SysQue® PAC

Duct Manufacturing downloading and integration with Autodesk Fabrication CAMduct, Vicon, and Vulcan

This document is based on:

SysQue® PAC 2015, 2016, and 2017

SUMMARY

This document provides detailed information on how to use SysQue® PAC to manufacture and order your duct from your SysQue® Systems BIM models to multiple different CAM stations with a variety of options along the way.

DOCUMENT TOPICS

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Specification mapping options for Vulcan

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*Vulcan SysQue® PAC file import*

Vicon SysQue® PAC file import

SysQue® PAC Add Hole option with Autodesk Fabrication CAMduct for Taps and Access Doors

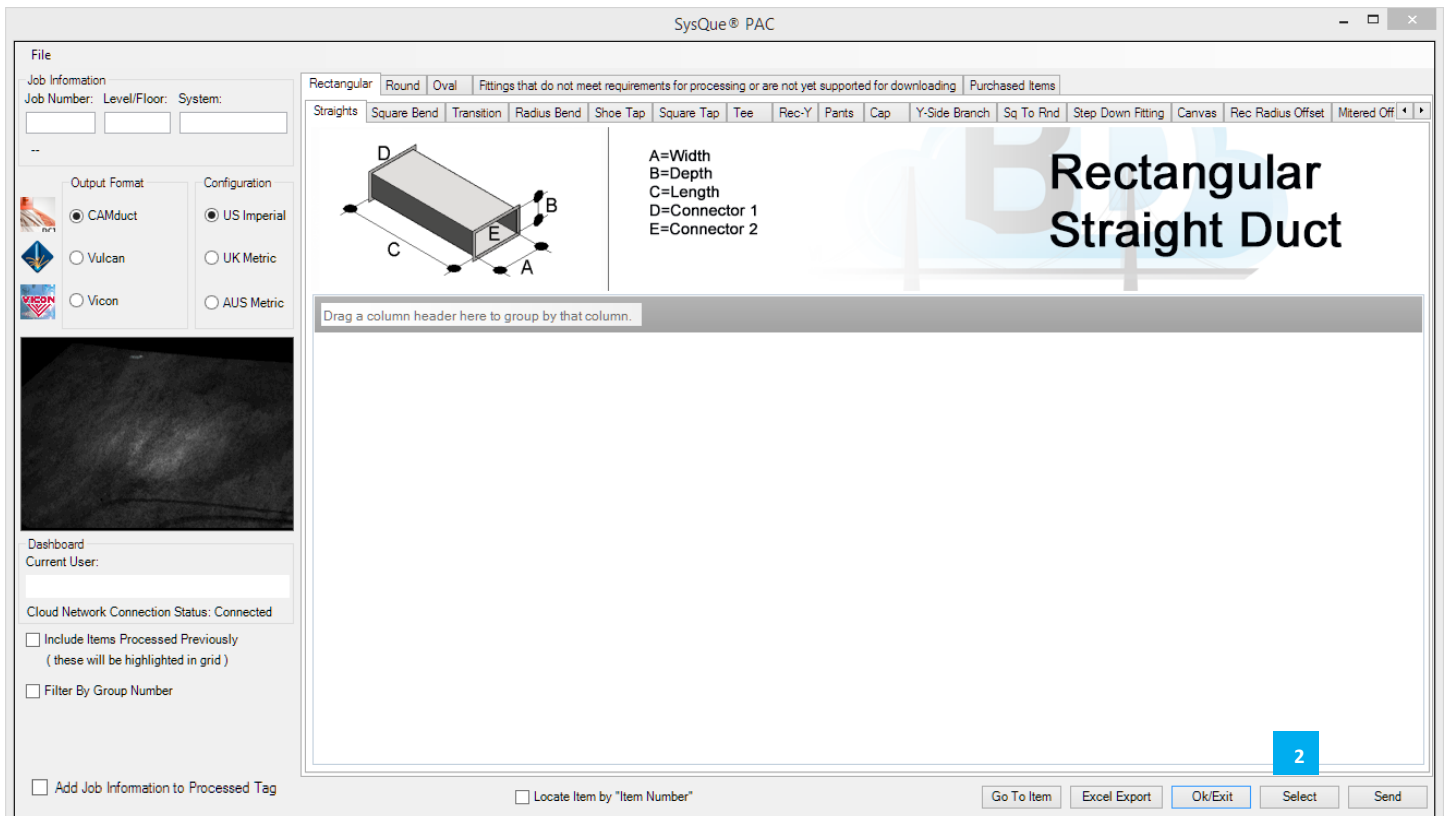*SysQue® PAC List of available duct patterns for manufacturing integration*

SysQue® Systems Duct, SysQue® PAC & TSI Duct Standard Specifications

SysQue® PAC Main Form and Basics

Using PAC is very easy. To start, you open the SysQue® PAC window by clicking on the PAC icon in the SysQue® Ribbon panel. **1**
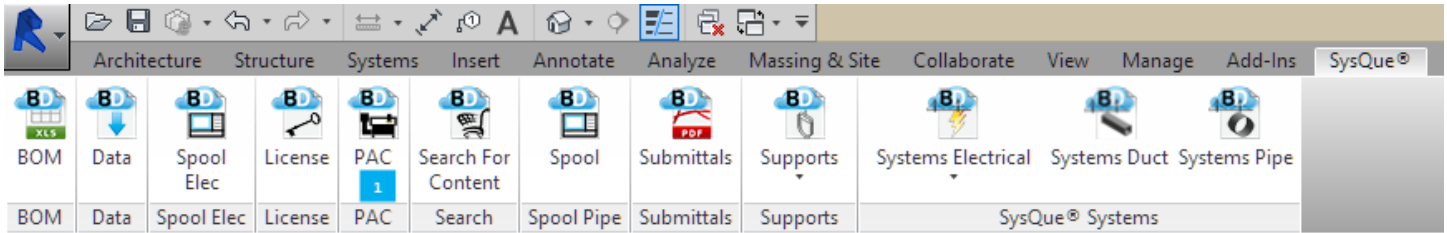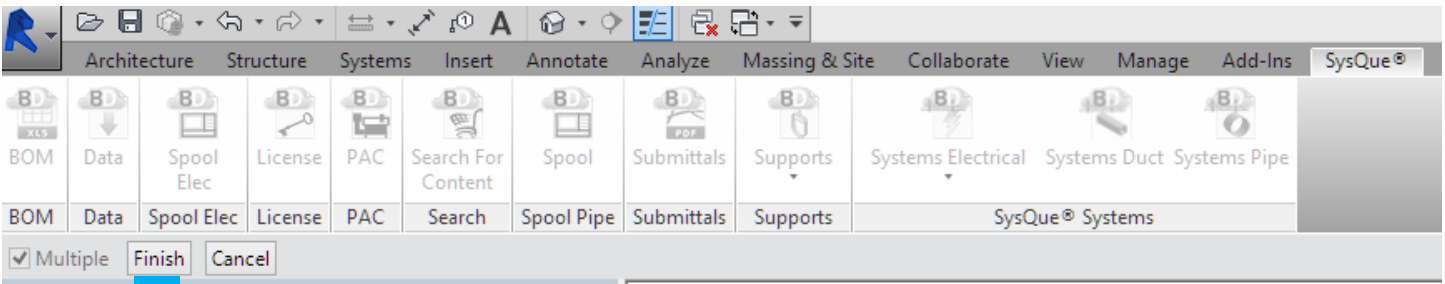

This will open the main PAC dialog and will look like this.

From this Dialog you will click on the "Select" button **2** . This will then put you back to your model in a selection mode. Once you have selected all of the duct you wish to submit with SysQue® PAC PAC, you will click on

"Finish" **3** .

Once the main SysQue® PAC window opens again, you will see that each fitting has a unique tab, and a populated grid within it showing the details of each instance of that fitting in your selection.
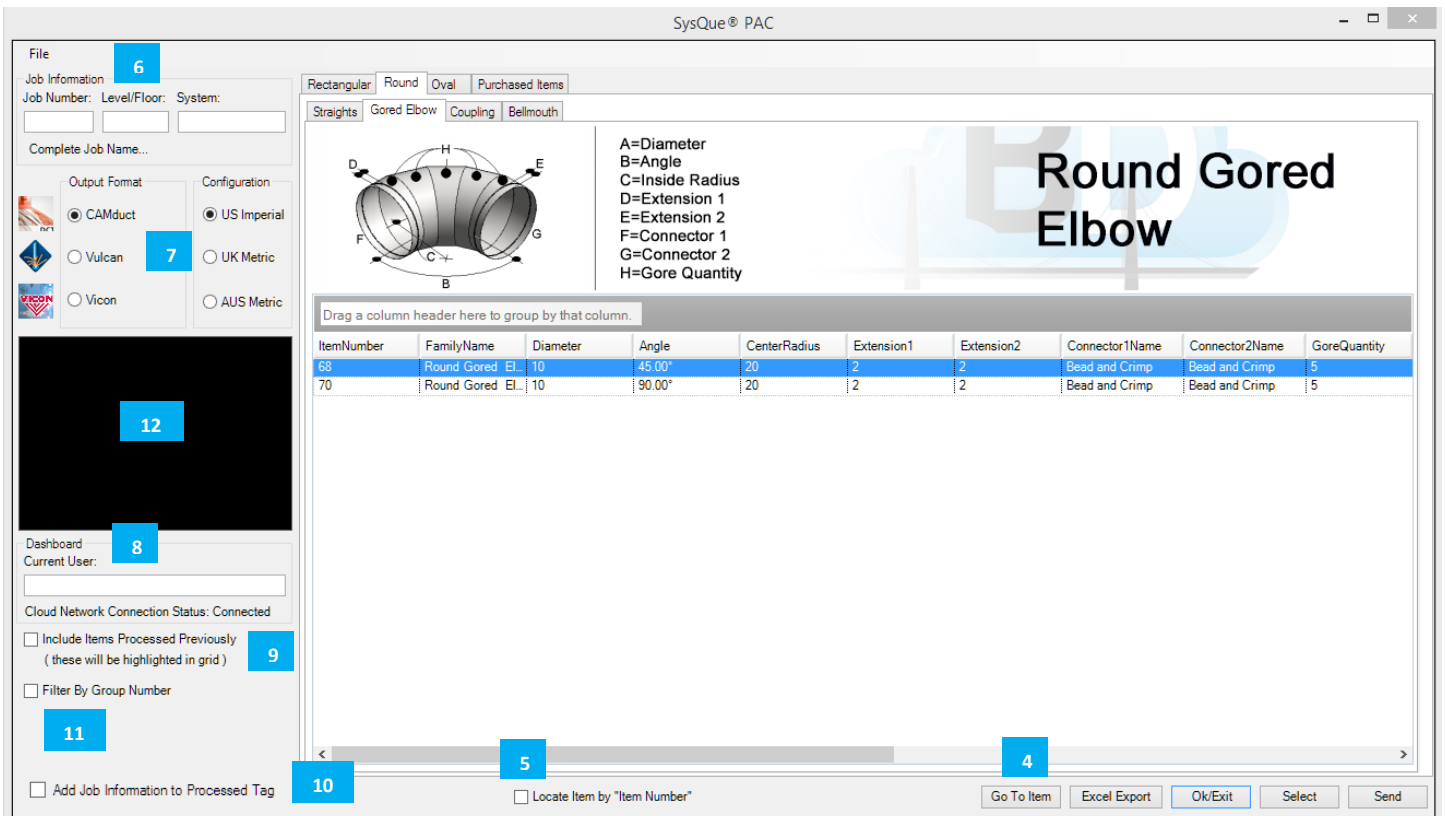
If you want to inspect the actual fitting in the model, you simply highlight the fitting in the grid then click the "**Go to Item**" button **4** at the bottom, the main form will minimize and the fitting highlighted will be zoomed in on. To get back just click on the PAC window again on your taskbar. Alternatively, if you want to zoom into a duct fitting by using the Item Number, you can check the "**Locate Item By Item Number**" **5** at the bottom and type the known item number into the now visible text field, then when you click the "Go To Item" again, it will find and zoom into the duct that has this Item Number.

The **Job Information** **6** area at the top of the form is where you will assemble the name of the file(s) that get generated by PAC. The Job Number, the Level/Floor, and the System fields are connected by hyphens to create the file name that will be used. Filling these out is mandatory at this time for the file to generate for you.

The **Output Format** and **Configuration** area **7** of the form are very important. It is vital that you select the correct **Output Format** to match what your Shop will be using. The **Configuration** is important because there are different units, as well as different standards for different geographical regions in the world for sheet metal

fabrication. Once you select the correct Output format and Configuration, and send your first Job, these settings will be saved for you and remain each time SysQue® PAC opens.
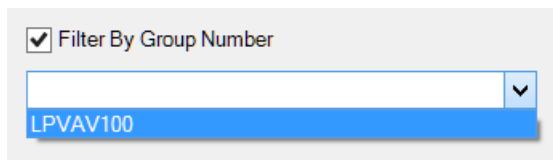
The **Dashboard** 8 is important, it lets you know that you have a successful connection to the SysQue® PAC cloud which is necessary to be able to get a processed file for manufacturing use.

The **Include Items Processed Previously** 9 option is a built in safety feature. Whenever you send duct through SysQue® PAC, the items are flagged as "Processed", then when this option is not checked, SysQue® PAC will not allow you to send the same duct again by making the ones that have been processed non-selectable. However, if you still want to send the same duct, you just tick the check box and the ones processed prior become selectable again.

In conjunction with the Include Items Processed Previously option, you can also choose to add the Job

Information file name to when it was processed by ticking the **Add Job Information to Processed Tag** 10 check box. This will then show up in the processed parameter in the fitting.
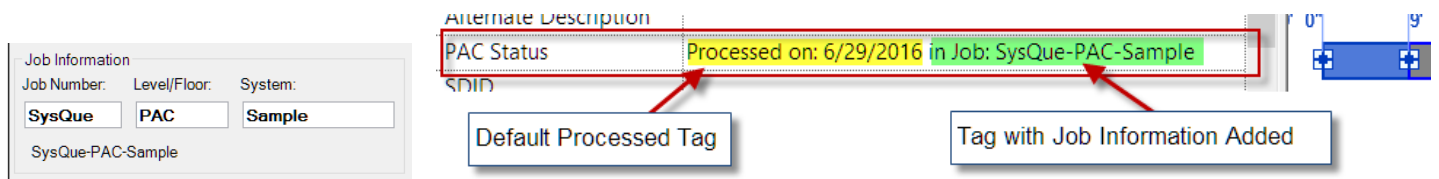
The **Filter by Group Number** 11 is a very powerful and logical way to organize your job into individual selection sets to send to the shop. For example, if you select all the low pressure duct after VAV-100, and type LPVAV100 into the shared "Group Number" parameter in the Revit properties window, all the selected items will then have this same Group Number. When you come into SysQue® PAC, and tick this option, a dropdown window will appear and you will see this new group added to the list. If you select the LPVAV100 group from that list, when you go to "Select" your items in your model you can simply **select the entire model** because the only selectable ones will be the ones with that group number because SysQue® PAC ignores all the other ones magically. This makes selecting very easy, and creates a very organized model for sending to the shop.

12 Because we can.

Configuration for Autodesk Fabrication CAMduct and Sending a Job

There are 3 *Configuration* options for **CAMduct**, they are based on geographical industry standards and their units (**Imperial or Metric**). It is very important that you send your job with the correct *Configuration* option. The *Output Format* will determine the file type that is generated, for CAMduct this will be **.MAJ** file type that can be opened and used natively with Autodesk Fabrication CAMduct to download your duct to your Plasma tables and/or Decoilers.

Configuration for Vulcan and Sending a Job

There are 3 *Configuration* options for **Vulcan**, they are based on geographical industry standards and their units (**Imperial or Metric**). It is very important that you send your job with the correct *Configuration* option. The *Output Format* will determine the file type that is generated, for Vulcan this will be 2 files, one is the **import file** with the details of your duct and fittings, the other is a security **signature file** added for your protection to ensure the file was generated by an authorized third party developer and that it was not tampered with during electronic transfer. Editing the import file will cause the import to fail. The import file will be used to import the SysQue duct and Fittings into Vulcan to download your SysQue Duct and Fittings to your Plasma tables and/or Decoilers, the signature file needs to remain with the import file, in the same folder.

Configuration for Vicon and Sending a Job

There are 3 *Configuration* options for **Vicon**, they are based on geographical industry standards and their units (**Imperial or Metric**). It is very important that you send your job with the correct *Configuration* option. The *Output Format* will determine the file type that is generated, for Vicon this will be **.txt** file type that can be imported into your Vicon platform to download your SysQue Duct and Fittings to your Plasma tables and/or Decoilers.

Excel report exporting and export format options

SysQue® PAC gives you the option to export [1] your Duct and Fitting selection to Excel to use for reporting. There are also some options for formatting this report, hiding or showing columns [2] as well as grouped filters [3].
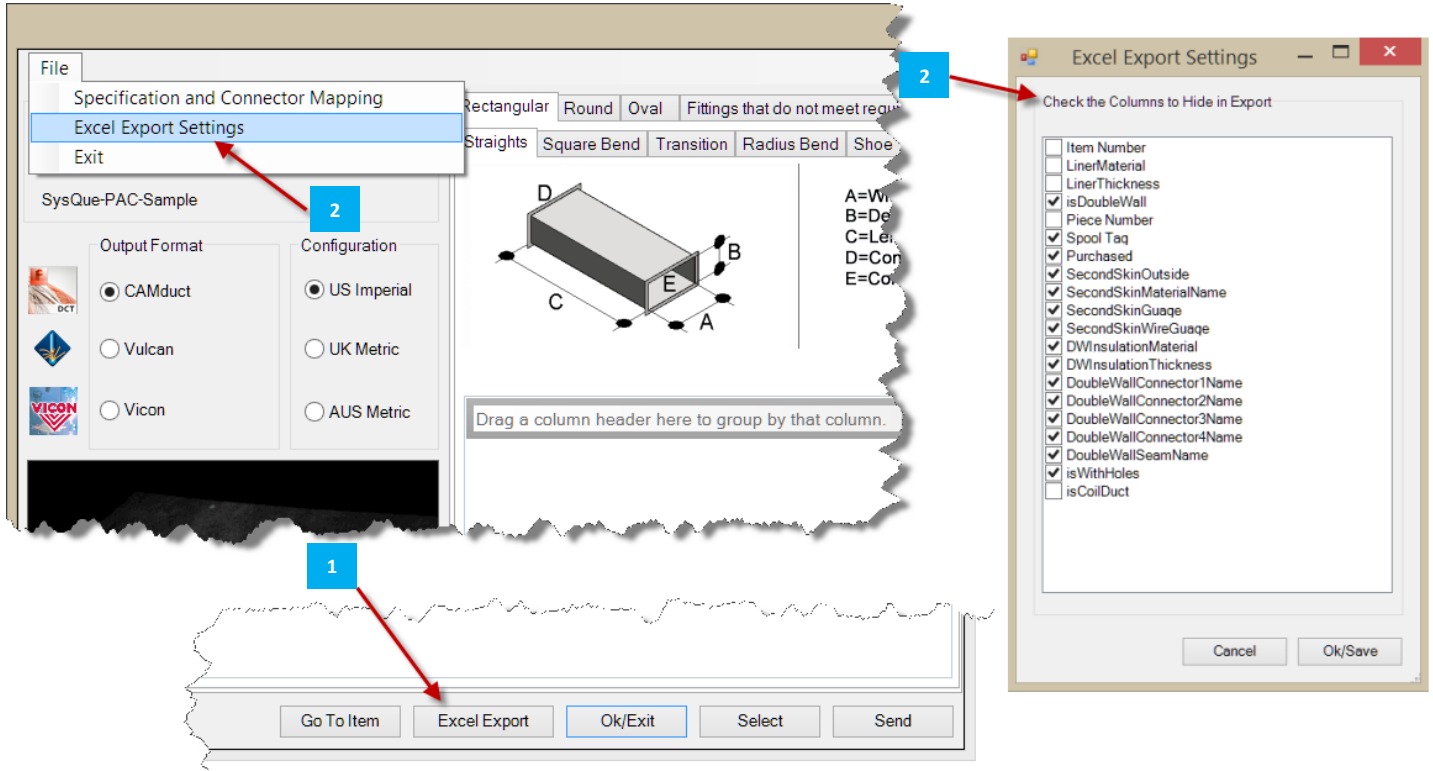
By default, all columns are on, but if you use the Excel Export Settings, you can choose to simplify your report and remove columns that you do not need for your report process. Below is an example of the default before, and then after the columns in the above example have been hidden. This setting is saved and remembered each time you make changes to it, so once you have it the way you want it will remain that way.

The SysQue® PAC interface allows you to use what are called "Group Filters". These are used simply by dragging a column header to the top that you would like to group by. These will let you further customize your reported output into logical groupings for your manufacturing and/or ordering process. The example below shows how you can break up your straight duct report into:

Non-Coil duct without liner **4** , Non-Coil duct with liner **5** , Coil duct without liner **6** , and Coil duct with liner **7**

Connector Mapping Options for Autodesk Fabrication CAMduct

SysQue® PAC offers the ability for you to specify what connector you want to map your SysQue Duct connector to within the list of TSI Standard connectors. (Mapping to custom connectors is also supported, and is covered in this document in the topic labeled: "*Autodesk Fabrication CAMduct station using SysQue® Systems Duct Custom Connectors*")

To MAP your connectors, within the main SysQue® PAC window, you will go to File **1** , and click on Specification and Connector Mapping **2** . Once in the dialog, select the Connector Map tab **3** , you will go down the list on the Left and for each, select from the dropdown **4** on the Right the desired Fabrication connector you want to use **5** . It is important you select a "like" connector, meaning do not select for example a TDC or Companion Flange connector if the SysQue connector is based on a Bead and Crimp connection method. Most of these will be setup for you out of the box, and will only need reviewed for specific workflows that might differ slightly based on your Manufacturing standards.
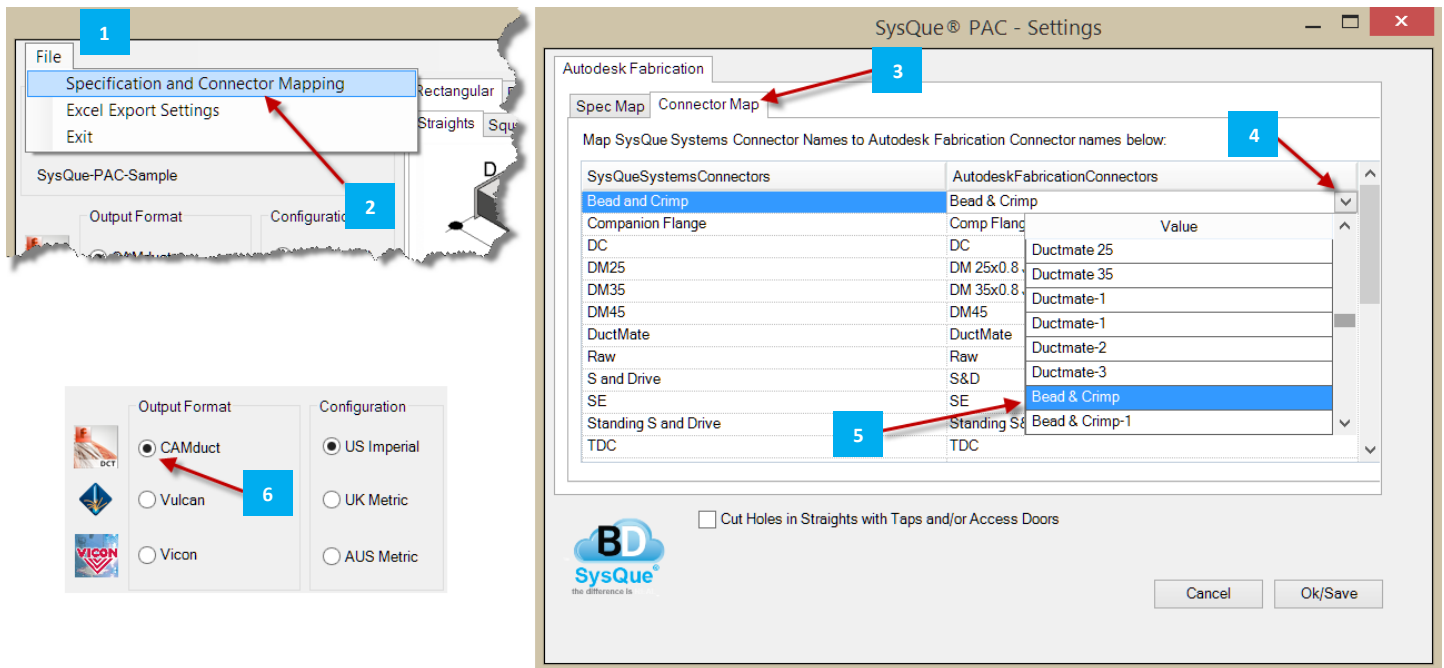
Note: This dialog will reflect the settings based on what output you have set currently, CAMduct, Vulcan, or Vicon, so be sure that CAMduct is the Output Format selected **6** .

Once you have completed this mapping, the SysQue named connector will be replaced with the Autodesk Fabrication named connector during the cloud processing. In this example, the SysQue "Bead and Crimp" connector was replaced with "Bead & Crimp" within the returned .MAJ file. (The .MAJ file is the native file format for Autodesk Fabrication CAMduct.)
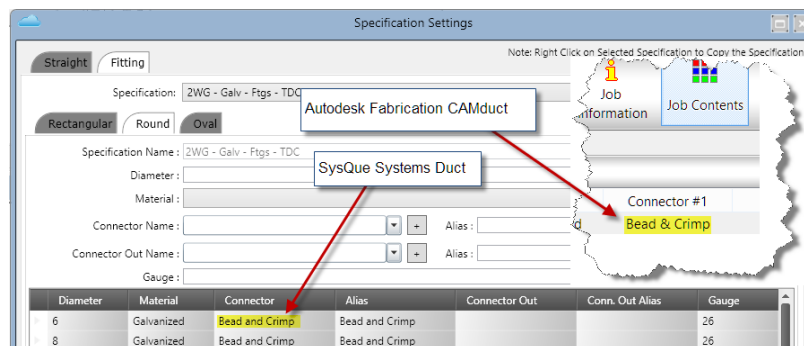
Specification Mapping Options for Autodesk Fabrication CAMduct

SysQue® PAC allows you map your SysQue® Systems Duct Specification to a TSI Duct Standard Specification within the Autodesk Fabrication CAMduct software. (Mapping to custom Specifications is also supported, and is covered in this document in the topic labeled: "*Autodesk Fabrication CAMduct station SysQue® Scripting Utility use and setup*")

To MAP your Specifications, within the main SysQue® PAC window, you will go to File **1** , and click on Specification and Connector Mapping **2** . Once in the dialog, select the Spec Map tab **3** , you will go down the list on the Left and for each, select from the dropdown **4** on the Right the matching TSI Duct Standard Specification you want to use **5** . Most of these will be setup for you out of the box, and will only need reviewed for specific workflows that might differ slightly based on your Manufacturing standards.
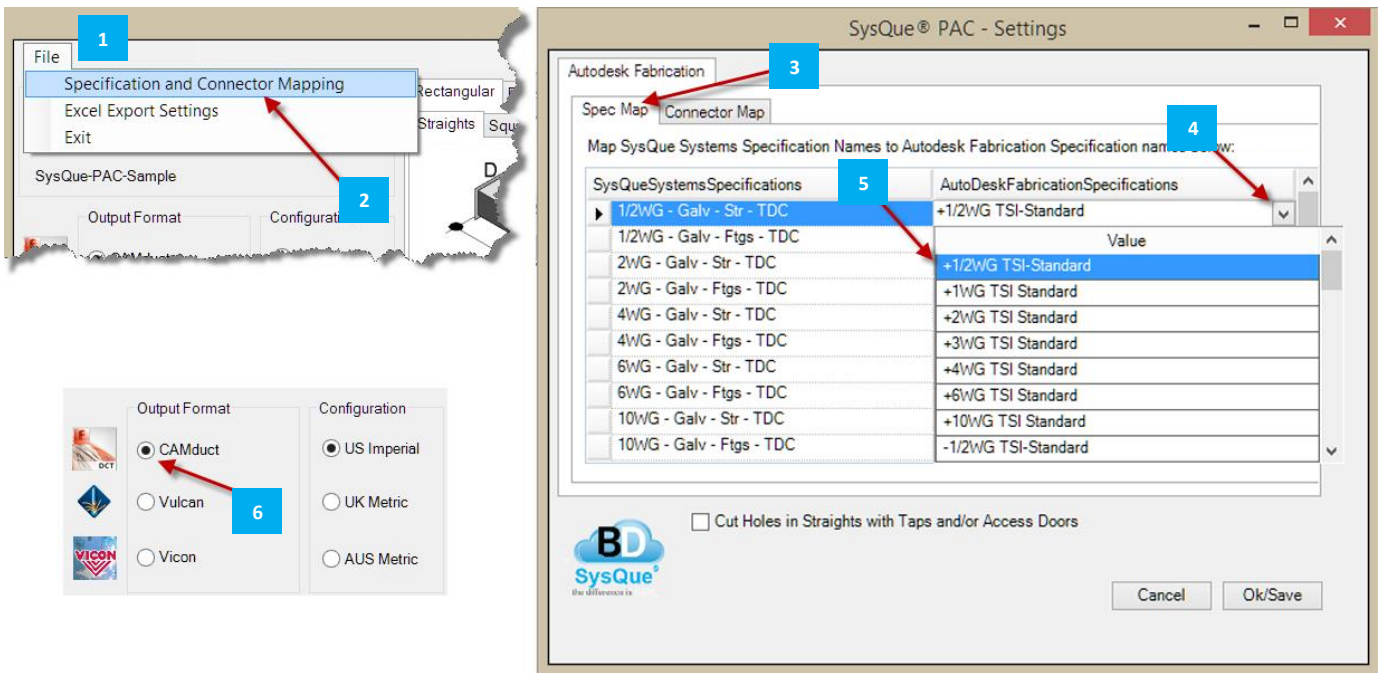
Note: This dialog will reflect the settings based on what output you have set currently, CAMduct, Vulcan, or Vicon, so be sure that CAMduct is the Output Format selected **6** .

Once you have completed this mapping, the SysQue named Specification will be replaced with the TSI Duct Standard named Specification during the cloud processing. In the below example, the SysQue "2WG-Galv-Str-TDC" Specification was replaced with "+2WG TSI-Standard" within the returned .MAJ file. (The .MAJ file is the native file format for Autodesk Fabrication CAMduct.)
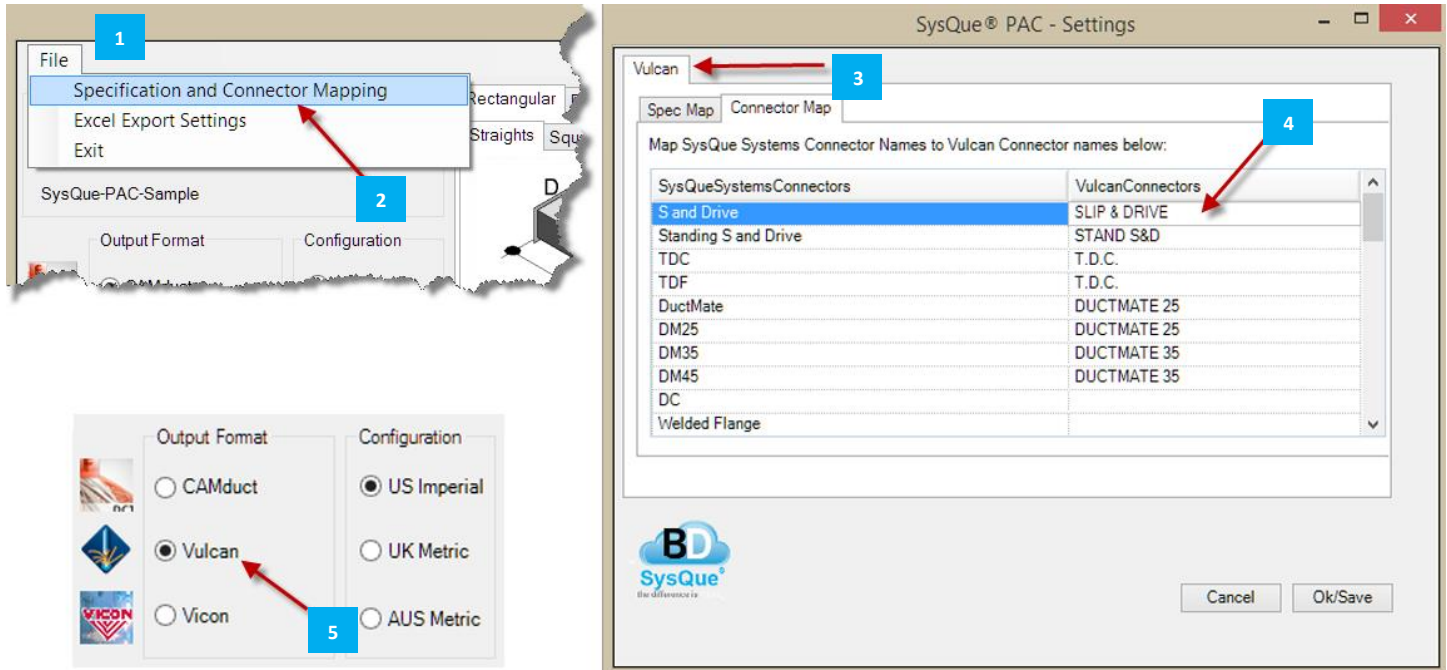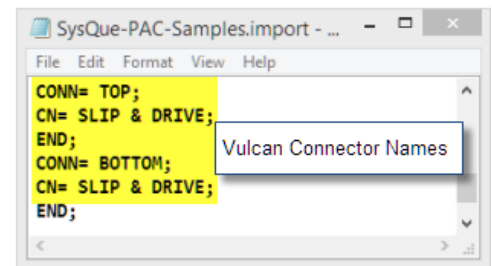
Connector Mapping Options for Vulcan

SysQue® PAC allows you to map your SysQue® Systems Duct Connectors to your specific Connector within your Vulcan cutting software.

To MAP your connectors, within the main SysQue® PAC window, you will go to File [1], and click on Specification and Connector Mapping [2]. Once in the dialog, select the Connector Map tab [3], you will go down the list on the Left and for each, type in the name of your connector for each [4]. It is important you type a "like" connector, meaning do not type for example a TDC or Companion Flange connector if the SysQue connector is based on a Bead and Crimp connection method.

Note: This dialog will reflect the settings based on what output you have set currently, CAMduct, Vulcan, or Vicon, so be sure that Vulcan is the Output Format selected [5].

Once you have completed this mapping, the SysQue named connector will be replaced with your Vulcan named connector during the cloud processing. In this example, the SysQue "S and Drive" connector was replaced with "SLIP & DRIVE" within the returned import file. (The import file will be imported into the Vulcan Cutting Software. Note, you will receive 2 files back, both are required, one is a security signature file that ensures the file integrity since it is transmitted over the cloud. It ensures that the file was not modified between our cloud and your computer.)
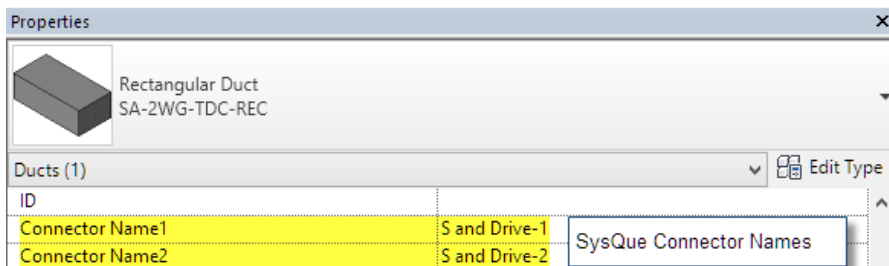
Specification Mapping Options for Vulcan

SysQue® PAC allows you to map your SysQue® Systems Duct Connectors to your specific Specification within your Vulcan cutting software.

To MAP your connectors, within the main SysQue® PAC window, you will go to File **[1]**, and click on Specification and Connector Mapping **[2]**. Once in the dialog, select the Spec Map tab **[3]**, you will go down the list on the Left and for each, type in the name of your Specification for each **[4]**.

Note: This dialog will reflect the settings based on what output you have set currently, CAMduct, Vulcan, or Vicon, so be sure that Vulcan is the Output Format selected **[5]**.
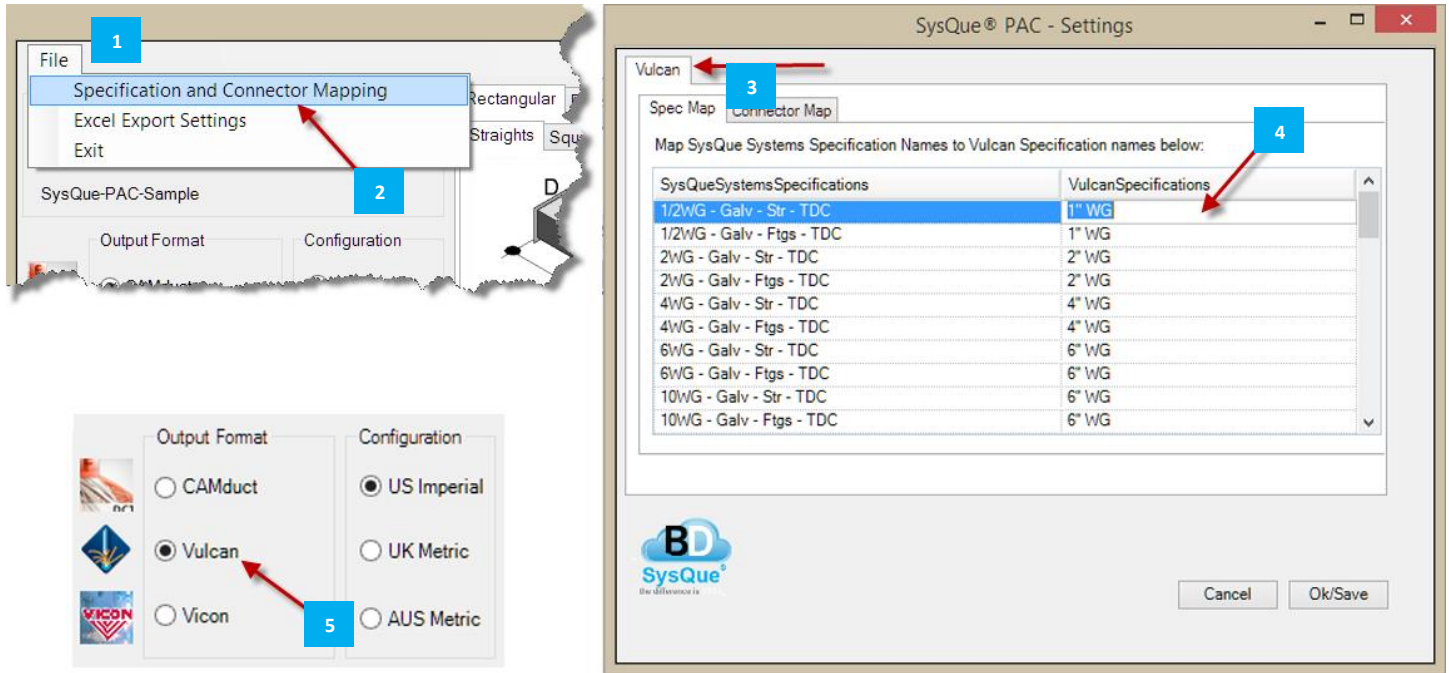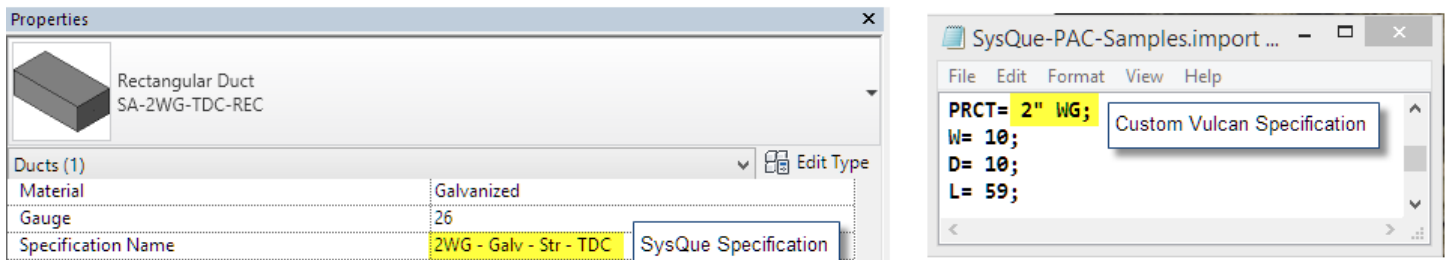
Once you have completed this mapping, the SysQue named Specification will be replaced with your Specification name during the cloud processing. In the below example, the SysQue "2WG-Galv-Str-TDC" Specification was replaced with "2"WG" within the returned .import file. (The import file will be imported into the Vulcan Cutting Software. Note, you will receive 2 files back, both are required, one is a security signature file that ensures the file integrity since it is transmitted over the cloud. It ensures that the file was not modified between our cloud and your computer.)

Connector Mapping Options for Vicon

SysQue® PAC allows you to map your SysQue® Systems Duct Connectors to your specific Connector within your Vicon cutting software.

To MAP your connectors, within the main SysQue® PAC window, you will go to File [1], and click on Specification and Connector Mapping [2]. Once in the dialog, select the Connector Map tab [3], you will go down the list on the Left and for each, type in the name of your connector for each [4]. It is important you type a "like" connector, meaning do not type for example a TDC or Companion Flange connector if the SysQue connector is based on a Bead and Crimp connection method.

Note: This dialog will reflect the settings based on what output you have set currently, CAMduct, Vulcan, or Vicon, so be sure that Vicon is the Output Format selected [5].

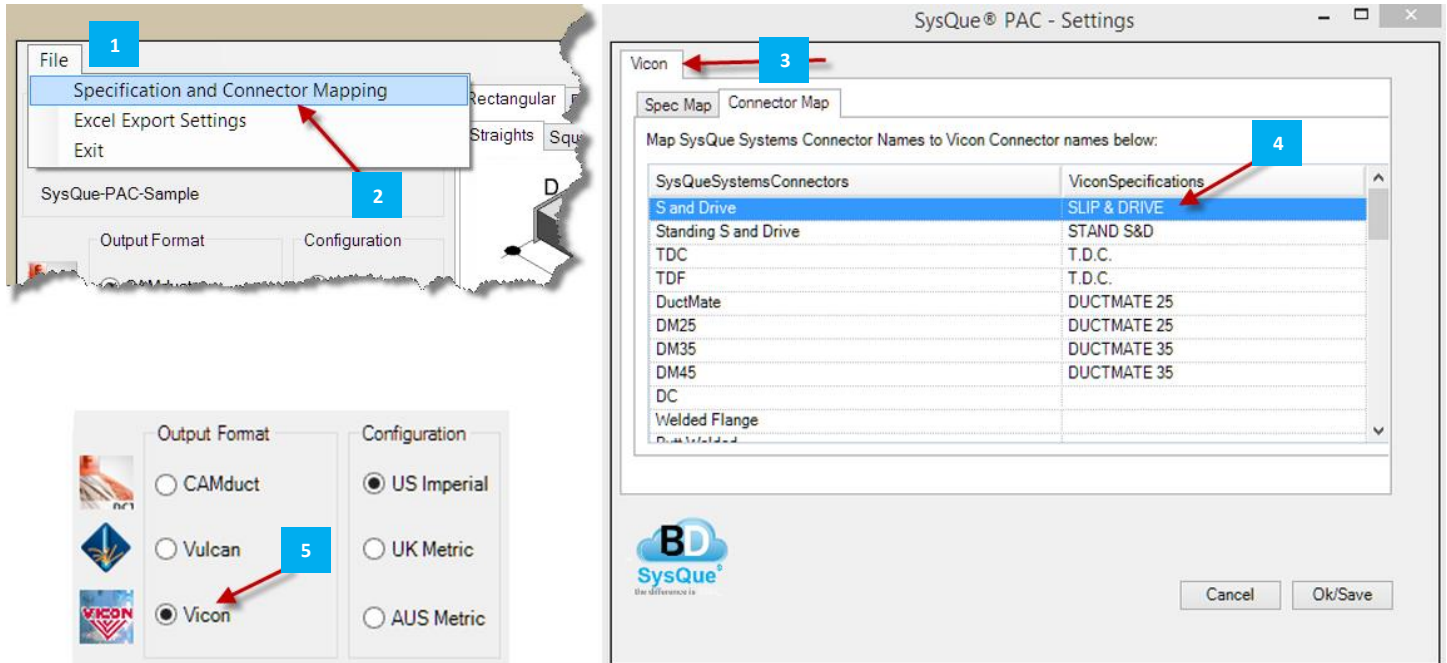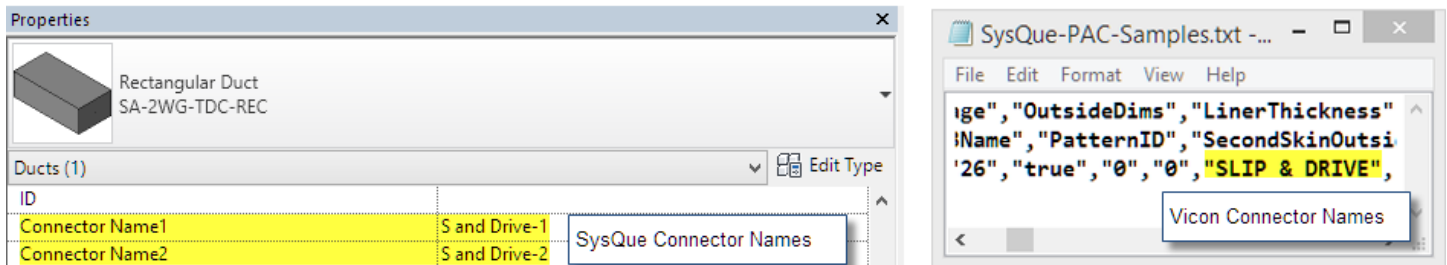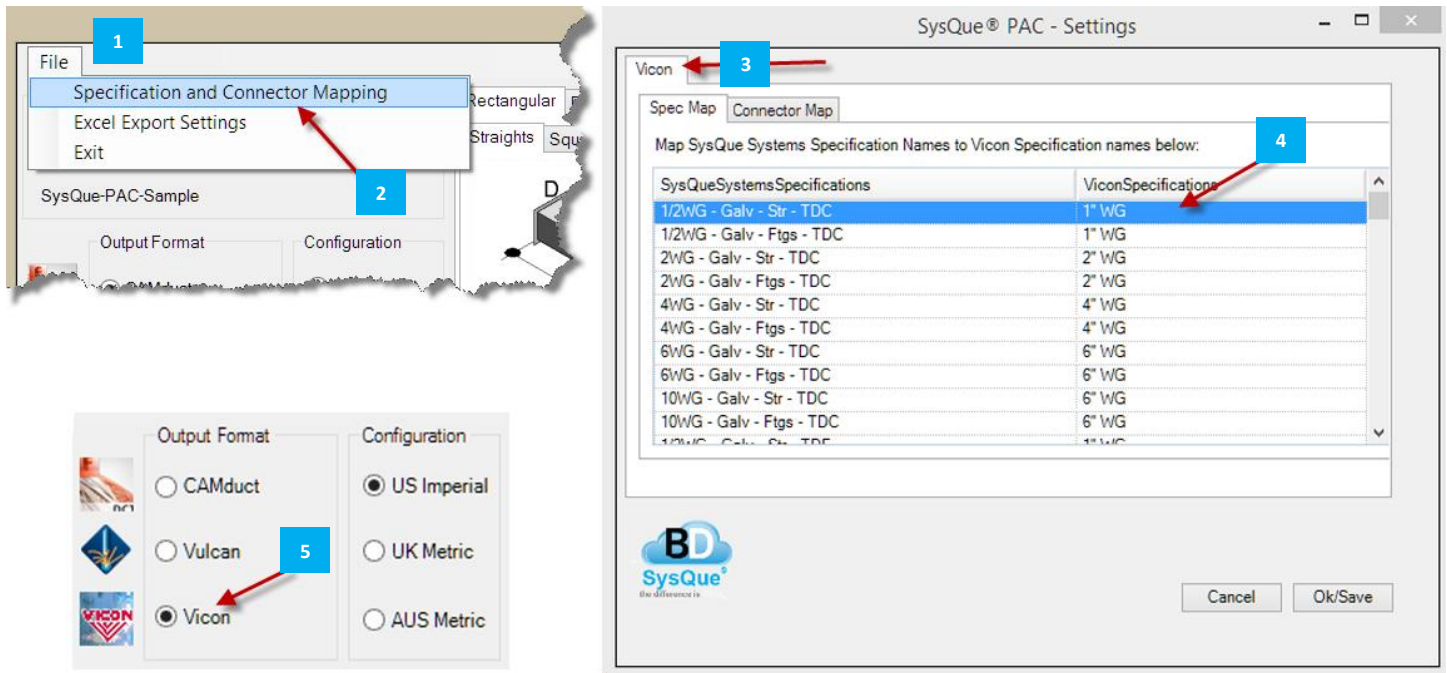Once you have completed this mapping, the SysQue named connector will be replaced with your Vicon named connector during the cloud processing. In this example, the SysQue "S and Drive" connector was replaced with "SLIP & DRIVE" within the returned txt file. (The txt file will be imported into the Vulcan Cutting Software.)

Specification Mapping Options for Vicon

SysQue® PAC allows you to map your SysQue® Systems Duct Connectors to your specific Specification within your Vicon cutting software.

To MAP your connectors, within the main SysQue® PAC window, you will go to File **[1]** , and click on Specification and Connector Mapping **[2]** . Once in the dialog, select the Spec Map tab **[3]** , you will go down the list on the Left and for each, type in the name of your Specification for each **[4]** .

Note: This dialog will reflect the settings based on what output you have set currently, CAMduct, Vulcan, or Vicon, so be sure that Vicon is the Output Format selected **[5]** .

Once you have completed this mapping, the SysQue named Specification will be replaced with your Specification name during the cloud processing. In the below example, the SysQue "2WG-Galv-Str-TDC" Specification was replaced with "2 WG" within the returned .txt file. (The txt file will be imported into the Vicon Cutting Software.)
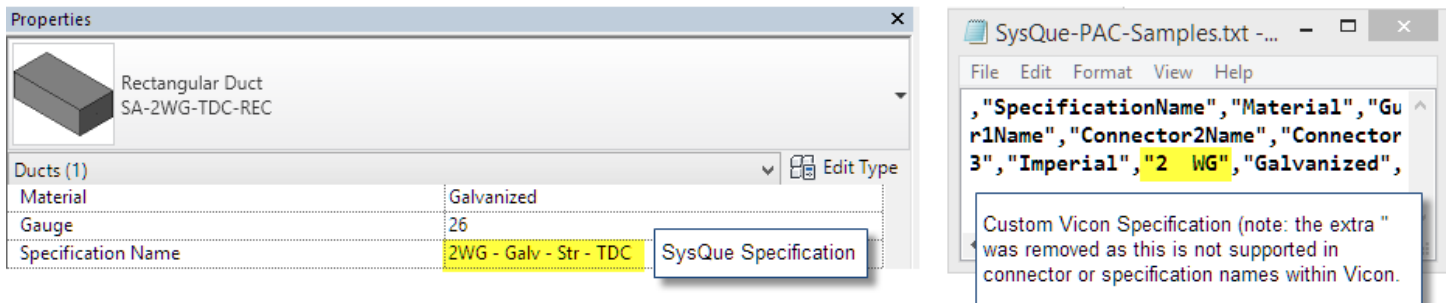
# Autodesk Fabrication CAMduct station setup and SysQue® PAC Integration

In order to successfully process a SysQue® PAC processed .MAJ file, you will want to first set up your Autodesk Fabrication CAMduct database to ensure a successful integration as well as set up any custom modifications you would like during processing. This is done in 3 steps:

1.   Import the TSI Duct Standards and Connectors

Located within the support directory from the initial SysQue install you will find the files necessary to get your database up to date with the latest TSI Duct Standards and Connectors.
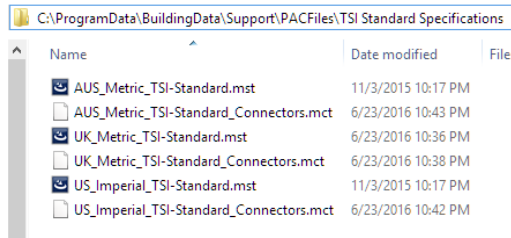
You will notice there are 3 configuration types based on your geographical area. You will want to choose the one that meets your location and units. By importing these into your database you are providing a placeholder for your SysQue PAC processed .MAJ components to land on. From there you will be able to use them as is, or set up a process to move them to your own duct specifications and connector standards. The import of the connectors allows for custom connectors to be created in SysQue® Systems Duct and pointed to a custom connector in the shop. To import these into your database, you will go to the File menu **1**, then the Import fly out **2**, and select Database Import **3**. Next you will select Specifications **4** and go to Next **5**, path to the location of the Specification import file (.mst) and select the one for your area **6** then select Next, finally make sure all the boxes are selected and click Finish **7**.
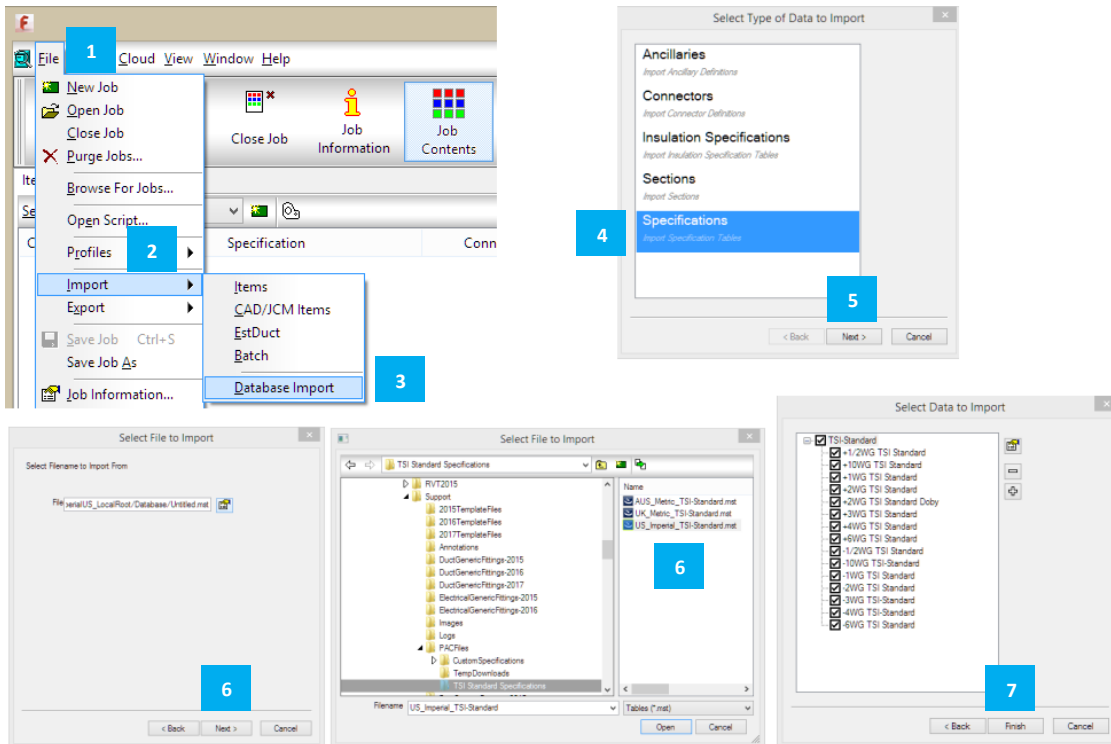
This process is repeated for the Connector import, simply select Connectors on the screen after Database Import and select the correct Connector import for your area, make sure all checkboxes are selected and click on Finish. Your database is now ready to accept a .MAJ from SysQue® Systems PAC and will have all the place holders needed.

2. Coordinate the custom connectors that may be used in SysQue® Systems Duct with your duct fabrication shop.

During the configuration of your SysQue® Systems Duct, you may determine you would like some additional connectors that are not part of the pre-defined ones. This is done by duplicating one of the existing ones and giving it an alias. You can have up to 3 custom connectors for each pre-defined one. For example, if you wanted to create a "1in Flange In" connector, you could just duplicate the pre-defined RAW connector since the geometry in the model would be sufficient. When you duplicate this connector using the + [1] within the SysQue® Systems Duct Specification Settings dialog it becomes RAW-1. You can then give it an alias called "1in Flange In" [2]. You will then notify and coordinate this with the shop that will manufacture your duct and let them know that "RAW-1" is meant to be a "1in Flange In" connection. This process would continue for all the custom connectors you wish to create.


The image above is from SysQue® Systems Duct within the Specification Settings located from within the command dropdown window of SysQue® Systems Duct.

3. Setup your standard process scripting .cod file.

Your script file will contain standard instructions that will be used every time you process a job received from SysQue® Systems PAC. It will handle things like locating all "RAW-1" connectors and setting them to your actual "1in Flng In" connector that is currently used in your shop standard. It can also move your entire job from the TSI Duct Standard Specifications and Materials to your own shop standard specifications and Materials. To create this .cod Scripting file please refer to topic "*Autodesk Fabrication CAMduct station Scripting Utility use and setup*" in this document. This topic will show you how to setup your CAM station to always use these instruction at processing time assuming you already have the .cod file created.

From within Autodesk Fabrication CAMduct, you will click on "Setup Processes" [1]. Next you will want to check the box at the bottom of the next dialog labeled "Execute Script After Process" [2]. Click on the folder icon [3] next to path to your Script file [4] you have created. And finally click on Open [5]. Note, if you are already using a script in your process it may be necessary to combine the scripts together or create a new Process specifically for jobs from SysQue® Systems PAC.
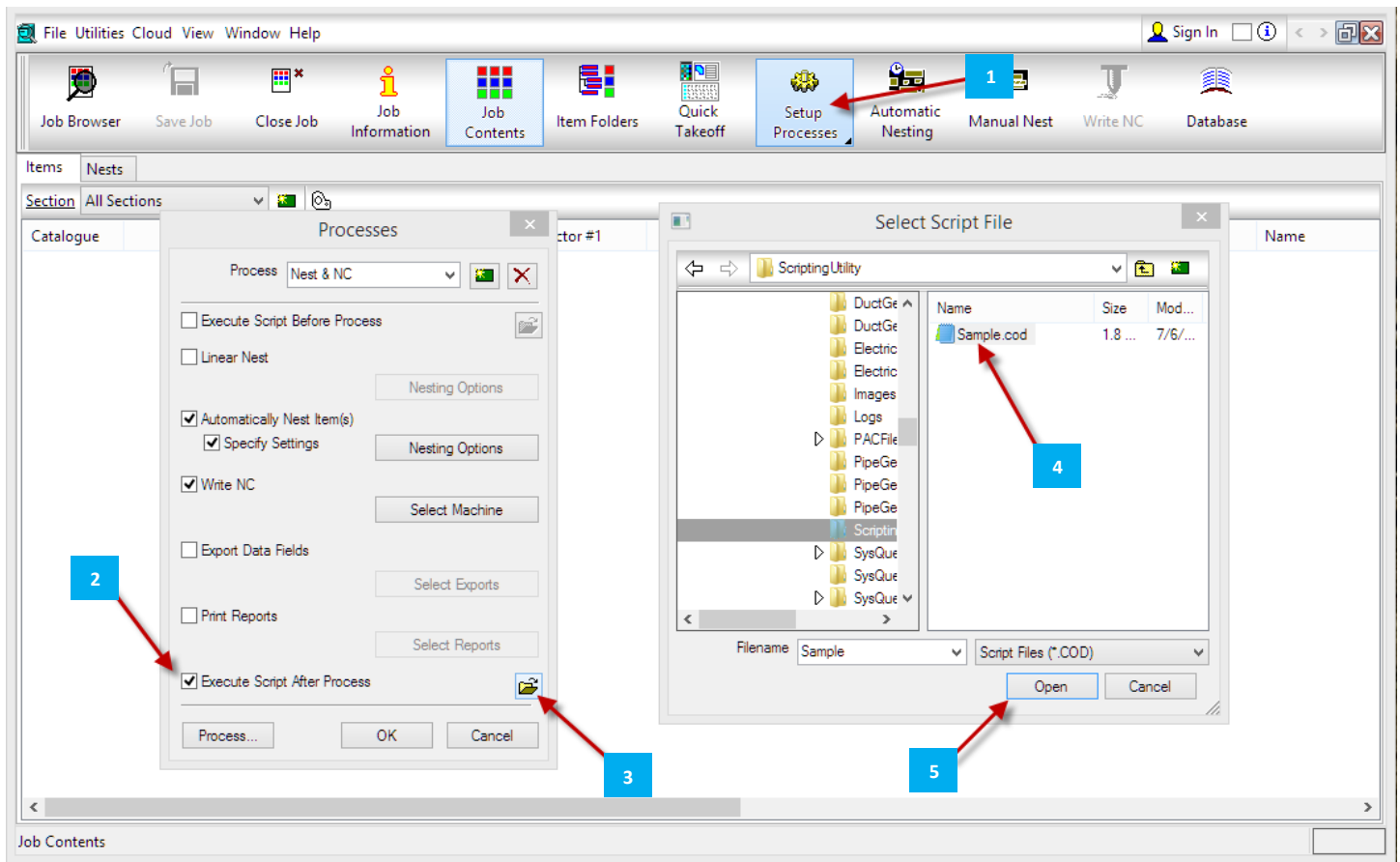

Now, every time you run your process, the script will run and you will get your desired changes that meet your shop's manufacturing standards.

Autodesk Fabrication CAMduct station Scripting Utility use and setup

The SysQue® Script II utility is included in the installation of SysQue® Systems. This utility makes it very easy for you to customize the integration between SysQue® Systems and your current duct manufacturing shop standards. Most people do not know how to write in the required scripting language provided as a tool with Autodesk Fabrication CAMduct, so the SysQue® Script II utility does the script writing for you after you specify what properties you would like to change.

The SysQue® Script II utility is located within the support directory after installation.
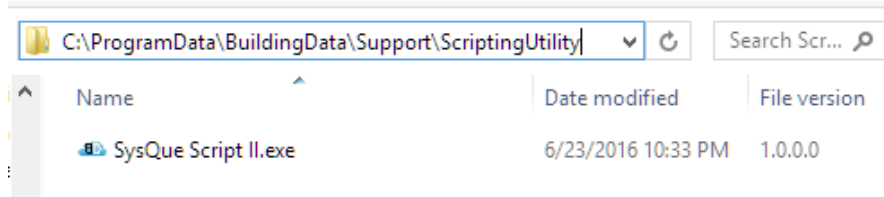
When you launch this application, you will see that the interface is pre-loaded with all the TSI Standards. This makes it very easy for you to specify what properties you want to generate scripting for. The interface is broken into 4 main areas. Specifications Mapping [1], Connector Mapping [2], Material Mapping [3], and Options mapping [4].
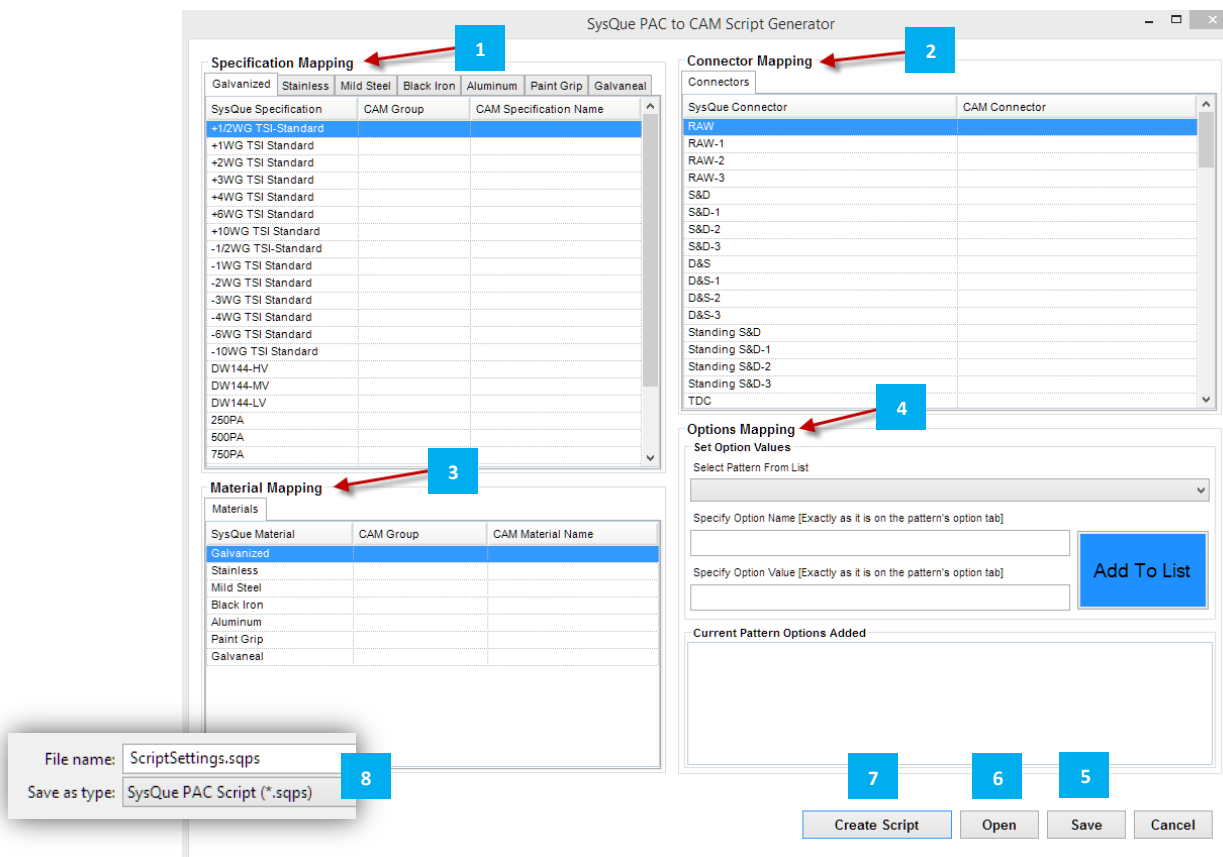
The Save [5] and Open [6] button allow you to save all of your options so you can come back later and modify or add to the script. The save and open save your options within a .SQPS (SysQue PAC Script) file [8]. Once you make changes a new .cod script file will need to be generated [7].
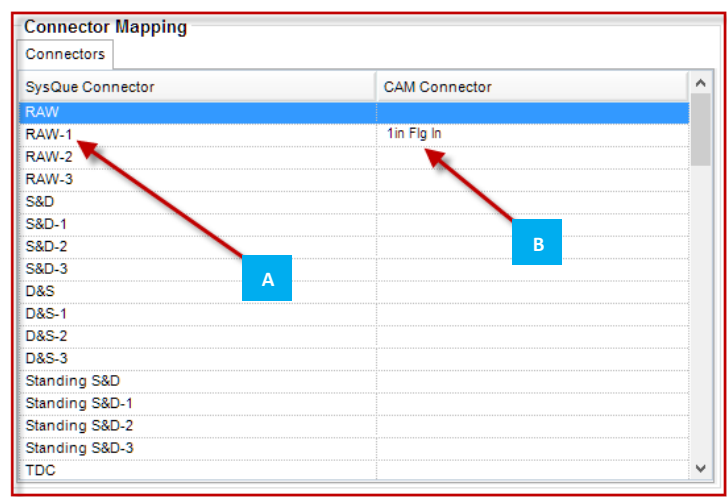
Specification Mapping [1]

Within Autodesk Fabrication CAMduct, go to the Main Database [A]. In the Main Database go to the Fittings [B] area. Inside of Fittings click on the Specifications [C]. In Specifications go to the Specification Properties [D]. This properties window, for the specification you want to map to, will be exactly what you will put into the fields for CAM Group [E] and CAM Specification [F]. In this example, when an item with "+2WG TSI Standard" Specification with "Galvanized" material is found, it will be moved to the "+2WG" Specification in the "Duct" group.
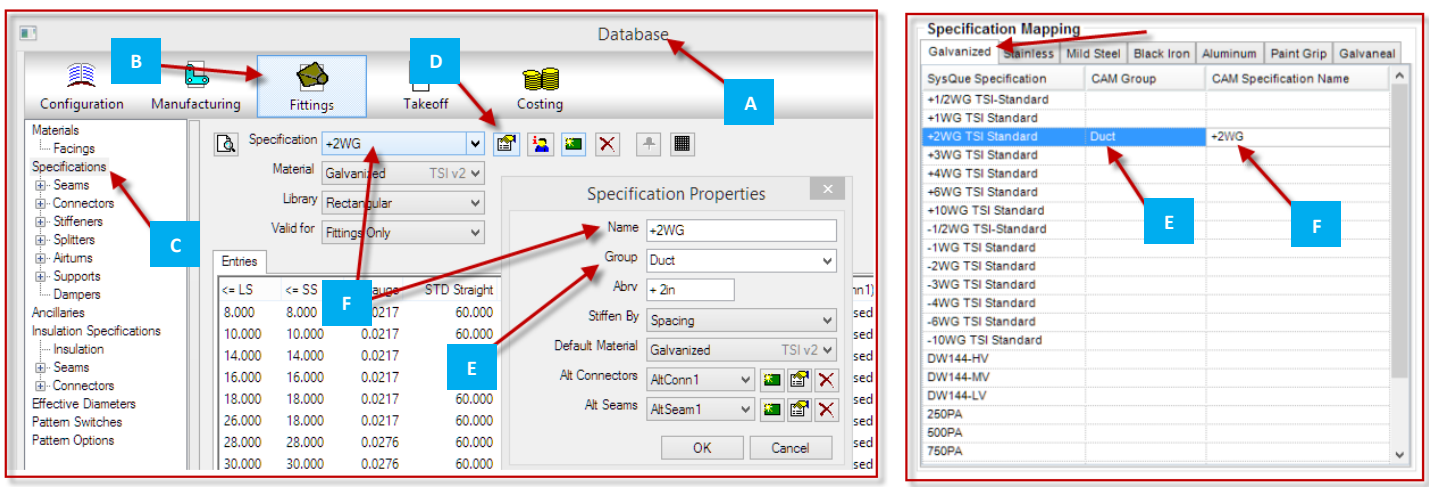
Connector Mapping [2]

Connector mapping will allow you to change from the SysQue® Systems named connector to your standard like connector in your database. It is also used to translate the SysQue® Systems Duct **Custom** connectors. For this you will coordinate with the modeling team to get their matrix standard for the custom connectors. For example, they may duplicate the RAW connector and make RAW-1 [A] so that they can have a connector to use for "flanged in" scenarios such as a duct tap with a grille box attached. Once you know which connector they used and what it intended for, you would then simply place the exact named connector your shop uses for that scenario such as "1in Flg In" [B].

Material Mapping [3]

If you are changing from the TSI Duct Standards to your own Standard Specification then you will want to also make sure you map to your specific Materials and Material Group as well so that when the items move to the new spec they have a valid Material to validate on that has specifications for it in your database. To do this you will go to your Main Database [A] in Autodesk Fabrication CAMduct, click on Fittings [B], Click on Materials dropdown [C] and locate the Material you wish to map to, click on that Material's properties [D]. The Name [E] is what you will place in the CAM Material Name [F], and the Group [G] is what you will place in the CAM Group [H].
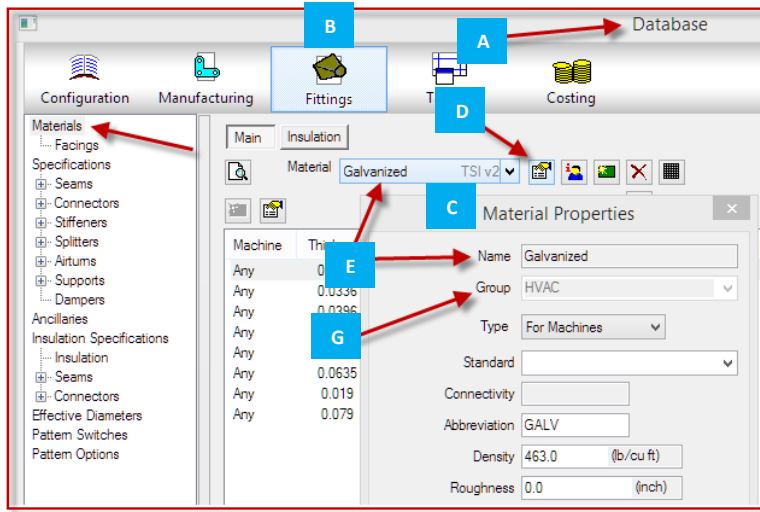
Once you generate your script, for each of the items that are found with the SysQue Material Name [J], they will be changed to your Material [F] and Group name from your Database [H].

Option Mapping [4]

The Options Mapping area will allow you to actually specify any option in your pattern to meet your manufacturing standards in your shop. To do this, click on the Select Pattern From List dropdown [A] and locate the SysQue Systems compatible pattern from the list. Next, type in the exact option name that you want to specify [B], then type in the exact value you want for that option [C]. Then, click the Add To List button [D]. When you generate the script, that option for that pattern will be set to your value when you apply the script at process time. You can specify as many options for each pattern as you need.
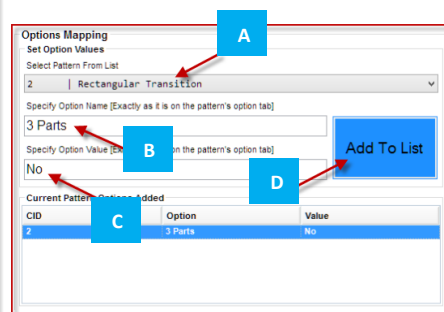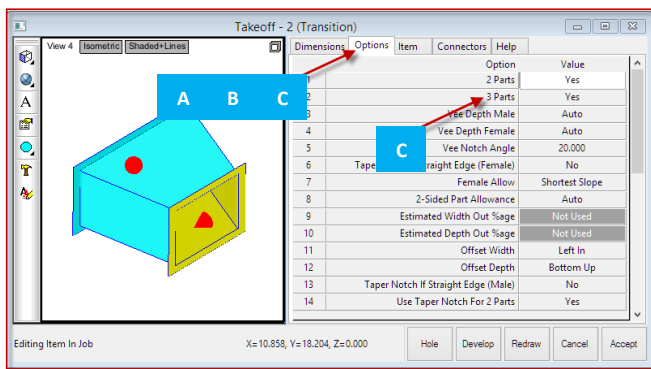
Vulcan SysQue® PAC file import

SysQue® PAC will generate 2 files for your Vulcan import process. One file contains the job with all the duct instructions, the other is a Signature file that ensures that the import file has not been tampered with between the cloud and when you actually go to import it. Likewise because of this, if you try to manually modify the txt file, the import will fail. In order to use the SysQue® import within Vulcan, you must meet some minimum criteria. The screen capture below gives an overview of this:

SysQue Import for Vulcan Software

The SysQue Import allows you to import manufacturing-specific content from drawings created in Autodesk® Revit® into the Vulcan fabrication software.

Requirements

The following requirements must be met in order to use this import:

1. 2013.3 version or higher of Vulcan
2. Previously purchased Vulcan 3rd party import license
3. Updated import.dll file located on our FTP site

Download New Import File

1. Right click on the Windows **Start** button and then click **Explorer**.
2. In the address bar enter ftp://ftp.quickpen.com/
3. In the Log On As window, enter:

   User Name: *VulcanCustomer*

   Password: *fAS#b9*

   Click **Log On.**
4. In the Windows Explorer window, navigate the following path :

   \\QPI Customers \Tech Support \ Downloads \Vulcan \ SysQue
5. From the **SysQue** folder, download the appropriate **import.dll** file from either the *32-bit* or *64-bit* folder (depending on your operating system). Make note of where you saved the file.

   Note: if you are not sure what operating system you are currently using, refer to the *Determine Computer Operating System* topic below.

Rename Current Import File

💡**Tip** – Trimble recommends that you make a copy of the current import file before placing the new import file. This preserves your current file in the event you need to revert to it at a future time.

1. On your Windows Desktop, click **Computer** and navigate to *C:\Program Files \QuickPen \Vulcan.*
2. From the Vulcan folder, locate the import.dll file. Right-click on it and then click **Rename**. The file name is highlighted.
3. Type *importOLD* and press ⬚Enter on your keyboard.

Place New Import File

1. Navigate to the location of the new (downloaded) *import.dll* file.
2. Right click on the *import.dll* file and then click **Copy**.
3. On your Windows Desktop, click **Computer** and navigate to *C:\Program Files \QuickPen \Vulcan.*
4. In the **Vulcan** folder, right click and then click **Paste** from the menu.

Determine Computer Operating System

The instructions below provide information to help you determine your computer operating system.

Windows XP

1. Right click on **My Computer** and click **Properties**.
2. In the System Properties window, on the **General** tab, it will specifically state under **System** if the computer has a 64-bit processor, however, if the processor is 32-bit no specific processor information will display.

Windows Vista\Windows 7

1. Right click on **Computer** and then click **Properties**. The System window displays.
2. From the System window, locate the **System** panel to verify the **System Type**.

Windows 8

1. From the Start Screen, type *System*. The **Search** menu is populated.
2. On the **Search** menu click **PC Info**.
3. In the PC and Devices window, locate **System Type** to verify processor type.

◈ **Trimble.**

mep.trimble.com

Vicon SysQue® PAC file import

SysQue® PAC will generate a single .txt file for you to use to import your duct instructions into your Vicon software. In order to be able to Import this file into your Vicon station, you must first make sure you have contacted your Plasma Automation rep or contact and purchase the SysQue import option, as well as ensure they have installed the required mapping file for this process onto your Vicon station. Once you have enabled your Vicon station you will be able to see "SysQue" as one of the options under the File Import options.

SysQue® does not support the Vicon software directly so if you have a question regarding the import within the Vicon interface, please contact Plasma Automation or your Plasma Automation rep. If you do not have a contact, you can go to www.vicon-machinery.com and click on "Contact Us".

If you have any questions regarding generating the file necessary for Vicon in the SysQue® PAC interface, please contact us through Zendesk.

SysQue® PAC Add Hole option for Autodesk Fabrication CAMduct Access Doors and Taps

SysQue® PAC offers the automation to have your separate tap holes and/or access doors automatically get cut out of the Duct that they are going to be attached to. This feature is only supported for the Autodesk Fabrication CAMduct workflow. At this time Vulcan and Vicon do not support this unless the duct and tap body are a single fitting/family already. In order to use this feature you must turn it on inside of SysQue® PAC. Within the SysQue® PAC interface, go to file and select settings. Within the settings dialog check the option to "Cut Holes in Straights with Taps and/or Access Doors [1] .
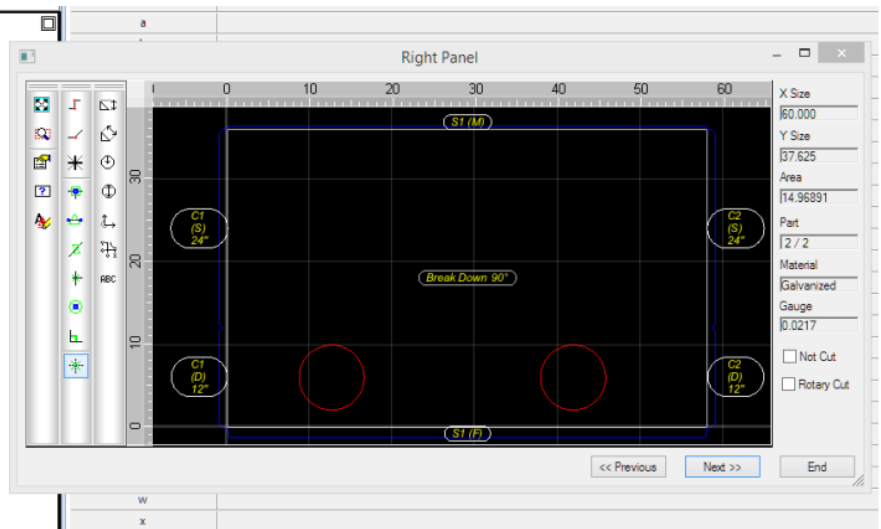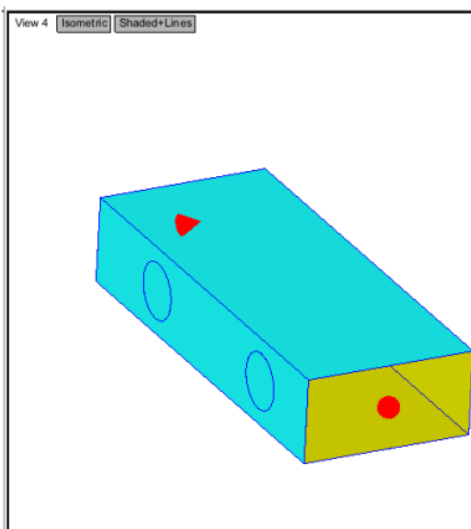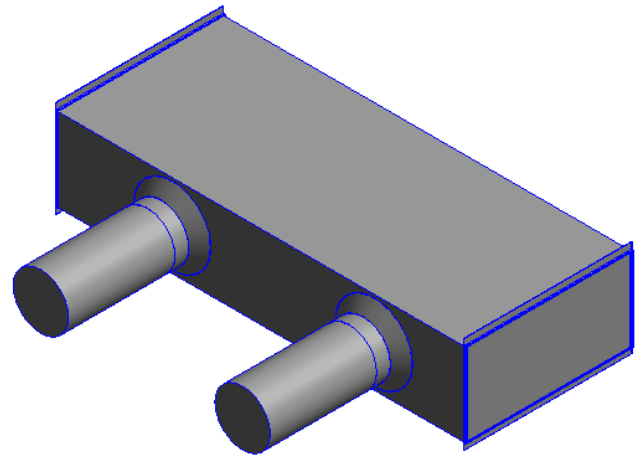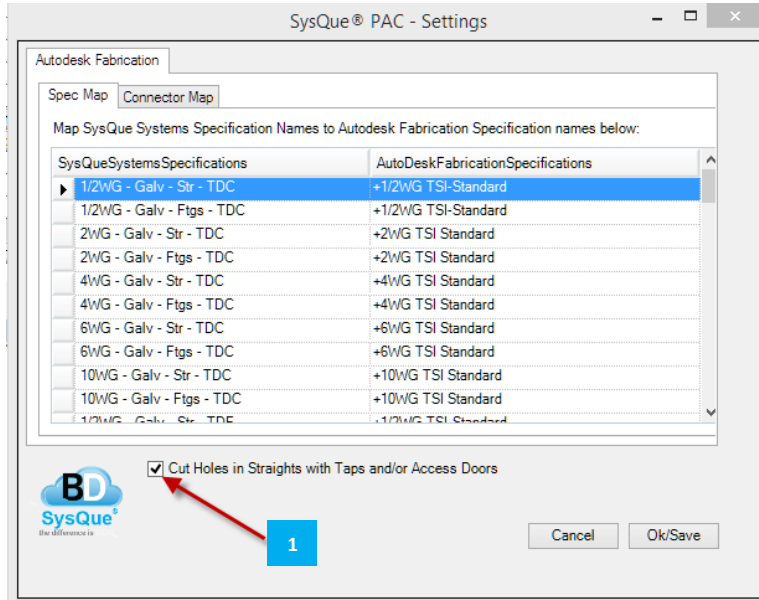

This option is only available for Autodesk Fabrication CAMduct, so be sure you have set your Configuration output to CAMduct [2] prior to going into settings to see this option.
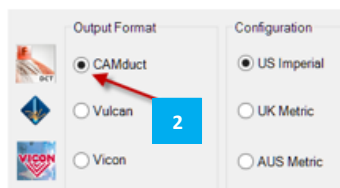
SysQue® PAC List of Available Patterns for Manufacturing Integration

The following are the patterns that are supported with SysQue® Systems Duct with SysQue® PAC downloading:

SysQue Systems Manufactured Rectangular Duct Patterns

| Image	SysQue Family Pattern	Fabrication CID	Vulcan Pattern	Vicon Pattern
	Rec Straight	866	FN=102(Coil), FN=108(Ftg)	RectangularStraightWCoilOption
	Rec Square Bend	20	FN=153-	RectangularElbow
	Rec Transition	2	FN=120-	RectangularTransition
	Rec Radius Bend	4	FN=163-	RectangularRadiusElbow
	Reducing Elbow Rectangular	3	FN=153-(90), FN=162-(0-45)	RectangularReducingMiteredElbow
	Drop Cheek	320	FN=160-(90), FN=166-(0-45)	RectangularRadiusReducingOffsetElbow
	Rec Square Tap	25	FN=4200-	RectangularSquareTap
	Rec Shoe Tap	7	FN=148-	RectangularShoeTap
	Rectangular Shoe Tap on Round	69	FN=1200-(Body), FN=12-(Tap)	RectangularShoeTapOnRound
	Rectangular Tap on Round	64	FN=1200-(Body), FN=12-(Tap)	RectangularTapOnRound
	Rec Tee	13	FN=170-	RectangularTee
	Rec-Y	14	FN=174-(90), FN=178-(45)	RectangularWye
	Rec Pants	328	FN=119-	RectangularPants
	Radius Offset	330	FN=183	RectangularRadiusOffset
	Mitered Offset	30	FN=187-	RectangularMiteredOffset
	Rec Cap	12	FN=129-	RectangularEndCap
	Step Down Connector	12	Not Supported	RectangularStepDownFitting
	Rec Y-Side Branch	18	FN=192-	RectangularSideBranch
	Square To Round	8	FN=134-	SquareToRound
	Duct Canvas	166	FN=118-	RectangularCanvas

SysQue Systems Manufactured Round Duct Patterns

Image	SysQue Family Pattern	Fabrication CID	Vulcan Pattern	Vicon Pattern
	Round Straight	40 & 41	FN=300-	RoundStraight
	Round Gored Elbow	61	FN=306-	RoundGoredElbow
	Round Reducer	51	FN=315-	RoundReducer
	Round Radius Bend	523	Not supported	RoundRadiusBend
	Round Coupling Male	1112	Not supported	RoundMaleCoupling
	Round Tee	851	FN=1000-	RoundTee
	Round Cap	60	FN=351-	RoundCap
	Round Bellmouth Tap	1020	FN=4200-	RoundBellmouth
	Round Shoe Spigot Take-off	871	FN=1200	RoundShoeSpigotTakeoff
	Round Shoe on Flat	24	FN=4200-	RoundShoeTapOnFlat
	Round Reducer Lateral	850	FN=2000-(Body) , FN=1-(Branch)	RoundReducerLateral
	Round Gored Offset	68	FN=319-	RoundGoredOffset
	Reducing Gored Elbow	142	FN=307-	RoundReducingGoredElbow
	Round Duct Canvas	555	FN=313-	RoundCanvas

SysQue Systems Manufactured Oval Duct Patterns

Image	SysQue Family Pattern	Fabrication CID	Vulcan Pattern	Vicon Pattern
	Oval Straight	106	FN=400-	OvalStraight
	Oval Gored Bend	106	FN=405-	OvalGoredElbow
	Oval Mitered Bend	106	FN=405-	OvalMiteredElbow
	Oval Reducer	122	FN=414-	OvalReducer
	Oval Coupling Male	1522	Not Supported	OvalMaleCoupling
	Oval Cap	121	FN=451-	OvalCap
	Oval Shoe Spigot Take-off	118	FN=2700-	OvalShoeSpigotTakeOff
	Rectangular to Oval	104	FN=141-	RectangularToOval
	Oval to Round	123	FN=414-	OvalToRound

Note: Vulcan fittings get an "i" or a "m" after for Imperial of Metric

SysQue® Systems Duct, SysQue® PAC, & TSI Duct Standard Specifications

Technical Sales International has been providing the Mechanical industry with processes, tools, automation, and best practices for well over a decade worldwide. Given this, we had an excellent opportunity to pull from the vast pool in the industry to generate our own Duct Standard Specifications. Rather than actually quiz users on what their best practices were, we instead asked for them to be a part of a massive data initiative and send us their actual .MAJ files. See, with the .MAJ files we cut out the "opinions" of users of often different answers within the same company between design and installation. We cut to the chase and wanted to examine what was actually being manufactured by region worldwide. This let us figure out what pressure classes and materials were being used, what duct construction was being used within those specifications, all the way down to connectors, seams, notches, etc.

We condensed all of this great information and built what can be considered the best of breed Duct Construction Standards for the industry. We then took these and had them reviewed and stamped by SMACNA. So, with every purchase of SysQue Systems, you get a fully industry accepted configuration of Duct that is SMACNA approved out of the box.

Customers that go to Autodesk Fabrication CAMduct from SysQue PAC will find that their MAJ that returns is from these Duct Construction standards. We then give you tools to map from those to any specific construction standard or process that might differ within your shop.

Customers that use the v200 version of SysQue and draw with the out of the box configuration will be drawing to real world fittings and construction standards that can be then used further down the process to minimize on rework and mistakes.

Regards,

Brian K. Gruel

VP-Technology, SysQue