



Working with Probe Files in Partworks 3D

Preparing the Files

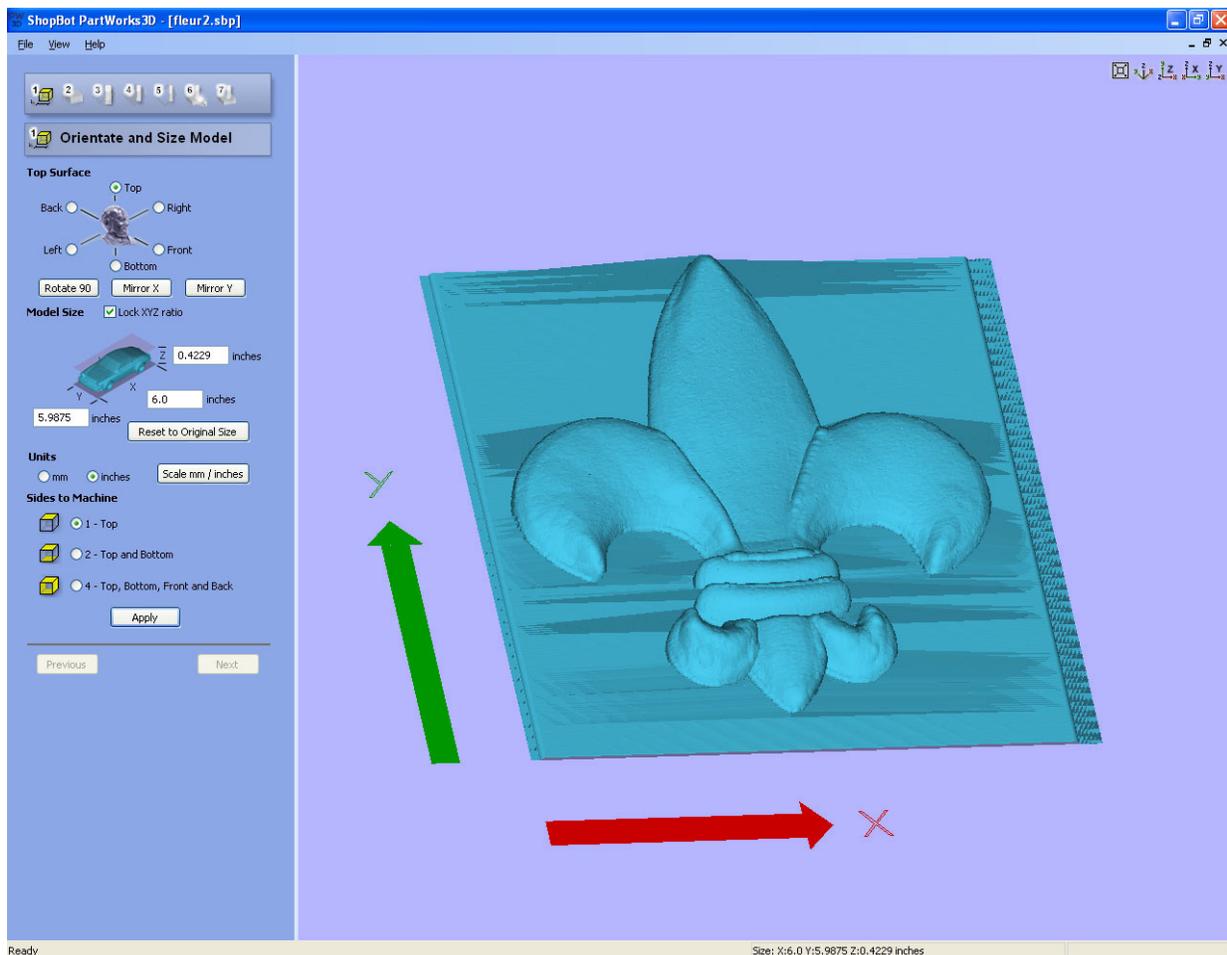
If files are incomplete, which can happen if probe operation was interrupted before completing, some “closing information” will be necessary to add to the end of the DXF file. Refer to “Probe” document for instructions on how to do this. Skip this step if probe operation was completed successfully.

Running probe files through the probe to surface translator in the ShopBot console (also detailed in “Probe” document). Once the files have been run through the translator, they can be brought into Partworks 3D.

Using the Software

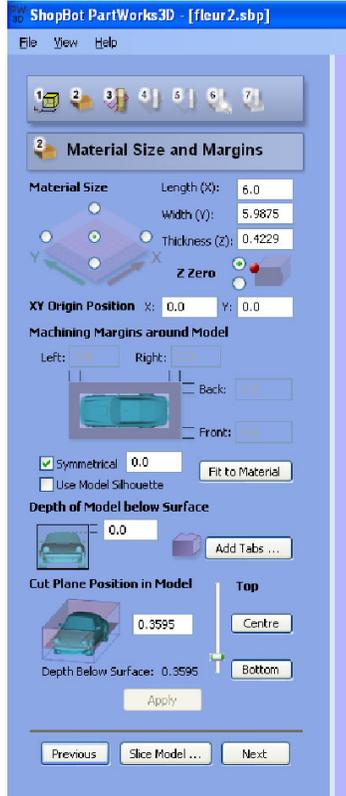
With Partworks 3D open, click on “load 3D file” and select the proper .dxf file. Partworks 3D will walk through seven steps for editing and toolpathing a model. Each step is fairly self-explanatory, but this document provides tips and a few clarifications on each step.

Step 1: Orient and Size Model



The first step allows for resizing and orienting the model. To resize proportionally, ensure “Lock XYZ ratio” box is checked. Otherwise, the model can be stretched and distorted by changing the dimensions separately.

Generally, probe files only machine the top of a model, so this can be left at its default setting. Click next to move to the next step.



Step 2: Material Size and Margins

Material size defines the actual size of the material that the model is being cut from.

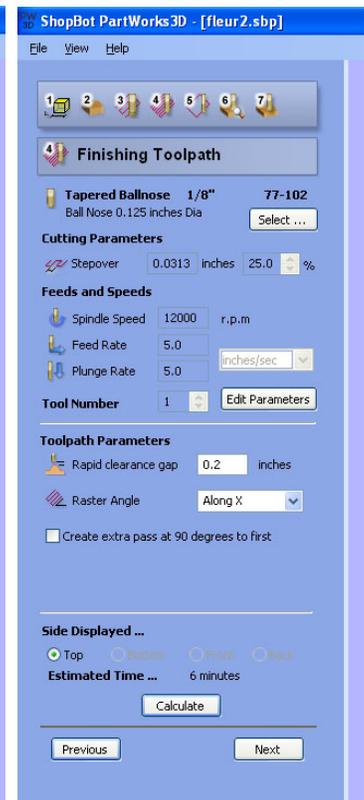
A machining allowance will remove surrounding material down to the cut plane for an area around the model.

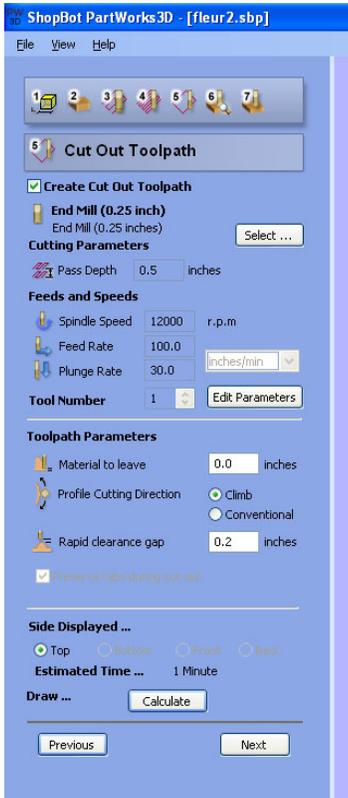
The cut plane defines the maximum toolpathing depth for the model. This is useful if some texture or “background noise” was picked up from the table during the probe routine. When sliding the bar up and down, a dark gray plane moves within the z-axis of the model, indicating the cut plane.

Steps 3 and 4: Roughing and Finishing Toolpaths

The roughing toolpath removes the bulk of the material around the model and allows for cleaner results on the finishing toolpath. First, select the tool, then select the feed and stepover rates (click edit parameters). The software will have default feed/speed/stepover settings for each tool, but these are not necessarily the proper ones, depending on the machine, cutter, and material. Be sure that the units (inches or mm) are correct, and that the speeds are set to inches/sec.

Click calculate when finished. Toolpath finishing is very similar. A smaller stepover rate for the finishing path, will provide better surface quality and minimize any sanding that has to be done afterwards.





Step 5: Cutout Toolpath

The cutout toolpath cuts along the outer bounding box of the model to remove it from a larger piece of material. Since there isn't an to create tabs here, it's wise to leave a little bit of material to keep the piece from coming loose during the cut. This is done under toolpath parameters.

Step 6: Preview

Preview toolpath. From here, it is possible to go back to any of the steps and edit settings to fine-tune the model. If everything looks good, click "next" to move to the final step.





Step 7: Output Toolpaths

Choose the ShopBot (arcs)(inch)(.sbp) postprocessor unless the tool has a toolchanger, or if working in mm.

Toolpaths can also be saved separately, or together as one file. If using different bits for each toolpath, it's easiest to save them as separate files. When all toolpaths have been saved, this process is complete. It's also a good idea to save this Partworks 3D model in a format that saves the settings and allows for future editing. To do this, click on File > save as, and save the file as a 3D model.