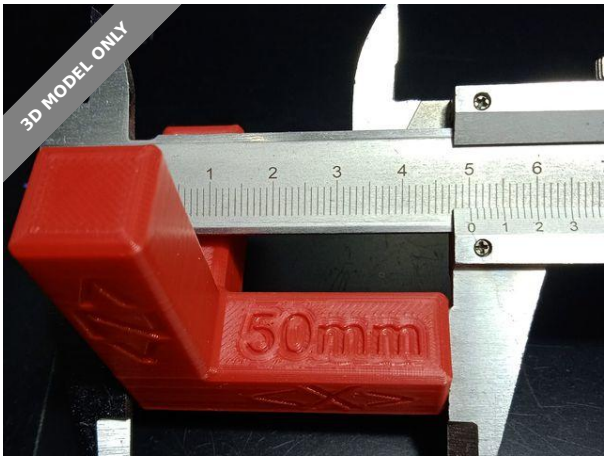

Calibration corner

FellipeC

VIEW IN BROWSER

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Summary

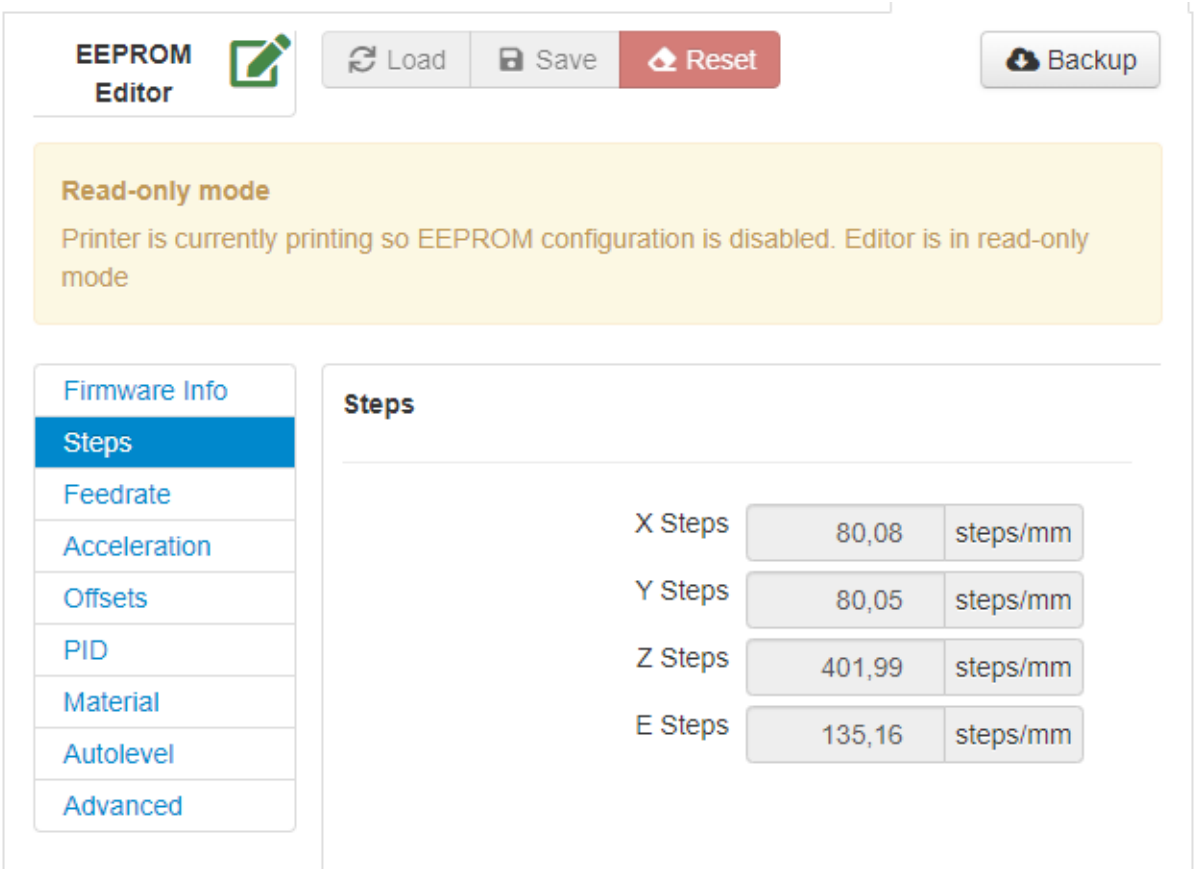
A corner of a cube with 50 mm each side. Use it to calibrate your printer motor steps/mm.

3D Printers > Test Models

Tags: calibration test calculate instructions steps tutorial

This part should be used to calibrate your steps of the axis' motors.

The first step is to discover how many steps your print do for each millimeter of axis travel. You can do this either by checking the printer LCD menus (not all printers show this info there), by using the EEPROM Editor plugin for OctoPrint (pictured here) or by issuing the command M503 on terminal.



Once you know this values, print the calibration part and measure it. You should get values very close to 50 mm. If your measurement is spot on, congratulations, you don't need to do anything. But if is there some deviation, you should calculate new steps values.

This can be accomplished by a simple cross-multiplication.

For example, let's say your printer had an X axis steps of 80, and you measured the print to be only 49.2 mm on the X axis. You should assemble your cross multiplication like this:

$$\frac{80}{x} = \frac{49{,}2}{50}$$

So 80 steps was equal to 49.2 mm and x steps should be equal to 50 mm. You cross-multiply and solve like this:

$$x = \frac{80 * 50}{49{,}2}$$

$$x = 81{,}3$$

The new X axis steps value should be 81,3. Repeat the same steps for the Y and Z axis and note the new values.

Now you should tell the printer about your new values. Like getting the values, you can do this using the LCD interface of your printer, if it has this function, using the EEPROM Editor plugin or using the terminal, issuing the command M92.

For example, let's say you calculated the X steps to 81,3, Y steps to 78,9 and your Z steps to 402,5. Your M92 command will look like this:

M92 X81.3 Y78.9 Z402.5

And don't forget to send a command M500 to save all this to the printer's memory, so it remembers those values next time you turn it on.

Next, print the model again, and measure. If everything is correct, you should measure 50 mm, or at least a value way closer to it than was before. In the later case, you can redo your math to fine tune it and print again.

Model files

calibration-square.3mf

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