SMART3D

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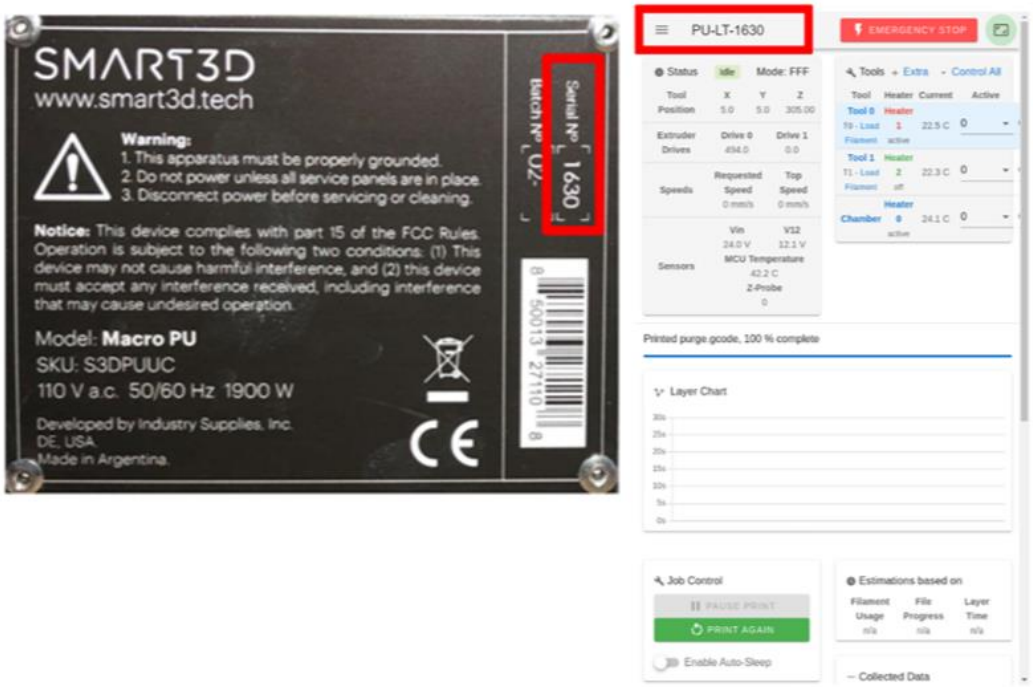
Build Plate Calibration

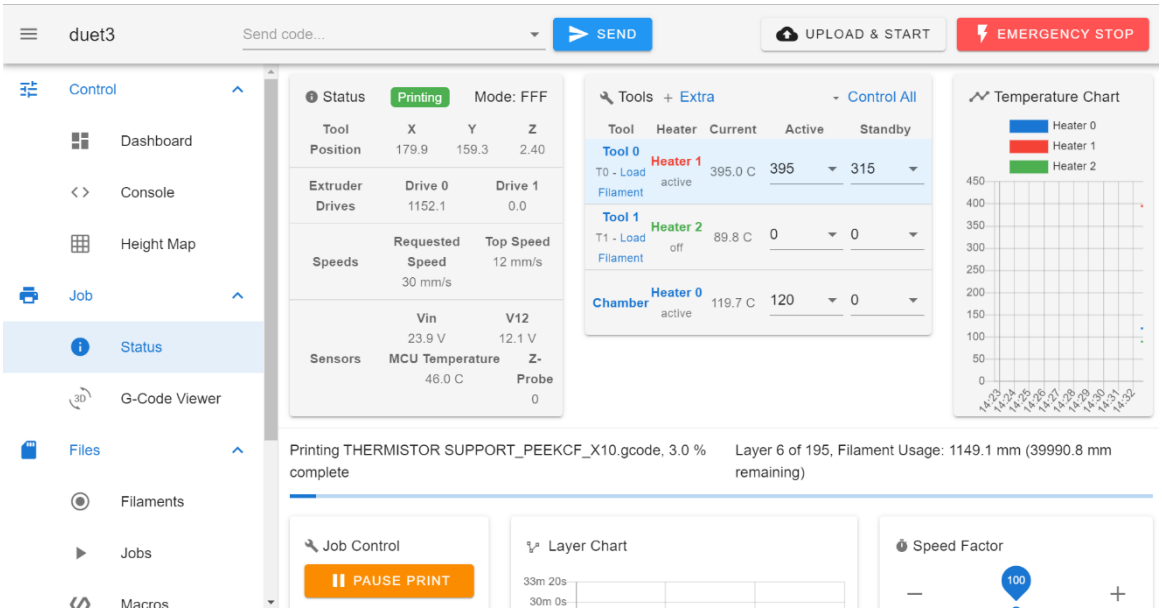
NOTE: Clean the nozzle from dust/debris and check that the build platform is in place before starting the calibration process.

To log into your Macro PU on a PC, enter the following in the address field in any web browser: [PU-LT-[Unit Serial Number].local/]

Your unit's serial number is available on the model identification tag on the back of the unit next to the power socket or the touchscreen.



After logging in, you will have access to the command screen of your Macro PU via your computer.



WARNING: Stay close to the unit during the calibration. Press the emergency stop button if the nozzle crashes into the build plate and follow the steps below.

Step-by-step calibration procedure

Step 1: Reboot the printer.

Step 2: Make an artificial home position for the Z-axis by sending command **G92 Z0** using the command line at the top of the screen. By doing so, the Macro PU will believe that its current position is Z0.

Step 3: Send command **M564 S0** to disable the axis limits, which will allow movement further Z0.

NOTE: If the nozzle is hitting the build plate, lower it 5mm by pressing the Z+5 button.

Step 4: Enable movement along the X and Y axes by clicking on the **HOME X** and **HOME Y** buttons (They will change color from orange to blue).

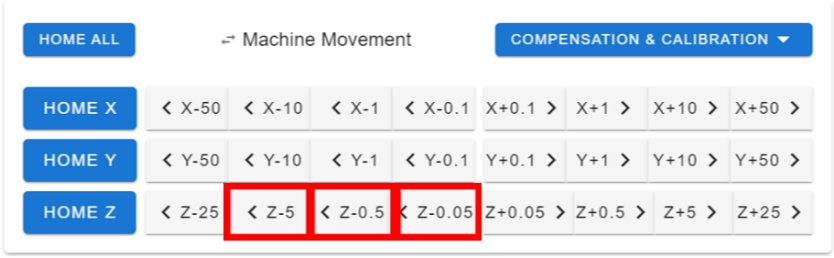
Step 5: Send command **G1 X175 Y1** to move the printhead to the front and center of the build plate.

Step 6: Override the grid to prevent the printer from compensating when moving the hotend later by sending command **M561**.

Step 7: Override the Z-Axis movement with command **M564 S0**

Step 8: Slowly move the Z axis upward till the build plate just touches the nozzle. To make this move slowly upwards by pressing the following buttons as needed:

- Z - 5 moves 5 mm
- Z - 0,5 moves 0,5 mm
- Z - 0,05 moves 0,05 mm

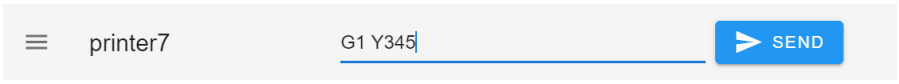


Warning: Be careful not to crash the nozzle violently into the build plate. Command M564 overrides movement limits in all the axes, allowing you to move freely without restrictions.

Step 9: Send command **G92 Z0** again to make the current position Z0.

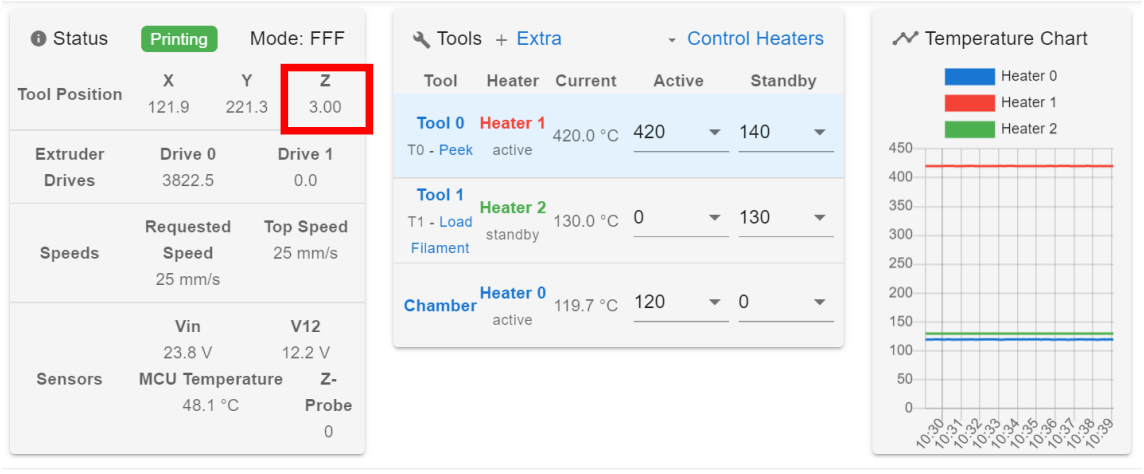
Step 10: Lower the build plate 5mm by pressing the Z+5

Step 11: Move the hotend to the back of the build plate by typing the command **G1 Y345.**



Step 12: Slowly move the Z-axis upward till the build plate just touches the nozzle. To make this move slowly upwards by pressing **Z-0.05** button to move in intervals of 0,05 mm.

Step 13: Find the current Z-axis position on the screen. This can be negative or positive. Divide that value by 2 and write that number down.



If negative:

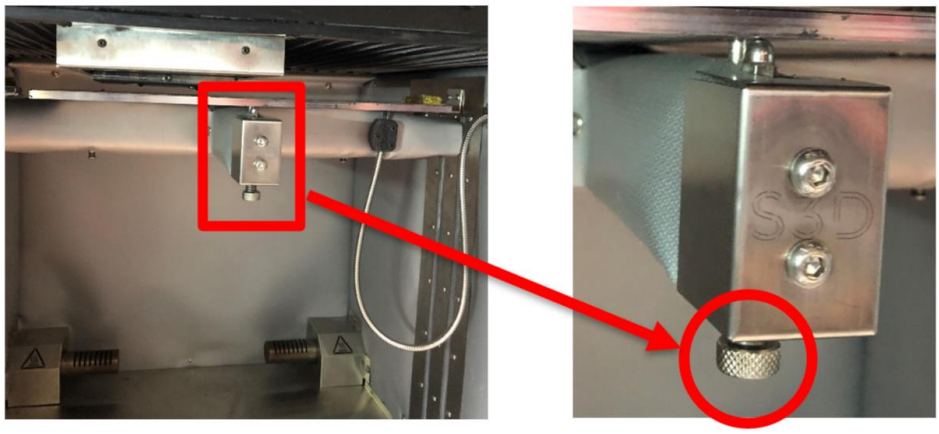
If the value of the Z-axis, when the hotend is on the back of the build plate, is negative, lower the build plate an amount equal to the calculated value, by pressing **Z+0.05** button.
Then use the screw at the front of the build plate, to rise it so that it touches slightly the nozzle.

If positive:

If the value of the Z-axis, when the hotend is on the back of the build plate, is positive, lower the build plate in the back by adjusting the front screw several turns to separate the nozzle from the build plate.
Then rise the build plate by an amount equal to the value you have calculated.
Adjust the bed with the front screw so that it just touches the nozzle again.

NOTE:

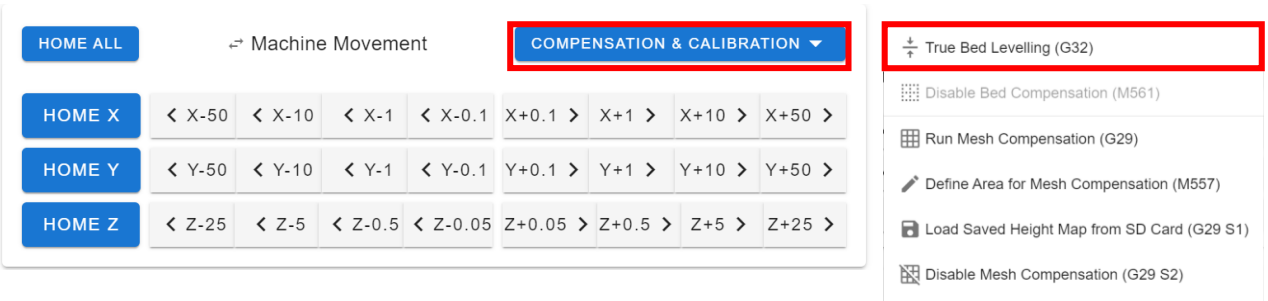
- When the nozzle is in the rear part of the build plate, turn the screw clockwise to lift the platform, and anticlockwise to lower it.
- When the nozzle is in the front part of the build plate, turn the screw anticlockwise to lift the platform, and clockwise to lower it.



Step 14: Repeat the whole procedure once more, starting from **step 5**.

Step 15: Restart the printer

Step 16: Click on **COMPENSATION AND CALIBRATION** and press **True Bed Leveling**, this will level your build plate.
Once done, press this button 5 times.



Step 17: To run the mesh compensation to see how well the build plate is calibrated, click on **COMPENSATION AND CALIBRATION** and **Run Mesh Compensation**. This process is going to take more or less 10 to 15 minutes.
Once finished, click **Height Map** on the **Control panel** to see an exaggeration of the build plate tilt.