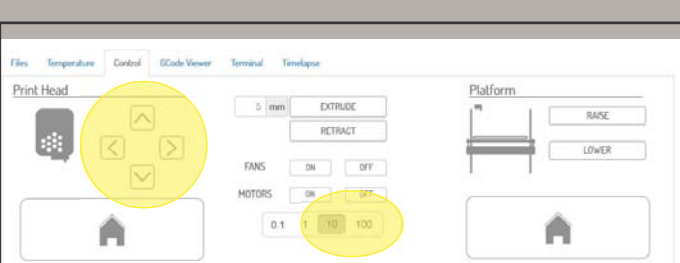
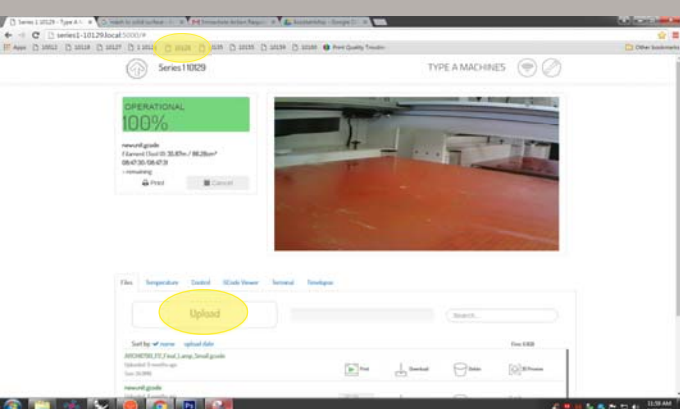
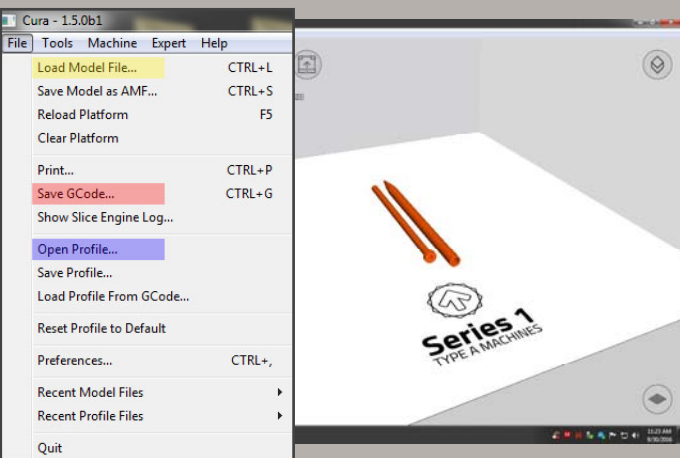
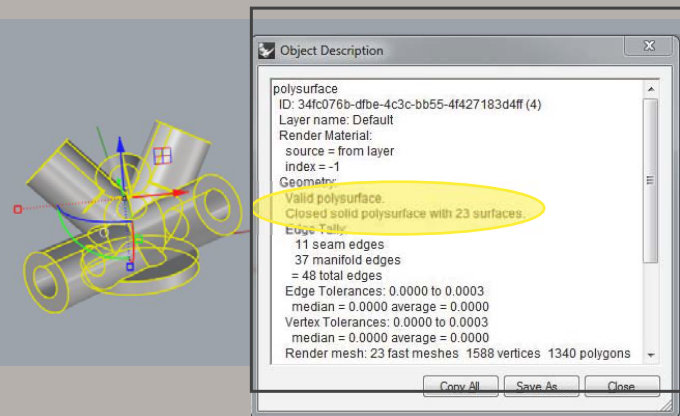


3D PRINTING TUTORIAL



01 - RHINO

- 1 Select your geometry and type in the "what" command
Your object needs to be a "closed solid polysurface" that is "valid"
- 2 Change your units to millimeters
- 3 Save your file as an .stl




02 - CURA

- 1 Open the program Cura and **load model file**
- 2 The settings should be fine, but you can load different **material settings** by going to: file/open profile/documents/typeAmachines
Normal Plastic: TypeA_PLA_Generic.ini
Ninja Flex: Fenner_NinjaFlex.ini
- 3 Note the time and material the file will take to print and check the printer's availability
- 4 Save the file as a **Gcode**


03 - CHROME

- 1 Open Chrome
- 2 Match an available printer to the tab at the top of the screen
- 3 Upload your Gcode file

04 - LEVEL THE PRINT BED

- 1 Click both home buttons  under the control tab
- 2 Slide a regular piece of paper under the print head to test the Z-axis. On the underside of the bed, turn the knob until the the head touches the paper and provides *some* resistance when you try and pull it out.
- 3 Do this for all four corners by:
Selecting the 100 option (beneath fans and motors) and clicking the direction arrow 3 times 
Then select the 10 option and click the opposite direction arrow twice. 

05 - HEAT UP THE BED

- 1 Set *bed temperature* to 80° and *print head temperature* to 220° (PLA) or 250° (NinjaFlex) - type in number and press enter
- 2 Apply glue to the area of the bed that the print will touch
- 3 Under *files*, go to your file and press the print button 

06 - WAIT! AT LEAST 30 MINUTES

- 1 It's important to closely examine the first layer as it prints. This is the most critical part of the print. The extruded filament should spread onto the print surface and adhere to it. It should not be stringy nor should it be crushed into the surface.
- 2 If you have a problem with adhesion or extrusion:
Try resetting the Z height
Retest the build platform alignment
Change the surface treatment

07 - CLEAN THE PRINT BED

- 1 Use a wet paper towel to get the excess glue and filament off of the bed

