

Calibrate the Extruder Steps/mm

[JellyBox HowTo: Calibrate Extruder Steps/mm](#)



The good news is: this process is not 100% necessary. The Jellybox will work well enough without this procedure. Yet, if you want predictable, comparable results from filament to filament, this is the way to go.

Before you attempt calibration, you should already have an even extrusion... It is beneficial to lightly hold the filament between fingers to feel the consistency of feeding. Also, visually explore the extrusion. Is it nice and even?

1. Position the extruder so it's nice and accessible.
2. Nozzle temp 210C for PLA (or whatever temperature your material of choice needs)
3. Make sure the drive gear is nice and clean
4. Load filament until it comes out.
5. Make sure you have enough tension on the filament. For PLA, put there a lot of pressure, while you still should be able to easily unlock the extruder arm.
6. Push filament a bit to get even extrusion, then lock it up.
7. Without waiting, mark the filament at the 'mark the filament here' mark
8. Using the "extrude" button on the controller under Adjustments extrude 100mm
9. When extrusion finishes, mark the filament at the same spot as before.
10. Pull the filament out (unload) and measure the distance between the two dots left to determine the actual distance travelled - using the meter on the top of the printer
11. **IF** the distance is 100mm +/- 4mm you're calibrated enough for our purposes. You're done. (4% error of volume extruded in a dynamic system given the inherent inaccuracies of the technologies is all fine.)
12. **IF NOT**
 - a. Check out the old steps
 - i. Using the controller go to Settings > Motion > E steps
 - ii. OR Send in M503 gcode

- b. Compute new E steps (extruder steps per millimeter) as
old steps * (what we wanted/what we got) = new steps
Example: $125 * (100/90) = 138.8889$
- 13. Input the computed value as new E steps (precision two decimals is more than enough)
 - a. Using the controller. Go to Settings > Motion> E Steps
 - b. OR Sending in gcode M92 E138.89
- 14. Done. Verify by repeating procedure (optional if you're confident) and print something.