



canvasxpro

3D guide



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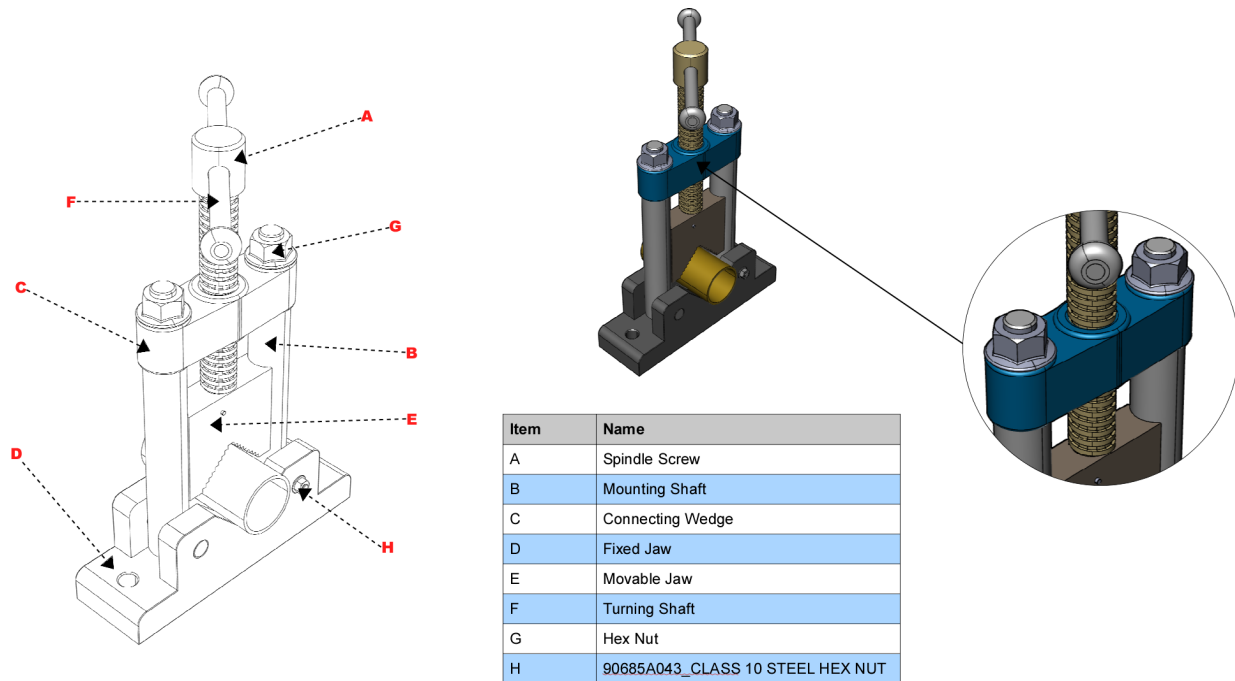
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Welcome to Canvas X Pro

Canvas X Pro is the preferred application for technical illustrators in many industries because it offers the most flexible, scalable and integrated design environment. Canvas X Pro has a full range of precise vector object illustration tools and advanced raster image editing tools that you need — all in one single, workflow-accelerating application. In addition, Canvas X Pro can support importing various 3D format files to place them in your Canvas document. Files created with Canvas X Pro will be stored in the new file format (*.CVXCAD), so you can share the document with your colleagues and edit 3D objects whenever needed.



Canvas X Pro provides a complete solution for home, small business, school, and corporate users:

- An array of tools for illustration, layout, editing, proofing, and final output, so you can take projects from start to finish in Canvas X Pro.
- A dynamic and flexible interface, including a Toolbar you can configure with commands, tools, and styles as well as customizable keyboard shortcuts, a Docking pane and Docking bar to store palettes, and a Properties bar for tool settings and object manipulation.
- Help when you need it, in the form of a Dynamic Help window and the Canvas Assistant help for the tool you're currently using, built right into the interface, as well as a fully searchable Help system available from the Help menu.
- Support of popular 3D format files, ability to change the colors, opacities, visibilities at the part-level and to change overall appearance of the 3D Model applying another raster mode.
- Ability to move individual parts freely, to translate parts along an axis, to rotate parts, and explode parts in the 3D Model edit mode.

- Convenient tools to annotate on the 3D Model with sequential numbers, alphabets, part names, or custom texts, and creating a table based on the annotations or part name and quantity.

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Supported 3D Mode File Formats

The supported 3D Model file formats are as follows:

| File Format | Extensions |
|-----------------------------|------------------------------|
| 3DXML | *.3dxml |
| ACIS | *.sat;*.sab |
| CATIA V4 | *.model;*.session |
| CATIA V5 | *.CATProduct;*.CATPart;*.cgr |
| CATIA Assembly | *.CATProduct |
| CATIA Part | *.CATPart |
| COLLADA | *.dae |
| AutoCAD | *.dwg;*.dxf |
| Autodesk 3DS | *.3ds |
| Autodesk DWF | *.dwf;*.dwfx |
| AutoDesk Inventor | *.ipt;*.iam |
| Filmbox | *.fbx |
| GL Transmission Format | *.gltf;*.glb |
| Industry Foundation Classes | *.ifc;*.ifczip |
| IGES | *.igs;*.iges |
| JT Siemens | *.jt |
| NX Siemens | *.prt |
| OBJ | *.obj |
| Parasolid | *.x_t;*.xmt_txt;*.x_b |
| Pro/E/Creo | *.asm;*.prt |
| Pro/E/Creo Assembly | *.asm |
| Pro/E/Creo Part | *.prt |
| PRC | *.prc |
| Revit | *.rvt;*.rfa |
| Rhino | *.3dm |
| SolidEdge | *.par;*.asm;*.psm |
| SolidWorks | *.sldasm;*.sldprt |
| SolidWorks Assembly | *.sldasm |
| SolidWorks Part | *.sldprt |
| STEP | *.stp;*.step;*.stpZ |
| STL | *.stl |
| U3D | *.u3d |
| VDA-FS | *.vda |
| VRML | *.wrl;*.vrml |

Placing a 3D Model

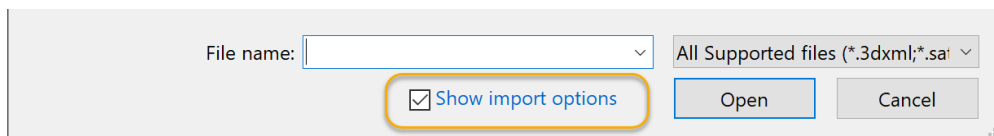
You can place 3D Models in your document.

To Place a 3D Model

1. Create a new document or open an existing CVX document.
2. Do one of the following:
 - Click the Place 3D Model icon in the Toolbar.



- Choose **File | Place 3D Model**.
3. In the **Open** dialog box navigate to a location of the 3D Model file that you want to place.
 4. Select the 3D Model that you want to open.
 5. Select the **Show import options** dialog box as needed.



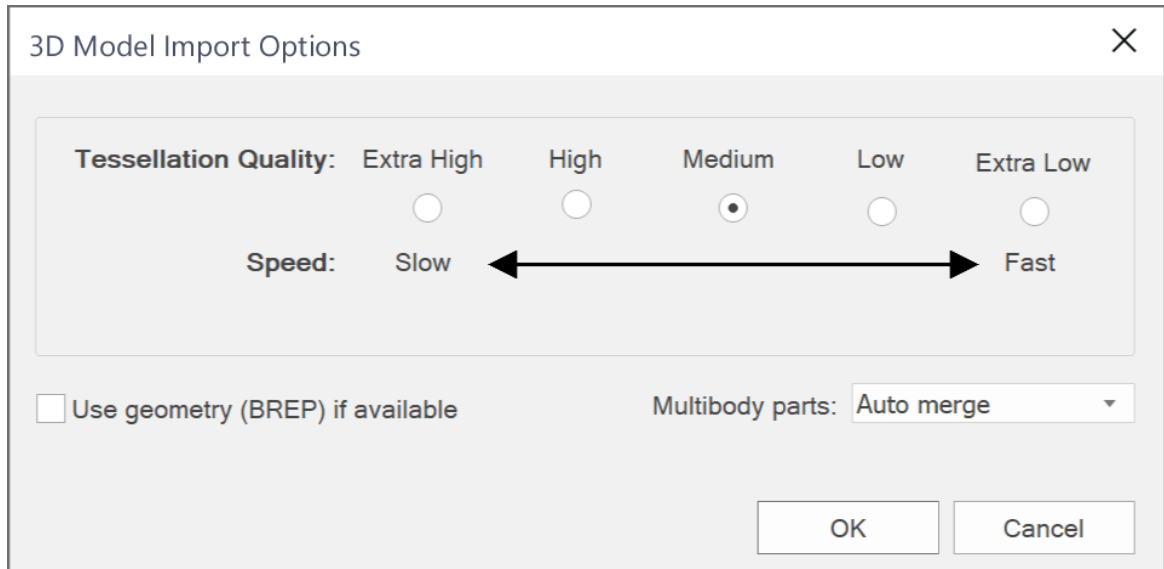
6. Click **Open**.
7. Modify the 3D Model in the **3D Model window**.
8. When you are done editing the 3D Model scene, click **Save** in the Ribbon.

The 3D Model window will be closed, and the 3D Model object of the default size is placed at the default position (generally, left top) on the current layer of the page.

The 3D Model objects that are placed in the document can be: resized, repositioned, copied & pasted like any other objects.

 3D Model objects will be indicated with this icon  in the Document Layout palette.

3D Model Import Options



| Options | Description |
|----------------------------------|--|
| Tessellation Quality | Extra High, High, Medium, Low, Extra Low. When BREPs (Boundary Representations) are available and the Use geometry (BREP) checkbox is selected, then it tessellates them with a chosen option. |
| Use geometry (BREP) if available | This option is not selected by default. In this case, tessellation data are used even if BREPs are available. When this option is selected, BREPs are used even if tessellation data are available. |
| Multibody parts | Auto merge - when parts consist of one subpart each, they are merged. Always merge - all subparts are merged. Do not merge - all subparts are imported as they are. |

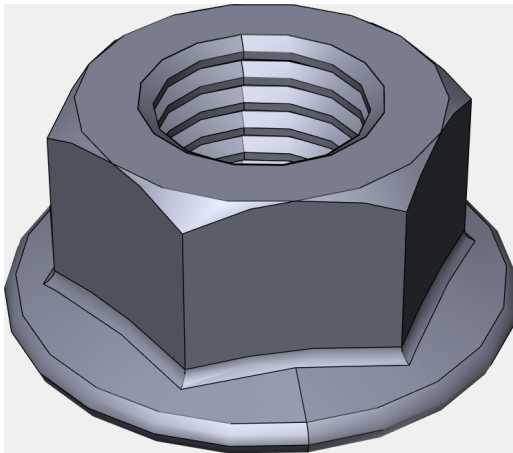


This tessellation quality cannot be changed after the 3D Model is loaded to the document.

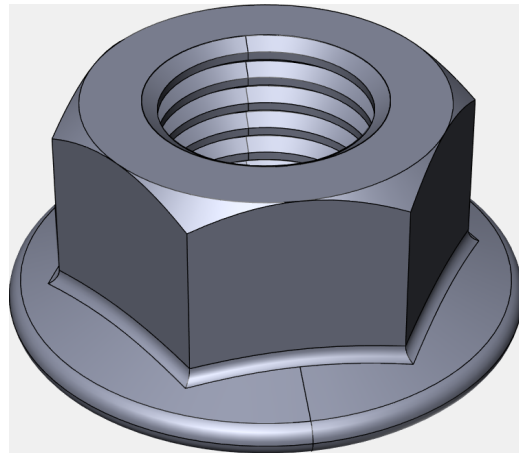
About Tessellation

The Tessellation setting affects the number of polygon points, which influences the overall smoothness of curves on the 3D Model appearance. In general, performance of drawing the 3D Model may decrease as the level of tessellation increases. The degradation of performance may depend on your system hardware.

Examples



Low



Highest

To Close the 3D Model Window Without Placing any 3D Models

1. Do one of the following:
 - Click **Exit**.
 - Click the **X** icon that is located at the right side of the Title bar.
 - Press **Alt+X**.
2. Click **Don't Save** in the dialog box.

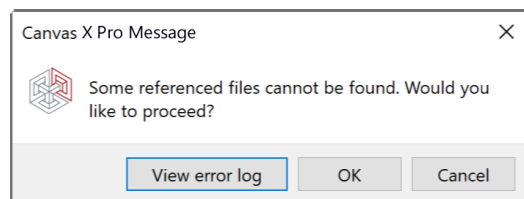
Important Notices for Opening a 3D Model file

You may see a warning message when you open a 3D Model file.

Missing Referenced Files

In case some referenced files are not available for opening the selected 3D Model file, the message dialog box is displayed.

The message will say: Some referenced files cannot be found. Do you want to proceed?



The error log is created in the simple text format and saved in the Canvas X Pro folder (**C:\Users\user_account\AppData\Roaming\Canvas GFX\Canvas X Pro**)

The error log contains missing file paths per line.

Error log file name: *main_3D_file_name_error_log.txt*

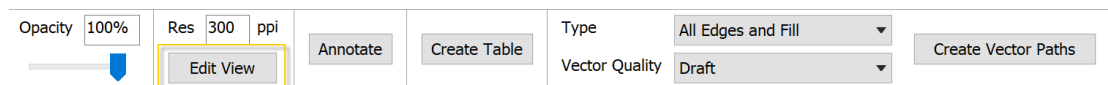
When clicking the **View Error Log**, Notepad will open the error log.

Editing the View of 3D Model Object

You can edit the 3D model view any time after it is placed in the current document.

To Edit 3D Model Object

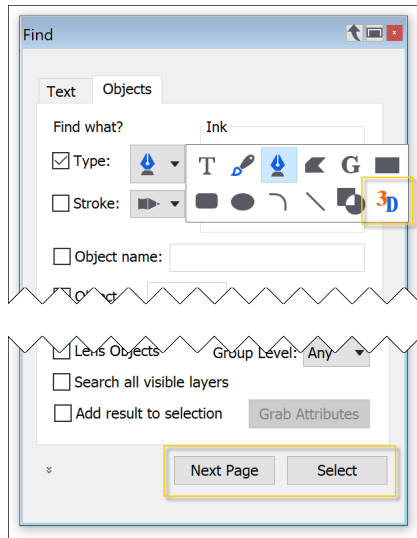
1. Open an existing CVXCAD document which contains a 3D Model or 3D Models.
2. Do one of the following:
 - Double-click the 3D Model object that you want to edit.
 - Select the 3D Model object that you want to edit. Click **Edit View** in the Properties bar.



3. Modify the 3D model in the **3D Model window**.
4. When you are done editing the 3D model scene, click **Save** in the Ribbon to make any changes applied to the 3D model in the document.

To Find 3D Model Objects

1. Open an existing CVXCAD document which contains a 3D Model or 3D Models.
2. Do one of the following:
 - Choose **Edit | Find**.
 - Choose **Window | Palettes | Find**.
 - Press **Ctrl+Shift+A** to open the Find palette.
3. Select the **Objects** tab in the palette.
4. Select the **Type** checkbox.
5. Click the **Type** drop-list.
6. Select the 3D icon.



7. Click **Select** and **Next Page** repeatedly, if necessary.

Placing the editing 3D Model as a new object

You can place the 3D model that you are editing as a new object in the document.

To Place Another View of the 3D Model

1. Open an existing CVXCAD document which contains a 3D Model or 3D Models.
2. Do one of the following:
 - Double-click the 3D Model object that you want to edit.
 - Select the 3D model object that you want to edit and click **Edit View** in the Properties bar.
3. Modify the 3D model in the **3D Model window**.
4. Click **Create New** in the Ribbon to exit the edit session and place the 3D Model view as a new object in the document.

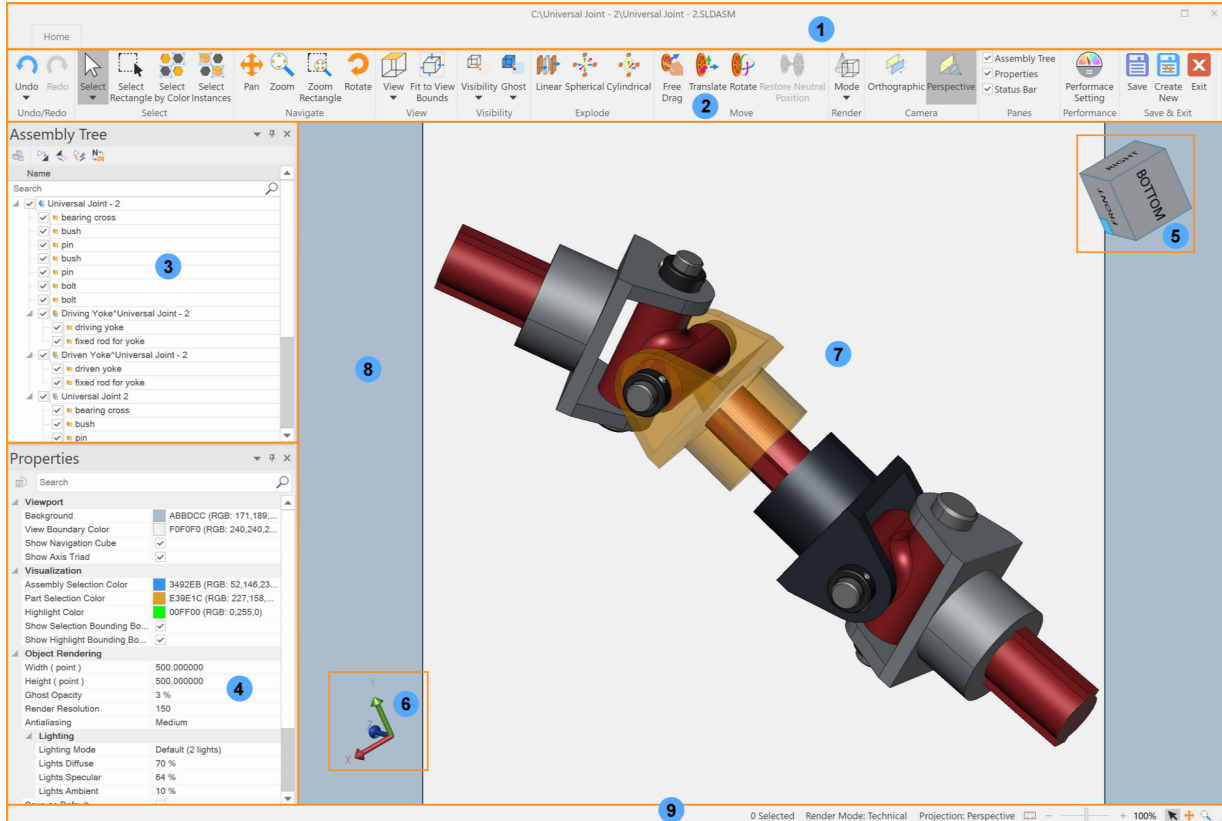
The new 3D Model object will be placed offset to the right of the original 3D Model object.

3D Model Window

The 3D Model window is the modal dialog box where you create a scene or view of the loaded 3D Model.

Interface Overview

The graphical user interface (GUI) of the 3D Model window consists of several sections. This is the default look.



| No. | Interface Names | Description |
|-----|-------------------------|---|
| 1 | Title bar | Displays the file path of the 3D Model file. You can minimize or close the window. |
| 2 | Ribbon | Provides access to application modes and functions from a ribbon with a number of menus. |
| 3 | Assembly Tree pane | Views and manages the structure of your 3D model parts. You can select, deselect, hide or show parts. |
| 4 | Properties pane | Shows properties of selected parts such as color or opacity. |
| 5 | Navigation Cube control | Rotates the camera to the preset directions by clicking on the cube or freely by dragging it around |
| 6 | Axis Triad control | Rotates the camera to the preset directions by double-clicking on the Triad (X, Y, Z) or freely by dragging it around |
| 7 | View bounds | Shows the bounding box of the scene where you can position the parts of interests. Parts that are shown outside of the bounds will not appear when it is placed in the main document. |
| 8 | Viewport | Displays the scene of the 3D model that you manipulate. |
| 9 | Status bar | Displays some useful information, and lets you access to some Navigate commands. |

Resizing the 3D Model window


The size of the 3D Model window can be adjusted.

To Resize the 3D Model window manually

Drag at one of the 4 sides or corners of the 3D Model window.

To Maximize or Restore the size of the 3D Model window

Do one of the following:

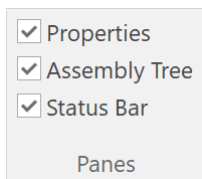
- Click the  icon that is located at the right side of the Title bar.
- Press **F11**.

To Show the 3D Model window in Full Screen

Press **F9**.

Hiding or Showing the panes

The Assembly Tree pane, Properties pane, Status bar can be hidden or shown by deselecting or selecting the checkbox in the Panes panel of the Ribbon respectively.



Rearranging the positions of the panes

You can arrange the positions of the panes in various ways.

To Arrange the Panes

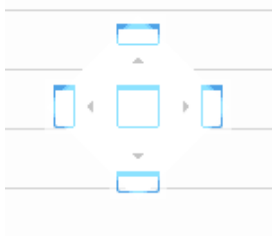
1. Start dragging the pane that you want to reposition. You will see the following control at the center of the screen or the pane. You also see the individual control at the top, right, bottom, and left.



2. Drag the pane to one of the controls.
3. Release the mouse button.

To Arrange the Panes as Tabs

1. Start dragging the pane that you want to reposition to another pane.
2. Mouse over to the center control that appears in the pane.



3. Release the mouse button.



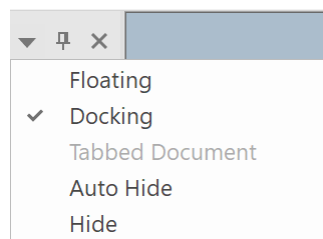
To Separate the Pane Listed as Tabs

Do one of the following:

- Drag out at the tab of the pane that you want to separate.
- Right-click on the tab and select **Floating**.



You can also make each pane floating or auto hidden. Each pane's title bar has the following icons.



Selecting Parts

You must select a part or parts in order to move, translate, rotate, explode, or change visibility. You can select parts in the Viewport or in the Assembly Tree Pane.

To Select a Part

1. Click the **Select** icon in the Ribbon.
2. Click a part in the Viewport.

To Select More Than One Part

1. Click the **Select** icon in the Ribbon.
2. Click a part in the Viewport.
3. **Shift**+click another part in the Viewport.
4. Repeat step 3 as needed.








*When you **Shift**+click a part that is already selected, that part will be deselected. You can also **Ctrl**+click, but you cannot deselect like **Shift**+click.*



*You cannot select ghosted parts with the **Select** tool. But you can select them in the Assembly Tree pane.*

From the Select drop-list, you can also access to the following commands.

| Icon | Function Name | Shortcut | Description |
|---|--------------------------|-------------------|---|
|  | Select | N/A | Select a part one by one. |
|  | Select All | Ctrl+A | Select all parts including ghosted or hidden parts. |
|  | Select All Visible Parts | Ctrl+Alt+A | Select all visible parts excluding ghosted or hidden parts. |
|  | Deselect All | N/A | Deselect all selected parts. |
|  | Invert Selection | Ctrl+I | Deselect the current selection and select parts that were not selected. |

To Deselect All of Selected Parts

Do one of the following

- Click at blank area in the Viewport.
- Click the **Select** drop-list from the Ribbon and select **Deselect All**.
- Right-click and select **Deselect Selection** from the context menu.

To Use the Select Rectangle Tool

You can select multiple parts by defining a rectangle with the Select Rectangle tool. When bounding boxes of parts are entirely or partially in the rectangle, those parts will be selected.

1. Select the **Select Rectangle** tool in the Ribbon.
2. Click and drag diagonally to define a rectangle.
3. Release the mouse button.

 *The **Select Rectangle** tool works like the **Select** tool.*

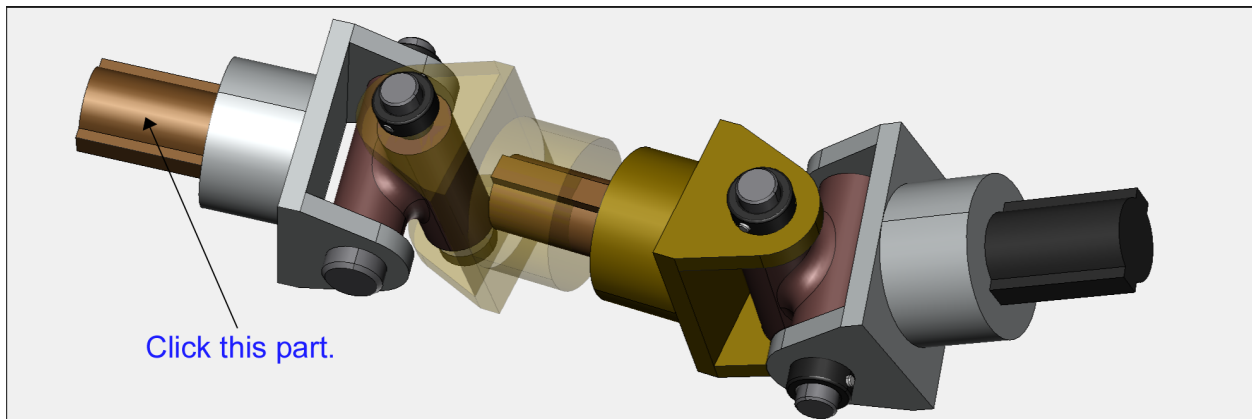
 *The **Select Rectangle** tool will exclude ghosted or hidden parts for selection.*

To Select Parts by Color

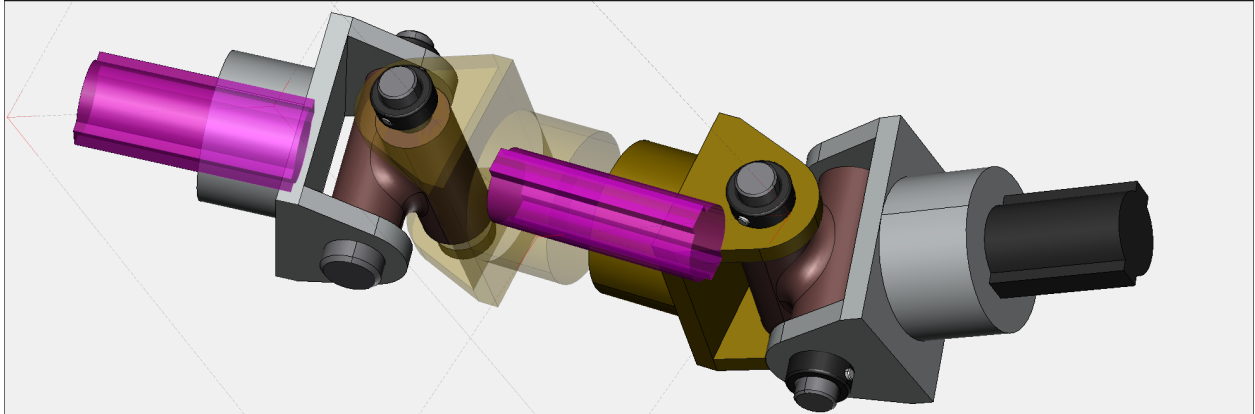
You can select parts which have the same color by **Select by Color** tool.

1. Select the Select by Color tool in the Ribbon.
2. Click on a part.

All parts that have the same color as the one which you clicked on, including ghosted and hidden parts, will be selected.



Example, the parts of the same color are selected and indicated in magenta. For details about how to change the selection color, please refer to: [Part Selection Color](#)

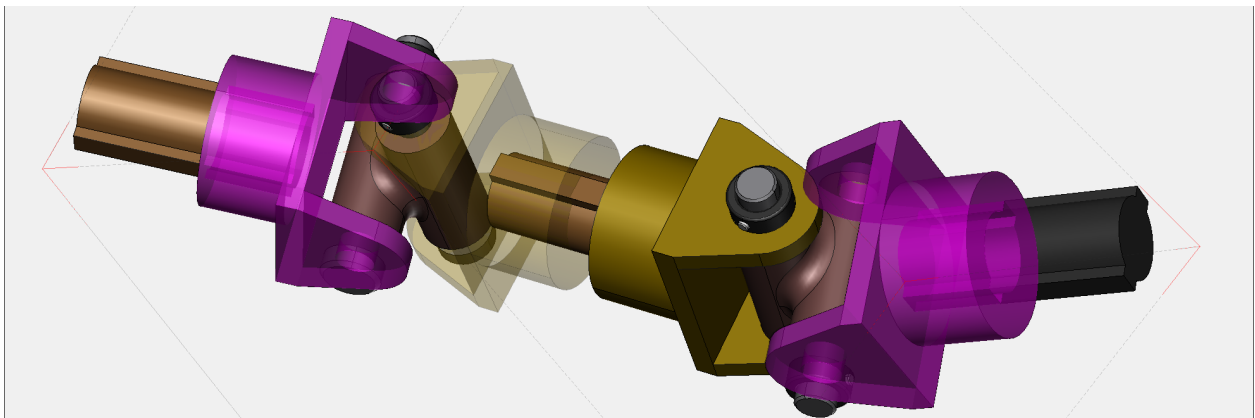


To Select Parts by Instance

You can select parts which are considered as the same instance by the **Select Instances** tool.

1. Select the **Select Instances** tool in the Ribbon.
2. Click on a part.

All parts of the same instance as the one which you clicked on, including ghosted and hidden parts, will be selected.

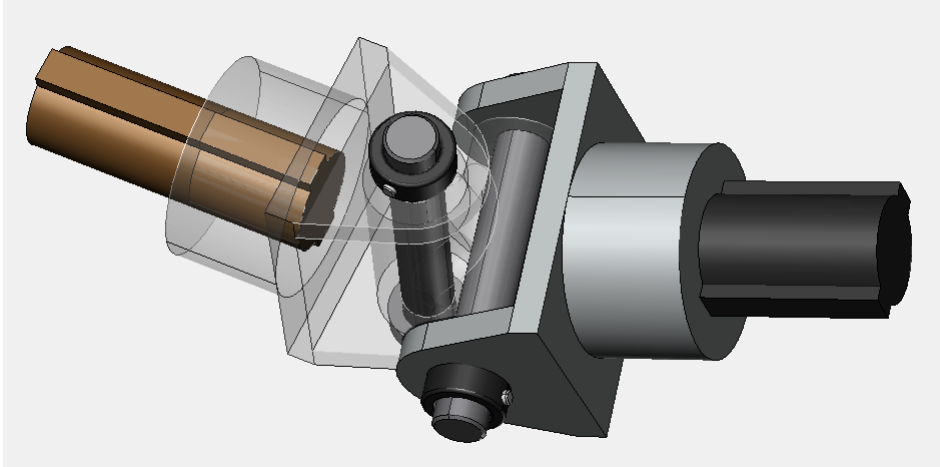


To Make Parts Translucent Temporarily for Selection

You can use this technique to make some parts translucent temporarily. In this state, such parts cannot be selected. Therefore, it is especially useful to select parts completely hidden by other parts.







| Modifier Keys | Operation |
|-------------------------|--|
| Tab -hover | Make parts semitransparent temporarily. |
| Shift+Tab -press | Restore the state of parts one by one with each press of the keys. |

Example:



List of the Selection Mouse Pointers

Here is the list of the mouse pointers for various selection states.

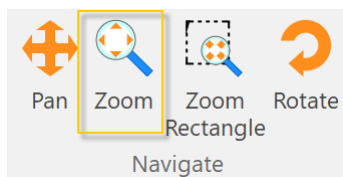
| Pointer | Tool/Mode |
|---|--------------------------------------|
|  | Select |
|  | Select with Shift key pressed |
|  | Select with Ctrl key pressed |
|  | Select Rectangle |
|  | Select by Color |
|  | Select Instances |

Zooming the Camera

When you open a 3D Model file, you will see the 3D Model that fits to the view bounds by default. You can zoom in the camera to make 3D Model larger relative to the view bounds and zoom out the camera to make it smaller.

To Zoom in the Camera

1. Select **Zoom** in the Navigate panel of the Ribbon. The mouse pointer changes to: 




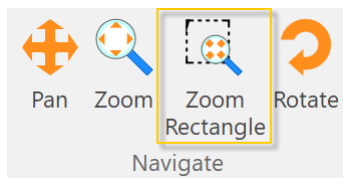
2. Press the left button of mouse and drag up to zoom in or drag down to zoom out.



You can also scroll the mouse wheel up to zoom in or down to zoom out in any mode to the location of your mouse.

To Zoom in to a Specified Rectangle

1. Select **Zoom Rectangle** in the Navigate panel of the Ribbon. The mouse pointer changes to: 



2. Click and drag diagonally to define the zoom area.



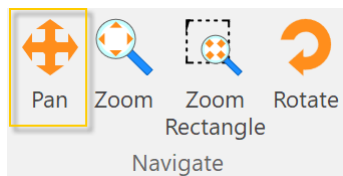
- *You can make visible parts' bounding box fit to the view bounds by clicking **Fit to View Bounds** in the **View** panel of the Ribbon or double-clicking on blank area.*
- *Double-click on a part to fit the part's bounding box to the view bounds.*

Panning the Camera

While you are manipulating the 3D Model, you may want to move the scene of interest by panning the camera.

To Pan the Camera

1. Select **Pan** in the Navigate panel of the Ribbon. The mouse pointer changes to: 



2. Press the left mouse button and drag up to pan.



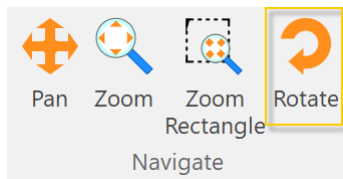
You can also press the mouse wheel and drag to pan in any mode.

Rotating the Camera

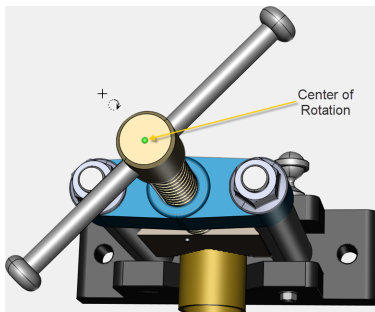
While you are manipulating the 3D Model, you may want to rotate the scene of interest by rotating the camera.

To Rotate the Camera

1. Select **Rotate** in the Navigate panel of the Ribbon. The mouse pointer changes to: 



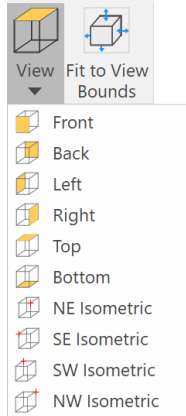
2. Press the left mouse button at a given center of rotation and drag to rotate. The center of rotation will be represented as the green dot.



You can also click the right mouse button and drag to rotate in any mode.

To Use the View Presets to Rotate

1. Click **View** in the **View** panel of the Ribbon.
2. Select one of the presets listed in the drop-list.

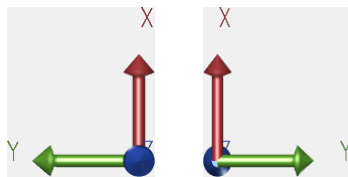


The plane like Front, Top, or Right is defined in the given 3D Model file. The view may be different from what you expect.

To Use the Triad Control to Rotate

Double-click on an axis, either X, Y, or Z to make the axis toward you or away from you.

For example,



Toward you

Away from you

Also, you can drag the Triad to rotate the camera freely.

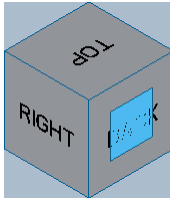


The Triad Control can be hidden or shown from the Properties pane when parts are not selected.

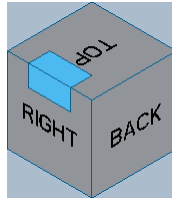
To Use the Cube Control

1. When you mouse over an area (centers, sides, corners) of the Cube Control, the plane will be highlighted in light blue.
2. Click that region to rotate the camera facing that plane to you.

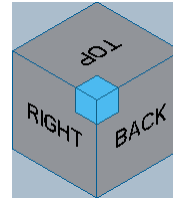
For example



Centers



Sides



Corners

- You can click the region repeatedly to rotate by the preset angles using it as the axis of rotation. You can drag the Cube to rotate the camera freely, also.



The Cube Control can be hidden or shown from the Properties pane when parts are not selected.

List of the Navigate Mouse Pointers

Here is the list of the mouse pointers for various navigation states.

| Pointer | Tool/Mode |
|---------|----------------|
| | Pan |
| | Zoom |
| | Zoom Rectangle |
| | Rotate |

Summary of the Mouse Operations

You can also zoom, pan, rotate the camera and other operations using the mouse.

| Operation | What it does |
|------------------------|---|
| Hover | It highlights a part being hovered. |
| Left-click | It selects a part. |
| Right-drag | It rotates around the point where the right-click happened. |
| Right-click | It shows the context menu. |
| Wheel Scroll-drag | It pans. |
| Wheel Scroll Up | It zooms the camera in at the mouse pointer. |
| Wheel Scroll Down | It zooms the camera out at the mouse pointer. |
| Ctrl+Wheel Scroll Up | It zooms in the view bounds. |
| Ctrl+Wheel Scroll Down | It zooms out the view bounds. |

The behavior of Left-click&drag depends on modes.

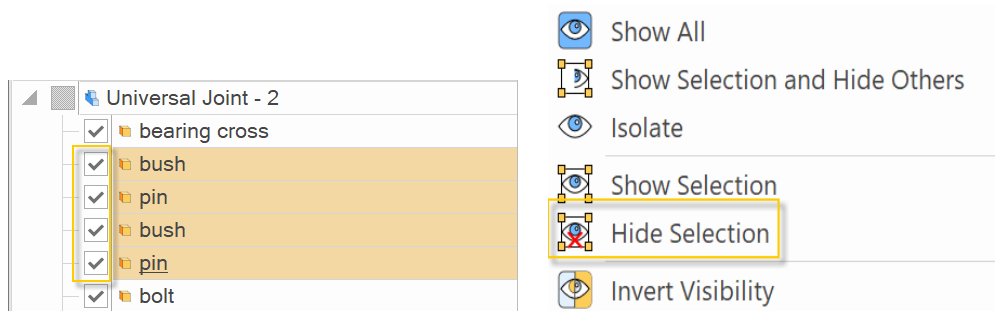
| Mode | Behavior |
|-----------------------|--|
| Select Rectangle mode | Left-click-drag creates a rectangle selecting parts within and touching. |
| Pan mode | Left-click&drag pans around. |
| Zoom mode | Left-click&drag up zooms the camera in. |
| Zoom mode | Left-click&drag down zooms the camera out. |
| Rotate mode | Left-click&drag rotates around the point where the left-click happened. |


Setting Visibility

You can hide or show the parts that you select.

To Hide Parts

1. Select parts that you want to hide.
2. Do one of the following:
 - Click the **Visibility** icon in the **Visibility** panel of the Ribbon and select **Hide Selection**.
 - Right-click and select **Hide Selection** from the context menu.
 - Deselect the checkboxes of the parts highlighted in the Assembly Tree pane.



 *The checkboxes of The Assembly Root and Assembly Groups may have the gray fill instead of the checkmark or blank . It means some of the parts under them are set to be shown or hidden.*

You can use other related commands to meet your needs.

| Command | Description |
|--------------------------------|---|
| Show Selection and Hide Others | Any parts that are selected will be shown. The rest will be hidden. |

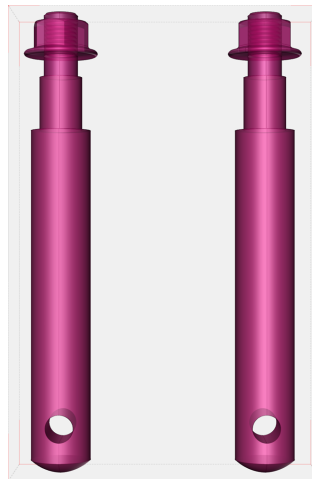
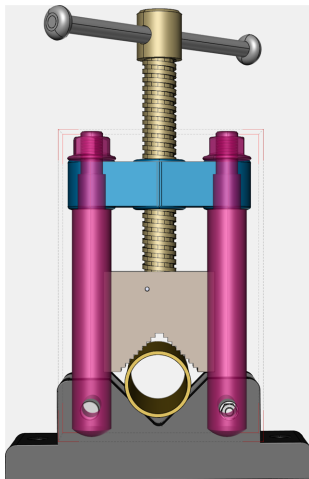
Invert Visibility

This command applies to all parts regardless of selection. Any parts that are hidden will be shown, and any parts that are shown will be hidden.

To Isolate Parts

You can show the selected parts only and make them fit to the view bounds at once.

1. Select parts that you want to isolate.
2. Do one of the following:
 - Click the **Visibility** icon in the **Visibility** panel of the Ribbon and select **Isolate**.
 - Right-click and select **Isolate** from the context menu.
 - Press **Ctrl+Shift+I**.



To Show Hidden Parts

Do one of the following:

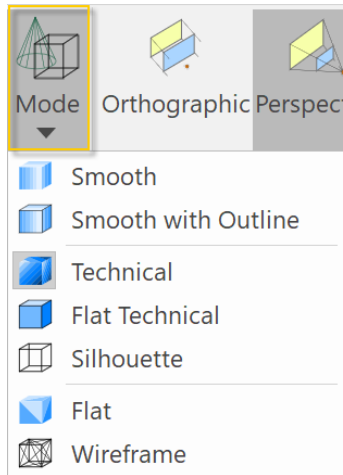
- Click the **Visibility** icon in the **Visibility** panel of the Ribbon and select **Show All**.
- Right-click and select **Show All** from the context menu.
- Press **Ctrl+Shift+A**.
- Select the checkboxes of the parts in the Assembly Tree pane.



*You can specify hidden parts in the Assembly Tree pane, right-click and **Show Selection** from the context menu.*

Setting Render Mode

Render mode will affect overall appearance of the 3D Model. There are 7 render modes.



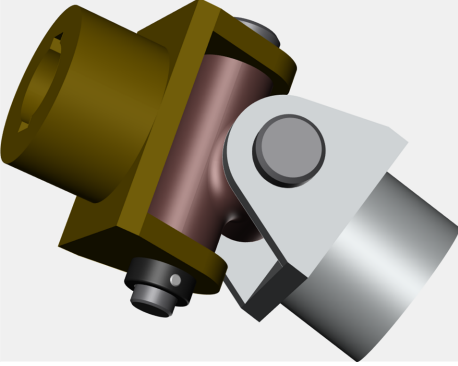
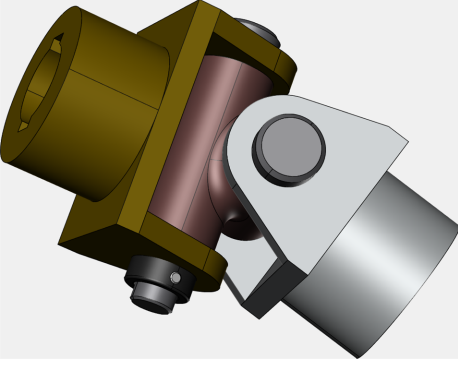
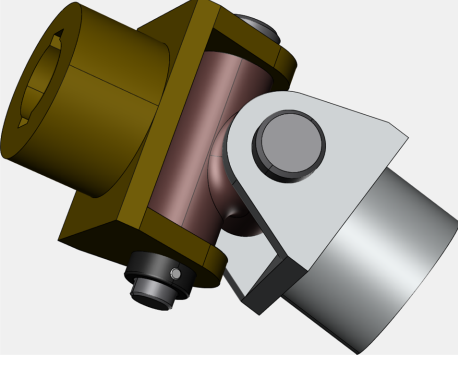
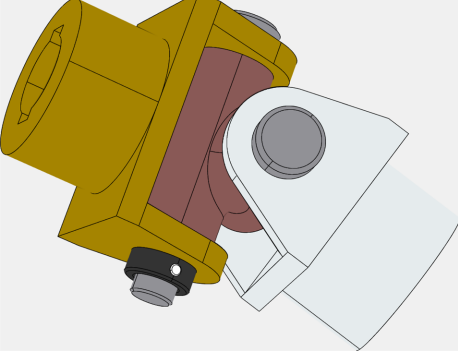
To Select a Render Mode

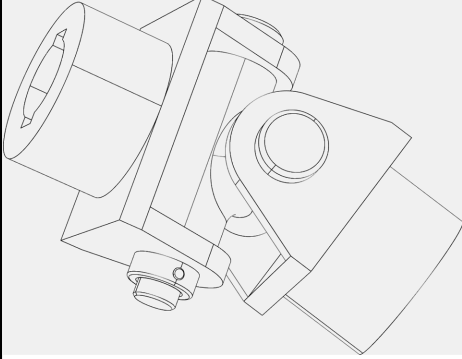
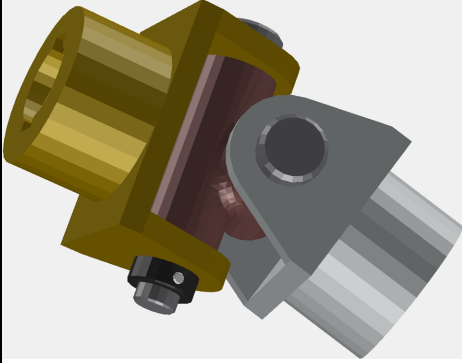
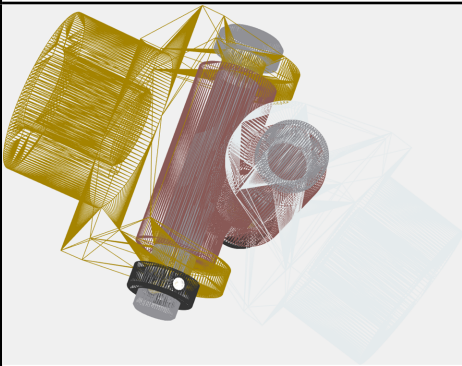
1. Click the Mode from the Render panel of the Ribbon.
2. Select one of the 7 render modes.



You can use the keyboard shortcuts to switch the render mode quickly. Please refer to: [Mode - Smooth](#).

Render Modes


| Render Mode | Sample— all are constant except the mode | Outline |
|---------------------|--|--|
| Smooth |  | Without outline |
| Smooth with Outline |  | With outline |
| Technical |  | Smooth with Outline and Silhouette are combined. |
| Flat Technical |  | With outline |

| | | |
|-------------------|---|---|
| <p>Silhouette</p> |  | <p>With outline</p> <p>*Parts with transparency will not be affected.</p> |
| <p>Flat</p> |  | <p>Without outline</p> <p>*To demonstrate the flat effect, the tessellation is set to "Lowest" for this sample.</p> |
| <p>Wireframe</p> |  | <p>Without outline</p> |

Changing the Lighting Properties

Appearance of the 3D Model may be also affected by the light properties. There are five lighting modes.

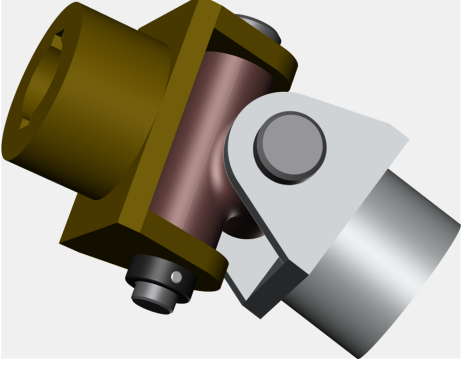
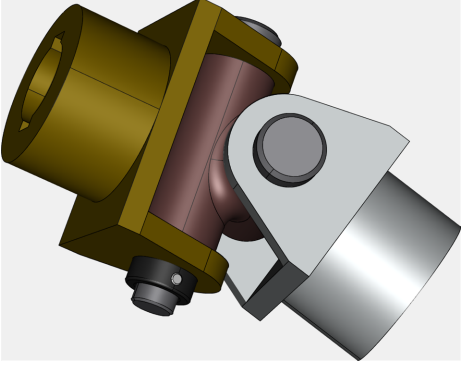
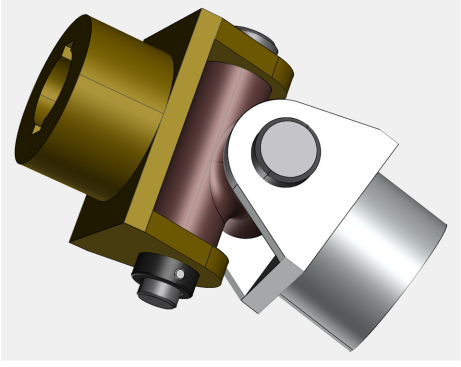
To Change the Lighting Properties

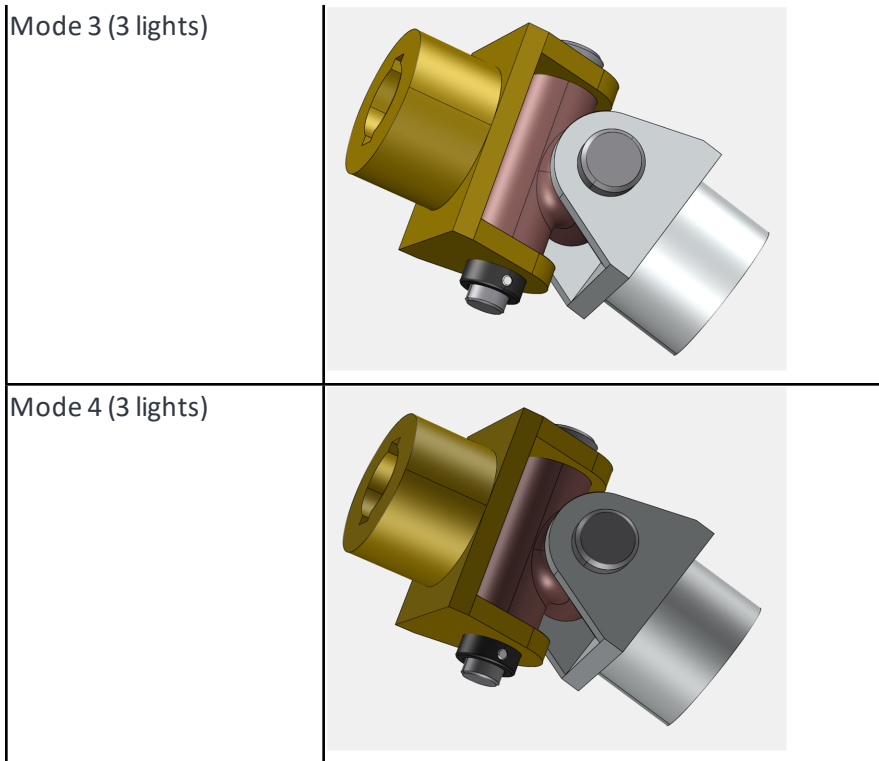
1. Deselect all parts by clicking blank area.
2. Show the **Properties** pane, if necessary, by selecting the **Properties** checkbox in the **Panes** panel of the Ribbon.
3. Click  to expand the category of **Lighting** under **Object Rendering** in the **Properties** pane as

needed.

- Click and select a lighting mode from the drop-list.


Lighting Modes

| Lighting Mode | Sample – all are constant except the mode |
|--------------------|--|
| Default (2 lights) |  |
| Mode 1 (1 light) |  |
| Mode 2 (2 lights) |  |



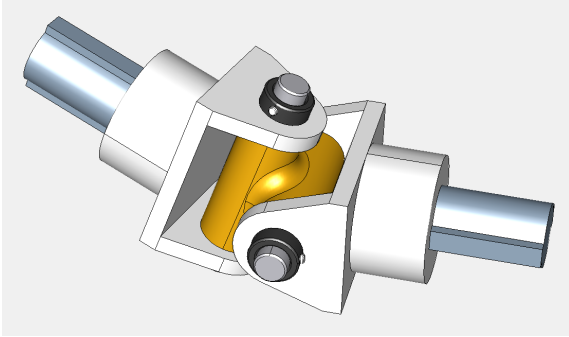
While you are rotating 3D Model, some parts may appear too white or too dark because lighting intensity may be too strong at a given relative angle to the light sources. To remedy this, you can change the light intensities.

To Change the Light Intensities

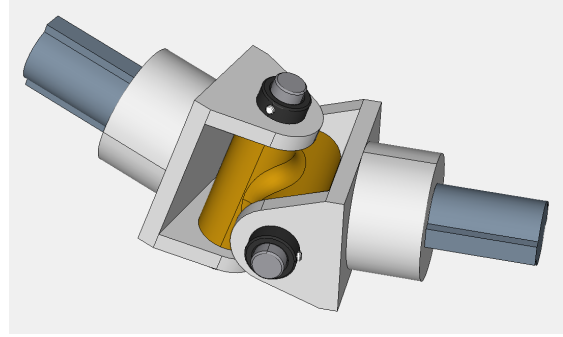
1. Deselect all parts by clicking blank area.
2. Show the Properties pane, if necessary, by selecting the Properties checkbox in the **Panes** panel of the Ribbon.
3. Click  to expand the category of **Lighting** under **Object Rendering** in the **Properties** pane as needed.
4. Set the following options to adjust the appearance.

| Category – Item Name | Description |
|----------------------|--|
| Lighting | |
| | Lighting Mode Select a predefined lighting mode with 1, 2, or 3 light sources from different directions which shows varied lighting characteristics: Default (2 lights) , Mode 1 (1 light) , Mode 2 (2 lights) , Mode 3 (3 lights) , Mode 4 (3 lights) . |
| | Lights Diffuse Set the intensity of diffuse lights from 1% to 100%. |
| | Lights Specular Set the intensity of specular lights from 1% to 100%. |
| | Lights Ambient Set the intensity of ambient lights from 1% to 100%. |

Before



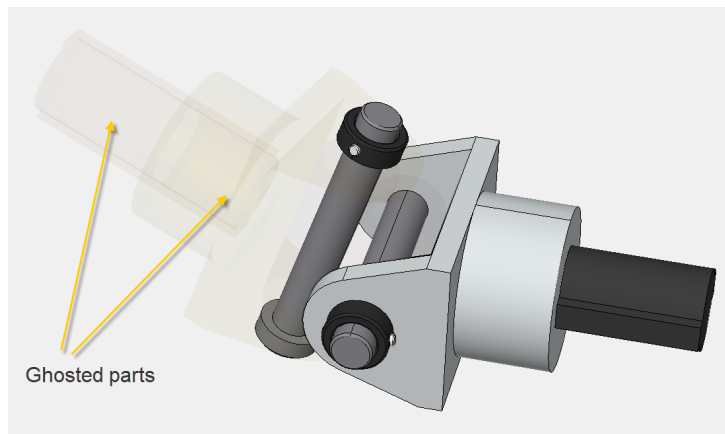
After



Ghosting and Unghosting Parts

You can apply “Ghost” effect to some parts so that other hidden parts can be seen through.

Example



Parts that are ghosted will have a fixed transparency like parts with some opacity level applied, however, they will be excluded for selection in the viewport. They can be selected in the Assembly Tree pane.

To Ghost Parts

1. Select a part or parts that you want to ghost.
2. Do one of the following:

- Click **Ghost** in the Ribbon and select **Ghost**.
 - Right-click and select **Ghost**.
 - Press **Ctrl+G**.
3. Click at blank area in the viewport to deselect.




*When you want to unghost others at the same time, you can select **Ghost Selection and Unghost Others** instead.*

To Change the Default Opacity of Ghost Effect

1. Show the Properties pane, if necessary, by selecting the Properties checkbox in the **Panes** panel of the Ribbon.
2. Deselect all.
3. Click the **Ghost Opacity** under **Object Rendering** in the **Properties** pane.
4. Drag the slider to set the value.

The change will be applied to all the parts with Ghost effect in the 3D Model.

To Unghost Parts

1. Select a ghosted part or parts that you want to unghost in the Assembly Tree pane. Ghosted parts are denoted with this icon  in the Assembly Tree pane.
2. Do one of the following:
 - Click **Ghost** in the Ribbon and select **Unghost**.
 - Right-click and select **Unghost**.
3. Click at blank area in the viewport to deselect.


To Unghost All Parts

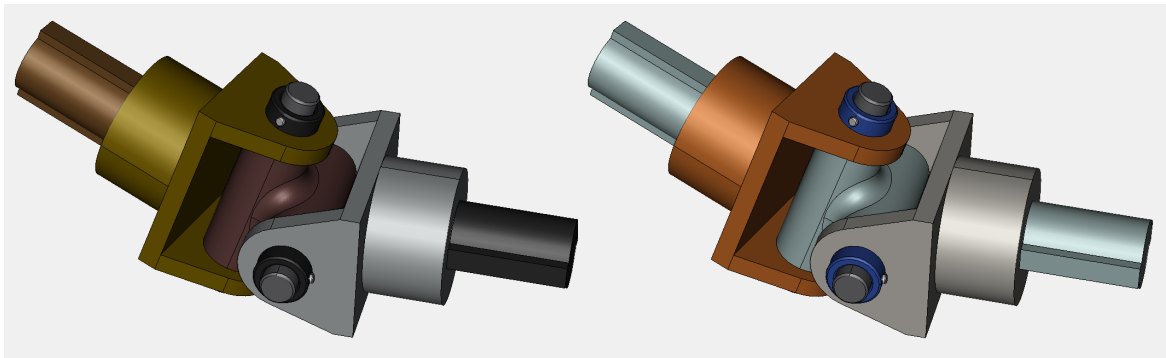
Do one of the following:

- Click **Ghost** in the Ribbon and select **Unghost All**.
- Right-click and select **Unghost All**.
- Press **Ctrl+U**.

Changing the Color of Parts

To Change the Color of Parts

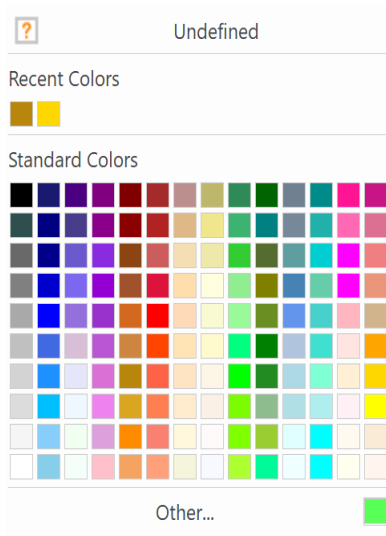
1. Select a part or parts that you want to change the color of.
2. Show the Properties pane, if necessary, by selecting the Properties checkbox in the **Panes** panel of the Ribbon.
3. Select the **Color** under **General** in the **Properties** pane.
4. Click on the pop-up icon .
5. Select a new color from the Recent Colors or Standard Colors. If necessary, select **Other** and define a new color.
6. Click at blank area in the viewport to deselect.



Before

After

Pop-up Color Palette

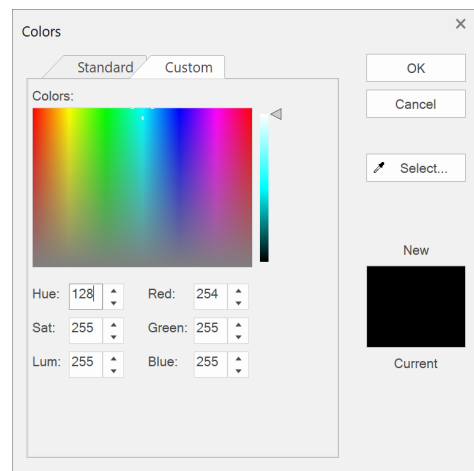
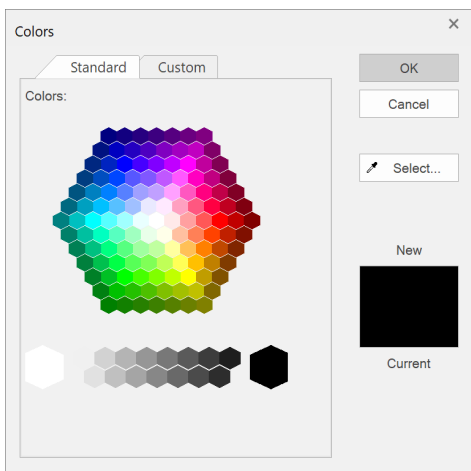


The applied colors will be listed to the Recent Colors up to 14 colors. They will be retained until you exit the main application.



When you cannot find a color that you are looking for, click Other to specify a custom color.

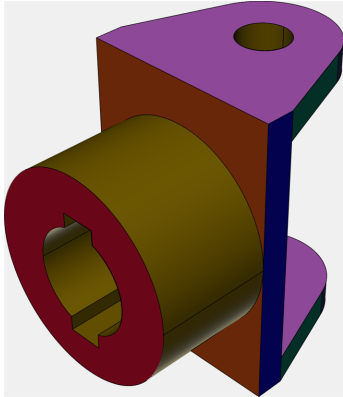
In the Colors dialog box, there are 2 tabs: Standard and Custom.



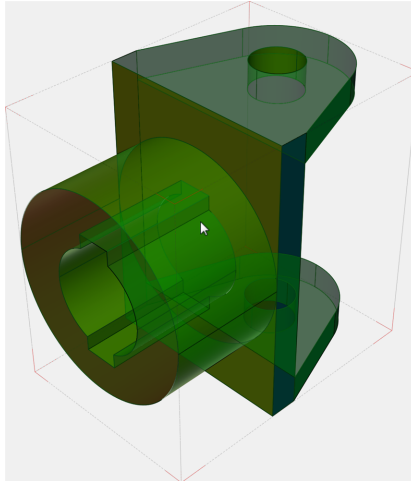
Important Notices on Changing the Part Color

A 3D Model part may have multiple colors in appearance. It depends on how that 3D Model part is created. In Canvas X Pro, however, only colors at part-level are supported.

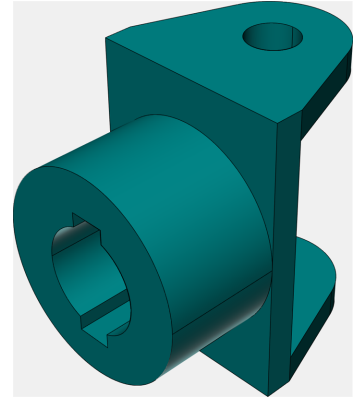
When you apply a new color to such a part, the entire part will be in that selected color.



A part with multi-colors



Hover on the part – one piece



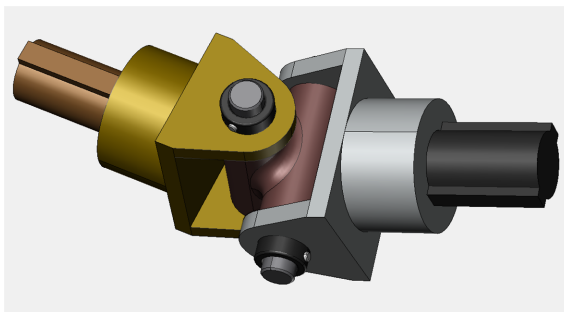
Green color is applied to the part

Changing the Opacity of Parts

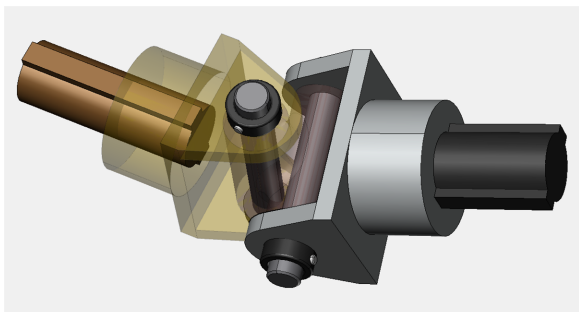
To Change the Opacity of Parts

1. Select a part or parts that you want to change the opacity of.
2. Show the Properties pane, if necessary, by selecting the Properties checkbox in the **Panes** panel of the Ribbon.
3. Select the **Opacity** under **General** in the **Properties** pane.
4. Drag the slider handle to set a new opacity.
5. Click at blank area in the viewport to deselect.

Before



After



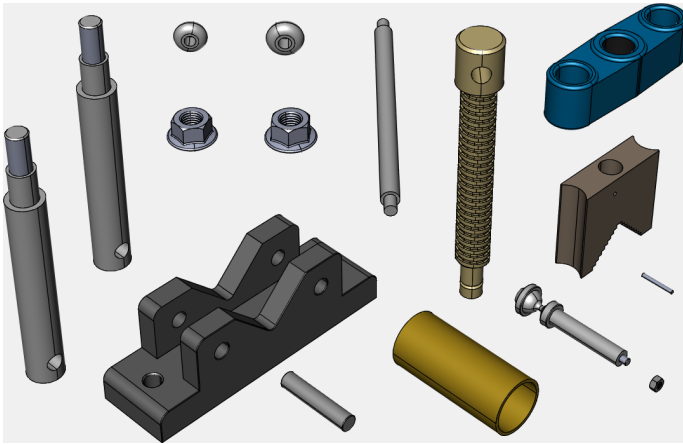
Moving Parts

You can move a part or parts that you select with the following modes or tools:

- Free Drag
- Translate
- Rotate
- Explode

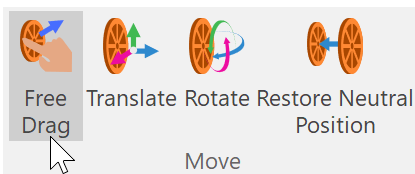
Moving Parts Freely


The Free Drag mode allows you to freely move parts any directions.




To Move Parts Freely

1. Click the **Free Drag** icon in the Ribbon.

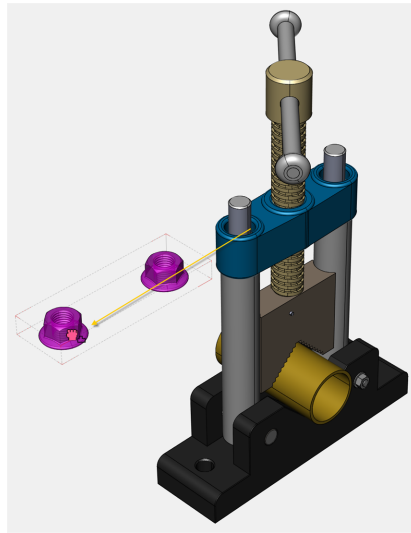
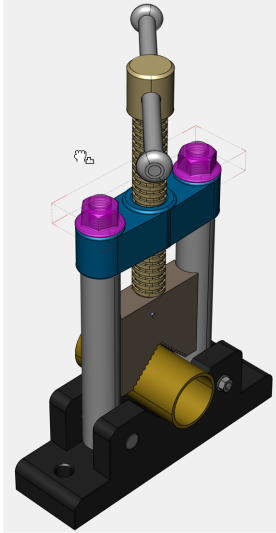


2. The mouse pointer changes to: 
3. Select one or more parts that you want to move.

When positioned for Free Drag, the mouse pointer changes to: 

4. Drag the selected parts to any space.
5. To confirm the moved positions of the selected parts, do one of the following:

- Click at blank area in view the viewport.
- Press **Esc** key.

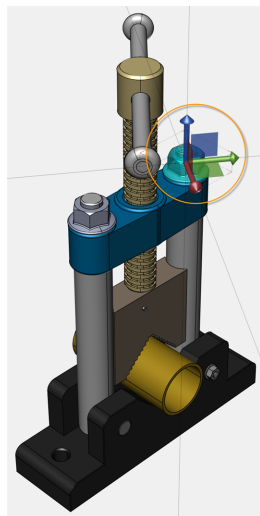


*The **Free Drag** mode persists until you switch to another mode.*

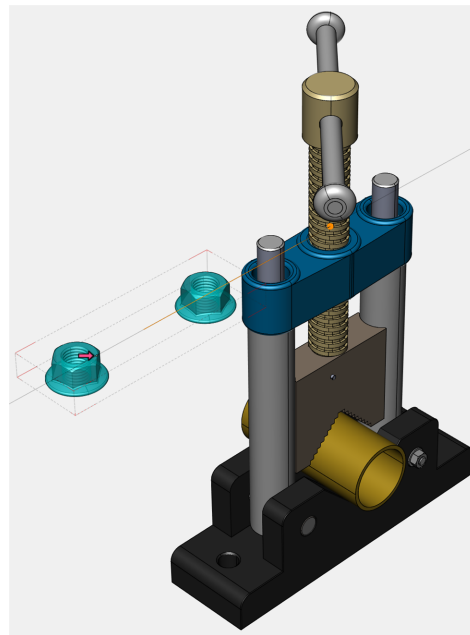
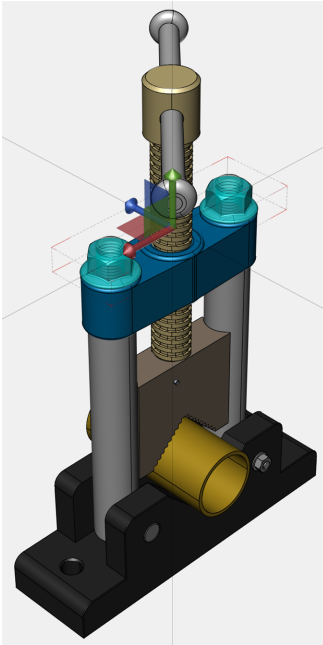
Translating Parts

The Translate mode allows you to move parts in 3D space.

- When a part is selected, translation will be based on the local axes. Thus, that triad's orientation may look different from that of the viewport's triad.

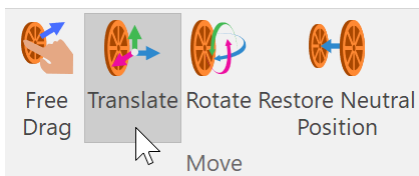


- When more than one part is selected, translation will be based on the world axes.




To Translate parts

1. Click the **Translate** icon in the Ribbon.



2. The mouse pointer changes to: 

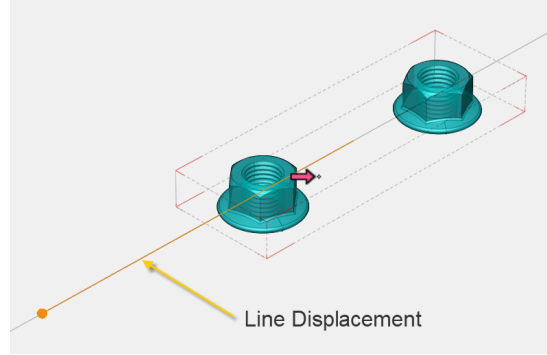
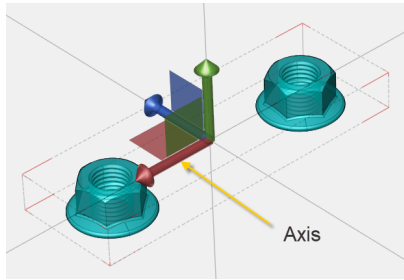
3. Select one or more parts that you want to translate.

When positioned for Translate, the mouse pointer changes to: 

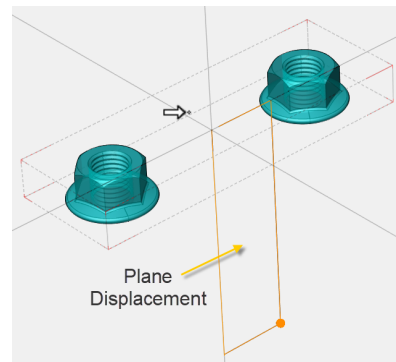
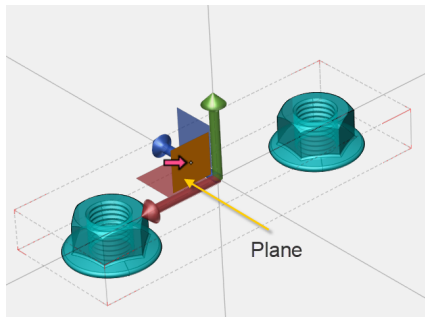
4. A triad control (X, Y, Z) and the extension lines from it appear.

5. Do one of the following:

- To move the parts along an axis, drag on a triad control axis. As you drag, a tracing path line in light orange indicates the linear displacement.



- To move parts along a plane, drag a triad control web (the colored square region between two axes). As you drag, a tracing rectangle area indicates the linear plane displacement.



6. To confirm the moved positions of the selected parts, do one of the following:
 - Click at blank area in the viewport.
 - Press **Esc** key.

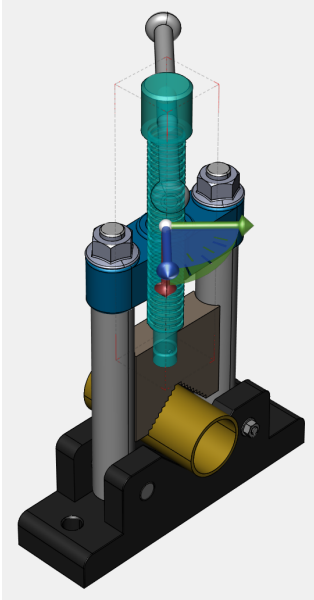


*The **Translate** mode persists until you switch to another mode.*

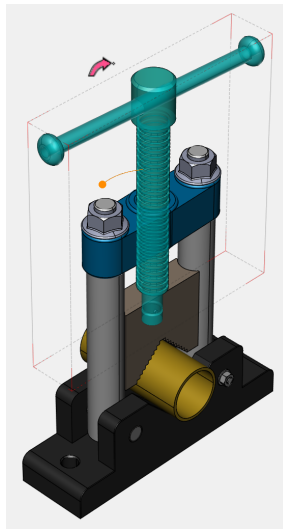
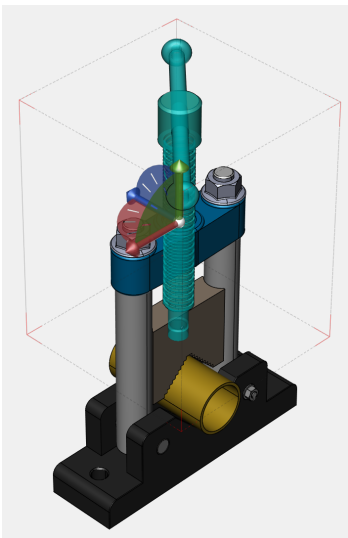
Rotating Parts

The Rotation mode allows you to rotate parts in 3D space.

- When a part is selected, rotation will be based on the local axes. Thus, that triad's orientation may look different from that of the viewport's triad.

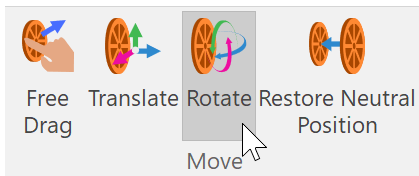



- When more than one part is selected, rotation will be based on the world axes.




To Rotate Parts

1. Click the **Rotate** icon in the Ribbon.



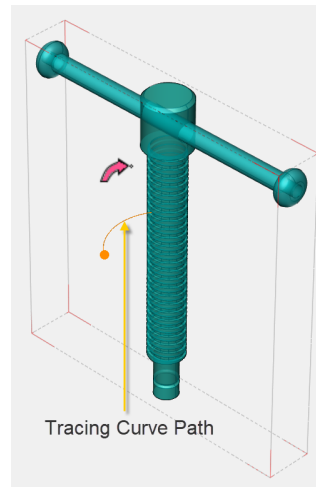
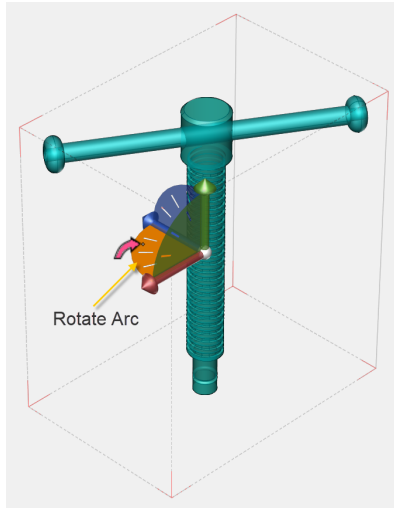
2. The mouse pointer changes to: 
3. Select one or more parts that you want to rotate.

When positioned for Rotate, the mouse pointer changes to: 

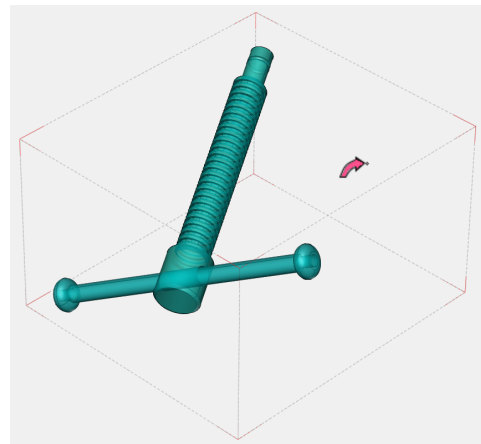
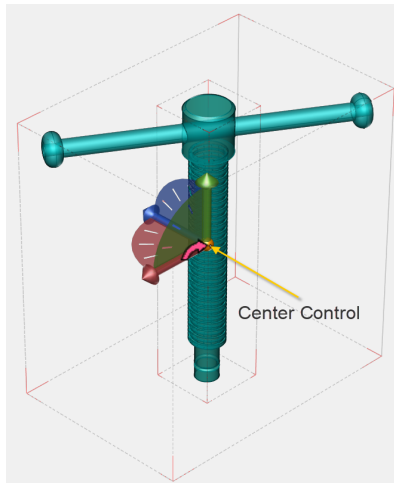
4. The Rotate controls (X, Y, Z) appear.

5. Do one of the following:

- To rotate parts along an axis, drag a Rotate arc. As you drag, a tracing curve path indicates in light orange.



- To rotate freely (in any direction), drag the center control.



6. To confirm the rotated positions of the selected parts, do one of the following:







- Click empty area in the 3D model view window.
- Press **Esc** key.



*The **Rotate** mode persists until you switch to another mode.*

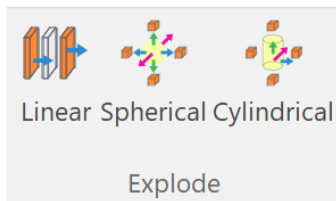
List of Move Mouse Pointers

Here is the list of the mouse pointers for various navigation states.



| Pointer | Tool/Mode |
|---|-----------------|
|  | Free Drag |
|  | Free Drag ready |
|  | Translate |
|  | Translate ready |
|  | Rotate |
|  | Rotate ready |

Exploding Parts

Explode commands add space between two or more selected parts by moving them to a specified direction or directions.



To Explode parts

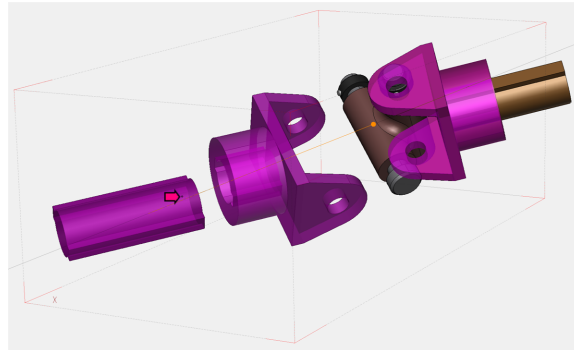
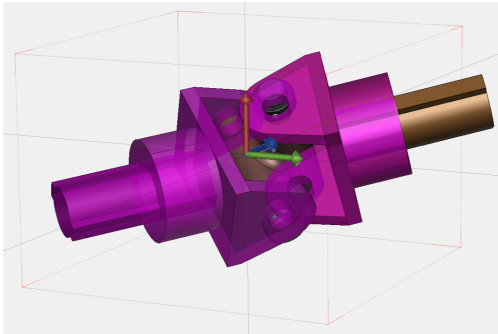
1. Select one or more parts that you want to Explode.
2. Select one of the Explode modes in the Ribbon: **Linear**, **Spherical**, or **Cylindrical**.
3. The triads or explode control appears, and the mouse pointer changes to: 
4. Mouse over to one of the Triad axes or the Spherical control.
5. The axis is highlighted. When positioned for Explode, the mouse pointer changes to: 
6. Drag toward a desired direction.
7. To confirm the moved positions of the selected parts, do one of the following:
 - Click empty area in the 3D model view window.
 - Press **Esc** key.



The **Explode** mode persists until you switch to another mode.

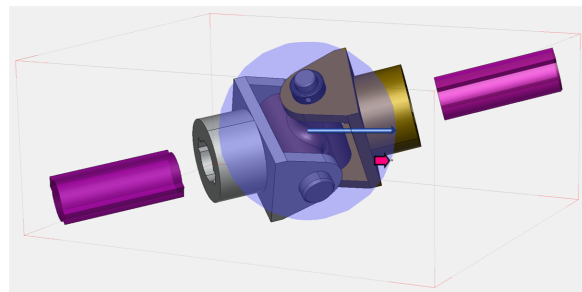
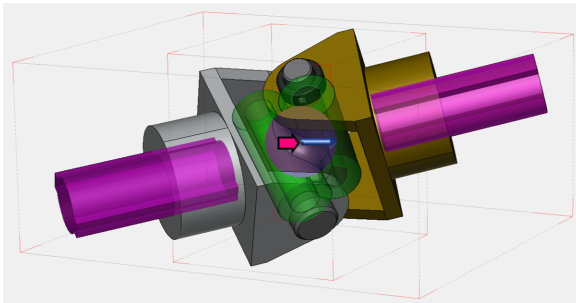
Linear Explode

This explode creates an exploded view along the local or world axis.



Spherical Explode

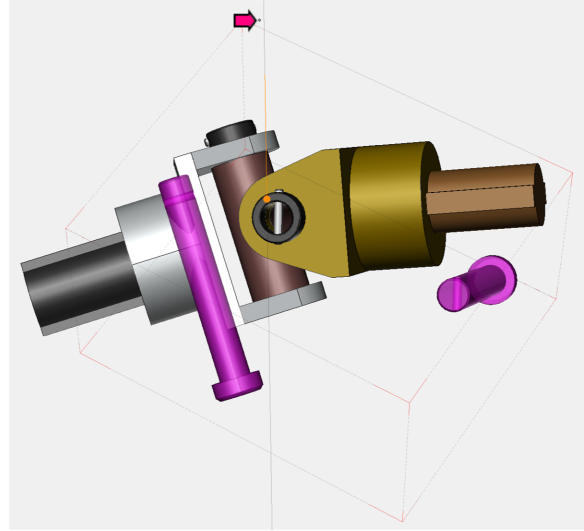
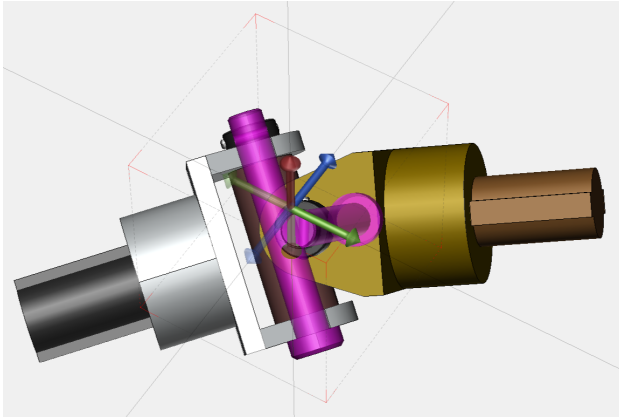
This explode creates an exploded view around a point.



When only one part is selected, the **Spherical Explode** will not move it because the center of spherical explode and the center of the part are the same.

Cylindrical Explode

This explode creates a cylinder exploded view around an axis.

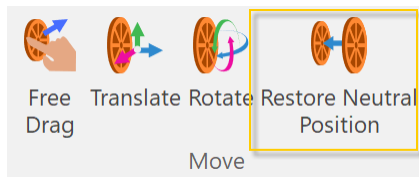


Reverting the Positions of Moved Parts to their Neutral Positions

After you moved some parts, you may want to have them reposition to their neutral positions.

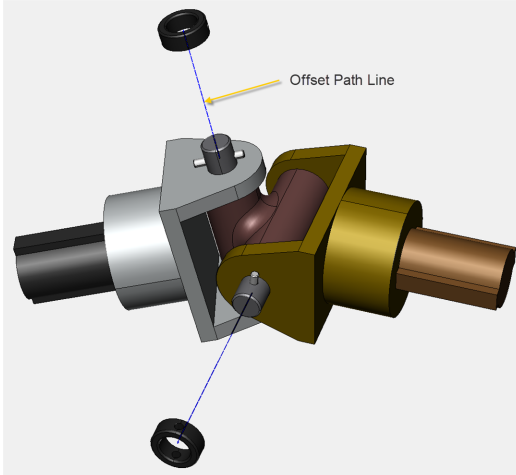
To Restore Neutral Position

1. Select parts that are moved, translated, rotated, and/or exploded.
2. Click the **Restore Neutral Position** icon in the Ribbon.



Displaying Offset Path Lines

You can enable to show or hide offset path lines from the neutral positions to moved locations. When you move the parts, their offset path lines will be also adjusted accordingly.



To Show Offset Path Lines

1. Select moved part or parts.
2. Show the **Properties** pane, if necessary, by selecting the **Properties** checkbox in the **Panes** panel of the Ribbon.
3. Select the **Show Offset Line** checkbox under **Offset Line** in the **Properties** pane.

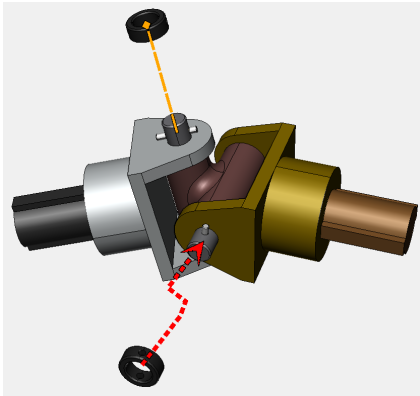
To Hide Offset Path Lines

1. Select a part or parts that have offset path lines.
2. Show the **Properties** pane, if necessary, by selecting the **Properties** checkbox in the **Panes** panel of the Ribbon.
3. Deselect the **Show Offset Line** checkbox under **Offset Line** in the **Properties** pane.

To Change the Attributes of Offset Path Lines

1. Select a part or parts that have offset path lines.
2. Show the **Properties** pane, if necessary, by selecting the **Properties** checkbox in the **Panes** panel of the Ribbon.
3. Set the attributes of offset path lines. For details, please refer to: *Offset Line in the Properties*

pane.



| Dash Style | Sample |
|----------------------|--------|
| Solid | |
| Dash Dot | |
| Dashed | |
| Dotted | |
| Dash Dot Dot | |
| Dash Dot Dot Dot | |
| Long Dash | |
| Long Dash Short Dash | |
| Fine Dot | |

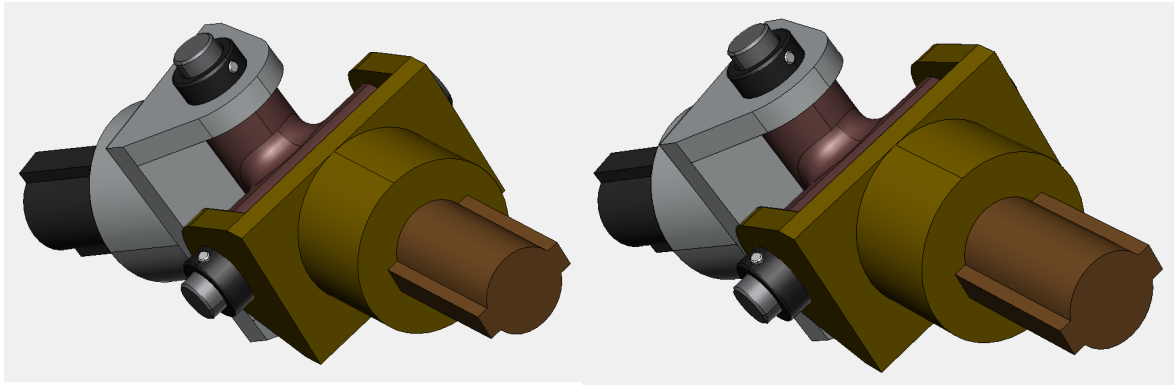
| Cap Type | Sample |
|--------------|--------|
| None | |
| Round | |
| Cross | |
| Arrow | |
| Medium Arrow | |
| Thin Arrow | |
| Diamond | |

Changing the Camera Projection

Orthographic and Perspective are supported for the camera projections.

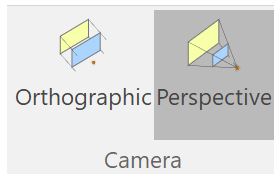
Orthographic

Perspective



To Change the Camera Projection

Select either **Orthographic** or **Perspective** in the **Camera** panel of the Ribbon.



The selected projection mode will be highlighted to indicate the current projection. The current camera project is also indicated in the Status bar.

Undoing Operations

Various operations can be undone while you are editing the view.



To Undo the Last Operation

Click the **Undo** icon in the Ribbon.

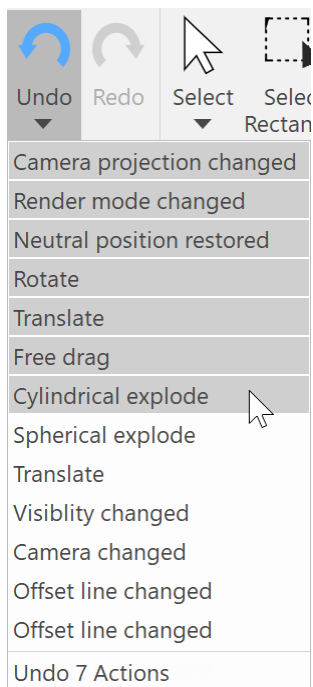


To Undo Multiple Operations

1. Click the split button of the **Undo** icon in the Ribbon.

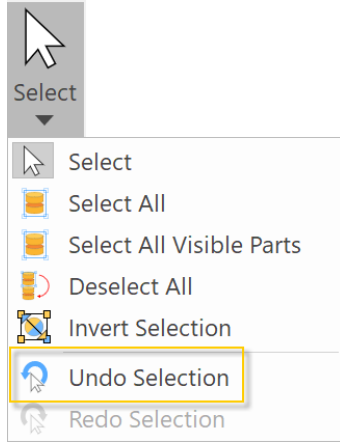


2. Select an operation in the drop-list. All undoable operations that you did from that point will be reverted.



To Undo Selection

You can undo selection one by one by selecting **Undo Selection** from the **Select** drop-list in the Ribbon or press **Ctrl+E**.



Redoing Operations

You can redo the operations that you undid previously one by one. While redoable operation is available, the icon is enabled.

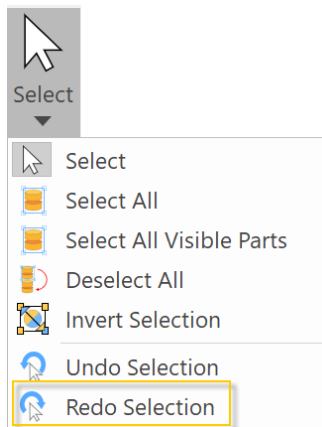


To Redo Operations

1. Click the **Redo** icon in the Ribbon.
2. Repeat step 1 as needed.

To Redo Selection

You can redo selection one by one by selecting **Redo Selection** from the **Select** drop-list in the Ribbon or press **Ctrl+F**. **Redo Selection** gets enabled when at least one selection is made.



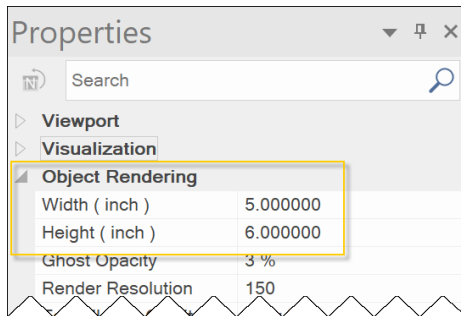
Setting the 3D Model Object Properties

In the 3D Model window, the 3D Model does not have the unit, but the ratio between the width and height will be relevant in relative to the 3D Model scene that you are creating in the view bounds.

In contrast, the 3D Model object that will be placed in the document will be created in the document unit. When you change the document unit, the dimensions of the 3D Model object will be recalculated automatically.

To Set the Default Size of 3D Model Object

1. Deselect all parts by clicking blank area.
2. Show the **Properties** pane, if necessary, by selecting the **Properties** checkbox in the **Panes** panel of the Ribbon.
3. Type a value for **Width** or **Height** under **Object Rendering** in the **Properties** pane.



4. Select the **Save as Default** checkbox that is located at the end in the **Properties** pane.
5. Click **Save** or **Create New** under the **Save** panel of the Ribbon.

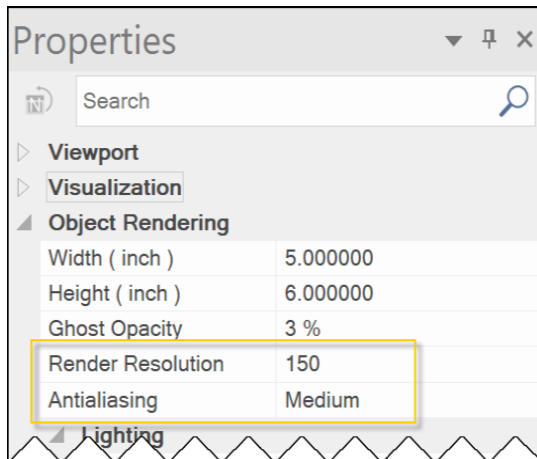
When you open a new 3D Model file subsequently, the new settings will be used.

The 3D Model object will be a result of rendering the 3D Model based on the set dimensions, render resolution, and antialiasing. Render resolution, and antialiasing settings under Object Rendering will affect the appearance of the 3D Model object placed in the document.

To Set the Default Properties of 3D Model Object

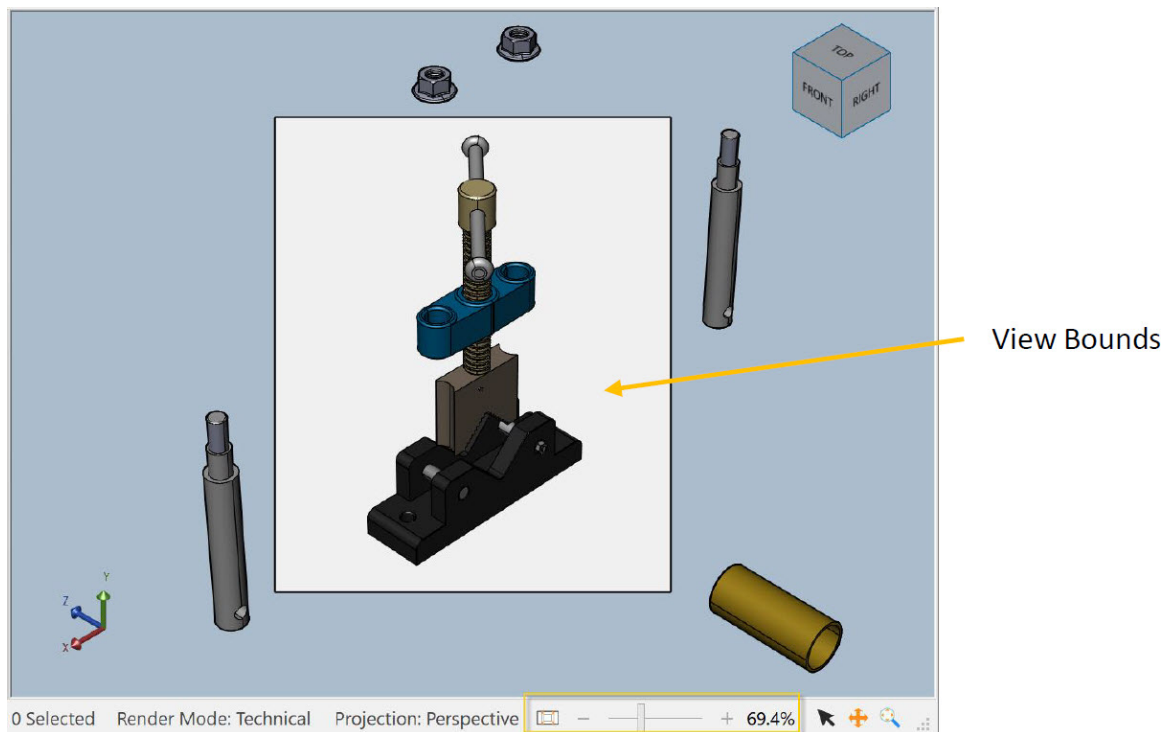
1. Deselect all parts by clicking blank area.
2. Show the **Properties** pane, if necessary, by selecting the **Properties** checkbox in the **Panes** panel of the Ribbon.
3. Type a value for **Render Resolution** under **Object Rendering** in the **Properties** pane.
4. Select a setting from the **Antialiasing** drop-list.
5. Select the **Save as Default** checkbox that is located at the end in the **Properties** pane.

- Click **Save** or **Create New** under the **Save** panel of the Ribbon.



Zooming the View Bounds

Zoom in or out the View Bounds does not affect what the 3D Model scene will be. You may want to see the outside of the View Bounds from time to time. It is different from zooming the camera.




To Zoom the View Bounds in or out

Do one of the following:

- Drag the zoom slider that is located at the right side in the Status bar
 - Zoom out: Drag to the left
 - Zoom in: Drag to the right
- **Ctrl**+scroll the mouse wheel
 - Zoom out: Up
 - Zoom in: Down



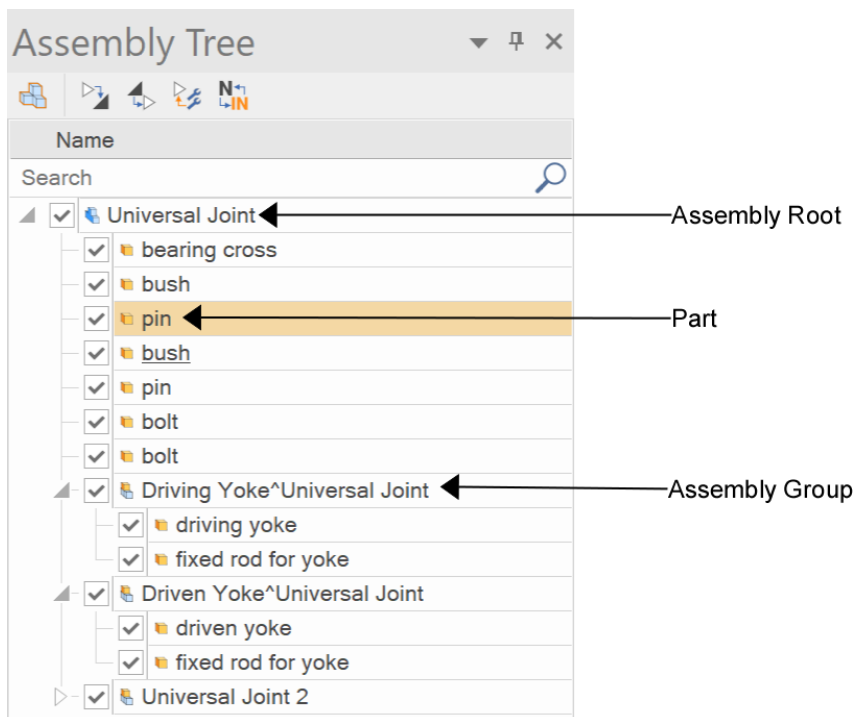
You can restore the view bounds fit to the full screen (100%) by clicking the  icon that is located at the right side of the zoom slider. You can also press **Ctrl+Alt+F**.

Using the Assembly Tree pane






You can select parts in the Assembly Tree pane as you can in the Viewport. Parts included in the 3D Model file will be listed in hierarchy of assembly root, assembly groups, and parts.

To Show or Hide the Assembly Tree Pane

Select or deselect the **Assembly Tree** checkbox in the **Panes** panel of the Ribbon.





There are five icons at the top of the Assembly Tree pane.







| Icon | Description |
|---|--|
|  | When you click to enable the Assembly Group selection mode , you can highlight parent assembly groups instead of leaf parts. By default, this is not enabled, which is Part selection mode . |
|  | Fully expand all tree levels including assembly groups. |
|  | Collapse all tree levels to the root. |
|  | Collapse all assembly groups at the same levels of the selections. |
|  | You can display the list of either "Name" or "Instance Name" by clicking this icon. |

To Expand or Collapse a Tree Level

Do one of the following:

- Click  icon of collapsed tree level to expand; and click  icon of expanded tree level to collapse.
- Double-click on the assembly root or an assembly group to toggle between collapsed and expanded state.

Each icon in front of each item name represents:

| Icon | Items |
|---|-----------------|
|  | Assembly root |
|  | Assembly groups |
|  | Parts |
|  | Geometries |
|  | Non-part items |
|  | Ghosted parts |

Selecting Parts in the Assembly Tree Pane

When you select parts or assembly groups in the Assembly Tree pane, those parts will be also selected in the Viewport, and vice versa.

To Select Parts in the Assembly Tree Pane

Do one of the following in the Part Selection mode:

- Click any part.
- To select more than one consecutive parts
 - Click the 1st part and **Shift**-click the last part.
 - Click the 1st part and drag up or down.
 - Click the 1st part and while pressing the **Shift** key, press one of the **Arrow** keys, for either up or down movement.
- To select more than one parts randomly, click the 1st part and **Ctrl**-click subsequent parts.
- To deselect a part in the selection, **Ctrl**-click a part that is selected.
- To invert the selection in an assembly group, **Ctrl**-click the assembly group to which the selection belongs.

You can move up and down in the Assembly Tree pane by using the **Arrow** keys.

- **Up** – **Up** or **Left** Arrow key
- **Down** – **Down** or **Right** Arrow key



You can type a part of or entire name in the Search field to show the parts that meet the criteria. Click X icon that is located at the right side of the field to show all.

Highlighting Assembly Groups in the Assembly Tree Pane

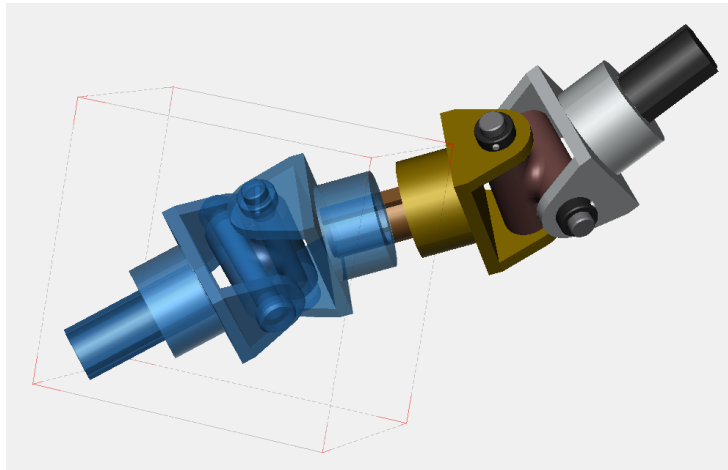
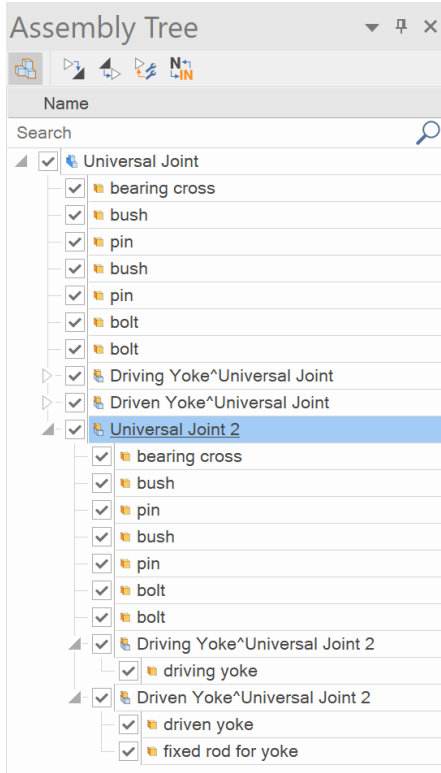
In the **Part Selection mode**, which is the default mode, assembly groups cannot be highlighted. You can only highlight parts under assembly groups. Once the **Assembly Group Selection mode** is enabled, you can highlight assembly groups in the pane, and you can select all parts under the assembly groups in the Viewport.

To Highlight Assembly Groups

1. Click the **Assembly Group Selection** mode icon in the Assembly Tree pane to enable the mode.
2. Click on any of assembly groups.

In the Assembly Group Selection mode, selected parts will be highlighted in a different color from the one in the Part Selection mode.

Example, the parts are selected and indicated in blue. For details about how to change the selection color, please refer to: [Assembly Selection Color](#).



*In the Assembly Group Selection mode, in the Viewport you can click a part and **Alt**+click it again to select its parent group. Repeat **Alt**+click as needed; eventually, all parts in the 3D Model will be selected. For the reverse order, **Alt+Shift**+click.*

Using the Properties pane

You can use the Properties pane to change various settings.

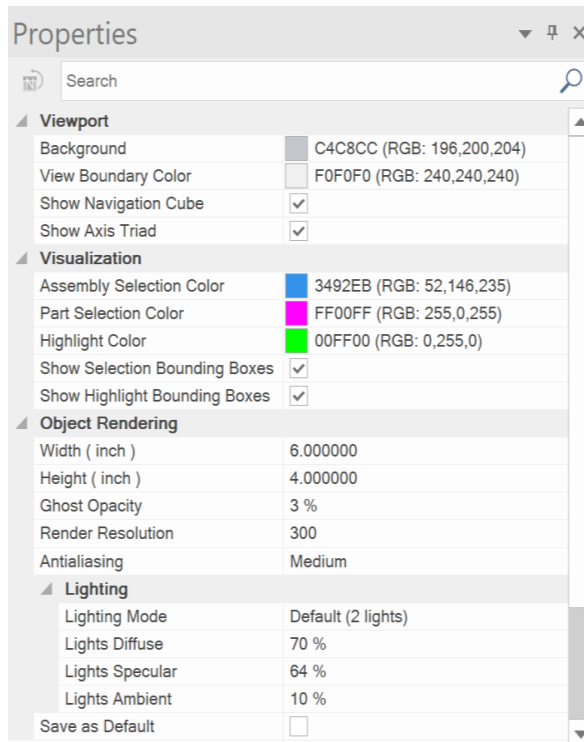
To Show or Hide the Properties Pane

Select or deselect the **Properties** checkbox in the **Panes** panel of the Ribbon.

There are three states:

- Nothing is selected.
- A part is selected.
- Multiple parts are selected.

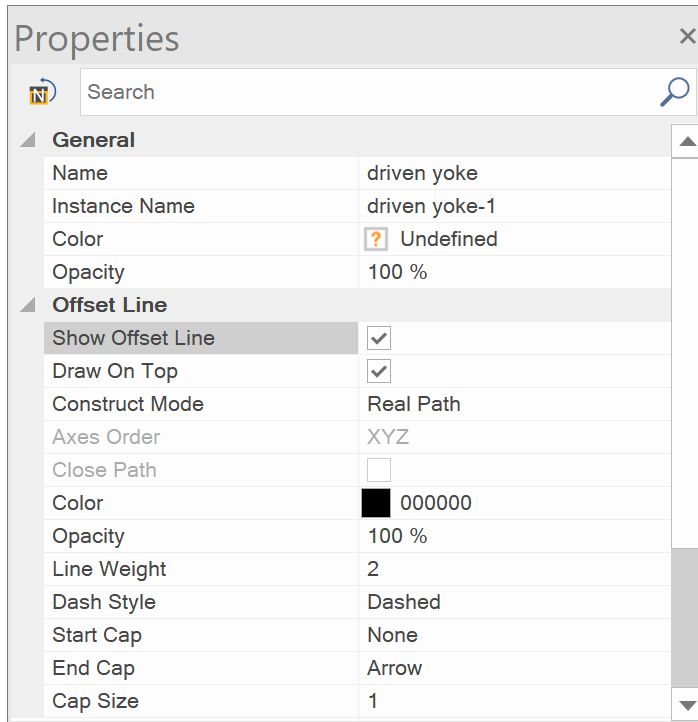
When there is no selection, it looks like this




| Category – Item Name | Description |
|--------------------------|---|
| Viewport | |
| Background | Set a color for the area outside of the view boundary in the Viewport. Click the color icon and specify a new color. |
| View Boundary Color | Set a color of the area of the View Bounds. Click the color icon and specify a new color. |
| Show Navigation Cube | Hide or show the navigation cube. |
| Show Axis Triad | Hide or show the Axis Triad. |
| Visualization | |
| Assembly Selection Color | When the Assembly Group Selection mode is on, selected assembly groups and parts will be highlighted in this color. Click |

| | | |
|---------------------------------|--|---|
| | | the color icon and specify a new color. |
| Part Selection Color | | When the Assembly Group selection mode is off, selected parts will be highlighted in this color. Click the color icon and specify a new color. |
| Highlight Color | | When you hover a part, the part will be highlighted in this color. Click the color icon and specify a new color. |
| Show Selection Bounding Boxes | | Hide or show the bounding boxes when you select a part or parts. |
| Show Highlight Bounding Boxes | | Hide or show the bounding boxes when you hover a part. |
| Object Rendering | | |
| Width (<i>document unit</i>) | | Set the width of 3D Model object. |
| Height (<i>document unit</i>) | | Set the height of 3D Model object. |
| Ghost Opacity | | Set the opacity of ghosted parts from 0% (totally transparent) to 100% (totally opaque). |
| Render Resolution | | Set the resolution for 3D Model object in pixels per inches. |
| Antialiasing | | Set antialiasing from: Off, Low, Medium, High . As the level increases, the degree of antialiasing increases. |
| Lighting | | |
| Lighting Mode | | Select a predefined lighting mode with 1, 2, or 3 light sources from different directions which shows varied lighting characteristics: Default (2 lights), Mode 1 (1 light), Mode 2 (2 lights), Mode 3 (3 lights), Mode 4 (3 lights) . |
| Lights Diffuse | | Set the intensity of diffuse lights from 1% to 100%. |
| Lights Specular | | Set the intensity of specular lights from 1% to 100%. |
| Lights Ambient | | Set the intensity of ambient lights from 1% to 100%. |
| Set as default | | Select this checkbox when you want to use the current settings as default. |

When a part is selected, it looks like this.



| Category – Item Name | | Description |
|----------------------|------------------|--|
| General | | |
| | Name | Name that is loaded from the 3D Model file will be listed. |
| | Instance Name | Instance name that is loaded from the 3D Model file will be listed if available. |
| | Color | The color that is applied to the selected part in the 3D Model file will be listed until you apply a new color. You can apply a new color to the selection by clicking the pop-up icon  . |
| | Opacity | The opacity that is applied to the selected part in the 3D Model file will be listed until you apply a new opacity. You can apply a new opacity to the selection from 1% to 100%. |
| Offset Line | | |
| | Show Offset Line | Select this checkbox when you want to show the offset line from the selected part's neutral positions to the moved parts. For details, please refer to: <i>Displaying Offset Path Lines</i> . When this checkbox is selected, the following options can be set. |
| | Drawn on Top | Select this checkbox when you want to have the offset line drawn over the selected parts. Otherwise, the offset line will be drawn behind the selected parts. |
| | Construct Mode | Select a mode from: Real Path , Based on Local Axis , or Based on World Axis . When you select either Based on Local Axis or Based on World Axis, you can set Axes Order and Close Path |

| | |
|-------------|---|
| | options. |
| Axes Order | Select an axes order from: XYZ, XZY, YZX, YXZ, ZXY, ZYX . Offset lines will be drawn in a selected axes order from the neutral positions to the selected parts. |
| Close Path | Select this checkbox when you want to have the offset line paths closed. When this option is selected, the start and end points will be connected by the straight line. |
| Color | Set the color of offset lines. |
| Opacity | Set the opacity of offset lines. |
| Line Weight | Set the line weight of offset lines from 1 to 100. |
| Dash Style | Select a dash style from: Solid, Dash Dot, Dashed, Dotted, Dash Dot Dot, Dash Dot Dot Dot, Long Dash, Long Dash Short Dash, Fine Dot . |
| Start Cap | Select a start cap from: None, Round, Cross, Arrow, Medium Arrow, Thin Arrow, Diamond . |
| End Cap | Select an end cap from: None, Round, Cross, Arrow, Medium Arrow, Thin Arrow, Diamond . |
| Cap Size | Set the cap size of offset lines from 1 to 100. This setting will be applied to both ends. |

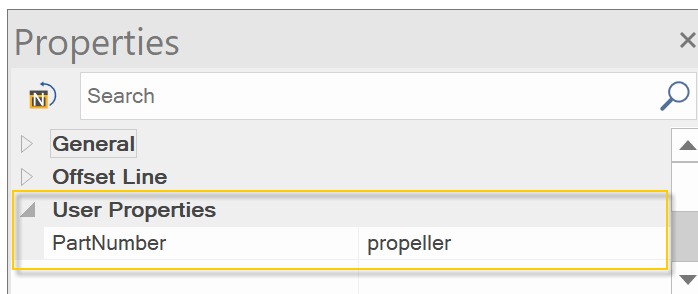


When multiple parts are selected, if values are the same among the selection, such values will be shown up in Name, Instance Name, Color and Opacity fields. Otherwise, it is blank.

User Properties

Only when the 3D Model file contains “non-blank” values of user properties, they will be listed. Some of the examples may be PartNumber, Revision, Definition, Nomenclature, Description, or any other user-defined properties.

For example,



Values of user properties are not editable, but can be copied to the clipboard by pressing **Ctrl+C**.



You can type a part of or entire option name in the Search field to show the items that meet that criteria. Click X icon that is located at the right side of the field to show all.

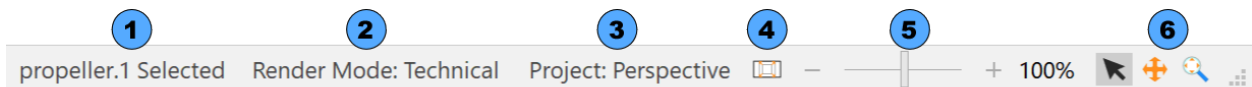
Using the Status Bar

The Status bar shows some helpful information about the edit session and provides some zoom and navigation tools.

To Show or Hide the Status Bar

Select or deselect the **Status Bar** checkbox in the **Panes** panel of the Ribbon.

The Status bar is located at the bottom of the 3D Model window by default.



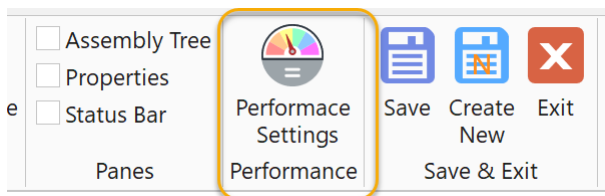
| No. | Description |
|-----|---|
| 1 | Display the name of a part or the number of selected parts. |
| 2 | Display the current render mode. |
| 3 | Display either Orthographic or Perspective. |
| 4 | Fit the view bounds to the current viewport (100%). |
| 5 | Zoom in or out the view bounds. |
| 6 | Select the Select, Pan, or Zoom tool. |

Modifying Performance Settings

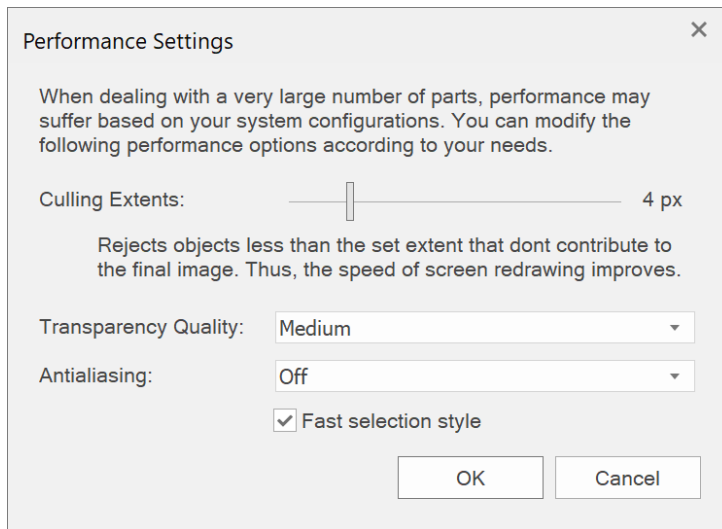
In case of dealing with a very large number of parts, you can modify the Performance Settings to improve the speed of operations as needed.

To Modify Performance Settings

1. Click **Performance Settings** in the Ribbon.



2. The **Performance Settings** dialog box is displayed. Modify the options.



3. Click **OK**.

Performance Settings

There are 4 settings which affect the screen drawing and performance.

| Options | Description |
|----------------------|---|
| Culling Extent | Rejects object less than the set Extent that don't contribute to the final image. Set it between 1 to 20. The Extent is set to "4" pixel by default. When it is set to "1", the culling is off. |
| Transparency Quality | Sets either Low (Fastest), Medium , Best (Slowest). Medium is selected by default. |
| Antialiasing | Sets either Off (Fastest), Low , Medium , High (Slowest). This option is Off by default. |
| Fast selection style | Selecting this checkbox drastically improves the performance of selection drawing for large assemblies. However, selection high-light of selected objects that are blocked by other parts will not be seen through. |

Glossary

This glossary defines the terms you should be familiar with while using this window.

3D Model:

3D representation of an object produced by computer-aided design (CAD) software.

Assembly:

Parts and other assemblies (subassemblies) are mated together. An example would be a car made of sub-assemblies (like four wheels) and parts.

Assembly branch:

Parent in a hierarchical relation tree.

Assembly leaf:

Child in a hierarchical relation.

Assembly Root:

Top level of your assembly tree.

Bounding box:

Imaginary parallelepiped volume that bounds a 3D part.

Triad control:

A graphical control that lets you manipulate parts in 3D.

HLR (Hidden Line Removal):

A view mode in which all model edges that are not visible from the current camera angle are removed from the display.

Mode:

A persistent edit tool such as translation or rotation, or behavior such as view modes). You can exit a mode by pressing the Esc key in general.

Neutral position:

Default position and view of parts initially defined by the data that you import from the 3D model.

Object Bounds:

Proportional representation of 2D object area that show a scene of 3D model when being placed in the main document

Parts:

A single 3D object. A part may be a component in an assembly, and it can be represented in 2D in a drawing. An example would be a bolt.

Properties:

Part's attributes such as size, color, opacity that you see which can be modified in the Properties pane.

Scene:

All 3D parts visible in the viewport

Subassembly:

An assembly that is part of a larger assembly. An example would be a wheel on a car.

Vector image:

2D image in which shapes are drawn in their mathematical form. You can move and change appearances and positions of parts in a post-processing piece of software.

View:

A 2D representation of the model in user-defined orientation.

Viewport:

3D model display area of the window where you manipulate your scenes.

Keyboard Shortcuts List

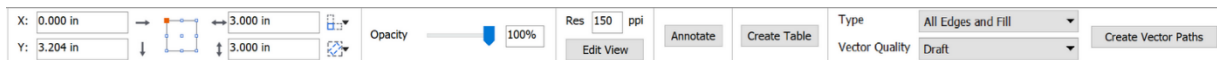
Here is the list of keyboard shortcuts.

| Function | Keyboard Shortcuts |
|-----------------------------|--------------------|
| Exit | [ALT]+[X] |
| Select All | [Ctrl]+ [A] |
| Undo Selection | [Ctrl]+ [E] |
| Redo Selection | [Ctrl]+ [F] |
| Ghost | [Ctrl]+ [G] |
| Hide Selection | [Ctrl]+ [H] |
| Invert Selection | [Ctrl]+ [I] |
| Restore Neutral Position | [Ctrl]+ [R] |
| Save | [Ctrl]+ [S] |
| Unghost All | [Ctrl]+ [U] |
| Undo | [Ctrl]+ [Z] |
| Mode - Smooth | [Ctrl]+[Shift]+[1] |
| Mode - Smooth with Outlines | [Ctrl]+[Shift]+[2] |
| Mode - Technical | [Ctrl]+[Shift]+[3] |
| Mode - Flat Technical | [Ctrl]+[Shift]+[4] |
| Mode - Silhouette | [Ctrl]+[Shift]+[5] |
| Mode - Flat | [Ctrl]+[Shift]+[6] |
| Mode - Wireframe | [Ctrl]+[Shift]+[7] |
| Show All | [Ctrl]+[Shift]+[A] |
| View - Back | [Ctrl]+[Shift]+[B] |
| View - Front | [Ctrl]+[Shift]+[F] |
| Isolate Selection | [Ctrl]+[Shift]+[I] |

| | |
|--------------------------------------|--------------------|
| View - Left | [Ctrl]+[Shift]+[L] |
| View - Bottom | [Ctrl]+[Shift]+[M] |
| View - Right | [Ctrl]+[Shift]+[R] |
| Create New | [Ctrl]+[Shift]+[S] |
| View - Top | [Ctrl]+[Shift]+[T] |
| Redo | [Ctrl]+[Shift]+[Z] |
| | |
| Select All Visible Parts | [Ctrl]+[Alt]+[A] |
| Fit View Bounds to Viewport | [Ctrl]+[Alt]+[F] |
| Zoom In - View Bounds | [Ctrl]+[Alt]+[=] |
| Zoom Out - View Bounds | [Ctrl]+[Alt]+[-] |
| | |
| Open online help | F1 |
| Fit to View Bounds | F5 |
| View Fullscreen | F9 |
| Toggle the Maximize and Restore Down | F11 |

Working on the 3D Model Object

When you select a 3D Model object in the document, the following Properties bar will be displayed.



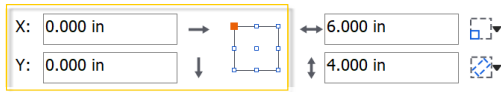
You can do the following using the Properties bar:

- Reposition 3D Model object numerically
- Resize 3D Model object numerically
- Change the overall opacity of 3D Model object
- Change the resolution of 3D Model object raster view
- Annotate (Name, Instance Name, Numbering, Alphabetizing, Custom Text)
- Create tables (basic BOM – Bill of Materials)
- Create vector paths from 3D Model object

To Reposition 3D Model Object

1. Select a 3D Model that you want to reposition
2. Do one of the following:

- Set the reference point and then **X** and **Y** coordinates in the Properties bar

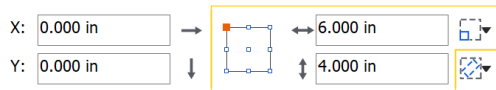


- Drag the 3D Model to a new position

To Resize 3D Model Object

3D Model objects will be placed in the set default dimensions, which is 3 in x 3 in.

1. Select a 3D Model that you want to resize in the document.
2. Do one of the following:
 - In the Properties bar set the reference point, select **Scale Proportional** and set either **Width** or **Height**.



- Drag at one of the 4 corners of the 3D Model.

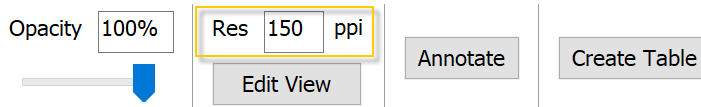


The default dimensions of 3D Model object can be set in the Properties pane of the 3D Model window. Please refer to: To Set the Default Size of 3D Model Object

To Change the Resolution of 3D Model Object

3D Model objects will be placed in the set default resolution, which is 150 dpi.

1. Select a 3D Model that you want to change the raster resolution.
2. Type a new Resolution value in the Properties bar.
3. Press **Enter**.



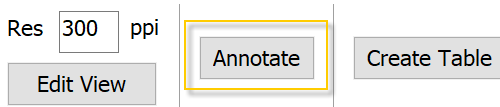
The default resolution of 3D Model object can be set in the Properties pane of the 3D Model window. Please refer to: To Set the Default Properties of 3D Model Object

Annotating on the 3D Model object

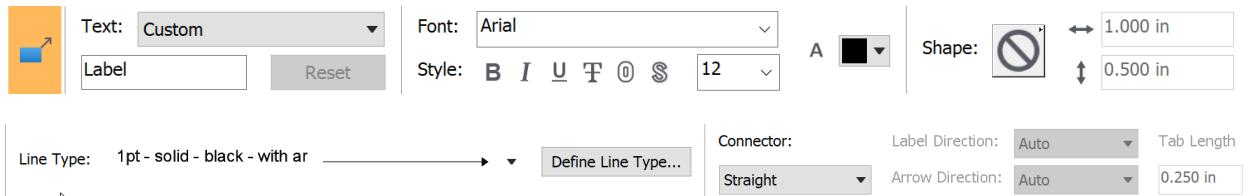
You can annotate on the placed 3D Model objects: any strings, sequential numbers, sequential alphabets, Names, or Instance Names with an EasyShape frame or without.

To Annotate on the 3D Model with (serial numbers or alphabets, custom texts) Manually

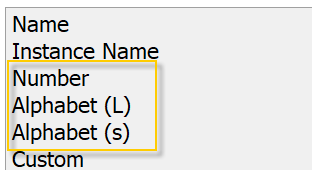
1. Select a 3D Model object that you want to annotate.
2. Click the **Annotate** in the Properties bar.



3. The Properties bar changes from the 3D Model to the Annotation – Basic tool.

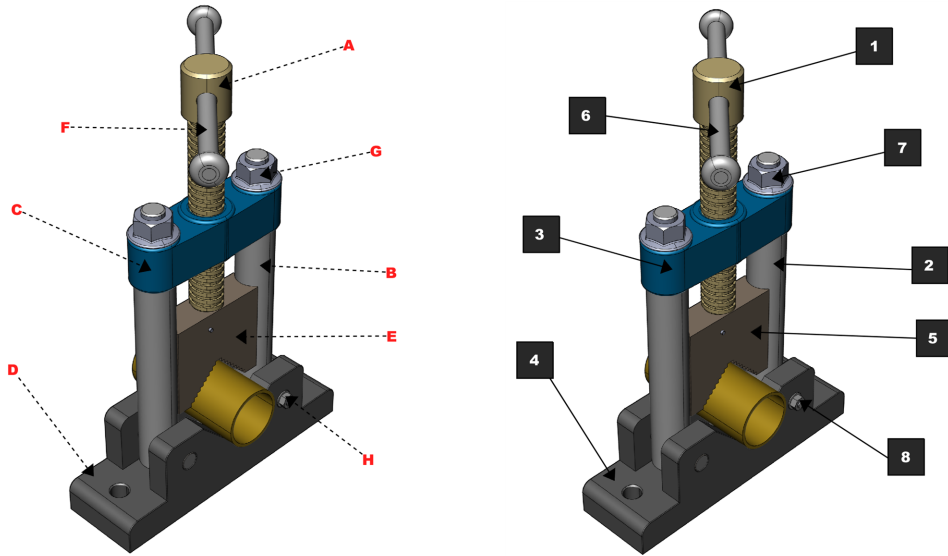


4. Select an appropriate type from the **Text** drop-list in the Properties bar.



5. Set the Font, Font Style, Font Size, and/or Font Color.
6. Select the **Shape** as needed.
7. Select the **Line Type** from the Preset drop-list.
8. Set the **Connector**.
9. Click on the 3D Model object and drag out to place an annotation text.

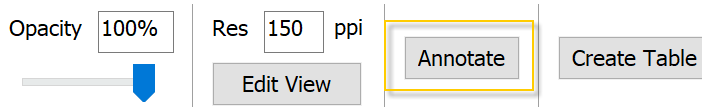
- Repeat step 9 as needed.



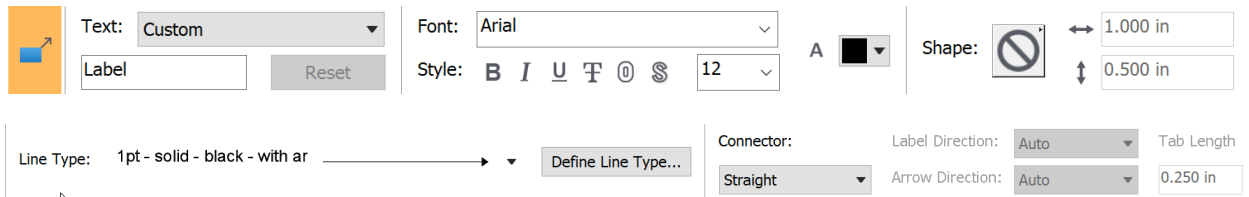
The pointing sites will be remembered relatively so that they should be retained correctly to a certain extent when the 3D Model scene is changed later.

To Annotate on the 3D Model object with (Name or Instance Name) manually

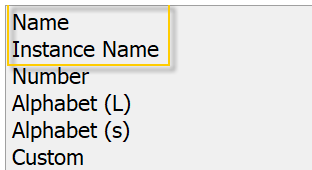
- Select a 3D Model object that you want to add annotations on.
- Click the **Annotate** in the Properties bar.



- The Properties bar changes from the 3D Model to the Annotation – Basic tool.

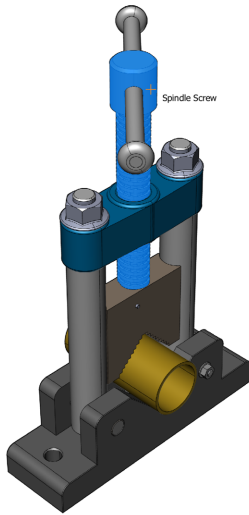


- Select the **Name** or **Instance Name** from the **Text** drop-list in the Properties bar.

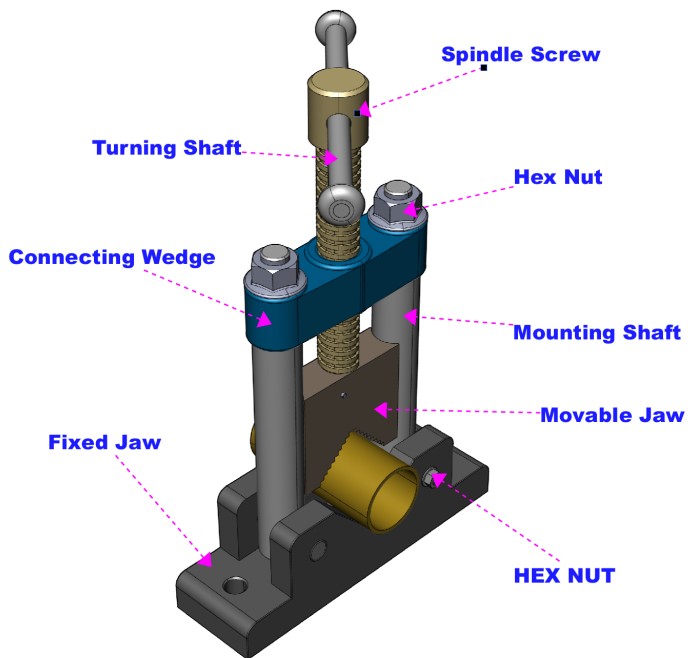


- Set the Font, Font Style, Font Size, and/or Font Color.

6. Select the **Shape** as needed.
7. Select the **Line Type** from the Preset drop-list.
8. Set the **Connector**.
9. Hover on a part
10. The part is highlighted, and its Name or Instance Name will appear as a tooltip



11. Click and drag out to place the Name or Instance Name which is loaded from the 3D model based on its pointing site.
12. Repeat step 9 to 11 as needed.



The pointing sites will be remembered relatively so that they should be retained correctly to a certain extent when the 3D Model scene is changed later.



When selecting the Annotation – Basic tool from the Toolbox, the annotation Properties bar for 3D Model will be displayed by clicking on a 3D Model object.

Creating Table of Parts

You can create a simple, static table from the 3D Models.

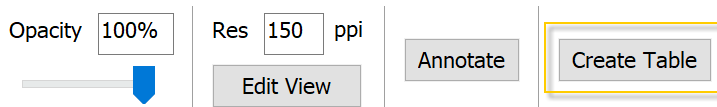
A table will be created in the fixed font attributes:

- font: Arial, font size: 12, Left Aligned
- Bold in black for the Total row
- Italic in blue for Assembly Groups

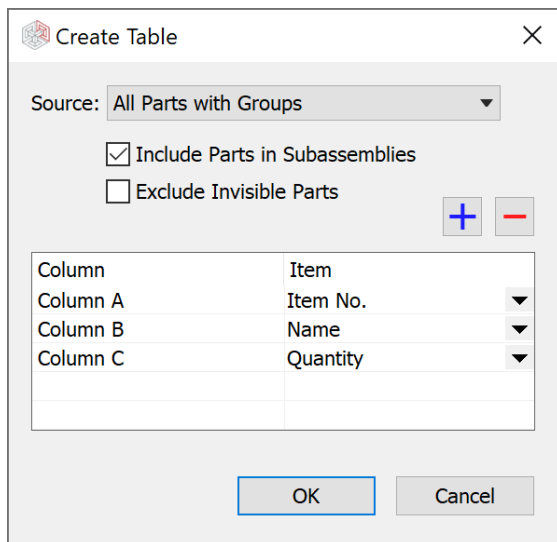
Any tables will be created using the current default stroke, dash, pen color, fill color, and text color.

To Create a Table from the 3D Model

1. Select a 3D Model that you want to create a table from





2. Click the **Create Table** in the Properties bar.



3. Select one from the **Source** drop-list in the Create Table dialog box:

- Annotated Parts Only
 - Viewable Parts (this is different from Shown/Hidden state; rather, pixels of parts are drawn in the object scene. In addition, Ghosted parts are considered as "non-viewable" parts for this purpose; thus, they are excluded.)
 - All Parts with Groups
 - All Parts without Groups
4. When you want to include sub-assemblies in the table, select the **Include Parts in Subassemblies** checkbox.
 5. When you want to exclude hidden (not Shown) parts in the table, select the **Exclude Invisible Parts** checkbox. Ghosted or Transparent parts are not counted for this.

| | Include Parts in Subassemblies | Exclude Invisible Parts |
|--------------------------|--------------------------------|-------------------------|
| Annotated Parts Only | X | X |
| Viewable Parts | X | X |
| All Parts with Groups | O | O |
| All Parts without Groups | O | O |

6. Click the  icon to add a column. Up to 5-column table can be created including Blank columns.
7. Select a column and click the  icon to delete the column.
8. Select an item for each column.

| Item | Description |
|---------------|---|
| Item No. | Serial numbers will be generated by code. |
| Name | This value will be loaded from the 3D Model file. |
| Instance Name | This value will be loaded from the 3D Model file. |
| Annotation | When Annotated Parts Only is selected, you can select this instead of Instance Name . Values will be annotation texts such as 1, 2, 3..., A, B, C..., Names, Instance Names, or Labels. |
| Quantity | This will be the count of the same parts based on Name per assembly group. (Quantity cells of assembly groups will be blank.) |
| Blank | It is for a blank column in case that you want to add values manually. |

9. Click **OK** to create the table.

- When the number of table rows is over 50, table objects of 50 increments will be created with the header separately. They will be placed offset by the width of the table object.
- The **“Total”** row will be generated except for Annotated Parts Only.

- **Assembly Root** item will be added for the **All Parts with Groups with Include Parts in Subassemblies** selected.

- When the **Include Parts in Subassemblies** checkbox is selected, sub-assembly items will be listed under their parent assembly groups being indented by “space – space” per level.

1st Level: XXXXX

2nd Level: - XXXXX

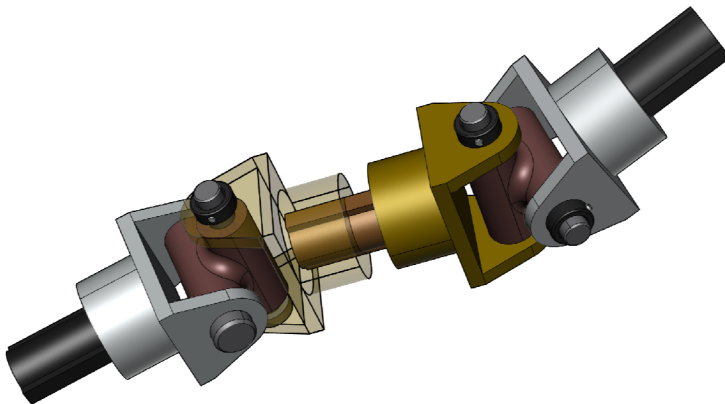
3rd Level: - XXXXX

- When the **Include Parts in Subassemblies** checkbox is selected, numbering will be like

1st Level: 1, 2, 3...

2nd Level: 1.1, 1.2, 1.3...

3rd Level: 1.1.1, 1.1.2, 1.1.3...



| Item No. | Instance Name | Quantity |
|----------|---|-----------|
| | <i>Universal Joint</i> | |
| 1 | bearing cross-1 | 1 |
| 2 | bush-1 | 1 |
| 3 | pin-1 | 1 |
| 4 | bush-2 | 1 |
| 5 | pin-2 | 1 |
| 6 | bolt-1 | 1 |
| 7 | bolt-2 | 1 |
| 8 | <i>Driving Yoke*Universal Joint-1</i> | |
| 8.1 | - driving yoke-1 | 1 |
| 8.2 | - fixed rod for yoke-1 | 1 |
| 9 | <i>Driven Yoke*Universal Joint-2</i> | |
| 9.1 | - driven yoke-1 | 1 |
| 9.2 | - fixed rod for yoke-1 | 1 |
| 10 | <i>Universal Joint 2-1</i> | |
| 10.1 | - bearing cross-1 | 1 |
| 10.2 | - bush-1 | 1 |
| 10.3 | - pin-1 | 1 |
| 10.4 | - bush-2 | 1 |
| 10.5 | - pin-2 | 1 |
| 10.6 | - bolt-1 | 1 |
| 10.7 | - bolt-2 | 1 |
| 10.8 | <i>- Driving Yoke*Universal Joint 2-1</i> | |
| 10.8.1 | - driving yoke-1 | 1 |
| 10.9 | <i>- Driven Yoke*Universal Joint 2-2</i> | |
| 10.9.1 | - driven yoke-1 | 1 |
| 10.9.2 | - fixed rod for yoke-1 | 1 |
| | Total | 21 |



Since the table created is static at the time of creation, when the annotations associated to the 3D Model are edited or the 3D Model file is updated later, a new table has to be created again to reflect such changes.

To Resize the Tables

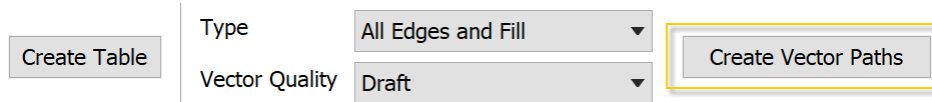
1. Select a table that you want to resize.
2. **Alt + Shift** + drag at one of the 4 corners of the table object to resize the table proportionally including texts.
3. Select **Text | Normalize Font Size** to convert scaled texts in equivalent font sizes if necessary.

Creating Vector Object from the 3D Model Object

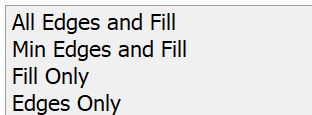
The 3D Model object placed in the document is a raster view. However,

To Create Vector Paths from the 3D Model

1. Select a 3D Model that you want to create its vector paths from



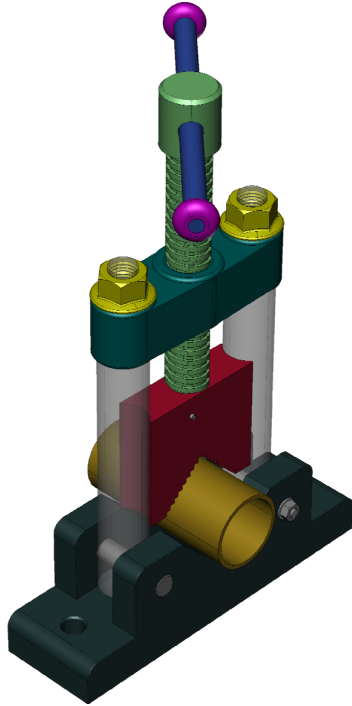
2. Select an option from the **Type** drop-list in the Properties bar.



3. Select an option from the **Vector Quality** drop-list in the Properties bar.



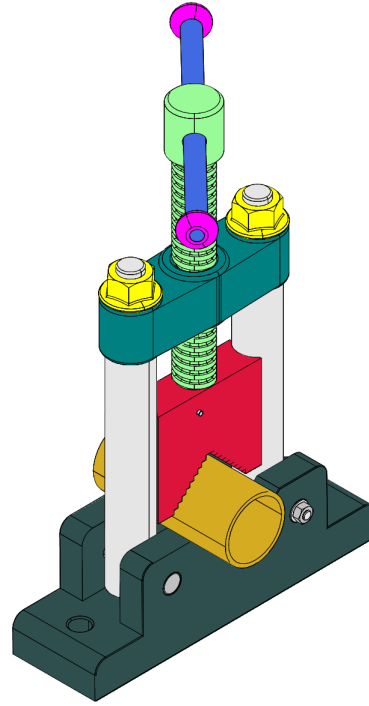
4. Click the **Create Vector Path** in the Properties bar.



3D Model Object

Render Mode: **Smooth with Outline**

Camera Projection: **Perspective**



Created Vector Paths

Render Mode: **Flat Technical**

Camera Projection: **Orthographic**

Type: **All Edges and Fill**



- *Any special effects like Ghost or Transparency will be lost. Only “Flat Technical” mode is supported for this function. “Perspective” camera projection mode is not supported. Thus, a result of this operation may look different from the selected 3D Model object.*
- *When a part that consists of multi-colored faces is converted to paths, the result will lose such colorization.*
- *The created object is no longer a 3D Model object and does not have the characteristics of it. It is just a group object of vector objects.*

Saving Documents with 3D Model Objects

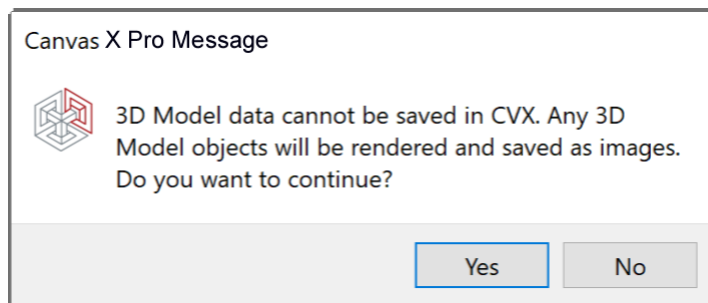
3D Model objects are special objects that can be placed and edited by only Canvas X Pro. It is recommended to always save any documents that contain 3D Model objects as CVXCAD for future editing.

To Save Documents with 3D Model Objects

1. Choose **File | Save As**.
2. Select **CVXCAD – Canvas X Pro** from the **Save as type** drop-list.
3. Specify the location to save the document.
4. Type a file name in the File name text box .
5. Click **Save**.



- *When you try to save the document with a 3D Model object or objects as CVX which does not support them natively, the following message will be displayed. You will have a chance to save it in CVXCAD.*



- *Otherwise, CVX files saved with Canvas X Pro can be shared with other users of Canvas X Draw or Canvas X Pro without any limitations.*