

[Tech Note 1031](#)

Creating Symbols Using Symbol Wizard

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Topic#: 002868

Created: April 2014

Introduction

This *Tech Note* describes how to use the new Symbol Wizard feature in the ArcestrA Graphic Editor in Wonderware System Platform 2014.

The Symbols created with the Symbol Wizard are similar to Smart Symbols created in traditional InTouch Applications. They can be embedded into a managed InTouch Application. The Symbol Wizard enables you to create multiple permutations of a symbol that you can use later when building a graphic display.

If your symbol needs to be modified, it can be done in one symbol rather than modifying in multiple symbols. For example, a symbol created in Symbol Wizard has a common component (status) and is used in five permutations within that symbol. Later, if the appearance or configuration of status needs to be changed, the modifications are done only once in the symbol.

In this case, if the wizard is not used, you will need five different graphic templates (one for each permutation) with the same component (status). If status needs to be modified, it has to be done in all five templates.

Application Versions

- Wonderware System Platform 2014 and later

Details

Two roles are necessary for creating and implementing a symbol using the Symbol Wizard

- **Designer** and
- **Consumer**

The **Designer** creates the symbol with multiple configurations using the Symbol Wizard mode within the ArcestrA Graphic Editor.

The **Consumer** embeds the created symbol into an ArcestrA Graphic Symbol, configures its options, and then embeds that symbols into a managed InTouch application.

- [Designing Symbols Using the Symbol Wizard Mode in the ArcestrA Graphic Editor](#)
- [Verifying Symbol Configuration](#)

- [Embedding the Symbol Into an ArcestrA Graphic Symbol and Using It In an InTouch Application](#)
- [Runtime Behavior of the Embedded Symbol](#)

For this example, a Valve with the following specifications is used:

- Right Handle
- Left Handle
- Top Handle
- Bottom Handle
- Valve State: Open (Green), Closed (Red)
- Discrete field Input – Control. The Control variable will be used to determine if the valve is open or closed.
 - Valve open = Control = True
 - Valve close = Control = False

Designing Symbols Using the Symbol Wizard Mode in the ArcestrA Graphic Editor

1. Create a new symbol in ArcestrA Graphic Editor and enable Symbol Wizard.
2. Insert a horizontal valve and vertical valve. Break the symbol and have ONLY one instance of the following pieces. Name each element accordingly.
 - a. HorizontalPipe
 - b. VerticalPipe
 - c. Animation
 - d. Status
 - e. TopHandle
 - f. BottomHandle
 - g. LeftHandle
 - h. RightHandle

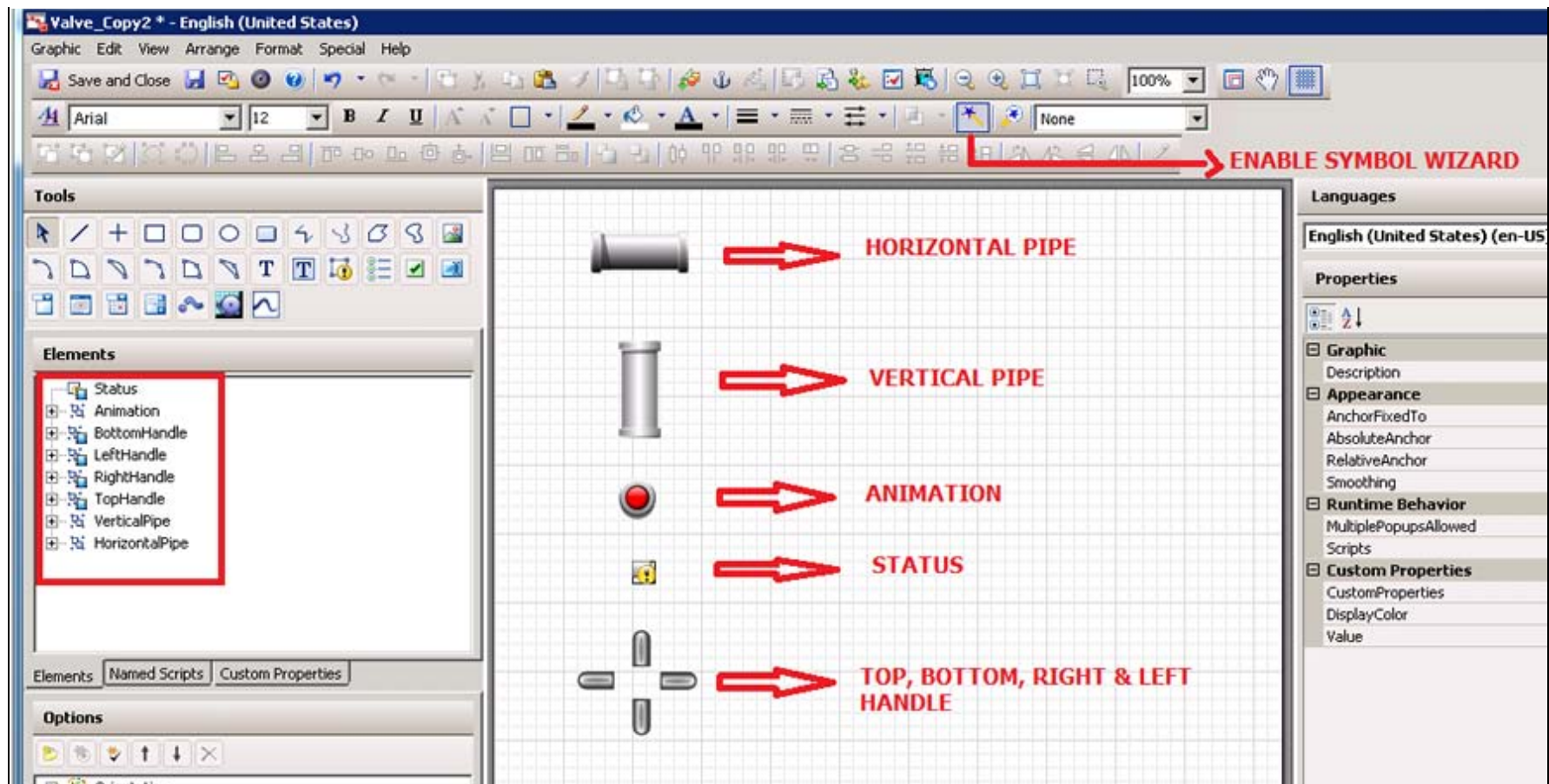


FIGURE 1: ELEMENTS OF THE VALVE SYMBOL

3. Create a Choice Group (Orientation) and create four choices for that group: Left, Right, Top, and Bottom.

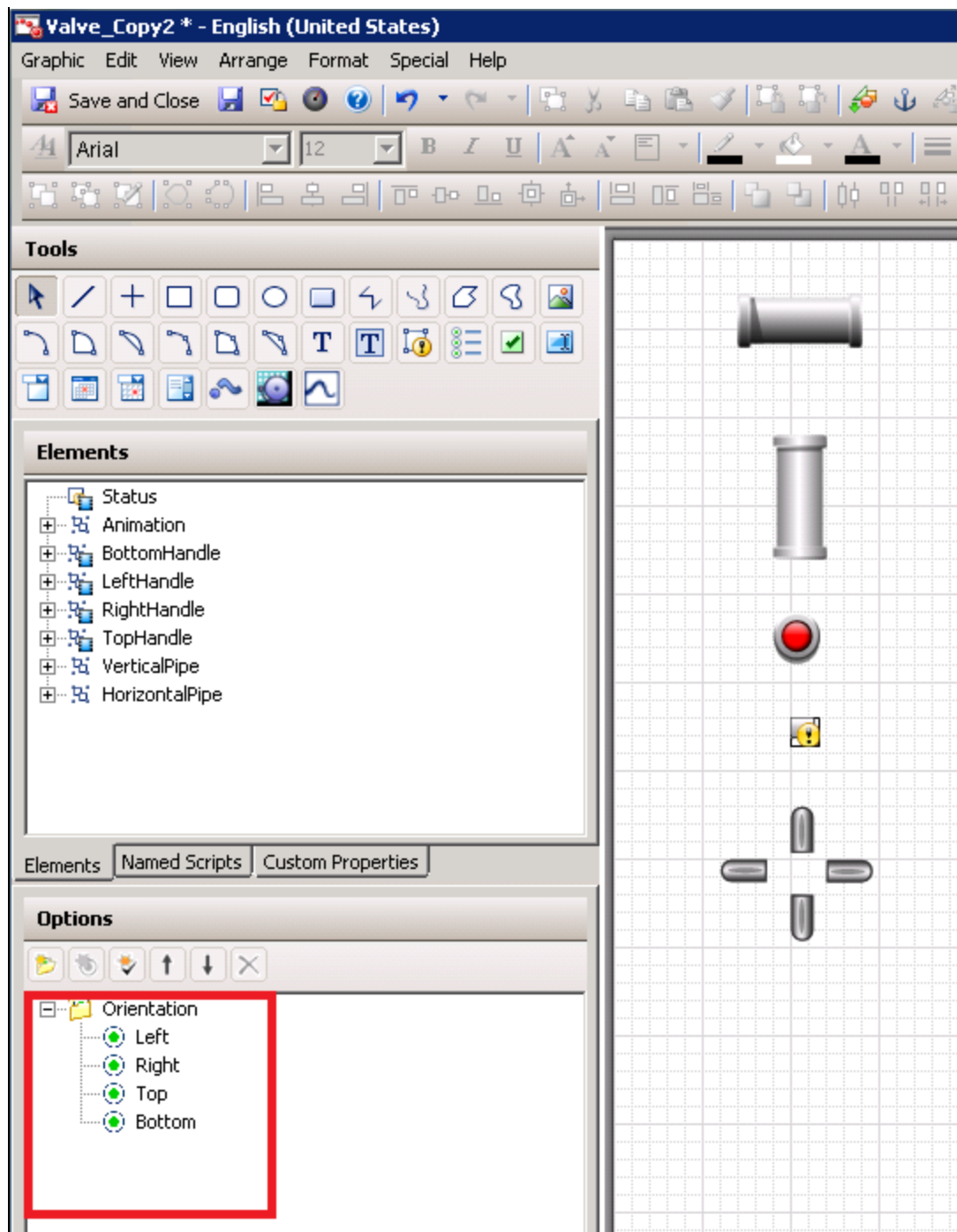


FIGURE 2: CONFIGURING OBJECT OPTION CHOICES

4. Create two Custom Properties – **Value** (Boolean), **DisplayColor** (Text).

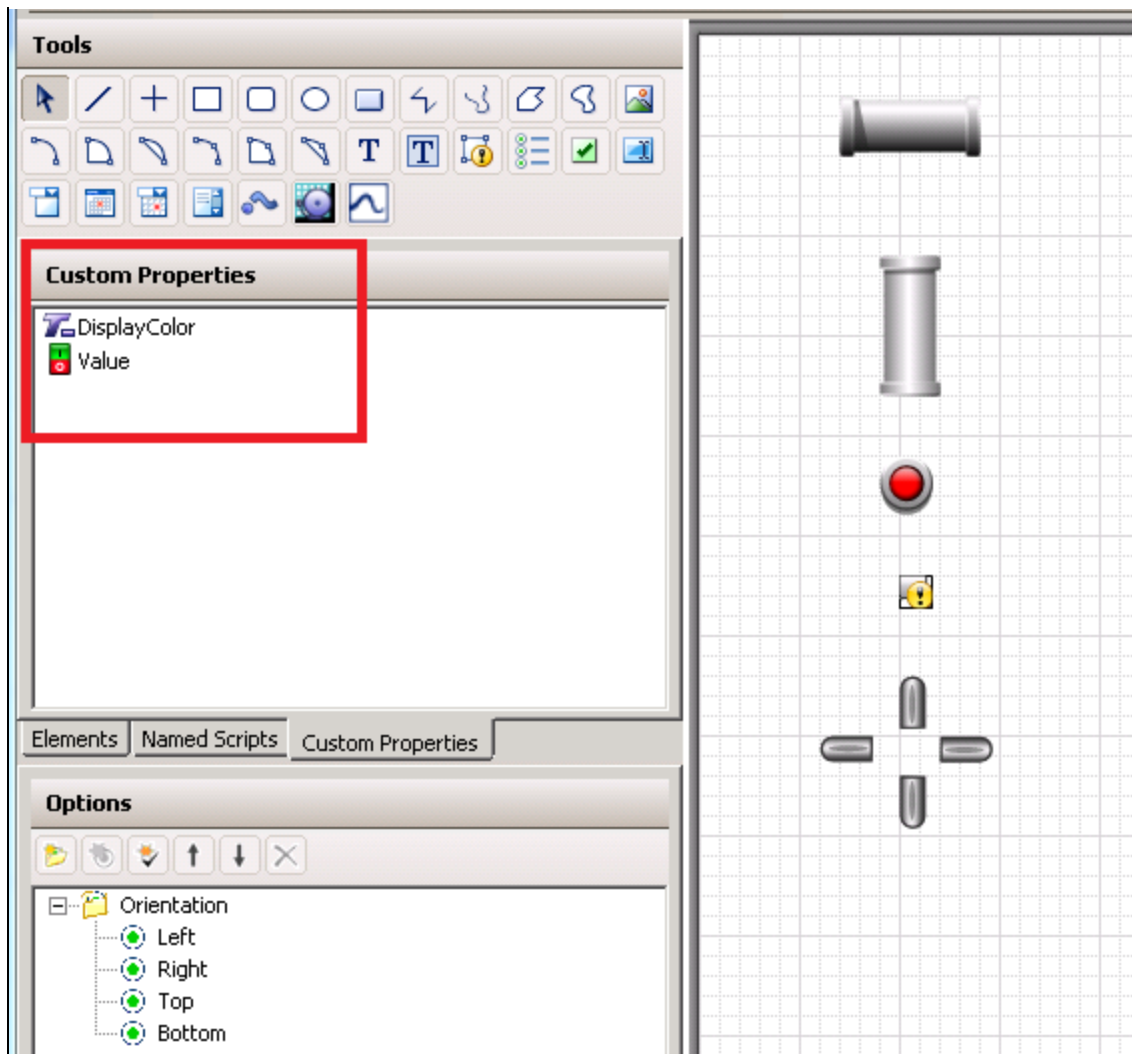


FIGURE 3: CONFIGURING CUSTOM PROPERTIES

5. Go to the **Layers** tab and drag-and-drop the Graphic Elements and the Custom Properties used for each Choice into their respective areas (Bottom, Left, Right, and Top).

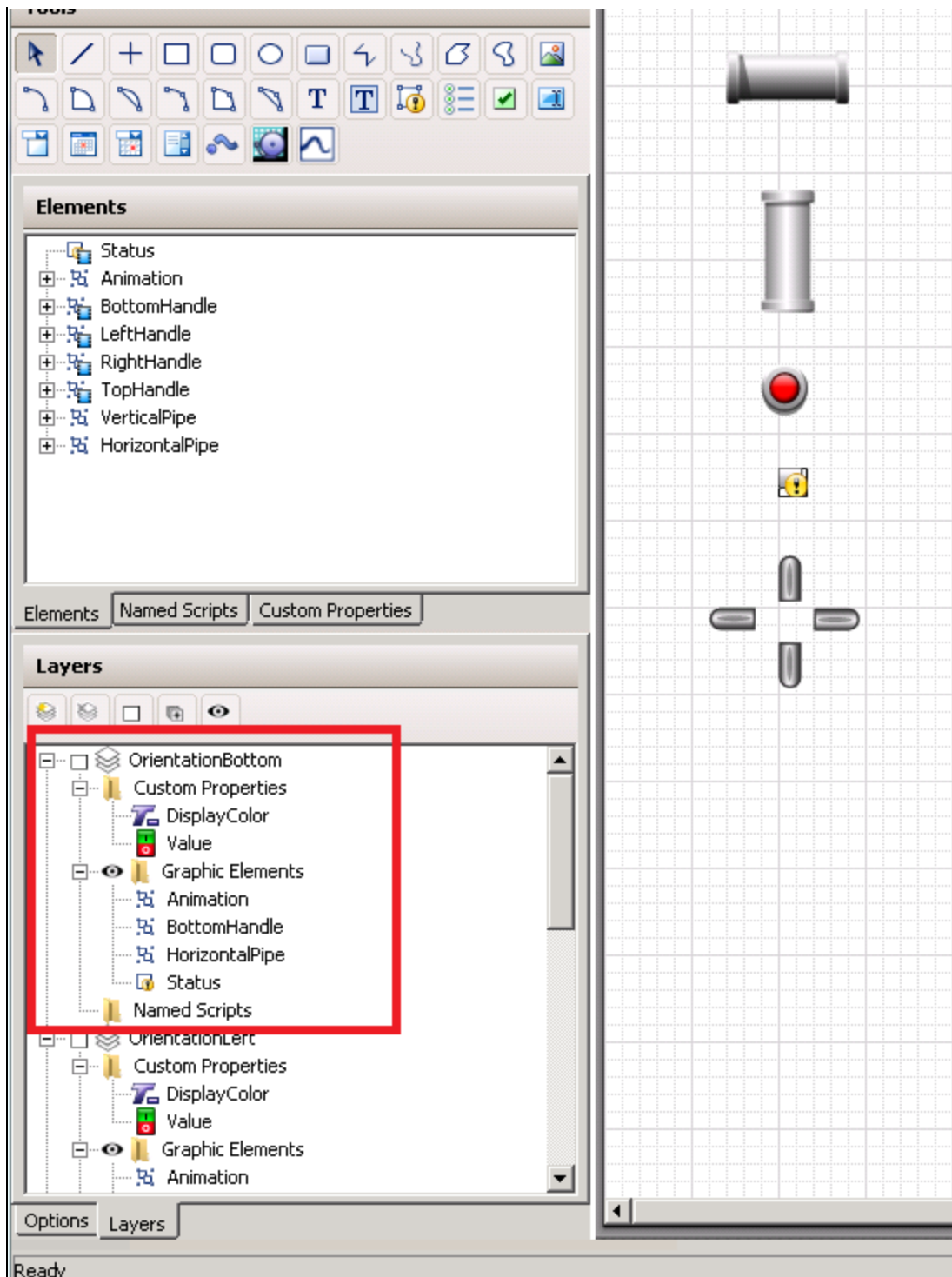


FIGURE 4: CONFIGURING LAYERS

Configure the **Layers** tab as follows:

Bottom

- Custom Properties – DisplayColor, Value
- Graphic Elements – Animation, BottomHandle, HorizontalPipe, Status

Left

- Custom Properties – DisplayColor, Value
- Graphic Elements – Animation, LeftHandle, VerticalPipe, Status

Right

- Custom Properties – DisplayColor, Value
- Graphic Elements – Animation, RightHandle, VerticalPipe, Status

Top

- Custom Properties – DisplayColor, Value
- Graphic Elements – Animation, TopHandle, HorizontalPipe, Status

Note: There are many similar components for the four permutations explained above. In this example, if any of the similar components needs to be modified, it will be done only once. If these graphics were created as a graphic template using the Archestra Graphic Editor, you would have four graphic templates and *each of them* would need to be modified.

6. Activate all Layers by clicking their top-level options.

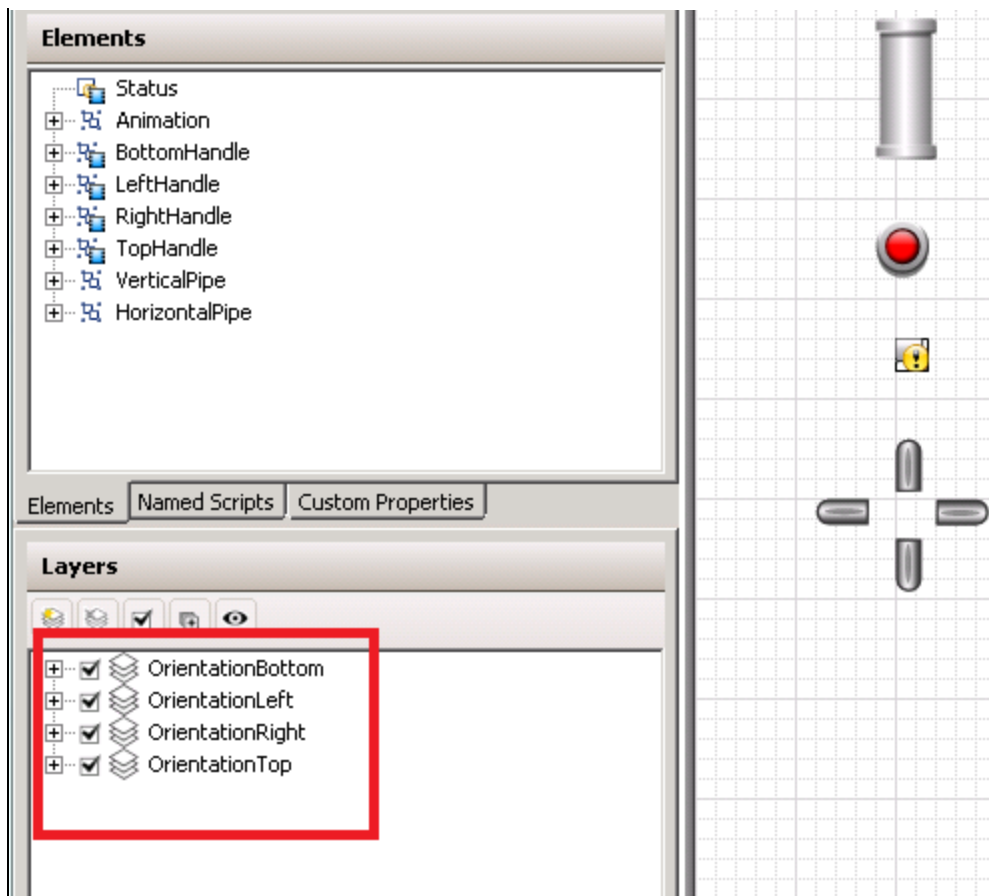


FIGURE 5: ACTIVATE LAYERS

7. Align all eight elements properly (Figure 6 below).

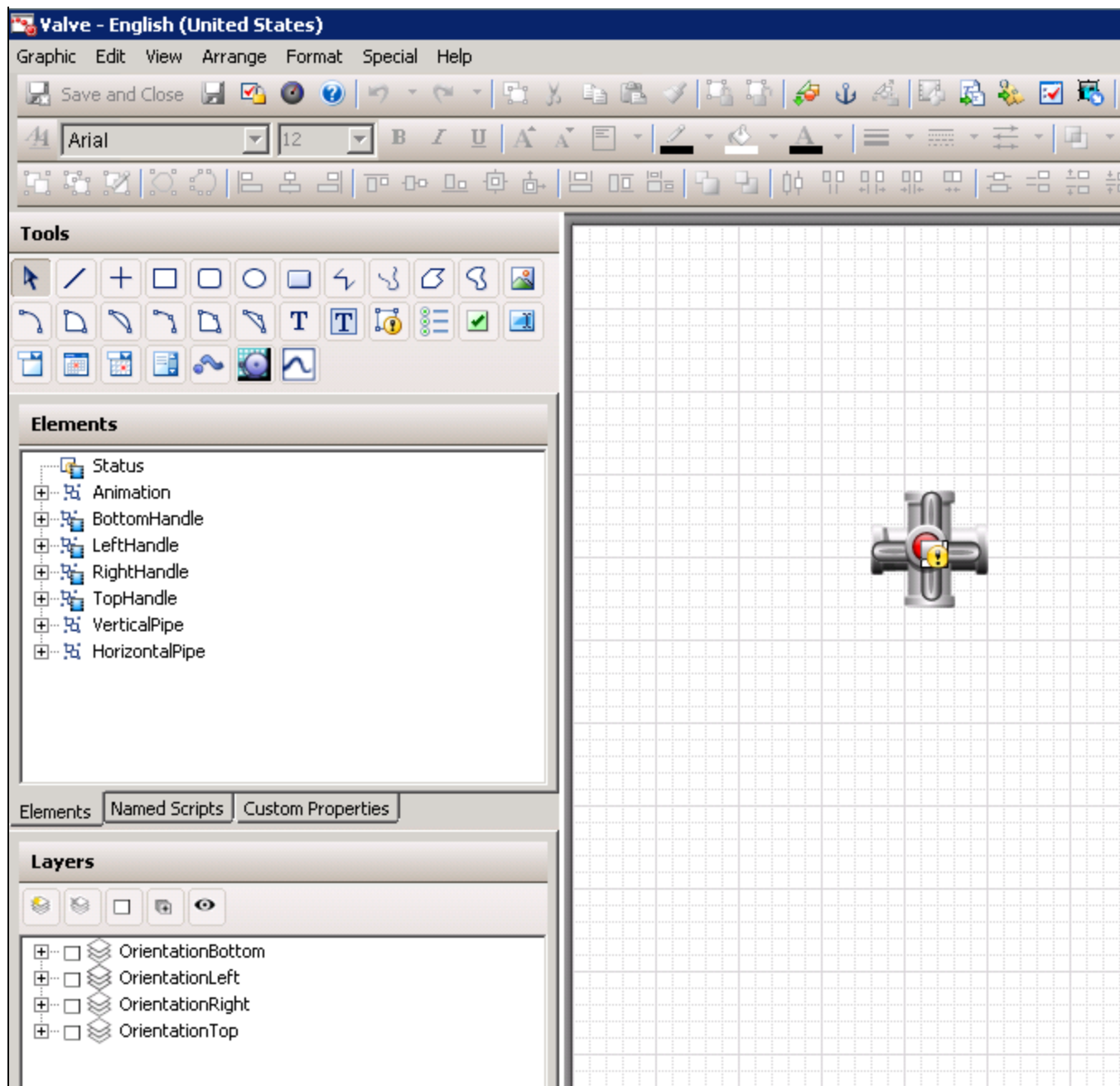


FIGURE 6: ALIGN ELEMENTS

8. Link the custom properties Value and DisplayColor with **Me.Control** and **Grey** respectively (Figures 7-8 below). These are used in the Animation Element.

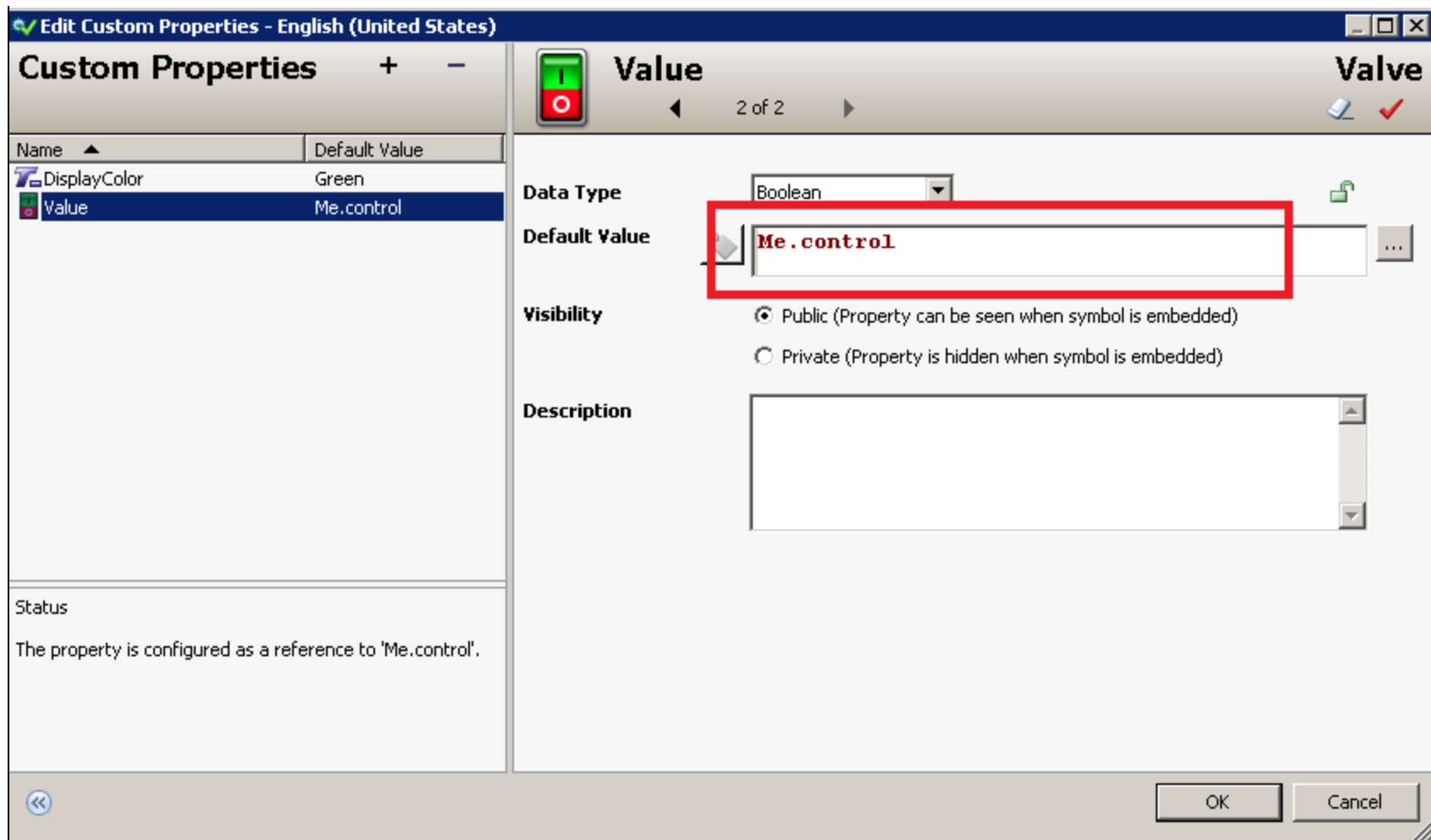


FIGURE 7: LINK CUSTOM PROPERTY (VALUE)

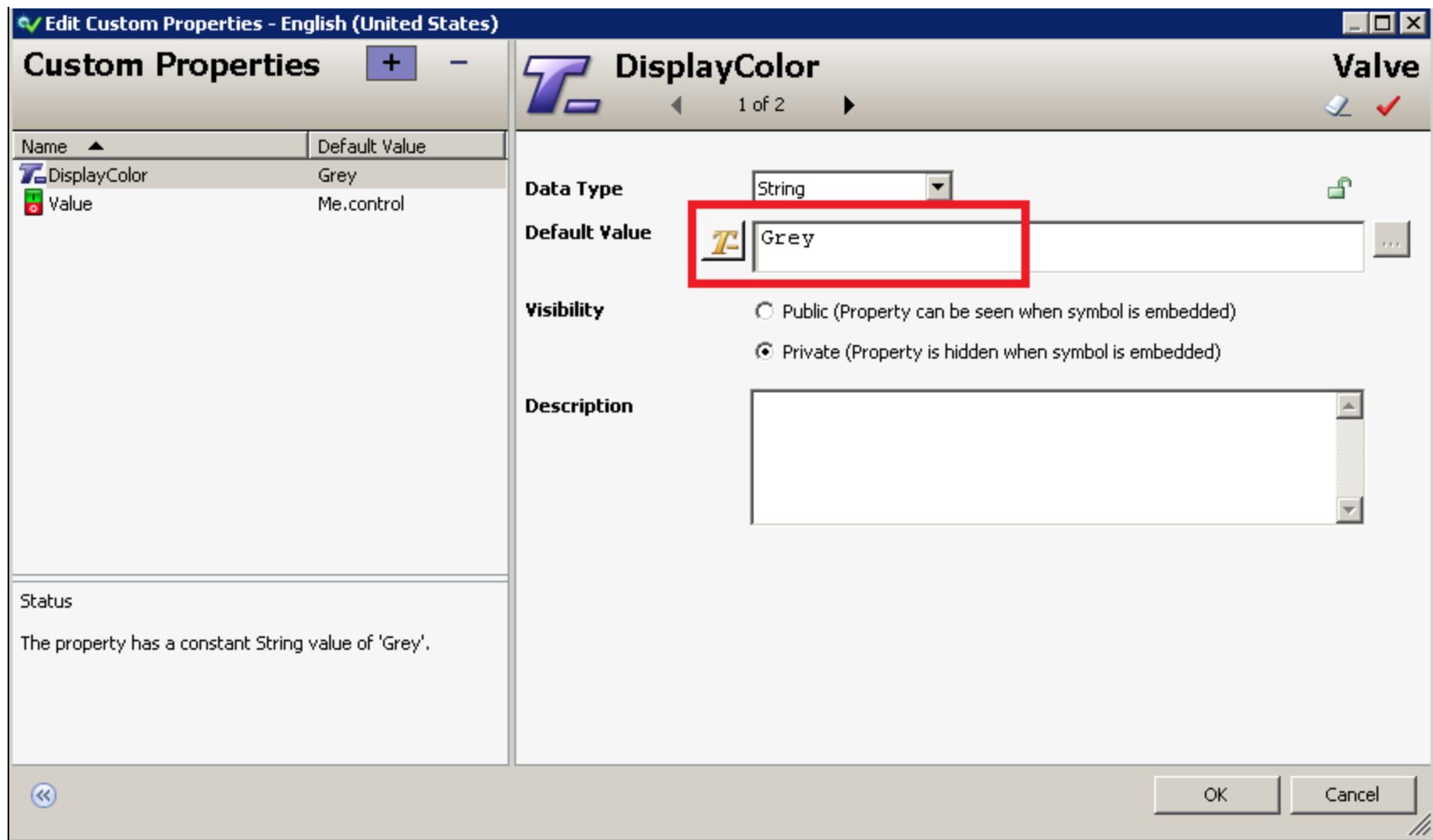


FIGURE 8: LINK CUSTOM PROPERTY (DISPLAYCOLOR)

Verifying the Symbol Configuration

In this section each configuration defined for the symbol is verified by using the Symbol Wizard Preview. To do so click on the **Symbol Wizard Preview** button.

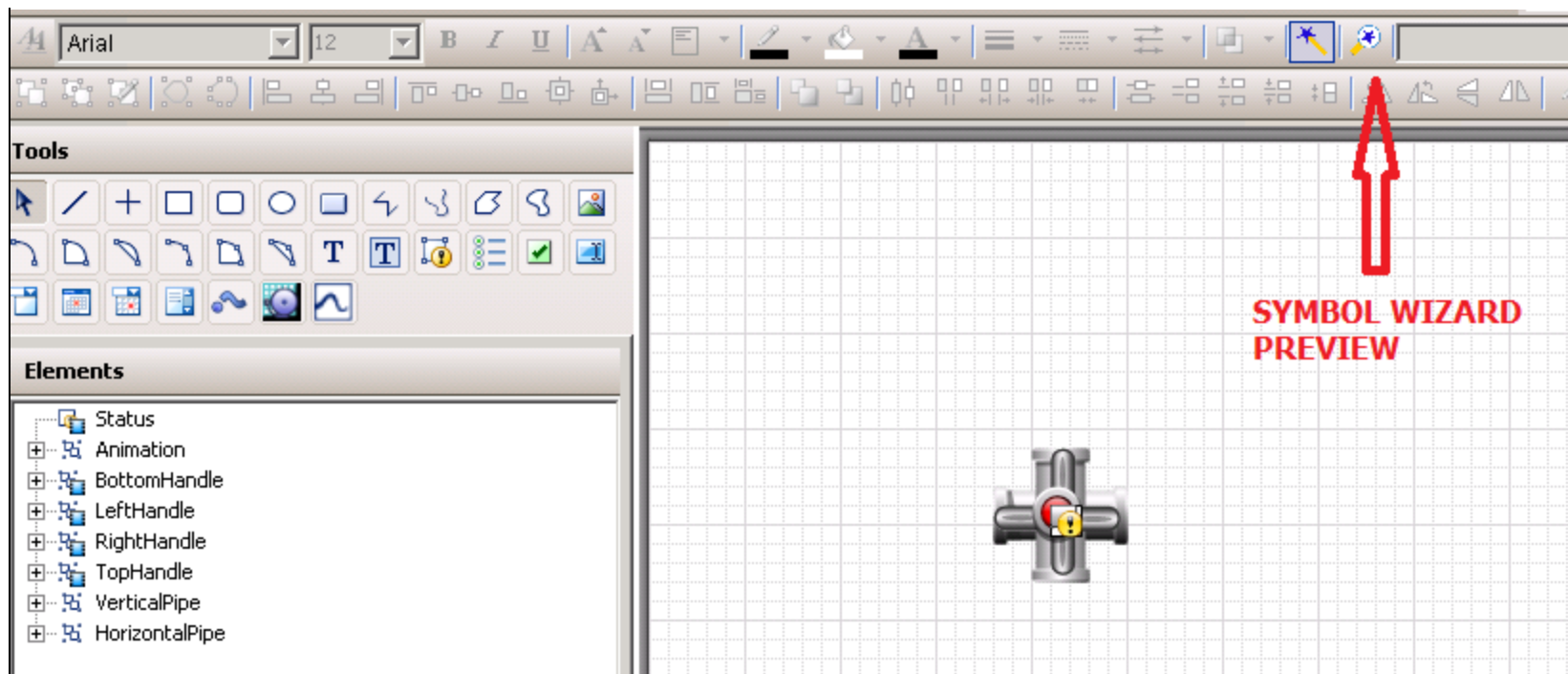


FIGURE 9: SYMBOL WIZARD PREVIEW BUTTON

The default orientation is **Left**.

- Now change the orientation to verify the graphic.

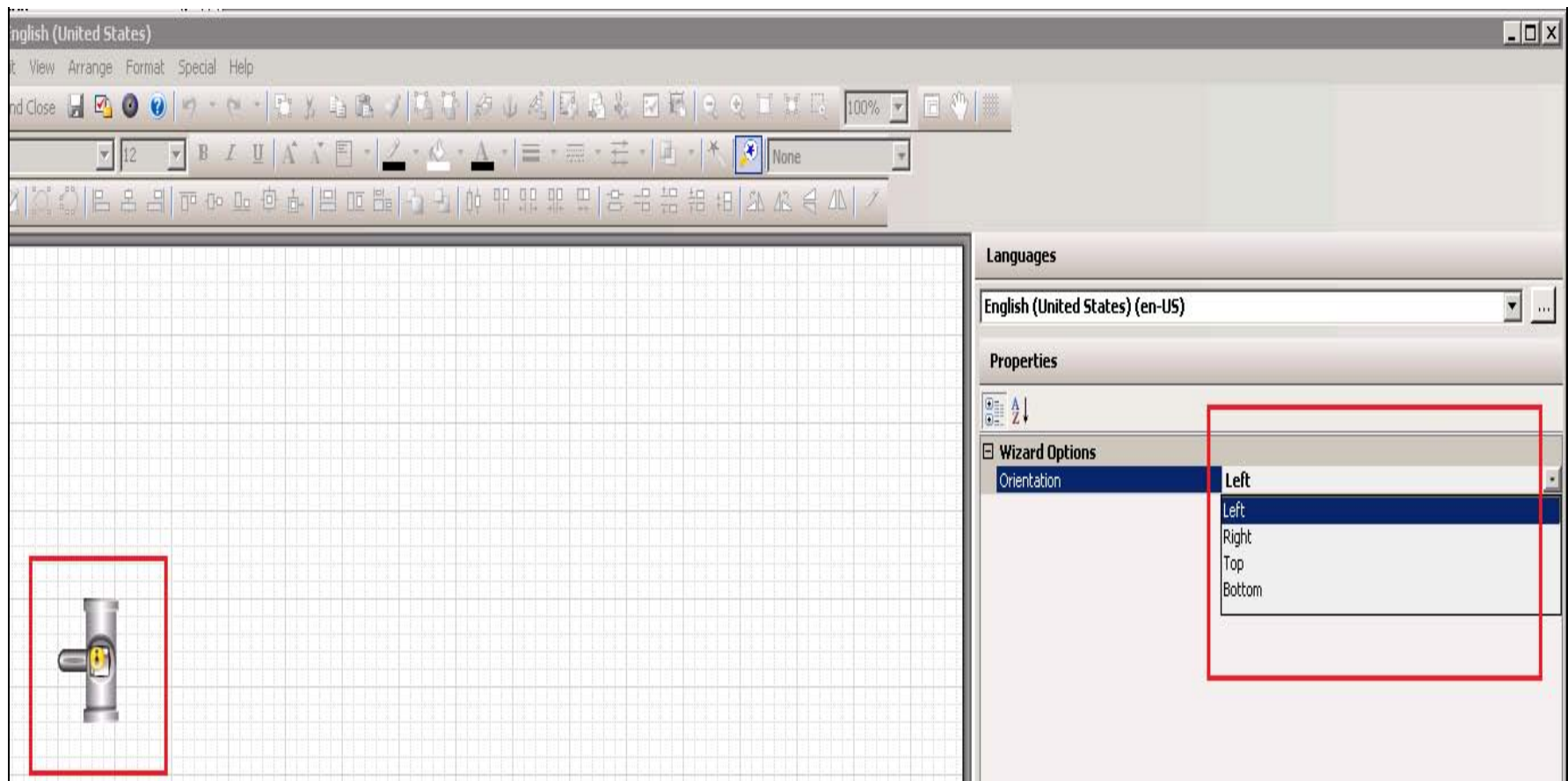


FIGURE 10: ORIENT THE SYMBOL TO THE LEFT

Embedding the Symbol Into an Archestra Graphic Symbol and Using It In an InTouch Application

For demonstration purposes:

1. Create four Application objects (top, bottom, left, and right) each with one field attribute (Control) and one UDA (Ctrl).
2. Configure the UDA (Ctrl) to be the input source for the field attribute (Control).
3. Add the appropriate graphic to each of the four objects. In other words, add the top valve graphic to the top valve Application object, and the bottom valve graphic to the bottom valve Application object, and so on.

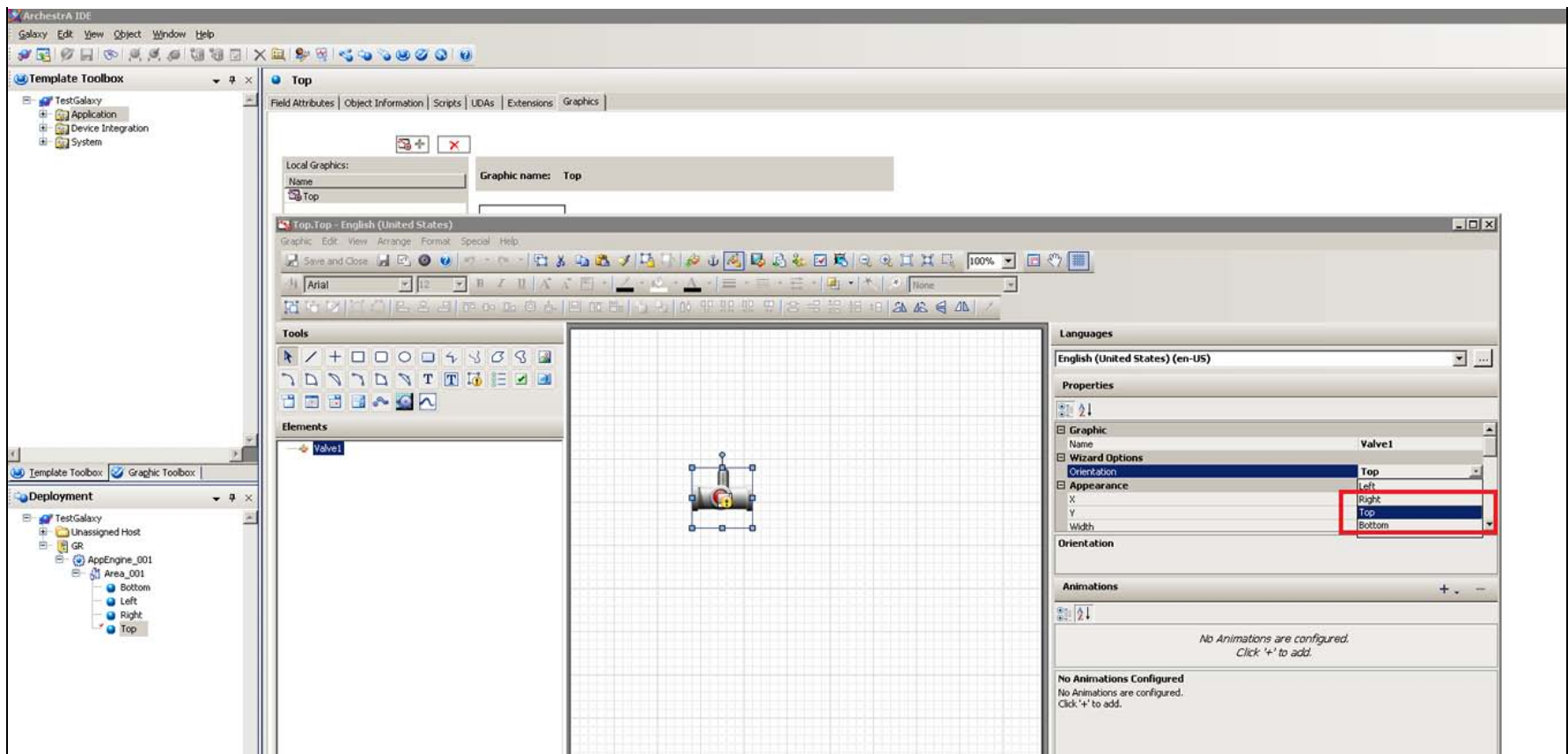


FIGURE 11: PLACE THE VALVE INSIDE THE ARCHESTRA GRAPHIC

4. Embed the four graphics from the four Application objects into an InTouch application (Figure 12 below).

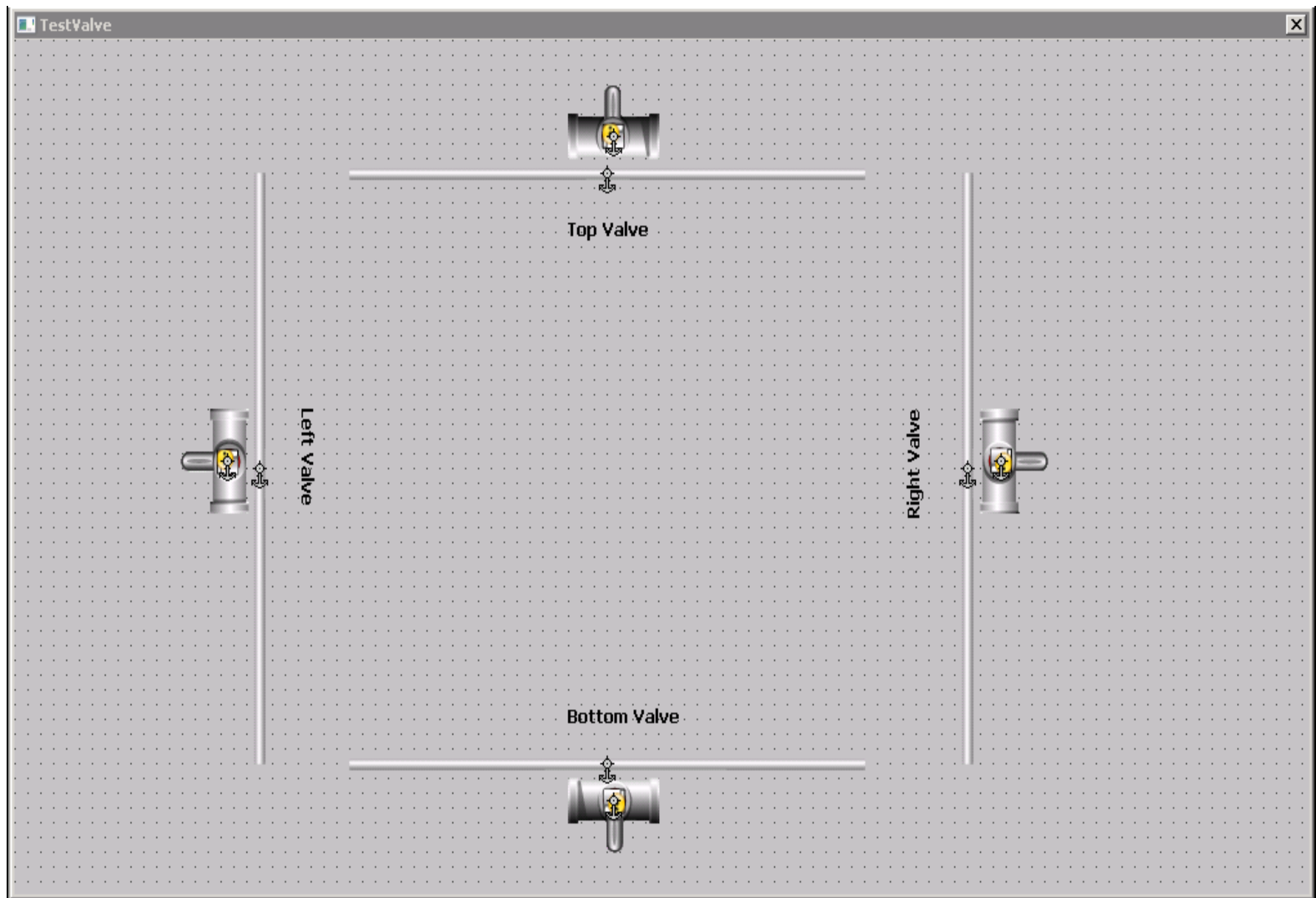


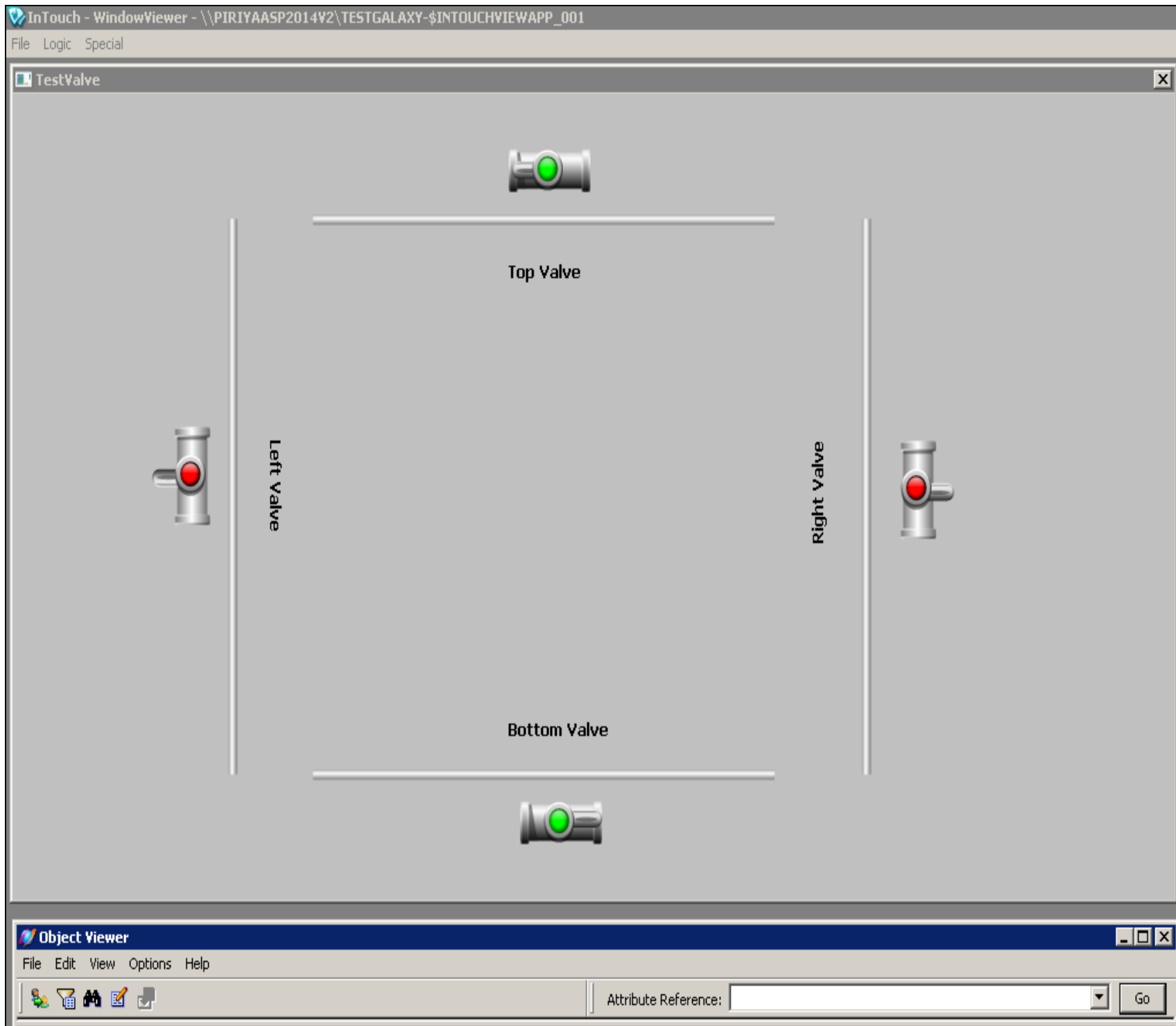
FIGURE 12: EMBED THE GRAPHIC IN INTOUCH

Runtime Behavior of Embedded Symbol

Open the InTouch application in WindowViewer and change the UDAs of the Application objects in Object Viewer. The color of the animation will change accordingly (Figure 13 below).

- *Valve Open = Ctrl UDA = True = Green*

- *Valve Close = Ctrl UDA = False = Red*



AttributeReference	Value	Timestamp	Quality	Status
Right.Ctrl	false	3/4/2014 11:33:19.640 ...	CO:Good	Ok
Bottom.ctrl	true	3/4/2014 10:56:10.888 ...	CO:Good	Ok
Left.ctrl	false	3/4/2014 10:56:37.612 ...	CO:Good	Ok
Top.ctrl	true	3/4/2014 10:55:34.925 ...	CO:Good	Ok

Watch List 1

FILE: User: DefaultUser Mode: User

FIGURE 13: RUNTIME BEHAVIOR

[Click here to download the Valve Symbol aaPKG \(zipped\) file demonstrated in this Tech Note.](#)

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