

# Plastic Rapid Prototyper

Here in MCAD's Digital Lab, we have a Dimension sst768 3D printer. The maximum build volume is 8" x 8" x 12". The Build Step Size is 0.010" or 0.013" (Software Selective for precision or fast mode). It uses ABS Materials & Soluble Support Material Spools .

## Before using the Plastic RP:

- You must have your finished file saved as an .stl on a thumb drive, Google Drive or e-mailed to yourself prior to your appointment.
- You must sign up for an appointment via the [3D Shop Appointments](#) link, which can be found on the MCAD intranet homepage. Select **Digital Lab** from the dropdown menu.
- Failure to show up for your appointment 3 times in a semester will result in suspension of Digital Lab privileges.

## Time/Cost

**Time** 3D printed files can often take many hours of machine time. Please be sure to schedule yourself with enough time to run your entire part. If your file is ready, we can give you an accurate time estimate so you know how long it will take. We pause the machines when the shop closes and resume them the next morning. Keep this in mind if you are running a part during evening hours.

**Cost** \$5 per square inch (of both model and support material)

Never start the Rapid Prototyper without a shop staff member. Follow the procedures in this document before asking for help. Thank you!

# Making Files

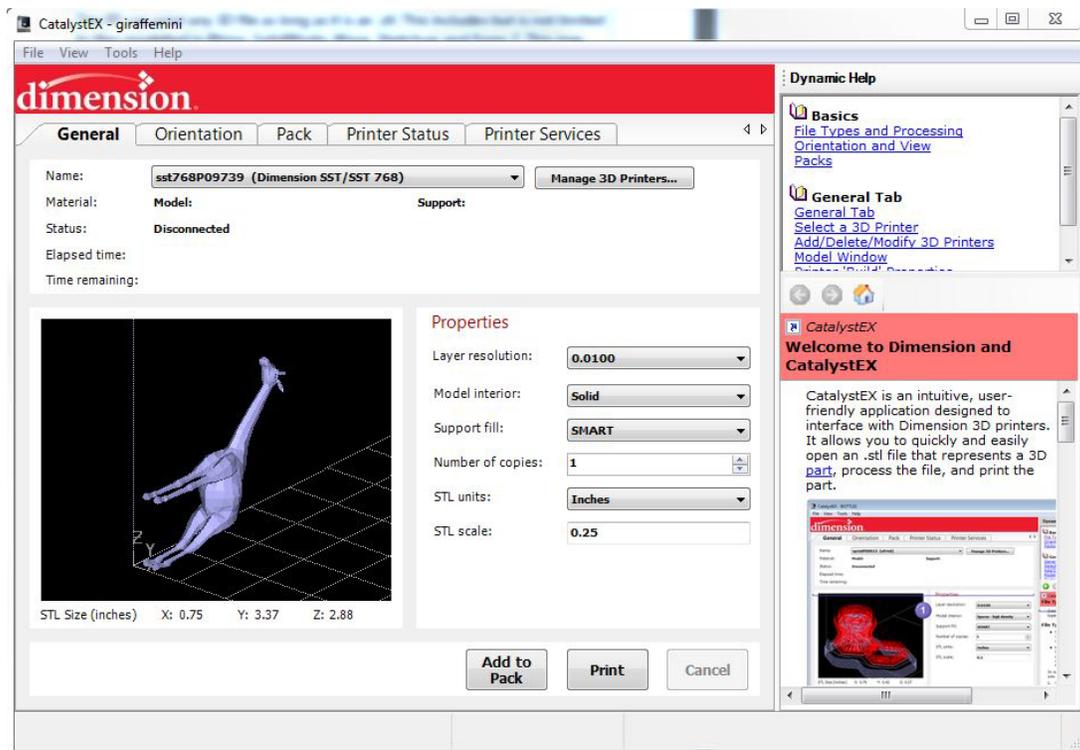
The RP can print any 3D file as long as it is an .stl. This includes but is not limited to files modelled in Rhino, SolidWorks, Maya, Sketchup and Form Z. This may also include 3D files purchased on sites such as TurboSquid or Thingiverse.

Make sure your file is **correctly scaled** in inches for the 3D Printer!!!

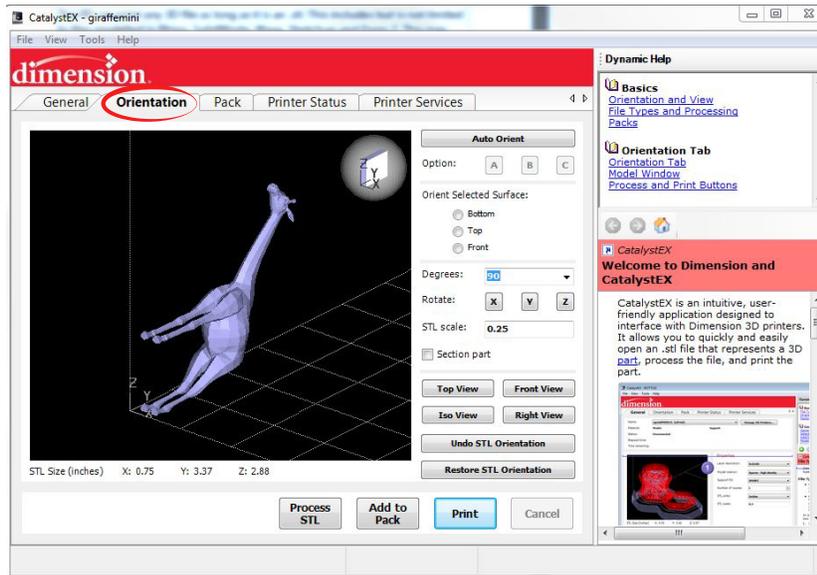
Keep in mind that if your part is hollow or has holes, support material will be printed in all empty spaces and will dissolve away in the solvent bath.

## Sending Files to the RP

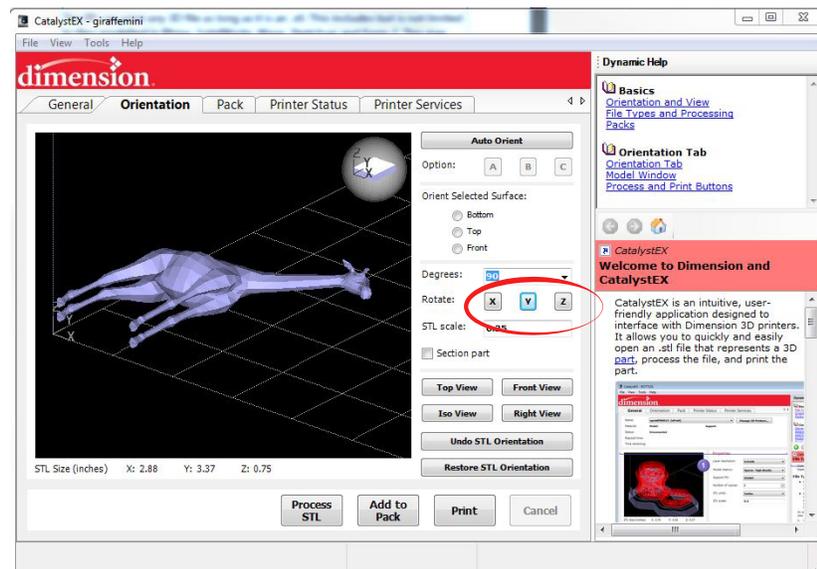
1. Upload your file onto the PC desktop. Make sure it is labeled with your first and last name.
2. Open CatalystEX 4.4 from the desktop.
3. Click the "File" dropdown menu and selected "Open STL". Select your .stl file on the desktop or from your drive. Your file should appear in the screen similar to this:



4. Check the orientation of your object. It should be positioned so that the maximum amount of surface area possible is laying down against the grid. If you need to rotate your object, click the "Orientation" tab located just to the right of "General".

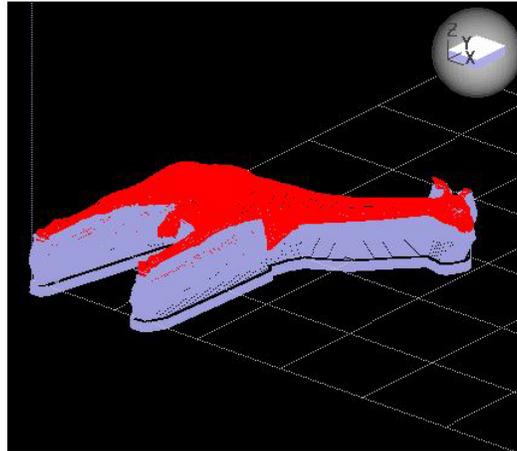


5. Use the X, Y and Z buttons to rotate your object along the axis of your choice until it is in a good position.

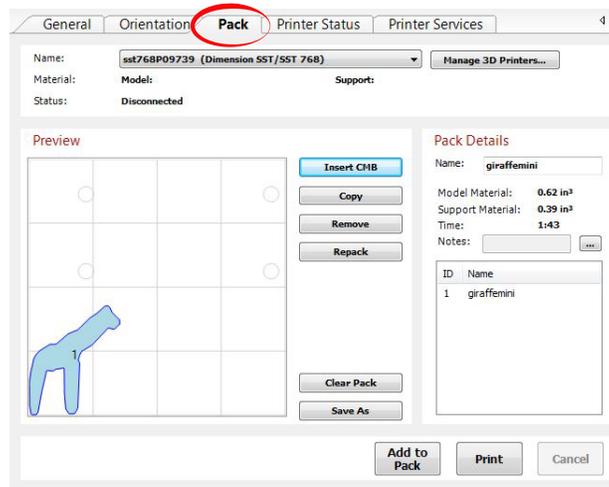


6. When you are happy with the orientation, click  button.

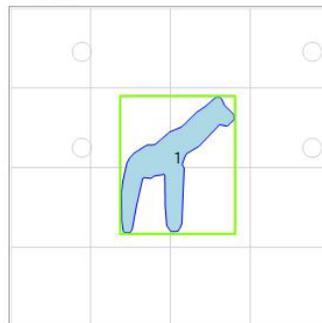
7. The software will automatically process your file and graph out the support material in blue and model material in red. Your part should look something like this:



8. Click the "Pack" tab just to the right of "Orientation" to see where your object is located in relation to the printing tray.



9. You can move the location of your object simply by clicking and dragging.



NOTE: You can have multiple parts/files in a single pack. The maximum amount of parts will depend on the size of each object.

10. The pack details will tell you the names of each file in your pack, the total volume of both support and model material as well as the total time of the part.

**Pack Details**

Name:

Model Material: **0.62 in<sup>3</sup>**  
Support Material: **0.39 in<sup>3</sup>**  
Time: **1:43**

Notes:

ID	Name
1	giraffemini

You are now ready to consult a Shop Staff member!