
View Manipulation

In this task, we'll introduce the basics of 2D/3D view manipulation. You'll learn how to rotate, zoom, pan and change the display and orientation of your model.

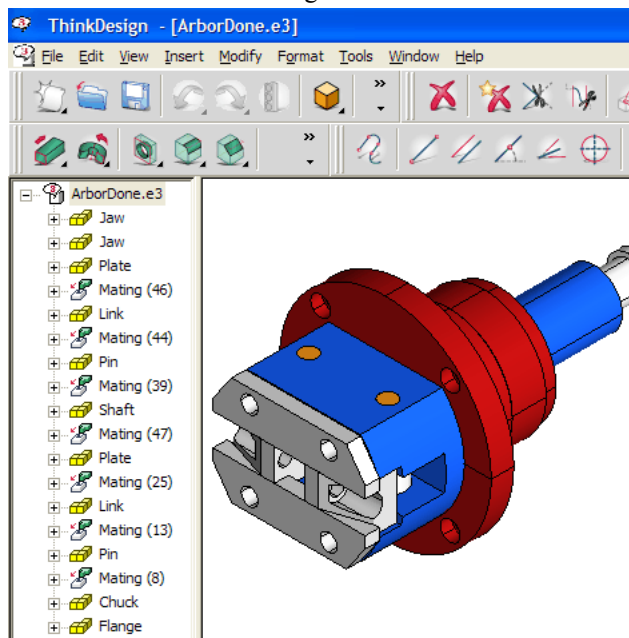
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1. Step 1: Rotate The Model

Let's start by closing the History Tree. The loaded model file consists of two window areas divided by a vertical bar. The left side contains the History Tree, Visual Bookmarks and Annotations options. The right side contains the Work Space where the 2D or 3D model is visually displayed.

- Move the cursor to the vertical bar separating the History Tree from the Work Space. (The cursor will change to
+|+
.)
- Click on the bar and drag it to the left to close the History Tree.



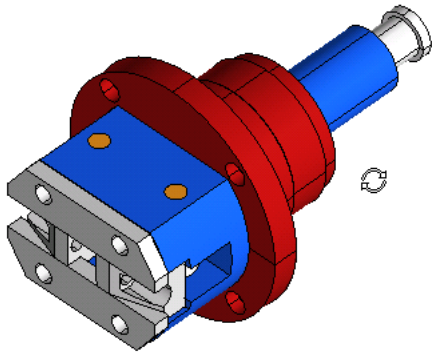
By the way, to set the focus back to the ThinkDesign window after scrolling or clicking in this tutorial window. You can:

- Click on the title bar of the ThinkDesign window OR click on a blank part of the ThinkDesign window.

Try not to click in the Work Space, especially when a command is active, or you may end up picking a point!

Now that we know how to set the focus back to ThinkDesign , let's take a good look at our part from different angles.

- Click and hold the right mouse button anywhere in the Graphics Area.
- Drag the mouse around and rotate the view.

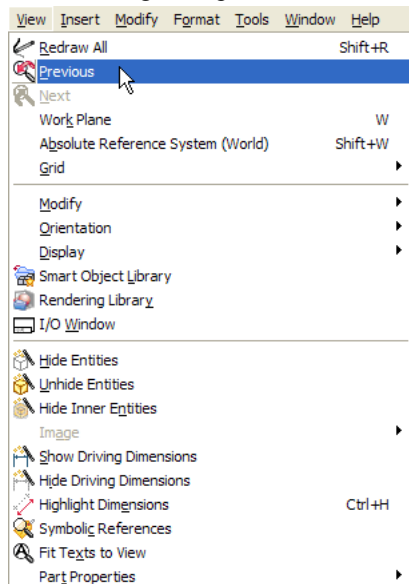


- Let go of the right mouse button at any point.

Here's a cool thing to know: You can use dynamic rotation at any time, even in the middle of other commands.

Okay, let's get back to our original view.

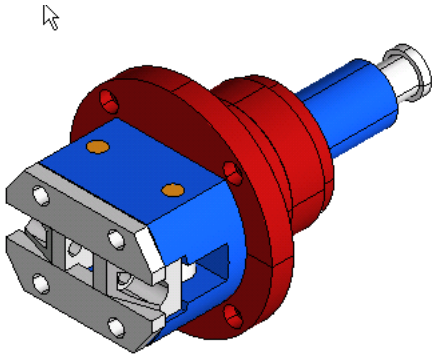
- From the pull down menu choose **View** → **Previous**. You might have to hit **Previous View** a number of times to get the part back to its original view.



In the next step, we'll explore many different ways to display a model.

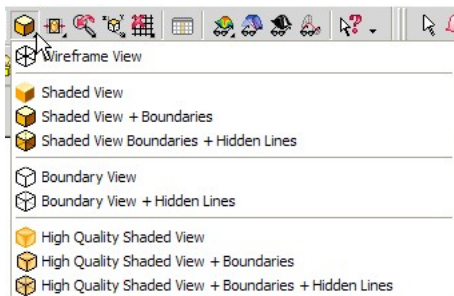
2. Step 2: Display The Model

Let's look at the options available for changing the display of the Arbor.

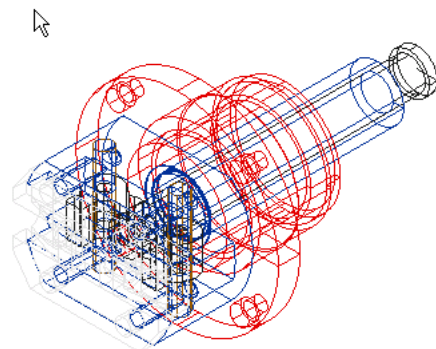


You'll notice a lot of surface boundaries on our time capsule. Let's start by removing them.

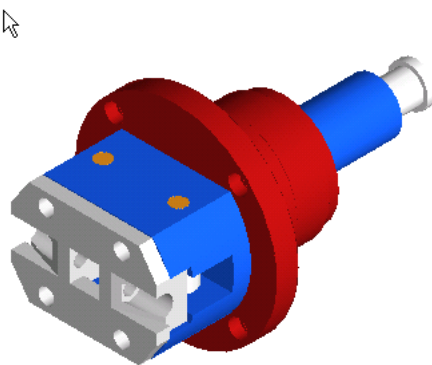
- Click the View Display drop down button on the Standard toolbar or on Status bar.



- Click **Wireframe View** to view just the outline of the time capsule.

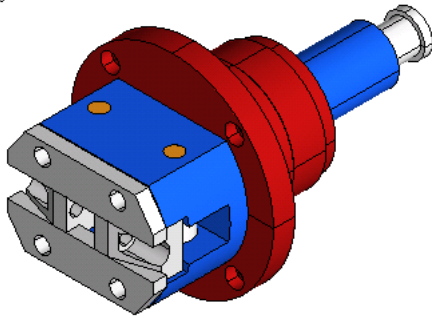


- Click **Shaded View** to display the objects in the model as shaded renderings with no visible surface boundaries.

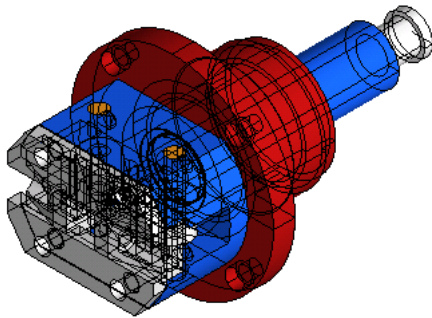


- Click **Shaded View and Boundaries** to display the objects as shaded renderings with visible surface boundaries. Hidden surface boundaries are not displayed.

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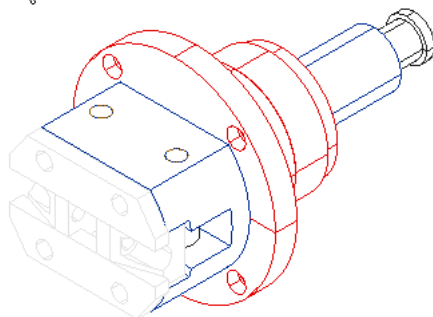


- Click **Shaded View Boundaries and Hidden Lines** to display objects as shaded renderings, with visible surface boundaries shown as continuous lines. Hidden surface boundaries are shown as dashed lines by default.

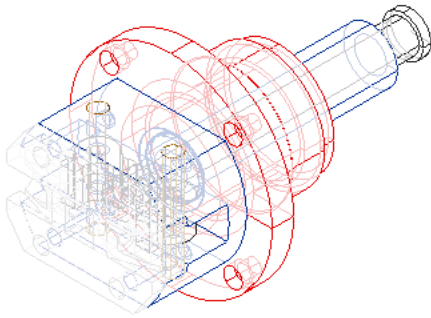


- Click **Boundary View** to show only visible boundaries. Hidden surface boundaries are not displayed.

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- Click **Boundary View and Hidden Lines** to display visible boundaries as continuous lines. Hidden surface boundaries are displayed as dashed lines by default.

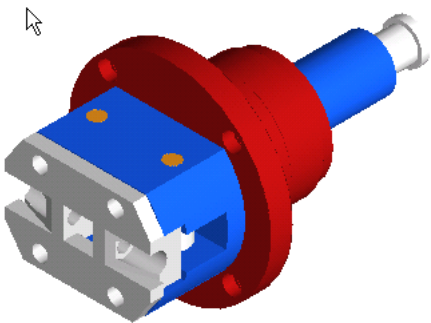


Play around with the different options, then return to the **Shaded View**.

Next we'll look at some dynamic controls.

3. Step 3: View the Model with Dynamic Controls

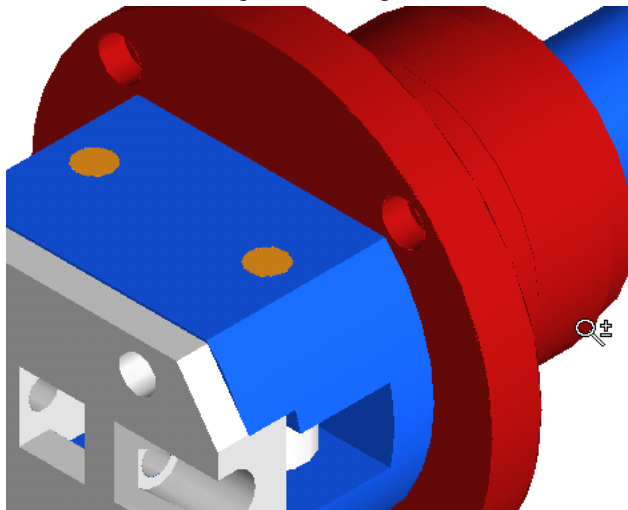
In this step we'll explore new ways to dynamically control the view of the model in real time.



First, let's try a dynamic zoom in real time using keys and the mouse buttons.

- Hold down the **Shift** key and the right mouse button.
- Move the mouse up and down.
- End the zoom by letting off on the **Shift** key and the mouse button.

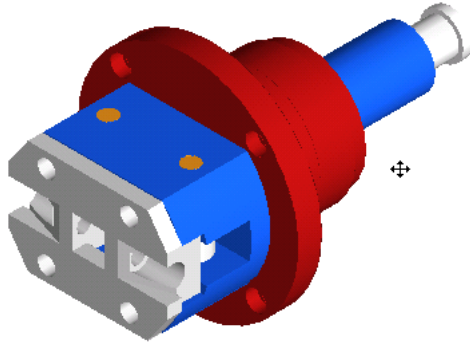
We can do the same operation using Scroll wheel middle mouse button.



Now we'll try a dynamic pan.

- Hold down the **Ctrl** key and the right mouse button.
- Move the mouse around.

Just like dynamic rotation in the last step, you can zoom and pan anytime.

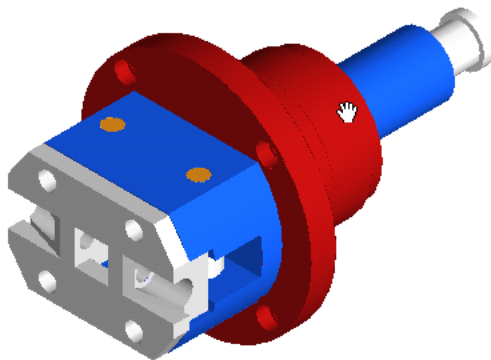


You can also pan, zoom and rotate the view from the Standard toolbar.

- Click **Pan/Zoom/Rotate** button from the View Modify drop down (if needed) on the Standard toolbar.



You will notice that the cursor changes from an arrow to a hand.



- Click and drag with the left mouse button to dynamically pan the view.
- Click and drag with the middle mouse button (if your mouse has one) to dynamically zoom the view. (If your mouse does not have a middle button, use the key/mouse combinations above.)
- Click and drag with the right mouse button to dynamically rotate the view.

- Hit **Esc** key to exit the command.

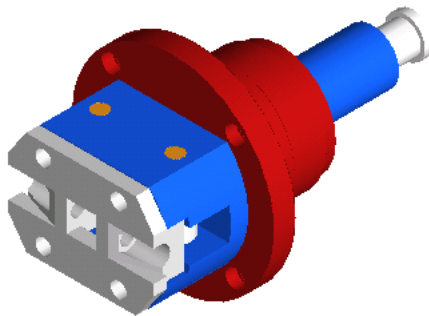
You'll notice your cursor has changed back to an arrow.

- Hit **Fit View** to fit the part to the screen.

In the next step you will learn how to change the view orientation.

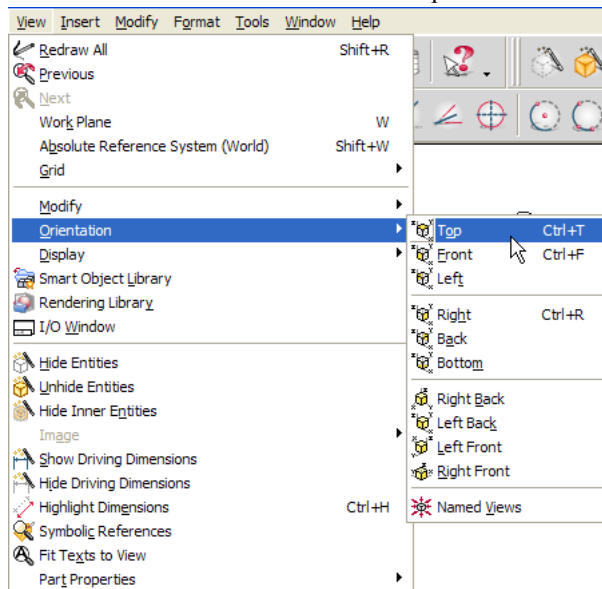
4. Step 4: Orient the View

In this step, we'll look at two ways that are available to change the view orientation.



We'll start by using the pull down menu.


- Select **View > Orientation** from the pull down menu.











Look at a few of the different views.

- Select each view option in turn.
- When ready, return to the original **Right Back View** isometric view.





All of these icons and pull downs are useful, but let's try manipulating the orientation using the keyboard. We'll use the arrow keys for this step. We can either use the regular arrow keys or the arrow keys on your number pad,

just make sure the  Lock key is off.

First let's rotate the model.

- Hit the  key + the  key to rotate the view clockwise about the X axis.
- Hit the  key + the  key to rotate the view counterclockwise about the X axis.
- Hit the  key + the  key to rotate the view clockwise about the Y axis.
- Hit the  key + the  key to rotate the view counterclockwise about the Y axis.

Now let's use our keyboard to pan.

- Reset the view to **Right Back View**.
- Hit the  key to pan up.
- Hit the  key to pan down.
- Hit the  key to pan left.
- Hit the  key to pan right.

There are menu items equivalent to the previous keyboard commands, you can find them under View > Modify > Step Actions.

Congratulations! You are well on your way to become a 3D master.

A.

- Getting Acquainted with ThinkDesign UI.
- Views.