

MSF124276

Revit Fabrication Parts - Design to Spooling Update

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Victaulic

Learning Objectives

- Efficiently make coordination and design changes.
- Create assemblies and schedules.
- Access data for fabrication.
- Export coordination files.

Description

This session will propel users into Revit 2018, exemplifying the advantages of using a singular model throughout the preconstruction process. Learn how to go from design intent to fabrication spools using fabrication parts in Revit. In this session you will convert a Revit design model to fabrication parts, make design and coordination changes, define and detail fabrication spools, and create all construction documentation without ever leaving Revit. Attendees will gain first access to new 2018 software add in's that streamline this process with prepopulated templates and content libraries. The hands on session will reinforce best piping practices, and give users the tools they need to take their business to the next level.

Speaker



Ralph Schoch is the Revit, Technology, and Internal Support Manager in the Construction Piping Services Division (CPS) at Victaulic, a leading manufacturer of mechanical pipe-joining and fire protection systems. For 22 years he has been devoted to 3D piping system layout and design for global projects large and small. His interest in 3D modeling software led him to begin developing content for Revit in 2009. Ralph develops Revit families and add-in applications that allow engineers and contractors to design piping systems within Revit using Victaulic products. These families and tools have been used around the world from engineering to construction with full fabrication from the Revit model. In addition to Revit, Ralph has experience in Fabrication CADmep, Navisworks, Inventor, Solidworks, and Bentley Autoplant. He is a board member for the Lehigh Valley BIM Professionals Group and is a member of Autodesk Developers Network and Professional Member of AUGI.

Email: Ralph.Schoch@Victaulic.com

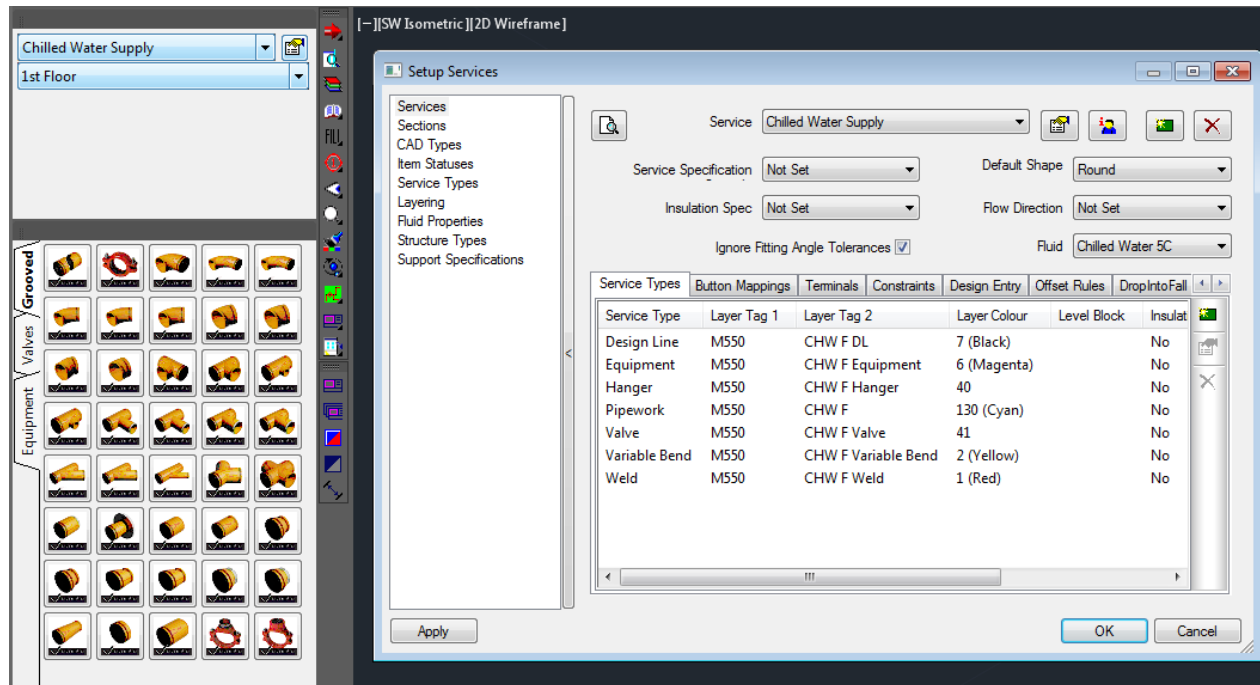
Website: www.VictaulicSoftware.com

What are Fabrication Parts?

Autodesk Fabrication – CADmep is an AutoCAD arx based software developed in the late 1980's by MAP out of Europe. It uses the same database thru its suite of products (FABmep, ESTmep, & CAMduct).

There are three basic elements to fabrication.

- o Configuration/Database – contains connector, specification, & pricing information
- o ITM files – Based off specific patterns developed by Autodesk (One pattern for all elbows, one pattern for all valves)
- o Services – Define what products are placed when routing a specific system based on pipe size and material.



Fabrication Parts Setup

To be able to route with fabrication parts you need to have an Autodesk Fabrication database. For Revit 2016 if you don't currently own the Fabrication suite you will need to download the sample databases provided by Autodesk. By going to the link below you will have the ability to download an Imperial or Metric database.

<http://knowledge.autodesk.com/support/revit-products/getting-started/caas/CloudHelp/cloudhelp/2016/ENU/Revit-GetStarted/files/GUID-12CF009B-3D4B-45D5-84C7-4EDEF2D8C52D-htm.html>

For Revit 2017 and 2018 sample configurations are available during the installation of Revit. (Skip this step)

Another great tip is to install a demo version of ESTmep. It will load configurations with more content and services.

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Revit MEP Fabrication Sample Configurations

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May 15 2015 | [In-Product View](#)

Applies to Revit 2016

Download sample fabrication configurations for use in Revit MEP.

The sample fabrication configurations contain generic US Imperial and UK Metric content.

Download the Imperial and Metric sample configurations

1. Click the file names: www.autodesk.com/revit-2016-mep-fabrication-sample-content-imperial and www.autodesk.com/revit-2016-mep-fabrication-sample-content-metric.
2. Open the files.

The files are installed to:

- C:/Users/Public/Documents/Autodesk/Fabrication 2016/Revit MEP Imperial Content/Vx.xx
- C:/Users/Public/Documents/Autodesk/Fabrication 2016/Revit MEP Metric Content/Vx.xx

Parent topic: [Sample Files](#)

Related Tasks

- [Specify Fabrication Settings](#)
- [Place Fabrication Parts](#)

Importing and Exporting Fabrication

To import or export fabrication parts you will need to download the Revit Extension for Fabrication. This can be found on the Autodesk Desktop Application.

<https://knowledge.autodesk.com/search-result/caas/sfdcarticles/sfdcarticles/About-Autodesk-desktop-app.html>

You will also need access to the Fabrication database that was used to create the model. This can be a sizeable task since a working database can be over 500mb and contains over 17,000 files. You can also find contractors will not freely provide this database as it contains trade secret information on how they fabricate their duct components and may represent years of development.

For this reason I would recommend the contractor to provide a Revit project with all the fabrication parts imported. Keep in mind that if you want to make changes to the fabrication parts layout you will need to have the fabrication database.

<https://apps.exchange.autodesk.com/en>

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Revit ▾ 

Show All

Revit > Item Detail

**Revit Extension for Fabrication**
Autodesk, Inc.
★★★★★ (6 reviews)

 Tweet 0  Like 8

OS: Win64

Language: English

Description

With the Autodesk® Revit® Extension for Autodesk® Fabrication, Autodesk® Revit® 2016 software users can save models that have been produced in Revit 2016 or Revit MEP 2016 using Fabrication Parts to a file compatible with Autodesk® Fabrication 2016 software products (Fabrication CADmep, Fabrication ESTmep, Fabrication CAMduct). This interoperability allows users to utilize fabrication model data authored in Revit for use in Fabrication workflows. Additionally, supported parts in models created in the Fabrication software products can be opened for continued modelling in Revit, or Revit hand-off at the end of the project.

[Read Help Document](#)

About This Version

Version 1.0, 8/5/2015
First Release

Available Parts

Search Autodesk Fabrication Parts Database

<http://aec-projects.com/autodesk-fabrication/search-itm-content/>



Autodesk Fabrication & Autodesk Revit Search Fabrication Parts

Fabrication Parts, or .ITM files, are individual pieces of content that represent the geometrical dimensions and the associated data of the manufacturers' product. They are native to Autodesk Fabrication software products, Autodesk Revit 2016 software, and Autodesk Revit MEP 2016 software.

Autodesk provides an extensive sample dataset of building manufacturers' product content in both imperial and metric units that can be used to build databases that suit the needs for your business or project.

You can search the available content using the fields below. To download individual Fabrication Parts, visit www.building3dcontent.com.

Content last updated on **April 2, 2015**

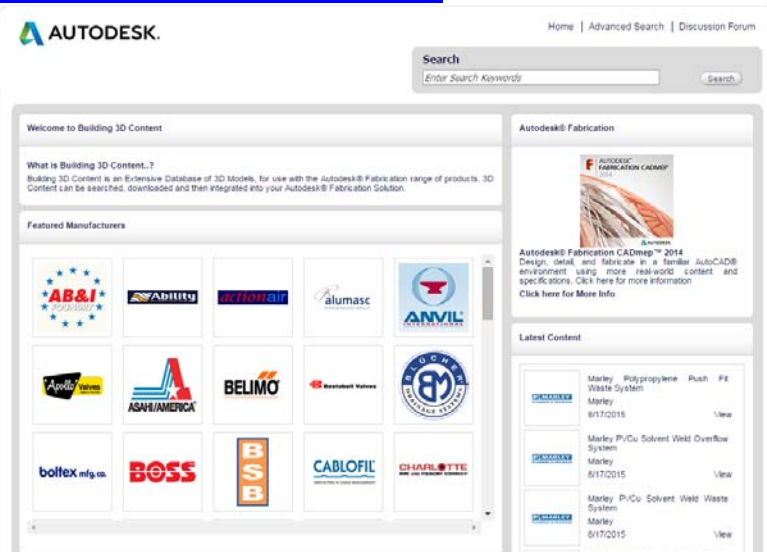
Group: Mechanical

[BACK](#)

Manufacturer:	Range	Material	Description	Sizes
Victaulic	All Ranges	All Materials		
Victaulic	IPS	Carbon Steel	No29M - Tee (Threaded) (Fabricated)	Multiple (+)
Victaulic	IPS	Carbon Steel	No53 - Swaged Nipple (Grooved x Grooved) (Fabricated)	Multiple (+)

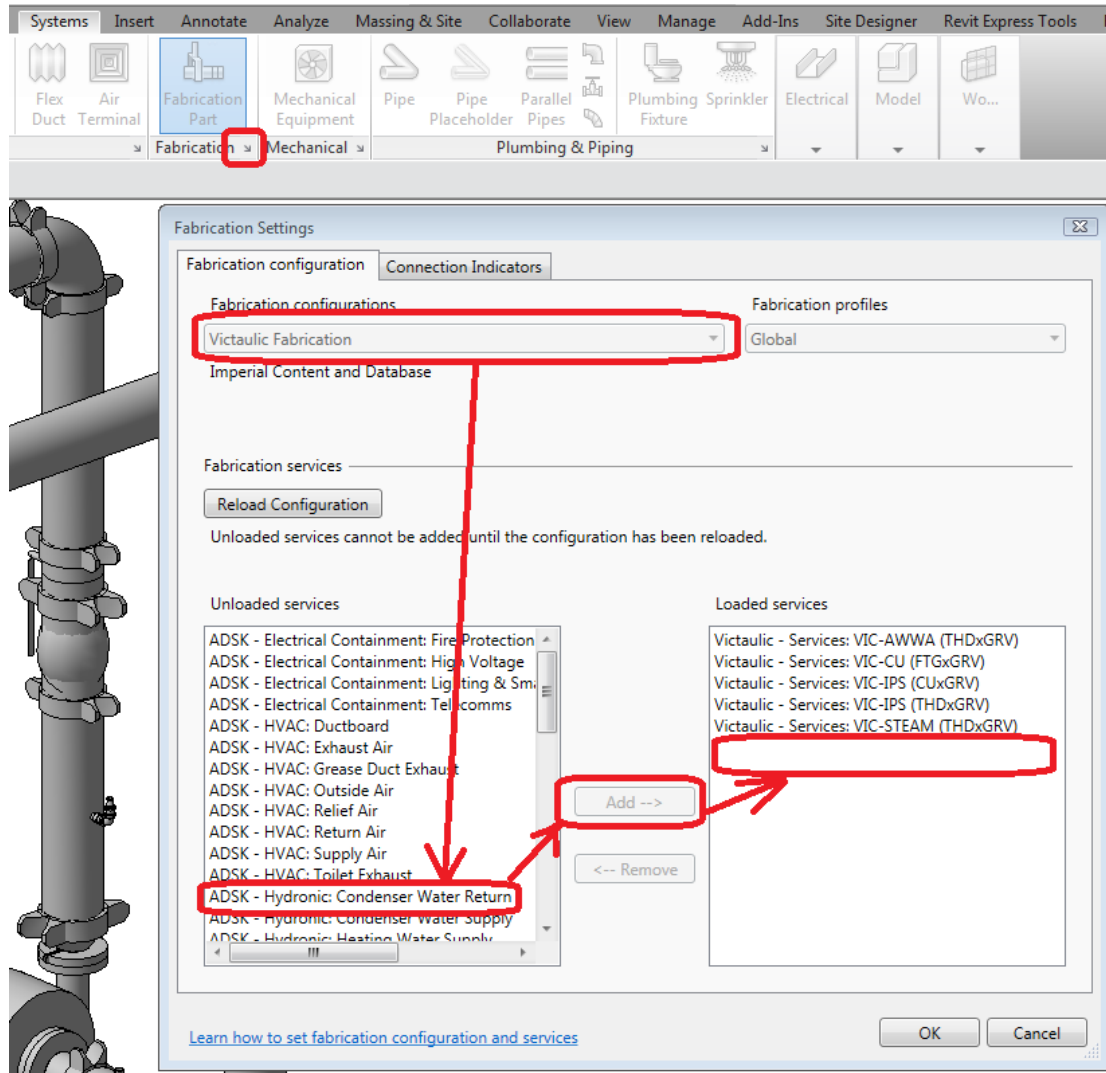
IEZ files are used to import content into your service using the fabrication software.

<http://www.building3dcontent.com/>

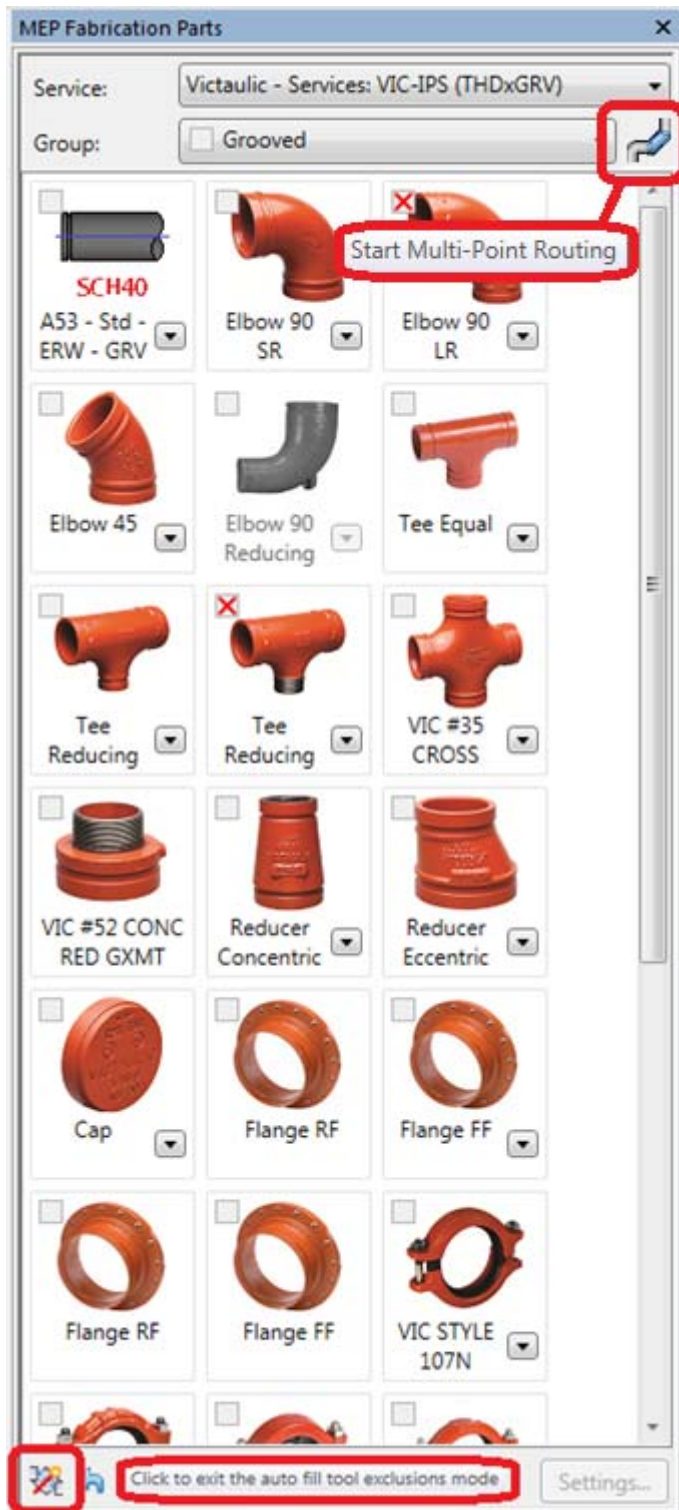


Accessing the Fabrication Configuration in Revit

Keyboard shortcut “FS” you will access the Fabrication Settings window, there you can select the desired fabrication configuration. Imperial and Metric configurations are available or load a customize company specific configuration. Note: To customize the configuration this is limited to the Fabrication software and not currently available in Revit.



Placing Fabrication Parts



Using the keyboard shortcut “PB” the MEP Fabrication Parts palette will appear.

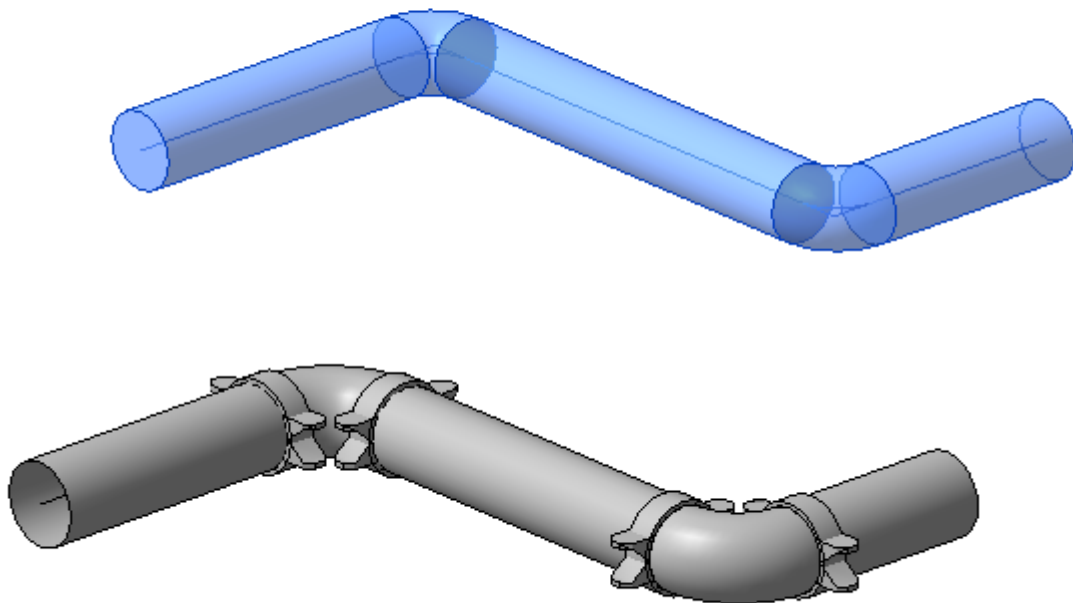
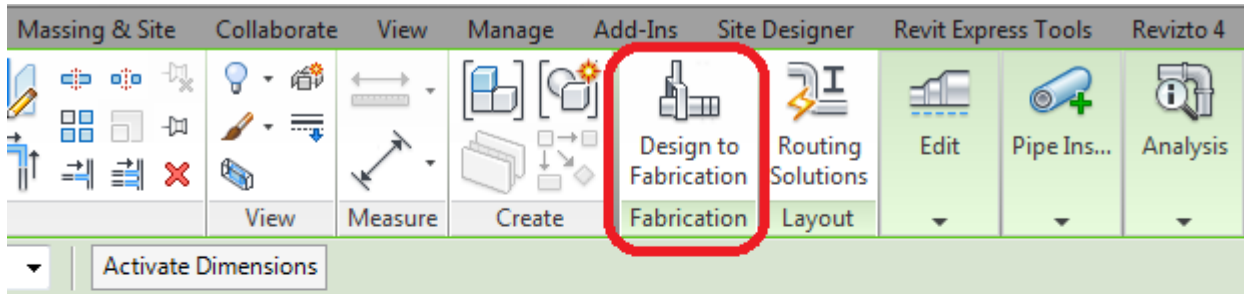
Select your desired Service and Group. Now you can place fabrication parts using any of the parts buttons. Notice some buttons have an arrow revealing addition parts available in the same button.

With Revit 2017.1 you now have the auto fill tool exclusions mode.

With Revit 2018 you now can Start Multi-Point Routing

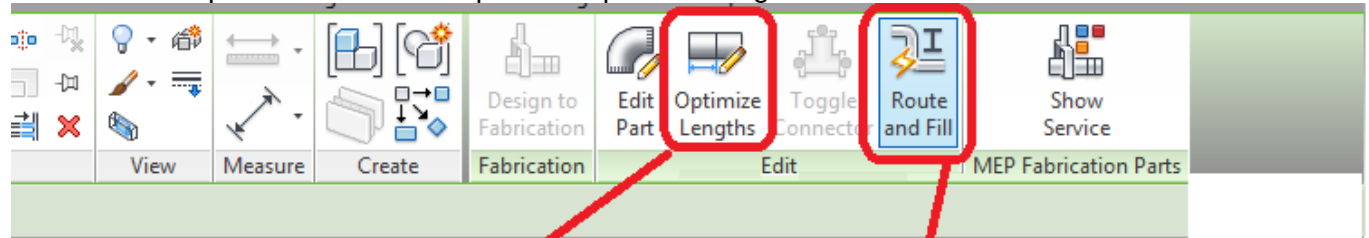
Design to Fabrication

Convert Revit design routings to fabrication parts by making a selection and you will see the Design to Fabrication button appear in the contextual ribbon. This also allows you to convert to fabrication parts.



Fabrication Routing

Select a run of parts and have the option to Optimize Lengths and Route and Fill.



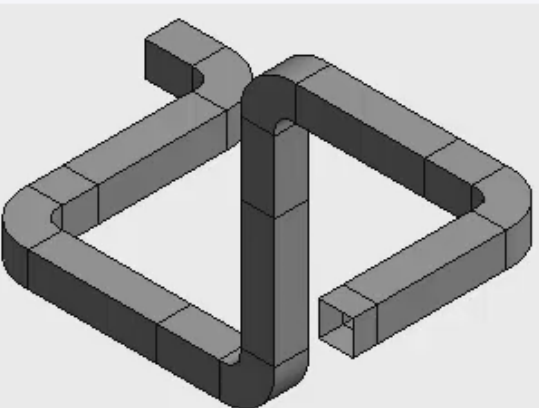
The screenshot shows the 'MEP Fabrication Parts' ribbon in a software application. The 'Optimize Lengths' and 'Route and Fill' buttons are highlighted with red boxes. Red arrows point from these buttons to their respective help panels below.

Optimize Lengths

Adds, removes, or modifies the length of straight fabrication elements for the selected run to maximize the number of standard lengths.

The fabrication specification defines the standard lengths based on the size of the fabrication element.

If a straight segment is pinned or part of a group, it will not be optimized.

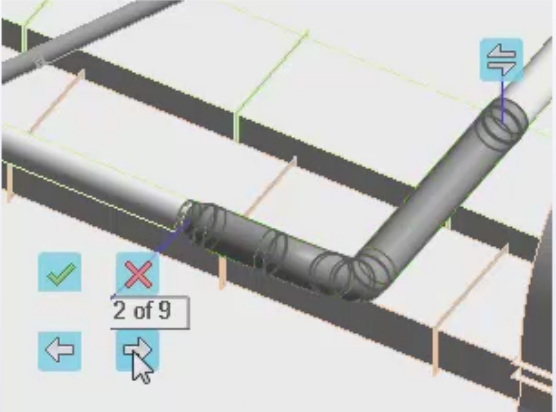


Press F1 for more help

Route and Fill

Offers different routing solutions to connect parts for creating fabrication layouts.

Step through the possible solutions by clicking the Previous and Next arrows on the Solutions panel.

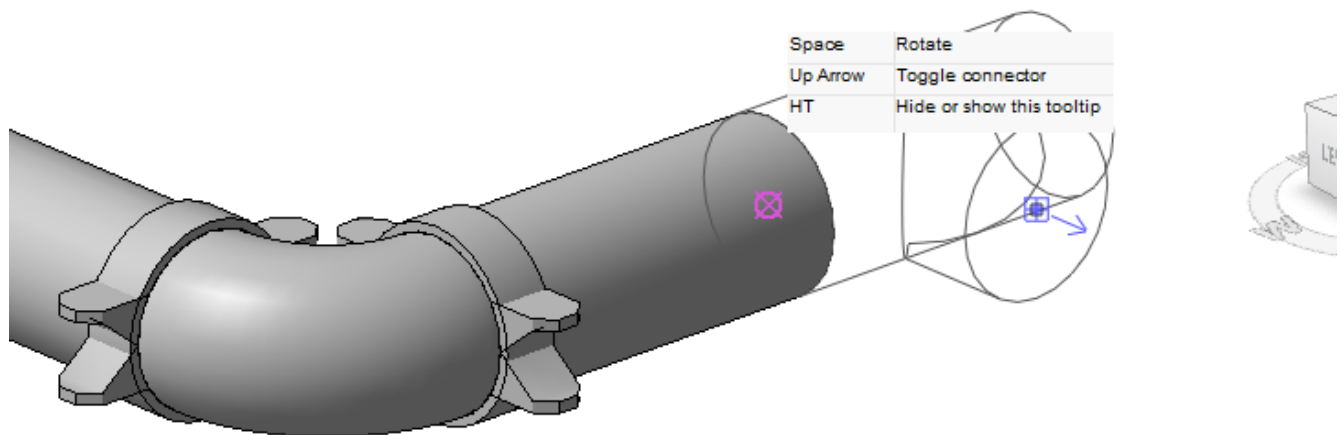
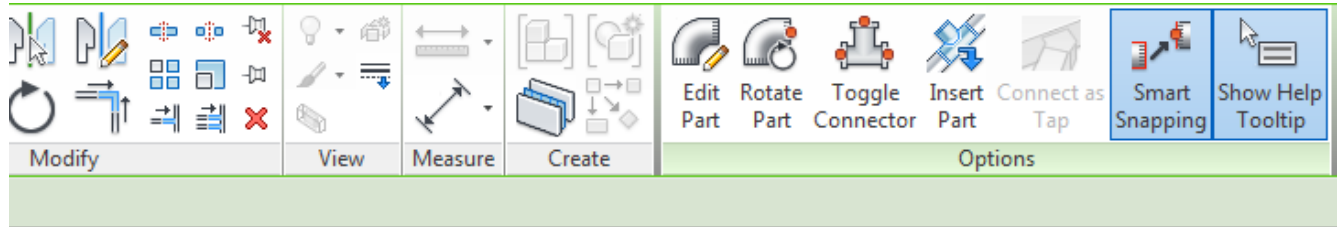


Press F1 for more help

Fabrication Routing

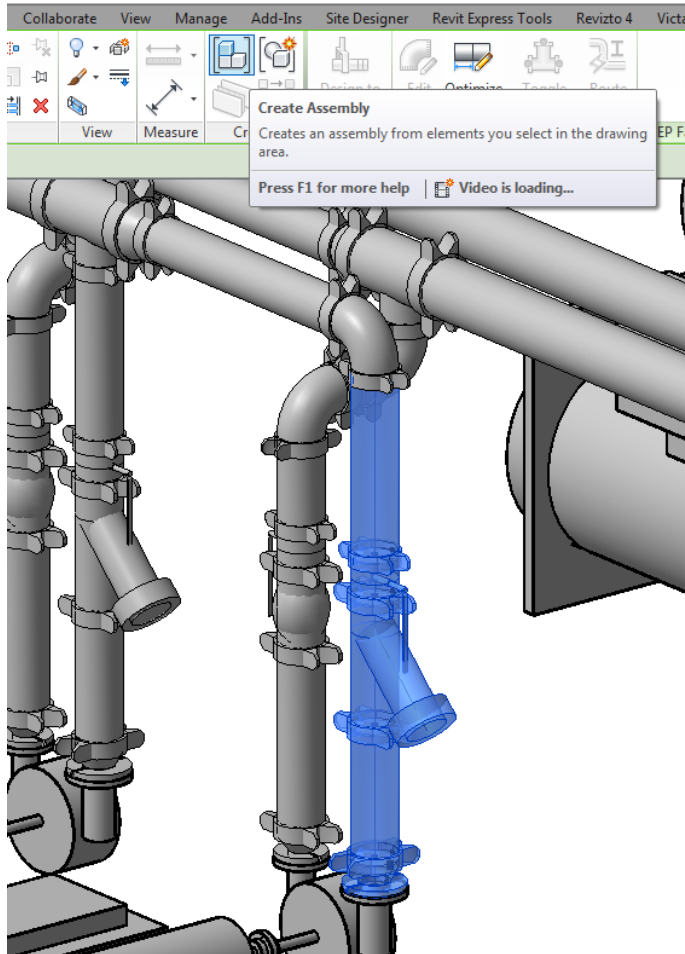
As you place fabrication parts you are presented many options.

- Rotate Part
- Toggle Connector
- Insert Part
- Connect as Tap
- Spacebar – Will rotate the part
- Up arrow - Will toggle the connector

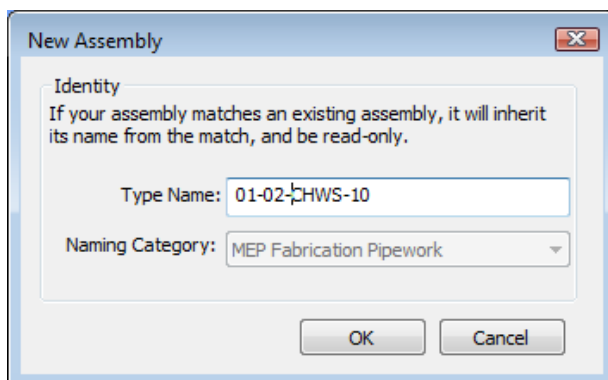


Creating Assemblies (Spools)

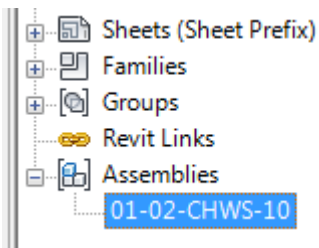
Select the group of components to become the new Assembly. Click the Create Assembly button.



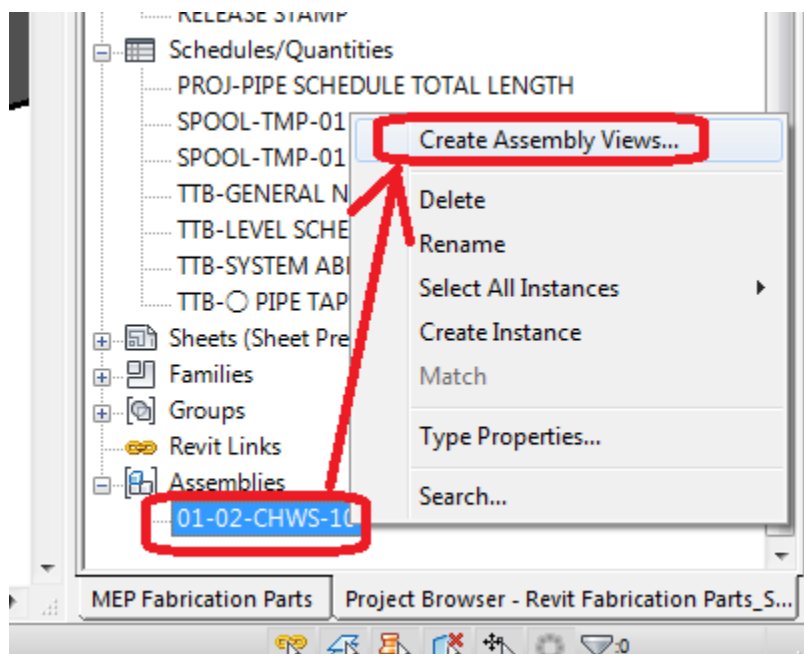
Define the spool name and sequential number.



In the bottom of the Project Browser you will see the new Assembly appear.



Right click on the assembly in the project browser and select Create Assembly Views.



Create the Assembly Views – be sure to select the correct View Templates.

Create Assembly Views

View scale

Scale: 1/2" = 1'-0"

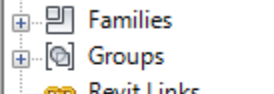
Scale value: 24

Views to create

☒	View type	View template	Assign
☒	3d Ortho	VIC 3D 1/2" SPOOL w/o WORKPLANE	☒
☐	Plan	<From type>	☒
☐	Section A	<From type>	☒
☐	Section B	<From type>	☒
☒	Elevation Top	VIC SECTION 1/2" BLACK	☒
☐	Elevation Bottom	<From type>	☒
☒	Elevation Left	VIC SECTION 1/2" BLACK	☒
☐	Elevation Right	<From type>	☒
☒	Elevation Front	VIC SECTION 1/2" BLACK	☒
☐	Elevation Back	<From type>	☒
☐	Part List	<From type>	☒
☐	Material Takeoff	<From type>	☒
☒	MEP Fabrication Pipework Schedule	MEP Fabrication Fitting Schedule	☒
☐			

☒ Sheet 11x17 Horiz_VIC : Standard

[How do I create assembly views?](#) OK Cancel



Project Browser Hierarchy:

- Sheets (Sheet Prefix)
- Families
- Groups
- Revit Links
- Assemblies
 - 01-02-CHWS-10**
 - 3D View: 3D Ortho
 - Detail View: Elevation Front
 - Detail View: Elevation Left
 - Detail View: Elevation Top**
 - Schedule: MEP Fabrication Pipework Schedule
 - Sheet: A101 - Sheet

Mat#	Qty	Size	Description	Location	Part Number	Height
1	1	2"x1"	MECHANIC (CER) VIC STYLE 711 150-847 E GDSY.17M		1818717P ER	7.18 IN
1	1	2"x1"	MECHANIC (CER) VIC 458 EX-86 RDB.17M		1817858P ER	6.58 IN
1	1	2"x1"	VIC STYLE 12PM 84188 VIC 8108 EWP GDSY			6.28 IN
1	1	2"x1"	MECHANIC (CER) VIC 82318 R111 010 794-86 STD 8108 E SW 117M		1801751 GDS	23.28 IN
1	1	2"x1"	MECHANIC (CER) VIC STYLE 177M 84188 VIC 8108 EWP GDSY.17M		1801777P SW	38.48 IN
1	1	2"x1"	MECHANIC (CER) VIC STYLE 732 JYE 82488 EWP GDSY.17M		2800732P ER	72.88 IN
						165.78 IN



① 3D Ortho



② Elevation Front
1 1/2" = 1'-0"



③ Elevation Left
1 1/2" = 1'-0"



④ Elevation Top
1 1/2" = 1'-0"

PRELIMINARY



CONSTRUCTION PIPING SERVICES

NOTE: Contractor to list vertical equipment configurations, make scaling dimensions and elevations for conformance to Victaulic layout drawings PRIOR TO CUTTING PIPE. Please notify Victaulic Construction Piping Services Division for recommendations regarding any deviations.

All Victaulic drawings and piping engineering assemblies utilize based on information furnished to us and is provided solely as an aid to procurement and installation. The Victaulic Company is not responsible for design or engineer of means, methods or operation. Liability of Victaulic Company is limited to materials, weights, tolerances, dimensions, or any other data shown herein is correct to the extent charged to Victaulic Company for producing the drawing or assembly. If the work of the pipe, Victaulic products must be used in accordance with customer specifications and Victaulic standards.

Rev	Description	Date

PROJ# XX-XXXXX P.O.# 000000-000 CRN BY: 000001 FAB NUMBER		AREA# LEVEL SYSTEM DATE SCALE 1/2" = 1'-0"
01-02-CHWS-10		REV

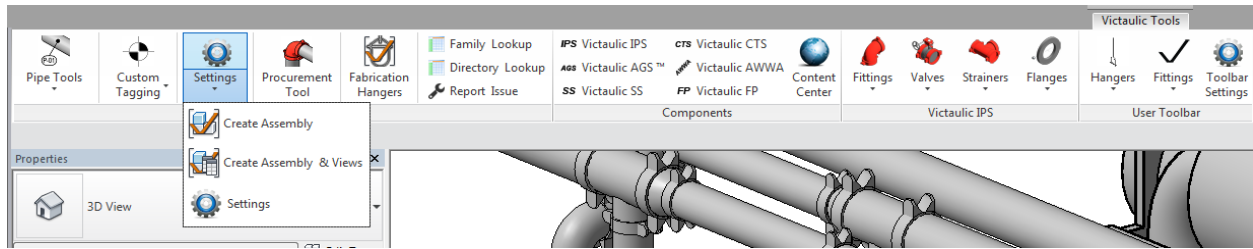
Mechanical Contractor

Project Name

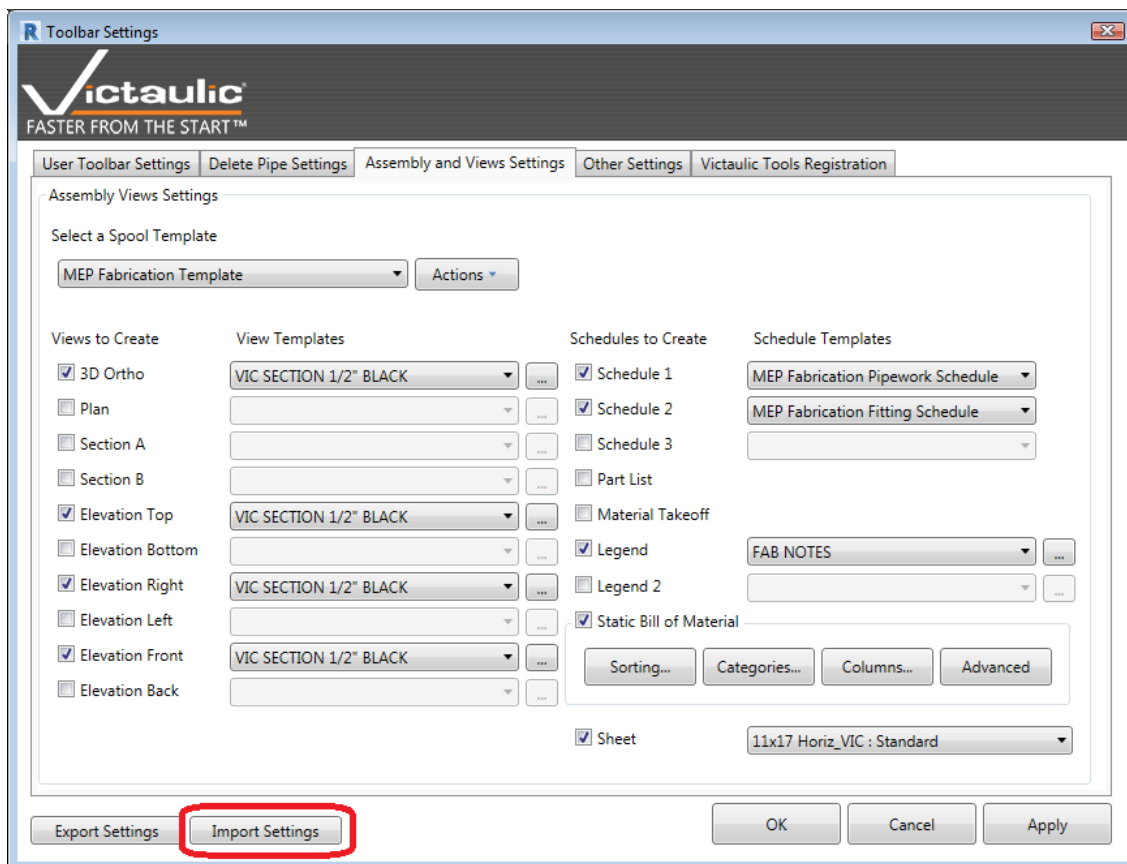
VHS-20216-21-588-4M

Now we are going to use Victaulic Tools for Revit
www.VictaulicSoftware.com

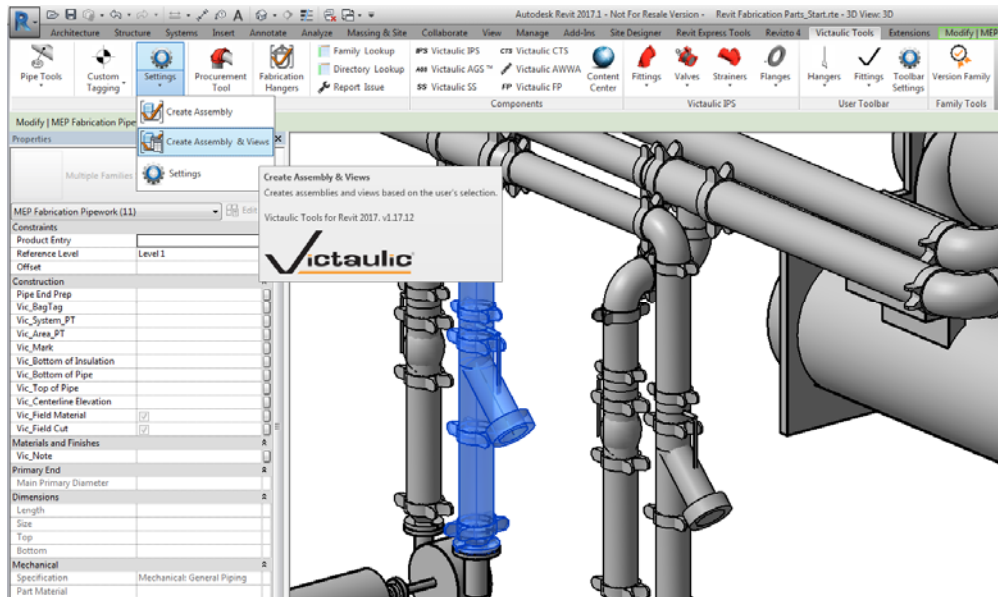
Click the Settings button under Create Assembly



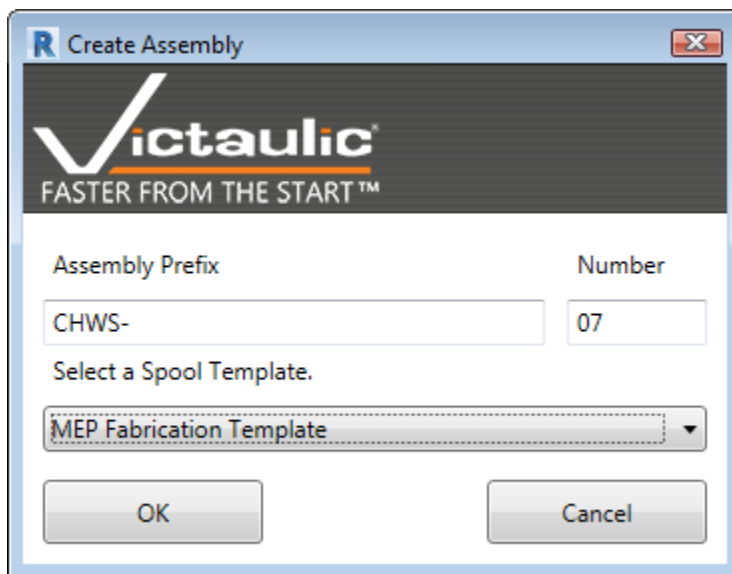
For ease of setup we are going to import the settings from the text file provided.



Now click the “Create Assembly and Views” button after selecting the items you want on the assembly.



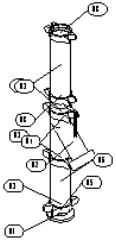
Select the “MEP Fabrication Template” and click Ok.



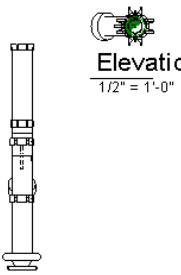
The assembly is created, views are placed on the sheet, and tags are placed and auto sequenced. View location is also set based on your settings.

Rev	Qty	Size	Description	End Flg	Pipe End Length	Weight
B6	1	2"	Flg-A52-FS-W-SCH40-11.5 (DR)		1'-5.50"	35.52 lb
B7	1	2"	Flg-A52-FS-W-SCH40-11.5 (DR)		2'-1"	35.52 lb

Rev	Qty	Size	Description	Location	Part Number	Weight
B8	1	2"x1"	Weldneck (WN) WIG STYLE 111 150 WFF E 050T.1TM		150WFF150	1.14 lb
B9	1	2"x1"	Weldneck (WN) WIG STYLE 132 ALTE 250 WFF E 050T.1TM		250WFF250	72.00 lb
B3	2	2"x1"	Weldneck (WN) WIG STYLE 177W 100 WFF 115 E 050T.1TM		100WFF100	36.00 lb
B1	1	2"x1"	Weldneck (WN) WIG 100W 115 150 WFF 115 E 050T.1TM		100WFF100	36.00 lb
B5	1	2"x1"	Weldneck (WN) WIG 150 115 150 WFF 115 E 050T.1TM		150WFF150	69.00 lb
B2	2	2"x1"	WIG STYLE 100W 100 WFF 100 E 050T.1TM		100WFF100	36.00 lb



3D Ortho



Elevation Top
1/2" = 1'-0"



Elevation Right
1/2" = 1'-0"



Elevation Front
1/2" = 1'-0"

FAB NOTES
1. ALL DIMENSIONS ARE TO THE END OF PIPE, FACE OF FLANGE, OR CENTERLINE OF FITTING, UNLESS OTHERWISE NOTED

PRELIMINARY



CONSTRUCTION PIPING SERVICES

NOTE: Contractor to verify all equipment configurations, model, ratings, dimensions and materials for compliance with Vicalia specifications. PRIOR TO CUTTING PIPE, please notify Vicalia Construction Piping Services Division for recommendations regarding any revisions.

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Rev	Description	Date

Proj #	Area #
CHWS-07	

1/15/2016 5:58:31 PM

Fabrication Parts (Updates)

- Added model categories Revit 2017
 - o MEP Fabrication Containment, Ductwork, Hangers, Pipework
- Ability to resize routing Revit 2017.1
- Ability to swap fittings – Revit 2017 and better for 2017.1
- Added trim/extend editing – Revit 2017
- Added hidden lines – Revit 2016 R2
- Awesome Tagging for - Revit 2017 (Elevation at location)
- Improved AutoCAD Exports - Revit 2016 R2
- Route and Fill auto routing – Revit 2017
- Automatic cut in of tees, valves, or taps – Revit 2016 R2
- Slope routing improvements – Revit 2018
- Auto Route and Fill – Revit 2018

Fabrication Parts (plus)

- Database controls content – all content consistence with patterns supplied by Autodesk
- Pricing, labor, and part number data available
- Dimensionally accurate
- One source of content for both CADmep and Revit
- Large Database of Manufactures content
- Autodesk commitment of development