



FDM BEST PRACTICE

Sectioning Large Parts In Z

SOFTWARE / PRODUCT / FINISHING

The following will provide a means to section large parts in the Z plane within Insight. When sectioning in Z, alignment features may be added with the use of the draw function. This sectioning process will be outlined step-by-step below.

Process

STEP 1: Slice the .stl file. Click the green check box (dismiss the error report dialog)

NOTE

Error Summary “Z dimension of slices is larger than maximum”

STEP 2: Determine which layer you want to section the part at. Below this layer will be the bottom section and above this layer will be the top section.

STEP 3: Display the layer from step 2. View the layer in the Top View

STEP 4: Using the Draw function, draw in the Alignment feature(s). Go to Edit>Draw>Curve, Circle, or Box. For this demonstration we will draw in alignment bosses, both square and round, both male and female. Refer to figures 1 and 2.

STEP 5: Click on Slice dropdown menu (figure 3).

- A. Click on Section at Z
- B. Check the box Invert Top Section
- C. Enter the Section Z height from step 2
- D. Click OK (Icon) (note window to save before sectioning. It is not necessary to save the file click yes or no)

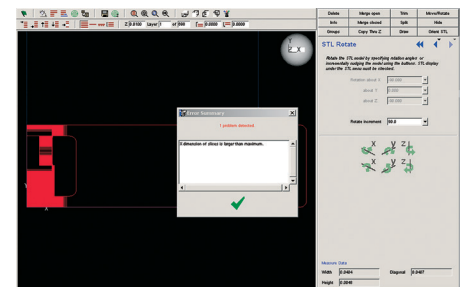


Figure 1: Draw in alignment bosses

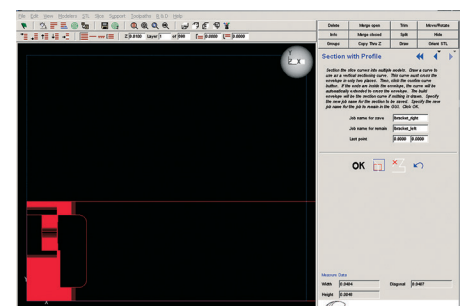


Figure 2: Square and round

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- E. Click OK (Icon) to save the top section it will then be filed away

STEP 6: Display the top slice of the remaining section in the top view

STEP 7: Offset the Alignment Features for clearance (figure 4).

- A. Click on Edit (dropdown menu)
- B. Click on Offset
- C. Set the direction to Inside
- D. Set distance to .001
- E. Set destination group to Same as Selected
- F. Set keep original to No
- G. Select Alignment Features and click OK (Icon)

STEP 8: Extrude Alignment Features Up (figure 5).

- A. Click on Edit (dropdown menu)
- B. Click on Copy Curves Thru Z
- C. Set Copy Mode to Specify thru Layer
- D. Set Thru Layer to Sectioning Height Plus Length of Alignment Feature(s) (approximately .25)
- E. Check Offset Direction and set to the Inside
- F. Set Offset distance to .0002
- G. Set the Destination Group to Same as Selected
- H. Select the Alignment Features and click OK (Icon)

STEP 9: Delete the Alignment Features at the Z section height only

- A. Click Edit (dropdown menu)
- B. Click Delete
- C. Select the Alignment Features and click OK (Icon)

STEP 10: Process Supports and Toolpaths

STEP 11: Save the file and close

STEP 12: Open the Top Section

STEP 13: Display the Top Layer, note the alignment features.

STEP 14: Extrude Alignment Features Down to Make the Pockets for the Bottom Section.

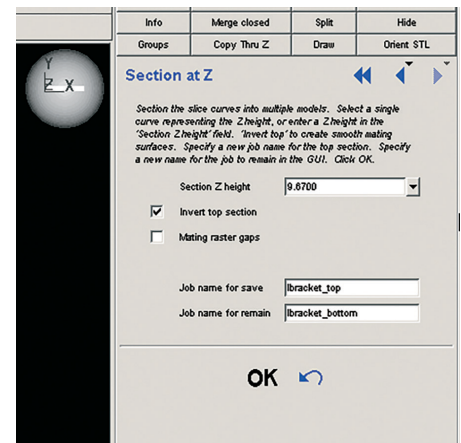


Figure 3: Slice Menu

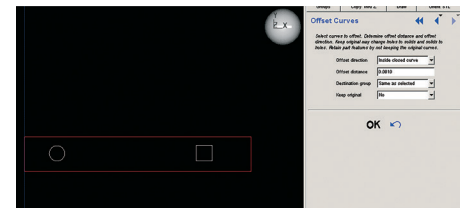


Figure 4: Offset Alignment Features

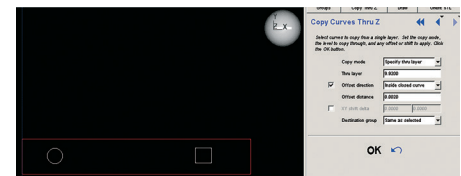


Figure 5: Extrude Alignment Features

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- A. Click on Edit (dropdown menu)
- B. Click on Copy Curves thru Z
- C. Set Copy Mode to Specify thru Layer
- D. Set thru Layer to Current Layer Minus Length of Alignment Feature (approximately .25)
- E. Set Destination Group to Same as Selected
- F. Select Alignment Features and Click OK (Icon)

STEP 15: Process Supports and Toolpaths

STEP 16: Open the Top Section

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CONTACT

For questions about the information contained in this document, contact Stratasys at www.stratasys.com/contact-us/contact-stratasys.

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