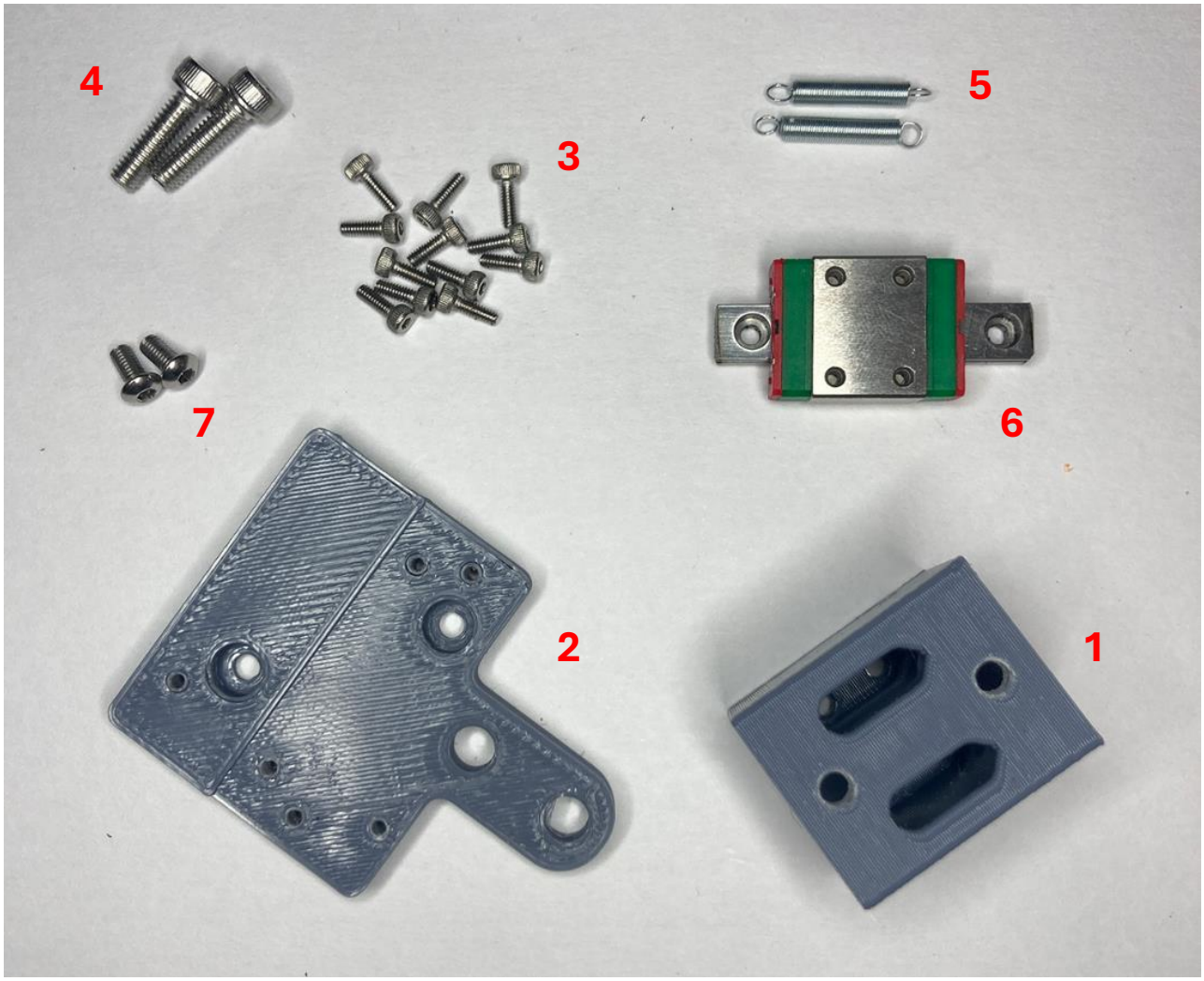
FS Plotter

Assembly / Installation Guide

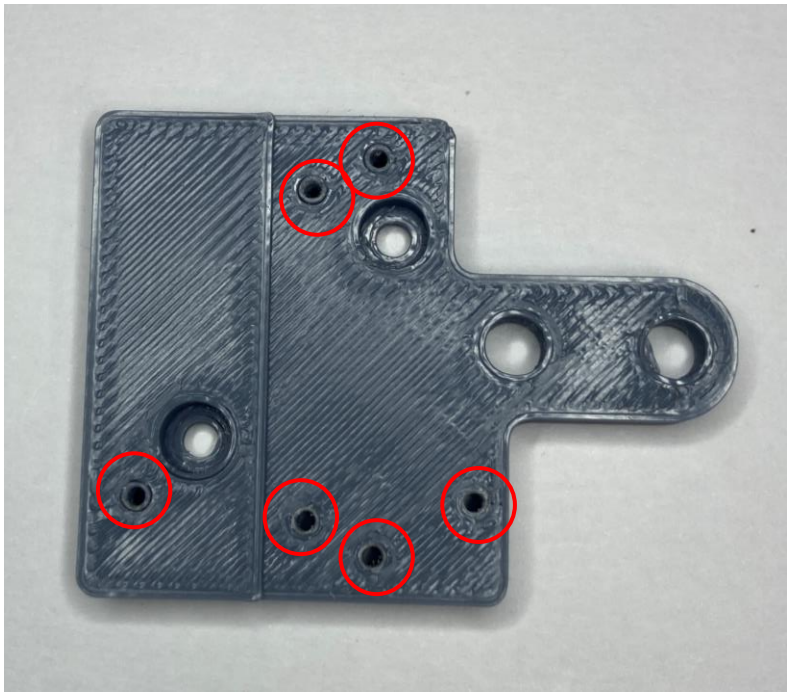
By: Geoffrey Gao
02/2024

Bill of Materials

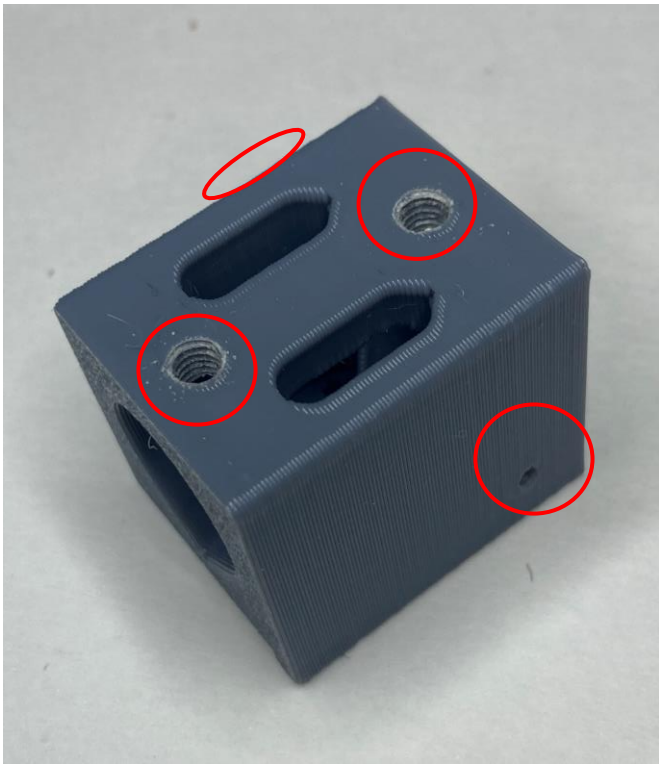


#	Name	QTY
1	Pen Holder	1
2	Carriage Mount	1
3	Socket Head Cap Screw (M2 x 6mm)	12
4	Socket Head Cap Screw (M4 x 20mm)	2
5	Extension Spring (0.3 x 3mm x 20mm)	2
6	40mm Linear Rail	1
7	Ender 3 Fan Mount Screw	2

Assembly Instructions

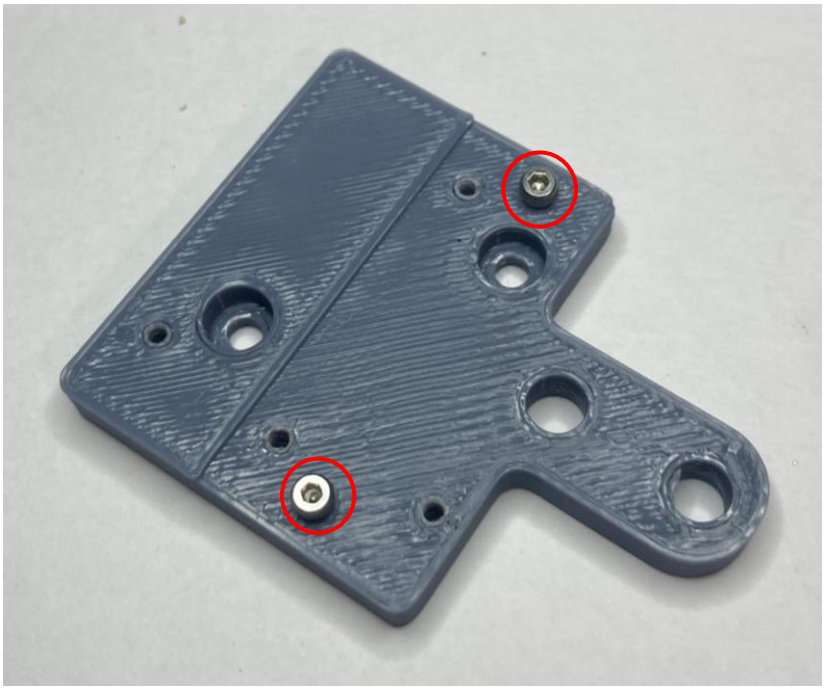


1. Tap the noted holes with an M2 Tap

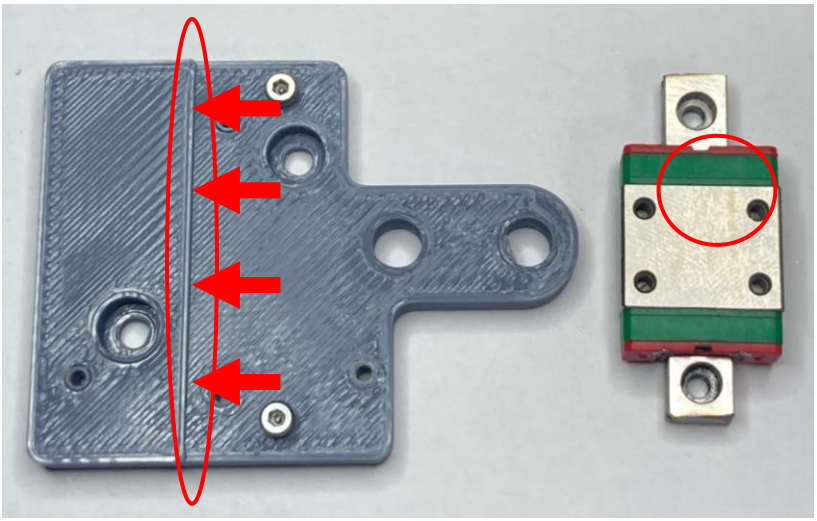


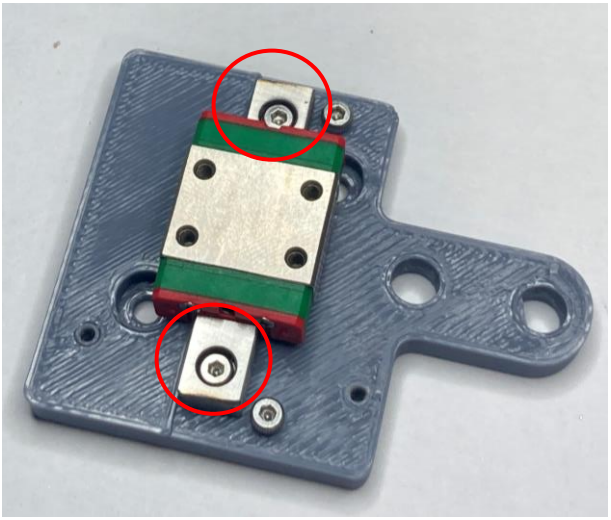
2. Tap the noted holes with an M4 and M2 Tap

2 Holes M4 Tap on the front, 2 Holes M2 Tap on the sides



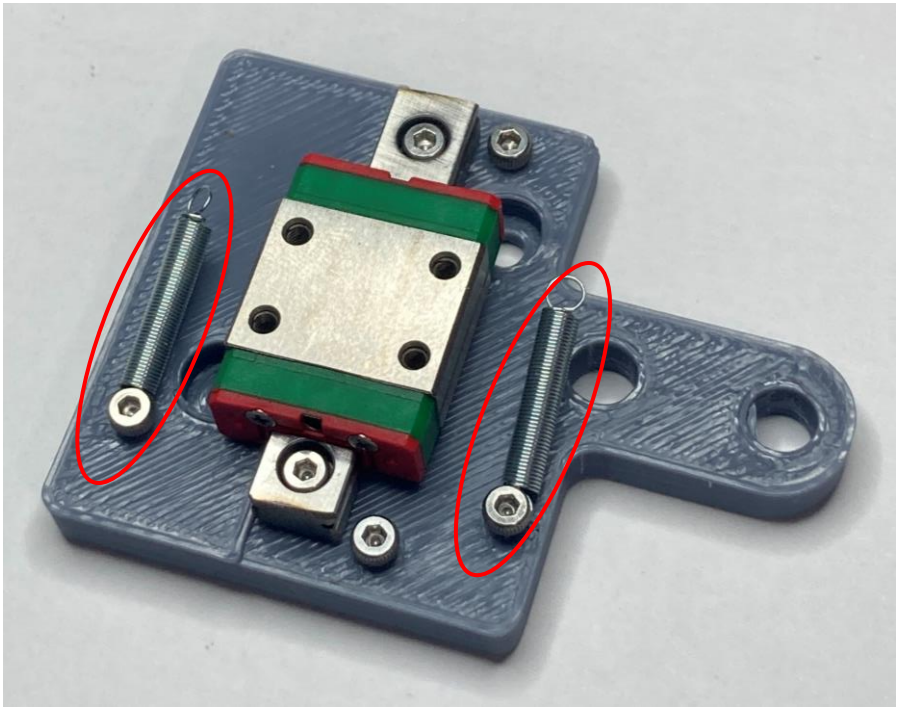
3. Install 2 M2x6mm Screws



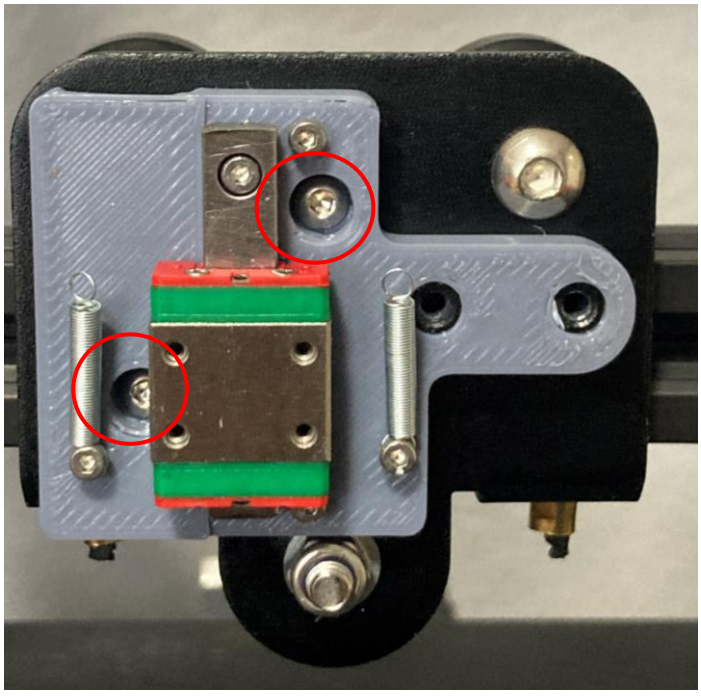


4. Install the Linear Rail using 2 M2x6mm Screws

Push the rail against the shown edge to align it when installing. Be careful not to allow the carriage to come off the rail!

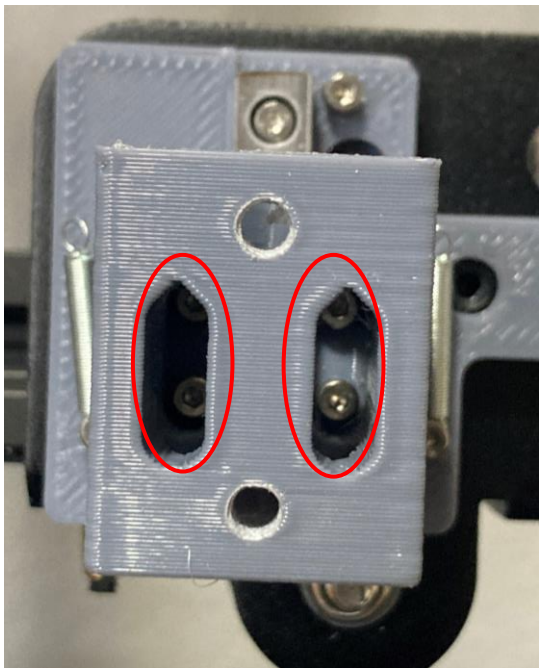


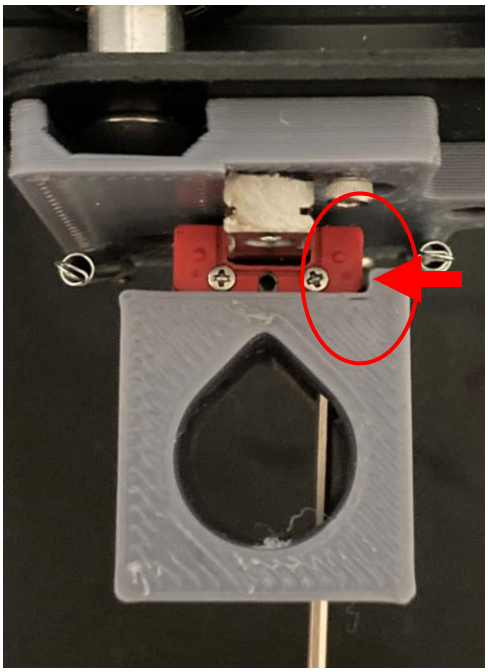
5. Install 2 Springs with 2 M2x6mm Screws



6. Mount the Carriage Mount to the Ender 3 Carriage

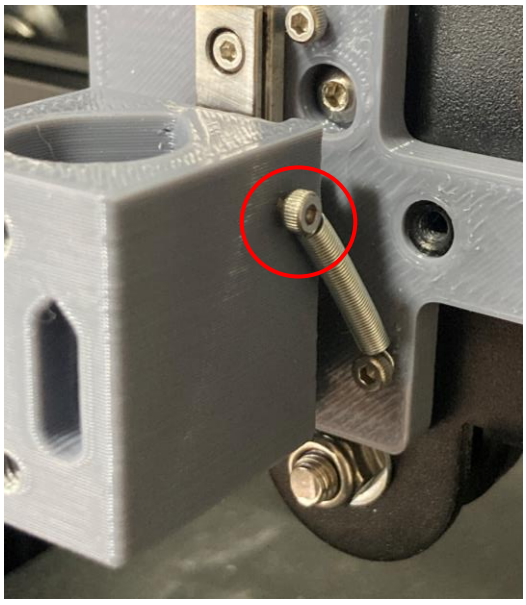
The 2 holes that were used to mount the hotend are used as alignment features. Use the screws that were originally from the fan mount to install

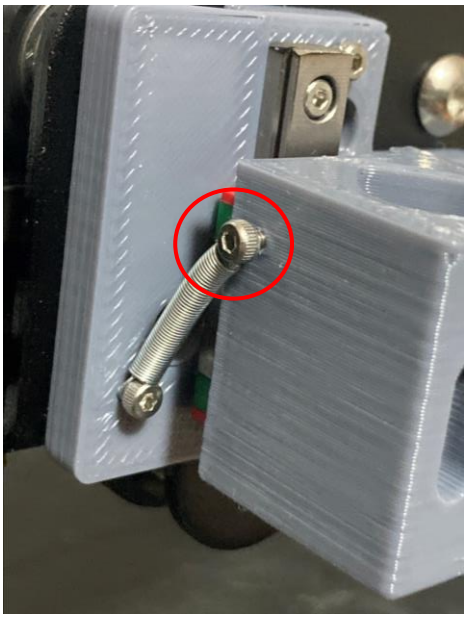




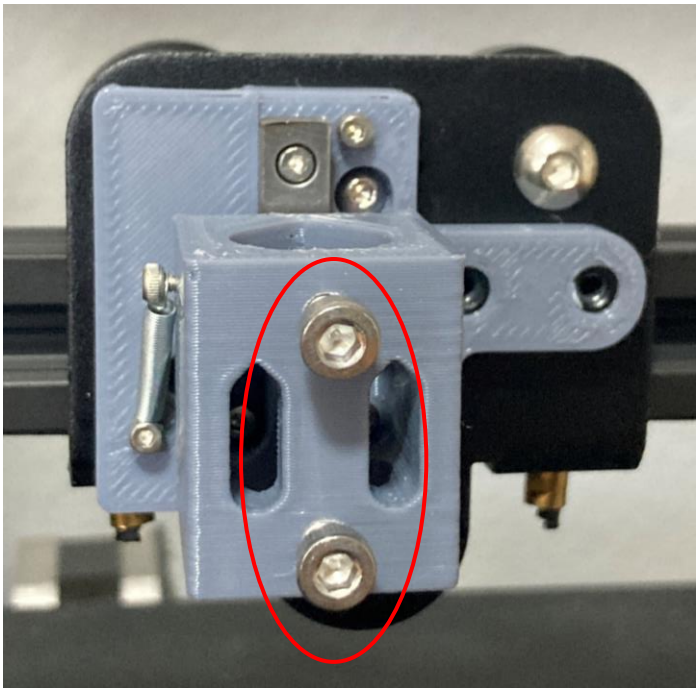
7. Install the Pen Holder to the Linear Carriage with 4 M2x6mm Screws

Use the alignment feature on the pen holder to push against the carriage to ensure alignment. Screws are a bit difficult to install!



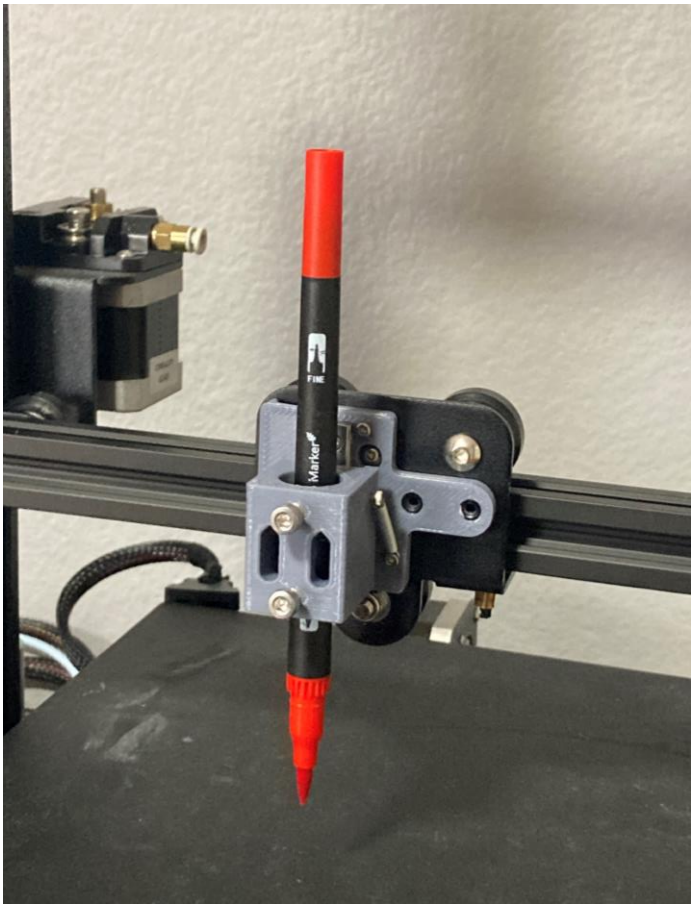


8. Attach the springs to the Pen Holder with 2 M2x6mm Screws



9. Install the 2 M4 Screws on the front of the Pen Holder

These screws will be used to hold the pen in place



Installation is complete!

Pen Height Calibration

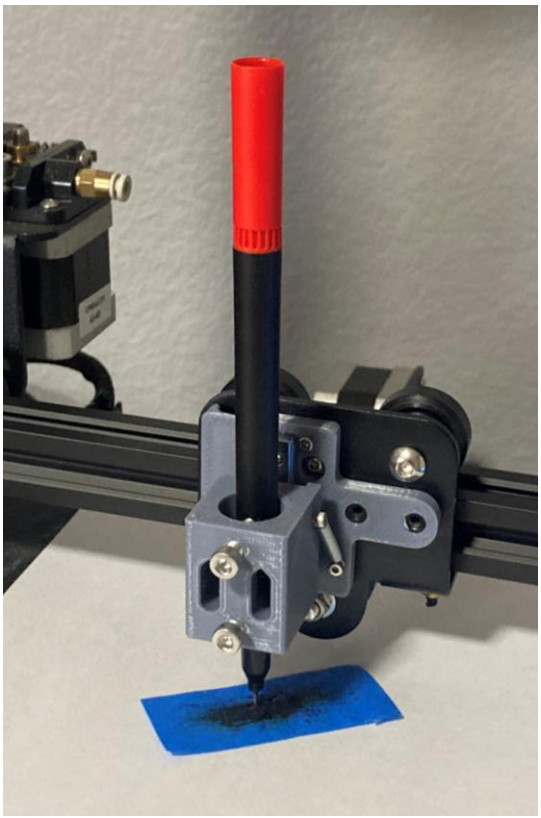
1. Auto home the printer

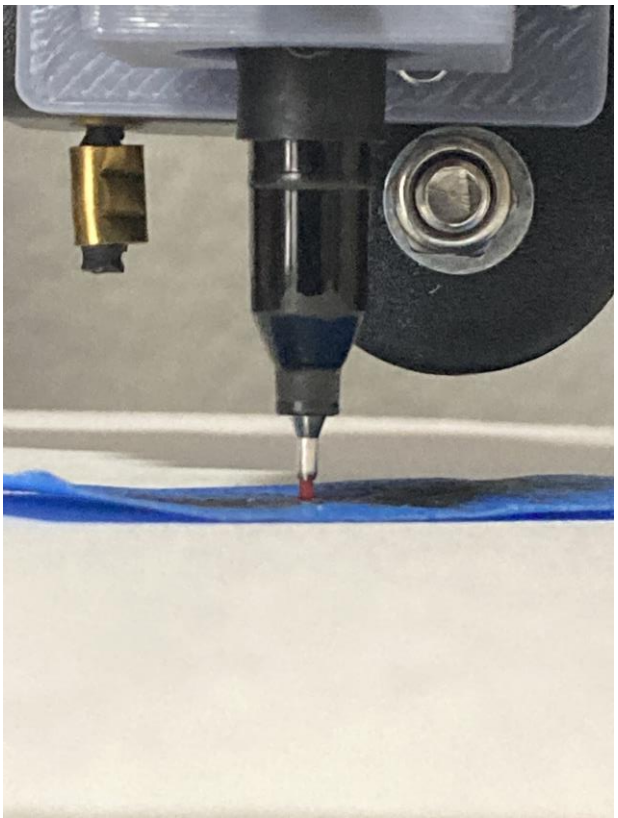
2. Move Z axis to 0.5mm

Depending on how precisely your bed is leveled, a smaller number can be used as long as it is greater than 0.1mm. I usually use 0.5mm to be safe

3. Disable Steppers

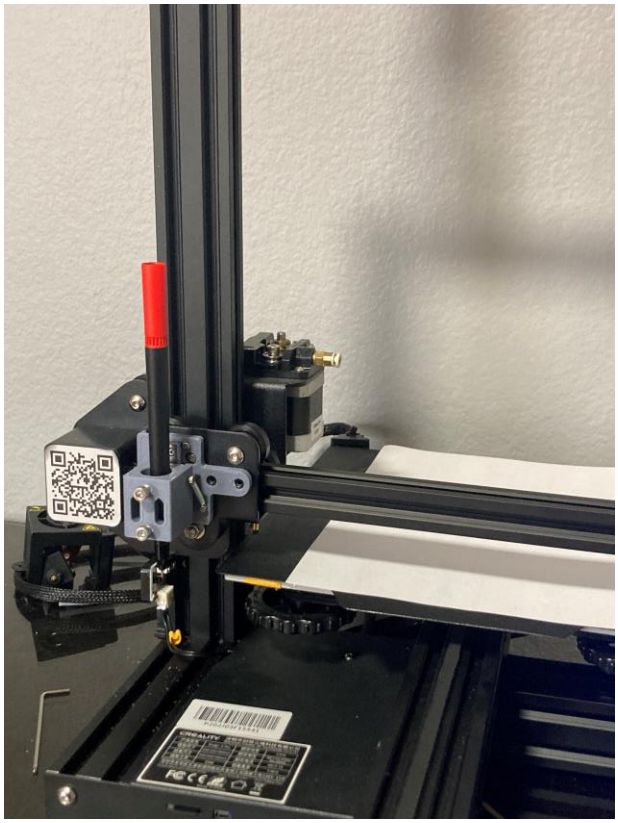
This allows free movement of the carriage/stage





4. Load pen into pen holder

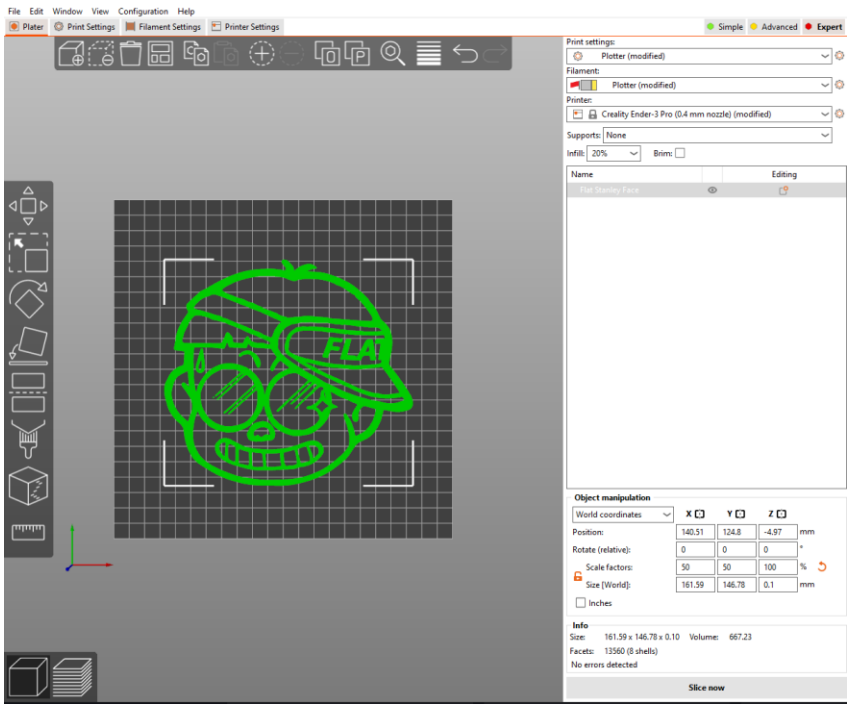
Ensure the pen is making contact with the surface to be printed on. I use some painters tape to prevent marking. Tighten the pen in place using the M4 Screws



5. Auto Home the printer

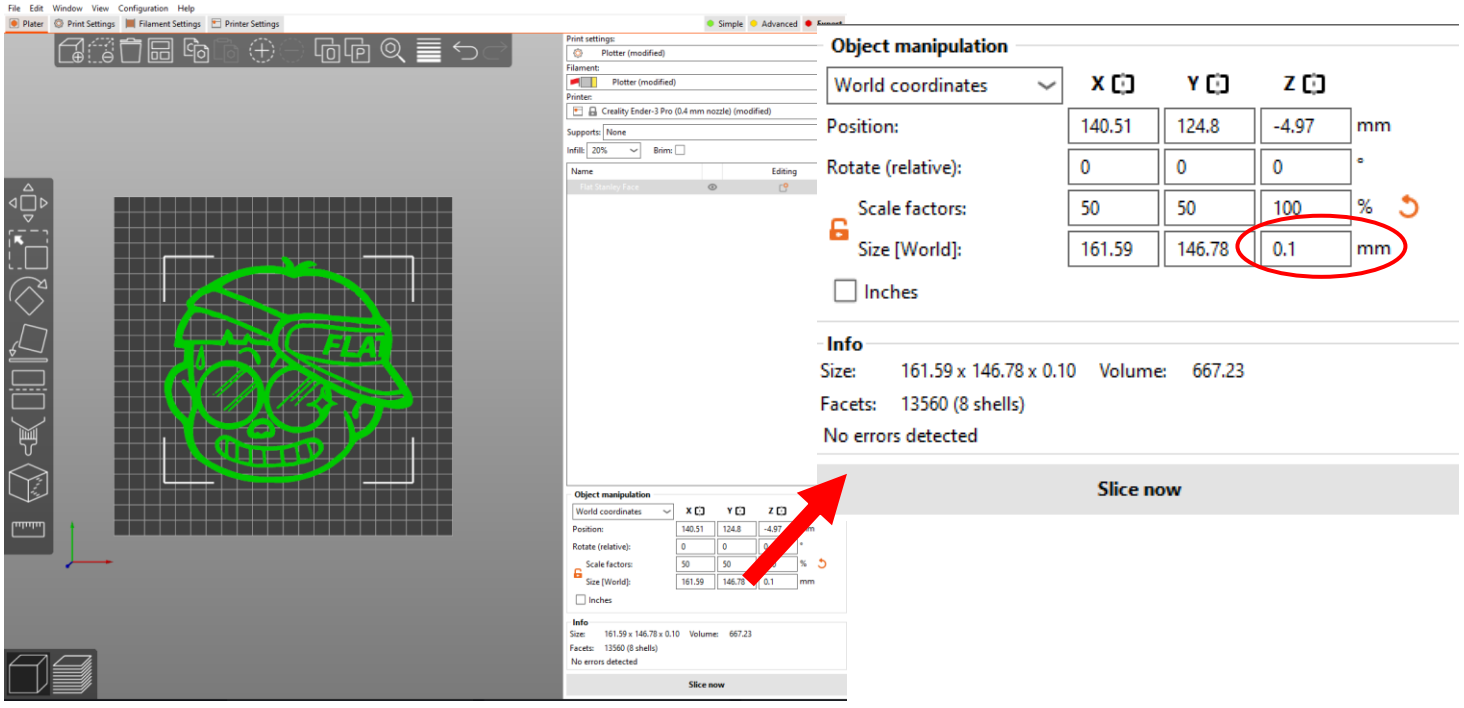
The holder is ready to be used. Any time the pen is switched out, this process should be repeated.

Gcode Generation

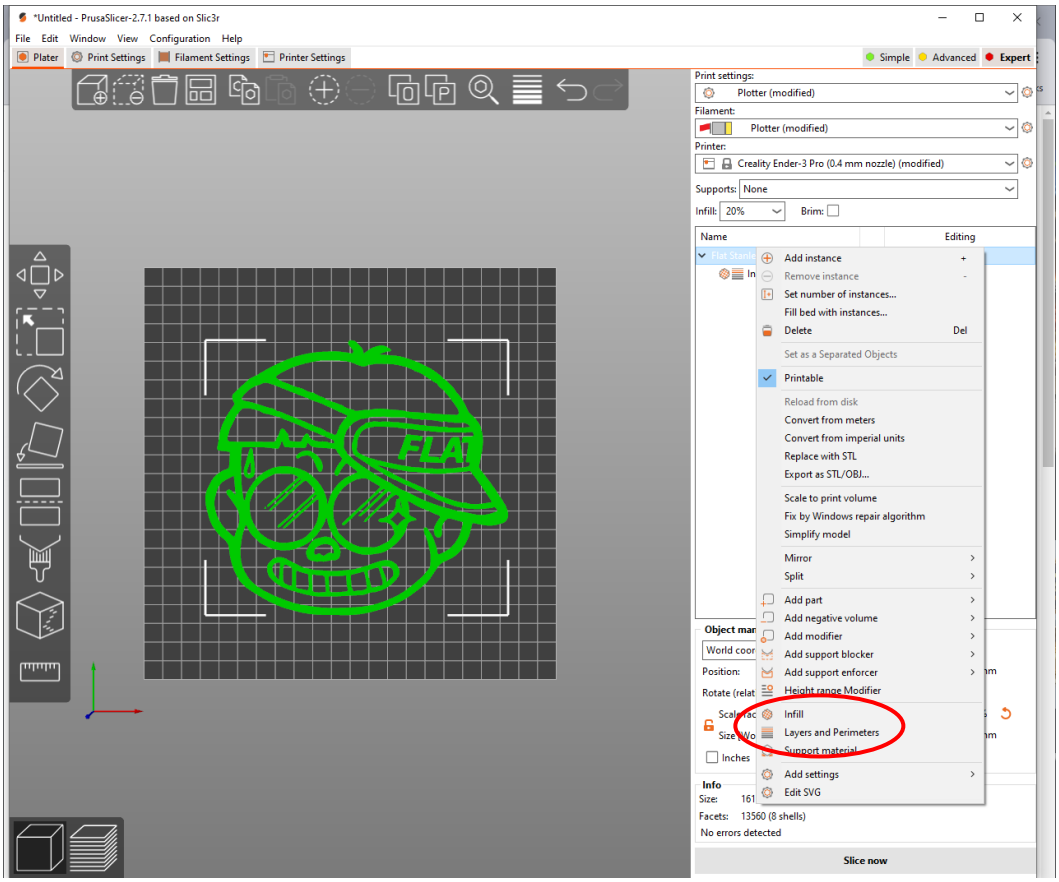


1. Load a SVG File in PrusaSlicer

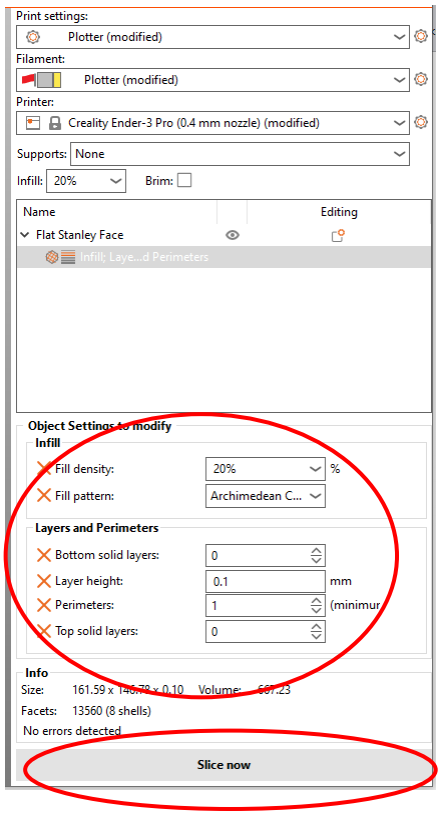
Ensure that the config settings have been loaded already



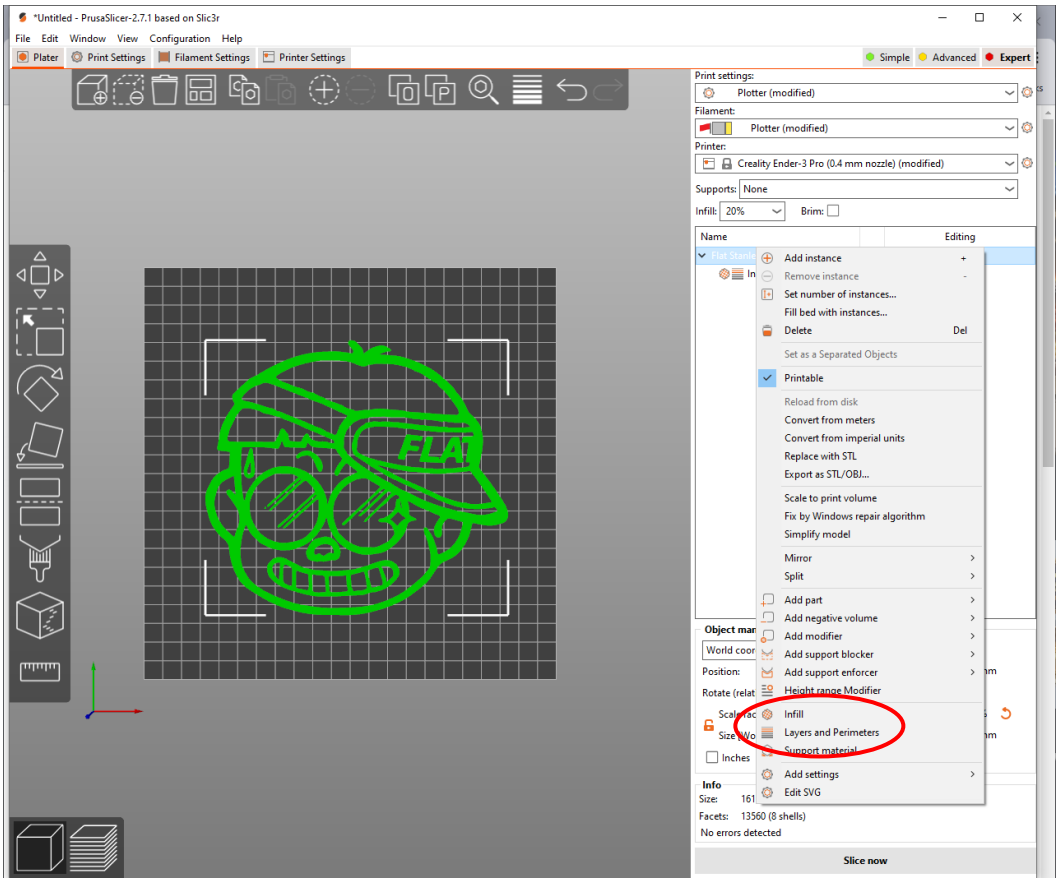
2. Change object thickness (Z) to 0.1mm



3. To modify print settings, select “Infill” and “Layers and Perimeters”



4. Adjust print settings to your liking, then your design is ready to print!



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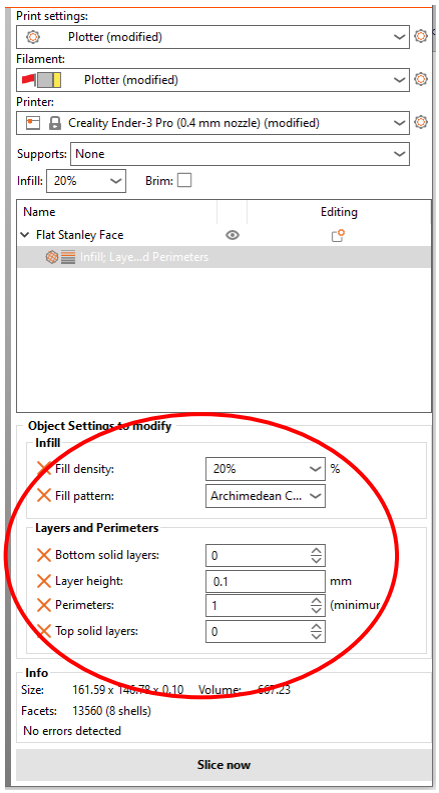
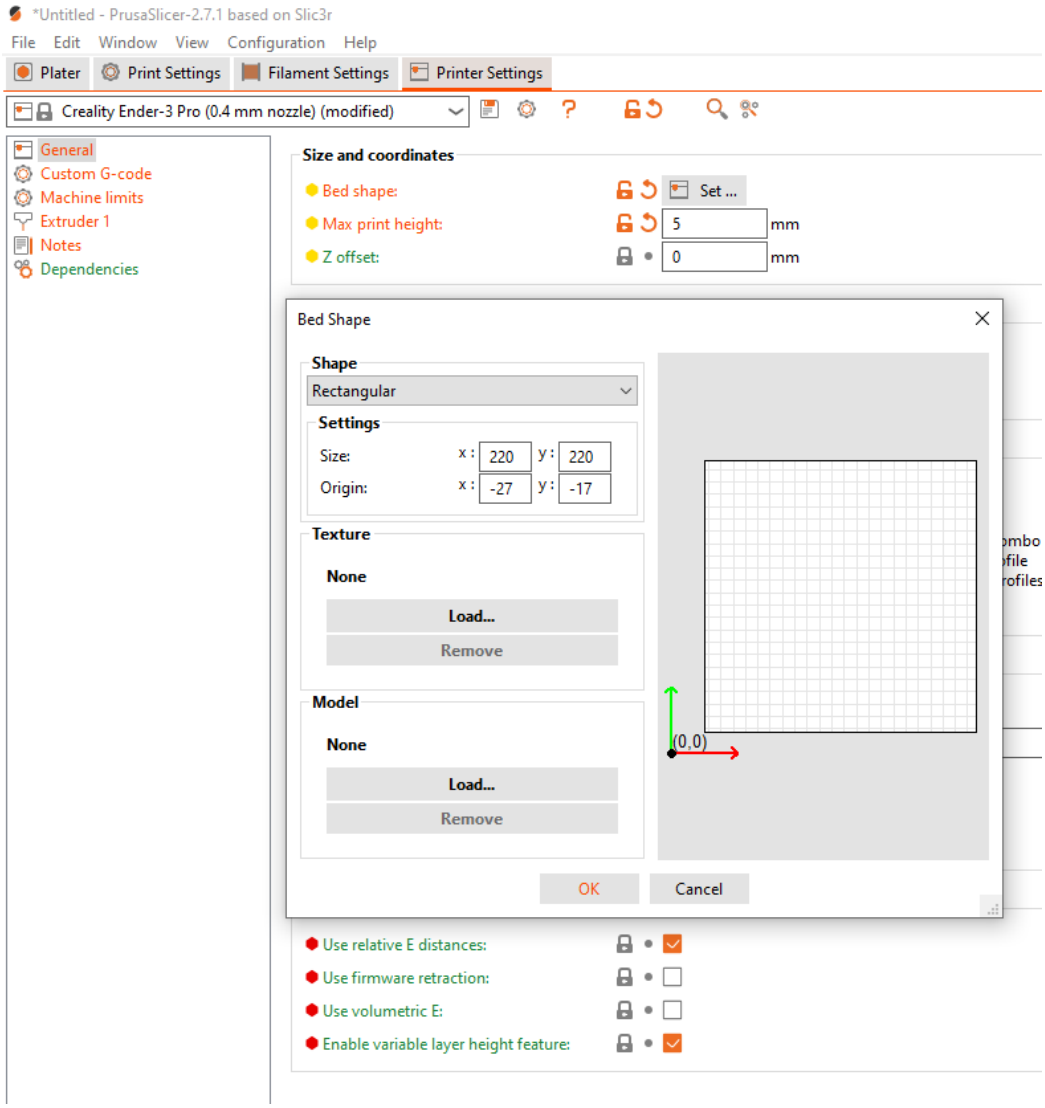


4. Adjust print settings to your liking

Troubleshooting:



If you are noticing that the print is not aligned to the intended coordinates, you may have to adjust the XY offset in Prusaslicer

- In PrusaSlicer , Printer Settings, Bed Shape, and adjust the Origin XY values
- These values are related to the size of the pen being used, so adjust accordingly