



Weekly Tech Tip

Topic: Saving STL Files

June 29, 2009

Rapid prototyping can be an invaluable way to fine tune a new product's design before it is manufactured. A common file format accepted by rapid prototyping machines is the STL format.

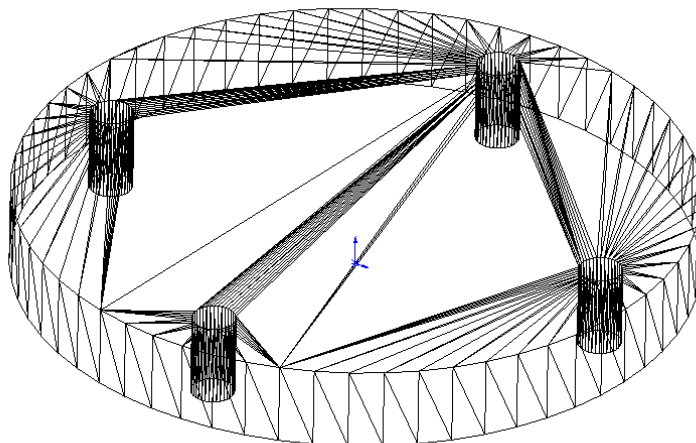
STL is short for *Standard Triangulation Language*. This language views any object as a collection of surfaces and describes each surface of the object as a collection of triangles. Curved surfaces need more triangles to describe them. It is important to save the STL file with sufficient resolution because it may directly affect the quality of the resulting prototype.

In SolidWorks, there are a few options available when saving STL files. It is important to note that options used on one file may not be suitable for use on another file. Below is a set of general instructions to use as a guide:

To Save an STL file in SolidWorks :

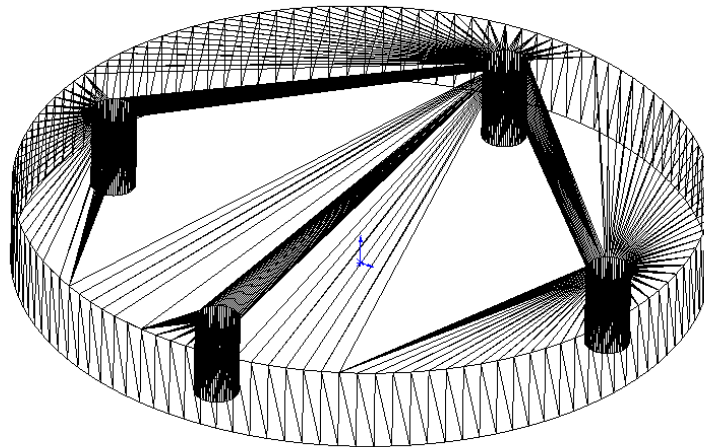
1. Go to **File, Save As**.
2. Set the **Save As** type to **STL**
3. Click **Options**, Choose **Fine**.

Be sure to enable the **Preview** option. The smaller details on your model will likely appear as a dense area of triangles. If the larger curved areas of the model appear too coarse, as in the image below, you will need to use custom settings. Note: The model below has an outside diameter of 3 inches and the triangles shown on the outside diameter would likely be visible in the prototyped part.



For a smoother STL file, change the Resolution to **Custom**. Change the **deviation** to **0.0005in** (0.004 mm) and Change the **angle** to **5**.

The result is shown below:



If the resolution appears too coarse, you can try smaller deviations and use a smaller angle. Smaller deviations and angles will produce a smoother file, but the file size will get larger. Do not sacrifice the quality of the .STL file in order to reduce the file size. Our Objet Alaris30 can handle 150mb of files per print and the file size does not affect the printing time.

For more info, be sure to check out the following link:

http://www.objet.com/Misc/Pages/CAD_to_STL/Software_Overview/