

Add an Instrument Family to a Plant 3D Catalog

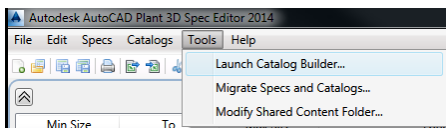
AutoCAD Plant 3D 2014

The AutoCAD Plant 3D Spec Editor does not provide a mechanism for the end-user to create a family of Instruments to use in a Plant 3D model. Similarly, the Catalog Builder does not provide access to the Instrument class through the user-interface either. However, it is quite possible to use the Excel spreadsheet that is created from a Catalog Builder Template to build an Instrument family.

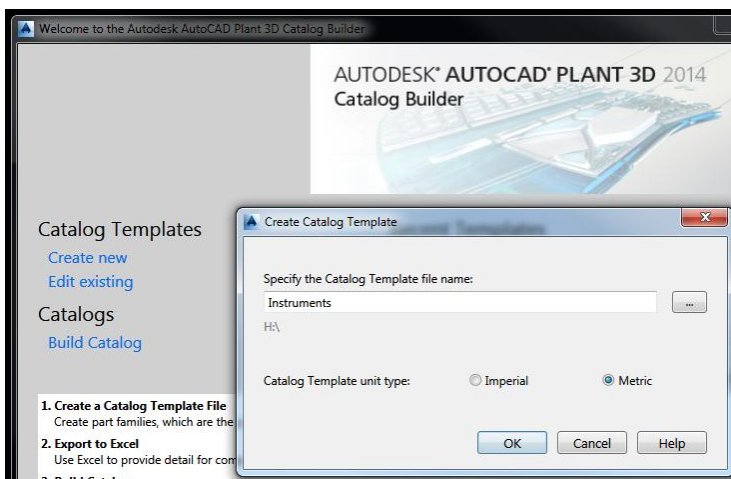
This white paper describes an example of creating an instrument family and adding it to a new Plant 3D catalog for subsequent use in a piping model.

Catalog Builder

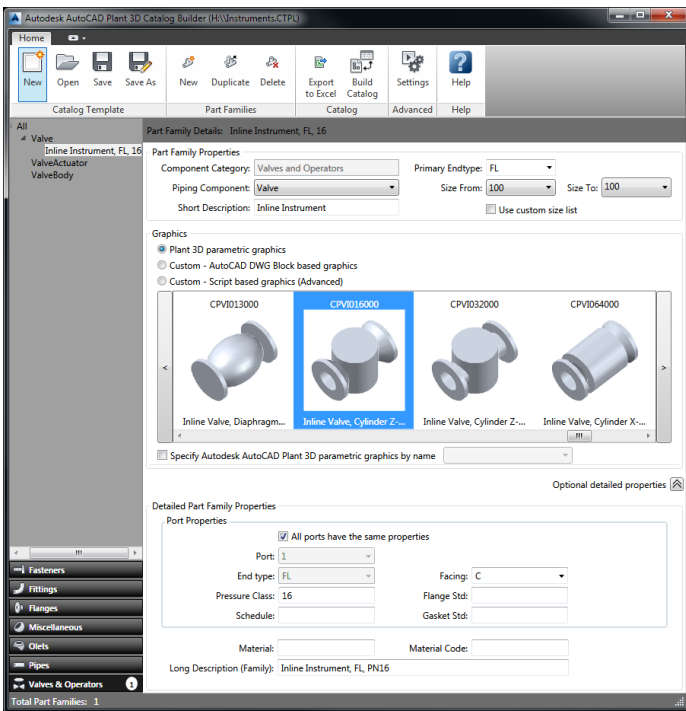
The starting point for Instrument family creation is the Plant 3D Catalog Builder. This can be launched from the Tools menu of the Plant 3D Spec Editor.



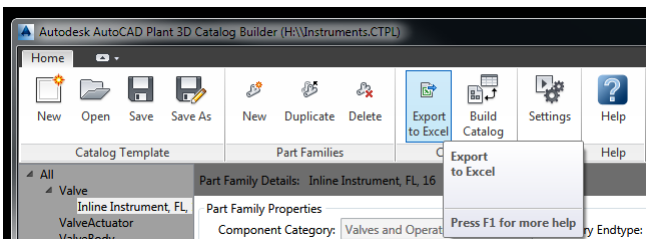
Once open, a new catalog template can be created from which the new catalog will be built. Here, the template called Instruments is being created.



The Part Family list on the left of the Catalog Builder window does not contain an entry for instruments. Because of this, a new Valve family is being created through which the geometry for the new instrument family will be defined.



Once the appropriate geometry definition has been selected and any required property definitions have been added, the catalog template is exported to Excel.

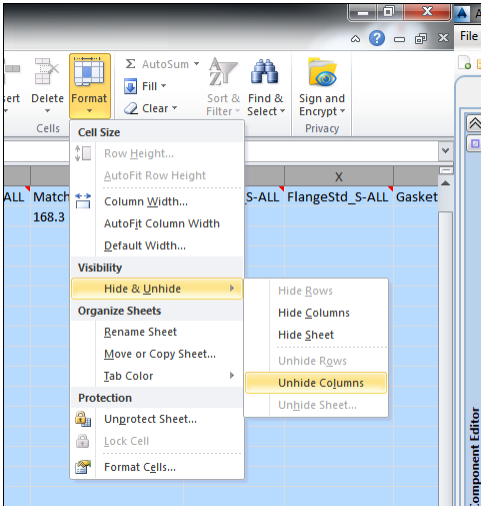


The Excel spreadsheet provides access to all of the data that will be used during catalog creation, including the size parameters for the geometry.

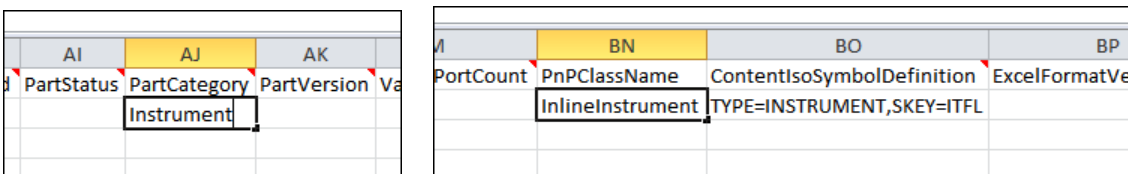
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
2	Preview	Sizes	Shape Name	D1	D2	L	LS	H1	H2	D3	H3	W1	W2	OF	B1	B2	ContentGeometryParamDefinition	SizeRecordId_S-ALL	PortName
3		100	CPV016000	114.3	114.3	250	0	220	220	0	0	0	0	0	20	20	D1,D2,L,LS,H1,H2,D3,H3,W1,W2,OF,B1,B2	199eb296-12b4-4f20-8e90-eb7afa04563e	ALL

Note that if Block based geometry is selected, then filename and block name columns are included in the spreadsheet rather than size parameters.

Inspection of the column headers in the Excel spreadsheet reveals that several columns are initially hidden and protected within the sheet. The hidden columns need to be revealed and the sheet protection removed to enable the part family to be modified.



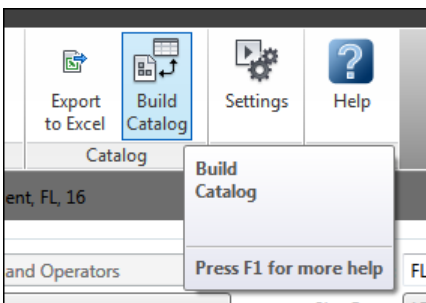
This provides access to the PartCategory and PnPClassName columns which are used to define the family to which the part belongs. These values can now be updated. The PartCategory must be set to Instrument, and the PnPClassName must be set to either Instrument or InlineInstrument depending upon the type of instrument family that is required. In this example, an InlineInstrument is being created.



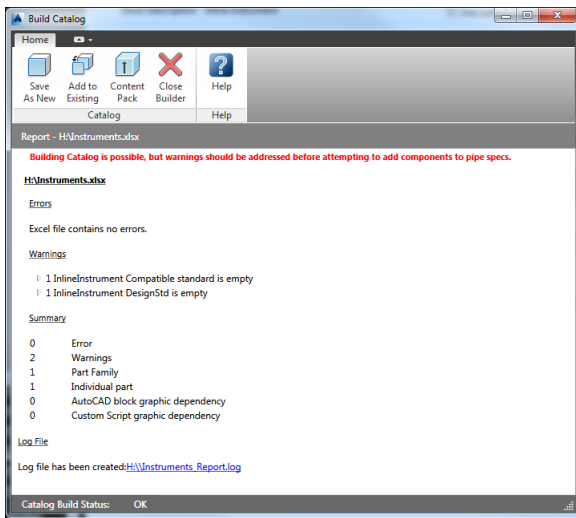
Once these changes have been made, the spreadsheet can be saved.

Build Catalog

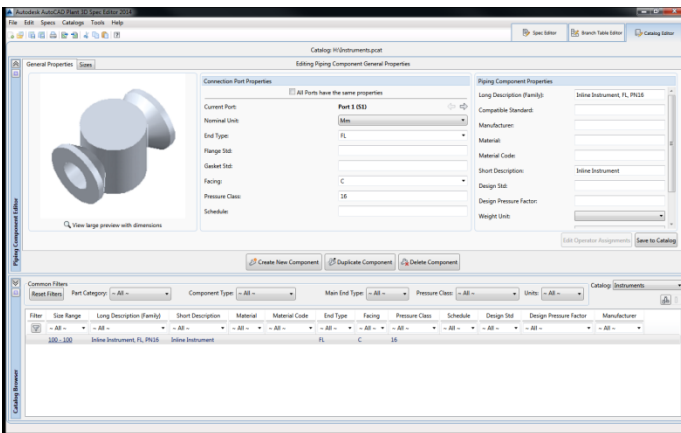
Returning to the Catalog Builder, a new catalog can now be built from the updated Excel spreadsheet.



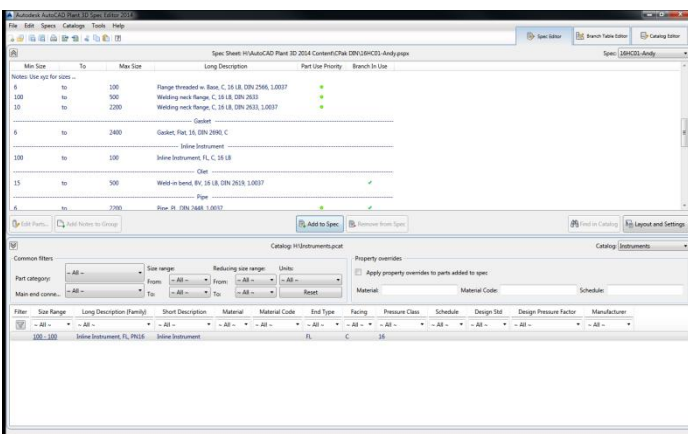
There are 3 choices of output from the Catalog Builder, in this example the Save as New option is chosen to build a new catalog called Instruments.



Once built, the new catalog may be edited through the Spec Editor as normal.

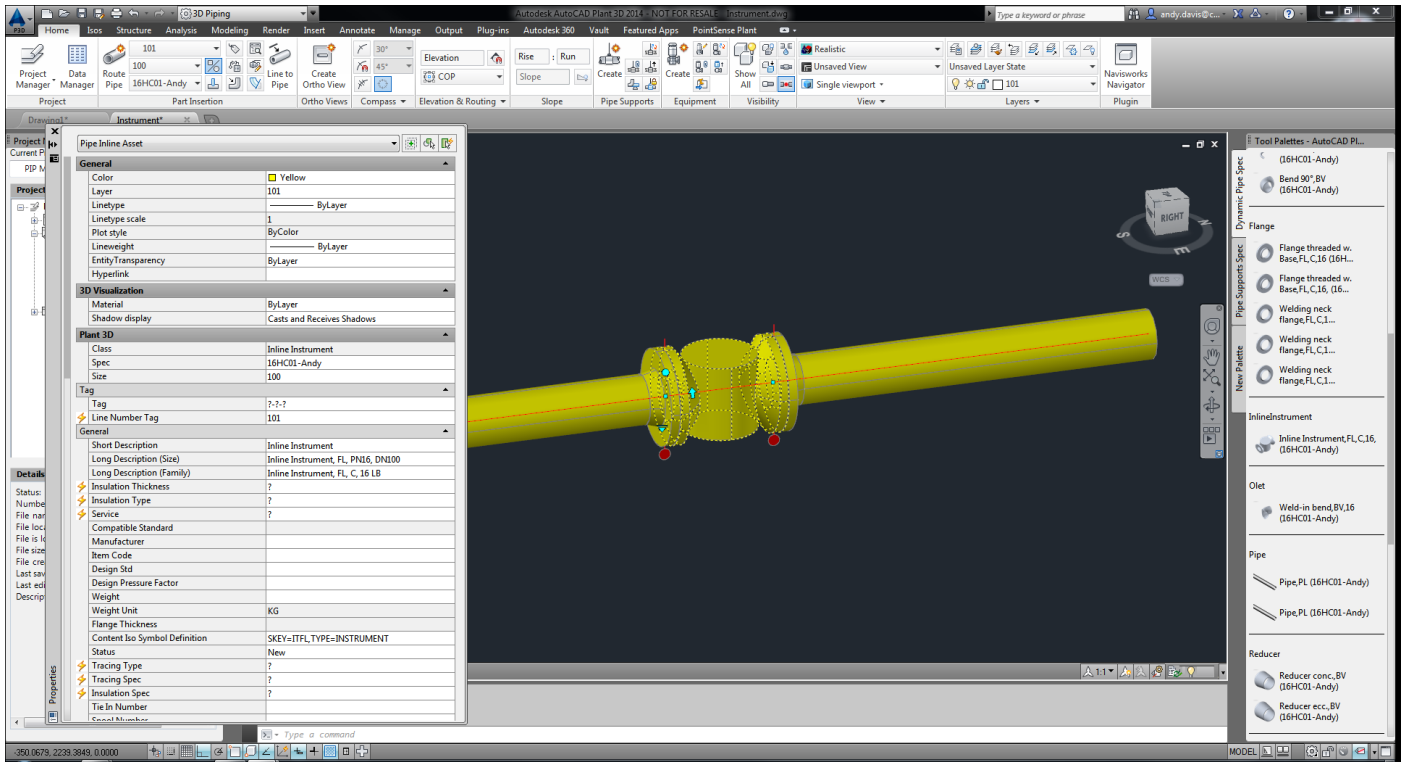


The new instrument may be added to any Spec as required.



Notice that the instrument is displayed correctly in the Inline Instruments section of the spec window.

The new instrument is now available for use in a Plant 3D project.



With a suitably configured template, the instrument may be shown in an Isometric drawing.

