Tutorials: Using Autodesk® Inventor® Files

Autodesk® 3ds Max®

Design 2010

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Autodesk® 3ds® Max Design 2010 Software

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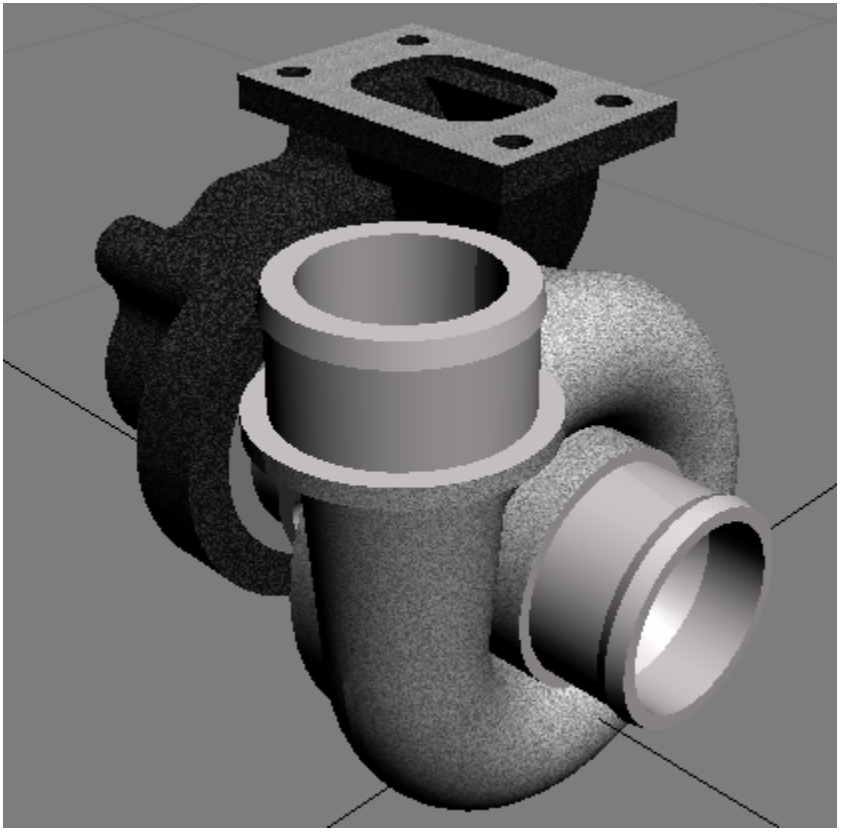
Using Autodesk Inventor Files

You can import Autodesk Inventor parts and assemblies directly into 3ds Max Design. To use this feature, you must have Inventor installed on the same machine as 3ds Max Design. This tutorial covers the options available within the Autodesk Inventor File Import dialog.

IMPORTANT To use this tutorial, you must have Inventor 10 or higher installed.



In this tutorial, you will learn how to:

- Merge/replace files
- Set mesh resolutions
- Import Inventor Assemblies
- Import Inventor Materials
- Control vertical axis direction

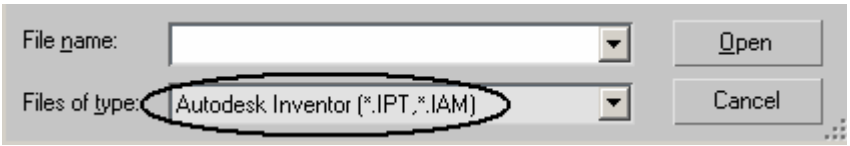
Skill Level: Beginner

Time to Complete: 1 hour

Using the Mesh Resolution Option

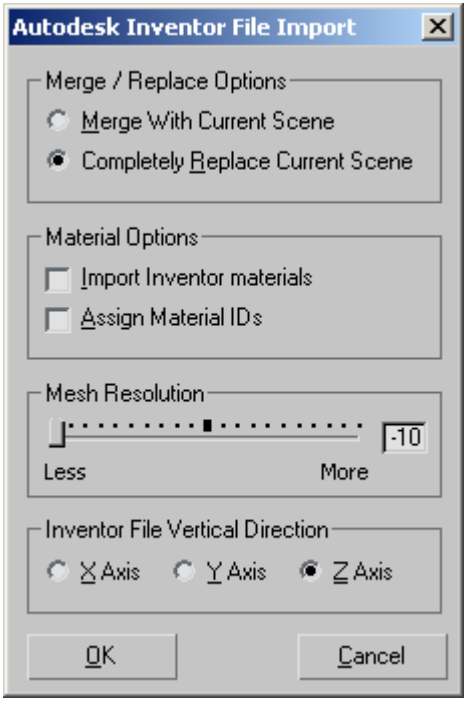
The inventor translator can generate different mesh resolutions. When importing, you can choose the resolution that suits the needs of the project.

1. Start 3ds Max Design.
2.  From the Application menu, choose Import.
3. On the Select File To Import dialog, set the file type to Autodesk Inventor (*.IPT,*.IAM).



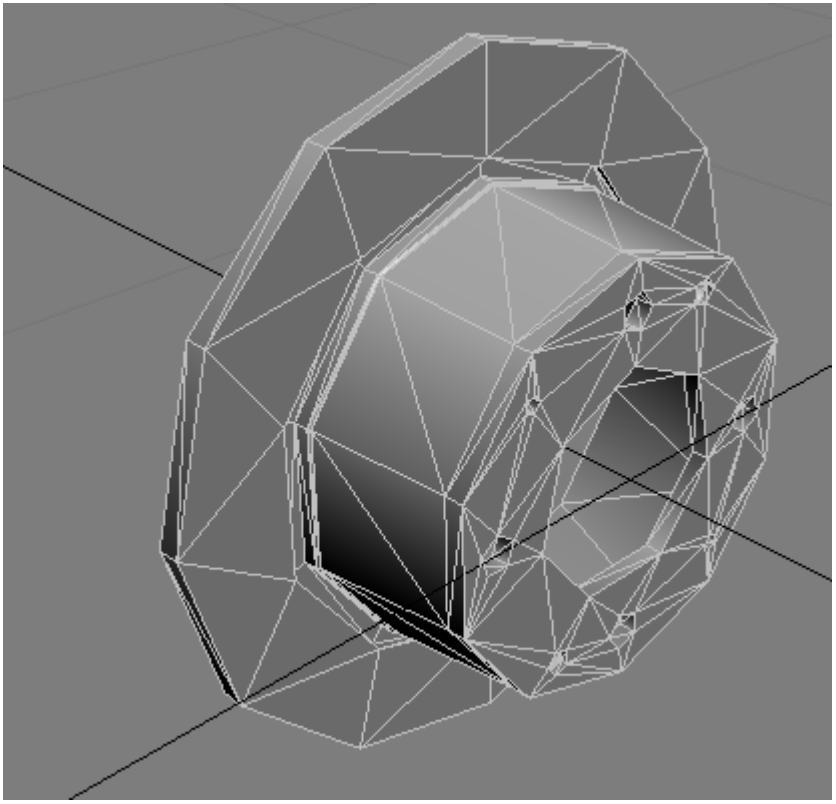
4. Navigate to the *\import\inventor_files* folder and open the *brake rotor.ipt* file.

   The Autodesk Inventor File Import dialog opens.
5. Choose the Completely Replace Current Scene option, if necessary.
6. Set the Mesh Resolution to –10 by moving the slider all the way to the left.
7. Verify that the Inventor File Vertical Direction option is set to Z Axis.



8 Click OK to import the file.

9 Press F4 to view edged faces, if necessary.



Next, you'll import the same file using a higher resolution.

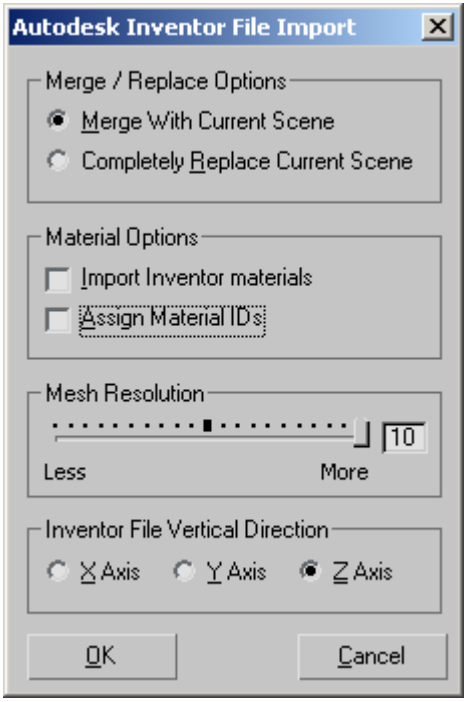
10  From the Application menu, choose Import.

11 From the *\import\inventor_files* folder, open *brake rotor.ipt*.

12 Choose the Merge With Current Scene option. This brings in the rotor and retain the current one in the scene.

13 Set the Mesh Resolution to 10 by moving the slider all the way to the right.

14 Click OK to import the file.



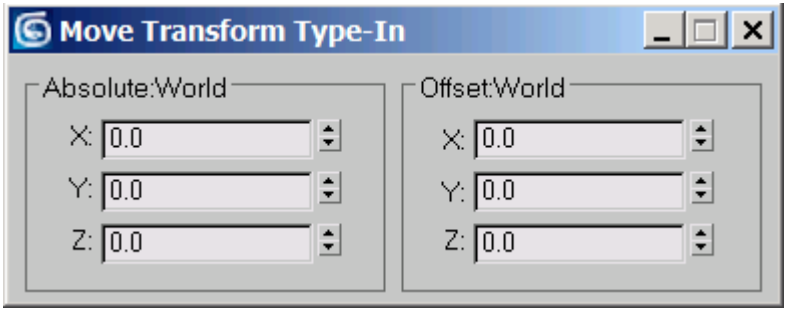
A warning appears indicating a conflicting import name conflict.

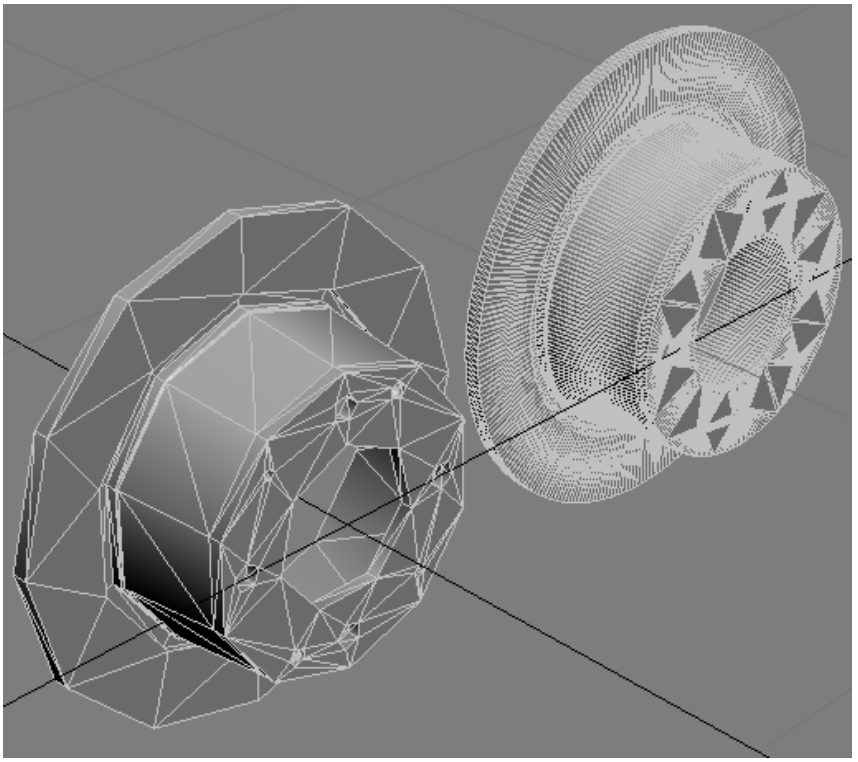
15 Click OK to accept the new name offered.

16 The new brake rotor object comes in on top of the old one.

17  On the main toolbar, click the Select And Move button, and then right-click it.

18 Enter **12** in the X axis field.





The two rotors illustrate the different settings for mesh resolution.

Next

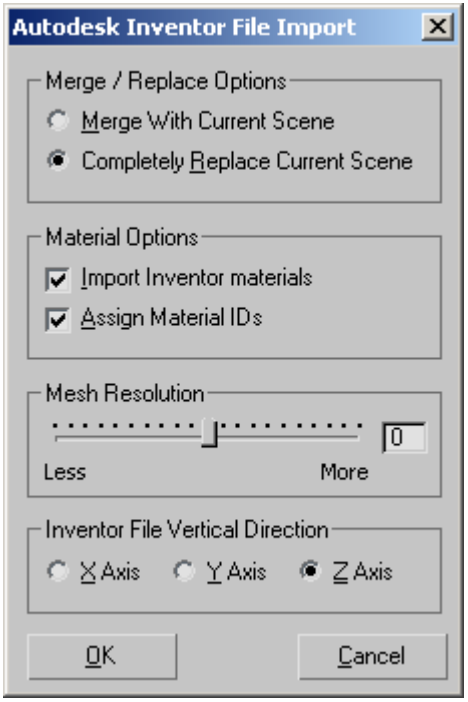
Importing an Assembly on page 932

Importing an Assembly

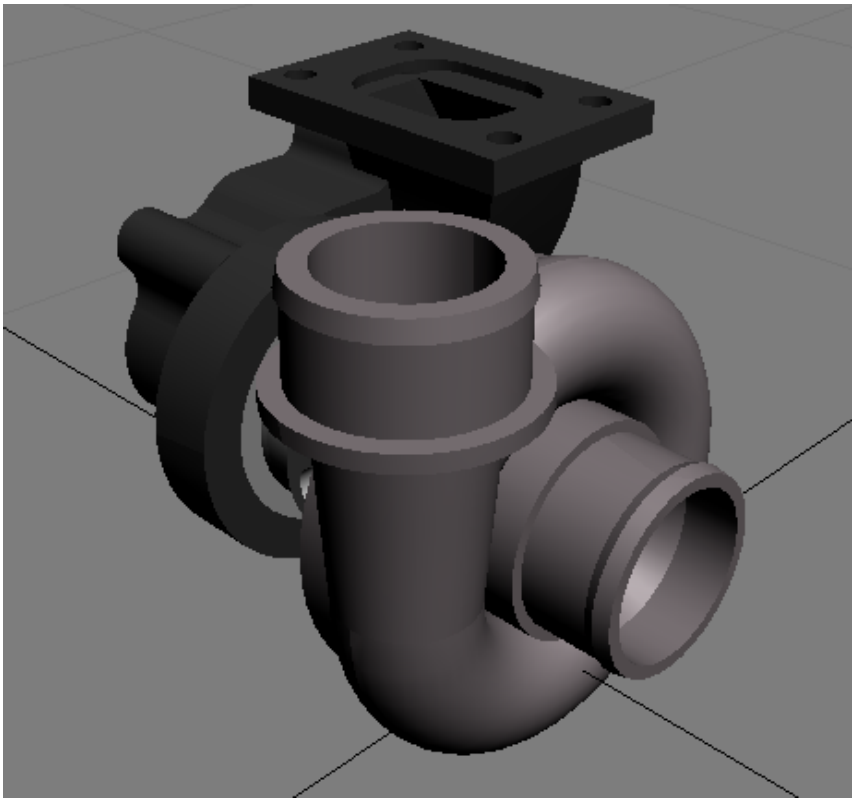
Inventor assemblies, (*.iam) can be imported in the same fashion as individual Inventor parts, (*.ipt). Part names applied in Inventor are preserved in the translation.

1. 

From the Application menu, choose Import.
2. Set the file type to Inventor (*.IAM, *.IPT)
3. Navigate to the *\import\inventor_files* folder, and open *turbocharger.iam*.
4. Choose Completely Replace Current Scene.

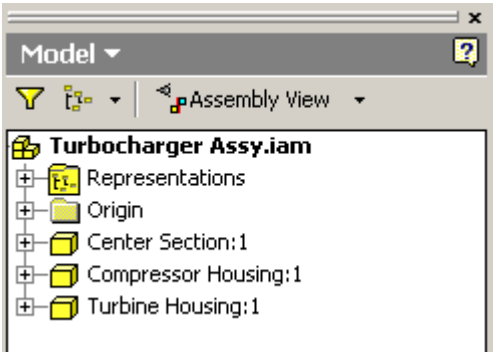


5 Click OK to import.



6 Press H to open the Select From Scene dialog.

The portion of the Inventor Browser bar shown illustrates the part names in the *turbocharger.iam* file. The names in 3ds Max Design are consistent with those applied in Inventor.



Next

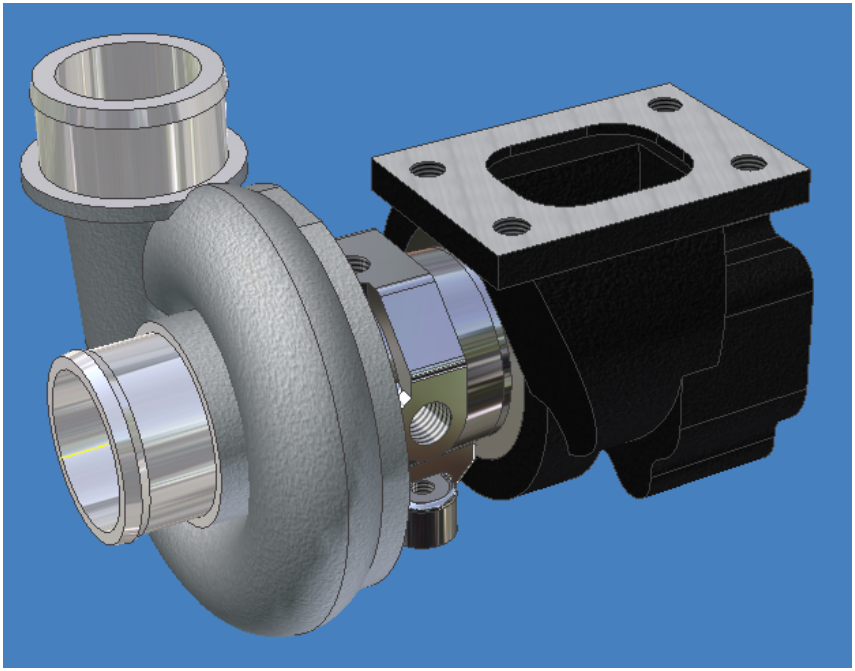
Importing an Assembly with Materials on page 934

Importing an Assembly with Materials

In this lesson, you'll see how the Inventor translator handles materials and material IDs.

NOTE You will need Inventor 10 to open the sample files in this tutorial.

1. Start Inventor.
2. From the *\import\inventor_files* folder, open *turbocharger.iam*.



The components of the turbocharger model have materials applied to them. Two of the components, the compressor and turbine housings, have different materials assigned to individual surfaces, the equivalent of multi sub-object materials within 3ds Max Design. The translator recognizes these materials and will bring in both materials and material ID's.

3 Start 3ds Max Design.

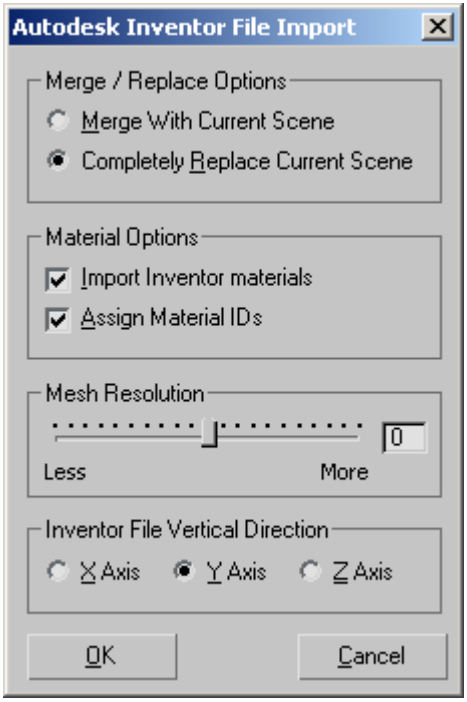
4  From the Application menu, choose Import.

5 Set the file type to Inventor (*.IAM, *.IPT)

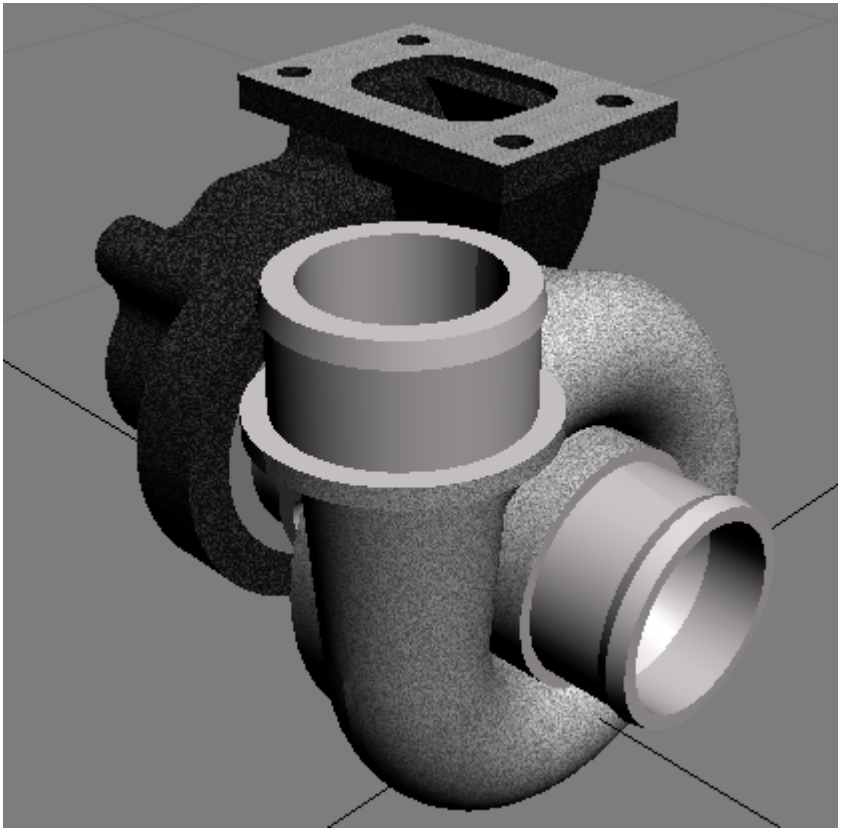
6 From the *\import\inventor_files* folder, open *turbocharger.iam*.

7 Choose Completely Replace Current Scene.

8 Turn on both Import Inventor Materials and Assign Material IDs.



9 Click OK to import the assembly.

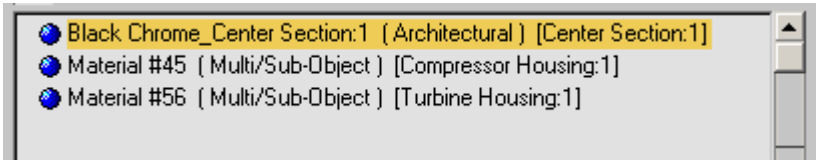


10 Press M to open the Material Editor.

11  Click Get Material.

12 From the Browse from group of the Material/Map Browser, set the Scene option.

13 The materials assigned to the scene objects are listed.



The compressor and turbine housings have Multi/Sub-Object materials, while the center section has an Architectural material.

Next

Controlling Vertical Axis Direction on page 938

Controlling Vertical Axis Direction

Autodesk Inventor lets you model with either the X, Y or Z axis vertical. In 3ds Max Design, the Z axis is in the vertical direction. When importing Autodesk Inventor models, you specify whether the X, Y, or Z axis in the Inventor file is aligned with the 3ds Max Design Z axis.

1 

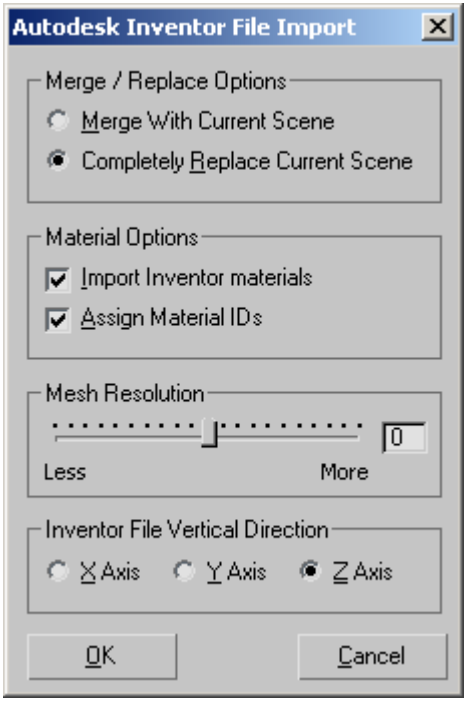
From the Application menu, choose Import.

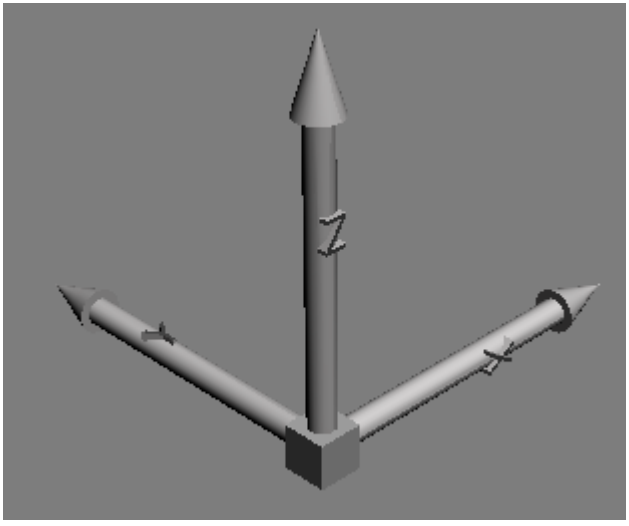
2 Set the file type to Inventor (*.IAM, *.IPT).

3 From the *\import\inventor_files* folder, open *axis tripod.iam*.

4 Turn on both Material Options check boxes.

5 Make sure Inventor File Vertical Direction (near the bottom of the dialog) is set to Z Axis.



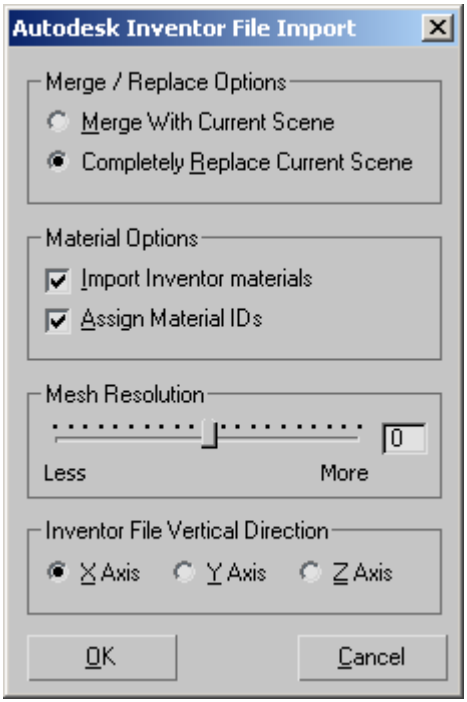


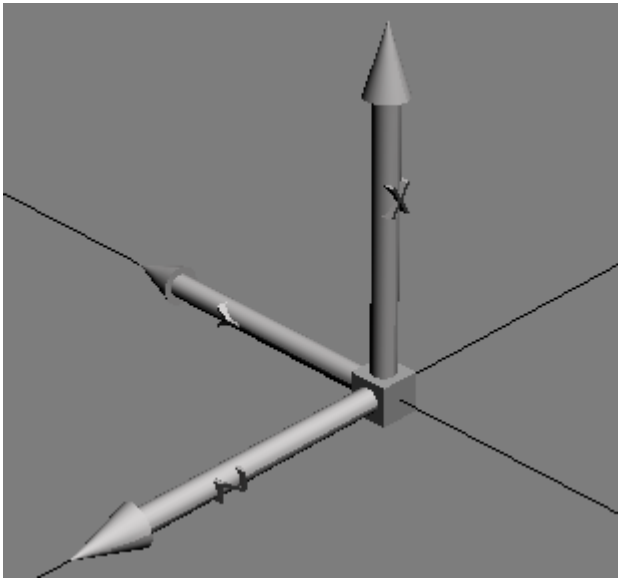
6 Notice how the X, Y, and Z axes of the imported Inventor file match those of the 3ds Max Design axes.

Now you'll import the same file again with X Axis as Vertical.

7  From the Application menu, choose Import.

8 Choose the *axis tripod.iam* file again.





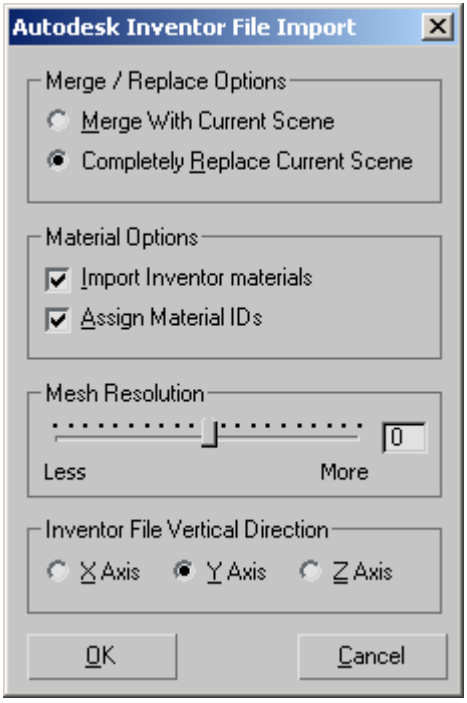
The tripod's X axis is aligned with the world Z axis.

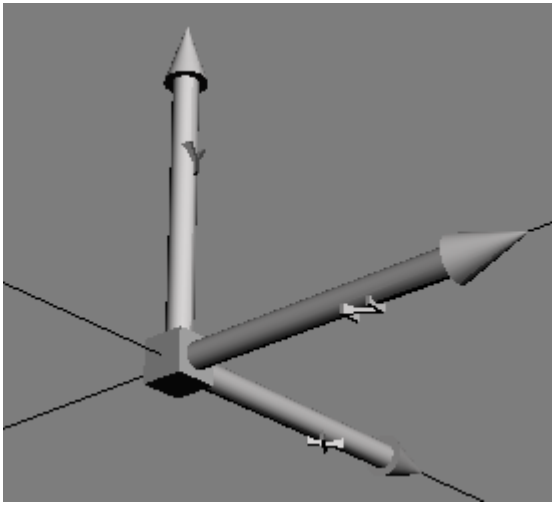
Next, import the file with Y defined as vertical.

9 

From the Application menu, choose Import.

10 Choose the *axis tripod.iam* file again.





11 Adjust the viewing direction to see the axis labels.
The Y axis is aligned with the Z axis in 3ds Max Design.

Summary

In this tutorial you worked with several options available in the Autodesk Inventor Import dialog. Mesh resolution can be adjusted up or down from the default setting to suit the needs of the project. An Inventor assembly file (IAM) can be imported in the same fashion as an Inventor part file (IPT). The names of the parts within the assembly retain their Inventor names. You have the option of including materials that were applied to parts within Inventor. If multiple materials were applied to a single part, the materials IDs can also be imported. The materials appear in the 3ds Max Design material/map browser after import. Finally, you can control which Inventor axis is aligned with the Z axis in 3ds Max Design.