

To minimize build time and ensure feature details are built, it is important to select the correct tip size for each part. Using too small a tip on a part can significantly increase build times. Example: a part with a 5" z-axis dimension will have 500 layers using a T16 tip, 715 layers using a T12 tip (a 43% increase), and 1000 layers using a T10 tip (a 100% increase).

Process

Determining the part size

Step 1

Determine the size of the part; x, y and z dimensions. Remember that Insight displays measurement information in the bottom-right corner. General rule of thumb is:

- Parts 6" or larger use T16 tip
- Parts 3-6" use T12 tip
- Parts 3" or smaller use T10 tip
- Measure Wall thickness, boss diameters etc.

Step 2

By measuring the smallest part features in Insight, such as wall thickness, boss diameters and other features road-widths can be determined.

- A. View Road-width measurements in Insight by right-clicking in the graphics window and selecting Measure (figure 1)

Note: Remember that each material and tip size has an associated range of road-widths besides the default. For example, a Titan T16 ABS tip has a range of road-widths from 0.016" to 0.032". The default is set at 0.020" (reference table in Insight User Guide). To see the range of contour and raster widths available for the tip selected, go to Toolpaths>Setup and look at the drop-down menu for both contours and rasters (see figure 2). This is important because this allows use of a larger tip and fills in feature details down to 0.016". By using the larger tip and modifying the road-widths only where necessary, decreases build time considerably. Road-widths can be modified on a layer-by-layer basis using the Custom Groups tool in Insight (reference the Insight User Guide).

- B. Measure Data by Selecting View on the main toolbar and selecting Measure Data to view data.

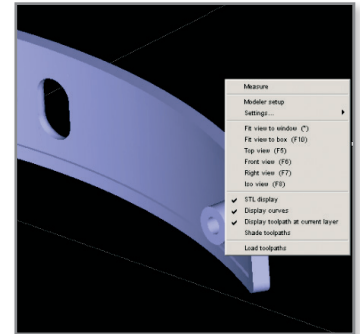


Figure 1: Measure Part

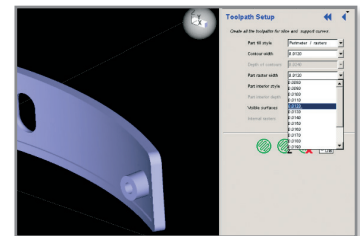


Figure 2: Toolpath Menu

Tip Selection

Step 3

Tip size selection is done prior to processing the part and after the STL has been loaded into Insight. Choose the tip size after you have selected the material. Remember, some materials have a limited tip selection. PPSF for example, uses only T16 tips. Tip size selection is done from the Modeler Setup screen in Insight (figure 3).

Note: After slicing the part, creating toolpaths, and reviewing the layers, modify the tip size/slice height. Go back to Modeler Setup and adjust the tip size in the pop-up menu. This will prompt a message asking if you want to change the tip size, answer yes. Repeat model slicing, support generation, and toolpath creation again.

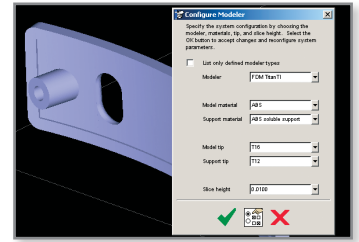


Figure 3: Tip Size Selection

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