PRV²SIZE

PRESSURE RELIEF VALVE AND VENT SIZING SOFTWARE

QUICK START GUIDE

PRV2SIZE 101: Introduction to Pressure Management Sizing Software

EMERSON

REQUIREMENTS

HARDWARE

Minimum

- Pentium4 (1.3 GHz)
- 728 MB RAM
- 400 MB free HD
- 1024 x 768

Recommended

- Pentium Core Duo (1.8 GHz or better)
- 1 GB RAM
- 500 MB free HD
- 1280 x 1024
- Internet Connection

OPERATING SYSTEM

- Windows 7
  (32-bit and 64-bit)
- Windows 8
  (32-bit and 64-bit)
- Windows 10
  (32-bit and 64-bit)

Unsupported

- Windows XP
- Windows Vista, 98, ME
- Windows Server (all)
- Mac OS (all)
- Linux (all)

SOFTWARE

- .NET Framework 3.5
- Acrobat Reader 5.0
  (7.0 or later rec)
- IE 6.0 or later
  Firefox 2.0 or later

PRV²SIZE FUNCTIONALITY

- HOME SCREEN
- STAGE 1: CALCULATION TYPE
- STAGE 2: SIZING & SELECTION
- STAGE 3: CONFIGURATION
- STAGE 4: REPORTING
- TAG MANAGEMENT

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HOME SCREEN

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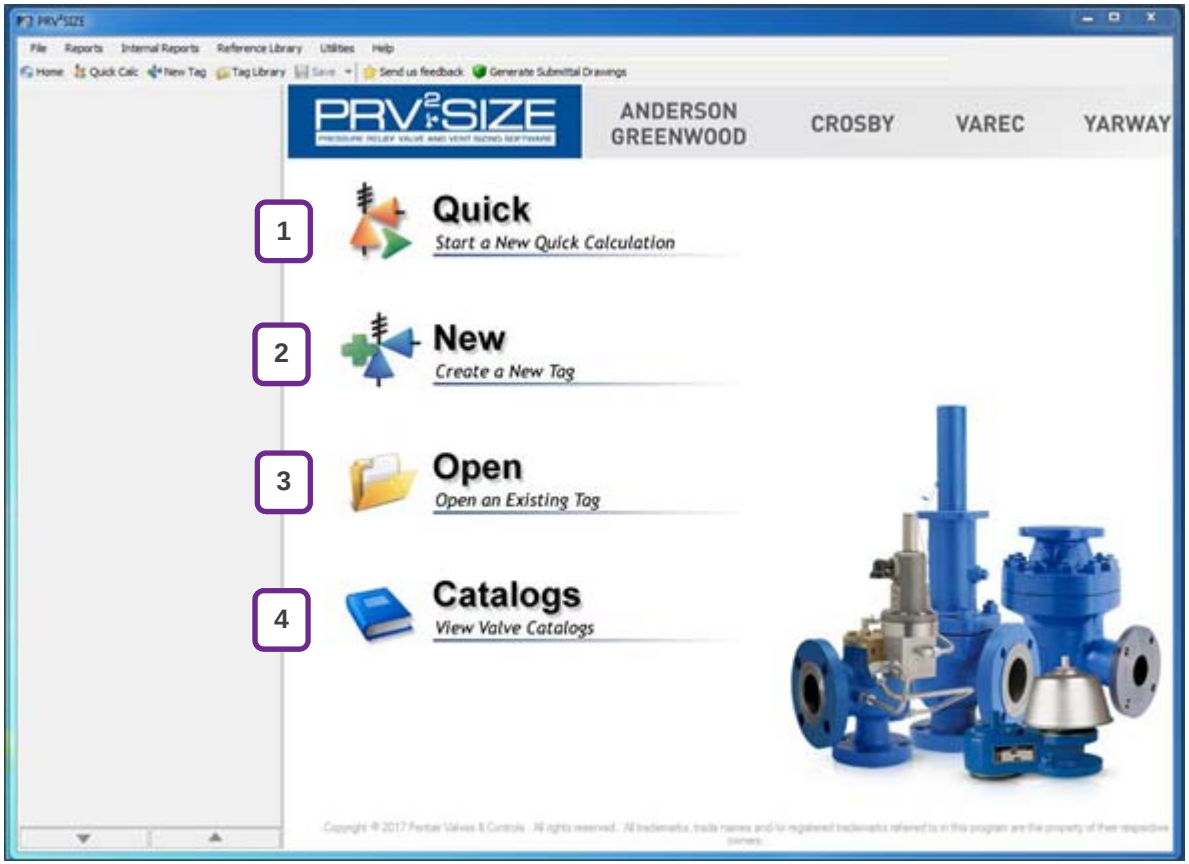
MAIN MENU



1. **Quick Calculation:** Size a tag without saving or assigning project or company name
2. **New Tag:** Create and save new sizing tag by associating a company, project and properties
3. **Open Tag:** Open single or multiple tags by accessing Project Tag Library
4. **Catalogs:** View, Save or Print from Catalog Browser showing Catalog Model, Brand, Document Number and Description

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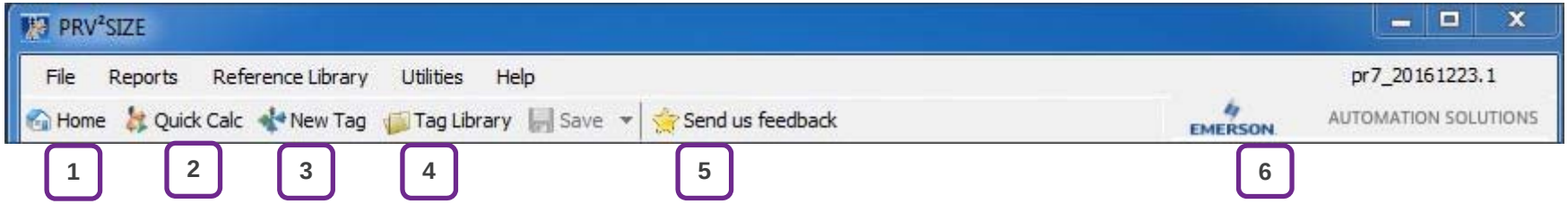
TOP MENU



1. **Home**: Access Home Screen options at anytime during sizing single or multiple tags
2. **New Tag:** Save new sizing tag by associating a company, project and properties
3. **Quick Calc:** Size a tag without saving or assigning project or company name
4. **Tag Library:** Open single or multiple tags by accessing Project Tag Library
5. **Send us Feedback:** Report a problem or suggestion to software maintenance team which includes option to attach tags database and provide detailed description
6. **Website Link:** Link to company Valve Sizing Website (https://valvesizing.emerson.com)

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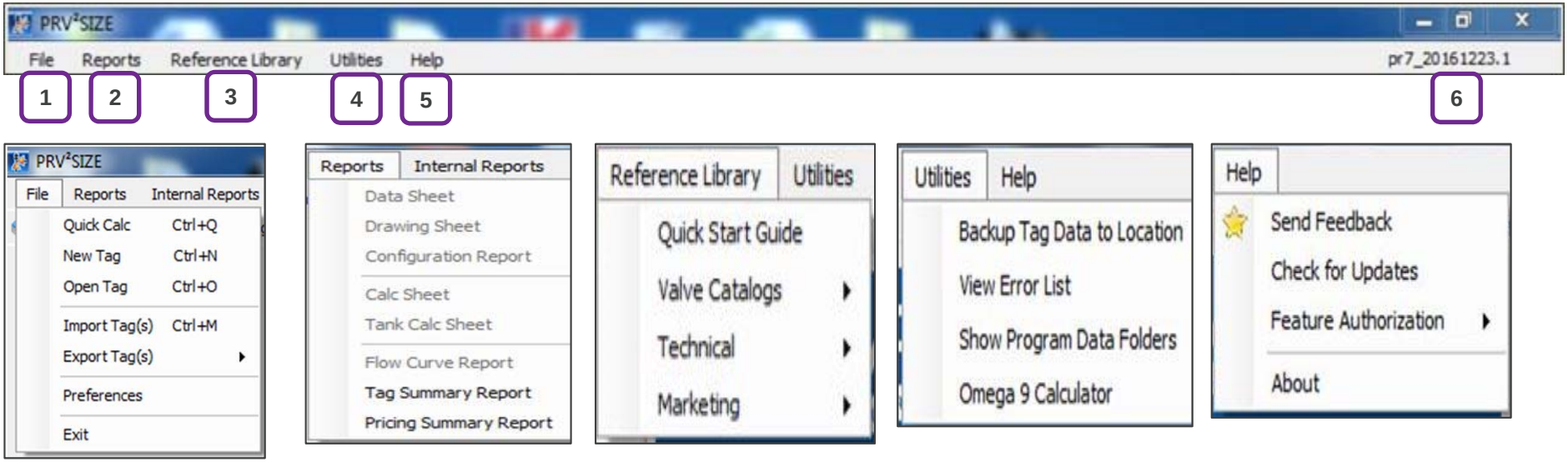
DROPDOWN MENUS



1. **File:** Export/Import Tags and Preferences options available
2. **Reports:** Datasheet, Drawing Sheet, Calc Sheet, Tank Calc Sheet, Flow Curve Report, and Tag Summary Report options available
3. **Reference Library:** Quick Start Guide, Valve Catalogs, Technical and Marketing options
4. **Utilities:** Backup Tag Data to Location, View Error List, Show Program Data Folders and Omega 9 Calculator options available
5. **Help:** Send Feedback, Check for Updates, Feature Authorization and About options
6. **Version/Build**: Installed PRV2SIZE software's version and build information

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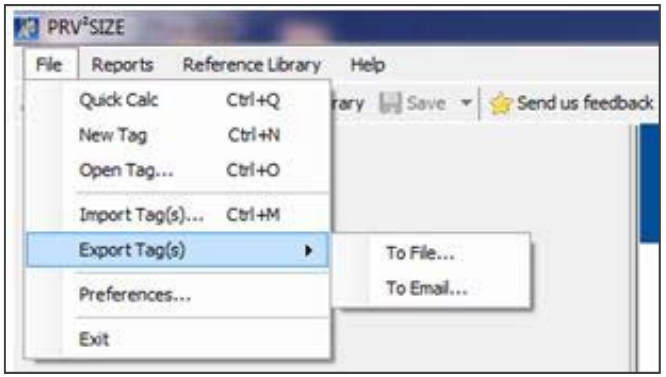
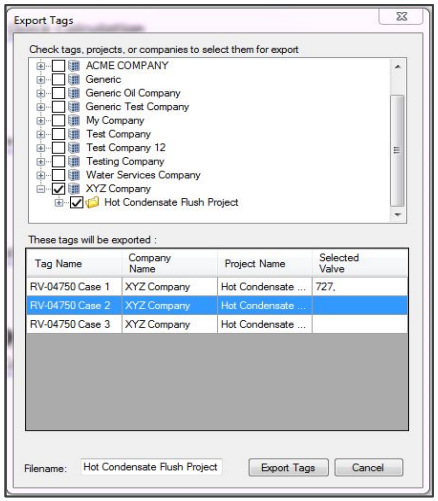
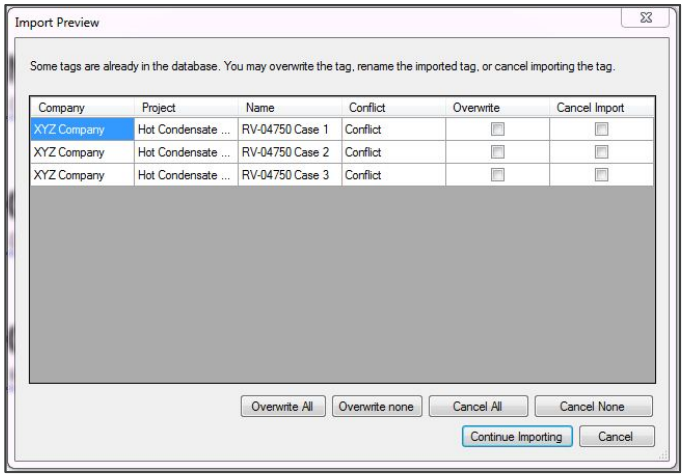
FILE > EXPORT / IMPORT TAGS







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1. **Export to File**: Choose export to File and select single or multiple tags to be exported
2. **Export to Email:** Choose to export to Email has an option of entering ‘File Name’
3. **Import Tags:** Import sizing tags exported by other users in your program and choose to:
   - Overwrite existing tags whenever duplicate tag exists in software (or)
   - Cancel the import to avoid duplication

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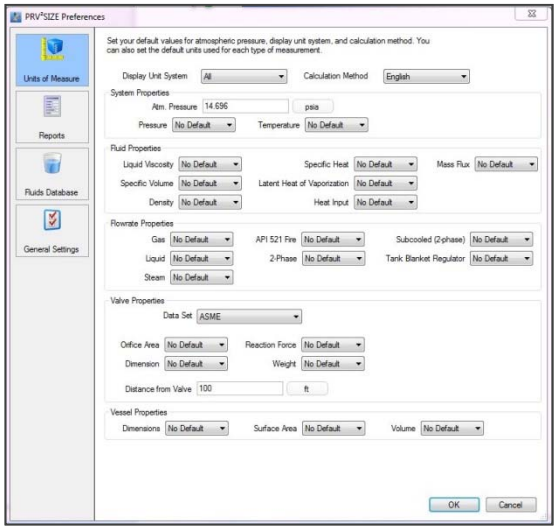
FILE > PREFERENCES



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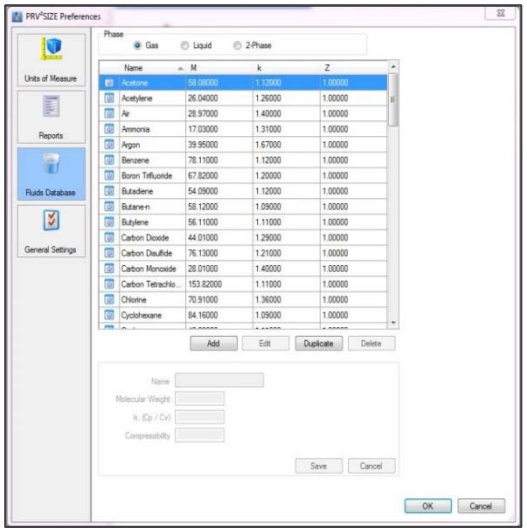

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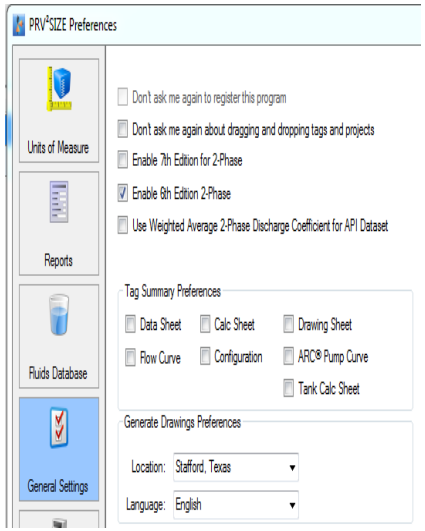

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1. **Units of Measure**: Set up global default units for any new tag to be created in program
2. **Reports Header:** Enter or customize information appearing in reports header
3. **Fluids Database:** Create your own custom fluids database for use in the program
4. **General Settings:** Modify 'Tag Summary' and 'Generate Drawing' Preferences with options to:
   - Activate 2-phase API 6th or 7th Edition sizing methods
   - Use of Weighted Average 2-phase Discharge coefficient for API Dataset
   - Deactivate auto-populated message when dragging and dropping tags and projects

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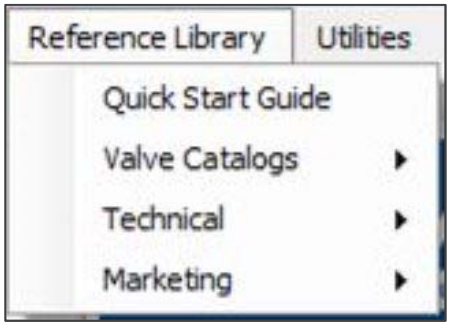
REFERENCE LIBRARY



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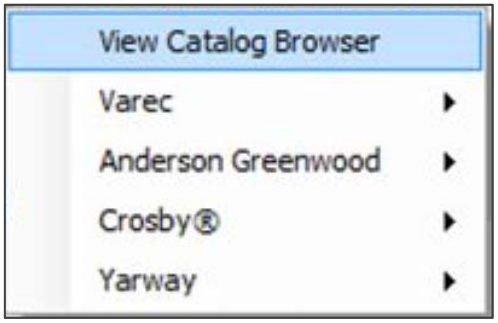

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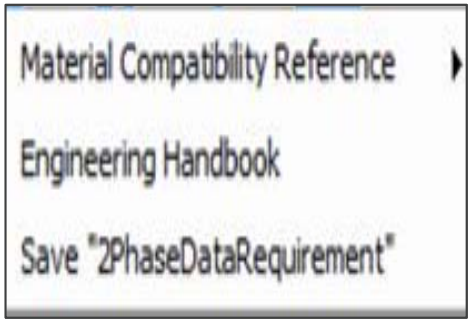

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1. **Quick Start Guide**: PRV2SIZE Quick Start Guide includes software installation, functionality, features and troubleshooting information
2. **Valve Catalogs:** All catalogs can be accessed by clicking ‘View Catalog Browser’ or by selecting legacy product line brand
3. **Technical:** Includes Material Compatibility reference for metals and non-metals, PRV Engineering Handbook and 2-phase Sizing Data Requirements Form
4. **Marketing**: Includes all Product Model Features, PRV Overview and PRV2SIZE Brochure

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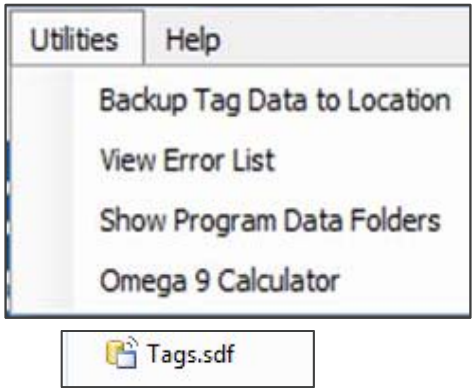
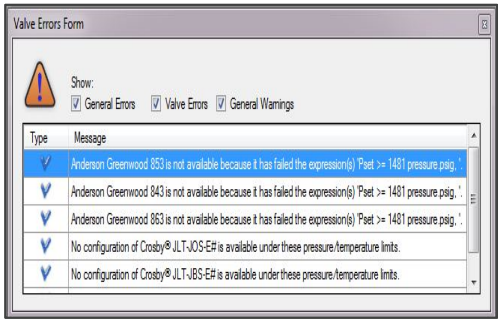
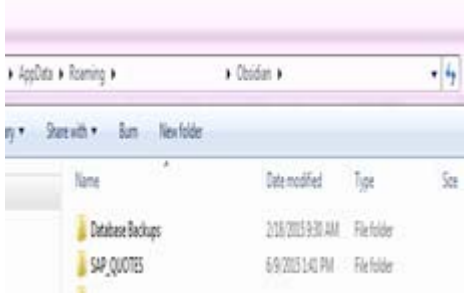
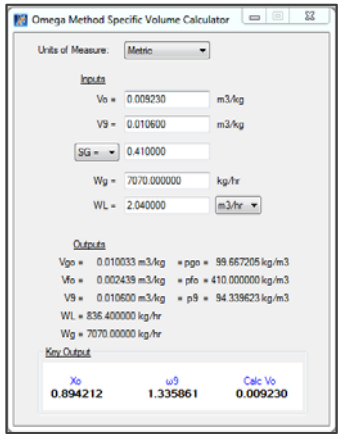
UTILITIES









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1. **Backup Tag Data to Location**: To back up save ‘Tags.sdf’ backup file on your computer
2. **View Error List:** Sizing/Selection Errors or Warning for active tag will populate
3. **Show Program Data Folders:** Allows access to PRV2SIZE program data folders
4. **Omega 9 Calculator**: Tool to calculate liquid and vapor densities missing in customer datasheet when combined sp. volume or density at the inlet for Omega method are available

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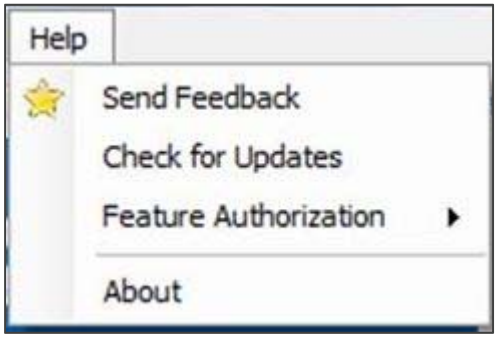
HELP



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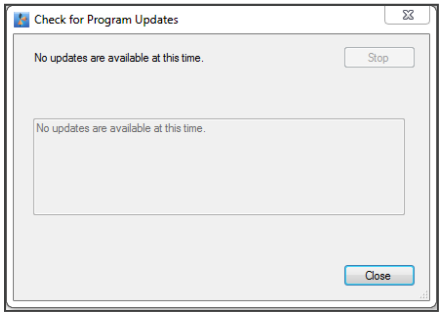

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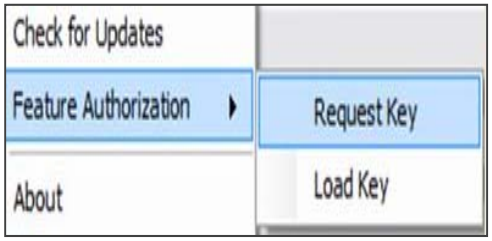

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1. **Send Feedback**: Report a problem or suggestion to software maintenance team which includes option to include tags database
2. **Check for Updates:** If there are updates they will be displayed in popup box
3. **Feature Authorization:** Special Features can be activated by requesting feature authorization key (Emerson Users Only)
4. **About**: Opens up splash screen that includes build information and expiration dates

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STAGE 1: CALCULATION TYPE

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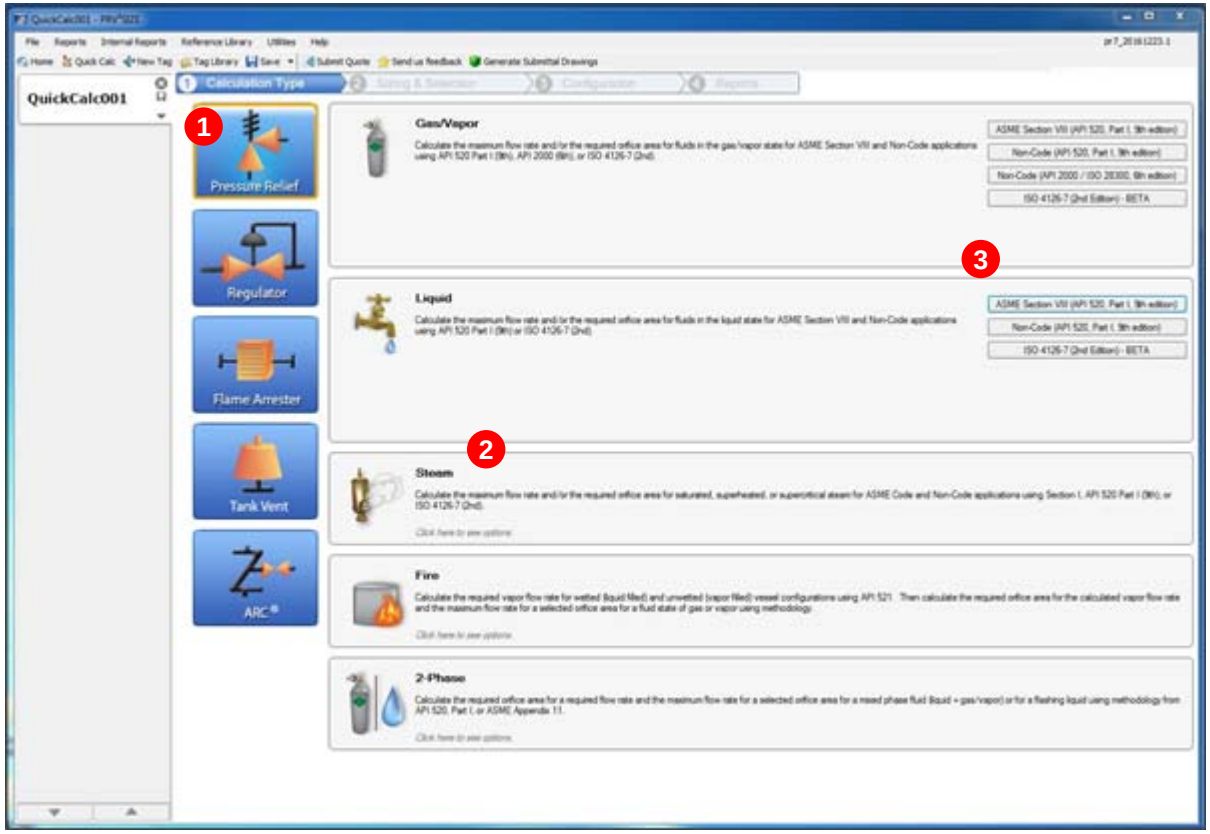
CALCULATION TYPE SELECTION



1. **Valve Category**: Choose a valve category to display sizing methodology options
2. **Fluid Type:** Click in sizing option description to enable sizing methodology options
3. **Sizing Methodology:** Click sizing workflow to start sizing calculation

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STAGE 2:
SIZING & SELECTION

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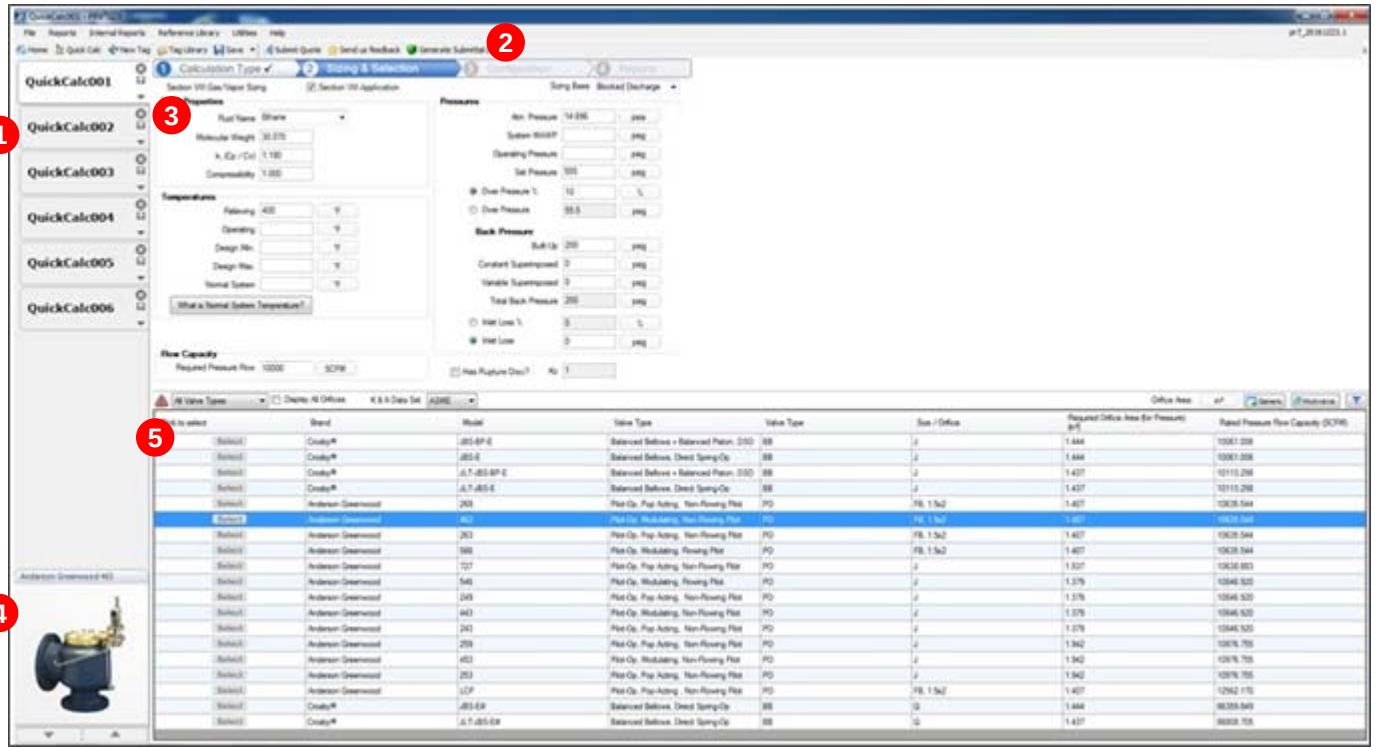
SIZING AND SELECTION SCREEN



1. **Open Tags**: All open tags being worked on are listed on left and can be closed or saved
2. **Workflow Stages:** Top workflow stage shows check mark for completed stage
3. **Input Values:** Sizing input values for each sizing workflow are required to be entered
4. **Valve Image:** A picture of valve is displayed as you drag over grid values in section 5
5. **Valve Selection:** Valve candidate list that satisfies input criteria is generated and valve can be selected by clicking ‘Select’ button

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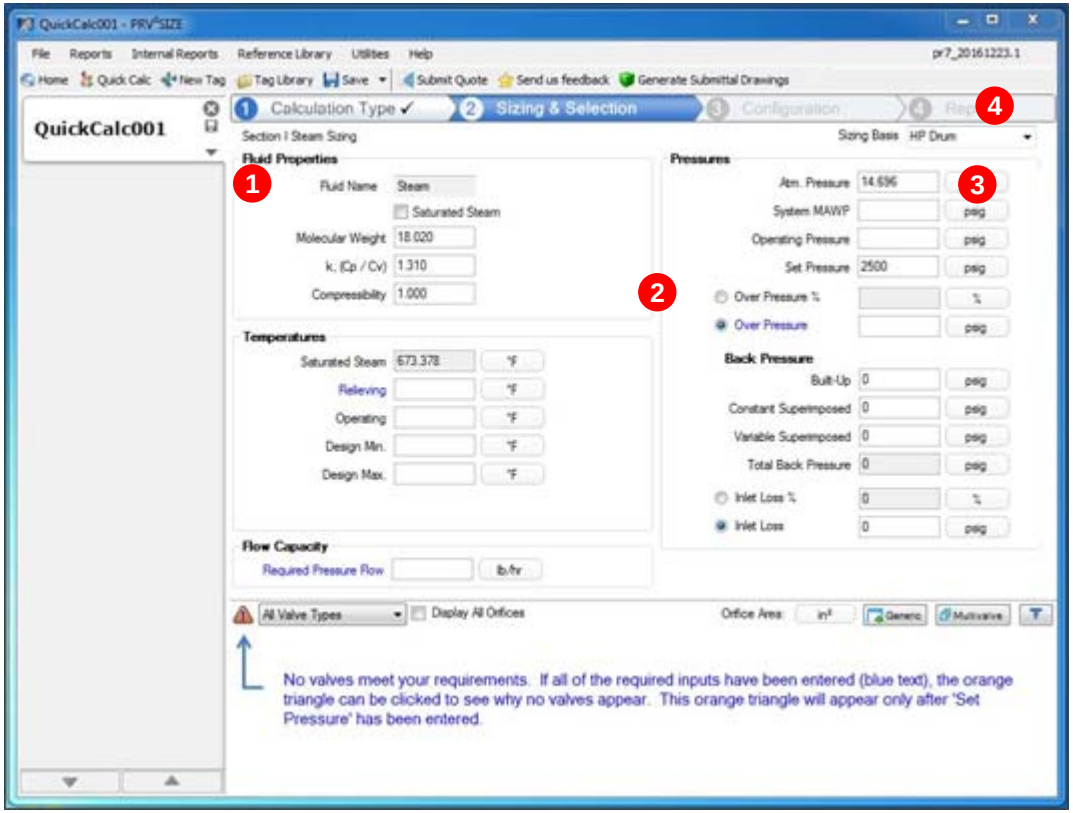
SIZING AND SELECTION INPUT VALUES



1. **Input Sections**: Input fields are grouped into like sections
2. **Required Values:** Required fields are highlighted in blue
3. **Units Change:** Change units by clicking the unit button for a list
4. **Sizing Basis:** Select sizing basis from dropdown list

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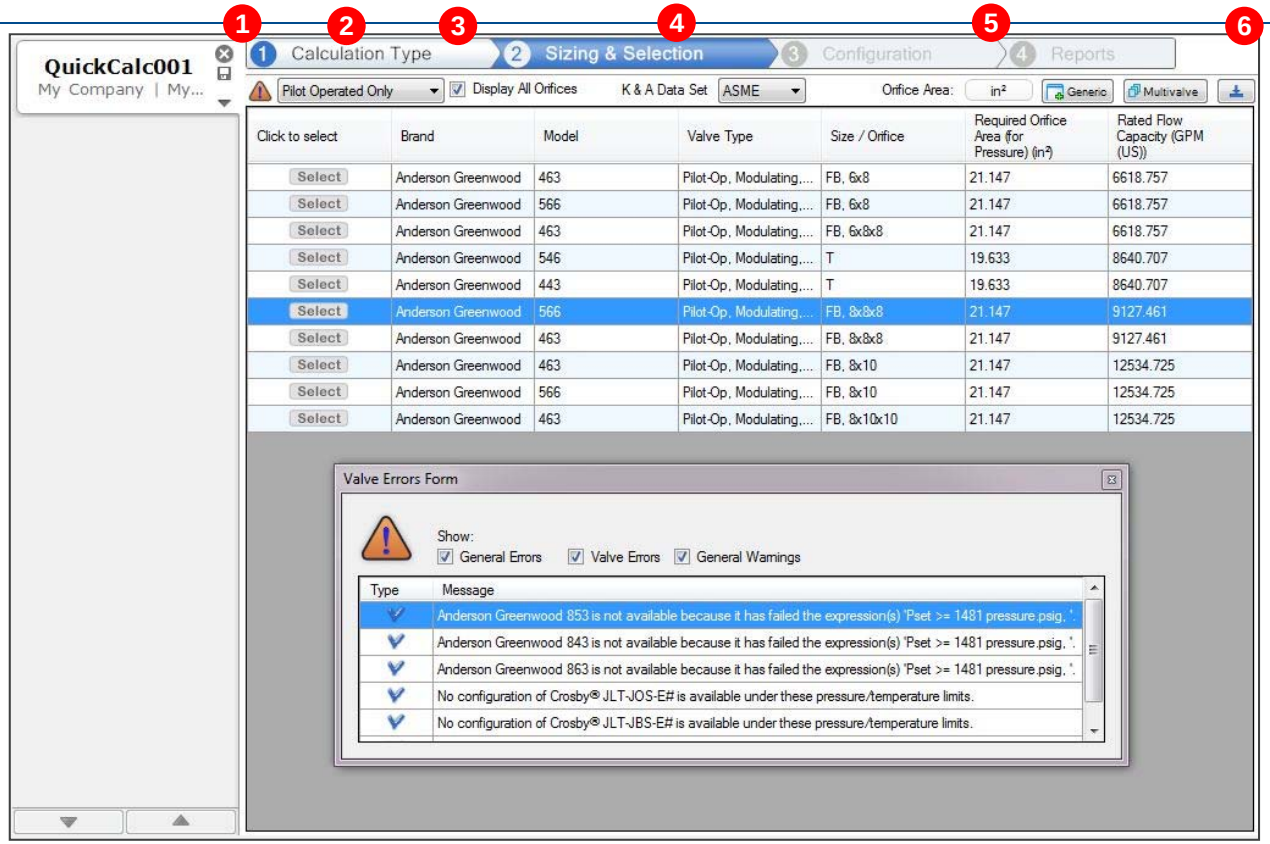
FILTER BAR FOR SIZING AND SELECTION



1. **Invalid Valve Models:** Click Orange Triangle to view error list of invalid models and warnings
2. **Filter Valve Type:** Filter valves based on valve type
3. **Orifice Sizes:** Display all orifices check box allows display of all valve orifice sizes
4. **K & A Dataset:** Allows selection of API and ASME dataset K and A values
5. **Orifice Area Units:** Units for Orifice Areas can be changed to in^2, cm^2 and mm^2
6. **Maximize Valve Selection:** Valve candidate list can be maximized

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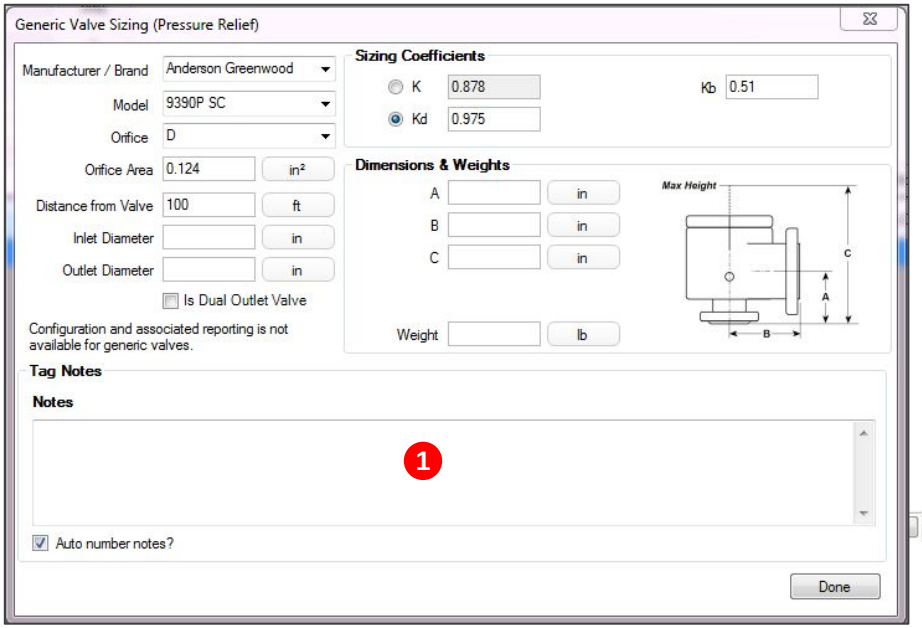
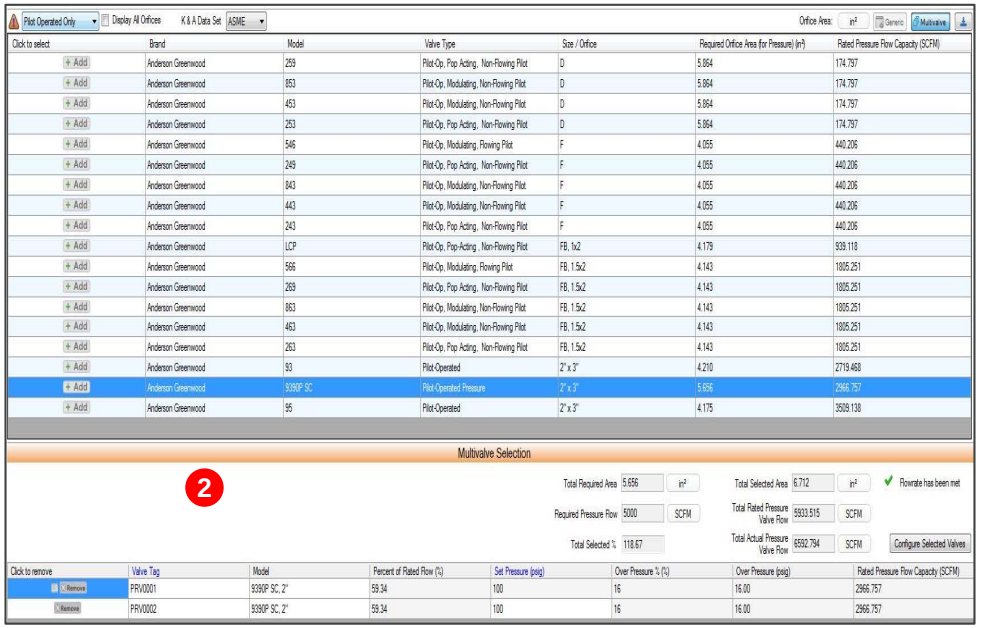
GENERIC AND MULTIVALVE OPTIONS





1. **Generic Option:** Allows manual entry/selection of valve data to generate calculation and drawing report for manually entered sizing coefficients, orifice area and other valve data
2. **Multivalve:** Allows selection of multiple valves to meet required flow rate and green check mark with message ‘Flow Rate has been Met’ is displayed when sufficient valves have been added to meet required flow rate and ‘Configure Selected Valve’ gets activated to allow configuration of multiple valves

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STAGE 3: CONFIGURATION

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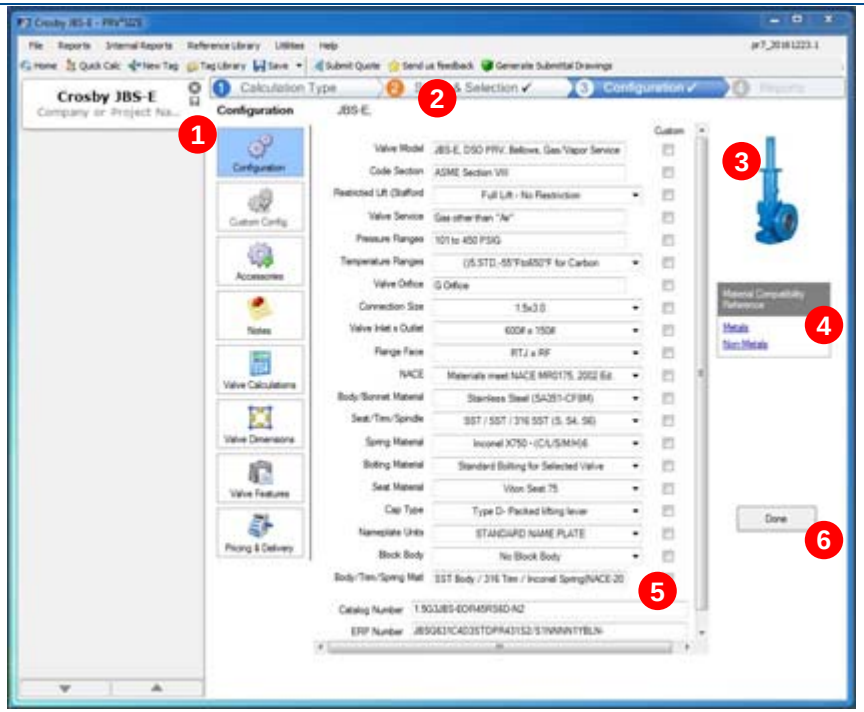
CONFIGURATION



1. **Configuration Menu Options:** Click each section to view options
2. **Option Choices:** You can select from valid dropdown options in black and invalid options are grayed out which can be selected for custom non-standard configuration
3. **Custom:** Click ‘Custom’ checkbox to override any value and put custom value in its place
4. **Materials Compatibility Reference:** PDF for Metals and Non-Metals material compatibility
5. **Catalog Model and ERP Part Number:** Catalog Part Number is based on configuration selections and ERP number is recognized by ERP system at the factory
6. **Completing Configuration:** Click ‘Done’ to generate report for your valve

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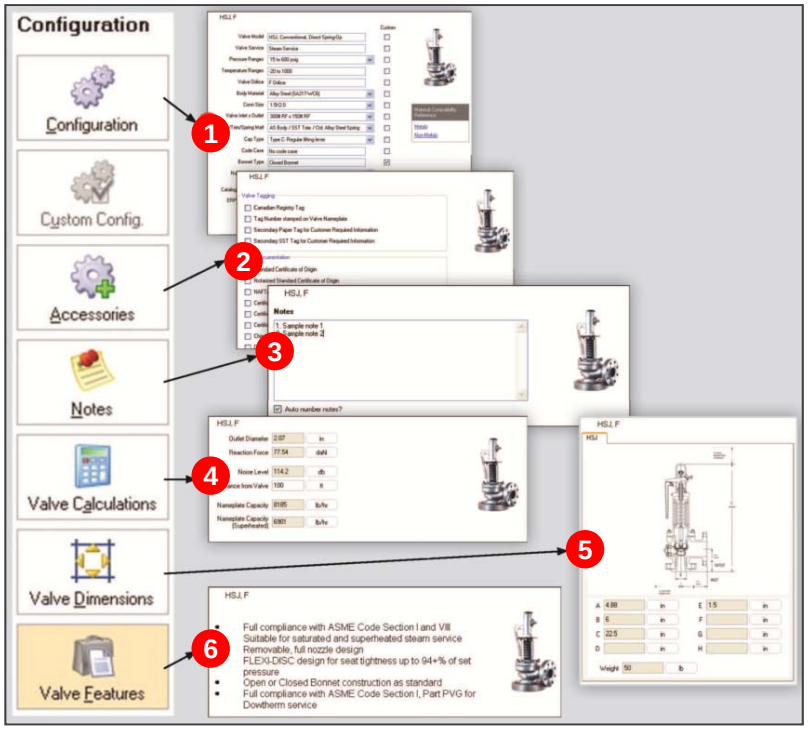
CONFIGURATION MENU



1. **Configuration:** Displays your detailed configuration menu
2. **Accessories:** Allowable accessories to select for the valve
3. **Notes:** Input free text notes that you want to include on the tag
4. **Valve Calculations:** Reaction force and noise levels provided for the valve
5. **Valve Dimensions**: Valve weight and dimensions are displayed
6. **Valve Features:** Summary feature list and image of selected valve

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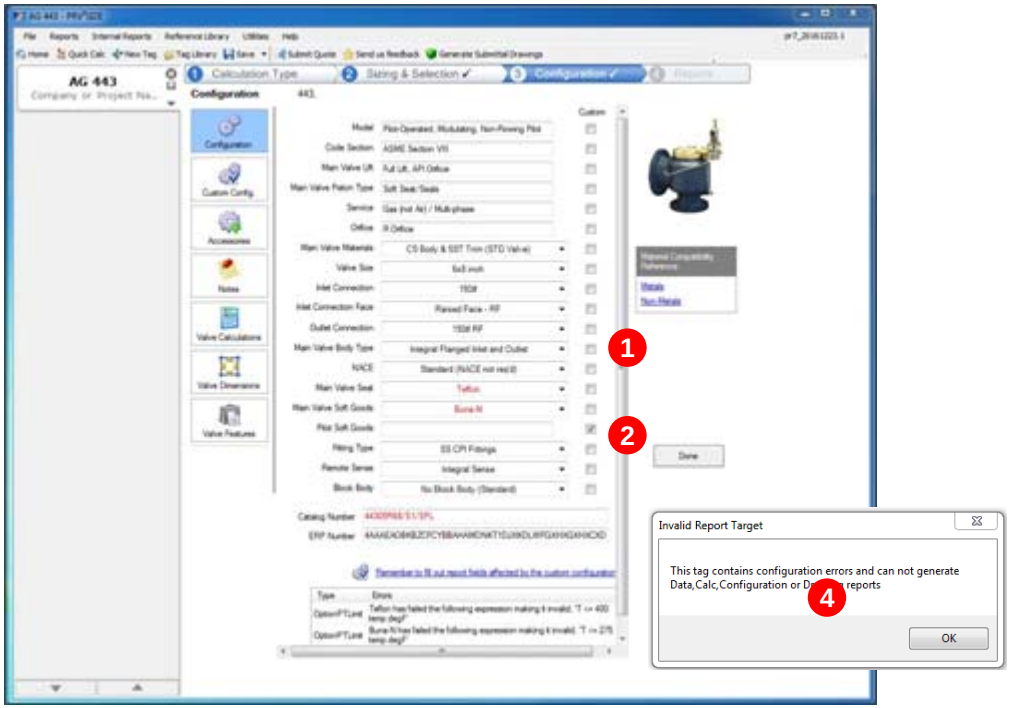
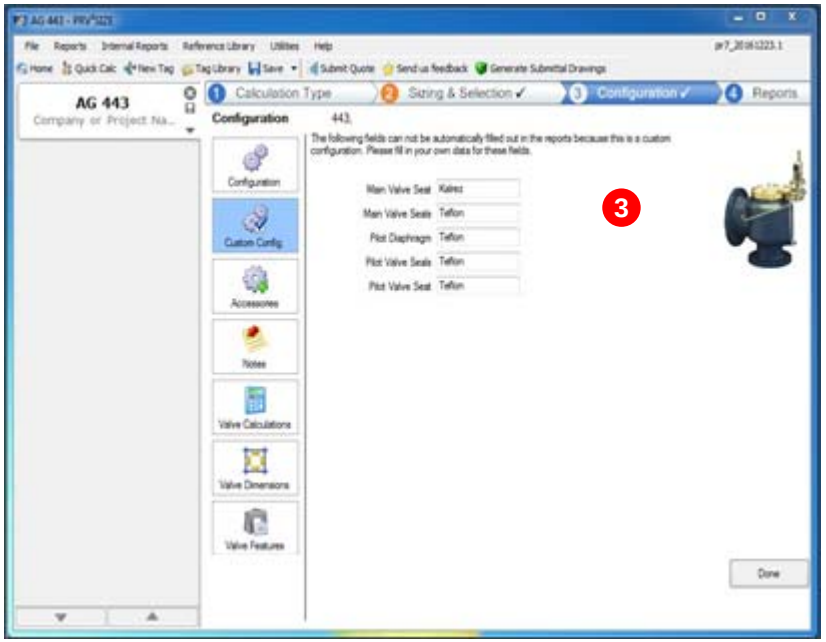
CUSTOM CONFIGURATION





1. **Customized Configuration:** Configuration can be customized when a special configuration option is required or when configuration combination gives an error
2. **Check Box:** Select check box for configuration option that needs to be customized
3. **Custom Option Description:** Click on the activated ‘Custom Config’ button to enter brief description of customized option that will populate on reports
4. **Configuration Errors:** Errors must be resolved in order to proceed to Stage 4 Reports

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STAGE 4: REPORTS

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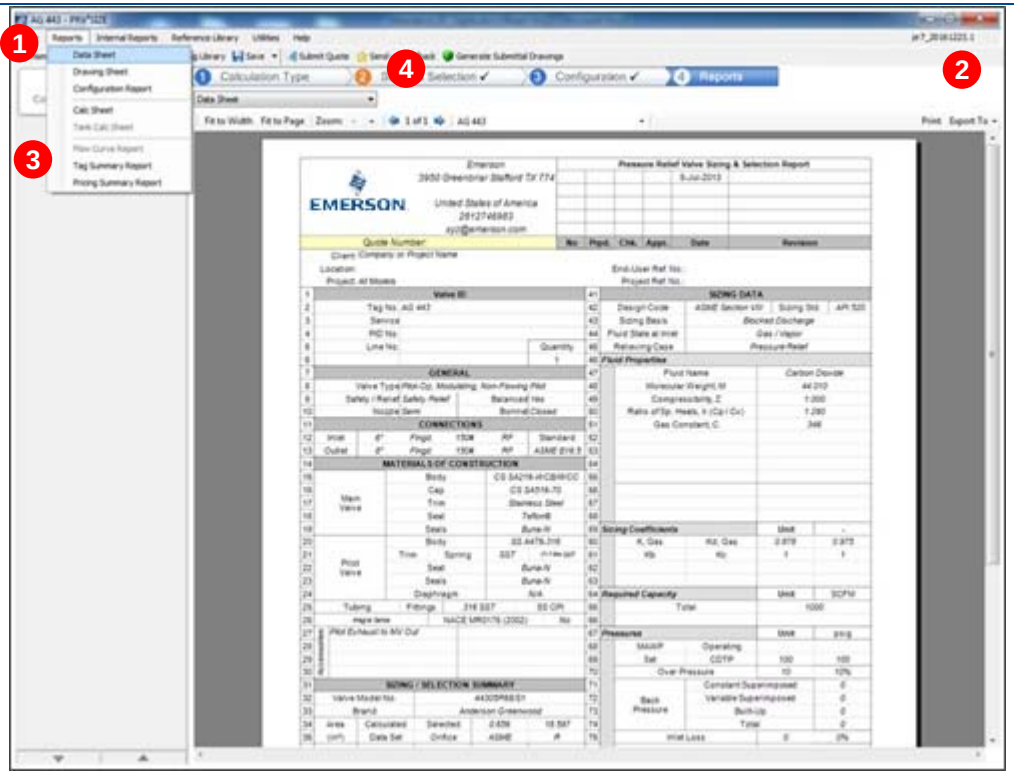
REPORTS



1. **Reports Menu:** Click ‘Reports’ menu to show all available reports
2. **Excel or PDF Reports:** Save or Print PDF or Excel reports
3. **Tag Summary Report:** Tag Summary Report will combine all individual reports into one Excel or PDF document for a tag
4. **Reports Dropdown List:** Reports can also be accessed by clicking reports in top menu dropdown list

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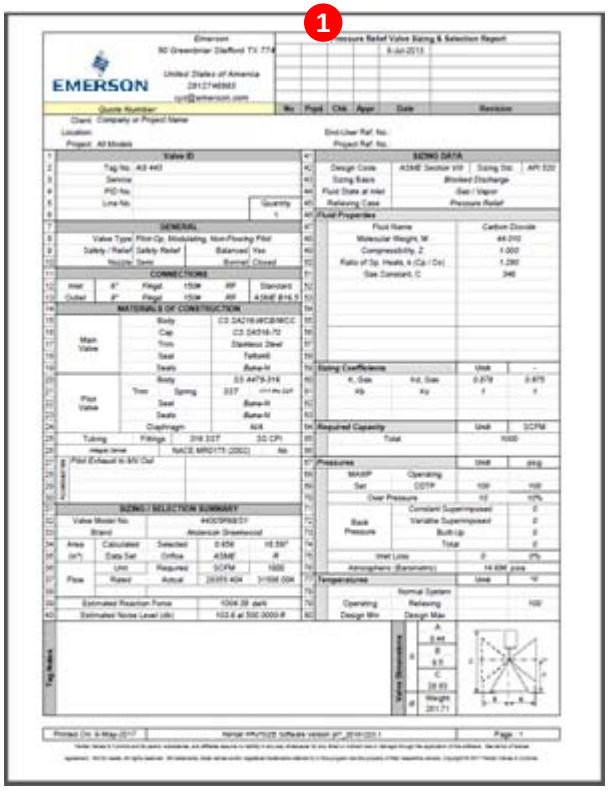
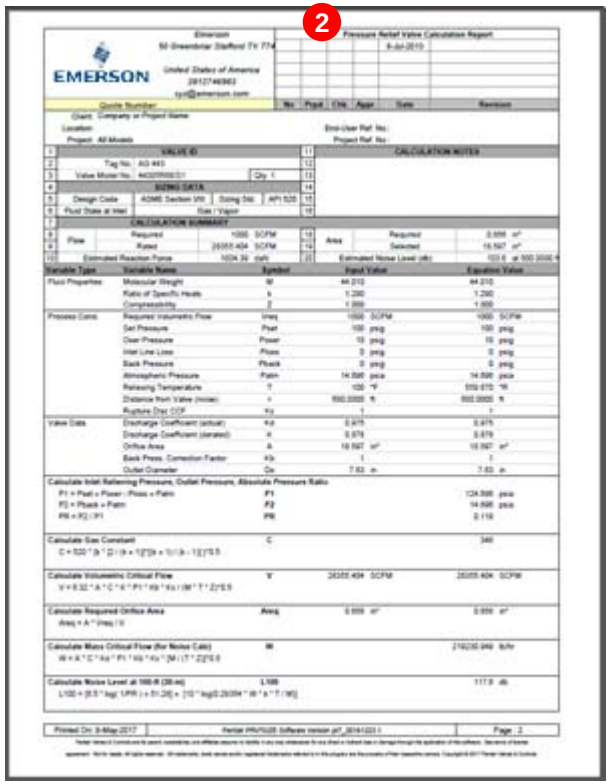
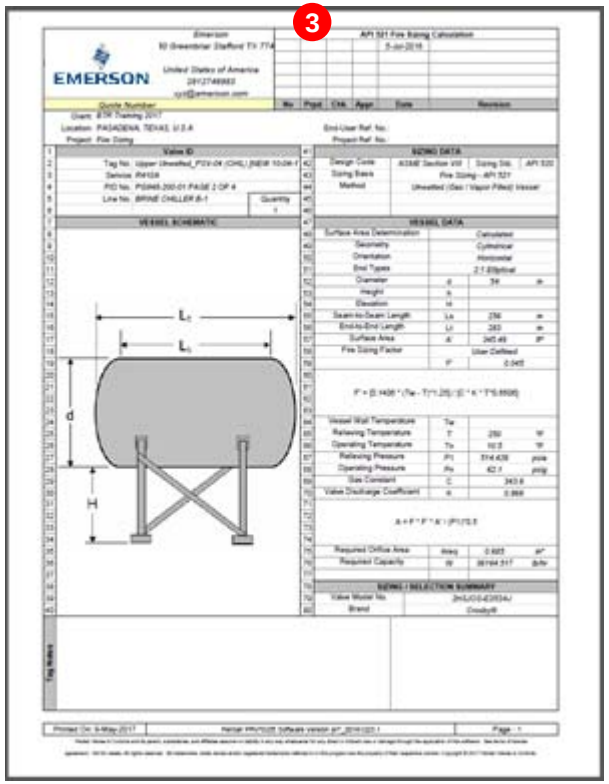
DATA SHEET AND CALCULATION REPORTS







1. **Datasheet Report:** Datasheet report includes Valve Tag ID, Type, MOC, Connections, Selection Summary, Tag Notes and Valve Dimensions and Weight
2. **Calculation Report:** Calculation report includes Calculation Summary, Notes, Variable Type, Names, Symbols, Input Values/Units, Equation Values/Units and Calculation Formulas
3. **Tank Calculations:** Tank Calculation sheet includes fire sizing calculation and product selection data

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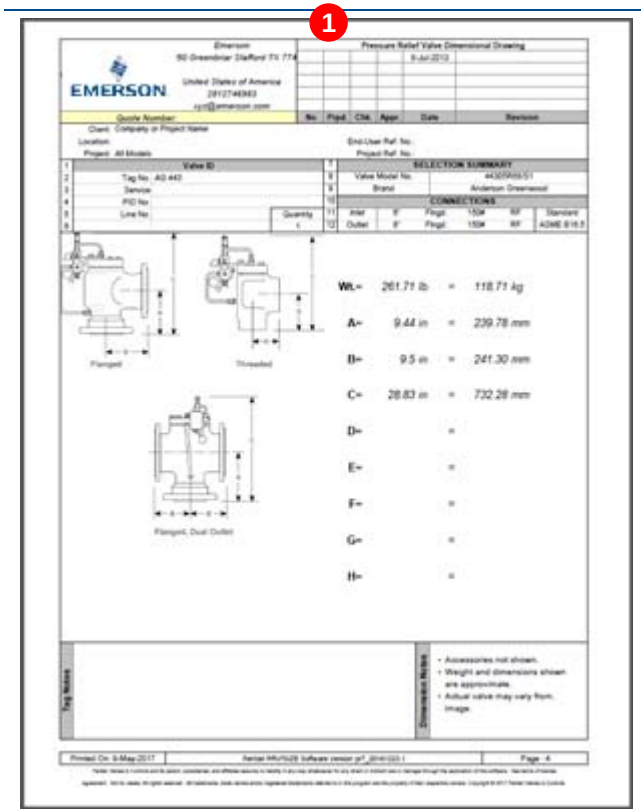
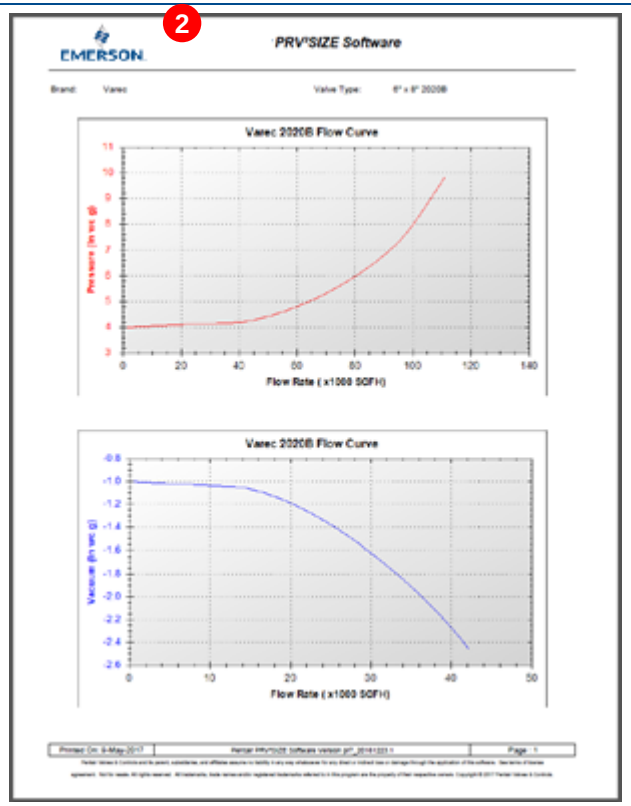
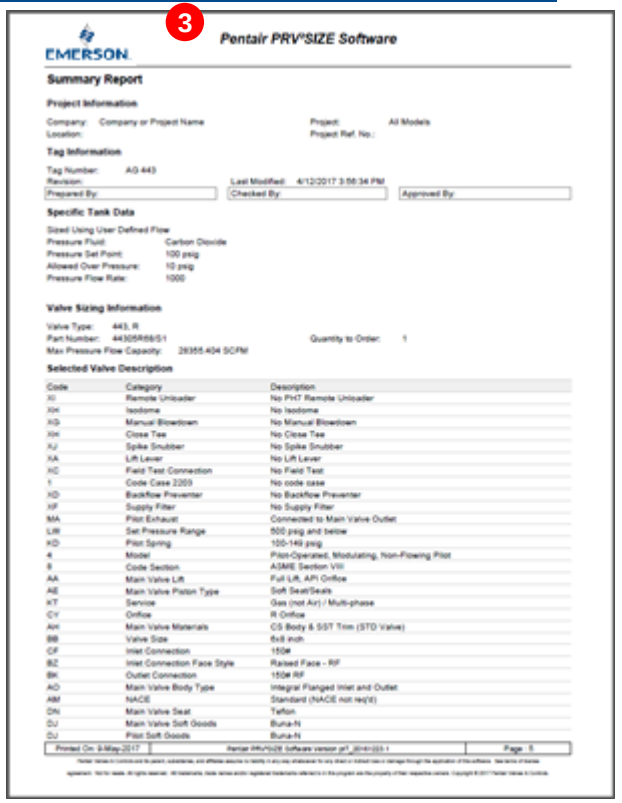
DRAWING, FLOWCURVE, CONFIGURATION REPORT







1. **Drawing Sheet:** Drawing sheet displays cross sectional drawings with dimensions and weight
2. **Flow Curves:** Pressure and Vacuum relief valve flow curves can be generated
3. **Configuration Report:** Configuration report shows specific Tank Data, Valve Sizing Information and Selected Valve Description with ERP Model Number and Category

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TAG MANAGEMENT

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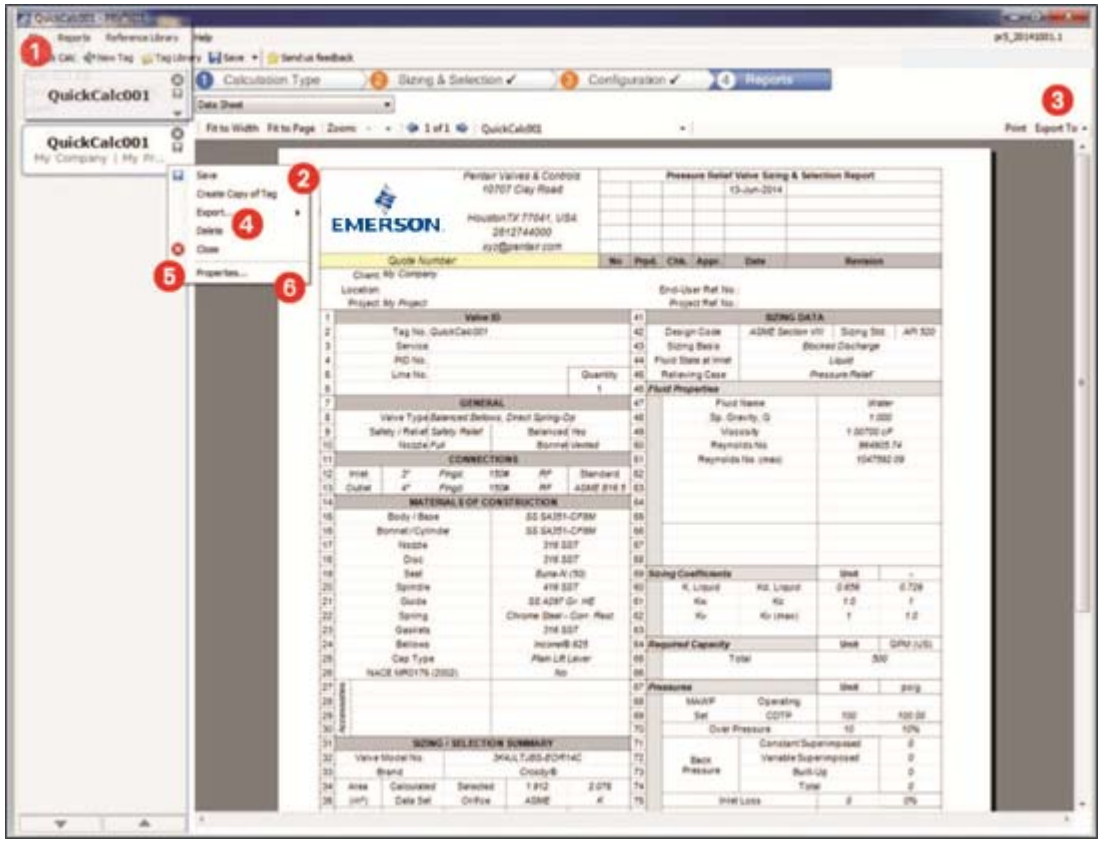
SAVE, CREATE, COPY, EXPORT, DELETE OR CLOSE



1. **Save Tag:** Save anytime during sizing process
2. **Copy Tag:** Create Copy of Tag anytime during sizing process
3. **Export Tag:** Export Tag to PDF or Excel after reports are generated
4. **Delete Tag:** Delete Tag when required
5. **Close Tag:** Close tag anytime during sizing
6. **Properties:** Update or change Project Tag information

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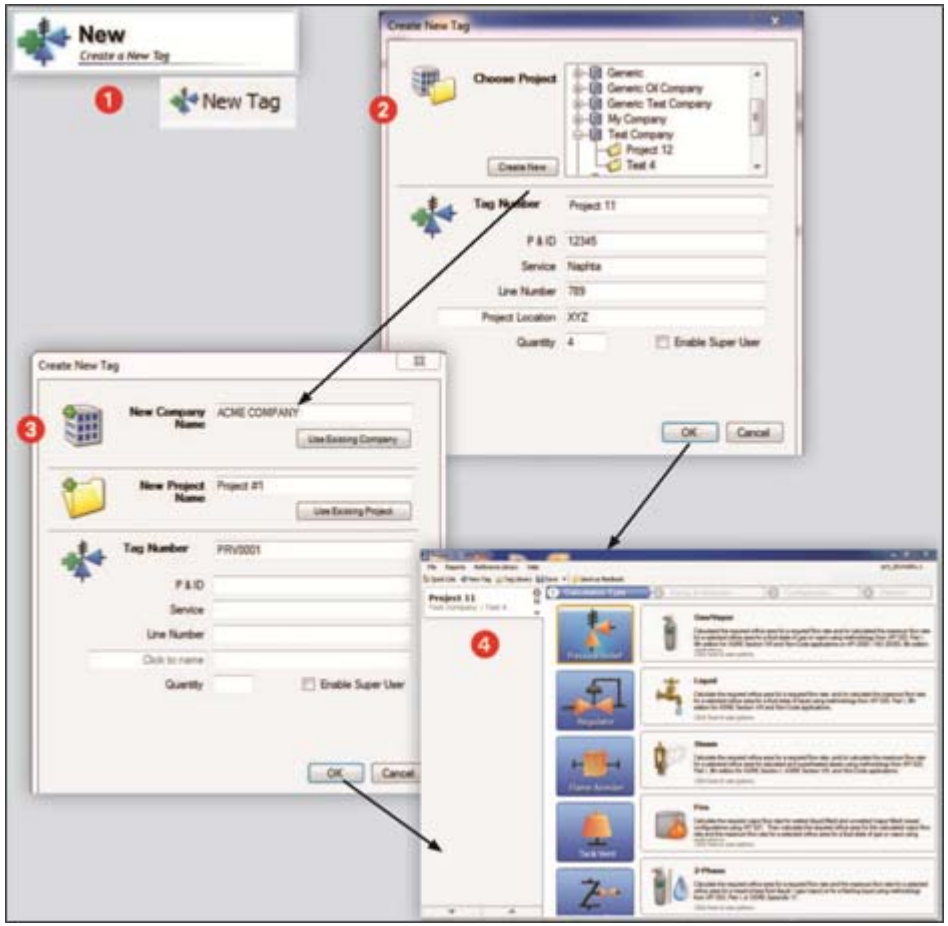
CREATE A NEW TAG



1. **Tag Library:** Click on either of these icons to launch your tag library
2. **Tag Information:** Associate existing company and project to the new tag (or)
3. **New Tag Information:** Enter new company, project and tag number for new tag
4. **Calculation Type:** Next step will be stage 1 ‘Calculation Type Selection’

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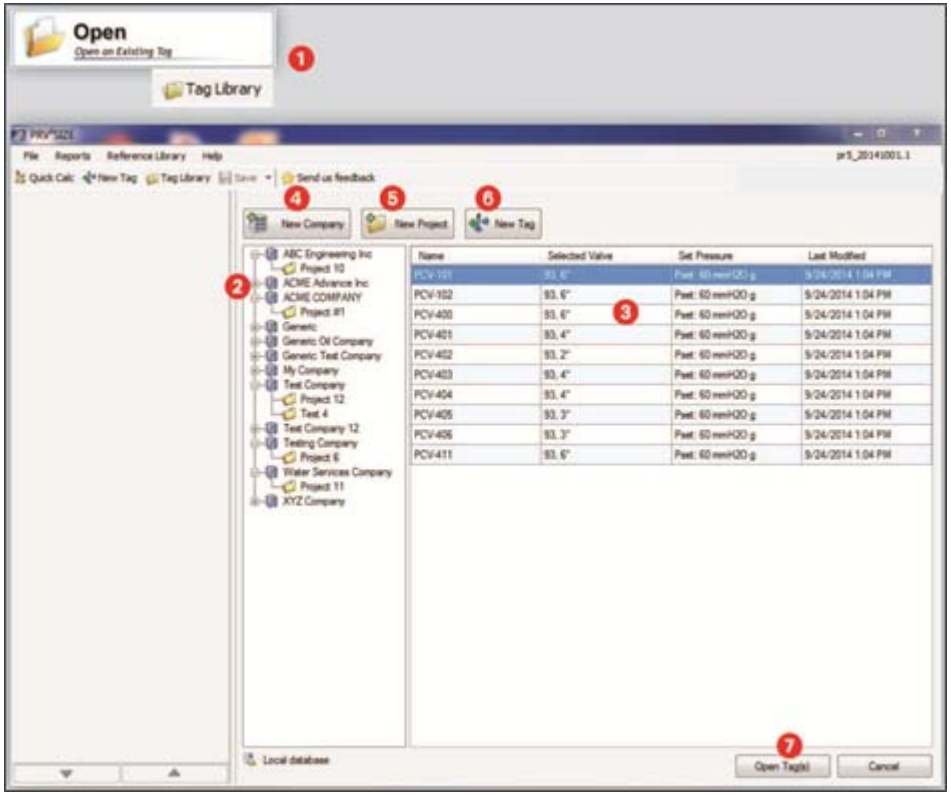
TAG LIBRARY



1. **Tag Library:** Click on these icons to launch tag library
2. **Library Tree:** Library tree has listing of companies and projects associated with companies
3. **Tag Grid:** Has listing of tags in particular project selected
4. **New Company:** Create a New Company
5. **New Project:** Create a New Project
6. **New Tag:** Create a New Tag
7. **Open Tag(s):** Select tags and click on ‘Open Tag(s)’ to open one or multiple tags

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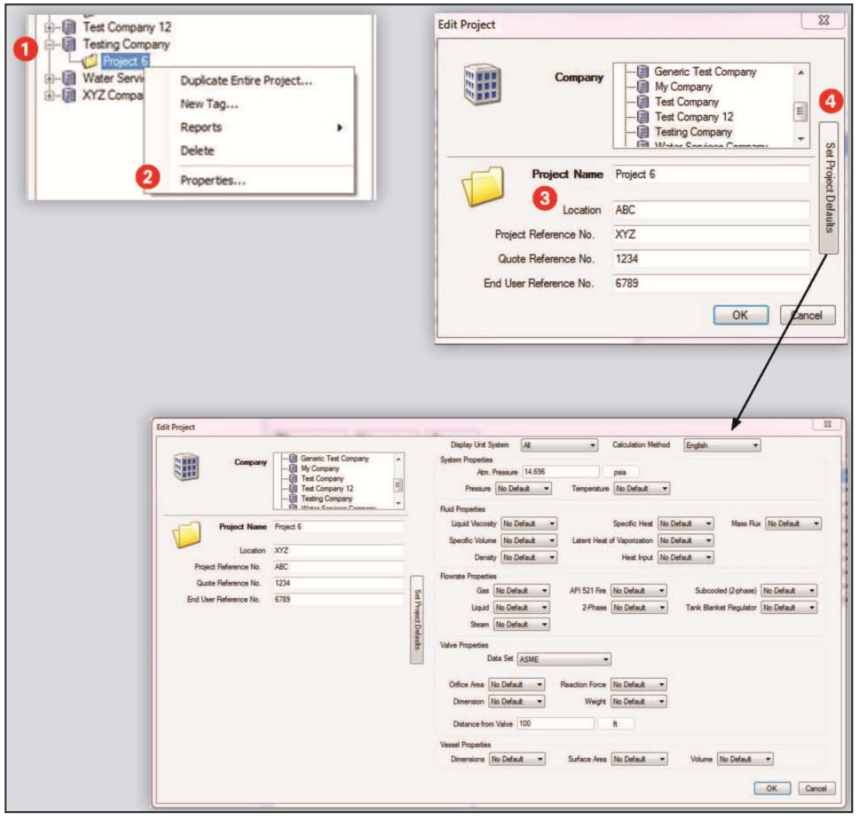
PROJECT PROPERTIES



1. **Project Properties:** Right click on project to modify its properties
2. **Edit Project:** Select ‘Properties’ to launch the ‘Edit Project’ dialog box
3. **Change Properties:** Change listed properties for the project
4. **Set Project Defaults:** Click ‘Set Project Defaults’ to expand window in order to change Unit defaults, System Properties, Flowrate Properties, Valve Properties and Vessel Properties for any new tag to be created in the project

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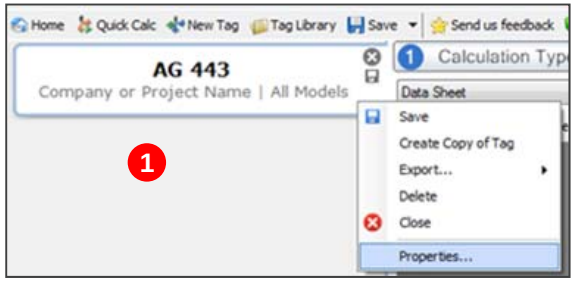
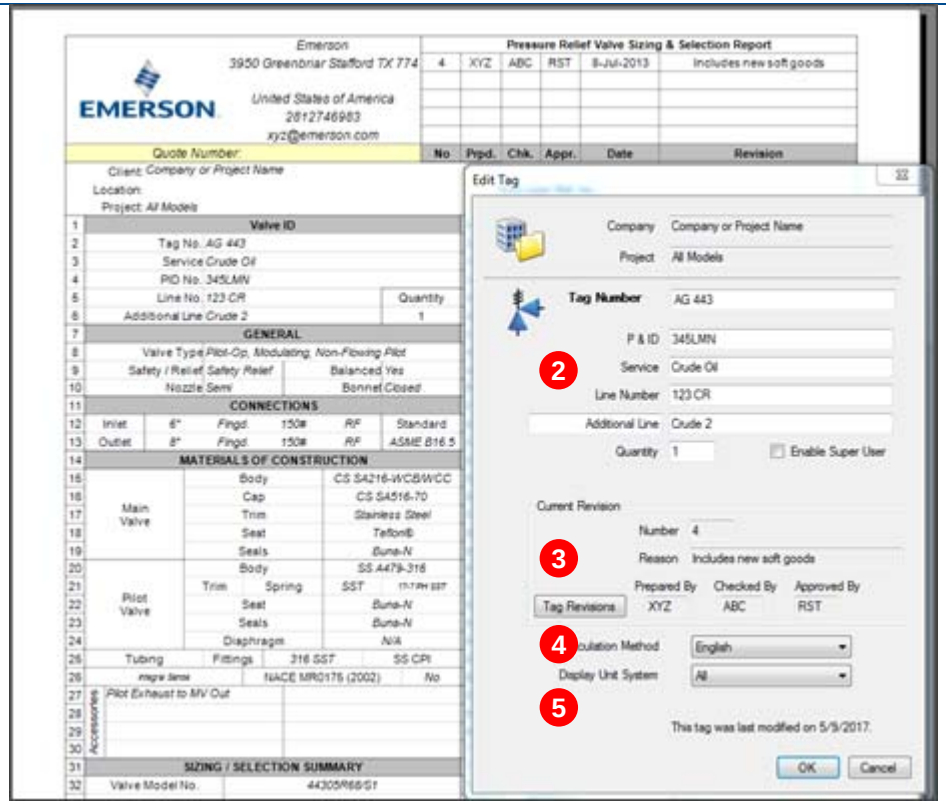
TAG PROPERTIES





1. **Tag Properties:** Right click on down arrow next to tag name to update its properties
2. **Project Valve ID:** Tag#, P&ID, Service, Line Number, Quantity or additional info can be updated
3. **Tag Revisions:** Information about tag revisions can be updated or modified
4. **Calculation Method :** Metric or English calculation method can be selected
5. **Display Unit System:** Metric, English or All options are available for units to be displayed on reports

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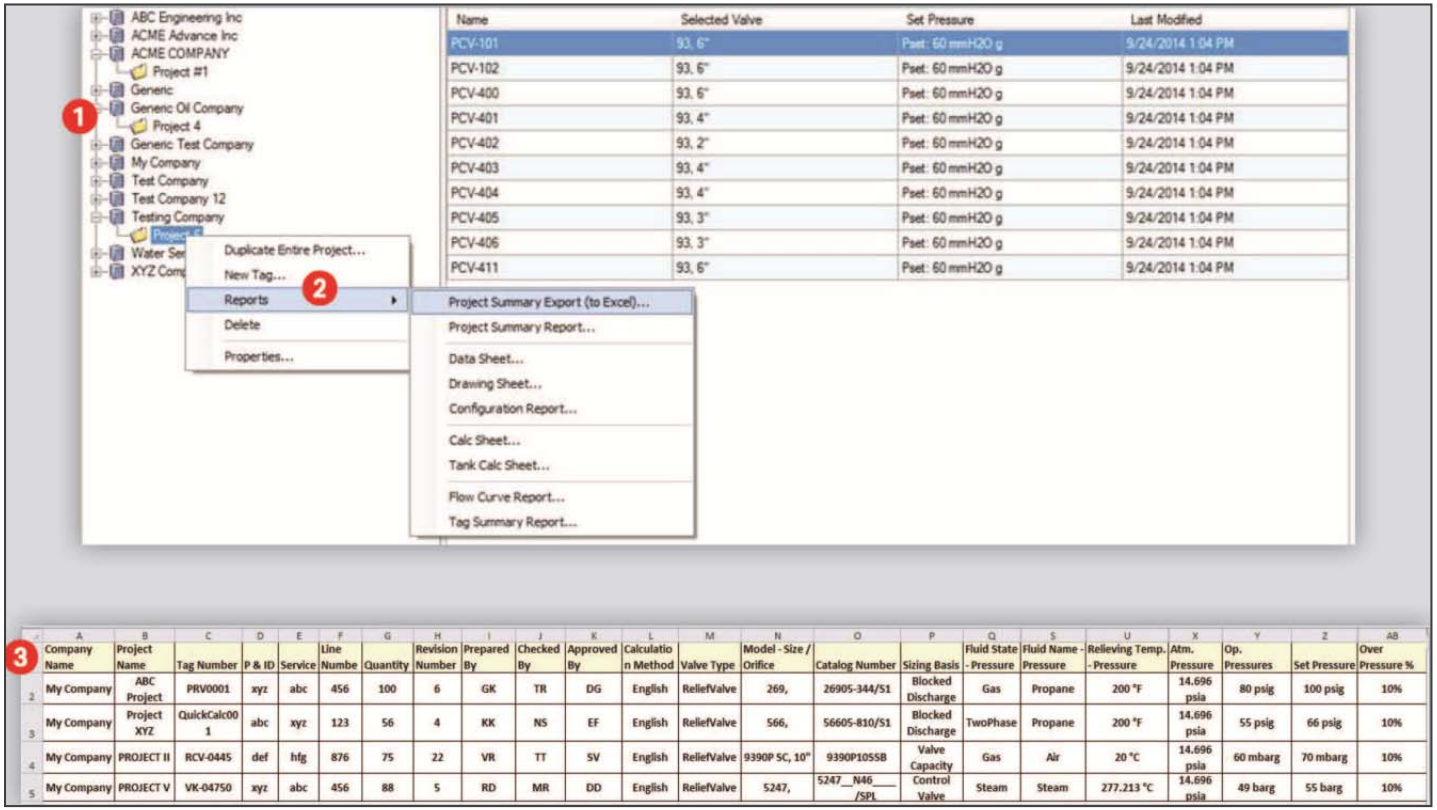
PROJECT / TAG SUMMARY EXPORT



Name	Selected Valve	Set Pressure	Last Modified
PCV-101	93, 6"	Pset: 60 mmH2O g	9/24/2014 1:04 PM
PCV-102	93, 6"	Pset: 60 mmH2O g	9/24/2014 1:04 PM
PCV-400	93, 6"	Pset: 60 mmH2O g	9/24/2014 1:04 PM
PCV-401	93, 4"	Pset: 60 mmH2O g	9/24/2014 1:04 PM
PCV-402	93, 2"	Pset: 60 mmH2O g	9/24/2014 1:04 PM
PCV-403	93, 4"	Pset: 60 mmH2O g	9/24/2014 1:04 PM
PCV-404	93, 4"	Pset: 60 mmH2O g	9/24/2014 1:04 PM
PCV-405	93, 3"	Pset: 60 mmH2O g	9/24/2014 1:04 PM
PCV-406	93, 3"	Pset: 60 mmH2O g	9/24/2014 1:04 PM
PCV-411	93, 6"	Pset: 60 mmH2O g	9/24/2014 1:04 PM

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S	U	X	Y	Z	AB
	Company Name	Project Name	Tag Number	P & ID	Service	Line Numbe	Quantity	Revision Number	Prepared By	Checked By	Approved By	Calculation Method	Valve Type	Model - Size / Orifice	Catalog Number	Sizing Basis	Fluid State - Pressure	Fluid Name - Pressure	Relieving Temp. - Pressure	Atm. Pressure	Op. Pressures	Set Pressure	Over Pressure %
2	My Company	ABC Project	PRV0001	xyz	abc	456	100	6	GK	TR	DG	English	ReliefValve	269,	26905-344/S1	Blocked Discharge	Gas	Propane	200 °F	14.696 psia	80 psig	100 psig	10%
3	My Company	Project XYZ	QuickCalc001	abc	xyz	123	56	4	KK	NS	EF	English	ReliefValve	566,	56605-810/S1	Blocked Discharge	TwoPhase	Propane	200 °F	14.696 psia	55 psig	66 psig	10%
4	My Company	PROJECT II	RCV-0445	def	hfg	876	75	22	VR	TT	SV	English	ReliefValve	9390P SC, 10"	9390P10SSB	Valve Capacity	Gas	Air	20 °C	14.696 psia	60 mbarg	70 mbarg	10%
5	My Company	PROJECT V	VK-04750	xyz	abc	456	88	5	RD	MR	DD	English	ReliefValve	5247,	5247__N46____/SPL	Control Valve	Steam	Steam	277.213 °C	14.696 psia	49 barg	55 barg	10%

1. **Project Report:** Right click on project to access ‘Reports’ option
2. **Project Summary Report:** Select ‘Reports’ then select ‘Project Summary Export (to Excel)’
3. **Excel Project Summary:** Excel file that is saved to your hard drive will have tag information arranged by line for use in quotes or tables

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