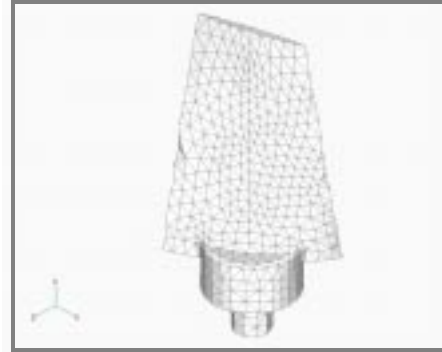


Iges Import, Solid Stitching, and Feature Suppression



Objectives:

- Import IGES model.
- Create solid geometry by stitching IGES surfaces.
- Obtain solid mesh without feature suppression.
- Obtain solid mesh with hole suppression.

WORKSHOP 7b *Iges Import, Solid Stitching, and Feature Suppression*

Model Description:

This exercise will show that one can import an existing IGES surface model and generate an N4W solid. The solid can be meshed with or without suppressing the hole at its center. Using the feature suppression command depends on whether or not the feature is pertinent in the analysis.

Figure 7b.1 - Model Geometry



Suggested Exercise Steps:

- Import the file "mblade.igs"
- Stitch the surface to obtain the solid model.
- Create the material and property.
- Solid mesh the model.
- Delete the solid mesh.
- Suppress the center hole.
- Remesh the solid.

Exercise Procedure:

1. Start up MSC.Nastran for Windows V4.0 and begin to create a new model.

Double click on the icon labeled **MSC.Nastran for Windows V4.0**.

On the *Open Model File* form, select **New Model**.

Open Model File:

2. Import an IGES file.

File/Import/Geometry...

Change directory to c:\Mscn4w40\examples. Select **mblade.igs**.

File name:

Under the *IGES Read Options* window, click **OK**.

3. The IGES import brought surfaces into your model. Now stitch the surfaces to make a single solid.

Geometry/Solid/Stitch...

MSC/NASTRAN for Windows will take the 34 surfaces to create a new solid.

4. Get a better view of the model.

Right Click on screen to invoke the pop up menu.

Workplane...

Uncheck **Draw Workplane**.

Draw Workplane

View/Autoscale <Ctrl+A>

Switch to solid render model by clicking the *View Style* icon.



Then select **Solid** and **Render**.

View/Rotate... <F8>

Figure 7b.2 - Solid Model of Blade



5. Load an existing material.

Model/Material...

(highlight)

6. Create a new property.

Model/Property...

Volume Elements:

Solid

Title:

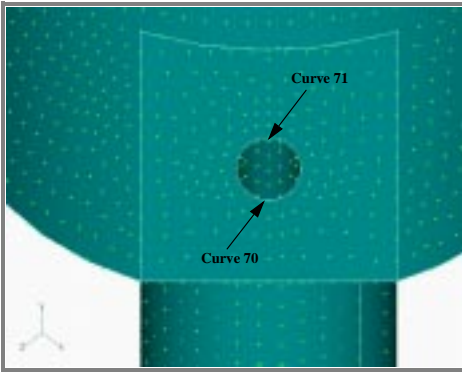
Material: (pull-down)

7. Suppress the hole.

Zoom in on the hole using the *Zoom* icon.



Figure 7b.4 - Hole in zoom view



Mesh/Mesh Control/Feature Suppression...

Entity ID:

Under the *Feature Suppression* window select the following:

Feature Selection: Manual
 Remove

In the *Select Loops for Feature Suppression* window, select Curves 70 and 71 that define the outer edge of the hole as shown in Figure 7b.4.

The feature should then be outlined in grey. This indicates that it will be ignored during the meshing process.

Refit the model on the screen.

View/AutoScale <Ctrl+A>

8. Mesh the part.

Mesh/Geometry/Solids...

"OK to Update Mesh Sizes?" Click Yes.

Under the *Automatic Mesh Sizing* window, click OK.

Element Size:

Under the *Automesh Solids* window select the following:

Property:

Midside Nodes

9. Inspect the meshed part.

Click the *Quick Options* icon and turn on the geometry.



Node

View/Regenerate <Ctrl+G>

MSC.Nastran for Windows.

File/Save As...

File name:

File/Exit

This concludes the exercise.