

Knowledge Base

Information



Abaqus/CAE plug-in utility to create an analytical rigid/deformable axisymmetric part from a 3D part

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QUESTION

Is there any way in Abaqus/CAE to create an analytical rigid/deformable axisymmetric part from a 3D part?

ANSWER

(The following applies to Release 6.9 and higher)

An Abaqus/CAE plug-in application for this purpose is attached below. This utility allows you to create an analytical rigid/deformable axisymmetric part from a 3-D part. For the utility to work properly, you should create the sketch of the 3-D revolved part in the global X-Y plane and revolve it about the global Y axis. The plug-in will also work if the sketch is drawn on the global Y-Z plane and revolved about the global Y axis by more than 90 degrees.

Installation

To install the plug-in, save the attached archive file to one of the following directories:

abaqus_dir\abaqus_plugins where *abaqus_dir* is the Abaqus parent directory


home_dir\abaqus_plugins where *home_dir* is your home directory

current_dir\abaqus_plugins where *current_dir* is the current directory

Note that if the abaqus_plugins directory does not exist in the desired path, it must be created. The *plugin_dir* directory can also be used, where *plugin_dir* is a directory specified in the abaqus_v6.env file by the environment variable **plugin_central_dir**. You can store plug-ins in a central location that can be accessed by all users at your site if the directory to which **plugin_central_dir** refers is mounted on a file system that all users can access. For example, `plugin_central_dir = r\\fileServer\sharedDirectory'`

On Windows platforms, right click on the archive file and select WinZip → Extract to here. On Linux platforms, type **unzip CreateAxisSymmFrom3D.zip** at the command prompt. A folder named `abq_createAxisSymmFrom3D` and a file named `createAxisSymmFrom3D_plugin.py` will be extracted. Note that the plug-in will not function properly if this procedure is not followed.

Usage

1. From the **Part** module, Click on the Create Axisymmetric From 3D icon:

2. The plug-in displays a dialog box and asks if you wish to create an analytical rigid axisymmetric part.
3. Click 'Yes' to create a new axisymmetric analytical rigid part with the name `<original3DPartName>_AnaRgd_<count>` and a new deformable axisymmetric part with the name `<original3DPartName>_axi_<count>` as shown in the Figures below.
4. Click 'No' to create only a new deformable axisymmetric part with the name `<original3DPartName>_axi_<count>`.
5. The original 3-D part is not modified in both cases.

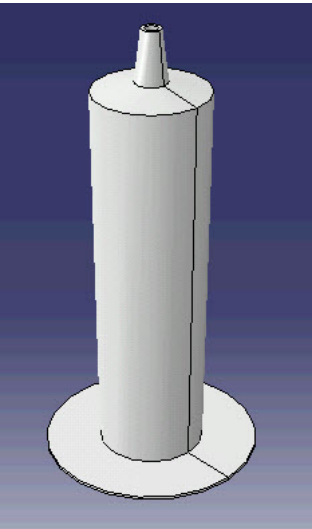


Figure 1: 3D Part

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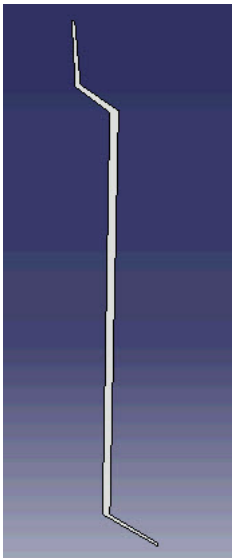


Figure 2: Axisymmetric Part

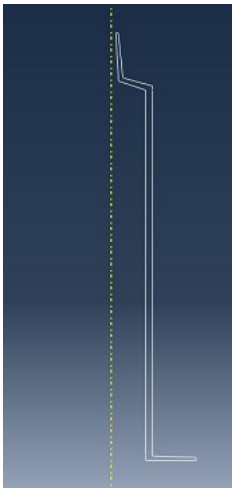


Figure 3: Axisymmetric Analytical Rigid Part

Notes

- 1. As mentioned before, the plug-in will not give expected results if the sketch of the 3-D part is not on the global X-Y plane and revolved about global Y axis, or on the global Y-Z plane and revolved about global Y axis by more than 90 degrees.

Disclaimer

The attachments to this article are subject to certain usage conditions. Please [click here](#) for details

KEYWORDS **plug-in, plugin, 4459, axisymmetric part**

ATTACHMENT

answer_4459_picture3.jpg	answer_4459_picture2.jpg	answer_4459_picture1.jpg
CreateAxiSymmFrom3D.zip	answer_4459_picture4.jpg	

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