

Nivelage du plateau

BED LEVELING

BY BILLIE RUBEN

Bed leveling is, quite literally, the foundation of any successful print, and one of the biggest hurdles newbies must overcome in order to avoid the dreaded plastic spaghetti. But never fear! I've put together this handy guide to help you! ♥

INCORRECT BED LEVELING CAN CAUSE:

POOR ADHESION

Making first layers hard to lay down

FAILED PRINTS

Resulting in plastic spaghetti

UGLY FIRST LAYERS

That have gaps or weird patterns

WARPING

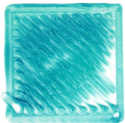
Ruining the accuracy of your prints



It occurs when the nozzle is not aligned properly to the bed. This is more accurately called 'tramming' (as nothing is being leveled to the ground), but 'leveling' is the common verbiage. As beds are usually leveled at 3 or 4 points, you may see any combination of the below in your first layer.

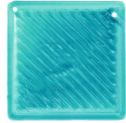
✗ MUCH TOO CLOSE

Filament extrudes thin or not at all in some places, often bulging out in others. Extruder motor might slip/click.



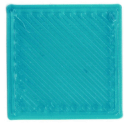
✗ A LITTLE TOO CLOSE

Filament bulges out of the sides of the nozzle which squishes into other lines, sometimes causing a pattern.



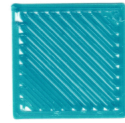
✓ PERFECT

Filament is flattened, adheres well to nearby lines, no gaps or peaks between lines.



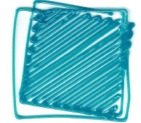
✗ A LITTLE TOO FAR

Filament appears rounded, connection between lines is loose, gaps may appear.



✗ MUCH TOO FAR

Filament is totally rounded, little to no connection between lines, doesn't stick to bed.



HOW TO FIX IT: LIVE LEVELING

1 ROUGH LEVEL, VISUALLY

Move nozzle to lower left corner of bed, adjust leveling knobs until nozzle and bed touch, then turn it back just a bit little until a gap barely appears. Repeat for each knob on your bed.



2 SLICE A LEVELING HELPER

In your slicer, resize a rectangular prism so the base is almost as large as your print bed, and set the bottom layer pattern to concentric. First layer should look like a square spiral.



3 LIVE LEVEL

Print it. As it's laying down the first layer adjust the leveling knobs so that the lines it's extruding look like the perfect example above, then cancel the print.



4 MAINTAIN IT

Your bed is now level. To maintain the level, print all future models with a skirt (or brim) and watch it lay the brim down, adjusting leveling as required as it prints the skirt.



FURTHER HELP:

If the above instructions aren't working for you, it could be one of these issues;

- If the middle of your bed is too high or low; your bed is warped, seek a replacement or add borosilicate atop it.
- Your speed may be too high. Seek a slicer settings profile from a trusted source (or use the slicer defaults).
- Your bed surface may need to be cleaned, or you may need to add some glue to the surface (esp. if cold).
- Your temperature may be wrong (bed usually should be around 60°C and nozzle 200 °C for PLA).
- Your z (up/down) axis end stop may be too high or low, try to move it, or print an adapter.
- The axis your nozzle travels on may not be level, seek instructions specific to your machine.

To solve these issues you might need some further help from other printer folk. I help run the largest 3D printing communities on **Discord** (discord.gg/B4tp8MH) and **reddit** (reddit.com/r/3Dprinting). We'd be happy to help you there!

I release full-resolution copies of these guides for free so you can print your own, but if you'd like to support me making more, consider purchasing a print from my store on **RedBubble** (redbubble.com/people/BillieRuben/shop)

If you'd like more of these guides, I'll be posting them to my **Twitter** @BillieRubenMake. Happy Printing! ♥ Billie



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