New Valve Shape and Utility

Standard Engineering Practices

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Supersedes:

A need was identified in Designer Suite 2000 to have an easy, straightfoward way to generate a Valve Schedule before Part numbers are available and the Job is engineered. The new Valve utilities address that need through the addition of a stencil, a new spreadsheet, and an export wizard. These new pieces are meant to be used in conjunction with, or instead of the existing Valve Wizard utilities. They are not meant to replace the existing utilites, but give an alternative method for generating the valve data.

The stencil, ValveDetails.vss, is provided in the stencils directory like any other stencil. It contains a series of Valve "Piping Details", labeled Detail "A", Detail "B", etc… These details are meant to be placed on the engineered drawing to represent the valve and piping. The valve shape at the center of the piping is a simplified Designer Shape that allows customization but has no representation on the Bill of Material.

The spreadsheet resembles the Valve Schedule spreadsheet that ships with Designer Suite 2000, but has additional functionality. By entering a Valve Assembly into the Part Number column the spreadsheet will auto-populate with the appropriate data. Right-Clicking on a row will bring up the Valve Wizard form to allow the user to select from the database.

The export routine reads the piping details and system names from the Valve Wizard Spreadsheet and creates a 'legend' page where each detail is placed on the page and the associated systems may be listed underneath.

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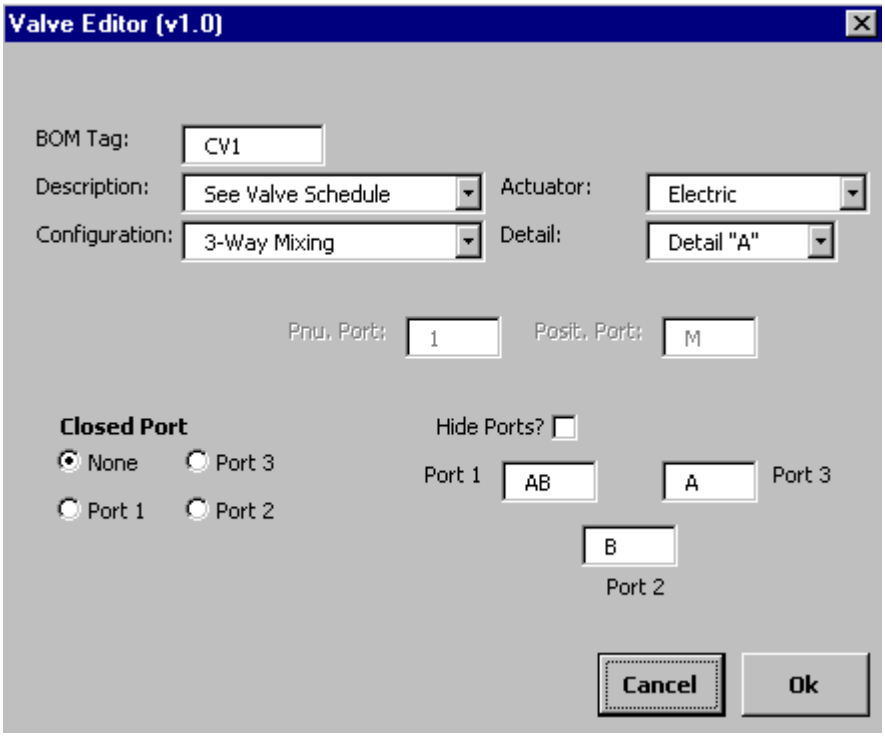
ValveDetails.vss

The stencil, ValveDetails.vss, contains Piping Detail configurations and a stand-alone valve shape. If the user drops the Valve Shape on their drawing, or drops a Piping Detail and ungroups it, editing the Valve Shape brings up the following form:



With this form the user can configure the Valve Shape to whatever specifications they wish. The *BOM Tag* does not appear on any bill of material (as this shape is never picked up by any bill of material) but rather relates to an item on the Valve Schedule. The *Description* can be one of the values from the pick box, or the user may enter their own. *Configuration* will identify what the porting layout for this particular valve is, *Actuator* will identify the type of actuator this Valve has, and *Detail* identifies what piping configuration this Valve uses.

Based on the various options chosen, different ports are available for the *Closed* option as well as the porting. If a Pneumatic actuator is chosen, the *Pnu. Port* is available, if Pneumatic W/ Positioner is chosen, the *Pnu. Port* as well as the *Posit. Port* are available. In Three-way configurations, Port 2 becomes available, while in a 2-way Angle configuration, Port 2 becomes available but the Port 3 is not.

Once the options have been selected, the user simply clicks *Ok* and the changes are saved to the shape.

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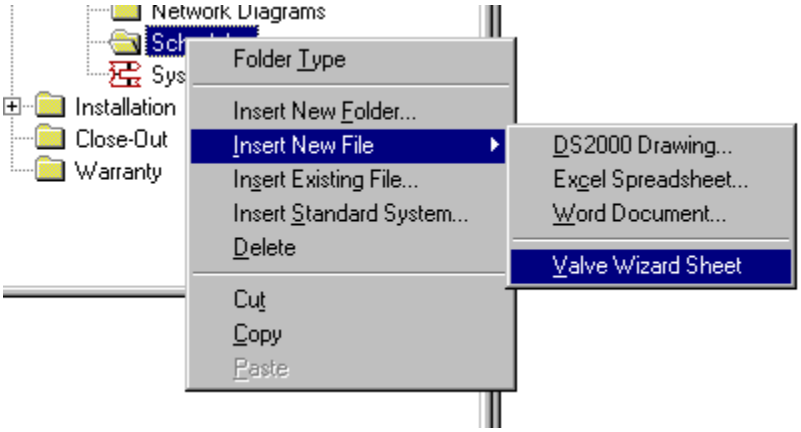
New Valve Wizard Spreadsheet

Since the shape itself is not picked up by the Bill of Material, the Valves can now be selected and listed in an Enabled Excel Spreadsheet. To insert the spreadsheet into a Designer Suite 2000 project, the user simply right-clicks the folder where they wish to insert and select *Insert New File → Valve Wizard Sheet*.



*Remember to insert the file into a directory other than your system folder, since it is an Excel sheet and will be filtered out of a system folder.

Once the file has been inserted it can be opened just like any other file in Designer Suite 2000. The preview will load on the right-hand side and the image or file name can be double-clicked to open the file.

The Excel sheet closely resembles the Best Practices Valve Schedule sheet that ships with Desinger Suite 2000. All of the same cells are available. This version of the spreadsheet is enabled to allow for faster, easier data entry. The Project Explorer Total BOM will inventory these valves as well.

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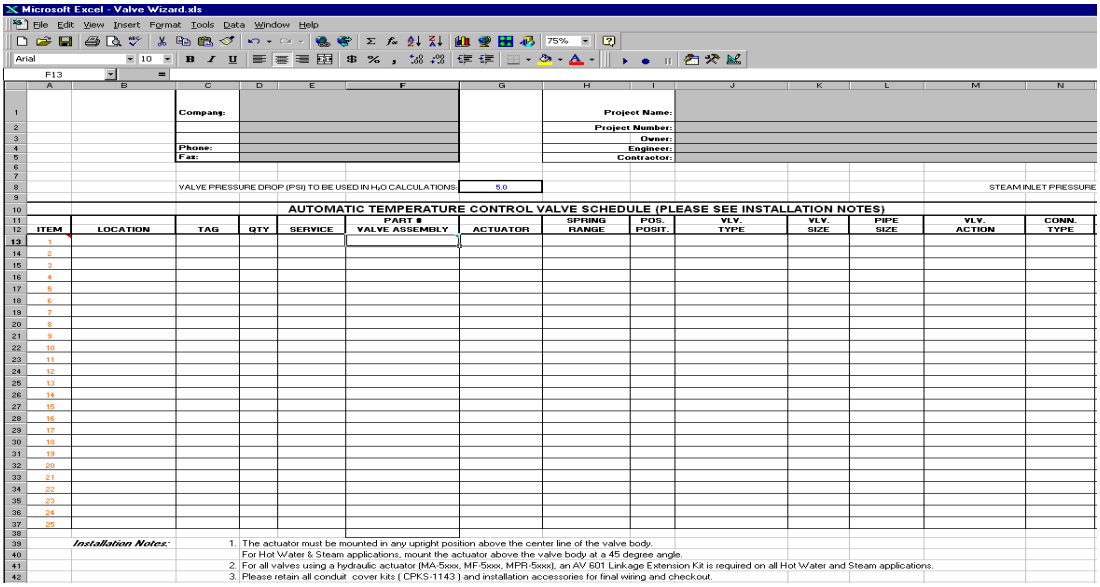

Microsoft Excel - Valve Wizard.xls

Company:

Phone:

Fax:

Project Name:

Project Number:

Owner:

Engineer:

Contractor:

VALVE PRESSURE DROP (PSI) TO BE USED IN H_2O CALCULATIONS: 5.0

STEAM INLET PRESSURE

AUTOMATIC TEMPERATURE CONTROL VALVE SCHEDULE (PLEASE SEE INSTALLATION NOTES)

ITEM	LOCATION	TAG	QTY.	SERVICE	PART # VALVE ASSEMBLY	ACTUATOR	SPRING RANGE	POS. POSIT.	VLV. TYPE	VLV. SIZE	PIPE SIZE	VLV. ACTION	CONN. TYPE
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
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24													
25													

Installation Notes:

1. The actuator must be mounted in any upright position above the center line of the valve body.
   For Hot Water & Steam applications, mount the actuator above the valve body at a 45 degree angle.
2. For all valves using a hydraulic actuator (MA-5xxx, MF-5xxx, MPR-5xxx), an AV 601 Linkage Extension Kit is required on all Hot Water and Steam applications.
3. Please retain all conduit cover kits (CPKS-1143) and installation accessories for final wiring and checkout.

If a valid part number (an assembly number found in the database) is typed into the Part #/Valve Assembly column, the row that it is entered into will populate with all of the data from the database. If the part number is not known, the user can right-click on the *Item* column to bring up the Valve Wizard form.

The Valve Wizard Form is used to select a Valve Assembly from the database. It is split into two screens. The first screen, the *CV Selection* screen is a tool designer to calculate a range of CVs with which to filter the database.

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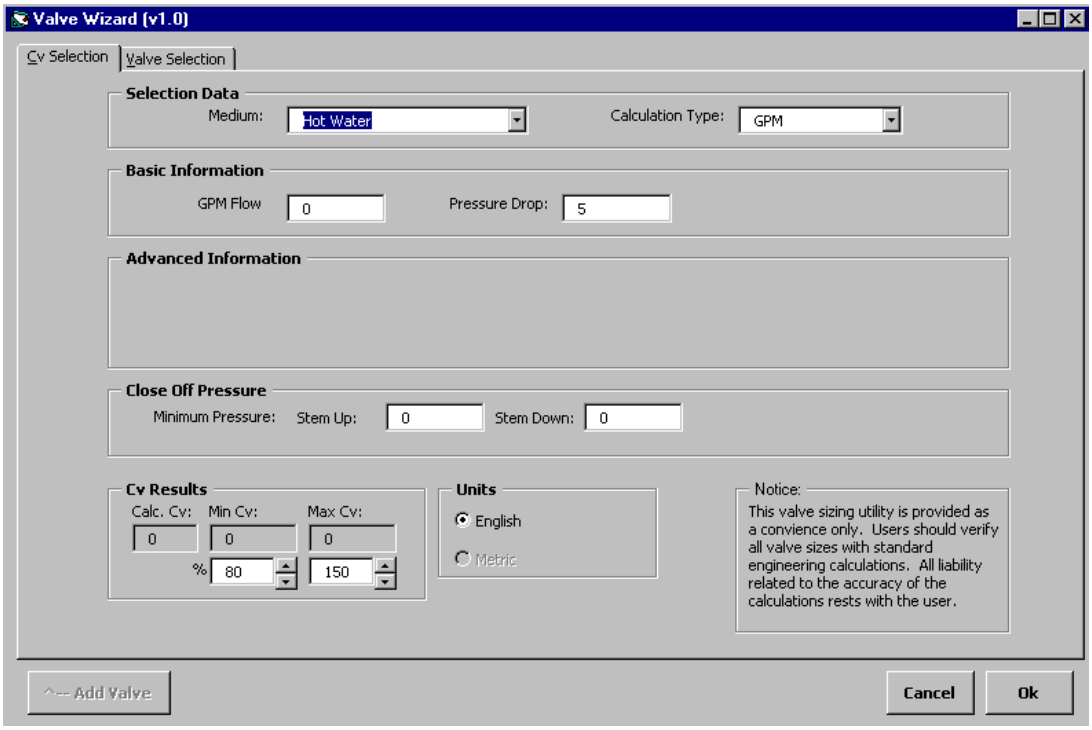

By filling in the information, a Min and Max Cv are calculated on the bottom of the form. These are brought over to the *Valve Selection* page when the user flips to that page.

Once a Cv has been calculated, the user clicks the *Valve Selection* tab to flip to the valve selection page.

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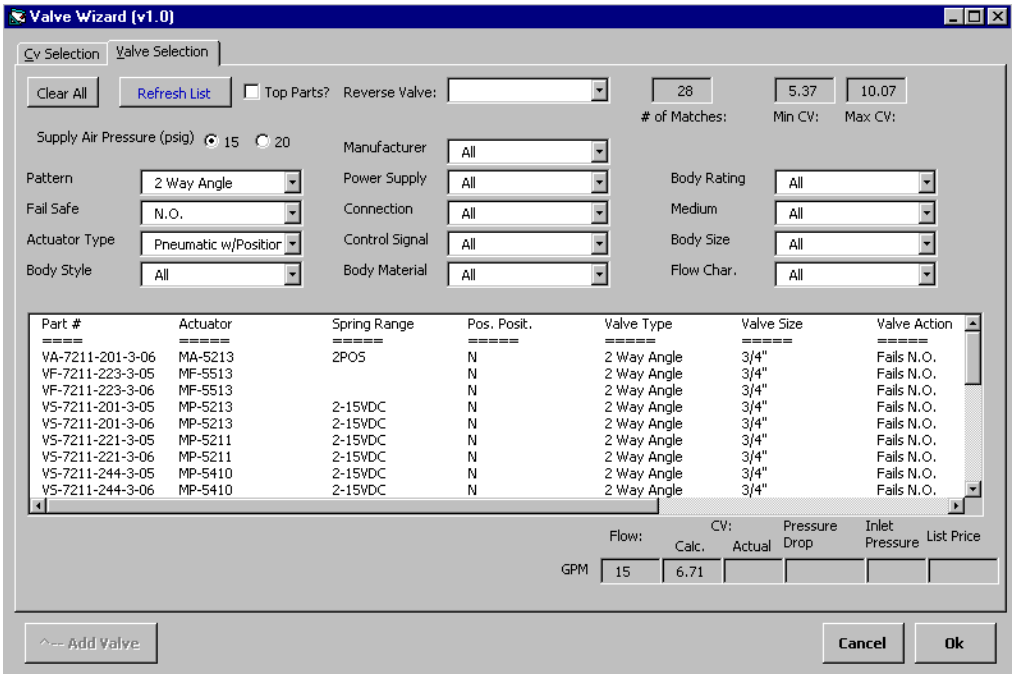

The Valve Selection page allows the user to choose various filters to limit the number of assemblies that are shown, and then can choose an assembly from the list box on the lower half of the screen after refreshing it with the *Refresh* button. The Min and Max Cv are listed in the upper right corner, along with the number of matches on the most recent search. When a desirable assembly is found, the user clicks the part in the list box and clicks ^-- *Add Valve* to close the form and drop the assembly number and associated information on the spreadsheet. Any existing data will be overwritten.

*See the Valve Wizard Help file for more detailed instructions

The user may also right-click on the Assembly # column to bring up a list of Valve Assembly numbers in the database. This list does not filter, rather it jumps to the point in the list that the user-entry most closely matches.

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Press 'Enter' to continue...

vf-

VF-1219-252-4-01	1/2" OD GF FLOAT 24V MF22203 N	0.4	$285.00
VF-1219-252-4-02	1/2" OD GF FLOAT 24V MF22203 N	1.4	$285.00
VF-1219-252-4-03	1/2" OD GF FLOAT 24V MF22203 N	1.9	$285.00
VF-2253-315-8-20	BALL VLV 1/2" W/MF-6103 35 IN-	1	$248.00
VF-2253-315-8-22	BALL VLV 1/2" W/MF-6103 35 IN-	2	$248.00
VF-2253-315-8-24	BALL VLV 1/2" W/MF-6103 35 IN-	4	$248.00
VF-2253-315-8-26	BALL VLV 1/2" W/MF-6103 35 IN-	15	$248.00
VF-2253-505-8-20	1/2" w/MF40-6043, 24V, CV 1.0	1	$212.66
VF-2253-505-8-22	1/2" w/MF40-6043, 24V, CV 2.0	2	$212.66
VF-2253-505-8-24	1/2" w/MF40-6043, 24V, CV 4.0	4	$212.66
VF-2253-505-8-26	1/2" w/MF40-6043, 24V, CV 15.0	15	$212.66
VF-2253-506-8-20	BALL VLV 1/2" W/MF40-6083 70 I	1	$276.00
VF-2253-506-8-22	BALL VLV 1/2" W/MF40-6083 70 I	2	$276.00
VF-2253-506-8-24	BALL VLV 1/2" W/MF40-6083 70 I	4	$276.00
VF-2253-506-8-26	BALL VLV 1/2" W/MF40-6083 70 I	15	$276.00
VF-2253-508-8-20	BALL VLV 1/2" W/MF40-6153 133	1	$313.00
VF-2253-508-8-22	BALL VLV 1/2" W/MF40-6153 133	2	$313.00
VF-2253-508-8-24	BALL VLV 1/2" W/MF40-6153 133	4	$313.00
VF-2253-508-8-26	BALL VLV 1/2" W/MF40-6153 133	15	$313.00

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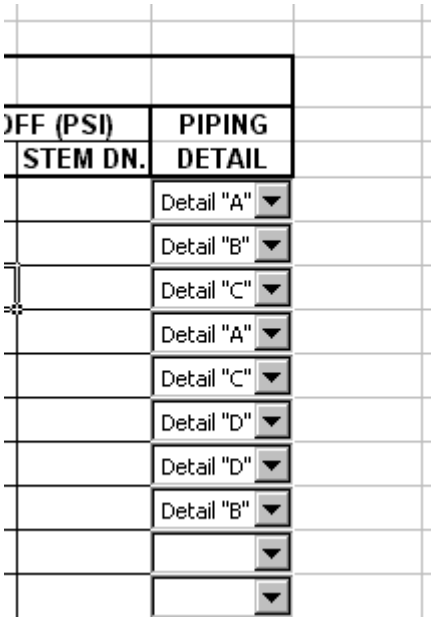
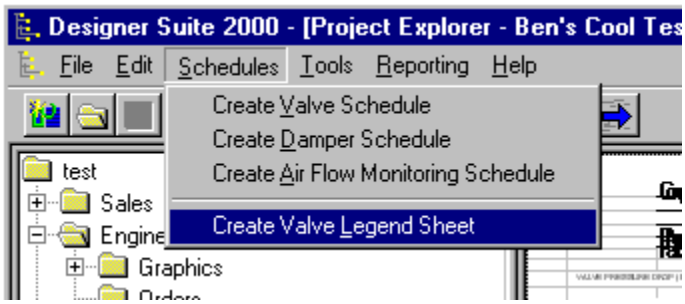
Exporting a Valve Legend Sheet

Once the user has filled in the Valve Schedule sheet, they can export the Details to a legend page. On the far right hand side of the Spreadsheet is a column for Piping Detail with a pick box for the various Details offered.



To run the export, the user should select *Create Valve Legend Sheet* from the Schedules Menu in Designer Suite 2000.



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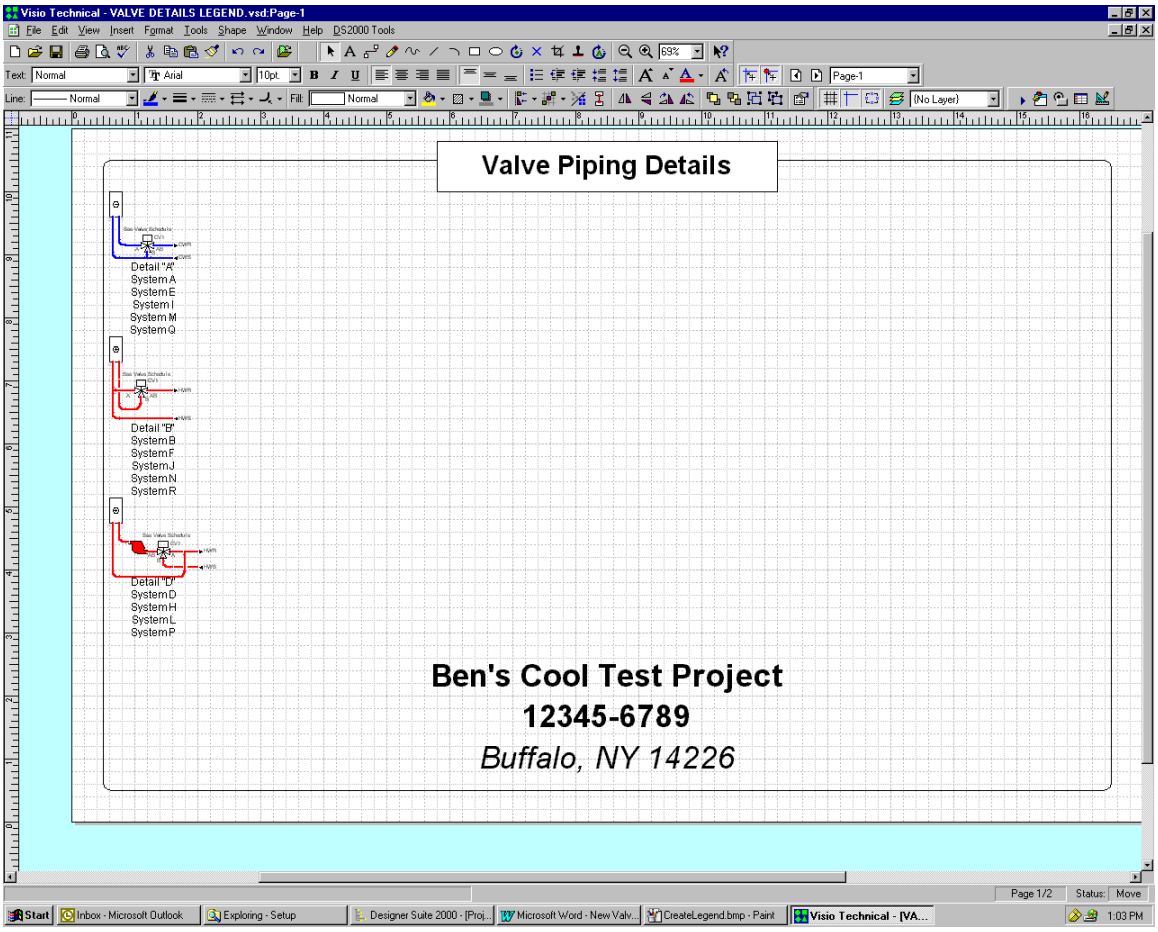
The user will then be prompted to select a Valve Wizard Spreadsheet to export from, followed by a save as dialog to choose where to save the Visio Legend page to. The Export Routine will read in all of the Details, and drop one instance of each detail used onto a Visio drawing. If the *Location* column of the spreadsheet is filled in, that text will be placed underneath the Detail, indicating which systems this detail is used in.



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