



AUTODESK UNIVERSITY 2015

AEC11446

Using Assemblies and Design Line Templates for Faster Design

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Learning Objectives

- Learn how to build and create a product listed Sub Assembly
- Learn how to build a scripted button assembly
- Learn how to create a design line template
- Learn how to use a Design Line Template

Description

Learn how to build and product list a subassembly for use within Fabrication CADmep software and Fabrication ESTmep software. We will look at scripted button assemblies and the reporting of assemblies. This course will also cover how to use, make, and transfer Design Line Templates to help create models more quickly.

Your AU Experts

Lyle Janda is a technical advisor at Applied Software for the Autodesk Fabrication products. He has extensive experiencing in installing, training and supporting Fabrication CADmep, ESTmep, CAMduct, Tracker and RemoteEntry. Lyle previously worked as a designer and drafter for an MEP contractor. He has contributed significantly towards the creation of the Applied Configuration pack for the US market and our courseware and training materials creation efforts. Lyle is also involved with Applied Software go-to-market strategy for a best known practices knowledgebase for the Autodesk Fabrication Solutions. <http://enceptia.com/fabrication-blog/ljanda@asti.com>

Scott Hendricks leads Applied Software's technical services delivery for the Autodesk® Fabrication products. He is an experienced instructor and implementation expert for Autodesk Fabrication CADmep™, Fabrication ESTmep™, and Fabrication CAMduct™. His skills also extend to application development and customization of the Autodesk Fabrication products. He is the primary author of the Applied Software Configuration Pack for the USA market which enhances the use of the Autodesk Fabrication products with Imperial standards. Scott also creates courseware and video tutorials for the Fabrication products. He previously worked for an MEP contractor and was a union plumber and pipefitter for over 26 years, rising to field supervisor before making the switch to software. <http://enceptia.com/fabrication-blog/SHendricks@asti.com>

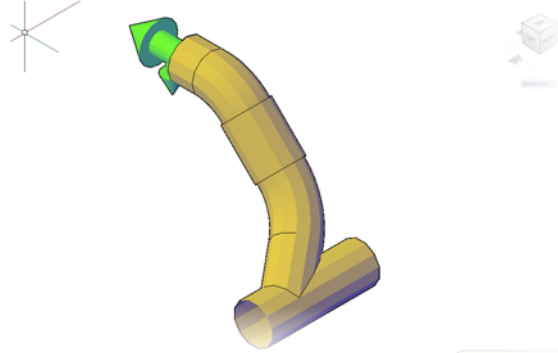
Go to Applied Software's Autodesk University page to enter for a chance to win free on-line training on Autodesk products. No purchase necessary: <http://www.asti.com/au2015>

Learn how to build and create a product listed Sub Assembly

What is a Sub assembly

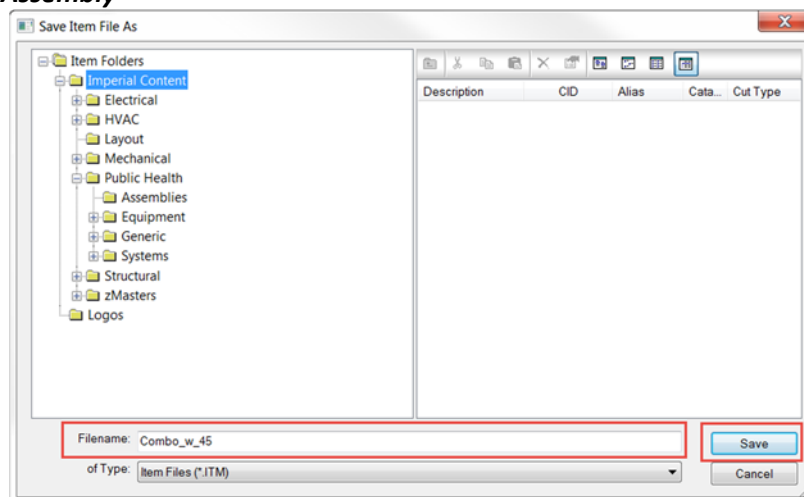
Multiple Items can be combine into a Sub Assembly for faster modeling. Sub-Assemblies can be saved as a Sub Assembly or Catalogued Item or as a Customized Product list.

How to Create a Sub Assembly



- Place items into the model, for this exercise we will use the following items
 - No Hub Combo
 - Coupling
 - Eighth Bend
- Rotate and attach items
 - Roll combo 45 degrees
- Move the insertion point of items to 0,0,0
- Using Change Object Properties, set the service to None

Save Sub Assembly

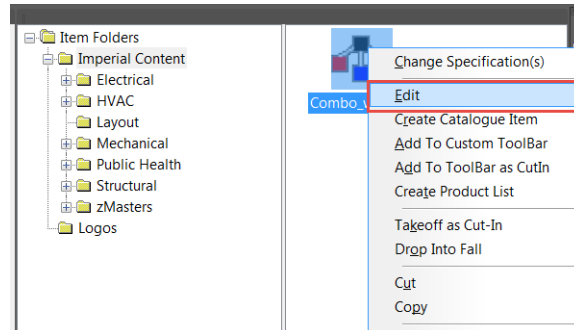


- Type the command SAVEASSUBASSEMBLY
- Name the item, Combo_w_45

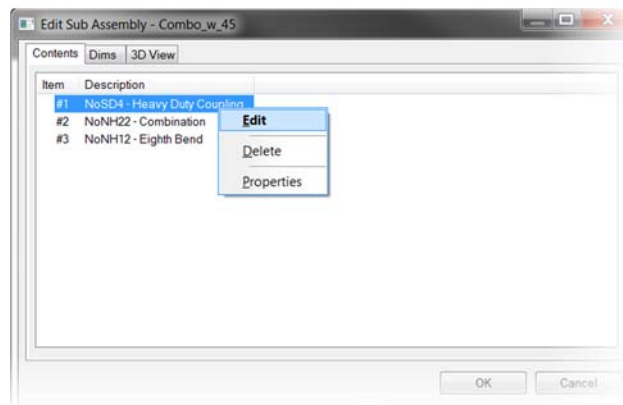


- Click Save

Edit the Items

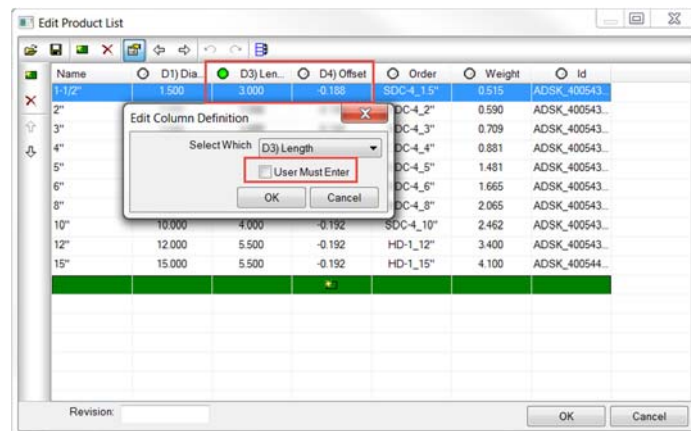


- Open Folders view
- Right Click on the item and select Edit.
- Edit each item, Right Click Edit



- The first step is to edit the product list of each Item.
 - Uncheck User Must Enter on all dimensions fields that are not required by the user to set when placing the item.

- **Heavy Duty Coupling**



- **Combination**

Edit Product List

Name	D1) Pip...	D2) Parti...	D7) Bra...	D9) Bra...	D12) Br...	D13) Br...	D14) Be...	D17) Be...	Order	Weight	Id
1-1/2"	1.500	4.000	1.500	1.500	5.375	2.000	2.750	1.500	NH-22_1.5"	3.100	ADSK_400538...
2"x2"x1-1/2"	2.000	4.000	1.500	1.500	5.875	2.000	3.000	1.500	NH-22_2"x2"x...	3.400	ADSK_400538...
2"	2.000	4.625	2.000	2.000	6.675	2.000	3.375	1.500	NH-22_2"	3.500	ADSK_400538...
3"x3"x1-1/2"	3.000	5.125	1.500	1.500	6.750	1.500	4.000	1.500	NH-22_3"x3"x...	5.000	ADSK_400538...
3"x3"x2"	3.000	5.125	2.000	2.000	6.750	1.500	4.000	1.500	NH-22_3"x3"x2"	5.700	ADSK_400538...
3"	3.000	5.750							NH-22_3"	8.500	ADSK_400538...
4"x4"x2"	4.000	5.000							NH-22_4"x4"x2"	6.600	ADSK_400538...
4"x4"x3"	4.000	6.313							NH-22_4"x4"x3"	9.500	ADSK_400538...
4"	4.000	7.063							NH-22_4"	14.300	ADSK_400538...
5"x5"x2"	5.000	7.125							NH-22_5"x5"x2"	8.500	ADSK_400538...
5"x5"x3"	5.000	8.000							NH-22_5"x5"x3"	12.000	ADSK_400538...
5"x5"x4"	5.000	8.750							NH-22_5"x5"x4"	17.100	ADSK_400538...
5"	5.000	9.500							NH-22_5"	19.700	ADSK_400538...
6"x6"x2"	6.000	7.813	2.000	2.000	8.250	0.500	5.500	1.500	NH-22_6"x6"x2"	12.000	ADSK_400538...
6"x6"x3"	6.000	8.500	3.000	3.000	9.500	1.250	6.563	1.500	NH-22_6"x6"x3"	14.700	ADSK_400538...
6"x6"x4"	6.000	9.250	4.000	4.000	11.000	1.938	7.813	1.500	NH-22_6"x6"x4"	18.400	ADSK_400538...
6"x6"x5"	6.000	9.938	5.000	5.000	13.000	2.563	9.125	2.000	NH-22_6"x6"x5"	23.400	ADSK_400538...

Revision:

OK Cancel

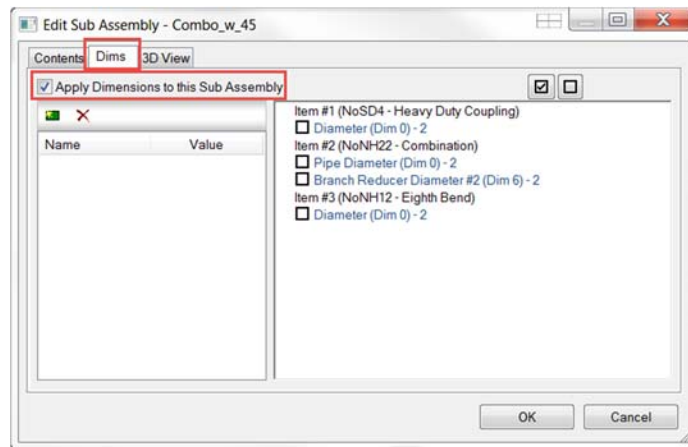
- **Eighth Bend**

Edit Product List

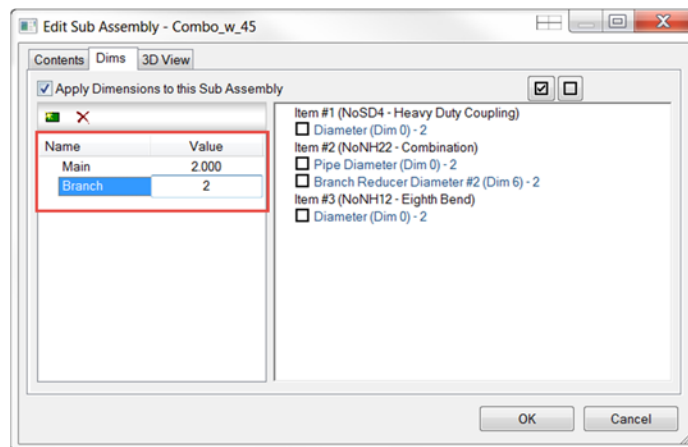
Name	D1) Dia...	D9) Btm ...	D10) To...	D4) Bott...	D5) Top...	Order	Weight	Id
1-1/2"	1.500	2.625	2.625	1.500	1.500	NH-12_1.5"	1.500	ADSK_400537...
2"	2.000	2.750	2.750	1.500	1.500	NH-12_2"	1.500	ADSK_400537...
3"	3.000	3.000	3.000	1.500	1.500	NH-12_3"	2.900	ADSK_400537...
4"	4.000	3.125	3.125	1.500	1.500	NH-12_4"	4.000	ADSK_400537...
5"	5.000					NH-12_5"	7.400	ADSK_400537...
6"	6.000					NH-12_6"	9.100	ADSK_400537...
8"	8.000					NH-12_8"	14.900	ADSK_400537...
10"	10.000					NH-12_10"	31.700	ADSK_400537...
12"	12.000					NH-12_12"	31.600	ADSK_400537...
15"	15.000					NH-12_15"	62.000	ADSK_400537...

Revision:

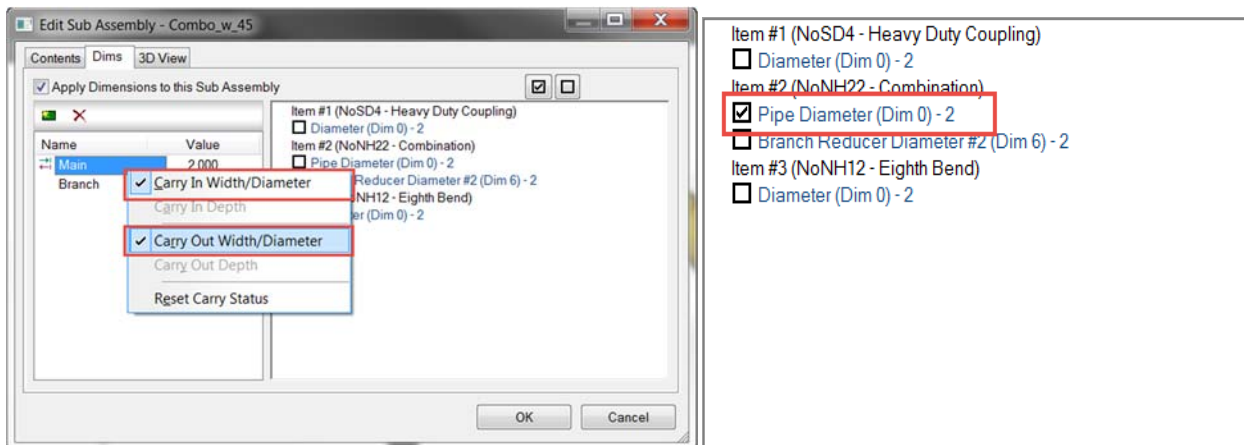
OK Cancel

Adding Dimensions

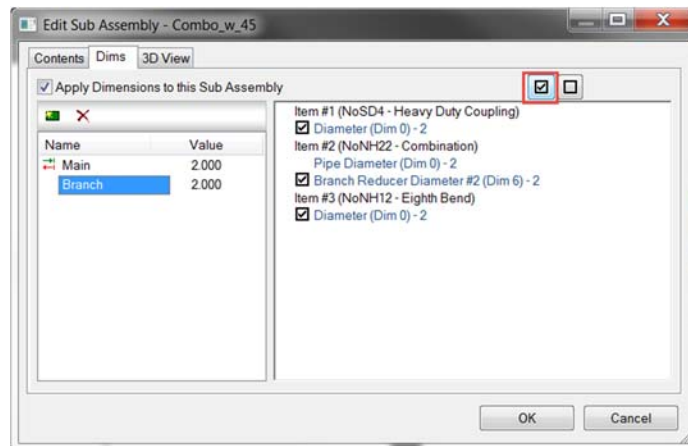
- Select Dims Tab
- Enable Apply Dimensions to this Sub Assembly



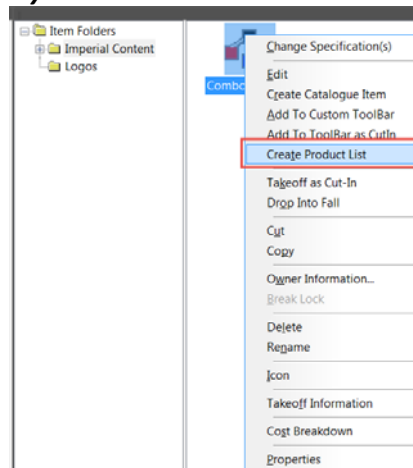
- Select New
 - Name Dim#1 = Main
 - Name Dim#2 = Branch
 - Value = 2 (same for both)



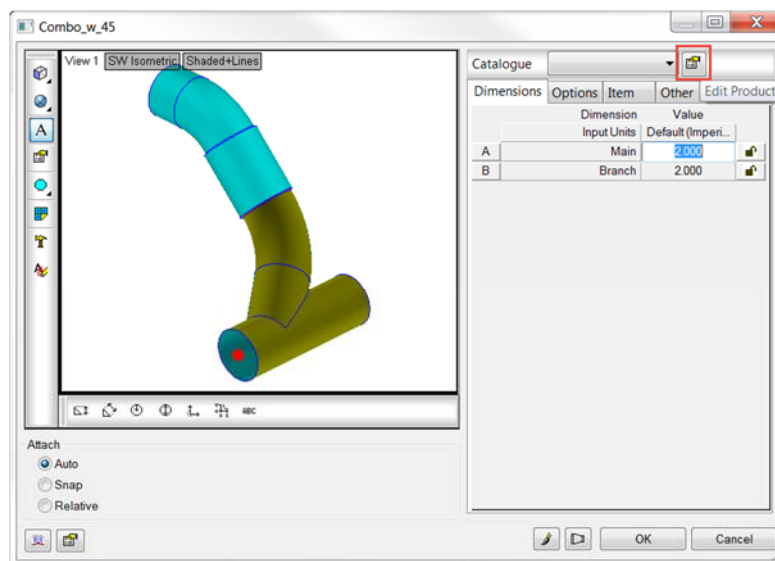
- Right Click on Main
 - Select Carry In Width/Diameter
 - Select Carry Out Width/Diameter
 - Check the box for Pipe Diameter on the Combination



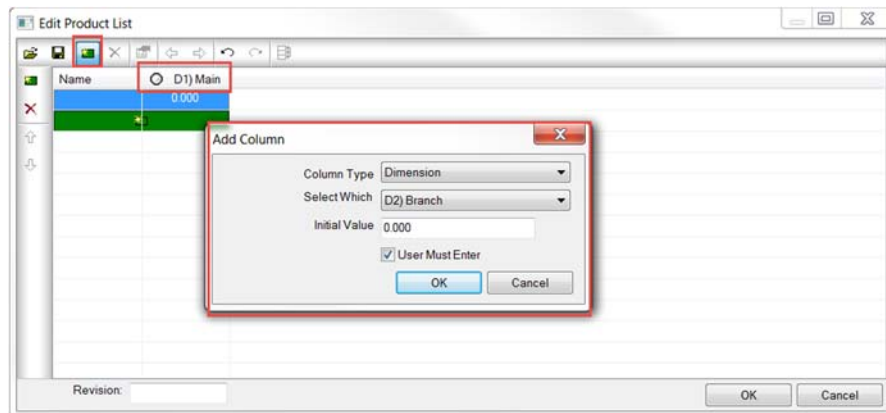
- Select Branch
 - Check the box for the remaining 3 values
- Click Ok to Save

Product Listing Sub Assembly

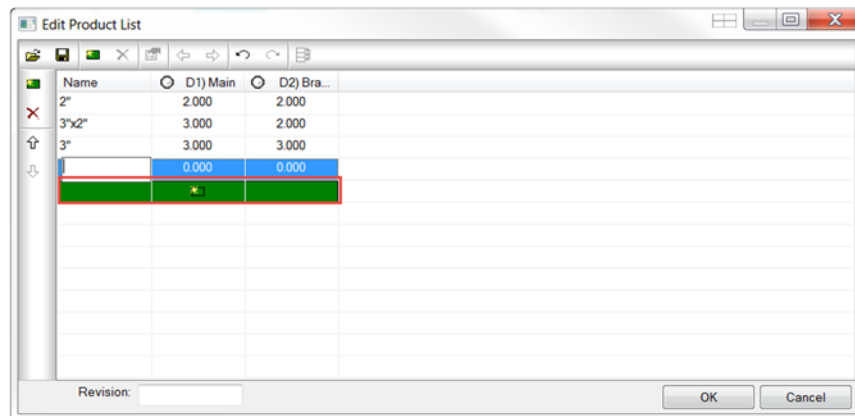
- In the Folders view, Right click on the Item and select Create Product List.



- Click on the Edit Product List icon



- Click on New
 - Column Type = Dimension
 - Select Which = Main
 - Ok
- Click New
 - Column Type = Dimension
 - Select Which = Branch
 - Ok

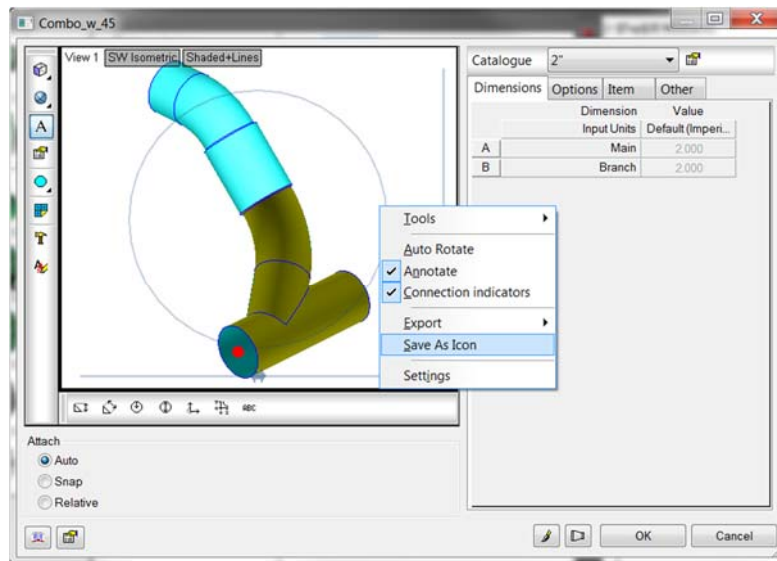


- Select New (Green Bar)
 - Add Sizes

Save Item Image and Set Defaults

- In the Item Editor Window, set all defaults
 - Lock Options
 - Specification = DWV
 - Material = Cast Iron
 - Service Type = Pipework
 - Bought Out



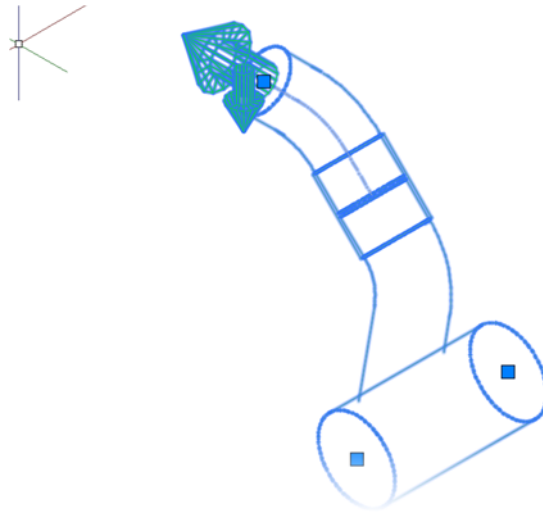


- Right Click in the 3D viewer and Select Save as Icon
 - The icon image will save to the active view
- Click Ok to Save

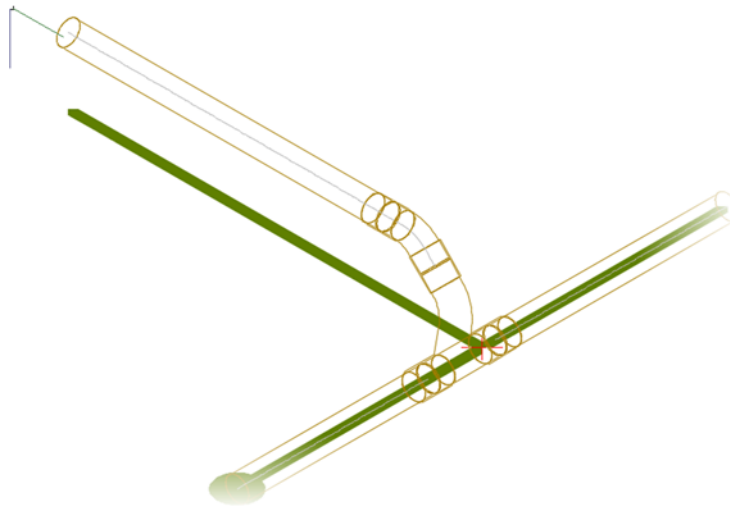
Use Sub Assembly



- Add New Item to service



- Place with attacher



- Place using design line
- Set Float to design line segment

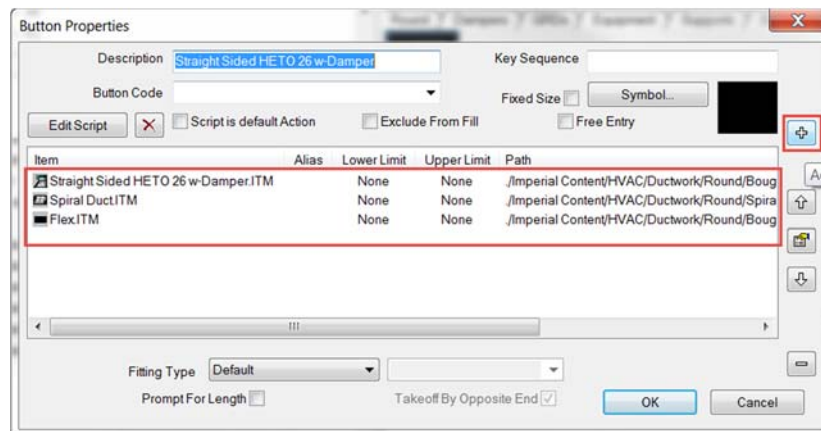
Learn how to build a scripted Button Assembly

What is a Button Assembly?

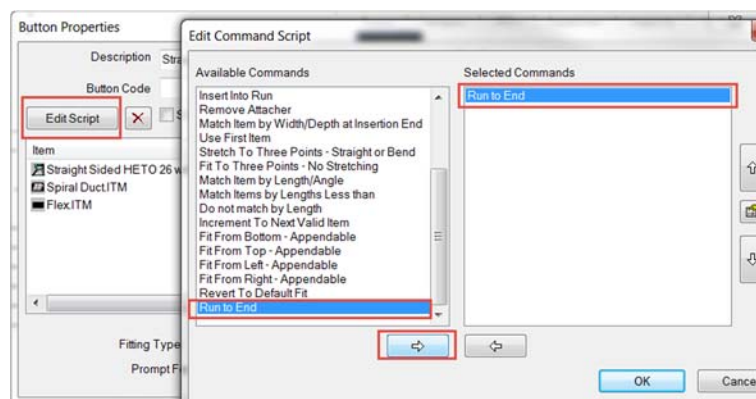
Multiple Items can be placed by setting a button script on an item. In this example, you will learn how to use the button script Run to End.

Creating the Item

- Edit the any HVAC service, for this exercise we will use the Supply Air Service.
- You can either modify your existing Tap or add another Tap to your Service.

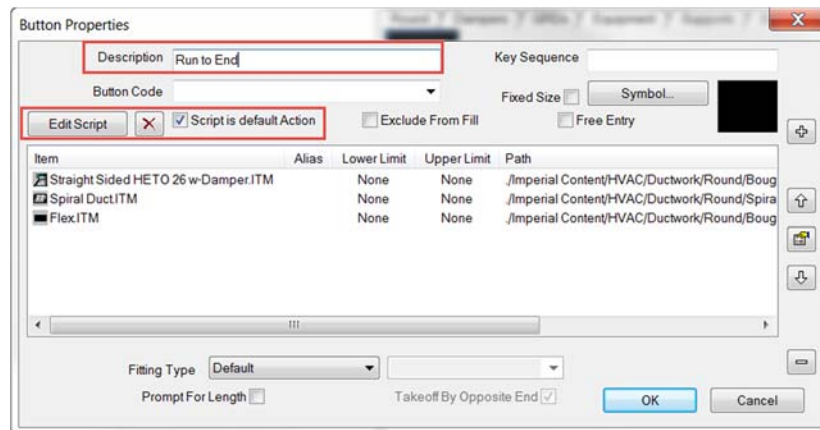


- Add the Item
 - Select the HETO and place it in the Service Template
 - Right Click and Select Button Properties
 - Click Add Entry and add spiral Duct and Flex.



- Select Edit Script
 - Highlight Run to End and move it to the right side

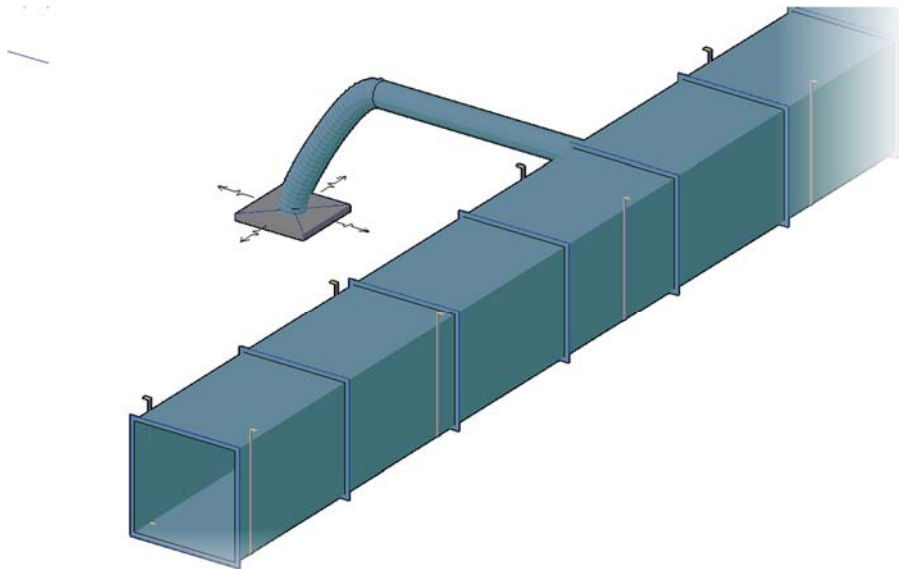




- Enable Script is default Action
 - This will now be the default action of this item. If you wish to use the items in this button separately, do not check this box.
- Change the Description and click Ok. Save and Ext the Service.

Placing the Item

- In the drawing, place your Duct and Diffuser
 - Elevation
 - Duct = 12'
 - Diffuser = 8'



- Select the End to Run Item
- The command line prompts to Select Upstream End of Straights
- Select Terminal end
- All three item will fill in.

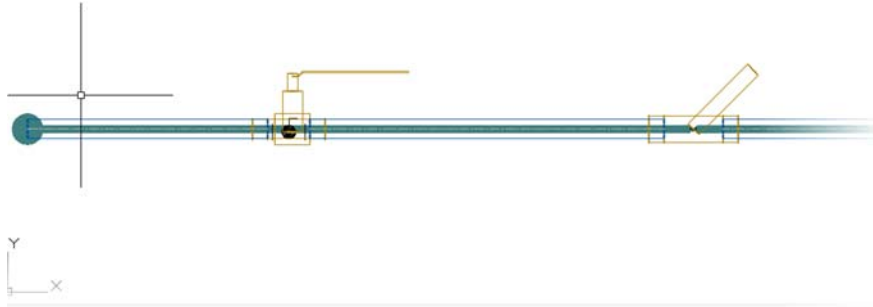


Learn how to create a design line Template

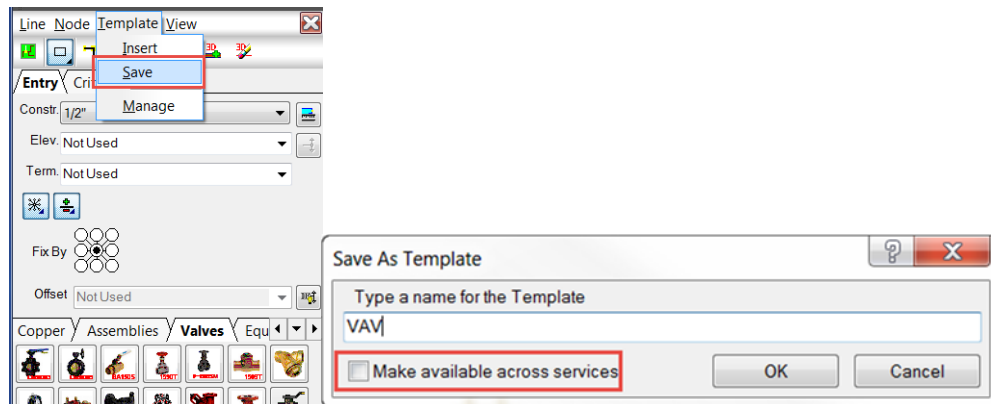
What is a Design Line Template

Design Line Templates can save time when a number of products are required to be filled together.

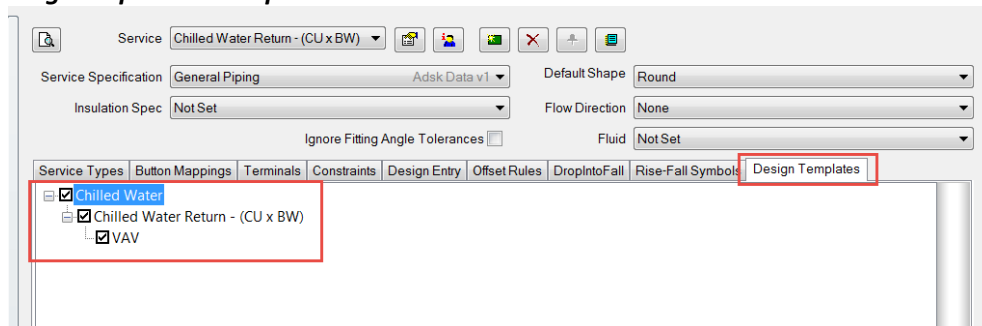
Creating a VAV hookup



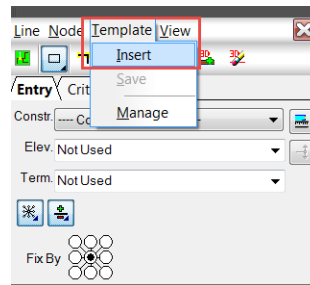
- Start a new design line
- Place a 1/2" copper line
- Add a Ball Valve and Strainer
 - You may need to rotate the Node after placement.
- Fill in 3D



- Save Template
 - Template>Save
 - Pick Insertion Point
 - Name Template
- Make available across services
 - Enable this if you wish to use this template on one or more services.

Adding Template to Dropdown List

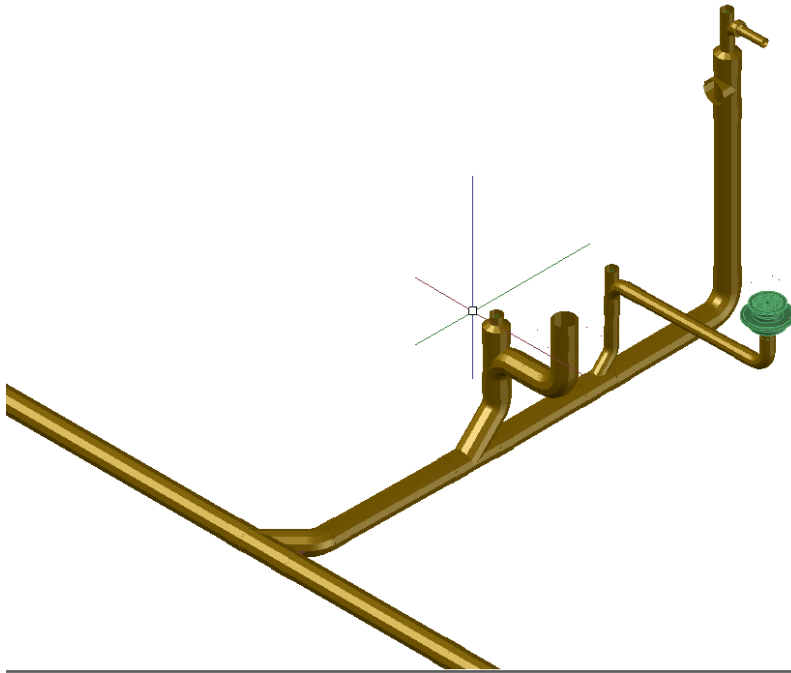
- Edit Service
- Select Design Templates
 - Check templates you wish to use for service.

Place Design Line Templates

- On the Design Line Toolbar, select Template>Insert
- Using the pull down, select design line template
 - You can change the constraints of the pipe.

Learn how to use a Design Line Template

Using Pre-Configured design line templates



- Adding a template to an existing drawing

