Northwest State
Community College

PLC220 Lab Exercise 21

InTouch HMI

Symbols/Cells

Symbols / Cells

Lesson Objective

By the end of this session, students should be able to:

1. Create a Symbol

2. Create a Cell.

3. Understand the differences between a Symbol and Cell

Lesson Requirements:

Computer with Wonderware InTouch, Software

Introduction:

This lesson demonstrates the differences between a Cell object and a Symbol Object. Both Cells and Symbols will group multiple objects into a single object.

Differences between Cells and Symbols
- Cells are not resizable
- Each object included in a cell can have its own Animation Links
- Symbols are resizable
- Animation Links for Symbols applied to the entire Symbol not to individual objects included in a Symbol

1.Create a new InTouch application called Symbol_Cell in InTouch

2. In WindowMaker create a Replace window called Symbol_Cell

3. Add the following Draw Object Toolbar objects to the window.
- Ellipse
- Rectangle
- Using Polygon drawing tool – add two (2) Triangles to the window

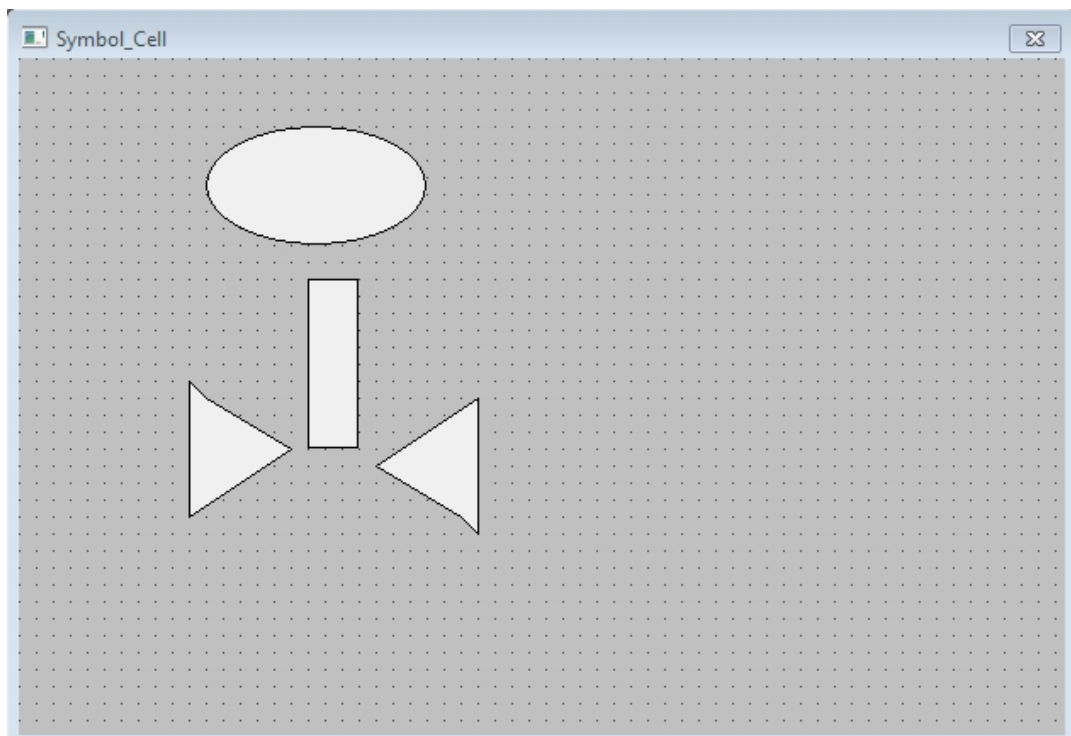The window will look similar to Figure 1-A

Figure 1-A
Symbols_Cell Window Objects
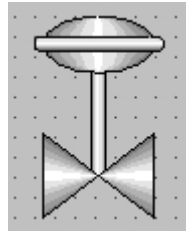4. Position the window object to represent a Valve symbol

Figure 2-A
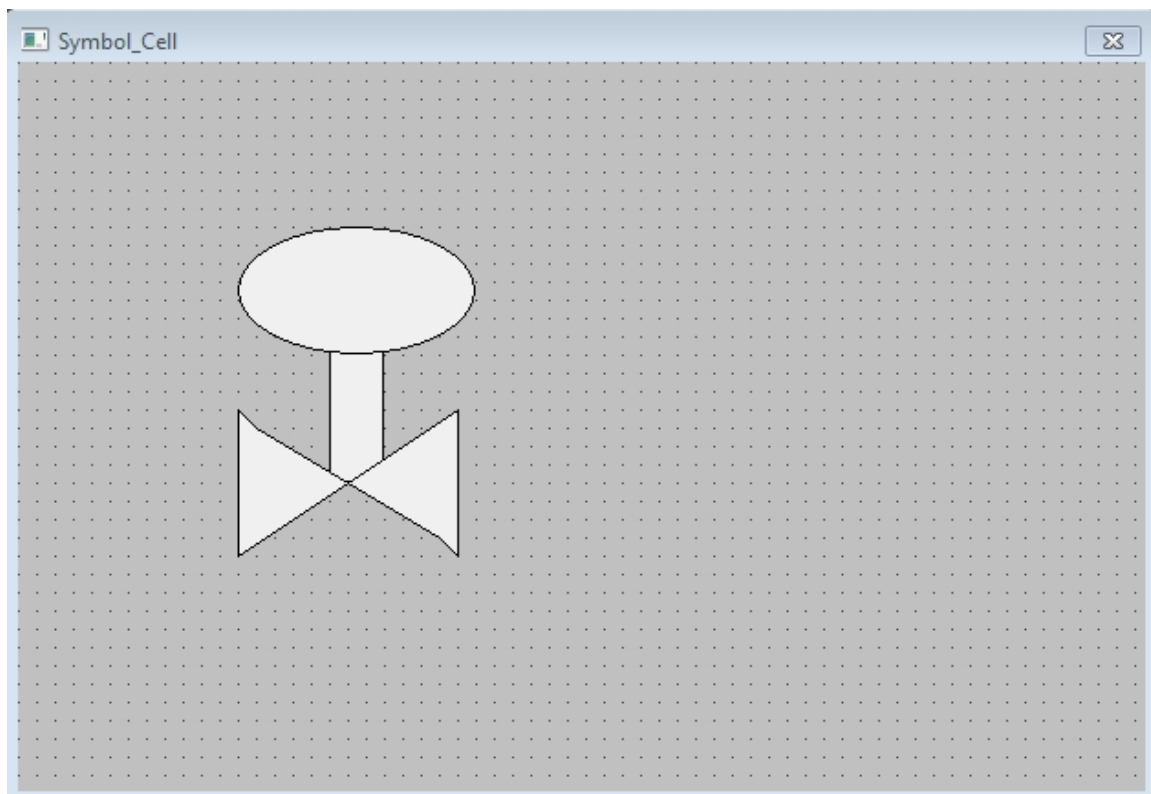Valve Symbol Likeness

Figure 3-A
Valve Likeness Symbol_Cell Window

Note; Use Send to Back / Bring to Front icons on Arrange Toolbar for positioning of
overlapping objects

Figure 4-A
Send to Back / Bring to Front Icons

Note: At least one object on the application windows must be selected for Send to Back /
Bring to Front icons to be active.

5. Select all four objects on the window
Right click the selected object
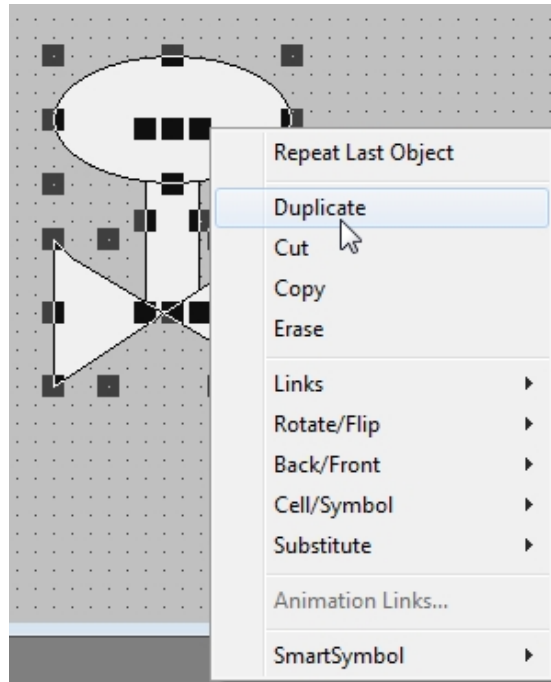Choose Duplicate from context menu

Figure 5-A
Duplicate Windows Objects

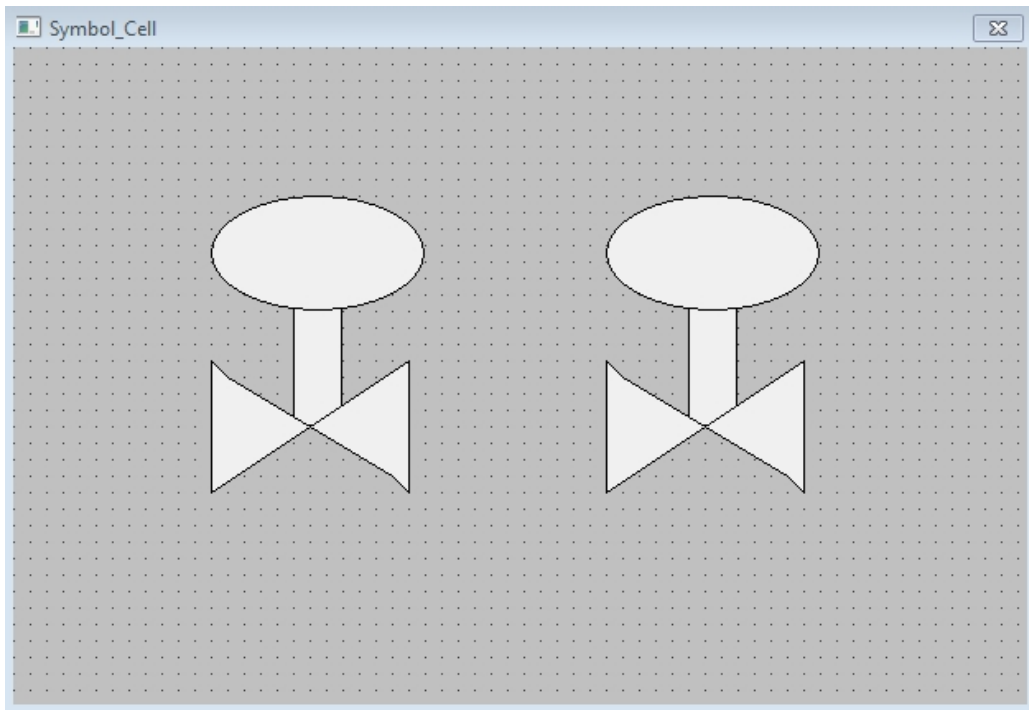6. Position objects on the window to appear similar to Figure 6-A

Figure 6-A
Duplicate Objects on Window

7. Select to Oval object on the left valve likeness
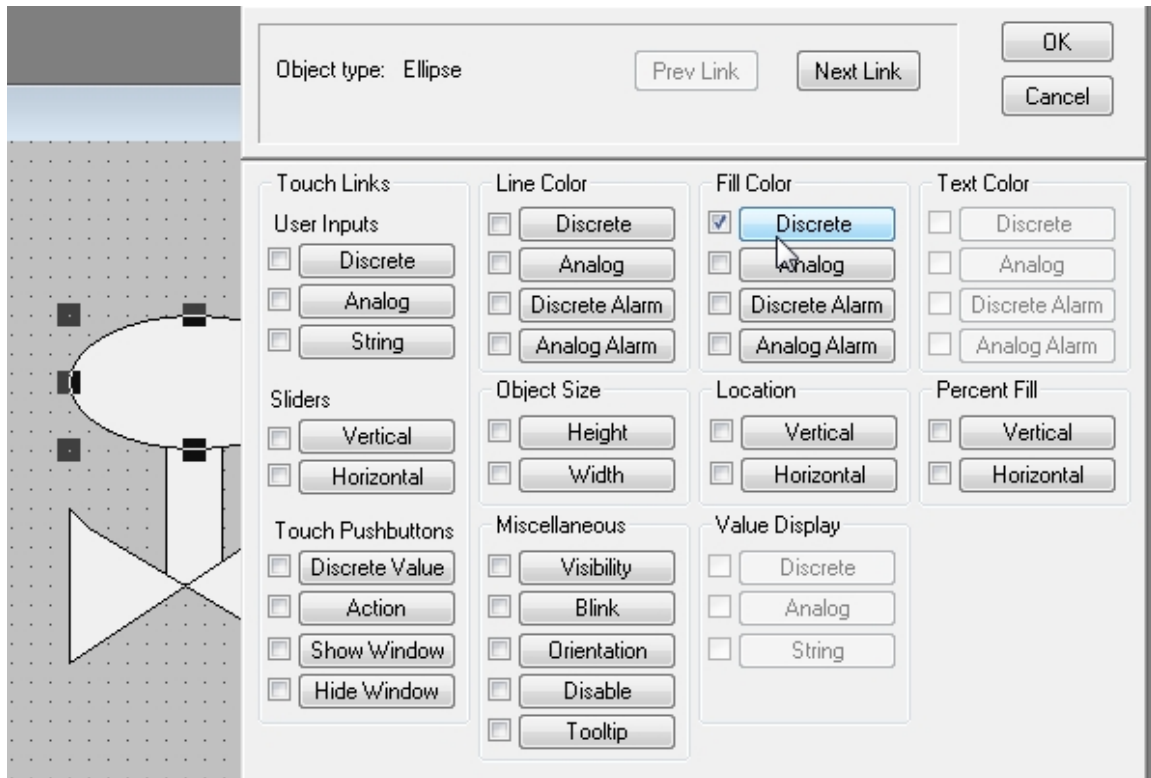   Assign an Animation Link of Fill Color Discrete.

Figure 7-A
Duplicate Objects on Window

8. Configure Fill Color Discrete Expression wind ow as shown in Figure 8-A
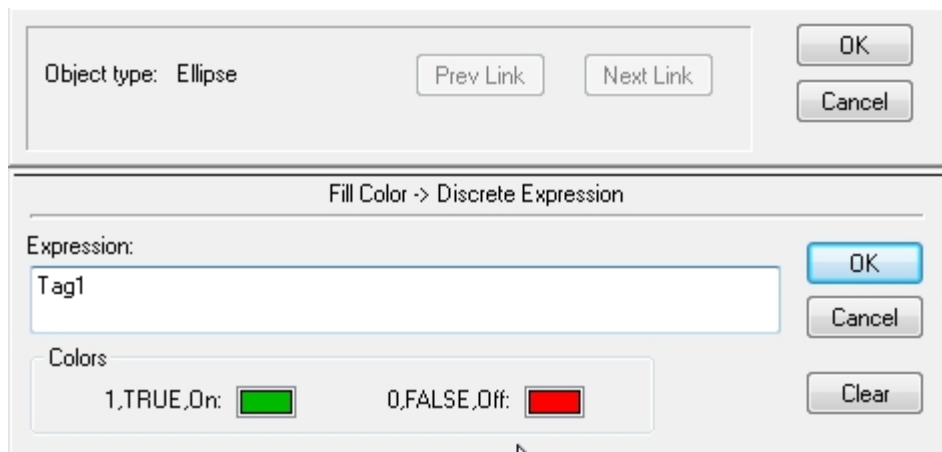

Figure 8-A
Fill Color Discrete Expression Window

9. Click the upper OK button

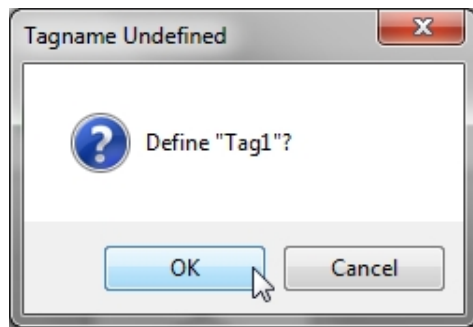10. Define Tag 1 as Memory Discrete
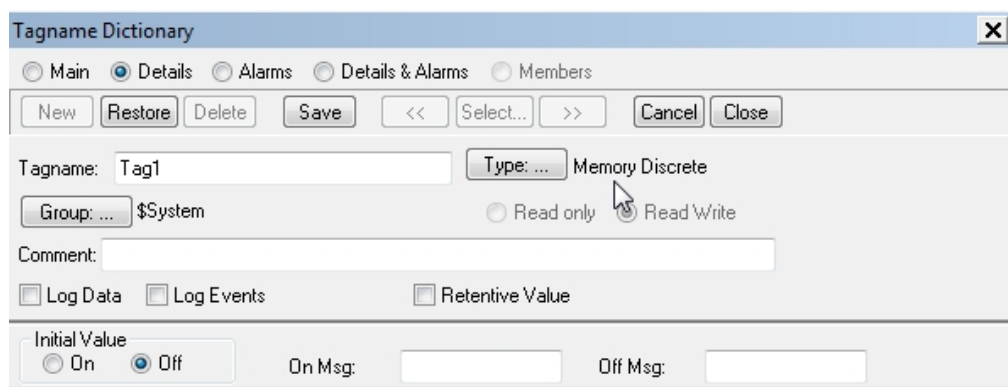
Figure 9-A
Define Tag 1

Figure 10-A
Tag1 – Type - Memory Discrete

11. Click Save Button – Click Close Button on Tagname Dictionary Window.

12. Click upper OK Button on Fill Color Discrete Expression Window to close the window

13. Add a Rocker Switch Wizard to the Symbol_Cell window.
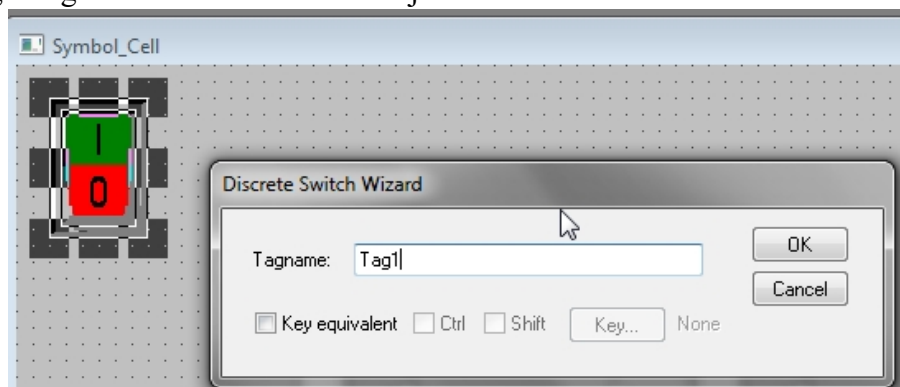   Assign Tag1 to the Rocker Switch object.

Figure 11-A
Rocker Switch - Tag1

14. Test modified application window.
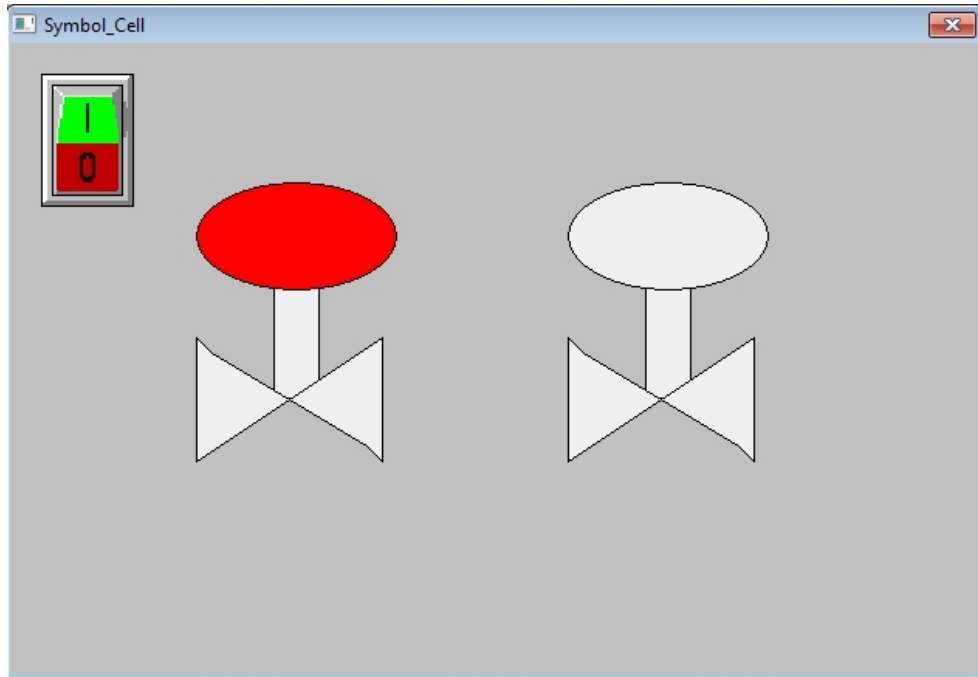   Click Runtime button on WindowMaker

Figure 12-A
WindowViewer – Test Application

The ellipse object on the left valve likeness will change RED to GREEN depending on
the value of Tag1
Tag1 = 0 - ellipse object RED
Tag1 = 1 - ellipse object GREEN

15. Click Development button on WindowViewer to return to WindowMaker

16. Create a Number Field on Symbol_Cell window to monitor the value of Tag1

17. Select all four objects on the left side Valve likeness and create Symbol.

Note: Make Symbol icon is located on the Arrange Toolbar

Figure 13-A

Make Symbol Icon Arrange Toolbar

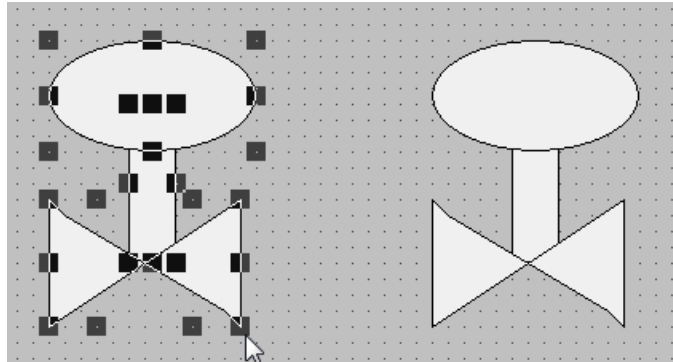Note: Multiple objects must be selected to activate the Make Symbol icon

Figure 14-A
Four Objects Selected

Click the Make Symbol icon once all four objects on the left Valve likeness are selected

The four (4) objects that made up the left side valve likeness are now combined into one (1) object – Symbol

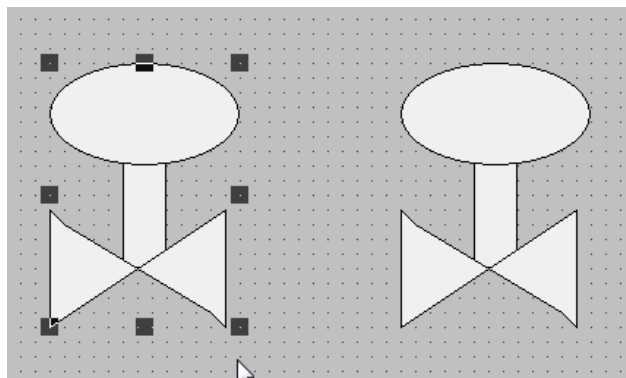Note- Handles around Symbol likeness

Figure 15-A
Symbol Created

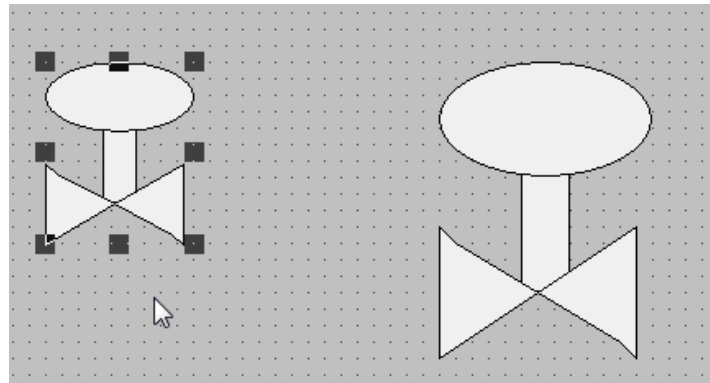Drag the Symbol handle to make the Valve Symbol smaller – Symbols can be resized.

Figure 16-A
Symbol can be Resized

18. Add a label below the Valve Symbol – Valve Symbol

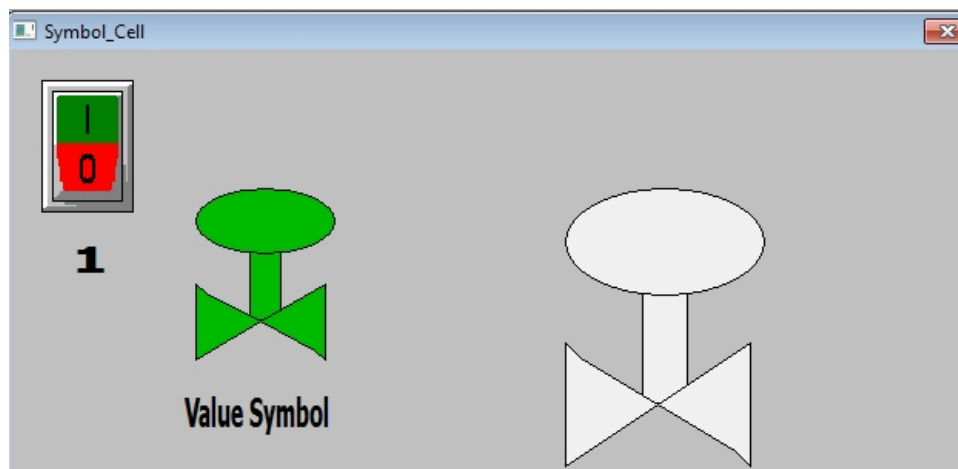19. Test Valve Symbol - Click Runtime button to open WindowView

Figure 17-A
Valve Symbol –WindowViewer

Toggle the Rocker Switch
Note: All four (4) object that were included in the Valve Symbol change colors based on
the Animation Link assigned to the Ellipse object – See pages 6-7.

20. Click the Development button to return to WindowMaker

21. Assign the following Animation Links to the right valve likeness

    Ellipse Object – Fill Color Discrete
                    Use following information for Ellipse Fill Color
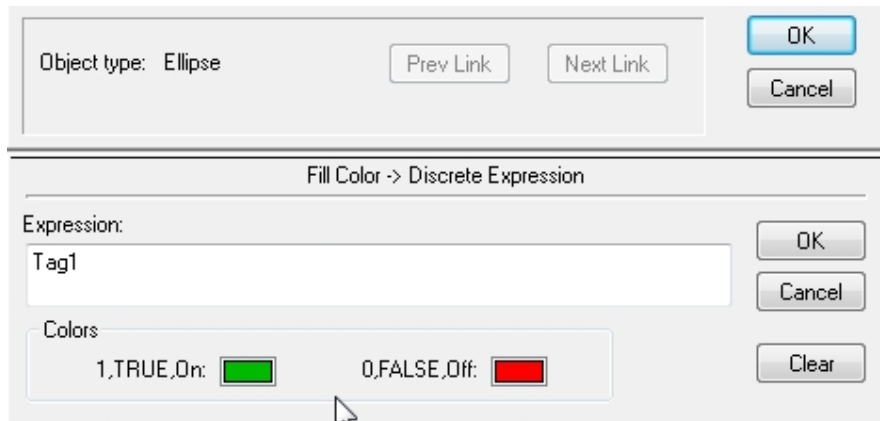
Figure 18-A
Right Valve Likeness –Ellipse Object

True Color – GREEN
False Color - RED
Rectangle Object – Fill Color Discrete
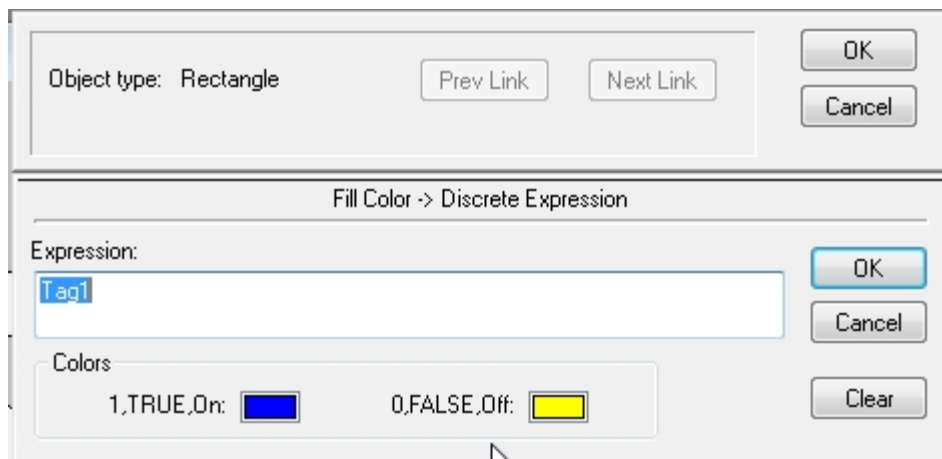   Use following information for Rectangle Fill Color

Figure 19-A
Right Valve Likeness –Rectangle Object

True Color – BLUE
False Color - YELLOW

Right Polygon (right Triangle) Object – Fill Color Discrete
                  Use following information for Polygon Fill
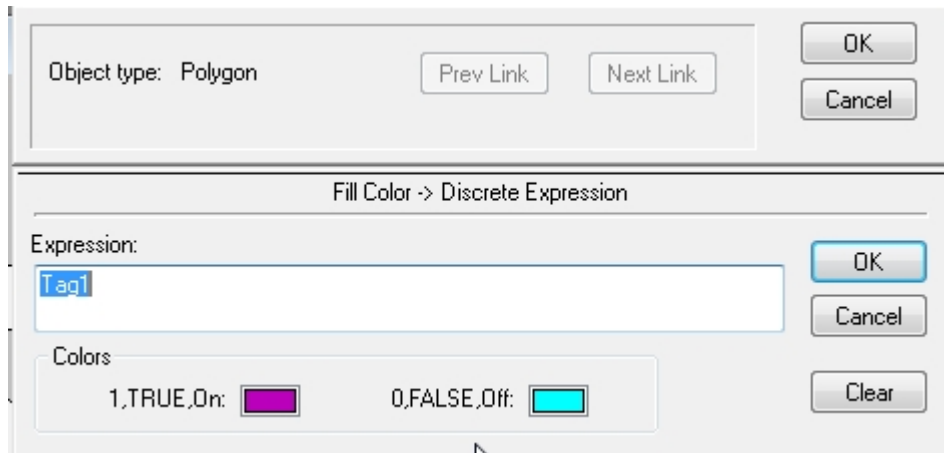   Color

Figure 20-A
Right Valve Likeness –Right Polygon Object

True Color – PURPLE
False Color – LIGHT BLUE

Note: Tag1 assigned to all three (3) objects

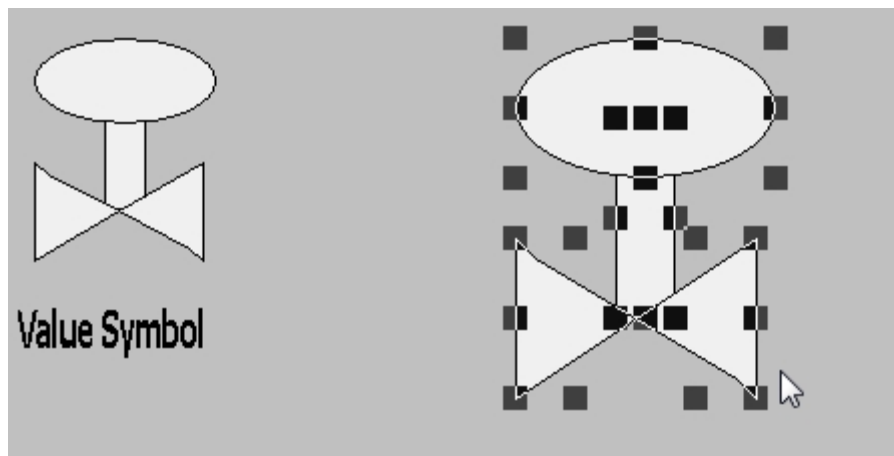Select all four (4) objects of right valve likeness

Figure 21-A
Right Valve Likeness –Four (4) Objects Selected

On the Arrange Toolbar click Make Cell icon

Figure 22-A
Arrange Toolbar – Make Cell Icon

Note: Multiple objects must be selected to activate the Make Cell icon

The four (4) objects that made up the right side valve likeness are now combined into one (1) object – Cell

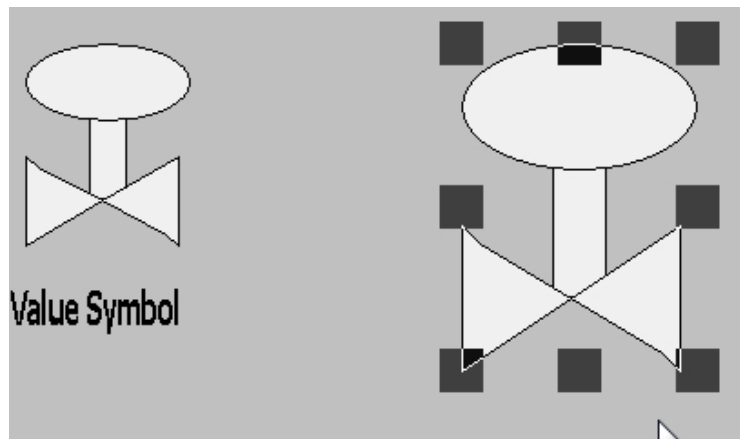Note- Handles around Cell likeness

Figure 23-A
Right Valve Likeness – Cell

22. Drag the Valve Cell handles
    Can a Cell object be sized ?_____

23. Add a label below the Valve Cell – Valve Cell

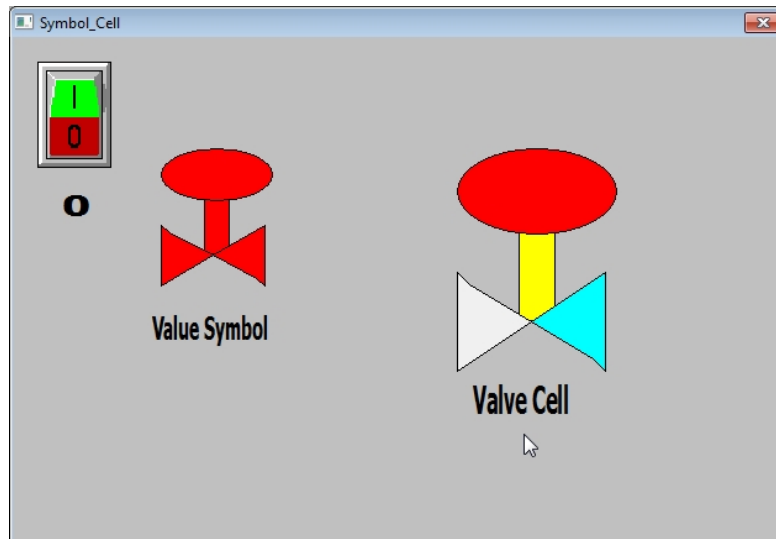24. Test Valve Cell - Click Runtime button to open WindowView

Figure 24-A
Valve Cell –WindowViewer

Toggle the Rocker Switch

Note: The four (4) object that are included in the Valve Cell change colors based on
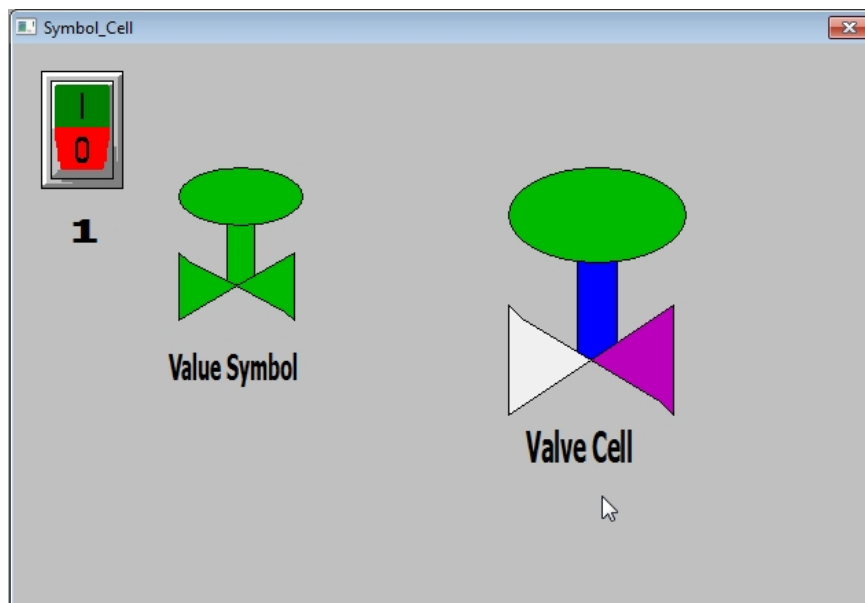their individual Animation Link assigned.– See pages 10-11.

Figure 25-A
Valve Cell –WindowViewer

Note: All four (4) object that were included in the Valve Symbol change colors based on
the Animation Link assigned to the Ellipse object – See pages 6-7.

The Animation Links assigned to an object within a Symbol will be applied to all the Symbol objects

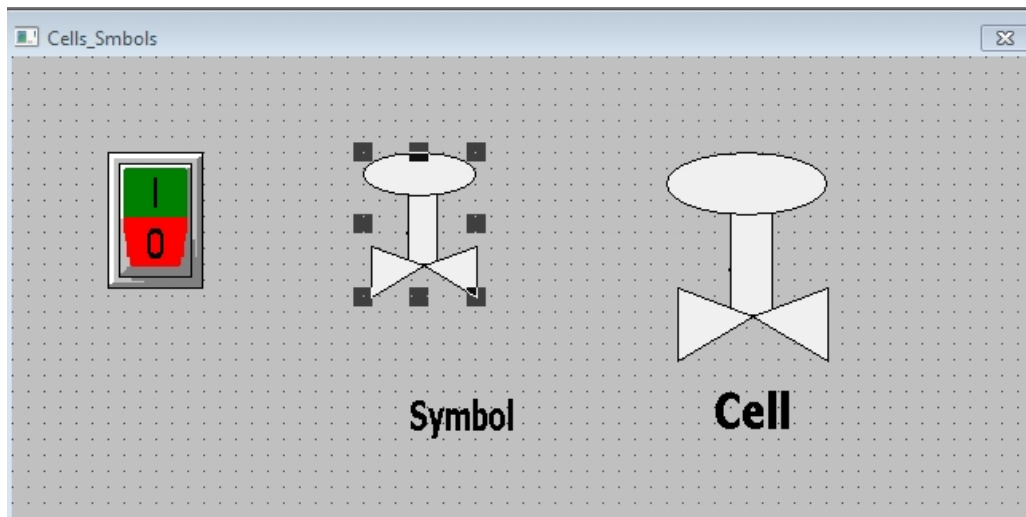25. Click the Development button to return to WindowMaker –Cell_Symbol window

Figure 26-A
Cell_Symbol Window –WindowMaker

To add Animation Links to a Symbol – double click the Symbol object or right click the Symbol object and select Animation Links from the context menu
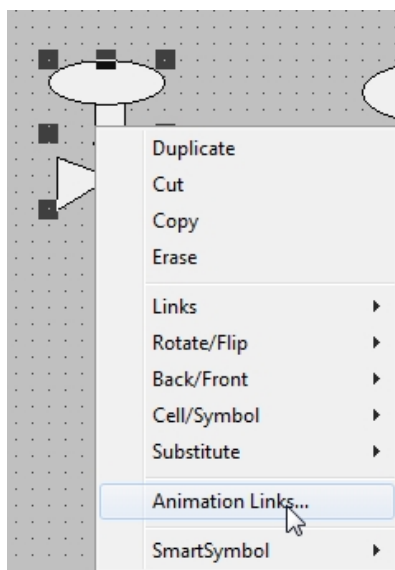

Figure 27-A
Symbol Context Window –Animation Link

Note: only one of a Symbol's object can have Animation Links assigned prior to

grouping objects as a Symbol

Right click the Cell object

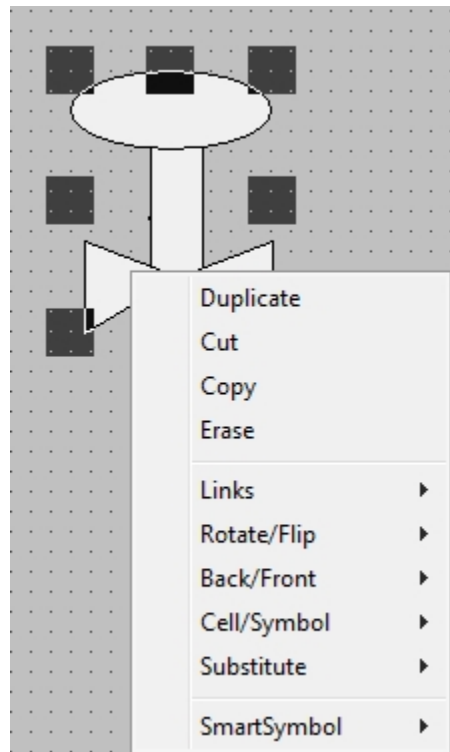Note: No Animation Link selection on Cell's context menu

Figure 28-A
Cell Context Window – No Animation Link Selection

To modify a Cell's object Animation Links-Select the Cell object- break the Cell.
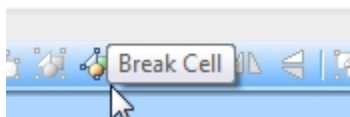
Break Cell icon on Arrange Toolbar

Figure 29-A
Break Cell – Arrange Toolbar

After Break Cell - the Cell object returns to its original objects the composed the Cell
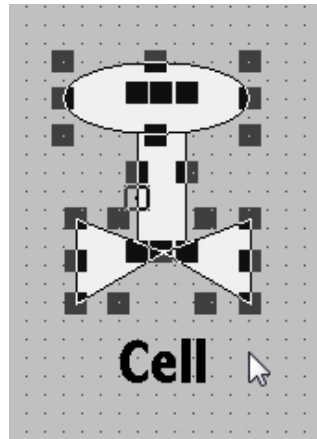
See Figure 30-A

Figure 30-A
Break Cell – Original Objects

Modify Animation Links on individual objects – Make Cell when changes are completed

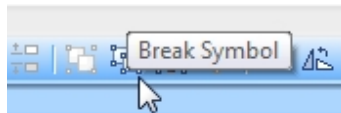Note: Break Symbol icon also located on Arrange Toolbar

Figure 31-A
Break Symbol – Arrange Toolbar

Brake Symbol will return the Symbol back to its original objects the composed the Symbol
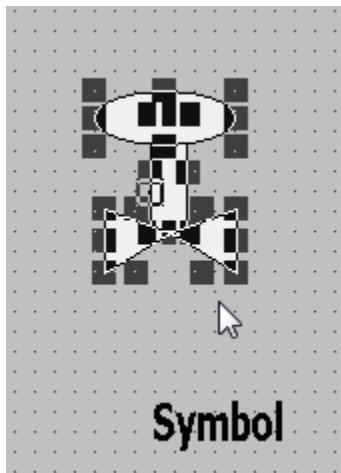

Figure 32-A
Break Symbol – Original Objects

Note: On context menus for Cells and Symbols – Selection to Make / Break Cells/Symbols
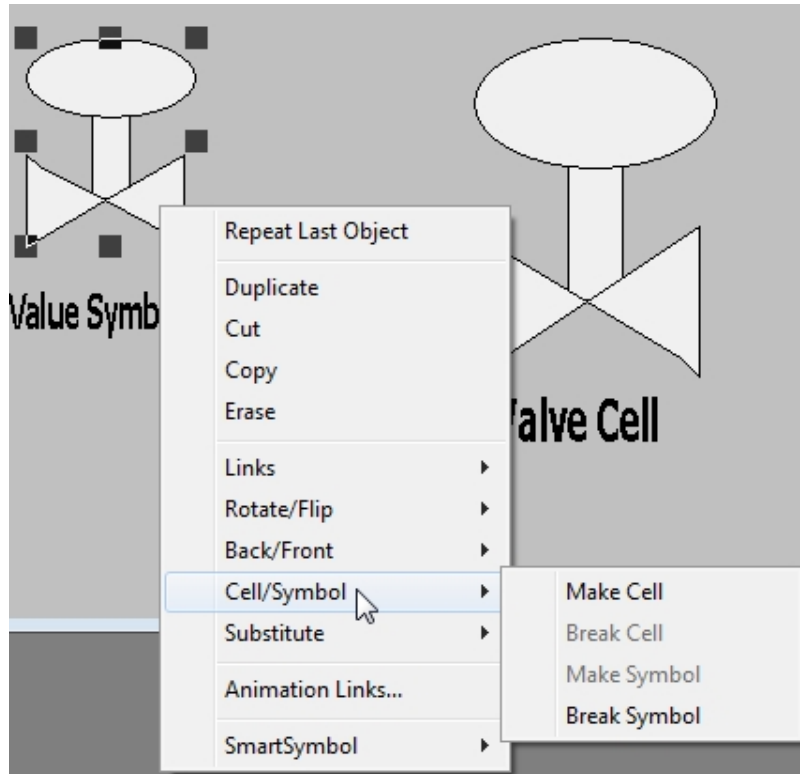
See Figure 33-A

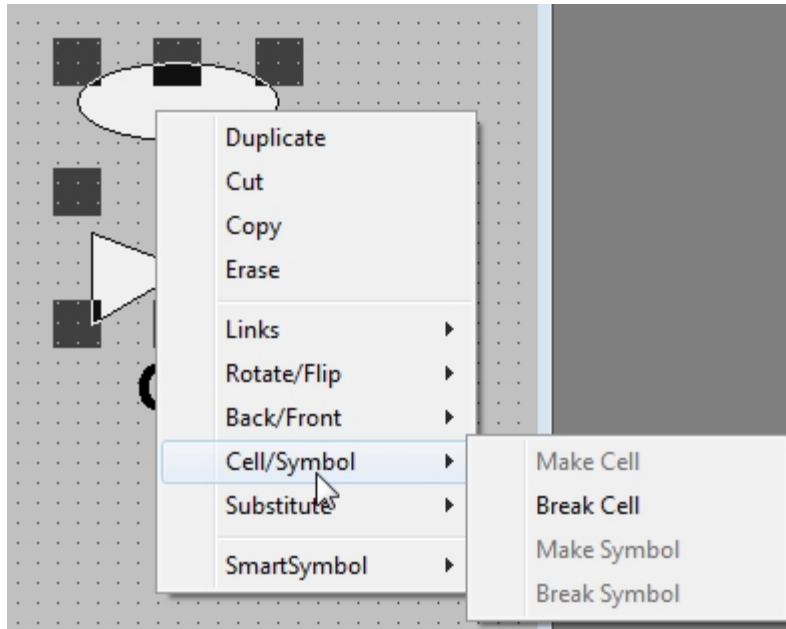Figure 33-A
Cell/Symbol Selection – Symbol Context Menu

Figure 34-A
Cell/Symbol Selection – Cell Context Menu

Review Questions

1.   T   F   Cells can have multiple Animation Links .

2.   A InTouch Window object that cannot be resized

   a)   Rectangle Object

   b)   Cell

   c)   Symbol

   d)   Wizard Objects

3.   To return a cell back to the original objects - use:

   a)   Break Symbol

   b)   Make Cell

   c)   Break Cell

d)   Cells cannot be returned to its original objects

4.   T   F   Symbols can be resized

5.   Wonderware InTouch objects that can be resized.

a)   Cells

b)   Symbols

c)   Wizard Objects

d)   Text

e)   None of the Above

6.   T   F   Individual objects within a cell cannot have its own Animation
             Links

7.   T   F   Individual objects within a symbol can have its own Animation
             Links

8.   T   F   Objects cannot overlap on an InTouch Window

9.   T   F   Cells cannot be resized

10.   Objects that can be included in a Symbol are :

a)   Ellipse .

b)   Polygon

c)   Rectangle

d)   All the above.

Review Questions Answers

1) T

2) b

3) c

4) T

5) b, c, d

6) F

7) F

8) F

9) T

10) d