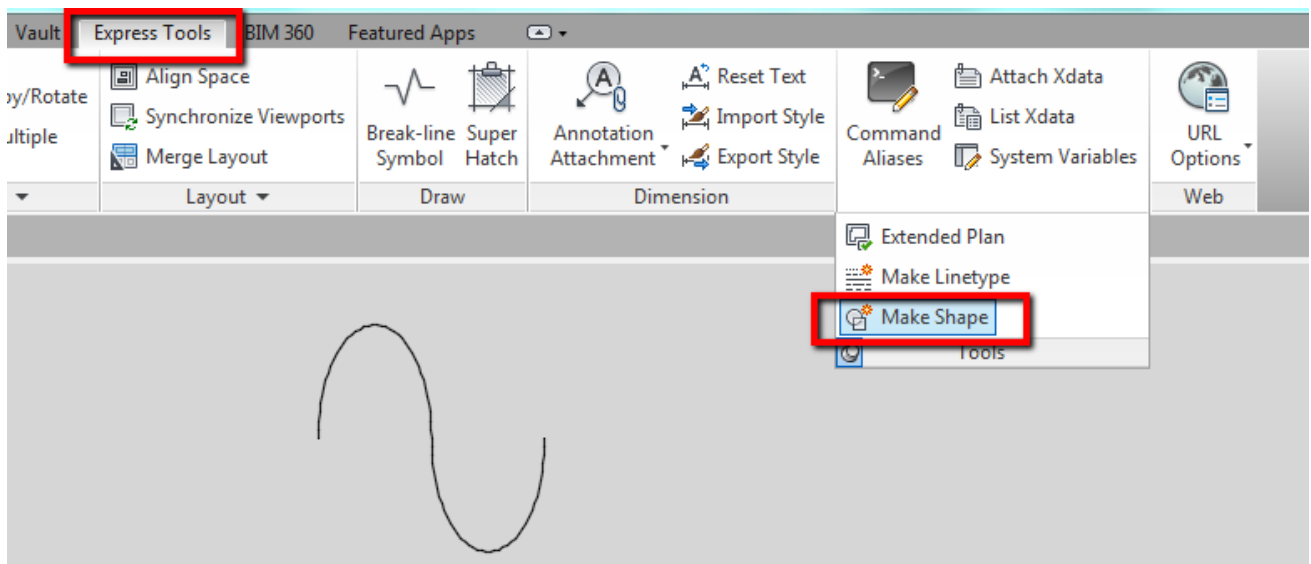# A flexible Hose linetype in P&ID

Autodesk P&ID and Plant 3D

In the default P&ID module of the Autodesk Plant products there is a standard hose block. We are often asked about how to improve this functionality especially to make it more flexible. The best way to achieve this is to make a custom linetype and this white paper shows how to do that.

Firstly, open a DWG in your project and draw a single 'section' of the hose you would like. Then using the **Express Tools > Tools > Make Shape** tool to define it as a shape. You will be prompted to write a **.SHX** file and then to give a name to the shape.

In this screenshot I have drawn a section of hose with ellipse halves and I have create a **HOSE.SHX** file with my shape called **HOSE**. I accepted the default resolution of 128bit…

Next, use the SHAPE command to place the shape you just created on your screen (It's very similar to the INSERT command). Then you can use the **Make Linetype** (above make shape in the screen shot above) tool to create a **.LIN** file with your custom linetype.

I have created **HOSE.LIN** with a linetype name of **HOSE**. You will need to select the start and end point of the linetype section and all the shape elements that make up that section.

The linetype is then defined in your drawing and saved in the **.LIN** file you saved which is the file you can select to load the linetype into any other drawing you like using the normal **LTYPE** command with the **LOAD** option. You must ensure that your **.SHX** file is always kept in the same folder as your **.LIN** file so that AutoCAD can find the shape definition when it loads the line.

If I have a few linetypes I am creating I also like to combine them into a single **.LIN** file but as the command creates a new file each time you will need to use a text editor to cut and paste all the definitions into a single new file.

Here's how my hose linetype was defined…


```
Hose.lin - Notepad

File   Edit   Format   View   Help
*HOSE,hose
A,0,-2.5,[HOSE,C:\Users\piduser\Desktop\Hose,s=1],-2.5
```

Lastly, in P&ID, in order for the linetype to be selectable as a Schematic linetype you need to load it into your **projsymbolstyle.dwg**

This enables a new class of Hose to be created in the normal P&ID Schematic line class definition.

Alternatively, you can use the linetype to draw with and use the **Convert to P&ID Object** routine, again in the normal P&ID command way.

The AutoCAD help files also provide further information on creating custom linetypes but if you have any further questions, as ever, don't hesitate to give us a call at Cadline.