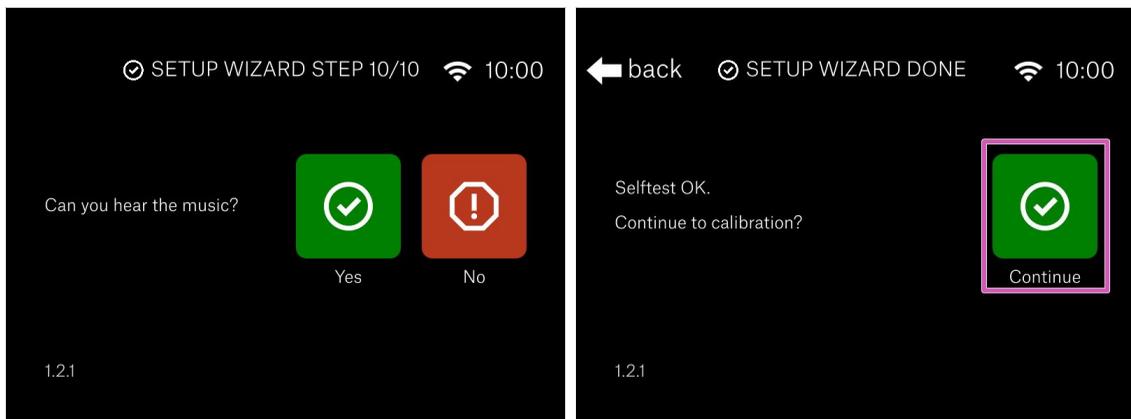
- Close the orange lid.
- Hit "Continue" and **avoid touching the printer for now!**
- ⓘ Behind the scene: *The printer needs to test the resin sensor conductivity, therefore the platform will lower down and almost touch the tank to close electronic circuit. That is why for now, you need to rotate the platform. Don't touch the printer during the procedure.*

## STEP 11 Setup Wizard 9



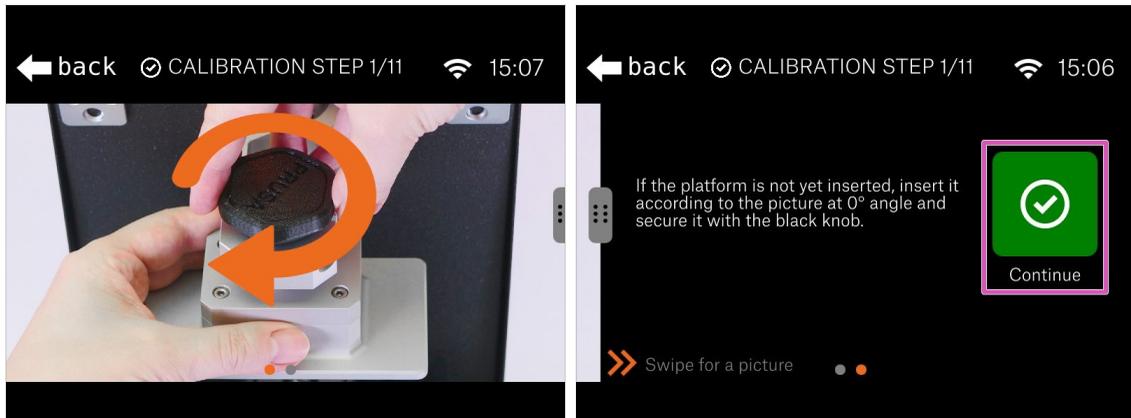
- To fully utilize the printer's features, we recommend setting your local timezone.
- Set the values and hit "Continue"

## STEP 12 Setup Wizard 10



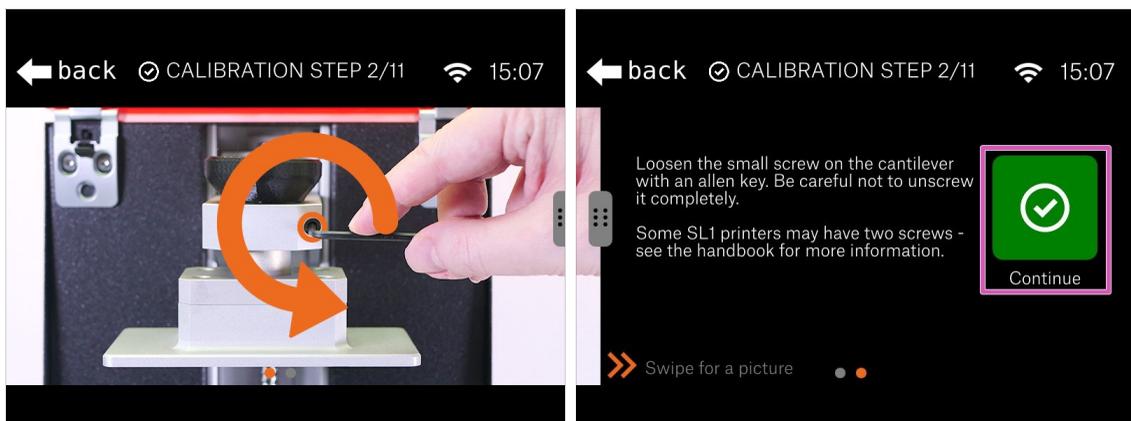
- Right now, you should hear a sound coming from the speaker near the touchscreen.
- Congrats! The setup part is finished. Now, let's calibrate the printer.

## STEP 13 Calibration 1



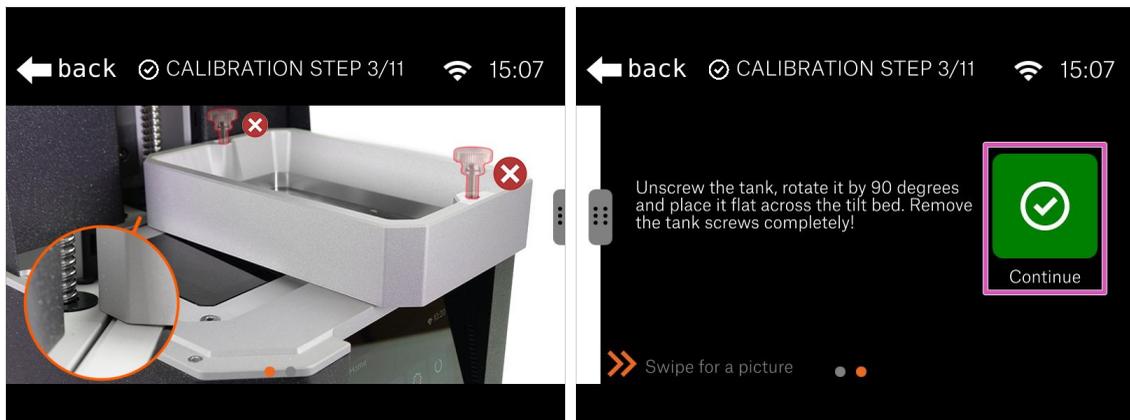
- Now it is time to rotate the printing platform, so it fits in the resin tank.
- Release the black knob slightly and pull the platform out.
- Insert the platform back in, but this time according to the picture. Edges of the platform should be parallel with the edges of the tank.
- Tighten the knob again.
- Press "Continue"

## STEP 14 Calibration 2



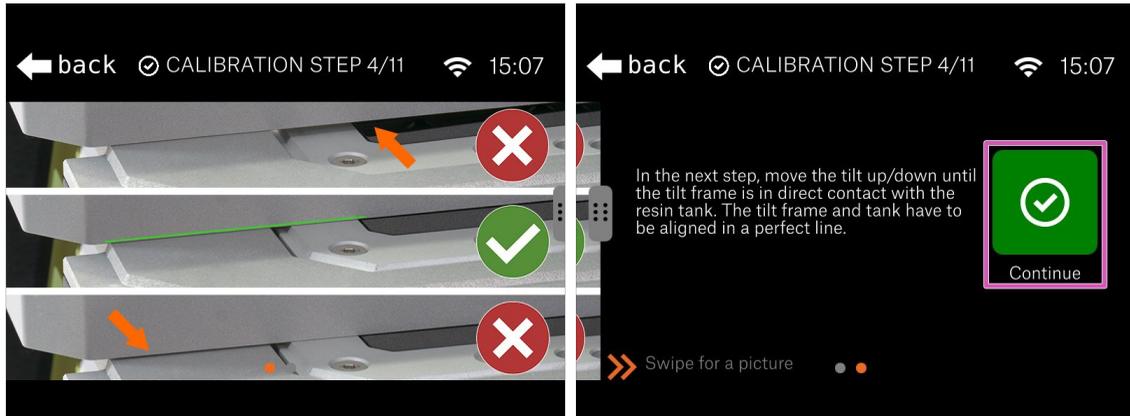
- Carefully release the screw(s) on the cantilever. Two turns are enough. Make sure not to unscrew them completely.
- Press "Continue"

## STEP 15 Calibration 3



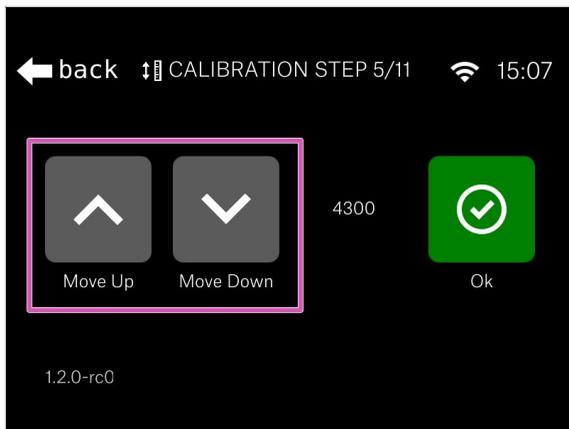
- Release and remove both screws on the resin tank. Place them outside the printer.
- Rotate the tank by 90° on the printer.
- Behind the scenes: *We will use the tank to calibrate the tilting mechanism. The tank will work as a levelling tool to set the tilt horizontal.*
- Press "Continue"

## STEP 16 Calibration 4



- See the pictures in the Wizard to set the tilting mechanism correctly.
- Actual setting will be in the next step, for now just learn the correct position.
- Behind the scenes: *The tank must be placed on both sides of the printer which doesn't move and in the middle is the tilt mechanism with the screen. Your goal is to set all surfaces to the same level.*
- Press "Continue"

## STEP 17 Calibration 5

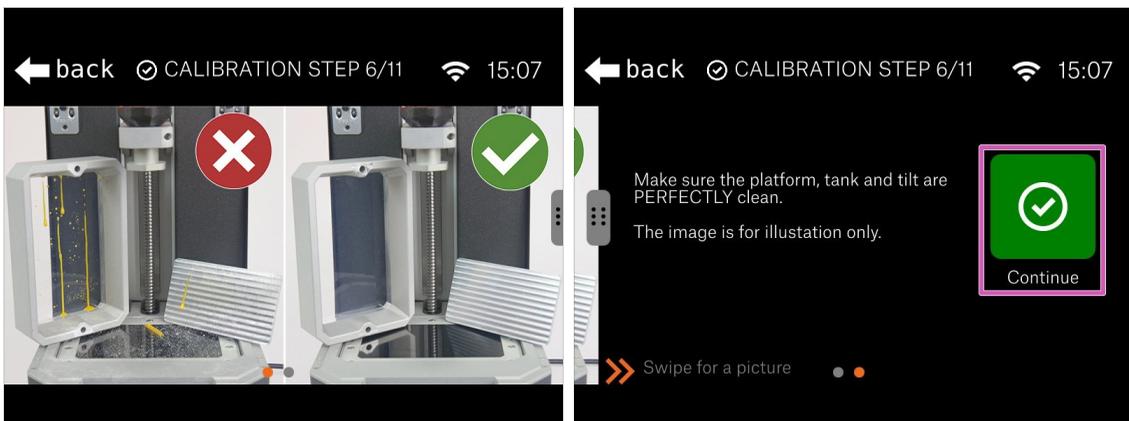


Using the "Up" and "Down" button move the tilt mechanism until you align it with the bottom edge of the resin tank.

**⚠ Recommended setup:** using the tilt, raise the tank slightly above the printer and then return down till you touch the surface of the printer again.

- The value will differ for each printer.
- As soon as you finish this step, you can remove the tank from the printer. Make sure you won't damage (punch through) the FEP film.

## STEP 18 Calibration 6



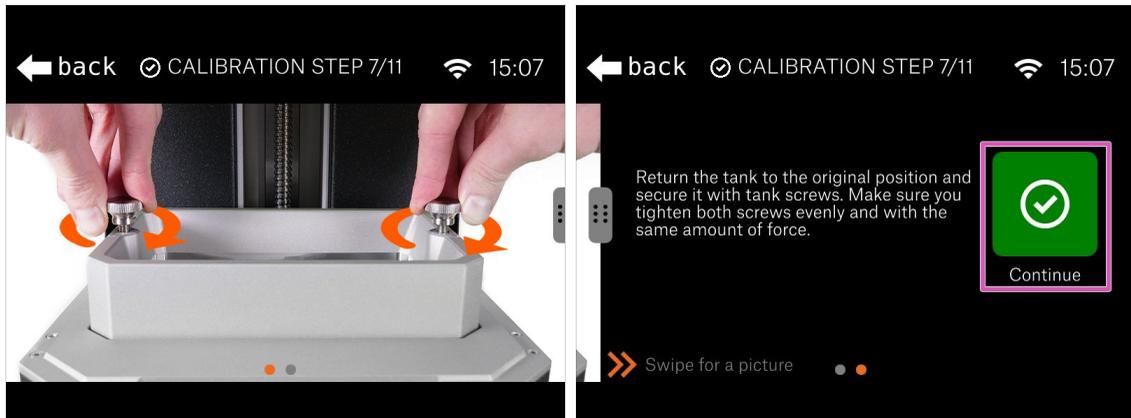
● Before you continue to the next step, make sure all the parts are perfectly clean. No resin or dirt should be present on the:

- Resin tank
- Printing display
- Printing platform

● Press "Continue"

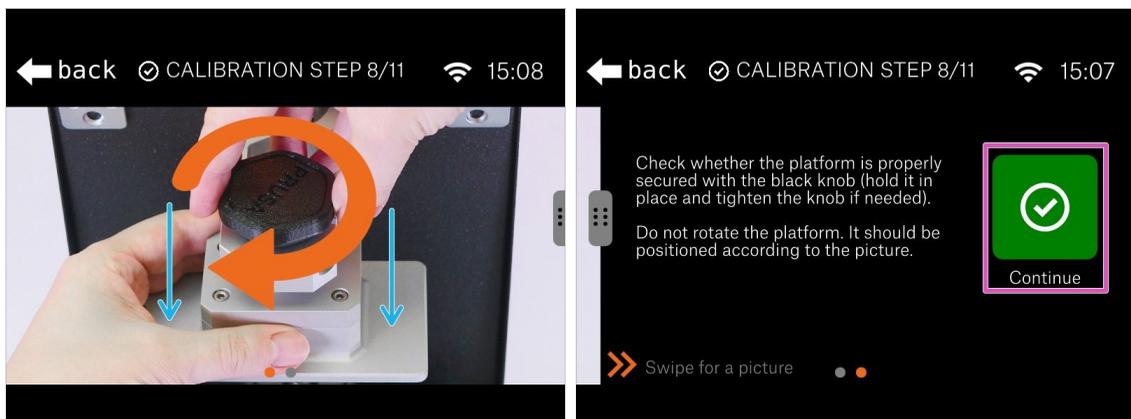
**⚠ WARNING: Do not clean the FEP film with isopropyl alcohol! Use a combination of warm water and a dishwashing product.**

## STEP 19 Calibration 7



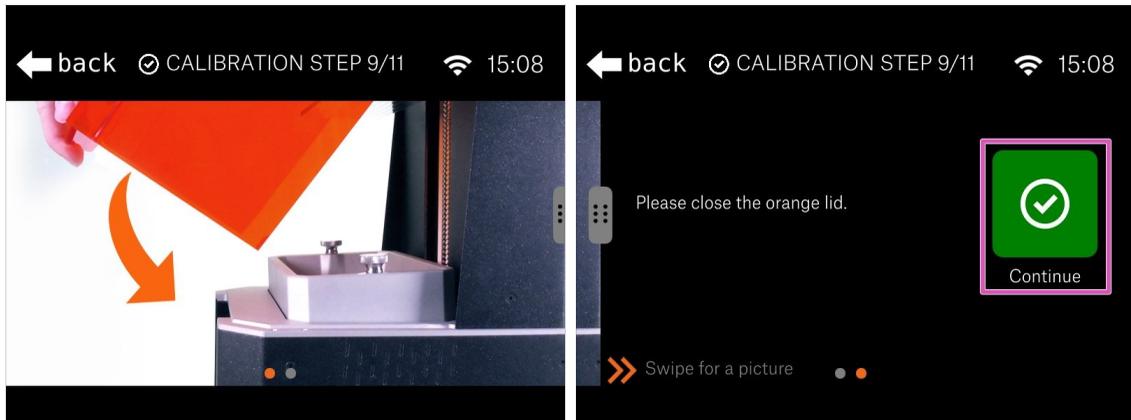
- After you ensure, that everything is clean, place the tank back in its original position and secure it with the screws.
- Press "Continue"

## STEP 20 Calibration 8



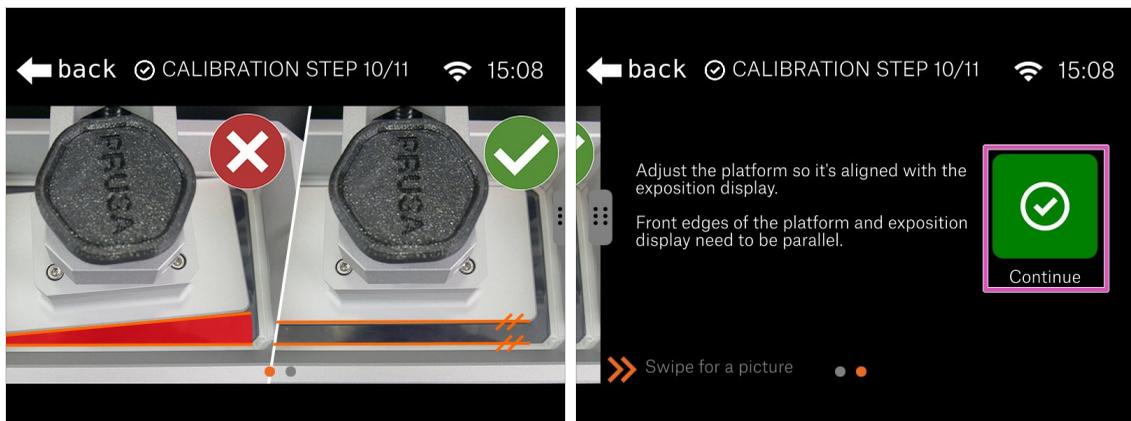
- Check, whether the platform is properly secured on the printer. If not, tighten the black knob.
- Since the screw(s) in the cantilever isn't/aren't tightened, the eccentric might wobble, but that is ok for now.
- By gently pressing on the platform, ensure it is all the way down in the cantilever.
- Press "Continue"

## STEP 21 Calibration 9



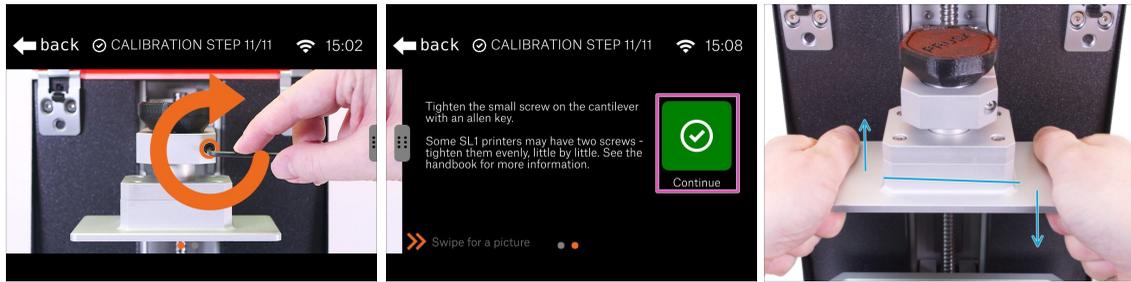
- Close the orange acrylic lid and continue with the next step.
- ◆ Press "Continue"

## STEP 22 Calibration 10



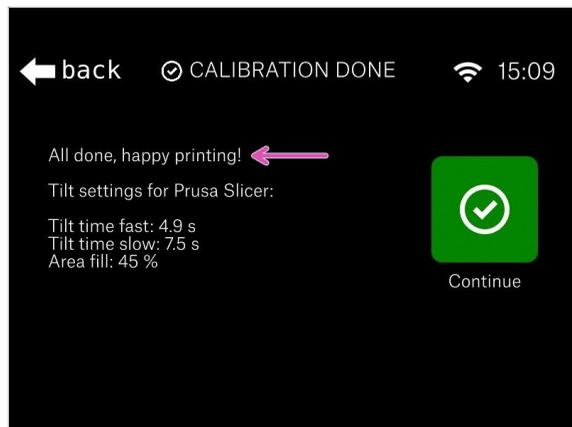
- Open the lid and take a look inside the printer, make sure the edges of the platform and the tank are parallel.
- ◆ Press "Continue"

### STEP 23 Calibration 11



- Tighten firmly one or both screws on the cantilever to finish the adjustment.
  - Press "Continue"
  - Grasp the platform in both hands like in the picture and try tilting the platform up and down. **The platform must not move!**
- ⚠ **If the platform is moving, return to the beginning of the calibration and repeat the whole procedure. Don't forget to use more force to tighten the screw(s) in the cantilever.**

### STEP 24 Finalising the calibration



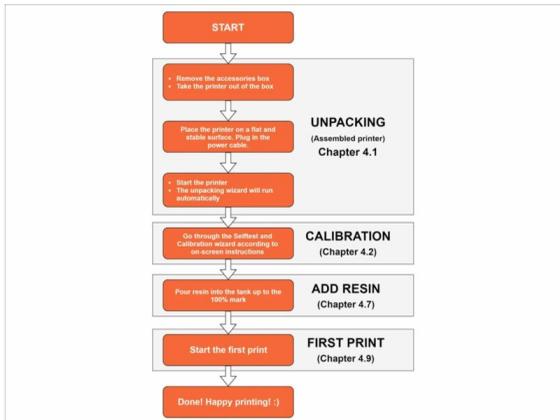
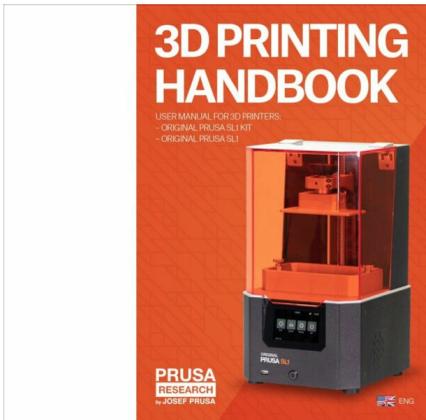
- **Calibration is finished!** Check the final screen.
- ⓘ For advanced users, values for PrusaSlicer are included, to make the print time estimation more precise. Note you have to switch PrusaSlicer to the Expert mode.

## STEP 25 Haribo time!



- ◆ The calibration was easy compared to the previous chapters. Eat the last row, read the remaining steps and enjoy your new printer.

## STEP 26 Quick guide for your first prints



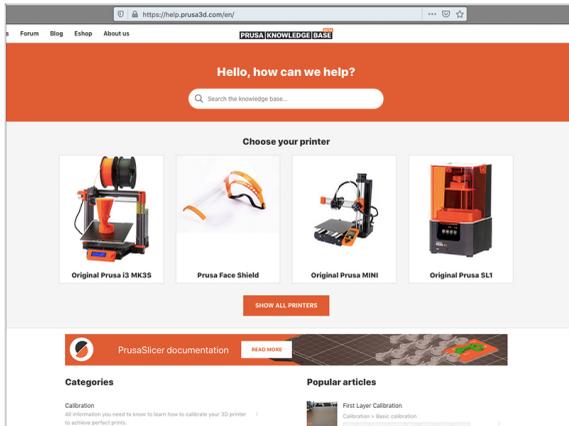
- ◆ See our free **3D Printing Handbook** - [prusa3d.com/3dhandbookSL1](https://prusa3d.com/3dhandbookSL1)
- ◆ Your printer is already calibrated and ready for printing. Read the Handbook to learn all about the first steps with resins, printing or connecting the SL1 to the network.

## STEP 27 Printable 3D models



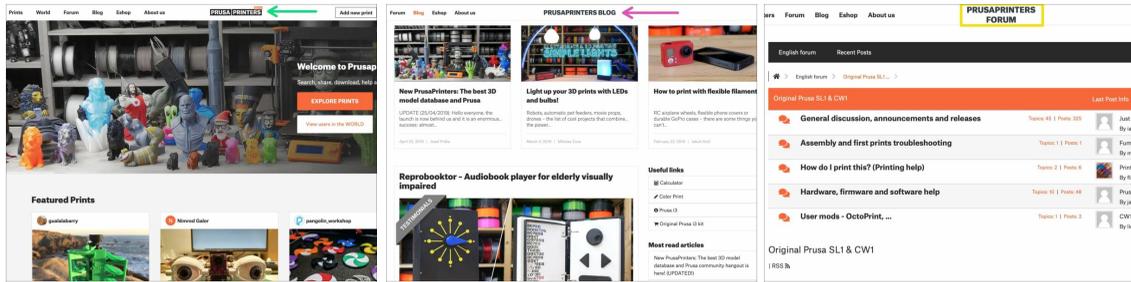
- Printable models are included with the printer, you can download them directly from our servers using the printer's menu.
- List of the models for the SL1 is [available on PrusaPrinters.org](https://www.prusa3d.com/prusa-3d-printer-sample-objects/). Look for collection "SL1 Sample Objects" by Prusa Research.

## STEP 28 Prusa knowledge base



- If you encounter any problems at all, don't forget you can always check out our knowledge base at [help.prusa3d.com](https://help.prusa3d.com)
- We're adding new topics every day!

**STEP 29** Join PrusaPrinters!



- ◆ Don't forget to join the biggest Prusa community! Download the latest models in STL. Register at [PrusaPrinters.org](https://PrusaPrinters.org)
- ◆ Looking for inspiration on new projects? Check our blog with weekly updates.
- ◆ If you need help with the build, check out our forum [forum.prusaprinters.org](https://forum.prusaprinters.org) with great community :-)
- i All services share one account.

# Manual changelog SL1



## STEP 1 Versions history



- Versions of the SL1 manual:
  - 07/2019 - Initial version 1.00
  - 08/2019 - Updated to version 1.01
  - 10/2019 - Updated to version 1.02

## STEP 2 Changes to the manual (1)



- 08/2019 - 2. Base & Tower
  - Assembly procedure of the reflector adjusted for easier installation.
  - New blower fan holder added. The assembly procedure adjusted accordingly.
- 08/2019 - 4. Electronics & Lid
  - A new cable for powering the UV LED added, same properties as the old version, just different manufacturing method.
  - Removal of the protective film from the reflector moved just before the print display installation.

**i** Manual version 1.01

## STEP 3 Changes to the manual (2)



- ◆ 09/2019 - 2. Base & Tower
  - ◆ New M4w washer added to further improve the grounding between the parts.
  - ◆ New revision of the Optical IR-sensor introduced. Functionality is the same. The assembly procedure remains the same as well.
  - ◆ New revision of the Connecting rod introduced. The difference in the manufacturing process, assembly is the same.
- ◆ Added instructions regarding ESD safety to protect the electronics.
- ⓘ Manual version 1.02















