

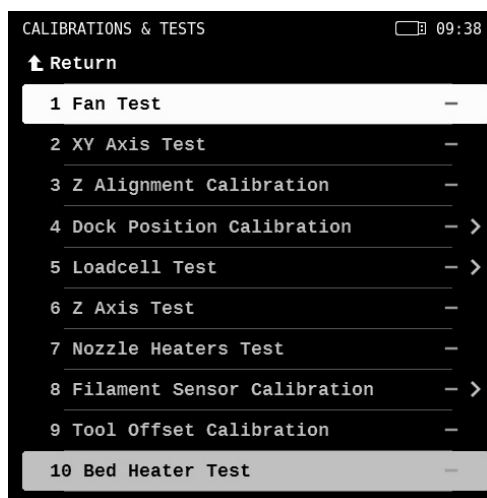
3.4. Running the Selftest



During the Printer Selftest, do not manipulate with the printer unless the wizard asks you to. If the printer is placed on an unstable surface or if there is another running 3D printer next to it, it may affect the accuracy of the calibration. The printer should be placed on a stable surface.

For the Selftest and the filament sensor calibration, **you will need at least 130 cm (4.5 ft.) of filament.**

The Selftest is a set of **various tests that serve as a diagnostic tool**. With their help, you can detect the most common problems, such as **incorrect wiring of cables**. The progress and results of each test will be displayed on the LCD. If the Selftest detects an error, the testing will be interrupted and the cause of the error will be displayed on the screen.



The Selftest includes:

- Test of the extruder and the print fan
- Test of the X, Y, and Z axis
- Proper connection of the heated bed and the hotend
- Loadcell test
- Dock Offset Calibration (only when you have more than one toolhead)
- Tool Offset Calibration (only when you have more than one toolhead)
- Setting up the filament sensor - how to correctly insert filament is described in the following chapter.

A majority of all tests are fully automatic and don't require any user interaction. However, there are a few exceptions. Let's look at them in the following chapters.

3.5. Dock and Tool Offset Calibration (Multi-Tool printers only)

If you have 2-5 toolheads, the printer will automatically detect them and require you to perform offset calibrations. Everything is described in detail on the screen of the printer. Simply follow the instructions and check the illustrations to finish the calibration. The procedure takes roughly 3 minutes per toolhead.

When performing the dock offset calibration, **make sure you're using the proper tools**. Be careful when removing the docking pins - do not drop them inside the printer. If you have trouble with any of the steps during this calibration, **please refer to the online guide** at help.prusa3d.com.

When the Selftest proceeds to the **Tool Offset Calibration**, make sure to follow the on-screen instructions. There is a **slot for storing the calibration pin** in the filament sensor on the left side of the printer - when not in use, **store the calibration pin in this slot**. Once the printer asks you to install the calibration pin, remove the print sheet and locate a large hole directly in the middle of the heatedbed. Insert the threaded part into the hole and screw it in. **Do not use excessive force** to tighten it.

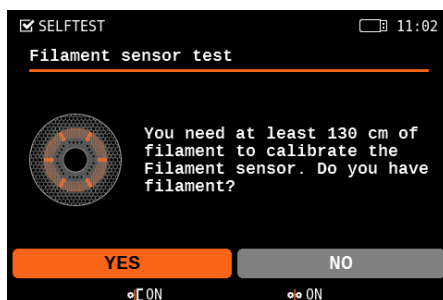
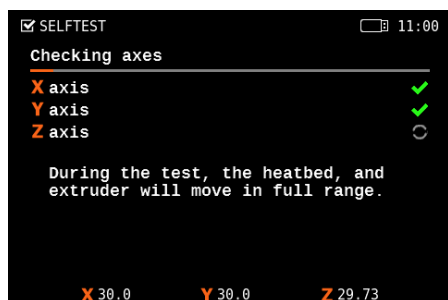
Let the printer calibrate each tool individually. Once everything is calibrated, the Selftest will proceed to the next step - filament sensor calibration.

3.6. Filament Sensor Calibration

For the Filament Sensor Calibration, you will need at least 130 cm (4.3 ft.) of filament. We recommend using a standard spool of filament and simply feeding the material in, you don't have to cut a precisely measured strand of plastic to perform the calibration.

1. Take a spool of filament and place it on a spoolholder on the left side of the printer
2. Carefully unhook the end of the filament - do not let it go or the filament could tangle up
3. Use sharp pliers to cut the end of the filament into a sharp point
4. Follow the on-screen instructions and calibrate the XL's filament sensor (sensors). In case you have four or five toolheads, you will need to switch the spool to the right side of the printer where filament insertion points 4 and 5 are located.

This concludes the initial Selftest / Calibration wizard. Now it's time to start printing. Let's continue in the next chapter, where we describe how to correctly load filaments into the printer.

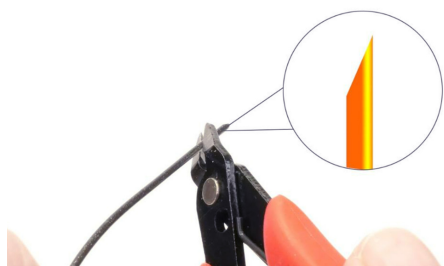


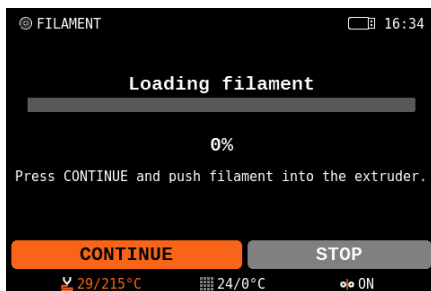
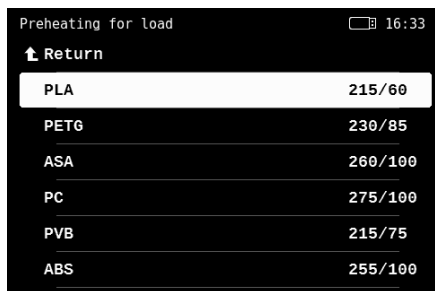
3.7. Inserting filament

If you are starting with the printer, we recommend choosing PLA for the initial print. This material is easy to work with and does not require complex pre-print preparation.

Before you insert the filament, start by placing the filament spool on the side holder. Be careful not to let go of the end of the filament strand - the spool could easily tangle up.

1. **Cut the end of the filament into a sharp point.** Insert the filament into the PTFE tube on the side and keep pushing it inside. If the filament sensor is on, the filament will be automatically fed. If the filament sensor is off, proceed to step 2.
2. Select the *LCD Menu - Filament - Load Filament* and confirm with the button.
3. The Preheat menu will automatically appear. Select the **material of the filament you want to insert** and confirm the selection with the rotary knob.
4. Wait until the nozzle reaches the desired temperature.
5. Press the rotary knob to start feeding the filament. Push the filament into the PTFE tube lightly until you feel that the extruder gear grabbed the filament and is pulling it in.
6. The feed wheel in the extruder will then feed the filament further into the extruder. Once it heats up fully, it will push out a bit of material from the nozzle. **The printer will ask if the color of the extruded filament is okay.** The message on the screen will say: Yes / Purge More / Retry. Check if there is filament extruded from the nozzle, then select:
 - If the filament is extruded and the color is correct, select YES
 - If the filament is not extruded or is contaminated with another color, select: PURGE MORE (you can repeat this step)
 - If the filament is not extruded and PURGE MORE doesn't help, repeat the loading procedure by choosing RETRY





The printer remembers which filament is inserted into it even when you turn it off. The type of filament is displayed in the lower section of the LCD menu.

Loading / Changing multiple filaments at the same time (Multi-Tool only)

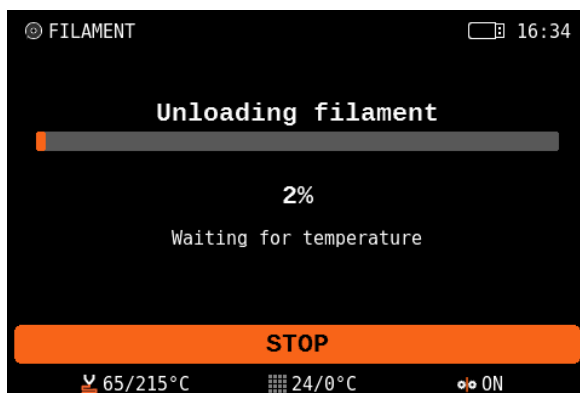
If you have an Original Prusa XL 3D printer with a toolchanger (2-5 extruders), you can load or change multiple filaments at the same time. On the left side of the printer, there are filament insertion points 1-3. Filament insertion points 4 and 5 are on the right side of the printer.

Open the Filament menu on the printer's screen and select Change Filament in All Tools. The printer will then display a list of available extruders. Select any of them to choose whether you want to keep the currently loaded filament or load a new one. The printer will then guide you through the rest of the process.

For the next step (Starting the First Print), **leave the filament inserted in the printer**. If for any reason you need to change the filament, the procedure is as follows:

3.8. Removing Filament

1. Select *LCD Menu - Filament - Unload Filament*
2. The printer will preheat automatically depending on the selected material. As soon as it reaches the right temperature, the filament will be unloaded from the extruder in a few seconds.
3. Once the extruder stops unloading the filament, remove it from the PTFE tube by hand. Please keep in mind that the process of unloading the filament strand from the extruder takes a few seconds. Do not pull hard on the filament when the unloading process is running. Check the printer's screen for information.
4. Make sure to secure the unloaded filament when you wind it up back onto the spool. If the end of the filament slips out, the spool may become tangled.



Tangled filament? Let's fix it!

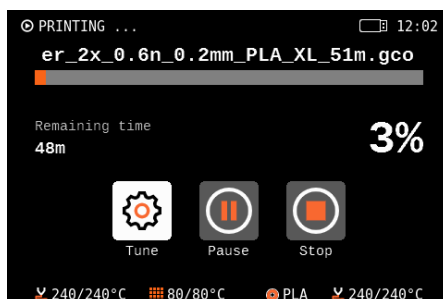
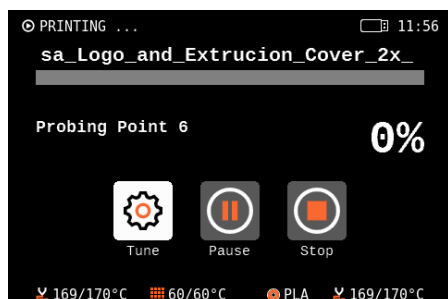
If you accidentally manage to let go of the end of the filament and the strand quickly retracts onto the spool, it's possible that the filament became tangled. This poses a risk during printing - a knot can form on the strand of filament, which will inevitably lead to a failed print. Simply remove the spool from the spoolholder and start unwinding the filament strand from the spool until you find the crossed section. Fix it and wind the filament back onto the spool.

3.9. Starting the First Print

If you haven't done it already, clean the print sheet with the enclosed wipes saturated with isopropyl alcohol and select one of the test objects from the Print menu (only appears if a USB drive is inserted). Confirm the selection with the button. Watch the printer closely during the first print. We recommend **selecting the PRUSA logo or First Layer Test**. These give you the best and fastest overview of whether everything is properly set up.

The nozzle will first preheat to 170 °C independently of the selected filament - the temperature is lower to prevent the filament from dripping from the nozzle. Then, the printer performs **Mesh Bed Leveling** - the nozzle will check the distance to the print sheet in several places to **create a virtual height map of the surface**. This allows the printer to lay down a perfect first layer every time.

Subsequently, the printing of the object or objects will take place.



Carefully observe the quality of the first layer. The Original Prusa XL is equipped with very accurate LoadCell technology, which measures the distance between the nozzle and the bed with perfect accuracy. However, it may happen that **due to, e.g., traces of grease, the print may not hold well**. If you find that the plastic is peeling off the bed, **stop the print by selecting the Stop print icon on the screen**. Clean the bed and try again. If the first print fails repeatedly, go to the **First Print Troubleshooting chapter**, where you will find useful tips and tricks.

3.10. Removing a Printed Object from the Print Sheet

Once the printing is finished, wait until the print sheet cools down. The print plate and heated bed may exceed 100 °C, depending on the settings - contact with unprotected skin can cause burns. Check the heatbed temperature in the footer of the LCD screen.

Depending on the type of material, it may happen that the print will separate from the print sheet automatically by itself after cooling. If not, remove the print plate and carefully bend it on both sides. Then turn it by 90° and repeat the bending. **Be sure to remove all pieces of plastic** - don't forget the introductory line on the edge of the plate.



! If there are plastic remnants on the plate, do not remove them with your nails, you could get injured. Use a plastic spatula to remove the remaining plastic.

i Try not to touch the print surface with your fingers - fingerprints are greasy and can reduce adhesion.

3.11. First Print Troubleshooting

The calibration and pre-print setup of the Original Prusa XL are fully automated - the filament is automatically inserted, axes checked and the first layer precisely measured. If a printing issue does occur, it usually falls into one of the following scenarios:

3.11.1. First layer peeling off from the bed

Solution: The most common cause is grease on the bed or an unsuitable combination of material and print surface (e.g. PLA and textured sheet). Make sure that the sheet is sufficiently **degreased using isopropyl alcohol** - more information can be found in the Preparing Flexible Print Sheets chapter. In the Materials chapter, you can find information on how to properly print specific filament types. Water with a bit of dish soap is also an option if you don't have access to IPA - **make sure to clean and dry the sheet thoroughly to prevent rusting.**

3.11.2. Nozzle moves too high/low, or extrudes plastic outside the print area

Solution: Make sure that the print sheet is properly mounted. Due to its size, it may be mounted incorrectly on the heatbed, causing it to hit the end stops of the Z axis (affecting the axis calibration) or it may be shifted outside the print area. **Make sure that nothing is obstructing the movement of the axes** and that all packaging material and transport fixations have been removed from the printer. Run the Auto Home calibration from the menu to test all three axes.



If you built the XL using the assembly kit, double-check that the Nextruder and the heatbed are mounted correctly. Check the wiring of the Nextruder and inspect the Z-axis. Use the Assembly guide as a reference to make sure you built the machine correctly.

3.11.3. The nozzle does not start extruding, even after multiple attempts

Solution: Make sure that the PTFE tube is not blocked and that the filament can freely pass through to the extruder. The filament must have a sharp tip. The extruder has a clamp at its front. Unclamp it and flip the doors open - this will give you access to the feed wheel. Make sure that the filament strand can reach the edge of the feed wheel.

3.11.4. After a few hours of printing, the nozzle stops extruding filament

Solution: Remove the hotend from the extruder (see help.prusa3d.com for exact instructions) and check if the steel filament guide is deformed. This might happen when you overtighten the nozzle assembly.

3.11.5. Individual tools are not picked up or parked correctly

Solution: Please, re-run the **Dock Offset Calibration** from the printer's menu. Dock offset calibration may be incorrect.

3.11.6. Filament is extruded either too high or too low.

Solution: Please, re-run the **Tool Offset Calibration** from the printer's menu. This issue is usually caused by an incorrect tool offset.

3.11.7. The machine produces a rattling sound

Solution: If you built the printer using the assembly kit, it is likely that one of the side panels is not properly secured. Double-check the side panels and the back side (the "backpack") and make sure that all screws are tightly secured.

3.11.8. The filament sensor does not detect filament

Solution: If you built the printer using the assembly kit, it is likely that the filament sensor is disconnected. Check the rear side of the printer and make sure the filament sensor is properly connected to the mainboard.

3.11.9. The printer displays an error related to communication with extruder(s).

Solution: Make sure that the extruders are correctly connected. There are two extruder ports on the mainboard. If the first one is disconnected, the printer won't boot and display an error.

3.11.10. The printer does not turn on

Solution: If you built the printer using the assembly kit, there are multiple areas to check. First of all, check that once you plug the power cord into the power supply unit, the switch next to the plug lights up. If not, the cord may be damaged - you can try a different one. If this does not help, the power supply unit may be faulty. Contact our tech support to resolve this issue. If the switch next to the power cord lights up and the fans spin on startup, but the screen remains black, double-check the wiring of the display using the assembly guide. If the printer is stuck on the loading screen, the firmware installation may be corrupted. See the chapter Updating the firmware and learn how to force a firmware installation.



This problem can be also caused by an incorrectly installed heatbed - especially if there's an electrical short. Turn off the printer, open the electronics box under the heatbed and compare the connection with the photos and instructions in the assembly manual.

3.12. Updating the Firmware

The Original Prusa XL is ready to print once assembled and powered on. To make sure you have the most up-to-date version of the firmware with the latest features and settings, we recommend checking prusa3d.com/drivers. You can perform the firmware update after you perform the initial Selftest.

To check your firmware version, navigate to Info - Version info.

Follow these instructions:

1. Download the correct version of the firmware from prusa3d.com/drivers and unzip the file.
2. Copy the .BBF file to a USB drive formatted with FAT32 - you can use the USB drive that comes with your Original Prusa XL printer.
3. Insert the USB drive into the printer.
4. Restart the device using the reset button (located under the rotary knob).
5. The update process should begin automatically. Confirm flashing by selecting FLASH and pressing the knob.
6. Wait until the process is completed.



To force a firmware installation (e.g. if you need to load an older firmware), insert the USB drive containing the desired .BBF file, restart the printer, wait for the logo to show up and press and hold the control button during the system startup until the firmware installation screen appears.

3.13. Sample Models

The USB drive that came with your Original Prusa XL 3D printer contains a number of sample files (G-codes). We recommend keeping them on the flash drive. These files have been prepared (sliced) and thoroughly tested by us. If you encounter issues with print quality at any time, try loading and printing one of the sample files - especially the Prusa Logo and the First Layer Test. These sample files are designed to test the basic functionality of your Original Prusa XL.

If your print fails and the sample files are printed correctly, it means there's probably an issue with the way your files are sliced. Try reslicing them again with the default PrusaSlicer settings and check for the basic issues:

- Incorrect printer/nozzle profile (the Original Prusa XL is equipped with a 0.4mm nozzle by default)
- Incorrect material settings
- Missing supports
- Incorrectly configured infill
- The model is not in contact with the print sheet

If the sample files are not printed correctly, check the Troubleshooting section, our Knowledge Base at help.prusa3d.com or contact our tech support.

3.14. Factory Reset

If you feel like you changed settings that have negatively affected your 3D printer, you can always revert to factory default values and try again.

Factory Reset can be done via *LCD Menu - Settings - System - Factory Reset*. This will reset all the saved values to their default state.

