

Using the Content Center, Part 1



This is the first in a set of three Skill Builders which replace the Content Center tutorial previously supplied with the Inventor software. In this Skill Builder, you will learn to place and size components from the Content Center. In the second Skill Builder you will learn how to manage Content Center libraries. The third Skill Builder will teach you to use the search capabilities of Content Center. These three Skill Builders may be completed in any order.

Expected completion time: **15 to 20 minutes.**

Use with: **Autodesk® Inventor® 2009.**

The Content Center provides functionality to access and utilize standard parts and features contained in content libraries. The Content Center consists of two environments:

- Consumer environment, where you locate a part or feature, and then place that content into a document.
- Editor environment, where you locate and edit a Content Center library, or publish a part or feature into an existing read/write library.

In this Skill Builder, you learn how to:

- Open the Content Center
- Place a component from Content Center into an open assembly
- Use the AutoDrop resize handles when appropriate
- Resize a component placed from Content Center
- Replace a component placed from Content Center
- Open a component from the Content Center

Note - The examples in this Skill Builder use content based on common standards typically installed by default. Your Content Center may or may not include all of the libraries referenced by this Skill Builder. If your Content Center does not contain the same libraries or families, you can either read along without performing the steps or use a similar part from a different standard.

For example, if the Skill Builder calls for a machine screw from the ISO standard and your library contains only ANSI parts, you can substitute a similar screw from your ANSI library.

Set-Up

1. Set your active project to the supplied **tutorial_files** project
2. Create a new, blank assembly file using the **Standard (mm).iam** template
3. Place one occurrence of the part **Housing.ipt** in the assembly
4. Use the View Cube or the Orbit tool to adjust your view of the assembly to approximate the following image:



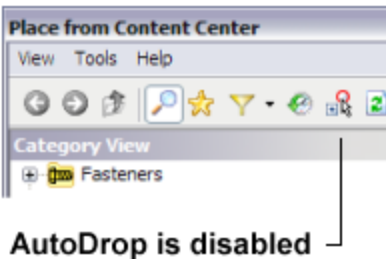
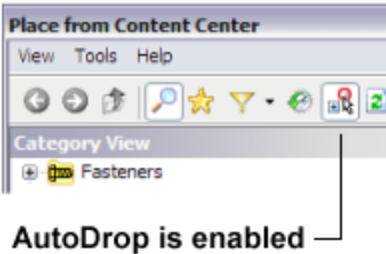
5. Right-click in the graphics window (over empty space - away from model geometry) and select **Place from Content Center** from the context menu

The **Place from Content Center** dialog box contains: a menu bar, a tool bar and areas within the dialog that display a structured view of the Content Center categories, a detailed view of the selected category and a view of any favorites that you may have defined.

Two methods are available for placing Content Center components: manual placement and AutoDrop. Let's first look at manually placing a component.

Manually Place a Bearing

When you run Inventor for the first time and use the Content Center, AutoDrop is automatically enabled. This initial exercise assumes that AutoDrop is disabled. Before you continue, please verify that your AutoDrop button appears in the disabled state (button is not outlined) as shown below:



1. To find the bearing used in this exercise: in the Category View portion of the dialog, click the “+” to the left of the **Shaft Parts** category node
2. Click the “+” to the left of the **Bearings** category node
3. Click the “+” to the left of the **Roller Bearings** category
4. Click on **Tapered Roller Bearings** in the Category View browser. The tapered roller bearing families contained in your content library display in the right-hand panel.
5. Double-click the **ANSI/AFBMA 19.1 TSF - Tapered Roller Bearing** family. The Family dialog box for the chosen bearing family activates and the Content Center window disappears.

The **Select** tab shows a thumbnail of the family and lists the key column entries for the family members. You can select a member and then click **OK** or **Apply** to insert the part into the assembly. However, in this particular family, since the key columns provide no direct indication of the dimensions of the family members, use the **Table View** tab to select the member.

6. Select the **Table View** tab
7. In the Outer Diameter column, select **50**
8. Click **Apply**.
9. Click in the graphics window to place one occurrence of the part
10. Press the **Esc** key on the keyboard to end the placement. The Family dialog box reappears and you can make another selection, as needed.
11. Click **Cancel** in the Family dialog box.

When you click **Cancel** in the Family dialog box, it closes and the Content Center dialog box reappears. When you click **OK** in the Family dialog box, the Content Center session terminates after you place the part.

Your assembly should appear similar to the following:



From this point, you would finish positioning the component using constraints (or iMates).

There is an alternative, interactive method for inserting and sizing parts from the Content Center called: AutoDrop. AutoDrop allows content to be sized appropriately and previewed in place based on the model geometry under your placement cursor. This function is especially useful when you do not know the dimensions of the model geometry.

Let's return to our assembly and explore AutoDrop (your Content Center dialog should still be displayed).



You are approximately 25% complete

Place a Bearing using AutoDrop

All subsequent exercises now assume that AutoDrop is enabled. Before you continue, please verify that your AutoDrop button appears in the enabled state (button is outlined) as shown above at the beginning of the previous exercise.

1. Click the **AutoDrop** button on the **Place from Content Center** dialog.
2. In the right portion of the Content Center dialog, select (single-click) the **ANSI/AFBMA 19.1 TSF - Tapered Roller Bearing** family.
3. Click **OK** (located at the bottom of the dialog).

Notice that the part preview in the graphics window is attached to a special cursor as shown below:



Initially, the cursor shows a question mark and a special context-sensitive icon. The question mark prompts you to pause the cursor over relevant geometry. The icon indicates the type of geometry required to place the part within the assembly. In this case, since you are placing a bearing, the assembly needs a circular edge. All variations of this icon can be reviewed in the Quick Reference topic for AutoDrop located in the on-line Help.

4. Pause the cursor (without clicking) over the outside circular edge of the housing, as shown in the image:

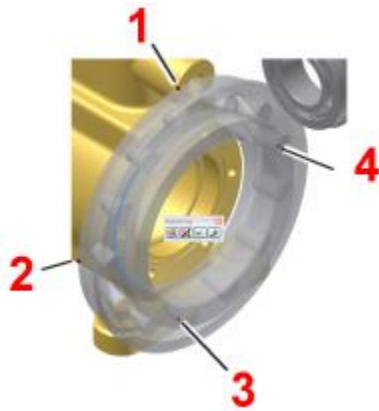


Notice that as you pause for a moment over legitimate geometry, the part preview automatically resizes to the closest match based on the parts available in your content library. A tooltip displays the part name and primary dimensions. The cursor also changes to a green check mark to indicate that the highlighted geometry under the cursor is the appropriate shape for the selected content.

5. Click to set the part.

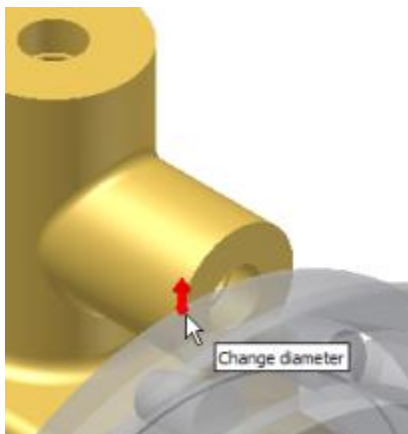


With this workflow, the part is placed temporarily and the program presents further options for placement. Notice that four dark red spots appear around the outside diameter of the temporary bearing preview graphics:



These dark red spots will become bright red resize “handles” when under your cursor.

6. Move your cursor over the dark red spot identified as “1” in the image above.



7. While the arrow is displayed, click and drag your cursor towards the top of the window. Notice that the bearing diameter gets larger. Click and drag the bearing back to the original size.
8. Move your cursor over the AutoDrop button menu.
9. Click the **Apply** button (with the green check mark) as shown below:

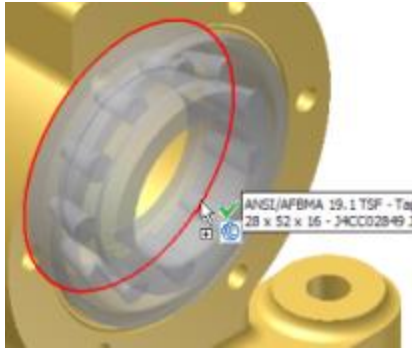


A table appears which shows all of the tapered roller bearings within the family that meet the selected criteria.

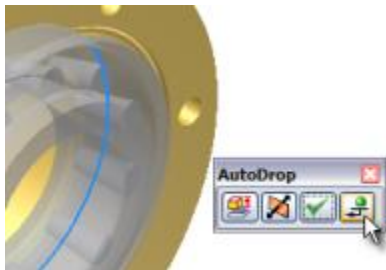


To use one of the family members in the table you would select the table row containing the desired component and click the **OK** button at the bottom of the table dialog. Since we don't want to place a huge bearing floating outside of the housing part we will click **Cancel** and start over.

10. Click **Cancel** on the Table dialog
11. Right-mouse click in empty space and again select **Place from Content Center** from the context menu
12. In the right portion of the Content Center dialog, again select the **ANSI/AFBMA 19.1 TSF - Tapered Roller Bearing** family that you selected in step 1 above.
13. Click **OK** (located at the bottom of the dialog).
14. Move your cursor over the inside edge of the bearing bore in the housing part as shown:

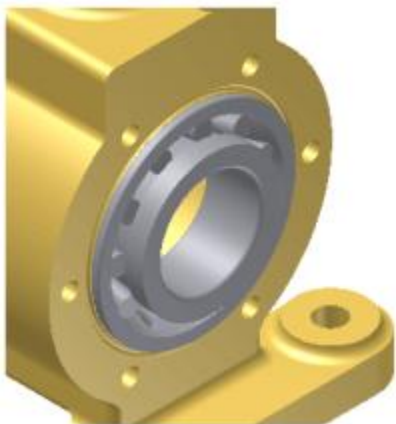


15. Click to set the part
16. Click the **Place** button on the AutoDrop button menu (right-most menu selection as shown below):



17. The bearing is sized, placed into position using an INSERT iMate and the Content Center dialogs are dismissed.

Your assembly should now appear as follows:

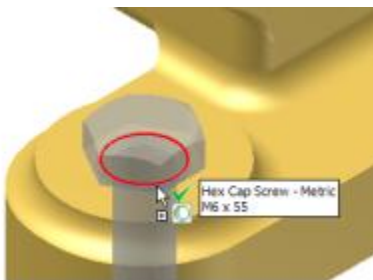


You are approximately 50% complete

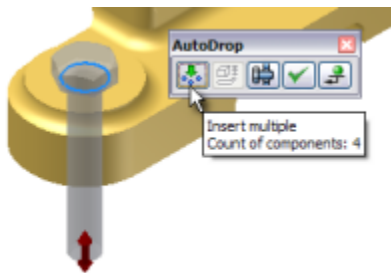
Resizing Placed Content

You can resize components that have been placed from the Content Center. To begin this portion of the exercise you will first place several hex head cap screws in the assembly:

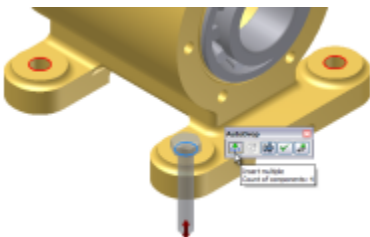
1. Right-mouse click in empty space and select **Place from Content Center** from the context menu
2. Click the “+” to the left of the **Fasteners** category
3. Click the “+” to the left of the **Bolts** category
4. Click the **Hex Head** category to display the content families in the right portion of the Place from Content Center dialog
5. Scroll down in the right-portion of the dialog and double-click on the **Hex Cap Screw – Metric** family
6. Position your cursor over the front-most mounting hole as shown:



7. Click to set the component and display the AutoDrop button menu.
8. AutoDrop can determine that multiple placements of a selected component would be desired. Click the Insert Multiple button on the button menu:



Notice that the circular top edge of each of the other mounting holes highlights in red to indicate where AutoDrop will place additional placements. Read the expanded tooltip which will also indicate the total count of components to be placed.



9. Select the **Place** button on the AutoDrop button menu (right-most menu selection) to place four hex head cap screws.
10. Although we did not use the Change Size button while placing these cap screws we will now change their length. Move your cursor over one of the cap screws that were just placed and right-mouse click to display the context menu for that component.
11. Because the component was placed from the Content Center, one of the selections is: **Change Size...** select that now to display the family selection dialog for cap screw.
12. From the Nominal Length column, select a length that differs from whatever length was placed. Click to check the **Replace All** option checkbox and click the **OK** button to accept the new length, dismiss the dialog and replace all four of the cap screws.

Replacing Placed Content

We just resized the cap screws that were previously placed with the same type of cap screw that was longer. We could have also changed the diameter if desired while keeping the same type of fastener. We will now look at a similar procedure that allows you to replace one type of placed component with another.

1. Right-click one of the cap screws, and select **Replace from Content Center** from the context menu.
2. In the upper-left Category View of the dialog, select the Socket Head family with a single click.
3. If needed scroll down so that you can see the **Forged Socket Head Cap Screw - Metric** family and double-click.
4. In the Family dialog box, select **M8 x 30**.
5. Select the **Replace All** check box.
6. Click **OK**.
7. A dialog appears warning of possible constraint loss – click **OK** (the program replaces all four occurrences of the hex head cap screw with four socket head cap screws as shown below).





You are approximately 75% complete

Use iMates to Position Content

The components that are supplied in the Content Center libraries have been created with iMates to make placement easier. In this next portion of the Skill builder you will delete one of the four socket head cap screws placed in the last exercise, edit the housing to create an appropriately named iMate and then place another socket head cap screw using iMates.

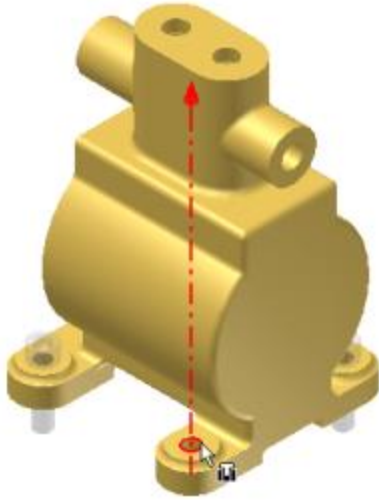
1. Use the View Cube or the Orbit tool to adjust the viewpoint to approximate the following image (in the next step you will delete the missing cap screw).



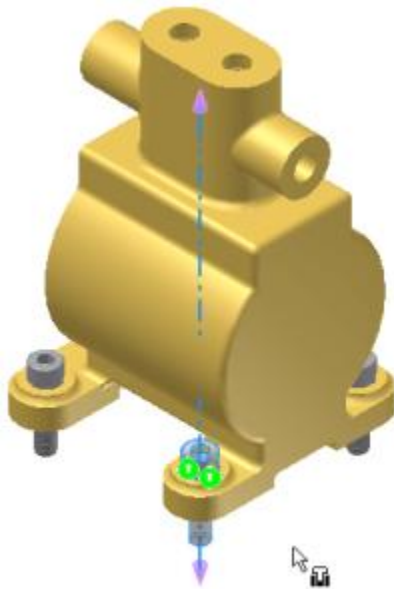
2. Right-mouse select the socket head cap screw located in the empty position shown above and click **Delete** in the context menu.
3. In the browser, right-click one of the remaining cap screw occurrences, and select **Expand All Children** from the context menu. Make a note of the name of the insert iMate: **Insert In1**.
4. Double-click **Housing.ipt** in the browser to edit the part in place.
5. Click **Create iMate** on the Part Features tool pallet (or press the **Q** to invoke the command using its shortcut key).
6. In the Create iMate dialog, click the **Insert** constraint type.



7. Select the circular edge, as shown on the housing part:



8. Click the >> (**More**) button to expand the dialog box
9. Type ***Insert In1*** in the Name field.
10. Click **OK** to create the named Insert iMate in the Housing.ipt.
11. Click the **Return** tool on the main tool bar (or click **Finish Edit** from a context menu evoked over empty space in the graphics area) to return to the parent assembly.
12. Activate the Content Center (click: **Place from Content Center** on the assembly tool panel).
13. Press the **Alt** key, and then double-click the **Forged Socket Head Cap Screw - Metric** family.
14. In the displayed Family dialog box, select **M8 x 30** (M8 thread type by 30 mm nominal length), click the **Use iMate** check box, and then click **OK**.



15. The selected cap screw previews in place (honoring the specified Insert iMate). Click anywhere in the graphics window to place the cap screw, and then press **Esc**.



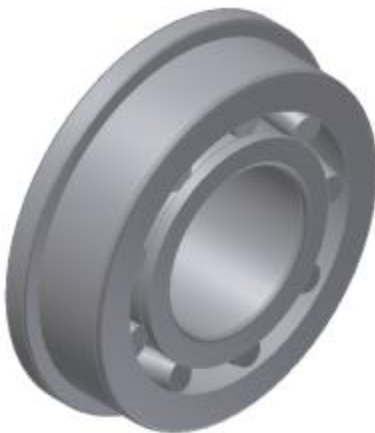
Note Your graphics display may zoom in following the placement. On the Assembly tab of the Application Options dialog box is the Placed Component option. If you select this option, the software automatically zooms to the iMate-equipped component after placement.

You can close the assembly without saving.

Open from Content Center

Open From Content Center is a convenient command you can use to view and examine the source part features, parameters, iMates, etc... in any family.

1. From the main menu, click **File > Open from Content Center**.
2. Navigate to the **ANSI/AFBMA 19.1 TSF - Tapered Roller Bearing** family.
3. Select the family and click **OK**.
4. In the Family dialog, select the first family member, and then click **OK** (the part file opens).



Since the file exists in a read-only library, notice that if you attempt to edit the file a message states that you cannot modify the file.

For example:

5. Click the **Parameters** tool (on the Part Features tool pallet).
6. Change the equation for parameter d4 to **6 deg**.
7. Click **Done**. Notice that a warning dialog displays telling you that you can not modify the library part.
8. Click **OK** to dismiss the warning dialog.

Close the file when finished.

Summary

This Skill Builder provided exercises to help you understand the basic capabilities of using components supplied in the Content Center. You were able to:

- Open the Content Center by selecting a button on the Assembly Tool Panel
- Open the Content Center from the Assembly context menu (with nothing selected)
- Interact with the Content Center category browser
- Interact with the Content Center family detail pane
- Manually select a component and specify the size desired using the table view from the component's Family dialog
- Use AutoDrop to automatically size and position component placement
- Use AutoDrop to place multiple placements of the same component
- Use the resize handles during AutoDrop to explore optional component sizes
- Explore the use of Apply while within AutoDrop to allow selection from a table of similar components
- Resize a component placed from Content Center with another component from the same family
- Replace a component placed from Content Center with a similar component from the same category
- Delete a component placed from Content Center
- Practice the creation and use of iMates
- Use iMates during the placement of components from Content Center
- Open a part from the Content Center to examine that part features, parameters, iMates, etc...

What Next?

As mentioned when you began, this Skill Builder is one of three that deal with using the Content Center. You may decide to complete each of the additional Skill Builders to get a better understanding of how to administer aspects of your Content Center by creating read/write libraries, modifying or publishing content to libraries or to more easily find components using the search and favorites capabilities in Content Center.

You may also want to simply become more familiar with the variety of parts contained in your Content Center libraries by browsing the categories and families listed in the Content Center dialog or by reading the on-line help concepts that discuss these topics.

This completes this Skill Builder.