AUTODESK **UNIVERSITY** 2015

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Beyond out of the box customization for AutoCAD P&ID

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Autodesk

Learning Objectives

- Navigate successfully through project setup
- Know how to create custom engineering items
- Know how to create unique tagging
- Know how to create custom off page connectors

Description

In this class I will share some useful steps to customize content to use in your AutoCAD P&ID software projects. You will be lead through accessing the project setup and learn what can be edited. We will primarily focus on accessing Engineering Items. This will involve creating custom equipment, inline assets, and instrumentation. In addition I will show how to create unique tagging and custom off page connectors.

Your AU Experts

Quentin Contreras *joined Autodesk in 2012 working with Frontline Customer Support and is currently a Premium Support Specialist working with Enterprise Priority Support focusing on customers with AutoCAD Plant Design software. Quentin has been involved with Autodesk technology for over 25 years (starting with release 10). Prior to joining Autodesk he worked with various companies as a CAD Manager and Designer with focus in the oil and gas industry and ammonia refrigeration. Prior to joining Autodesk he primarily worked using AutoCAD P&ID to develop as-built drafting services for various industries. This required various levels of customization due to following set guidelines set up with each customer he worked with. He is also a contributor to the In the Pipes blog that provides helpful tips and tricks to AutoCAD Plant 3D and P&ID users.*

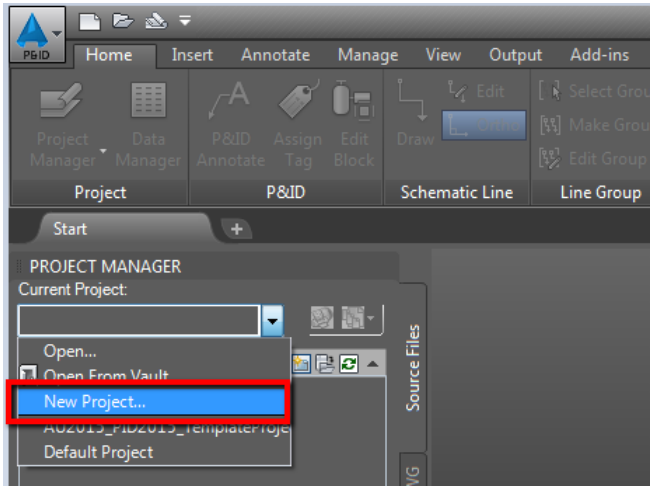
Navigating the Project Setup

When creating P&ID diagrams you might find the need to create custom content not provided in the out of the box items of AutoCAD P&ID. At this point you should develop a plan for exactly what is going to be required in generating P&ID's per your business standards. Having a good plan helps make sure that you have an organized method for creating content and avoid having to come back once P&ID's have been created.

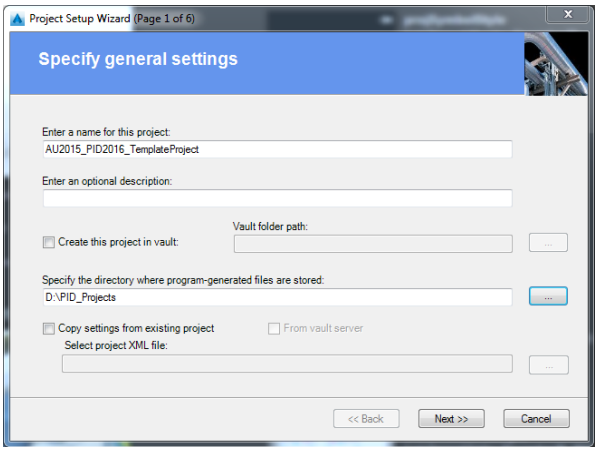
Before you dive into starting a project you will want to create the custom content to use in your AutoCAD P&ID drawings. I would suggest working on a template project first so that you can test as you create. I would also suggest you identify a user or users who will be creating custom content. Having a key user or users who are responsible for the custom content will help in knowing what new content or changes have been done in the project. I have seen companies create content as they go and that can lead to different variations of single items if users are not aware of changes made to the custom content within a project.

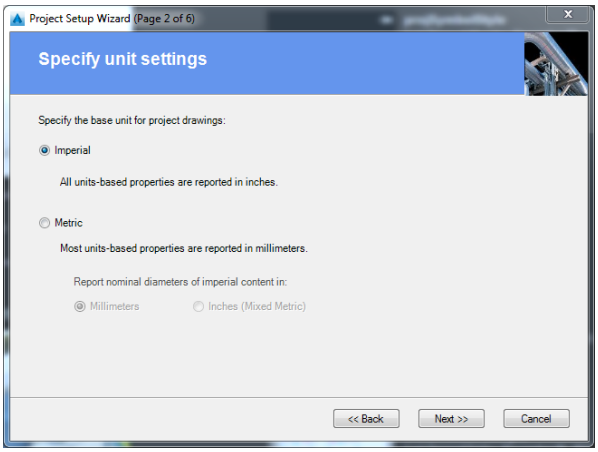
Creating the Template Project

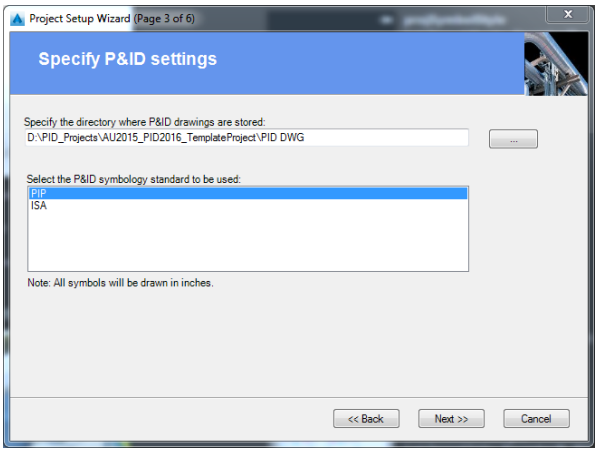
You will need to open AutoCAD P&ID and create a project that you will use as your template project. From the Project Manager you can select New Project to create this new Project.

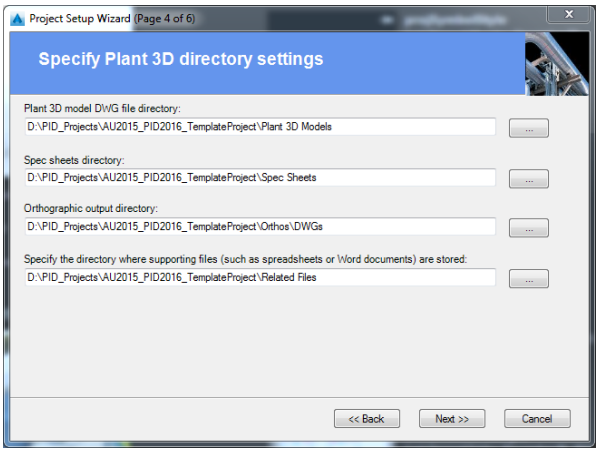


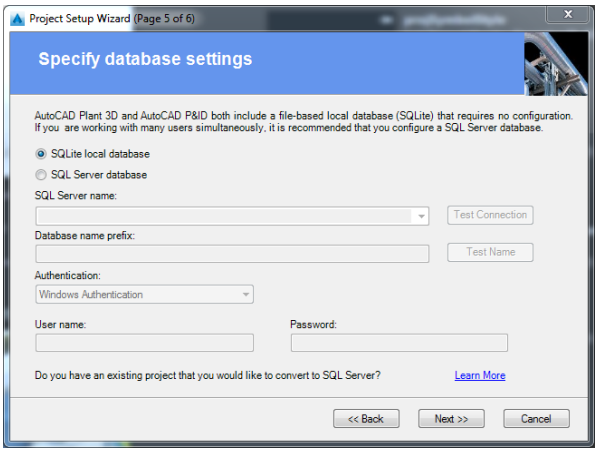
Then go through the rest of the Project Setup Wizard adjusting general settings, unit settings, P&ID settings, Plant 3D directory settings and database settings.



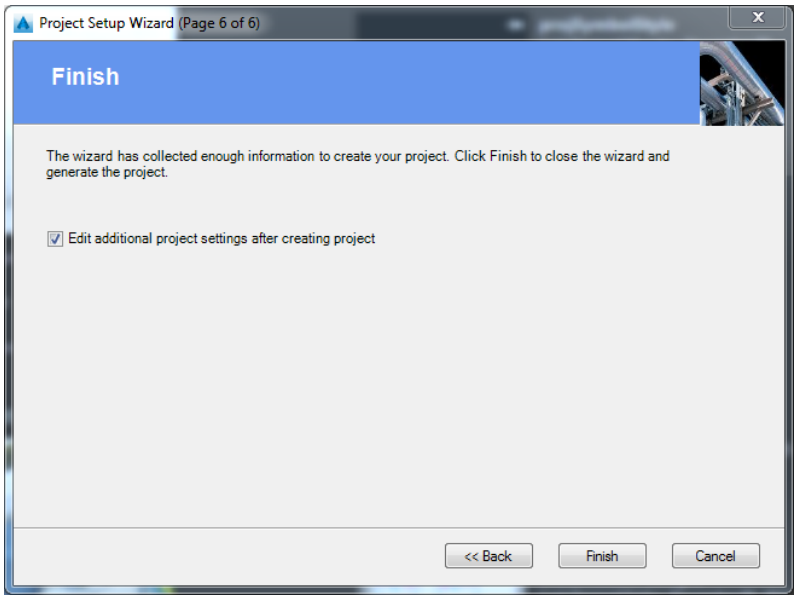




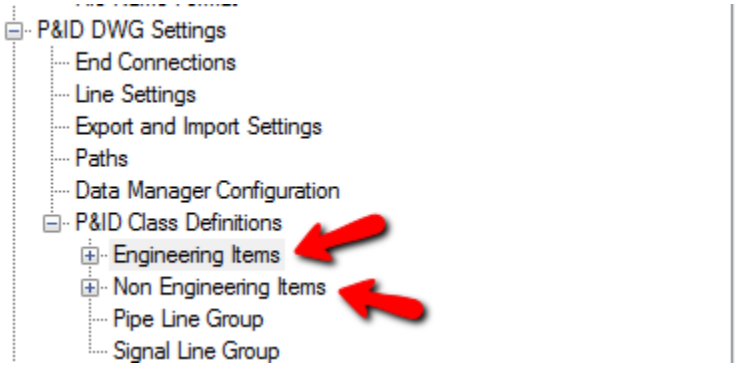




Before you select Finish to complete the Project Setup Wizard, check box for Edit additional project settings after creating project in the finish window.



The focal area we will be working in the Project Setup is the P&ID Class Definitions. The sub parts Engineering Items and Non Engineering Items is where we will setup our custom equipment, inline assets, instrumentation, lines, off page connectors and all associated tagging.

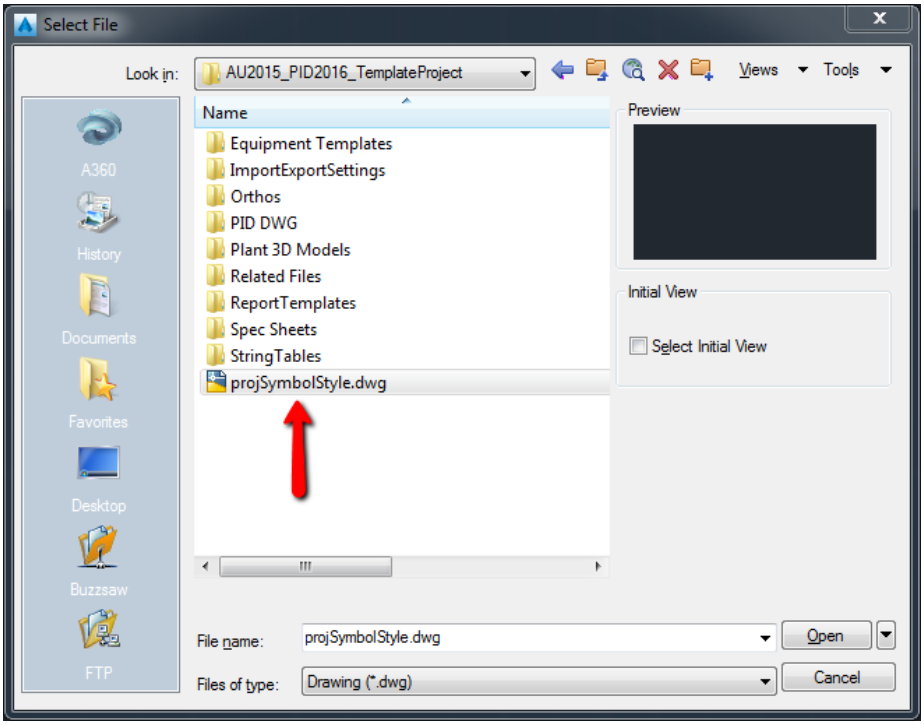


Creating Custom Engineering Items

AutoCAD P&ID comes with P&ID symbols used from the PIP, ISO, ISA, DIN and JIS-ISO standards. This does not necessarily mean that every P&ID symbol ever created is included. What I have encountered is that not all P&ID's are created the same way. P&ID symbols can vary depending on system applications, internal company standards, and user creativity. Luckily AutoCAD P&ID comes with powerful customization tools found inside the Project Setup. For a novice user, navigating through the Project Setup can seem like finding a needle in a haystack. However, having a planned and organized workflow can make custom symbol creation a manageable task.

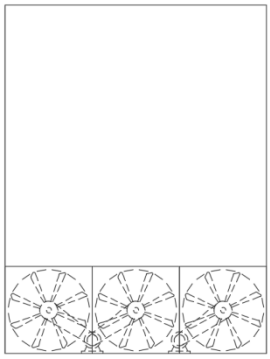
Custom Symbol Storage and Location

Every time you create a new AutoCAD P&ID project various files and folders are created that are associated with that project. Within the root structure of the P&ID project is a drawing file called projSymbolStyle.dwg.

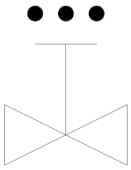


The projSymbolStyle drawing contains P&ID blocks that are used in coordination with the project setup. Essentially when you select a symbol from a palette, AutoCAD P&ID knows through the configuration in the Project Setup to pull that symbol from the projSymbolStyle.dwg. In order to get your custom symbols to work from a palette you will first need to create a block of your symbol inside the projSymbolStyle.dwg. This is how we will start with creating the custom symbols to use in our template project. You are going to create a custom symbol in the Engineering Items for Equipment and Inline Assets, Instrumentation.

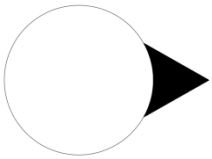
For the Equipment you will be creating this Evaporative Condenser.



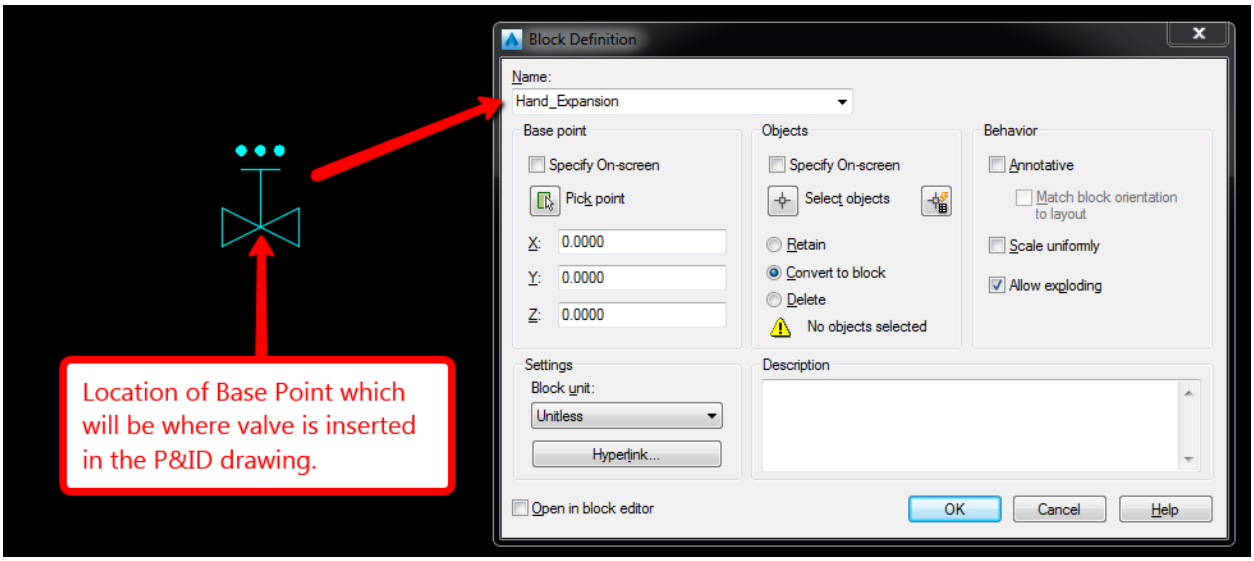
For the Inline Asset, Hand Valves you will be creating this Hand Expansion Valve.



For the Instrumentation, Inline Instruments you will create this Inline Flow Indicator.



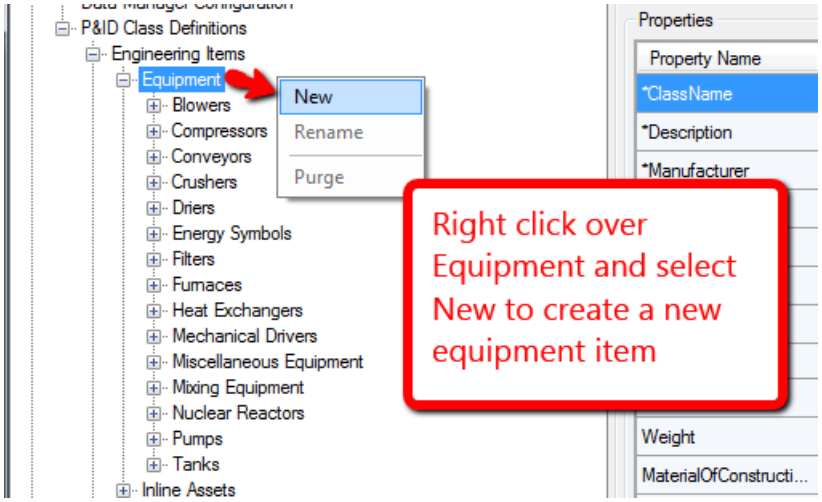
You will need to open the projSymbolStyle.dwg and create the custom symbols you want to use or you can insert the custom symbols from another drawing location. Once you have the symbols placed in the drawing you will need to block the symbols. When creating the blocks you will want to name the blocks matching to what symbol is being created. The other important part of the block creation is picking the base point. For example the Expansion Valve and the Flow Indicator, you have to remember that this is going to be placed on a process line in your P&ID drawings. So, the base point should be located according to how the process line will pass through the symbol.



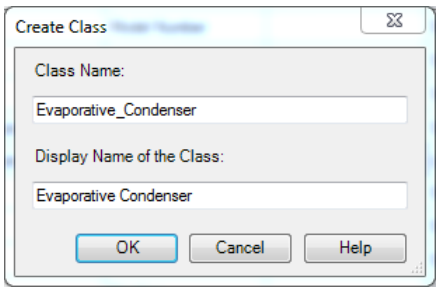
For these three symbols that are converted to blocks you can name them Evaporative_Condenser, Hand_Expansion and Flow_Indicator. Once you have created the blocks you will notice the symbols are still shown in the projSymbolStyle.dwg. At this point you may go ahead and erase them from the drawing. The symbols are now blocks residing inside the drawing and there is no need to keep them shown in the drawing. You will need to Save the drawing and close the drawing.

Custom Symbol Blocks to Project Setup

With the custom symbol blocks now created, you can incorporate them into the project setup. To show how this is done we will start with the Evaporative Condenser block previously created. You will need to access the Project Setup and navigate to the Engineering Items. Then you will select Equipment to expand the equipment list to show all the out of the box equipment items. If you right click over Equipment a pop-up list will appear giving you the option to create a New equipment item.

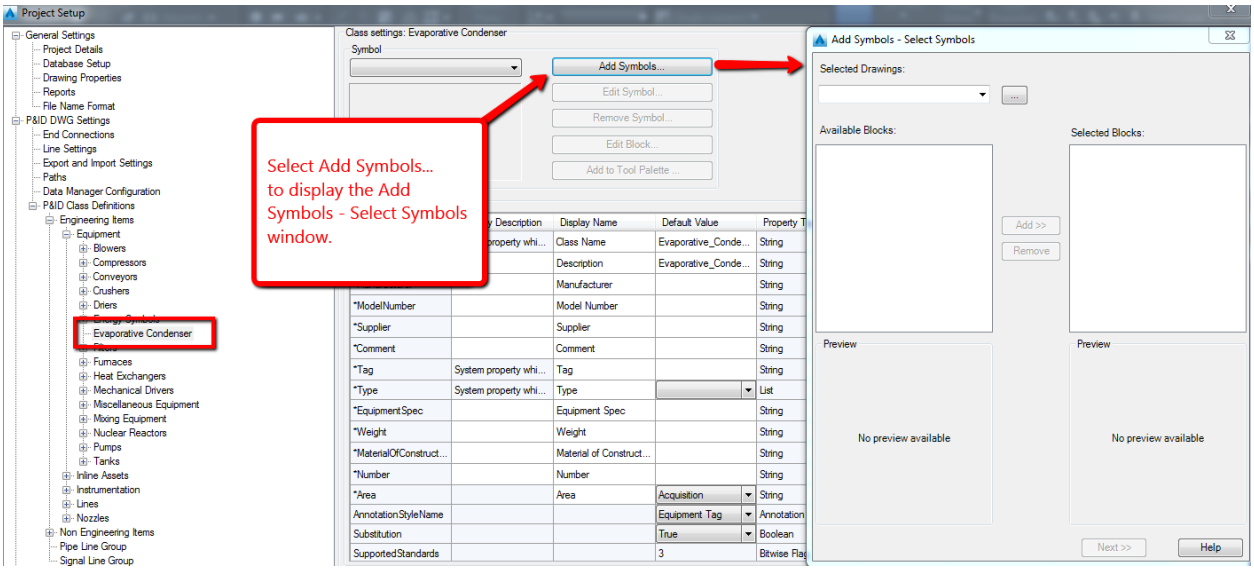


When you select New, the Create Class window will display. This is where you will name the equipment class to be displayed in the Project Setup. Enter Evaporative_Condenser for the Class Name and Evaporative Condenser for the Display Name of that Class. Select OK to close the Create Class window.

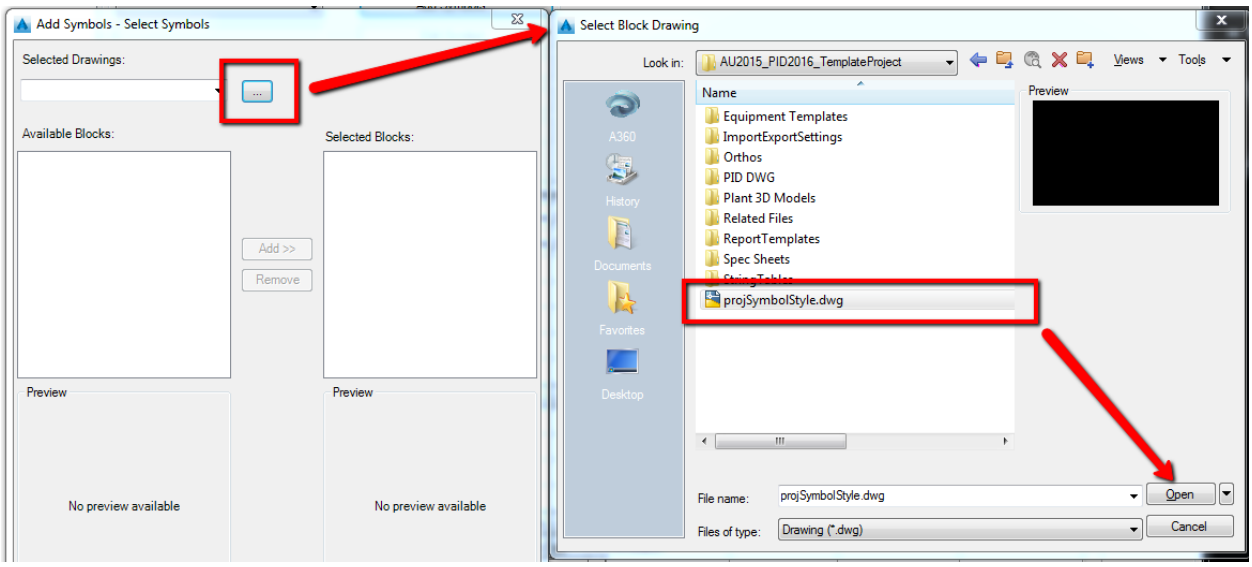


**Note: The Class Name does not allow for spaces to be part of the name. Only the Display Name of the Class allows spaces.*

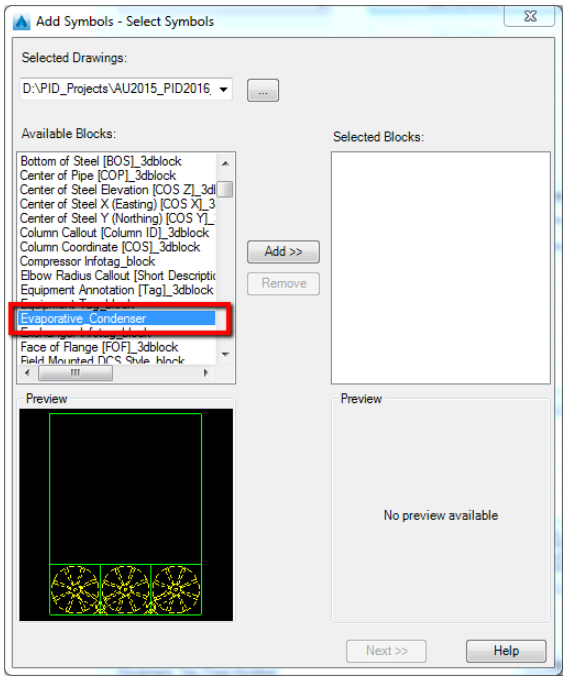
The Evaporative equipment class will now be displayed with the rest of the equipment classes. Within the class settings you will now be able to add the Evaporative Condenser block to the class. At the top of the Project Setup window select the Add Symbols button. The Add Symbols – Select Symbols window will display.



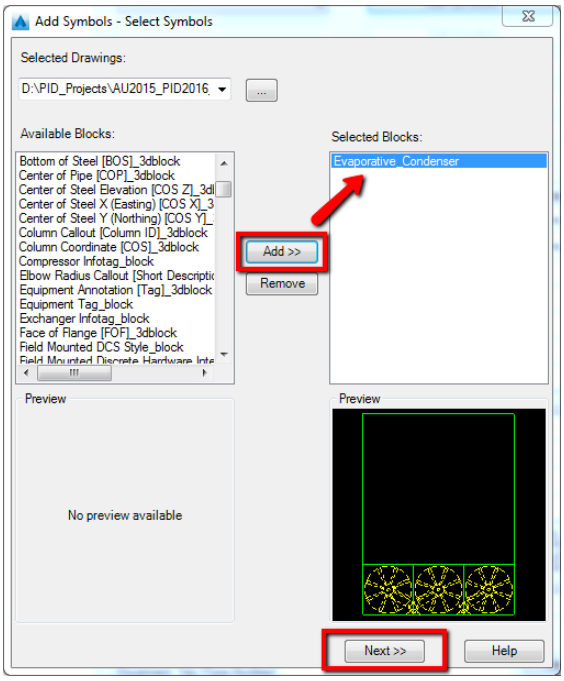
In the Add Symbol – Select Symbols window select " ... " button to be able to browse and find the projSymbolStyle.dwg. When you navigate to the projSymbolStyle.dwg select it and select Open to close the window.



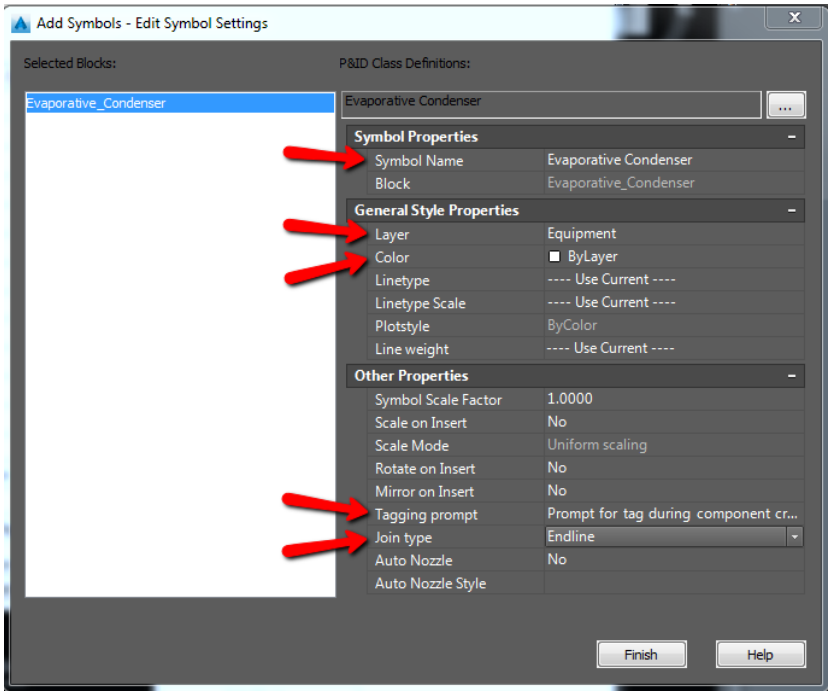
When the projSymbolStyle.dwg is selected this will populate the Available Block area of the Add Symbols – Select Symbols window. At this point you can scroll through the blocks and find the Evaporative_Condenser.



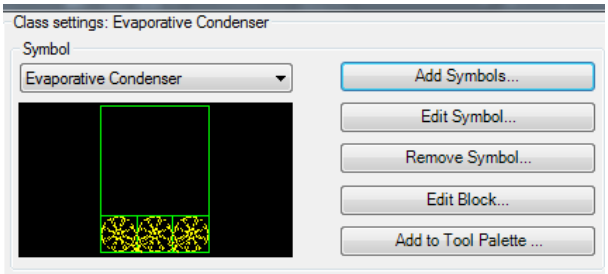
When the Evaporative_Condenser block is located, select it and then click on the Add>> button. This will add the block to the Selected Blocks area of the Add Symbols – Selected Symbols window. Then you can select the Next>> button to close the Add Symbols – Select Symbols window.



The Add Symbols – Edit Symbol Settings window now appears. This window is sectioned into three different areas: Symbol Properties, General Style Properties and Other Properties. For the Symbol Property section you will need to add a Symbol Name. In the blank area enter Evaporative Condenser. In the General Style Properties area you will set the Layer to Equipment layer and set Color to ByLayer. The remaining items in the General Style Properties leave them as they are assigned. Finally, in the Other Properties change Tagging prompt to Prompt for tag during component creation and Join type to Endline. The Join Type is important to set because it impacts what a P&ID line will do when it comes to the Evaporative Condenser. For this Evaporative Condenser we want P&ID lines to either come from it or leave from it. So, for this reason you set the Join Type to Endline. The remaining items in the Other Properties leave them as they are assigned. You can select Finish to close the Add Symbols – Edit Symbol Settings window.

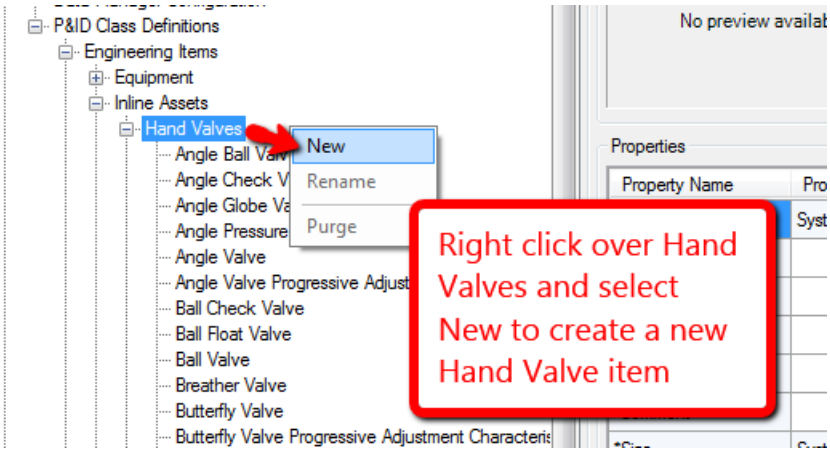


You will now be returned to the Project Setup window. You can see that the symbol name and a symbol preview have been added. At this point you should click Apply or OK in the Project Setup window to save the work that has just been completed.

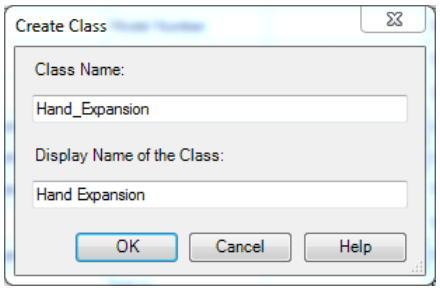


The next steps would be to add any additional properties desired to the Evaporative Condenser, assign a tag or annotation to be used and to add the symbol to a tool palette. However, there are still two other symbols left to create. So, you will want to create the two remaining symbols first and then come back to apply tagging and add the symbol to the tool palette.

Once again access the project setup so that the Hand Expansion Valve can be configured in the project setup. In the Project Setup you will navigate to the Engineering Items. Then you will select Inline Assets, then Hand Valves to expand the Hand Valves list to show all the out of the box Hand Valve items. If you right click over Hand Valves a pop-up list will appear giving you the option to create a New Hand Valve class.

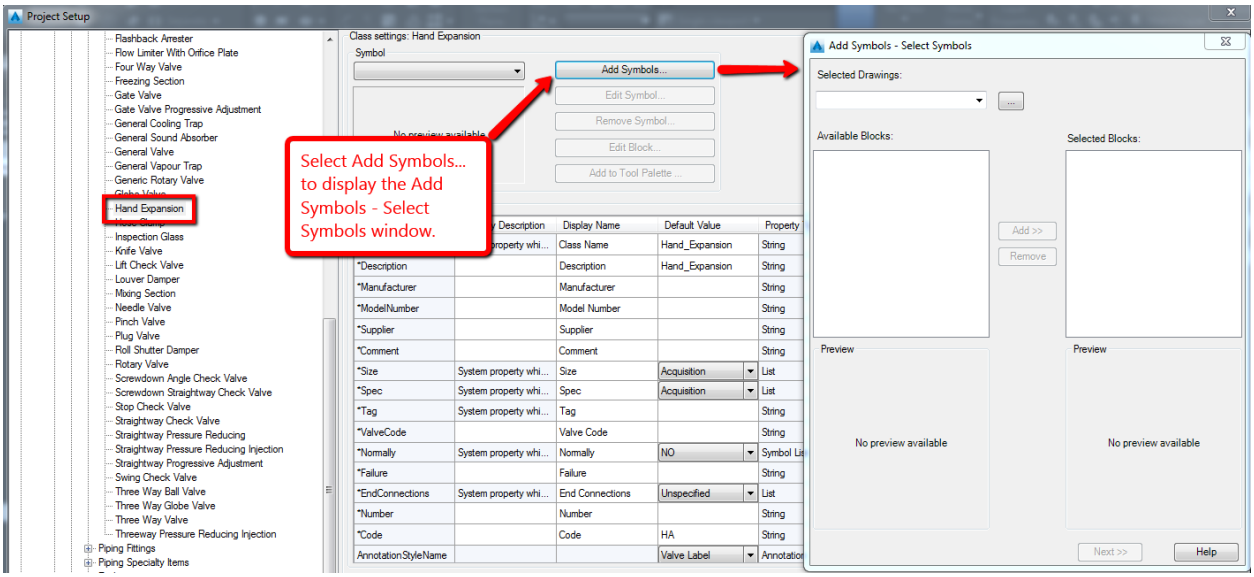


When you select New the Create Class window will display. This is where you will name the equipment class to be displayed in the Project Setup. Enter Hand_Expansion for the Class Name and Hand Expansion for the Display Name of that Class. Select OK to close the Create Class window.

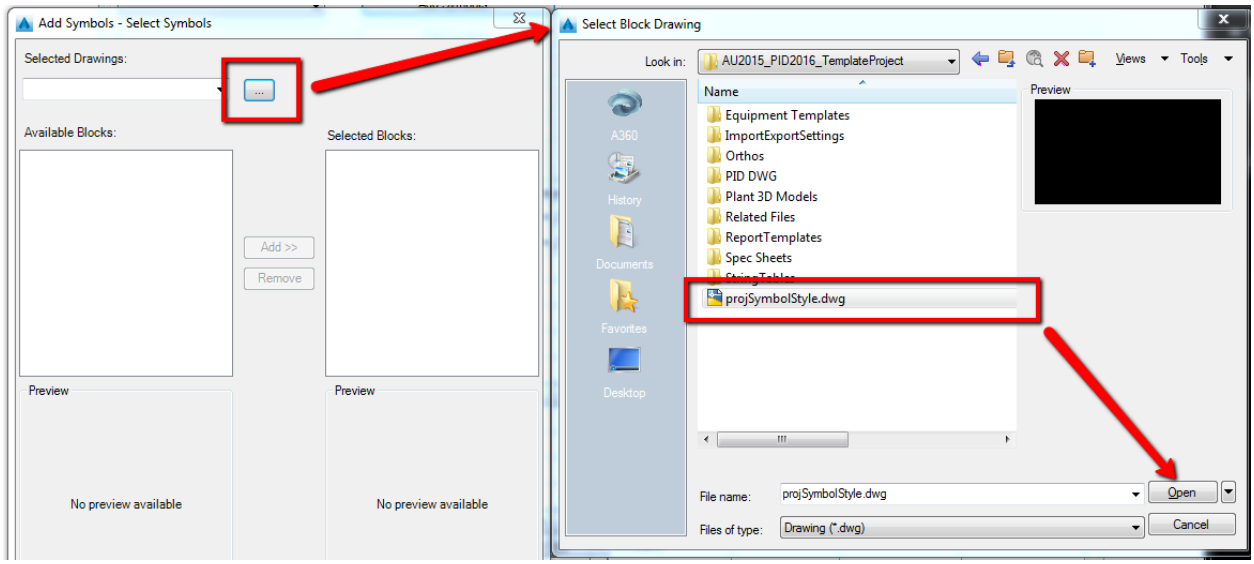


**Note: The Class Name does not allow for spaces to be part of the name. Only the Display Name of the Class allows spaces.*

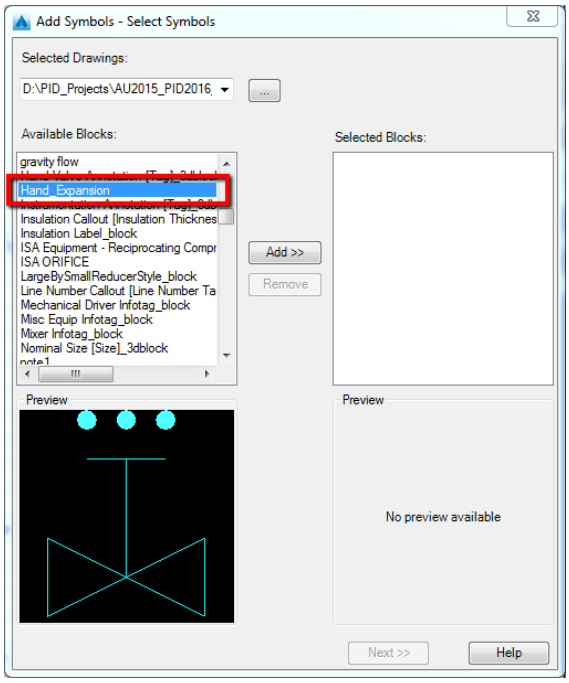
The Hand Expansion class will now be displayed with the rest of the Hand Valves items. Within the class settings you will now be able to add the Hand Expansion valve block to the class. At the top of the Project Setup window select the Add Symbols button. The Add Symbols – Select Symbols window will display.



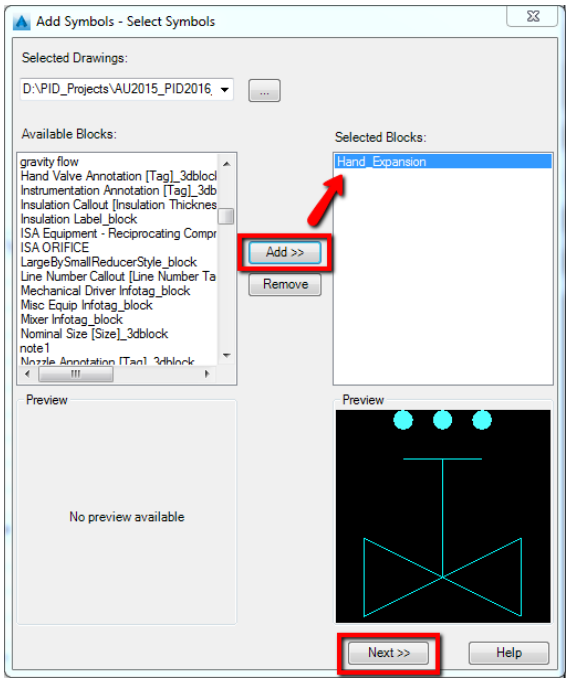
In the Add Symbol – Select Symbols window select " ... " button to be able to browse and find the projSymbolStyle.dwg. When you navigate to the projSymbolStyle.dwg select it and select Open to close the window.



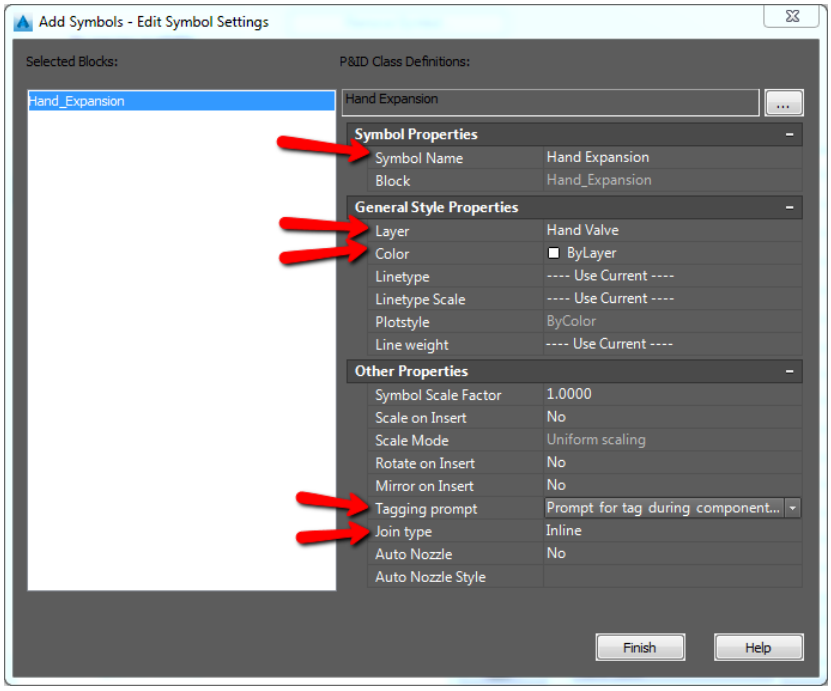
When the projSymbolStyle.dwg is selected this will populate the Available Block area of the Add Symbols – Select Symbols window. Now you can scroll through the blocks and find the Hand_Expansion.



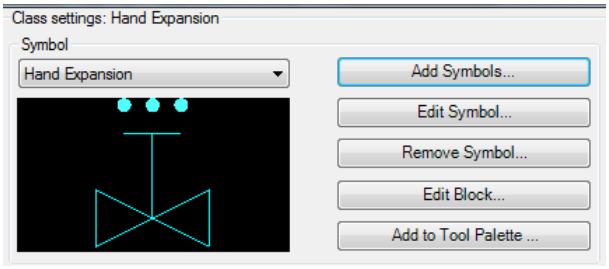
When the Hand_Expansion block is located, select it and then click on the Add>> button. This will add the block to the Selected Blocks area of the Add Symbols – Selected Symbols window. Then you can select the Next>> button to close the Add Symbols – Select Symbols window.



The Add Symbols – Edit Symbol Settings window appears, in the Symbol Properties area for Symbol Name enter. In the General Style Properties area you will set the Layer to Hand Valves layer and set Color to ByLayer. The remaining items in the General Style Properties leave them as they are assigned. Finally, in the Other Properties change Tagging prompt to Prompt for tag during component creation and Join type to Inline. The Join Type is set to Inline because it impacts what a P&ID line will do when it comes to the Hand Expansion valve. For the Hand Expansion valve we want P&ID lines not to display when they pass through the valve. For this reason you set the Join Type to Inline. The remaining items in the Other Properties leave them as they are assigned. You can select Finish to close the Add Symbols – Edit Symbol Settings window.

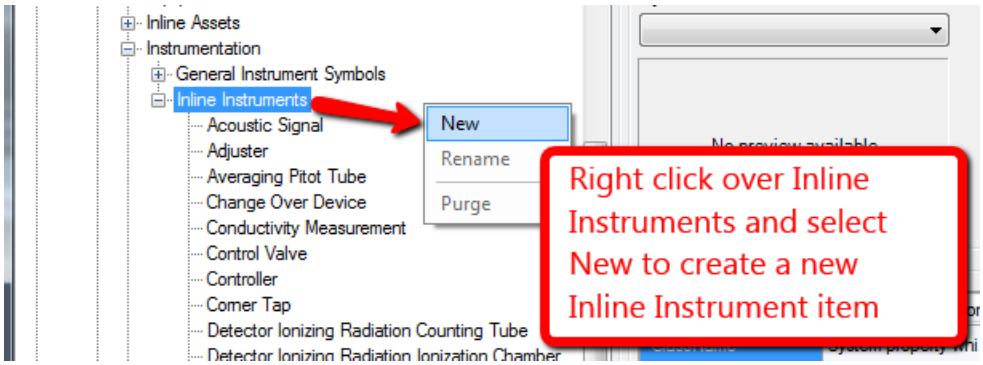


You will now be returned to the Project Setup window. You can see that the symbol name and a symbol preview have been added. You should click Apply or OK in the Project Setup window to save the work that has just been completed.

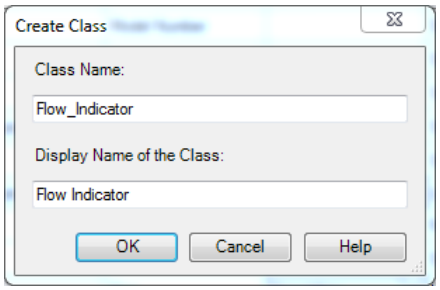


The next steps would be to add any additional properties desired to the Hand Expansion valve, assign a tag or annotation to be used and to add the symbol to a tool palette. However, there is still one remaining symbol to create.

Once again access the project setup so that the Flow Indicator can be configured in the project setup. In the Project Setup you will navigate to the Engineering Items. Then select Instrumentation and then Inline Instruments to expand the Inline Instruments list to show all the out of the box Inline Instruments items. If you right click over Inline Instruments a pop-up list will appear giving you the option to create a New Inline Instrument class.

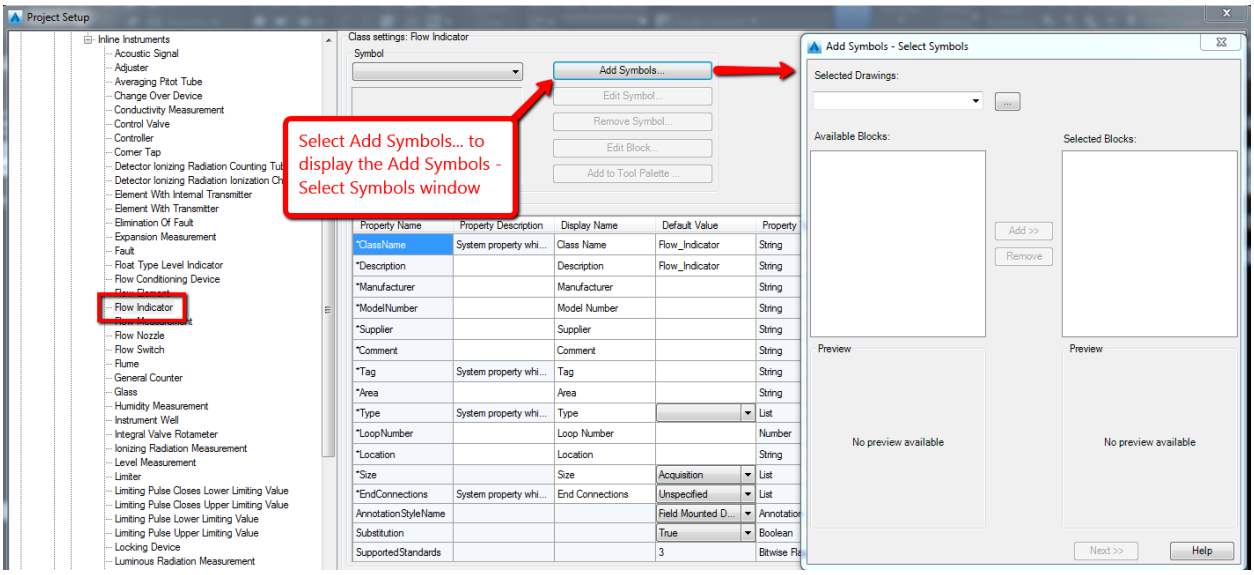


When you select New the Create Class window will display. This is where you will name the inline instrument class to be displayed in the Project Setup. Enter Flow_Indicator for the Class Name and Flow Indicator for the Display Name of that Class. Select OK to close the Create Class window.

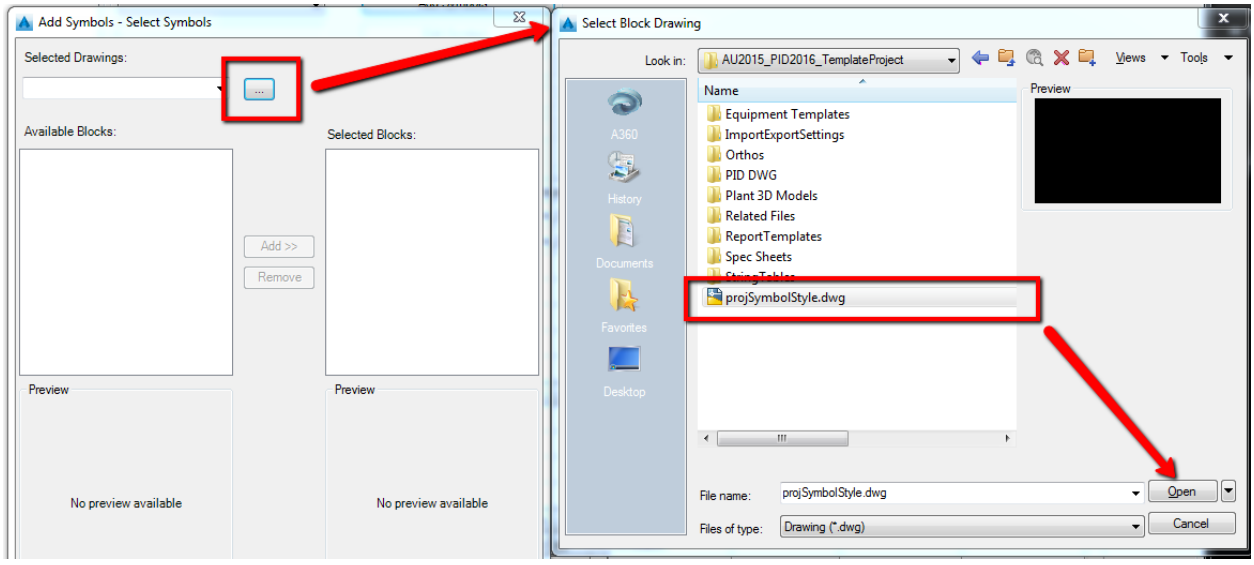


**Note: The Class Name does not allow for spaces to be part of the name. Only the Display Name of the Class allows spaces.*

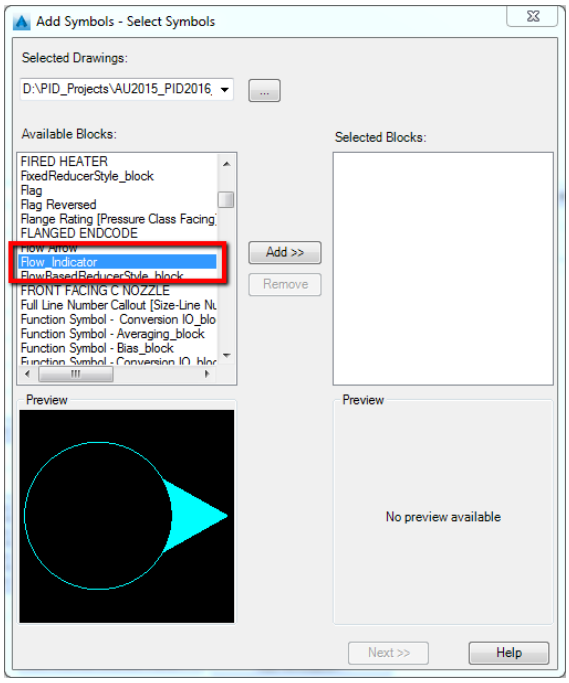
The Flow Indicator class will now be displayed with the rest of the Inline Instruments items. Within the class settings you will now be able to add the Flow Indicator block to the class. At the top of the Project Setup window select the Add Symbols button. The Add Symbols – Select Symbols window will display.



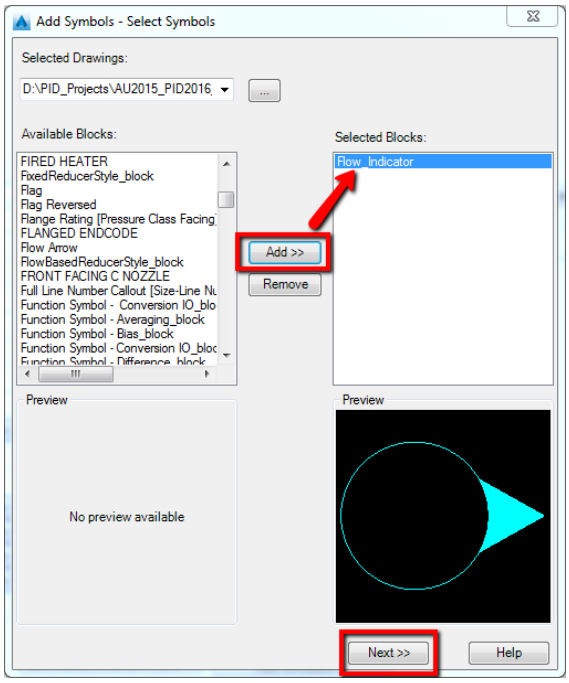
In the Add Symbol – Select Symbols window select " ... " button to be able to browse and find the projSymbolStyle.dwg. When you navigate to the projSymbolStyle.dwg select it and select Open to close the window.



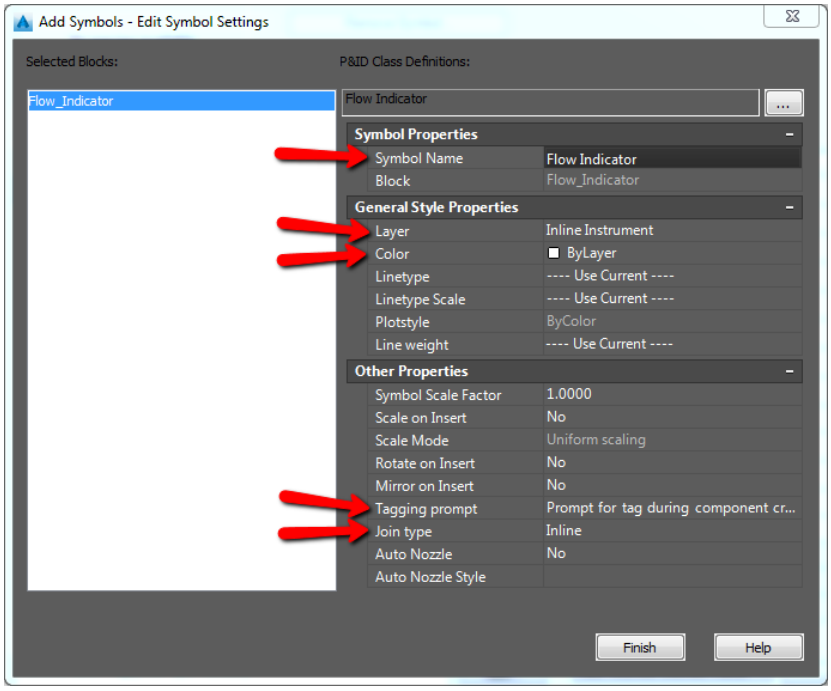
When the projSymbolStyle.dwg is selected this will populate the Available Block area of the Add Symbols – Select Symbols window. Now you can scroll through the blocks and find the Flow_Indicator.



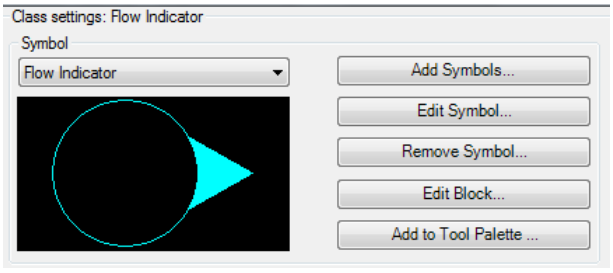
When the Flow_Indicator block is located, select it and then click on the Add>> button. This will add the block to the Selected Blocks area of the Add Symbols – Selected Symbols window. Then you can select the Next>> button to close the Add Symbols – Select Symbols window.



The Add Symbols – Edit Symbol Settings window appears, in the Symbol Properties area for Symbol Name enter Flow Indicator. In the General Style Properties area you will set the Layer to Inline Instrument layer and set Color to ByLayer. The remaining items in the General Style Properties leave them as they are assigned. Finally, in the Other Properties change Tagging prompt to Prompt for tag during component creation and Join type to Inline. The Join Type is set to Inline because it impacts what a P&ID line will do when it comes to the Flow Indicator. For the Flow Indicator we want P&ID lines not to display as they pass through the flow indicator. It is for this reason you set the Join Type to Inline. The remaining items in the Other Properties leave them as they are assigned. You can select Finish to close the Add Symbols – Edit Symbol Settings window.



You will now be returned to the Project Setup window. You can see that the symbol name and a symbol preview have been added. Now you should click Apply or OK in the Project Setup window to save the work that has just been completed.



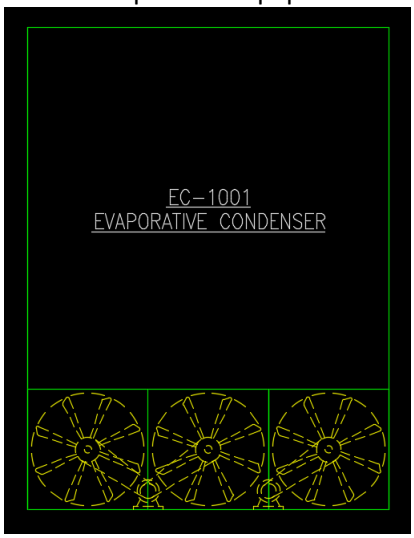
With all the custom P&ID symbols added the project setup you can now go setup any custom tagging.

Creating Unique Tagging

With an out of the box project tag formats for Equipment, Hand Valves, and Inline Instruments are already created in the project. However, your workflow will mostly likely require you to create unique tagging in your P&ID drawings. With the custom symbols that were previously created you will now go through the process of setting up unique tagging for the Evaporative Condenser and Hand Expansion valve.

Custom tagging formats

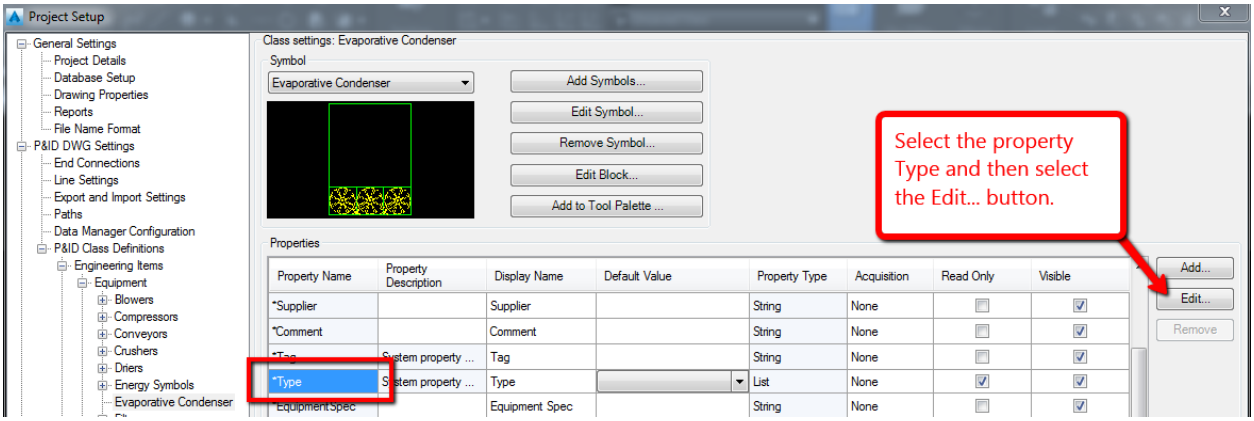
The first tag format you will be creating will be for the Evaporative Condenser. This tag will insert two lines of text. The first line of text will have an equipment type abbreviation and equipment number. The second line of text will be a description of the piece of equipment.



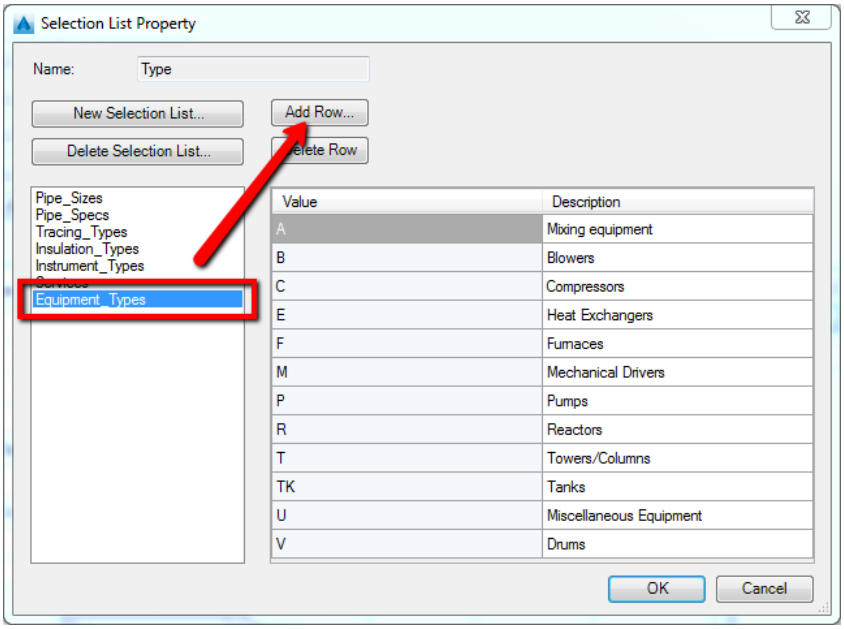
The second tag format you will be creating will be for the Hand Expansion valve. This tag will consist of three subparts, those parts being size, valve type and valve number.

Tag format creation in the Project Setup

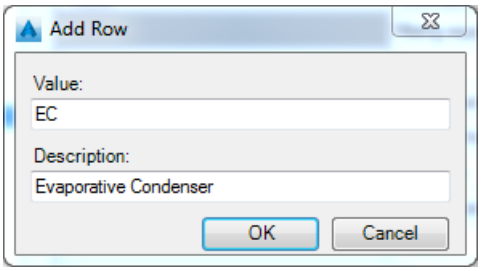
The first tag you will create is for the Evaporative Condenser. Access the Project Setup and navigate to the Evaporative Condenser. In the properties for the Evaporative Condenser find and select the Type so that it becomes highlighted. With this equipment tag you want the type "EC" to automatically apply when the symbol is placed in the drawing. With the Type still highlighted select the Edit.. button on the right side of the Project Setup window.



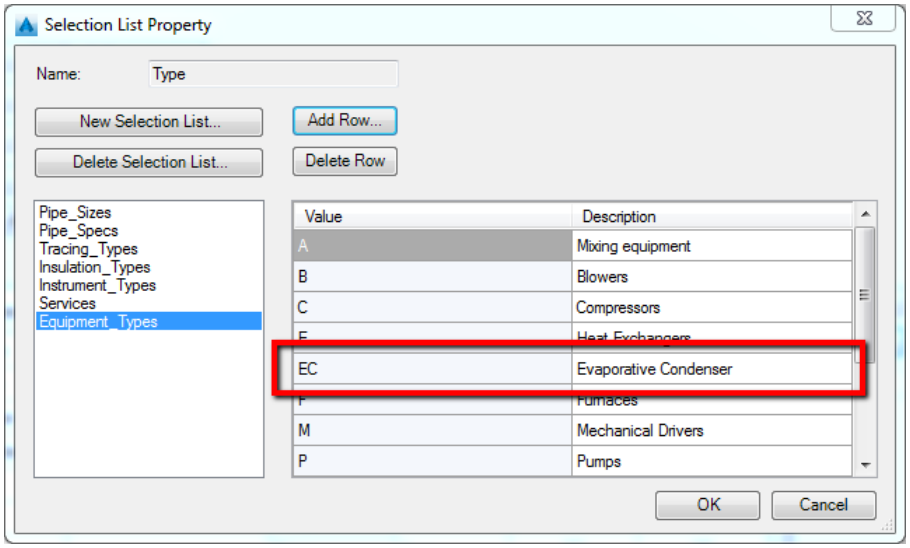
When the Edit.. button is select the Selection List Property window will be diplayed. You are able to create your own selection list in this window and edit the existing list. Selection lists are already listed when this P&ID project was created. For the equipment tag you are creating you will be editing the Equipment_Types selection list. Select the Equipment_Lists list so that it becomes highlighted. When you select the list the values and descriptions for the equipment type are listed. You will need to add the "EC" to this list for the Evaporative Condenser. To do this select the Add Row… button.



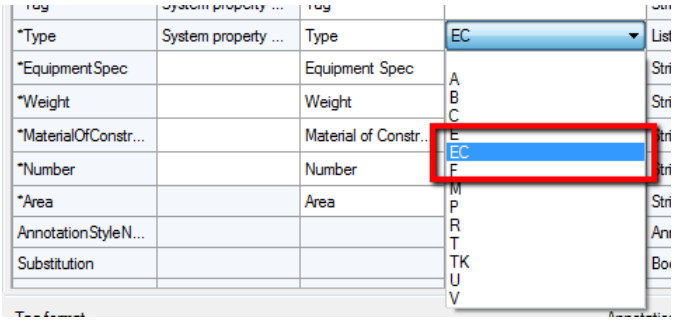
When you select the Add Row… button the Add Row window will prompt you for a Value and Desciption. For the Value enter EC, for the Description enter Evaporative Condenser and then select OK.



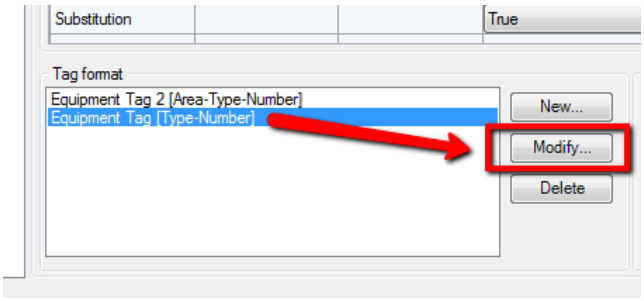
You will now be able to see that the EC value was added the the Equipment_Types selection list. Go ahead and select OK to close the Selection List Property window.



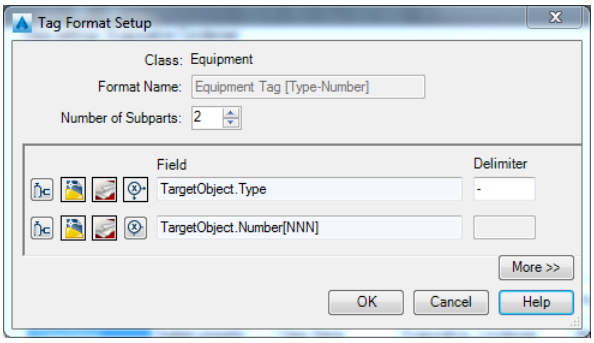
In the Project Setup select the drop down list for the equipment types. Find the EC, selecting it will make sure that EC is automatically applied to the equipment tag.



Now that the tag has been setup, the Tag Format will need to be updated. At the bottom of the Project Setup window find the Tag Formats. You will be editing the Equipment Tag [Type-Number]. Select this tag and select the Modify… button.

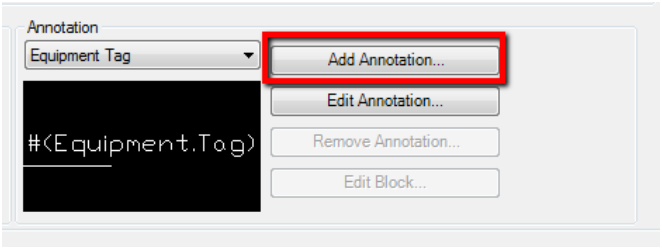


The Tag Format Setup window is displayed. From this window you can apply property information for this piece of equipment to the tag format. The tag of the Evaporative Condesner there is no need to make any changes as both fields are pulling the correct property information. Go ahead and select OK to close the Tag Format Setup.

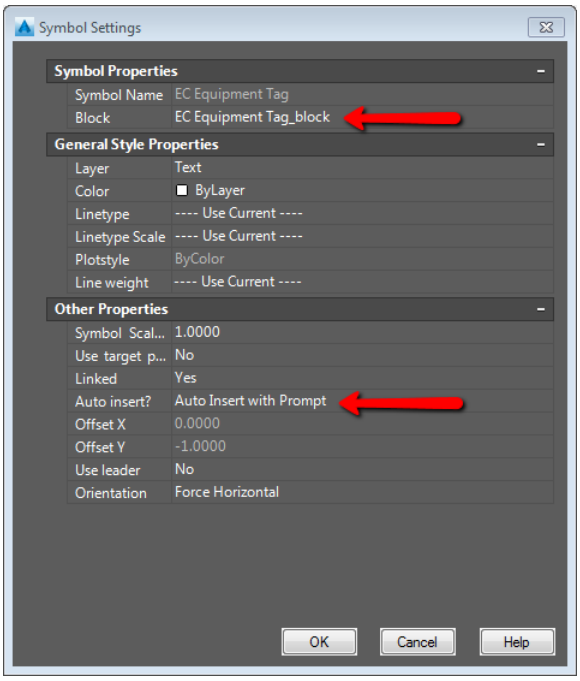


At this point it would be a good idea to select Apply in the Project Setup window to save changes.

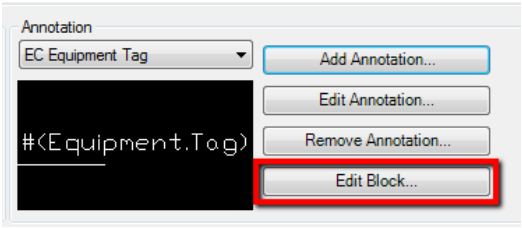
Now that the tag format is configured you can now setup the Annotation. The Annotation is the tag that will be inserted when the Evpaorative Condenser is inserted into the P&ID drawing. At the bottom of the Project Setup window locate the Annotation area. Select the annotation for the Equipment Tag and then select the Add Annotation… button.



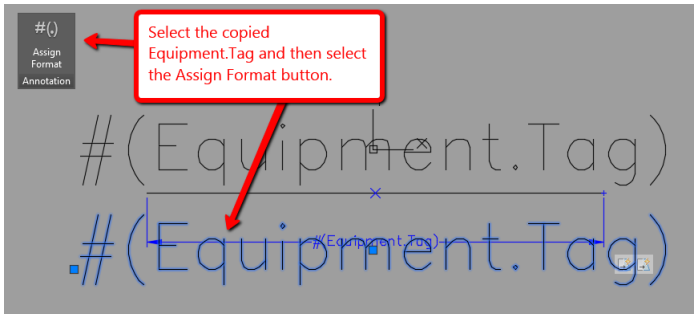
The Symbol Settings window will appear so that you can setup the properties for this equipment tag. EC Equipment Tag will need to be typed in for the Symbol Name and Auto Insert set to Auto Insert with Prompt. Select OK to save and close the Symbol setting window.



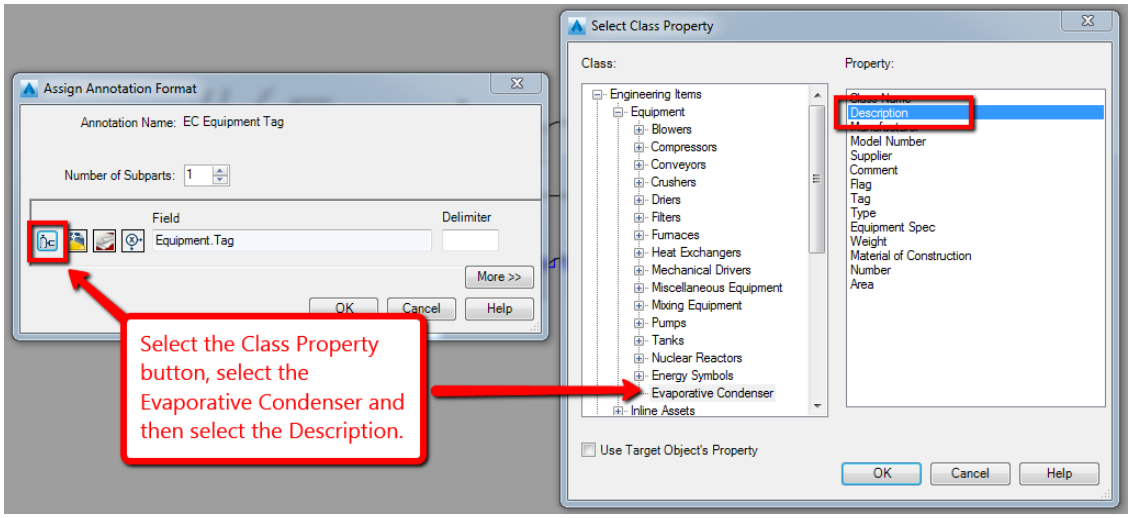
With the EC Equipment Tag set for the annotation select the Edit Block… button.



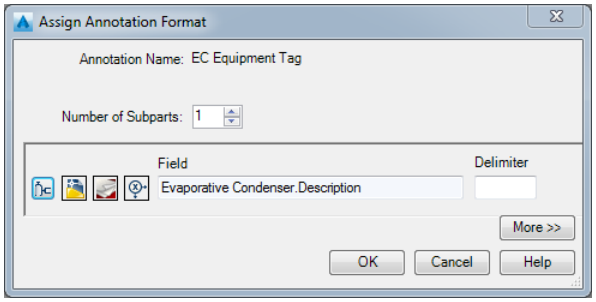
In the block editor you will see the format name setup for the Equipment.Tag. For the tag you are creating you will need to copy this tag and place it below the exisiting Equipment.Tag. Once the tag has been copied, click on the Assign Format button and select the copied Equipment.Tag.



The Assign Annotation Format window will display. Select the Select Class Property button that will display the window to select the properties to use for the tag. In the class list find the Evaporative Condenser and select it. This will populate the properties list for the Evaporative Condenser to use. In the property list find Description and select it and then select OK to close the Select Class Property window. Select OK in in the Assign Annotation Format window to close and save.

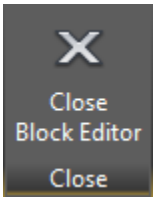


The field should update to show, Evaporative Condenser.Description in the Assign Annotation Format window. Select OK to close the Assign Annoation Format window.

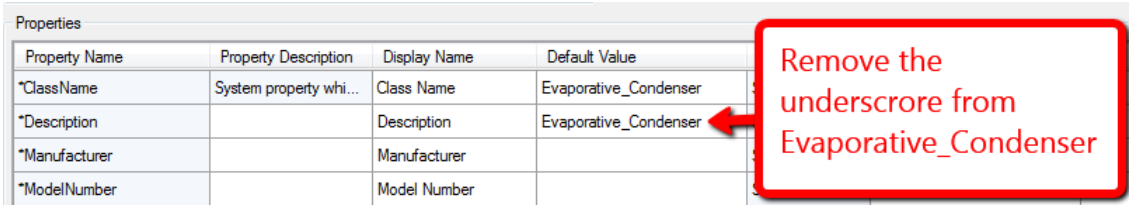


In the block editor you will see the the Equipment.Tag that was copied has updated. Select the updated tag to highlight it and right click on it to display the properties. In the properties window find the Text section and located the Tag. You are going to edit the tag so that it will show up underlined when the tag is inserted into the drawing. Place “%%u” at the beginning of the tag so that tag is as follows: %%u#(Evapoartive_Condenser.Description)

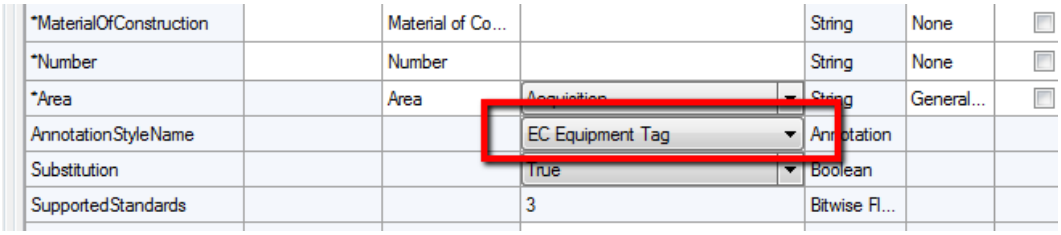
You can now select Close Block Editor on the Block Editor ribbon to close out of the block editor and to save.



With the Project Setup displayed the description for the Evaporative Condenser will need to be edited. When the description was initially setup an underscrore was automatically applied. For this tag description we do not want the underscore to appear. Find the Description in the Project Setup and simply remove the underscore that is between the Evaporative Condenser.

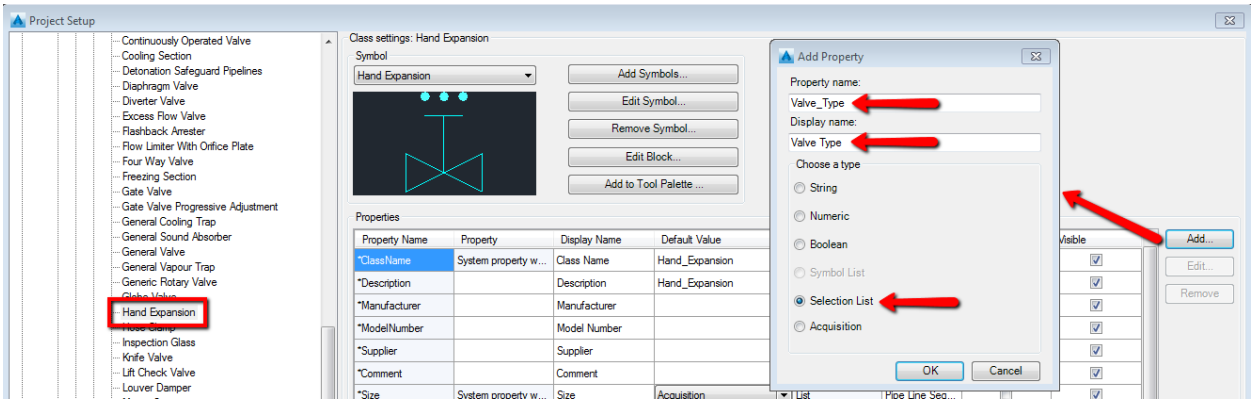


Finally, the only remaining step is to assign this tag as the default. In the Project Setup find the AnnotationStyleName property, using the pulldown list select the EC Equipment Tag.

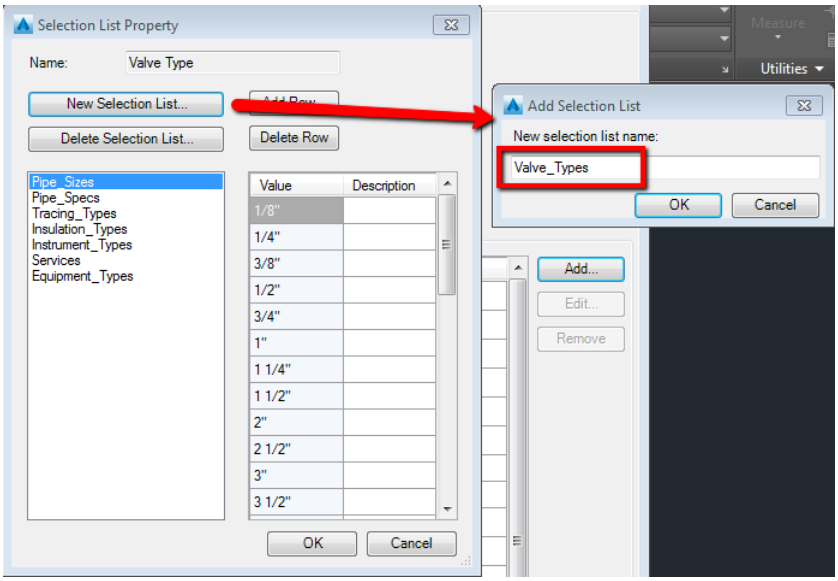


Select Apply in the Project Setup window to save.

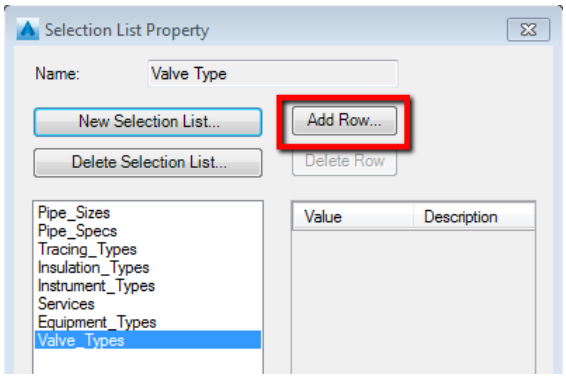
The first tag created you can move to creating the tag for the Hand Expansion valve. Access the Project Setup and navigate to the Hand Expansion valve. In the properties for the Hand Expansion valve you will need to create a new property. This property will be used in the tag for an abbreviated code for the type of valve. On the right side of the Project Setup window select the Add... button. The Add Property window will appear, for the Property Name type Valve Type and for Display Name type Valve Type. Also, set the type to Selection List. Select OK in the Add Property window to close and save.



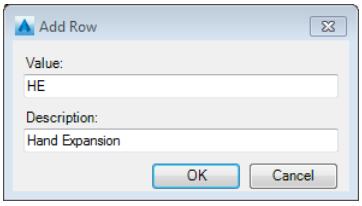
The Selection List Property window will appear prompting you to select a list to use. However, you will need to create a new list for the valve types. Select the New Selection List… button and type in Valve_Types for the new selection list name. Select OK in the Add Selection List window to close and save.



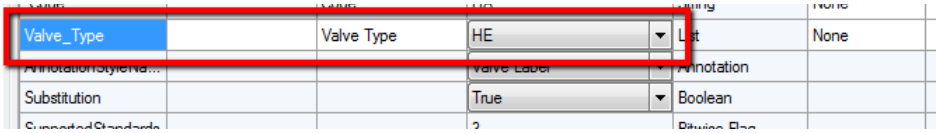
The Selection List Property window will be updated with the Valve_Types. When you select the Valve_Types there will be no values or descriptons listed. Those will have to be manually entered by selecting the Add Row button.



In the Add Row window type in HE for Value and for Hand Expansion for the Description. Select OK to close and save.

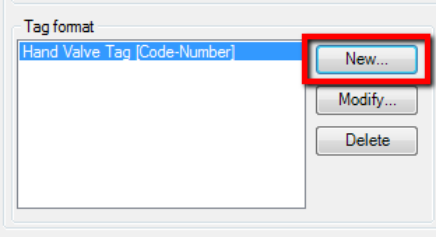


In the Project Setup window you will see that the Valve_Type is added and HE is set to default. You want the HE set to default so that when the valve is created the tag automatically assigns the HE in the tag when the valve is placed in the P&ID drawing.

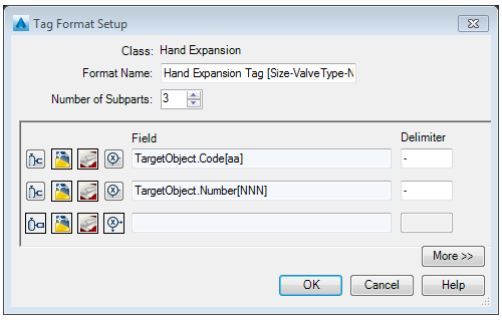


At this point it would be a good idea to select Apply in the Project Setup window to save changes.

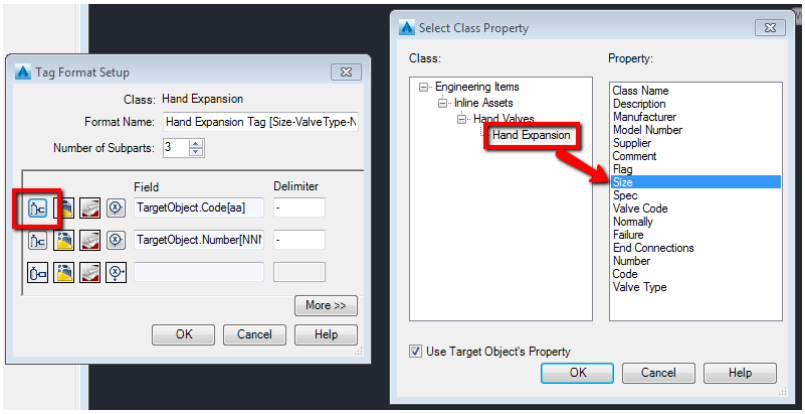
Now a new Tag Format will need to be created for Hand Expansion valve. At the bottom of the Project Setup window find the Tag Formats. You will be creating new tag with using the Hand Valve Tag [Code-Number]. Select this tag and select the New… button.



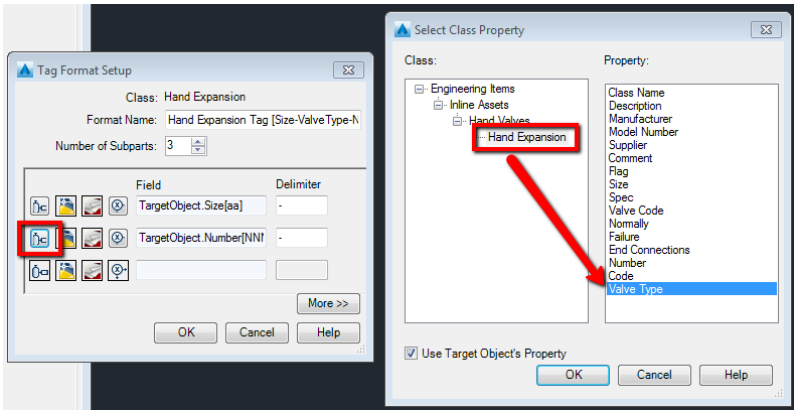
The Tag Format Setup window is displayed. The Format Name will need to be changed to Hand Expansion Tag [Size-ValveType-Number]. Having a descriptive format name helps you to remember exactly how the tag is configured. The other item that will need to be changed are the Number of Subparts. Change the number of Subparts to 3, the three Subparts used in the tag will be size, valve type and valve number.



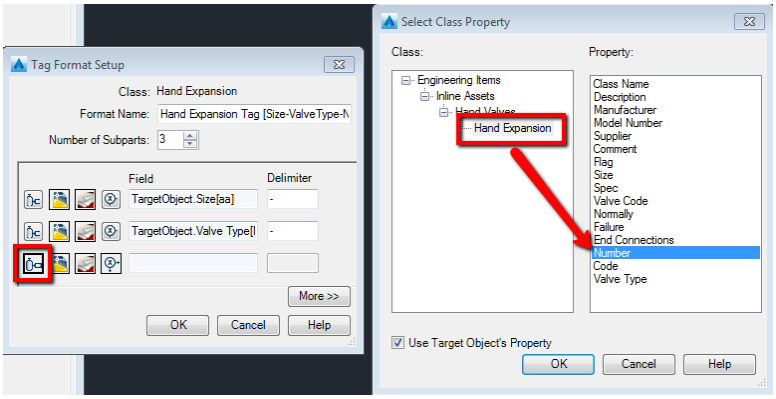
You will need to edit each of the 3 subparts so that the correct information is populated in the tag when it is inserted in the P&ID drawing. Select the first field Select Class Properties button. This will display the Select Class Properties window. Select the Hand Expansion valve and select the Size property for the valve. Select OK in the Select Class Properties window to close and save.



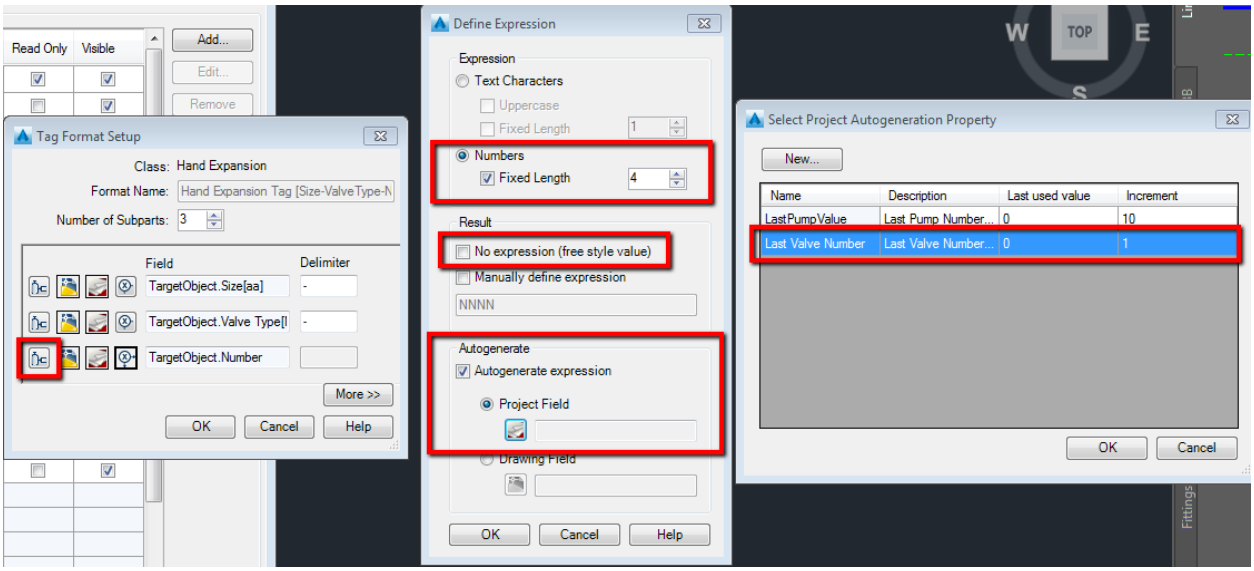
Move to the next field and repeat the process above. This time you will want to select the Hand Expansion property Valve Type.



Move to the last field and repeat the process above. This time you will want to select the Hand Expansion property Number.



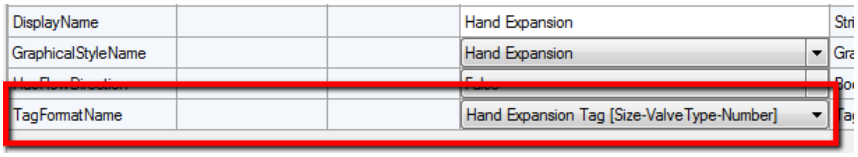
With the valve number field you will need to select the Define Expression button. This will allow you to define how the valve numbers are generated when the valve is inserted into the drawing. When the Define Expression button is selected the Define Expression window appears. In this window first make sure and uncheck No Expression. Next, change Expressions to Numbers, check as Fixed Length and set fixed length to 4. Then check Autogenerate expression, set to Project Field and select the Project Field button. A Select Project Autogeneration Property window will be displayed. Select the Last Valve Number property. If needed at this point you can reset the last used valve to 0 and change the increments if needed.



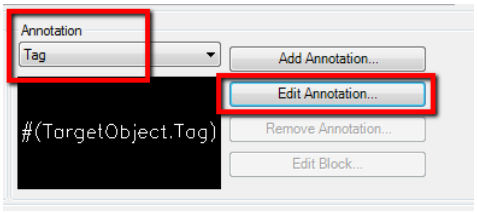
Once you have complete all the changes for the valve number,you can go ahead and select OK on all open windows until you get back to the project setup.

At this point select Apply in the Project Setup window to save changes.

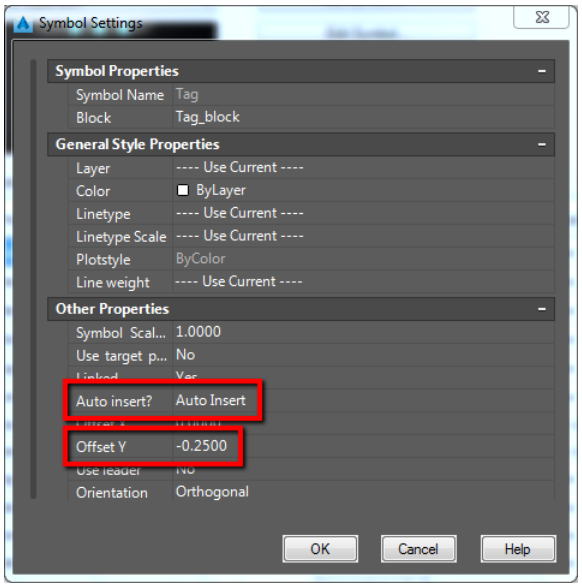
Now that the tag format is configured you will need to set this tag to be the default tag used when the Hand Expansion valve is inserted into the P&ID drawing. In the Project Setup find the TagFormatName property and change it to Hand Expansion Tag [Size-ValveType-Number].



The final step is that we want our tag automatically inserted when the valve is placed in the drawing. To do this you will need to find the Annotation area in the Project Setup and edit the Tag.



In the Symbol Settings window in the Other Properties section find Auto Insert. Using the pulldown list select Auto Insert. By choosing Auto Insert this will force the tag to be inserted when the valve is placed in the P&ID drawing. You may also need to adjust the Offset X or Y depending on where the Tag insertion point was located when the Tag block was created. For this example I am going to change the Offset Y to -0.2500. Select OK in the Symbol Settings window to close and save changes.



Select Apply in the Project Setup window to save.

Creating Unique Off Page Connectors

Off Page Connectors (OPC's) aid in threading P&ID drawings together with each other. Generally a connector gives a reference to where the P&ID line is going to and coming from. For your P&ID drawings you may choose to create your own OPC's rather than use the OPC's that are included with AutoCAD P&ID.

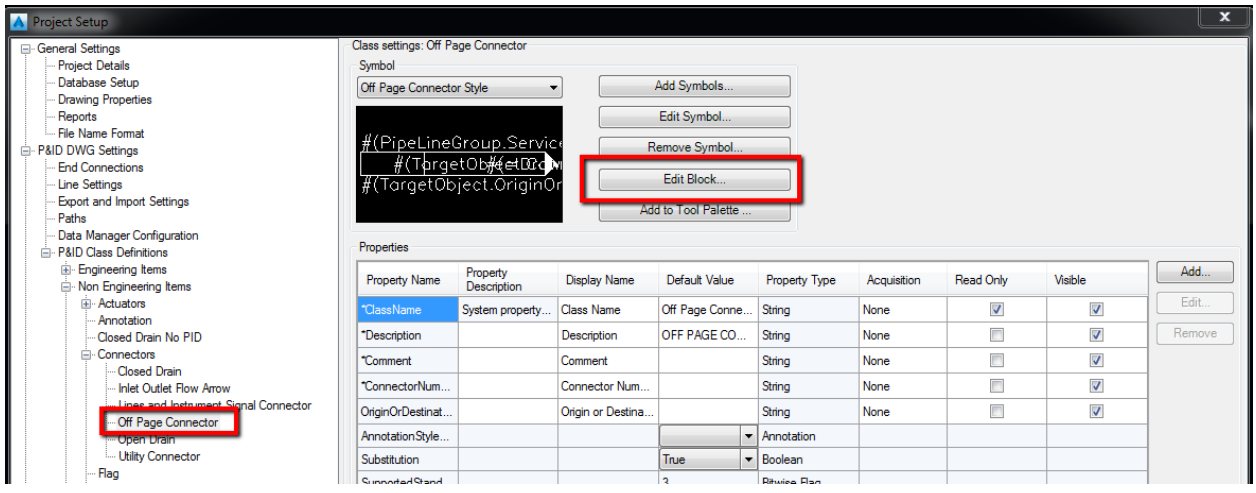
Custom OPC creation

For this example we simply want to create an Off Page Connector that references the drawing number it is coming from or going to. This is what the OPC's will look like.

OPC format creation in the Project Setup

There are various ways to create an OPC in the Project Setup. You could go through a similar process like creating a new block as you did previously with the equipment, valve and inline asset. However, since we are not using the existing out of the box OPC, you will instead modify that one to match the OPC above.

Access the Project Setup and navigate to the Non Engineering Items in the P&ID Class Definitions. Select Connectors and then select Off Page Connector. Once the Off Page Connector is selected you will want to select the Edit Block button for the connector.



Inside the block editor you will see various attribute definitions and parameters associate with this OPC. For your OPC you are not going to need some of these items. Remove everything except the AttachmentPoint1, AttachmentPoint2 and the attribute definition #(=Drawing.General.PnID).

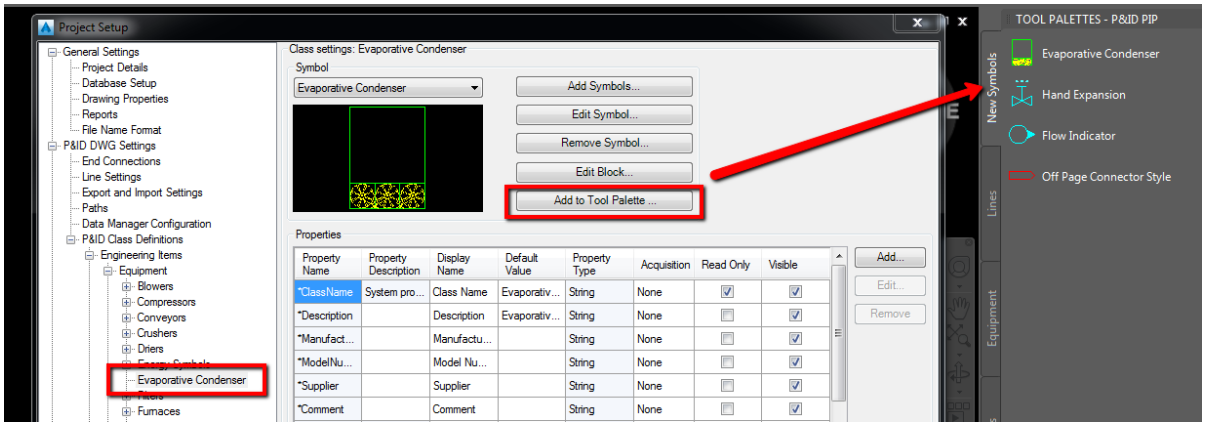
Next you will need to change the appearance of the actual body of the connector. The important part to of this connector is where AttachmentPoint1 and AttachmentPoint2 are located. The AttachementPoint1 is located at 0,0,0 and AttachmentPoint2 is located at the point of the OPC. The attachment points are where they will attach to the P&ID line and also know which way they need to be pointed depending on flow direction of the line. Here is how the finished revised off page connector should look like.

Select Close Block Editor in the ribbon once you have finished modifying the OPC to save your changes. Then select Apply in the Project Setup window to save and then OK to exit out of the Project Setup.

Testing the Customization

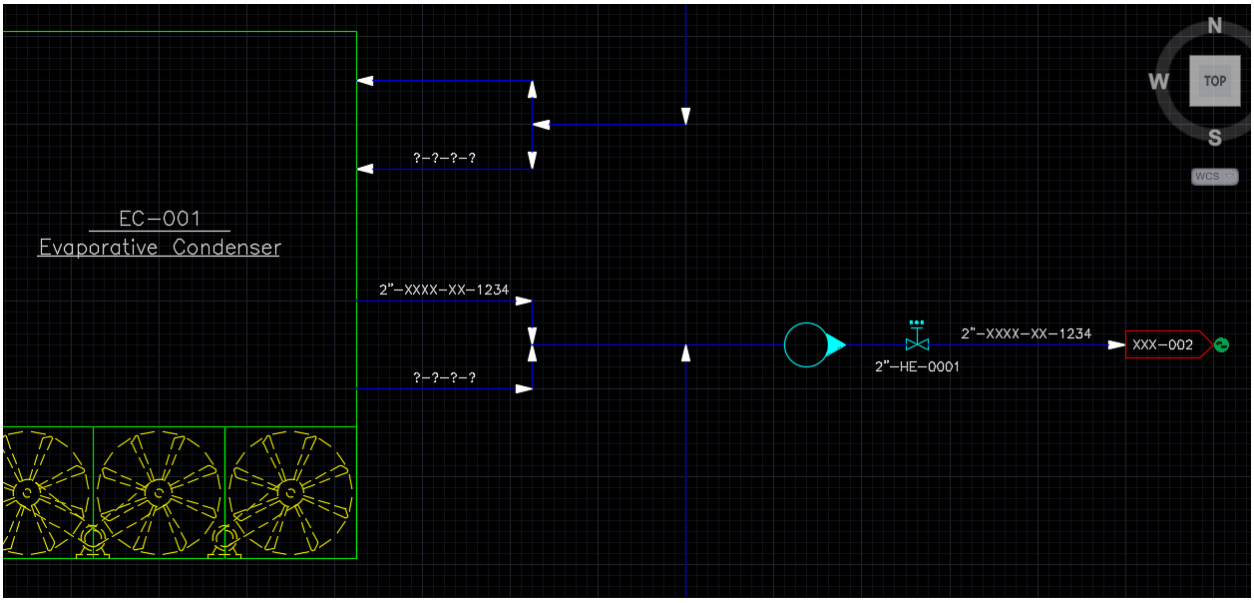
At this point all items have been created in the project and are now ready to use in your P&ID drawings. Before the symbols can be inserted into a P&ID drawing you will need to make the symbols accessible in the palettes. In the palette window you may wish to add the symbols to an existing palette or create a new palette. To create a new palette you can simply right click over an existing tab in the palette window and select New Palette. Then you will be prompted to enter a name for the palette.

Once the palette is created make sure the new palette tab is selected as the active palette. Now you will want to access the Project Setup. Access the Evaporative Condenser that was previously created in the Project Setup. Once it is selected you will need to select the Add to Tool Palette button. This will add item to the palette you just created. Repeat the process for the Hand Expansion valve, the Flow Indicator and the Off Page Connector.

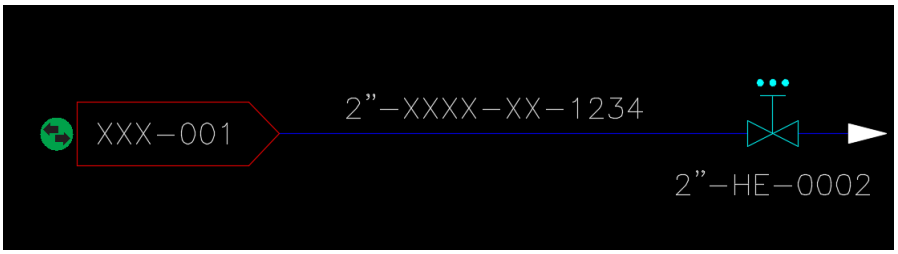


You will need to test all the items that were created. You will need to create at least two new drawings so you can test to see if the OPC's connect as expected. With the customization you just performed your results should look something like this.

Drawing XXX-001



Drawing XXX-002



Conclusion

There are numerous possibilities when you are tasked with incorporating customization to your P&ID projects. Just remember to allow time to have a plan and block out each task in a methodical order. Having a good plan will help in making sure all your customization works correctly and you are able to complete the task in a timely manner.