

User Manual



Version 2.0.0
23 November 2022

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1. Overview

Welcome to **CIRCOR Select**, a sizing and selection software tool that calculates sizing properties based on process service conditions in order to select and fully specify products for **RTK and CIR3X00** of Circor International. In addition to basic product sizing and selection, the program also provides selection for the actuator, accessories, materials, and factory notes. This document details the numerous features and aspects of the program.

CIRCOR Select is designed and developed as an intuitive, user-friendly program to provide a technically sound product selection and produce the following industry standard reports.

- Specification Sheet
- Analysis Sheet
- Orifice Sheet
- Flow Curve
- Outline Drawing
- Factory Notes/QA Plan

CIRCOR Select intelligently restricts or expands the attribute values of products based upon the process service conditions. It also determines if any adverse conditions exist, warning the user and recommending possible solutions.

Since **CIRCOR Select** incorporates and configure **RTK and CIR3X00 Controls** product.

CIRCOR Select provides a feature for the user to create a profile to define preferences such as Product Brand, Unit of Measurement system (English or Metric), and particular units within those systems. The profile values are used as default values within the program; however, the program allows the user to change these values while using the program without having to update the profile. Additionally, multiple profiles can be stored within the product to facilitate multiple users and/or quickly change default values for specific application sizing.

CIRCOR Select facilitates sharing of project data between users via import and export functions. This function enables one or more-line items to be exported from a project and imported into another, allowing multiple users to work on a project.



2. System Requirements

CIRCOR *Select* requires the following hardware and software to properly execute.

Minimum Hardware Requirements:

- Intel® Pentium® IV or equivalent
- 1 GB of RAM
- 150 MB of available disk space on the hard drive (system drive)

Recommended Hardware Requirements:

- Intel® Pentium® Dual Core 2.2 GHz or equivalent
- 3 GB of RAM
- 500 MB of available disk space on the hard drive (system drive)

Compatible Operating Systems:

- Microsoft® Windows XP® Professional - SP2 or above
- Microsoft® Windows 7 Professional (32 bit)

Supporting Software:

- Adobe® Reader® or equivalent PDF reader
- Microsoft® Report Viewer (a component of Windows)

Recommended Minimum Screen Resolution:

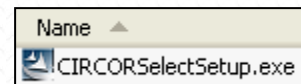
- 1024 x 768 pixels

3. Application Installation

To install **CIRCOR Select**:

- **Caution:** Administrative privileges are required to install this application. Please contact your Administrator to obtain the necessary permission if required.

- Click (or double-click) on the **CIRCOR Select Setup** file to initiate the installation process.



The setup will guide you through the installation; once installed, the **CIRCOR Select** icon will be placed on the desktop.

For detailed information on the installation process, see the **CIRCOR Select** Installation & Quick Start Guide.

4. Application Startup

Click (or double-click) the **CIRCOR Select** icon on the Desktop to start the application. Alternatively, clicking **Start → All Programs → CIRCOR Select → CIRCOR Select** will also start the application.

- **Note:** An internet connection is required to check for the latest updates when starting the program and to register the program (on initial startup only).

Initial Startup (Registration)

The software must be registered in order to receive an activation key, which is required to use the program. With an open internet connection, furnish the information required for registration and click **[Submit]**; an email will be sent immediately containing the activation key. Enter the activation key when prompted and click **[OK]** to proceed.

After registering and activating the software, you will be prompted to choose User Defaults.

- Click **Next** to proceed to the User Defaults screen.

Or

- Click **Exit** to close the application.

User Defaults (Preferences)

The User Defaults screen sets the preferences selected by the user. It is subdivided into different sections covered below.

- **Note: Product Brand, User Name, Company Name, User Phone and User Email must be entered in order to save preferences.**

The screenshot shows the 'Preferences' window with the following sections and values:

- General Configuration Defaults:** User Interface Language: English; Background: Blue; Confirm on Deletion of Item: ; Product Brand: CIRCOR; Recently Used Projects: 8.
- User Information:** User Name: Midhun; User Phone: 9846470635; Company Name: Circor; User Email: midhun.ramankutty@circor.; User Location: Select Location...
- Default Service Conditions:** First Heading: Max; Second Heading: Norm; Third Heading: Min; Fourth Heading: Cond4; Fifth Heading: Cond5.
- Calculation Variable Defaults:** Allow. SPL (dBA): 85.
- Print Options:** Actual Velocity No.; Actual Cavitation Index No.; Advisories.
- DSH-SW Contingency:** Spray Water Contingency(%): 10.
- UOM (Unit of Measure):** Unit System: Metric; Steam Flow Rate: kg/hr; Water Flow Rate: kg/hr; Gas Flow Rate: kg/hr; Liquid Flow Rate: kg/hr; 2-Phase Flow Rate: kg/hr; 2-Phase Partial Flow Rate: kg/hr; Inlet Pressure: kg/cm²[g]; Temperature: °C; Viscosity: cP.

At the bottom, the 'Profile' dropdown is set to 'Default', and buttons for 'Save', 'Save As', 'Delete', 'Apply', and 'Cancel' are visible.

● General Configuration Defaults

- **User Interface Language** - Language in which the user can interact with the application; once the language is selected the labels of objects on the user interface, error messages and the user prompts will be displayed in the selected language. The list of values will also be displayed in the selected language. The default user interface language is 'English'.
Note: Only English language is currently supported.
- **Background** - Background color for the screens within the application.
- **Confirm on Deletion of Item (check box)** - If this box is checked, then the user will be prompted to confirm before line item is deleted. If this box is unchecked, then the line item will be deleted without user confirmation.
- **Product Brand** - User can select which product brand (**RTK and CIR3X00**) to typically use. Product and attribute selections throughout the program are relevant to the selected brand.
- **Recently Used Projects** - This is number of recently used projects that are displayed on the opening project screen when the application is started.

● User Information

- **User Name** - Name of the person using the application.
- **Company Name** - Name of the company of the user.
- **User Phone** - Contact number of the user.
- **User Email** - Email ID of the user.
- **User Location** - Select user country, or country and region, from list. If location is not listed, select 'Other' and enter manually.

● Default Service Conditions

- **First Heading** - Name of the first column heading of service conditions. Default is 'Max'.
- **Second Heading** - Name of the second column heading of service conditions. Default is 'Norm'.
- **Third Heading** - Name of the third column heading of service conditions. Default is 'Min'.
- **Fourth Heading** - Name of the fourth column heading of service conditions. Default is 'Cond4'.
- **Fifth Heading** - Name of the fifth column heading of service conditions. Default is 'Cond5'.

● Calculation Variable Defaults

- **Allow. SPL (dBA)** - Allowable Sound Pressure Level in A-weighted decibels. Values between 70 and 120 are allowed; the default value is 85.

● Print Options

- **Actual Velocity No. (check box)** - If this box is checked, then the actual velocity rates will be displayed in the printed reports. If this box is unchecked, the actual velocity rates will not be displayed in the printed reports; 'Normal' or 'High' will be reported instead.
- **Actual Cavitation Index No. (check box)** - If this box is checked, then the actual cavitation index will be displayed in the printed reports. If this box is unchecked, the actual cavitation index will not be displayed in the printed reports; 'Normal' or 'High' will be reported instead.
- **Advisories** - If this box is checked, then the program advisories will be printed in the output reports. If this box is unchecked, the program advisories will not be printed in the output reports.

● Default U/M Selection

- **Unit System** - User can select between the English or Metric unit of measurement (UOM) systems. Individual selection of values for the following

attributes as well as those used within the program will be generated based on the unit system selected.

- **Steam Flow Rate** - UOM for rate of steam flow.
- **Water Flow Rate** - UOM for rate of water flow.
- **Gas Flow Rate** - UOM for rate of gas flow.
- **Liquid Flow Rate** - UOM for rate of liquid flow.
- **2-Phase Flow Rate** - UOM for rate of total two-phase flow.
- **2-Phase Partial Flow Rate** - UOM for rate of partial two-phase flow.
- **Pressure** - UOM for pressure.
- **Temperature** - UOM for temperature.
- **Viscosity** - UOM for viscosity.

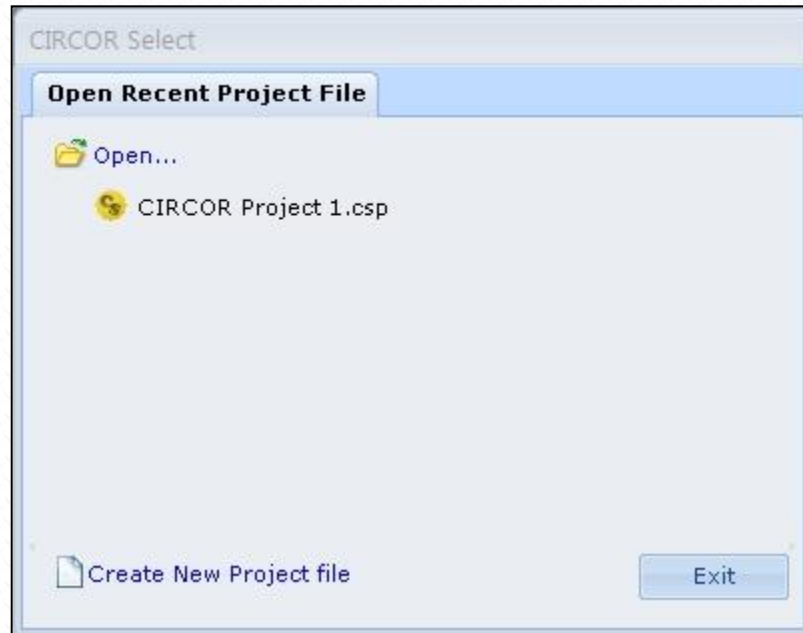
● Preferences

- **Profile** - Name of the profile to save the default preferences selected. Profile name 'Default' cannot be deleted. Multiple profiles can be created; additional profiles can be saved and deleted.
- **Note:** If a **new profile** is linked to an existing project, then the default values specified in the profile would be applicable only to the items added after linking the profile. The existing line items would not be affected.

Once preferences are set, click **Save** (or **Save As**) to proceed. Once the preferences are set after initial startup, subsequent startup of the application will begin with the opening project view screen.

Opening Project View

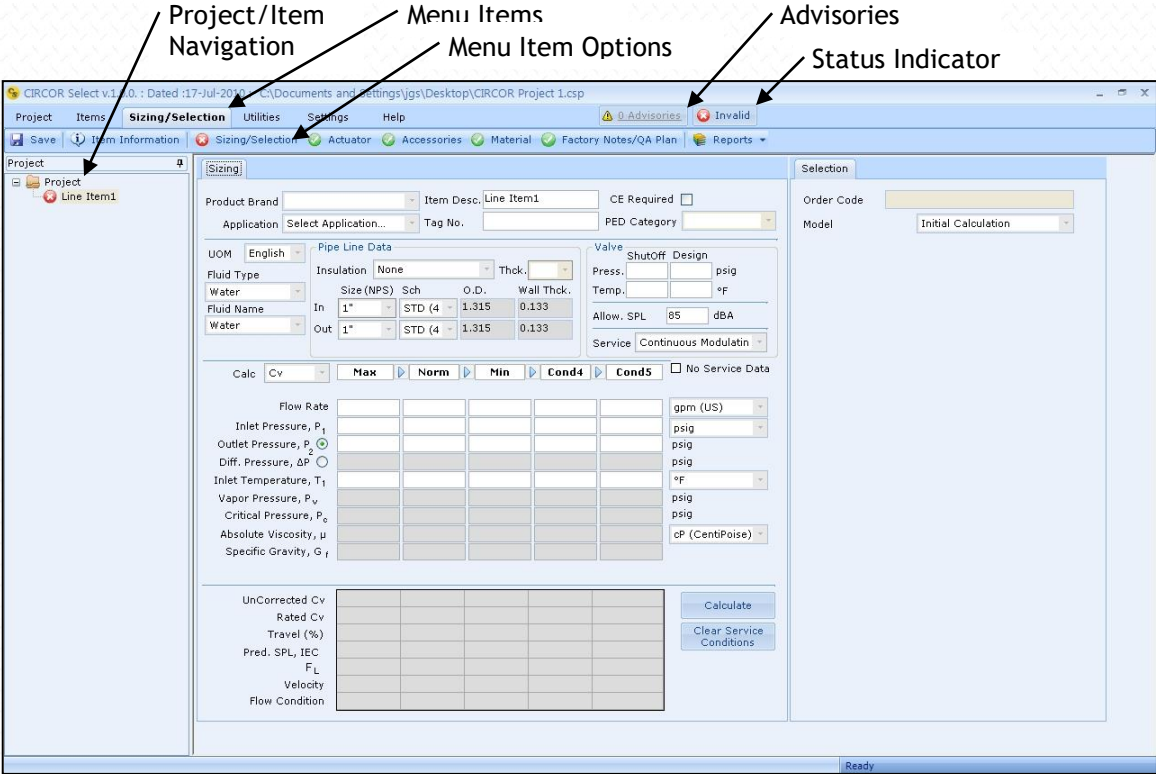
The Opening Project View screen is a dialog box that allows the user to create a new project or open an existing project. Refer to Chapter 6 Project for more information.



- Click **Create New Project file** to start a new project.
- Click **Open** to retrieve a saved project file or simply click on one of the recently used projects displayed. The number of projects displayed depends on the value set in the Preferences.
- Click **Exit** to close the application.
- **Note:** *CIRCOR Select* is designed to be “sizing-centered”, which means the user will always be taken directly to the Sizing/Selection screen regardless of whether a new project is created or an existing project is opened.

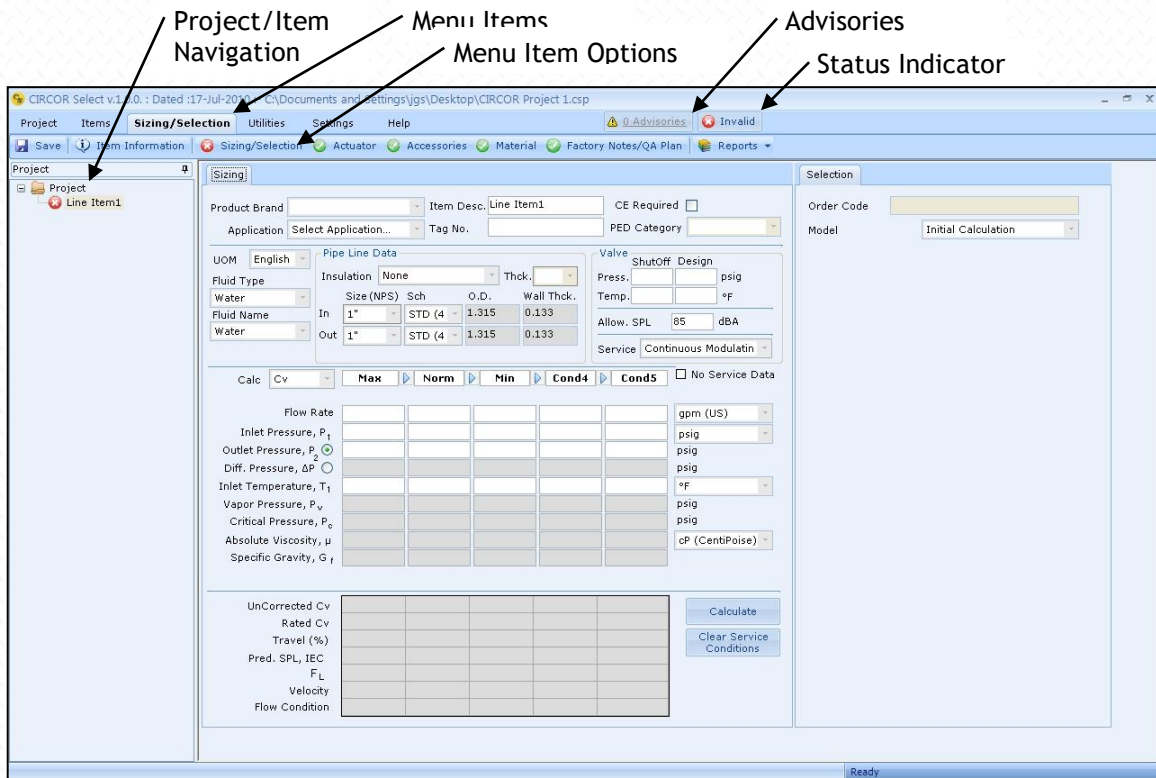
5. Interface & Navigation

CIRCOR Select is designed with a split screen interface for easy and quick navigation. Being “sizing-centered”, the program will always initially display the Sizing/Selection screen (shown below) upon startup. The left side of the screen is the project/line-item navigation section and the right side is the application work area. Navigation from this screen to other areas of the program is detailed below.



- The **Project/Item Navigation** section facilitates switching between the project and the line items. In the navigation section, all the line items that are included in the open project are displayed as individual child nodes under the Project node.
- **Note:** The navigation section can be resized by mousing over the divider (click when mouse changes, hold, move and release), or it can be hidden by clicking on the Project tack. To restore the navigation section, click on the vertical Project button and click on the Project tack to pin it.

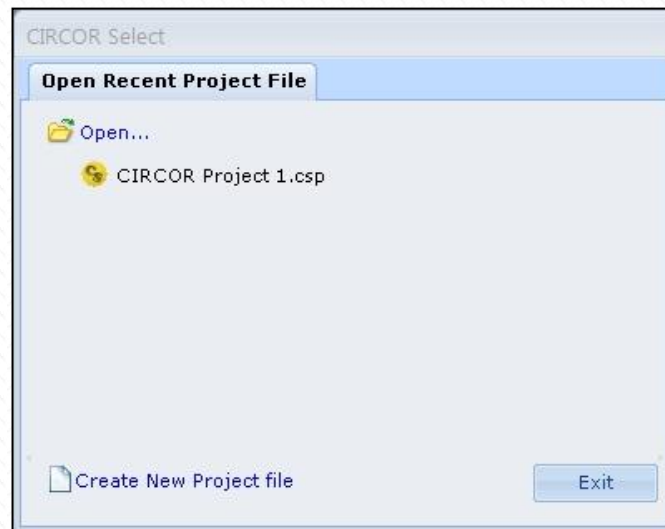
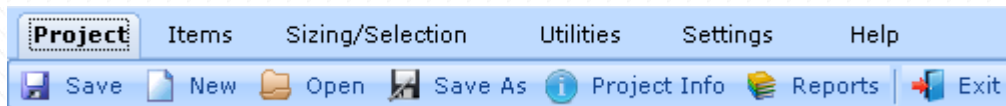




- Clicking **Project** navigates the user to Project Info contained within the Project menu item.
- Clicking on any **Line Item** displays the sizing and selection data for the selected item.
- Clicking on any **Menu Item** navigates the user to that particular menu. Each of the menu items is covered in its own chapter. Each menu items displays its associated **Menu Item Options** horizontally on the bar under menu item bar.
- Click **Advisories**, if present (enabled), to open a dialog box and view the current advisories related to the sizing and selection of the product. The advisories dialog box may also contain recommendations for the advisory.
- The **Status Indicator** displays the state of the current products selection. See the Status Indicator Section in Chapter 8 Sizing/Selection for more information.
- **Tool Tips:** On most drop-down lists and in other areas where indicated, placing the mouse over the selection/result provides a brief explanation or additional information known as tool tip. These can be very helpful, and they are used throughout the program.

6. Project

In **CIRCOR Select**, Projects contain one or more-line items. Only one project can be open at a time. The Opening Project View, which is displayed on program startup, allows the user to create a new project or open an existing project. The Project menu contains the following menu options: Save, New, Open, Save As, Project Info, Reports and Exit, which are explained in detail below.



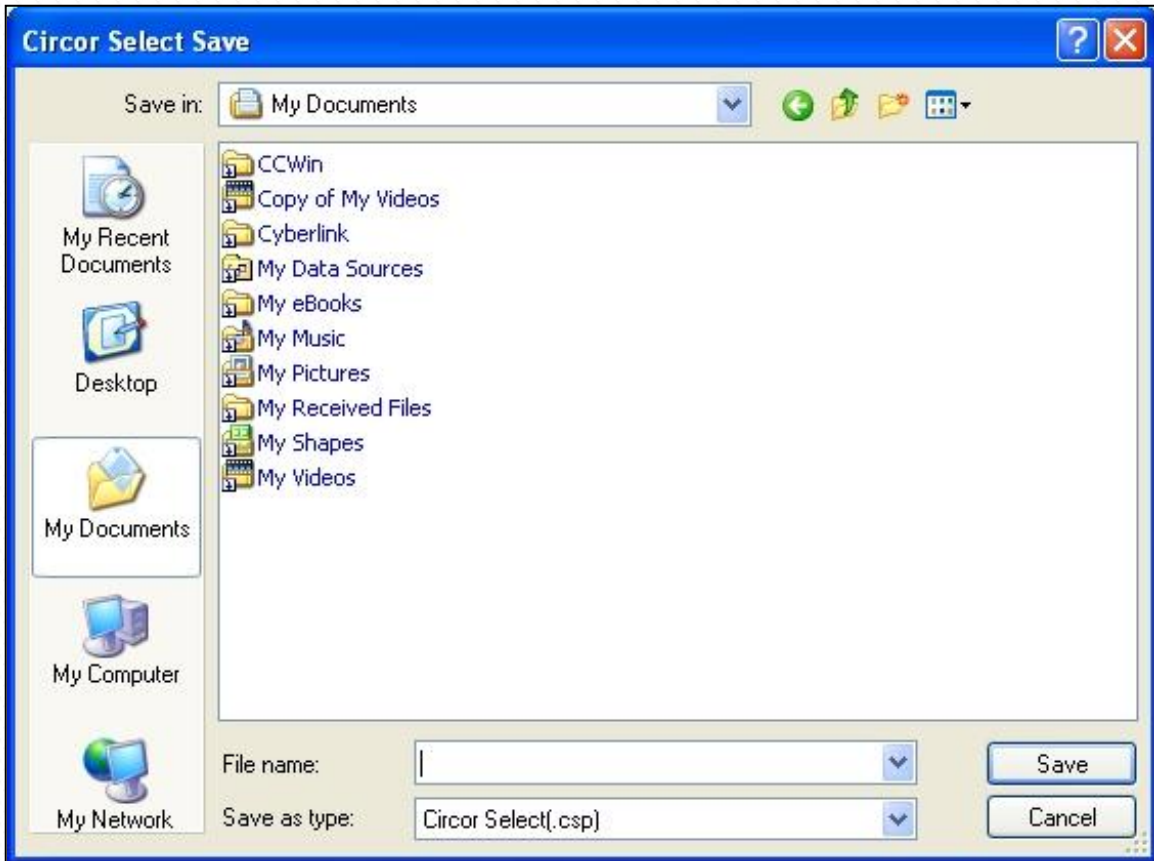
Save Project

To save a project in **CIRCOR Select**:

- Click **Save** from the Project menu options.
- **Note:** Navigating from the Project Info screen automatically prompts the user to save if changes have been made.

New Project

To create a new **CIRCOR Select** project file:



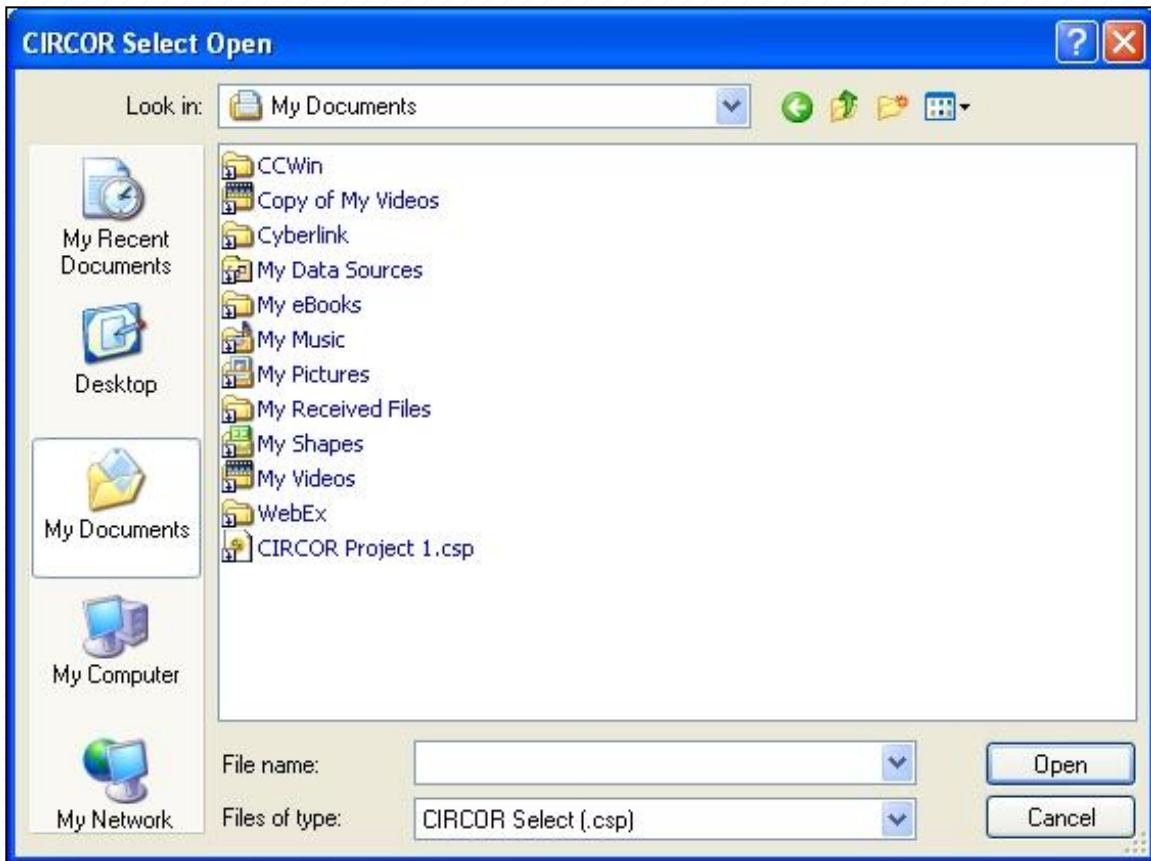
- Click on **Create New Project** file from the Opening Project View or **New** from the Project menu options to access the Save dialog box.
- Enter the project file name. The default location to save the file is the My Document folder. Save to any other folder by clicking the **Save in** drop down box.
- Click **Save** once the file name and folder location is entered.

A new valve line item is automatically created, and the user is taken to the Sizing/Selection screen.

- **Note:** Upon clicking **New** from the Project menu options, if changes have been made to the current project, then the user will be asked to save the changes. On confirmation, the changes will be saved, and the current project file will be closed before displaying the Save dialog box. Otherwise, the current project file will be closed without saving the changes before displaying the Save dialog box.

Open Project

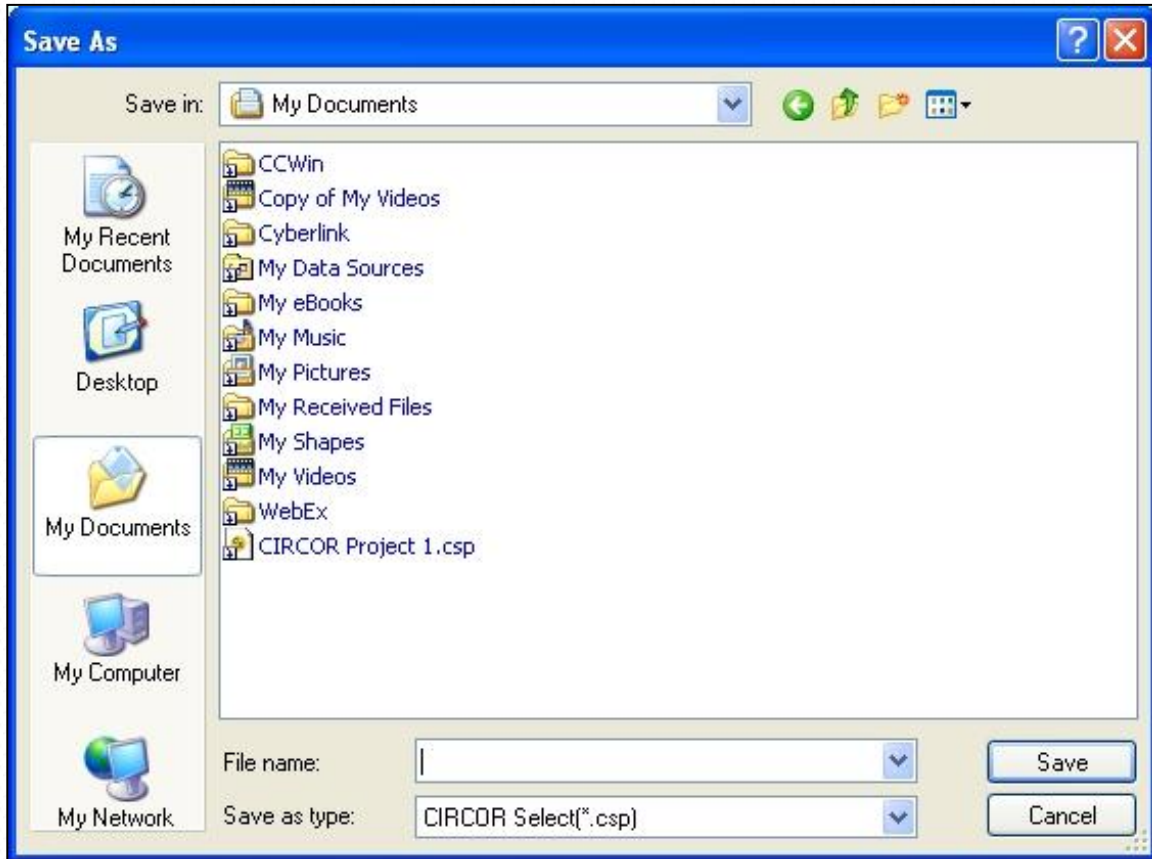
To open an existing **CIRCOR Select** project file:



- Click on the project file from the list of recently used projects displayed on the Opening Project View. The number of projects displayed depends on the value set in the Preferences.
- Click on **Open** from the Opening Project View or from the Project menu options to access the Open dialog box, which displays all the previously created projects in the My Documents folder and then select from the list. If project files are saved in any other folder, then first click **Look in** to select the folder and then select the project file from that folder. Once selected, the user is taken to the Sizing/Selection screen.
- **Note:** Upon clicking **Open** from the Project menu, if changes have been made to the current project, then the user will be asked to save the changes. On confirmation, the changes will be saved, and the current project file will be closed before displaying the Open dialog box. Otherwise, the current project file will be closed without saving the changes before displaying the Open dialog box.

Save As

To copy an existing **CIRCOR Select** project file including all line items into another project file:



- Open an existing project file.
- Click **Save As** from the Project menu options to access the Save As dialog box.
- Enter the project file name. The default location to save the file is the My Document folder. Save to any other folder by clicking the **Save in** drop down box.
- Click **Save** once the file name and folder location is entered.
- **Note:** Upon clicking **Save As**, if changes have been made to the current project, then the user will be asked to save the changes. On confirmation, the changes will be saved, and the current project file will be closed before displaying the Save As dialog box. Otherwise, the current project file will be closed without saving the changes before displaying the Save As dialog box.

Project Info

The **CIRCOR Select** Project Info screen allows the user to enter or edit general information about the project.

CIRCOR Select v15.3.0 : Dated :29-Jul-2022 :- C:\Users\midhun.ramankutty\Desktop\Test.csp

Project Item Sizing/Selection Utilities Settings Help

Save New Open Save As Project Info Reports Exit

Project

- Project
- CV-Line Item1

Project Information **Project Line Item**

Project

Project Name: Test

Plant Name:

Plant Site: Select Location...

Market Segment *: --Select--

Company SIC *: Power Generation

Plant Capacity(MW):

Total Items: 1

Total Project Cost: 0.00 (USD)

Notes:

Customer **End User** **Rep.** **Eng. Company**

Customer *:

Contact Name:

Email:

Phone Number:

Fax Number:

Address:

Country: Select Country...

Cust RFQ No. - Rev. : -

Estimated Award Date: 21-Nov-2021

Bid Closing Date: 21-Nov-2021

Req. Delivery: 0 weeks ARO

User Information

User Name: Midhun

Company Name: Circor

Location: India

User Phone: -

User Email: midhun.ramankutty@circor.com

Fields marked with * are required for Final Proposal.

Item

Sr No.	Config Status	Pricing Status	Description	Product Brand	Valve Model	Conversion Factor	Qu
1			CV-Line Item1	CIRCOR		0.00	

- Click **Project Info** from the Project menu options to access the project information screen or click on **Project** in the project/line-item navigation pane.
- Entering information in this screen is non-mandatory to save the file, however it is highly recommended that all fields are completed as much of this information is used on the output reports.
- The bottom of the screen displays all the items that are added to the project along with its Configuration and Pricing Status. Details of the individual item can be viewed / edited by selecting the item in the project navigation section.

- **Note:** Line items with invalid Configuration Status are not included in the Project Cost. Similarly, line items with valid Configuration Status but invalid Pricing Status are not included in Project Cost.
- **Note:** Pricing Status for valid line item is set to invalid and price for the line item is set to zero, if changes are made to the line-item configuration.

● Project Information - Project

- **Project Name** - Any name can be assigned to a project. This should help in identifying the project when the project is opened. Ideally, but not necessarily, the name entered should be the same or have some similarity as the name given to the project file.
- **Plant Name** - Name of the plant where the items will be installed.
- **Plant Site** - Select location of the plant where the items will be installed from list. If location is not listed, select 'Other' and enter manually.
- **Industry** - Select industry associated with the plant operation from list. If industry is not listed, select 'Other' and enter manually.
- **Plant Capacity** - Capacity of the plant, if applicable. '(MW)' is displayed if Industry is Power Generation.
- **End User** - Name of the owner of the plant.
- **Engr. Contractor** - Name of the Engineering Contractor of the plant installing the items.
- **Total Items** - Displays the number of items in the project. This field is automatically filled and cannot be changed by the user.
- **Req. Delivery** - Enter the requested lead time in number of weeks after receipt of order (ARO).
- **Notes** - Comments or special instructions associated with the overall project.

● Project Information - Quotation

- **Quote No.** - Quote number associated with the project.
- **Quote Rev.** - Revision number of the quote.
- **Quote Date** - Date of the quote; default is the current date.
- **Customer** - Name of the customer procuring items.
- **Contact Name** - Customer contact name.
- **Contact Phone** - Customer contact phone.
- **Contact Email** - Customer contact email.
- **Customer RFQ No.** - Customer request for quote (RFQ) number.
- **Customer RFQ Rev.** - Customer RFQ revision number.
- **Project Cost** - Total for all primary valid line items.

- **Note:** Price for alternate solutions is excluded.

● Project Information - User Information

- **Username** - Name of the person using the application.
 - **Company Name** - Name of the company of the user.
 - **User Phone** - Contact number of the user.
 - **User Email** - Email ID of the user.
 - **User Location** - Select user country, or country and region, from list. If location is not listed, select 'Other' and enter manually.
- **Note:** User information is automatically entered from the User Defaults, which can be edited from the settings -> Preferences menu.

Project Commercial Details

The **CIRCOR Select** Project Commercial Details displays all line items within a project with its Configuration and Pricing Status. In addition, it also displays alternate solutions, if any, for any primary line item selected.

Project Information		Project Line Item						Total Project Cost(USD)	0.00
Items									
Sr No.	Config Status	Pricing Status	Description	Product Brand	Valve Model	Conversion Factor	Qu		
1			CV-Line Item3	CIRCOR	3100	0.00			
2			CV-Line Item6	CIRCOR	3100	0.00			
3			CV-Line Item9	CIRCOR	3100	0.00			

***Project commercial details changed to Project line item.**

Reports

CIRCOR *Select* provides the following professional output reports:

- Specification Sheet
- Analysis Sheet
- Orifice Sheet
- Flow Curve
- Outline Drawing
- Factory Notes/QA Plan

Exit

To exit and close the **CIRCOR *Select*** project and application, click on **Exit** under the Project menu.

- **Note:** This will close the open project and the application without saving.

7. Items

In **CIRCOR Select**, Items are products that can be added to projects. Currently, control valves are available to be added as line items. The Items menu contains the following menu options: Add, Save, Copy, Delete, Lock/Un-Lock Item and Alternate Solution, which are explained in detail below.



Add Item

To add a line item to a project in **CIRCOR Select**:

- Click on the down arrow “▼” next to Add from the Item menu options, and then click on **Control Valve**,

or

- Press **CTRL + N** on the keyboard,

or

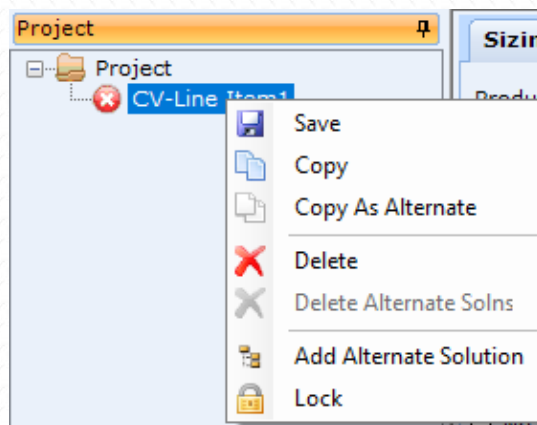
- Right click on **Project** in the project/line item navigation pane, and then click **Add New Control Valve**.



Save Item

To save a line item to a project in **CIRCOR Select**:

- Click **Save** under the Items menu options or Sizing/Selection menu options,
or
- Press **CTRL + S** on the keyboard,
or
- Right click on the line item in the project/line-item navigation pane, and then click **Save**.



***New features are added to the drop-down menu.**

Copy Item

To copy a line item within a project in **CIRCOR Select**, highlight the line item to be copied, then:

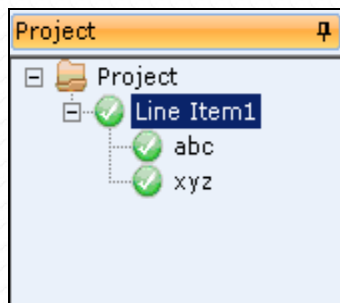
- Click **Copy** under the Items menu options, and then enter the new line-item description,
or
- Press **CTRL + C** on the keyboard, and then enter the new line-item description,
or
- Right click on the line item in the project/line-item navigation pane, click **Copy**, and then enter the new line-item description.

Alternate Solutions Functionality

The Alternate solution functionality in **CIRCOR Select**, helps users to compare different valve solutions for given service conditions.

Users can compare the solutions based on various important parameters like Valve Model, Size, Body Material, Flow Characteristics, Rated Cv, Travel, Sound, Velocity, Actuator and Price.

Alternate solutions are listed under the primary item as child line items.



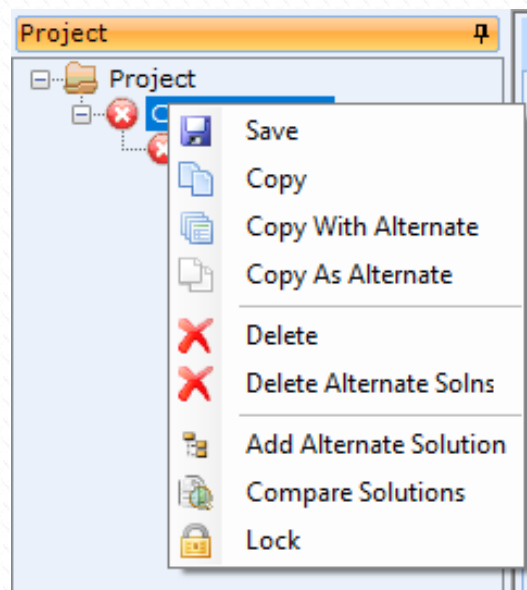
- Users can create alternative configuration solutions that could meet his service requirements.
- The comparative analysis helps users to choose the most appropriate product in terms of performance and price.
- **Note:** The Primary line item is the active solution. In Project cost only the pricing of Primary Line Item is included, the pricing of Alternate solutions is not included. The pricing of Alternate solution is included in project cost only if it is set as Primary. The option to set an Alternate solution as Primary Item is explained further ahead.

Copy As Alternate

The **Copy As Alternate** option creates a copy of the selected Primary/Alternate line item as Alternate Solution. You can create multiple Alternate solutions using this option. All the alternate solutions will be listed as child items under the Primary Line Item.

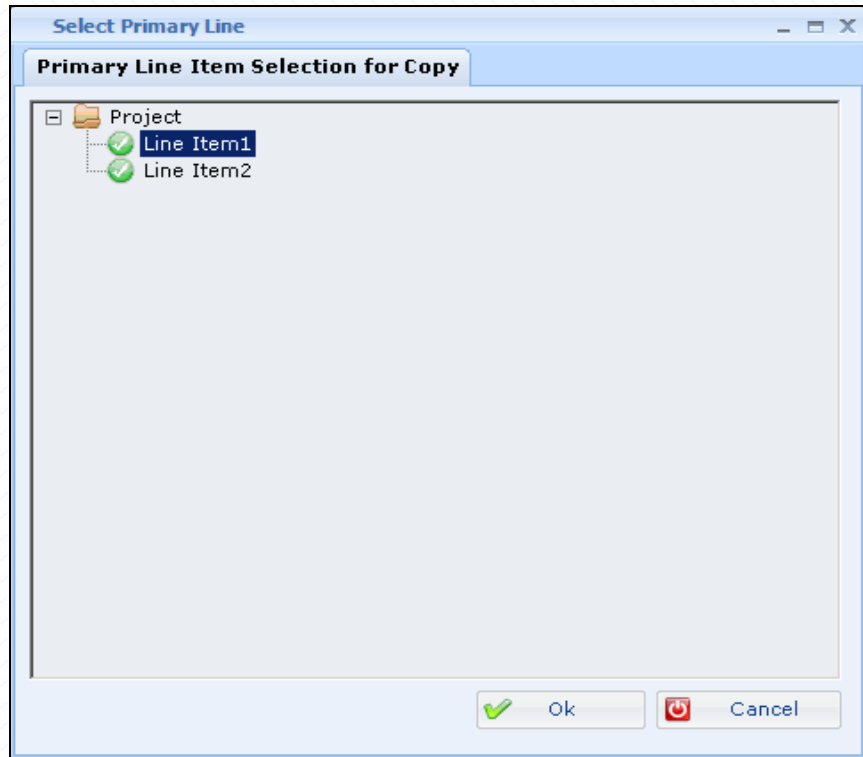
To use the **Copy As Alternate** option in Items Menu of a project in **CIRCOR Select**, highlight the line item to be copied, then:

- Click on the down arrow “▼” next to **Copy** from the Item menu options, and then click on **Copy As Alternate**,

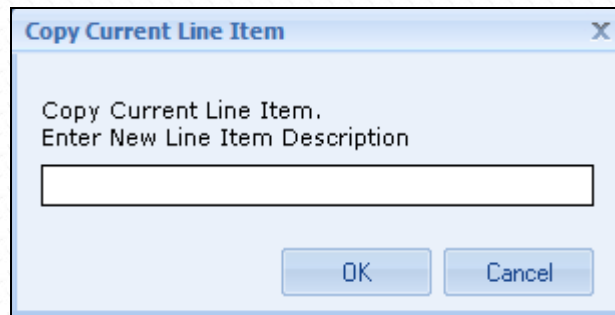


***New features are added to the drop-down menu.**

- The Select Line-Item screen will be displayed. If the selected Line Item is a Primary line item, the same will be highlighted by default. If the selected Line Item is an Alternate solution i.e., child item, then the Parent line will be highlighted by default. Select the Primary line item under which the selected line item on the navigation pane is to be copied under as Alternate line item.



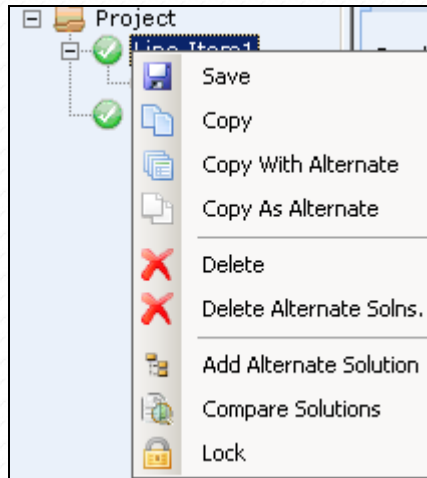
- Click **Ok**.
- Enter the name of the new line item. A Copy of the selected Primary/Alternate Line Item will be copied as a child Item under the highlighted Primary Line Item selected in **Select Primary Line** screen.



- Click **OK**.
- **Note:** If a selected line item is copied under a different Primary line item, the status indicator changes to **Calculation and Saving Required**.
 - ▲ **Line Item8-3** - as displayed in Project/Line Navigation Pane
 - ▲ **Calculation and Saving Required** - as displayed on Line Item Status indicator on the top

Or

- Right click on the line item in the project/line-item navigation pane, click Copy As Alternate, Click **OK**, Enter the name of new Line Item and then click **Ok**.



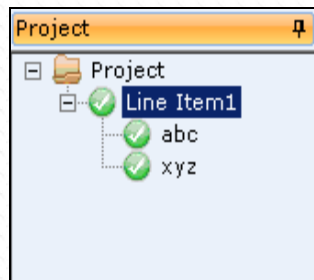
- **Note:** Service data of the primary line item will be applied automatically to all the child items. User will not be allowed to change the service conditions on the child items. Changing service conditions on primary line items would result in invalidating all the alternate solutions of child items requiring the user to revalidate the same.

Copy With Alternate

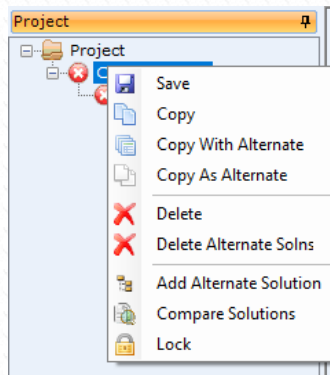
The **Copy with Alternate** option copies the entire set consisting of Primary Line and Alternate solutions.

- **Note:** The **Copy with Alternate** is enabled only when you select a primary line item. The new line item is an exact copy of the selected primary line item and includes the primary item and child items.

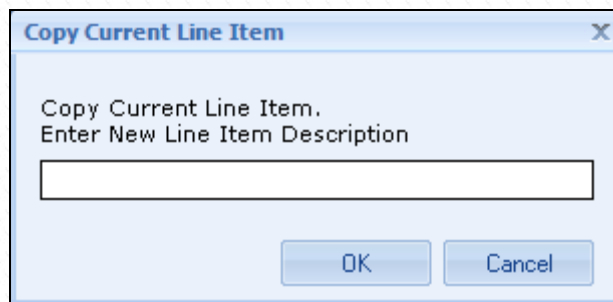
To use the **Copy with Alternate** option in Items Menu of a project in **CIRCOR Select**, highlight the Primary Line Item to be copied, then:



- Click on the down arrow “▼” next to **Copy** from the Item menu options, and then click on **Copy With Alternate**,



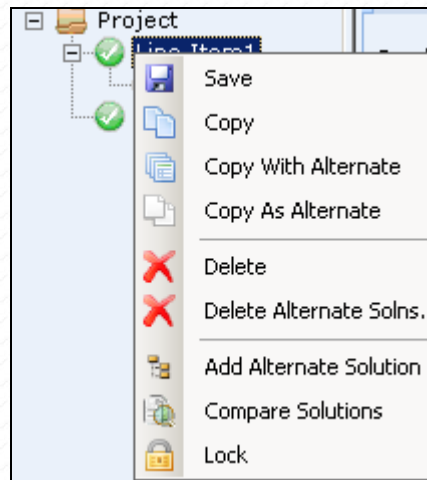
- Enter the name of the new Line Item.



- Click **OK**. A new Line item is created containing the selected primary line item along with all its child items. The line item description for child items is automatically created using the line item description entered for the Primary line item followed by a hyphen and a sequential number starting from 1.

Or

- Right click on the line item in the project/line item navigation pane, click **Copy with Alternate**, Enter the name of new Line Item and then click **Ok**.

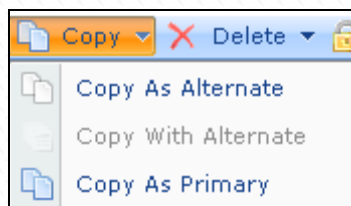


Copy As Primary

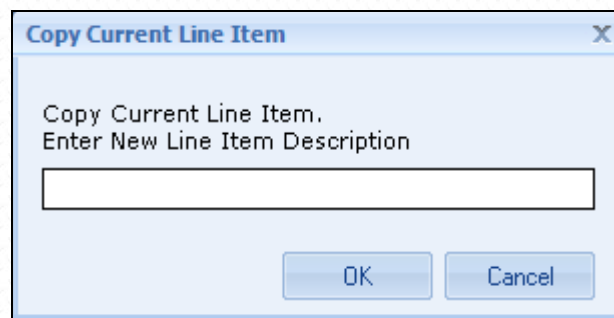
The **Copy As Primary** option is used to create a Primary line item from an existing Alternate solution i.e. child Item.

To use the **Copy As Primary** option in Items Menu of a project in **CIRCOR Select**, highlight the child item to be copied, then:

- Click on the down arrow “▼” next to **Copy** from the Item menu options, and then click on **Copy As Primary**,



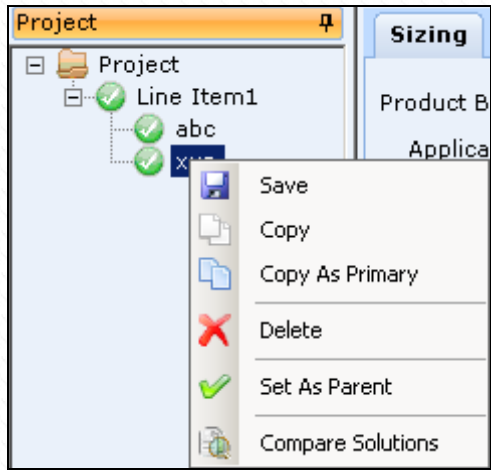
- Enter the name of the new Line Item.



- Click **Ok**. A new Primary Line item is created from the selected child item.

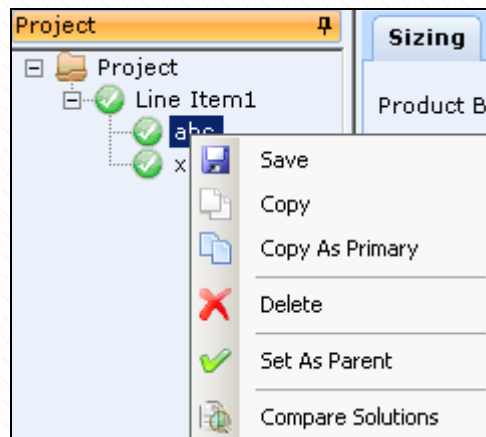
Or

- Right click on the child item in the project/line-item navigation pane, click **Copy As Primary**, Enter the name of new Line Item and then click **Ok**.



Set as Primary

The set as Primary option is used to set an Alternate solution as the Primary Line item. The selected Alternate item will be switched with Primary Line item and the earlier Primary Line item becomes a child item.



To set an Alternate item as Primary item within a project in **CIRCOR Select**,

- Click the Alternate item to set as Primary item
- Right click on the Alternate item in the project/line-item navigation pane, click **Set As Primary**.
 - **Note:** The selected Alternate item will be listed as a Primary item and the previous Primary item will now be Alternate solution or child item.

Delete Item

To delete a line item within a project in **CIRCOR Select**, highlight the line item to be deleted, then:

- Click **Delete** under the Items menu options, and then confirm deletion (if enabled - see User Defaults in Chapter 4 Application Startup),

or

- Press **CTRL + D** on the keyboard, and then confirm deletion (if enabled - see User Defaults in Chapter 4 Application Startup),

or

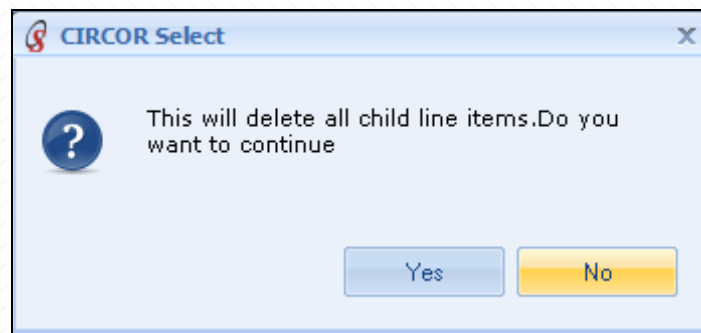
- Right click on the line item in the project/line-item navigation pane, click **Delete**, and then confirm deletion (if enabled - see User Defaults in Chapter 4 Application Startup).

Delete Alternate Solutions

To delete all Alternate Solution of a Primary item within a project in **CIRCOR Select**, highlight the Primary item



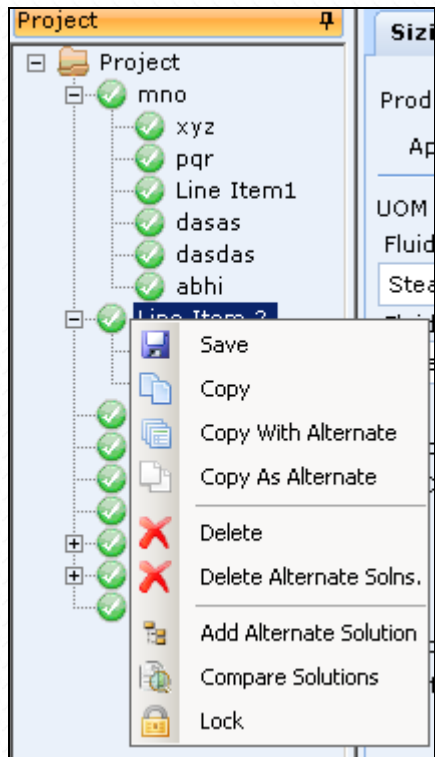
- Click on the down arrow “▼” next to Delete from the Item menu options, and then click on Delete Alternate Solutions,



- Click **Yes** to delete all the child line items.

or

- Right click on selected Line item in the project/line-item navigation pane, and then click Delete Alternate Solutions



Lock Item

Item can be locked to prevent unintentional modification of the same. On locking a Primary line item, all Alternate solutions are also locked.

A locked item is exported as locked item, similarly its status remains locked when imported into different project.

Locked items are not modified or updated when the project file is opened in a higher application version.

Line items submitted to customer should ideally be locked to prevent them from being changed during the project file update process to make it compatible with new application version or to avoid accidental changes to the configuration

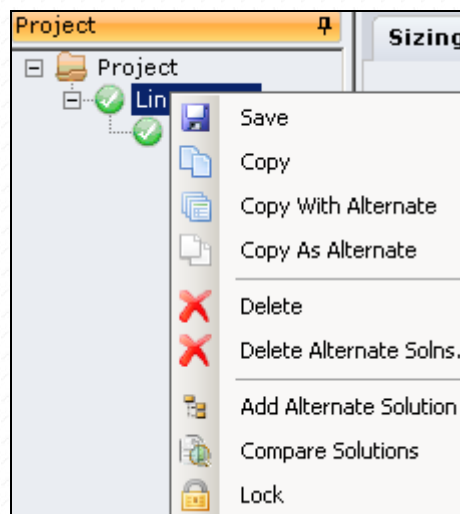
To lock a primary line item within a project in **CIRCOR Select**, highlight the primary line item to be locked, then:

- Click on the **Primary Line Item**, and then click on **Lock Item** under the Items Menu,



or

- Right click on **Primary Line Item** in the project/line item navigation pane, and then click **Lock**.



Un-Lock Item

A locked Primary item can be unlocked using this option. The lock option above works as toggle. When a locked item is selected the 'Lock' option changes to 'Un-Lock' and clicking on it unlocks the item.

On unlocking, the application will apply any updates if the project file is being opened in a new application version than the one used for configuring the line item at the time when it was locked. On unlocking, all the alternate solutions will also be unlocked.

Item can be modified once unlocked.

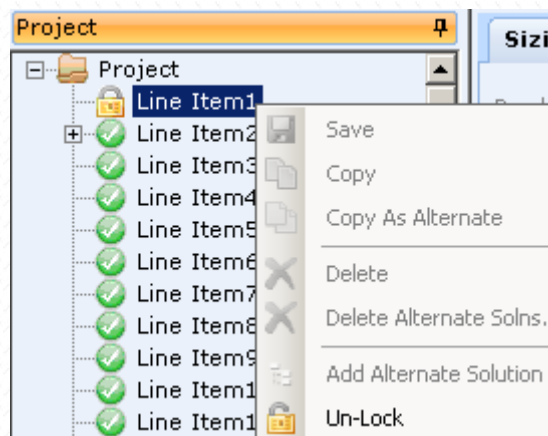
To Un-lock a primary line item within a project in **CIRCOR Select**, highlight the primary line item to be unlocked, then:

- Click on the **Primary Line Item**, and then click on **Un-Lock Item** under the Items Menu,



or

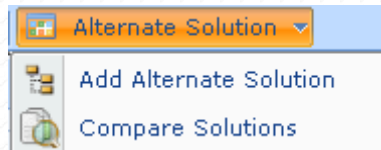
- Right click on **Primary Line Item** in the project/line item navigation pane, and then click **Un-Lock**.



Alternate Solution

The Alternate Solution under items menu within a project in **CIRCOR Select** has two options

- Add Alternate Solution
- Compare Solution

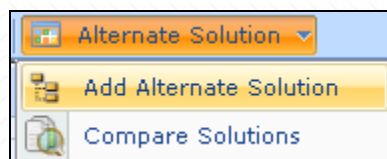


Add Alternate Solution

The Add Alternate Solution creates a copy of service conditions of the Primary Line Item as an Alternate Item. User is required to make a new selection and validate the same.

To add an Alternate Solution to a line item of a project in CIRCOR Select:

- Select the Primary Line Item
- Click on the down arrow “▼” next to Alternate Solution from the Item menu options, and then click on **Add Alternate Solution**,

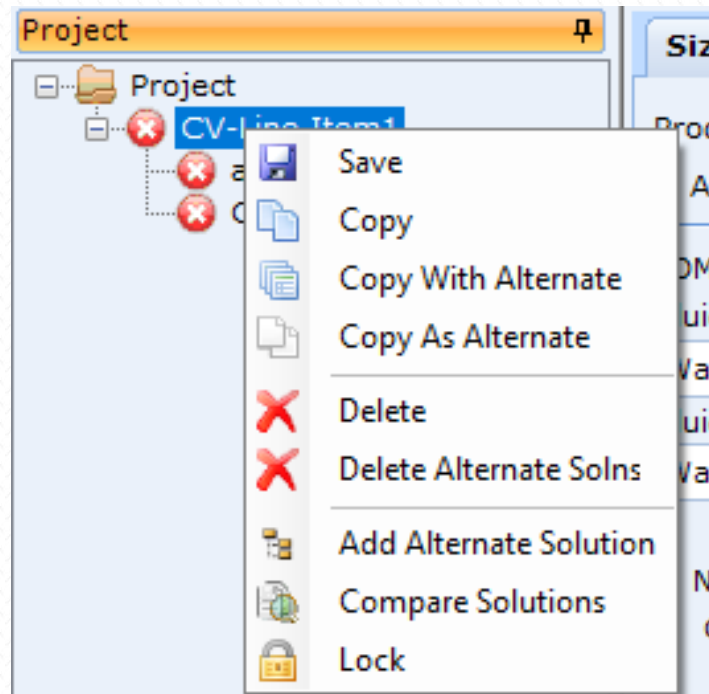


or

- Press **CTRL + N** on the keyboard,

or

- Right click on **Primary Line Item** in the project/line item navigation pane, and then click Add Alternate Solution.

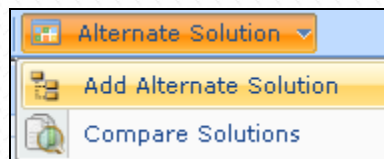


Compare Solutions

Compare Solutions allows to compare the Primary solution with Alternate solution/s on various parameters like Valve Model, Size, Body Material, Trim Type, Flow Characteristics, Required Cv, Rated Cv, Travel %, Noise, FL, Velocity, Flow Condition, Actuator Type and Price. In addition, it allows to compare the Inherent Flow Curves for Primary and Alternate Solutions.

Solutions can be compared only if Primary and one Alternate solution are not invalid.

To compare solutions, highlight the Primary line item or Alternate solution to be compared, then:



- Click on the down arrow “▼” next to Alternate Solution from the Item menu options, and then click on **Compare Solutions**,

The following compare solutions screen is displayed

Compare Alternate Solutions View Graph Comparison

Select View Type: Single Service Condition

UOM: English

Fluid Type: Water

Fluid Name: Water

Tag No.:

Pipe Line Data

Insulation: None Thck.:

In: 2" STD (40) 2.375 0.154

Out: 2" STD (40) 2.375 0.154

Valve Conditions

ShutOff Design

Press. 90 90 psig

Temp. 65 65 °F

Allow. SPL 85 dBA

Service: Continuous Modulating

	Max	Norm	Min	Cond4	Cond5	
Flow Rate	100					gpm (US)
Inlet pressure, P ₁	90					psig
Outlet Pressure, P ₂	80					psig
Diff. Pressure, ΔP	10					psig
Inlet Temperature, T ₁	65					°F
Vapor Pressure, P _v	-14.39					psig
Critical Pressure, P _c	3193.39					psig
Absolute Viscosity	1.044					
Specific Gravity, G _f	0.999					

Hide Attributes to Compare

Select All

- Body Material
- Trim Type
- Flow Characteristics
- Required Cv
- Rated Cv
- Travel (%)
- Pred. SPL, IEC (dBA)
- FL
- Velocity
- Flow Condition
- Actuator Type
- Total Net Price

	Line Item2 : DBO(Y)(S)-3 2"	Line Item2-1 : DLO(S)-2 2"
Body Material	Cast Iron, ASTM A126 Class B	Cast Iron, ASTM A126 Class B
Trim Type		Standard Stainless Steel
Flow Characteristics	Modified Linear	Equal Percent
Required Cv	31.6	31.6
Rated Cv	65	57
Travel (%)	58.7	84.3
Pred. SPL, IEC (dBA)	< 70	< 70
FL	0.8	0.92
Velocity	Normal	Normal
Flow Condition	Normal	Normal
Actuator Type	Leslie Spring Diaphragm	Leslie Spring Diaphragm
Total Net Price	3458.00	2888.00

Compare Alternate Solutions

- **Select View Type** - There are 2 different views for comparing Primary solution with Alternate solutions.
 - **Single Service Condition** - ‘Single Service Condition’ view is the default selected view and compares results for 1 service condition at a time. Select the condition title to select the service condition to compare.
 - **All Service Conditions** - Select ‘All Service Conditions’ view to compare results for all service Conditions.

Compare Alternate Solutions View Graph Comparison

Select View Type: All Service Conditions

UOM: English

Fluid Type: Water

Fluid Name: Water

Tag No.:

Pipe Line Data

Insulation: None Thck.:

In: Size (NPS) 2" Sch STD (40) O.D. 2.375 Wall Thck. 0.154

Out: Size (NPS) 2" Sch STD (40) O.D. 2.375 Wall Thck. 0.154

Valve Conditions

ShutOff: 90 Design: 90 psig

Temp: 65 65 °F

Allow. SPL: 85 dBA

Service: Continuous Modulating

	Max	Norm	Min	Cond4	Cond5	
Flow Rate	100					gpm (US)
Inlet pressure, P ₁	90					psig
Outlet Pressure, P ₂	80					psig
Diff. Pressure, ΔP	10					psig
Inlet Temperature, T ₁	65					°F
Vapor Pressure, P _v	-14.39					psig
Critical Pressure, P _c	3193.39					psig
Absolute Viscosity	1.044					
Specific Gravity, G _f	0.999					

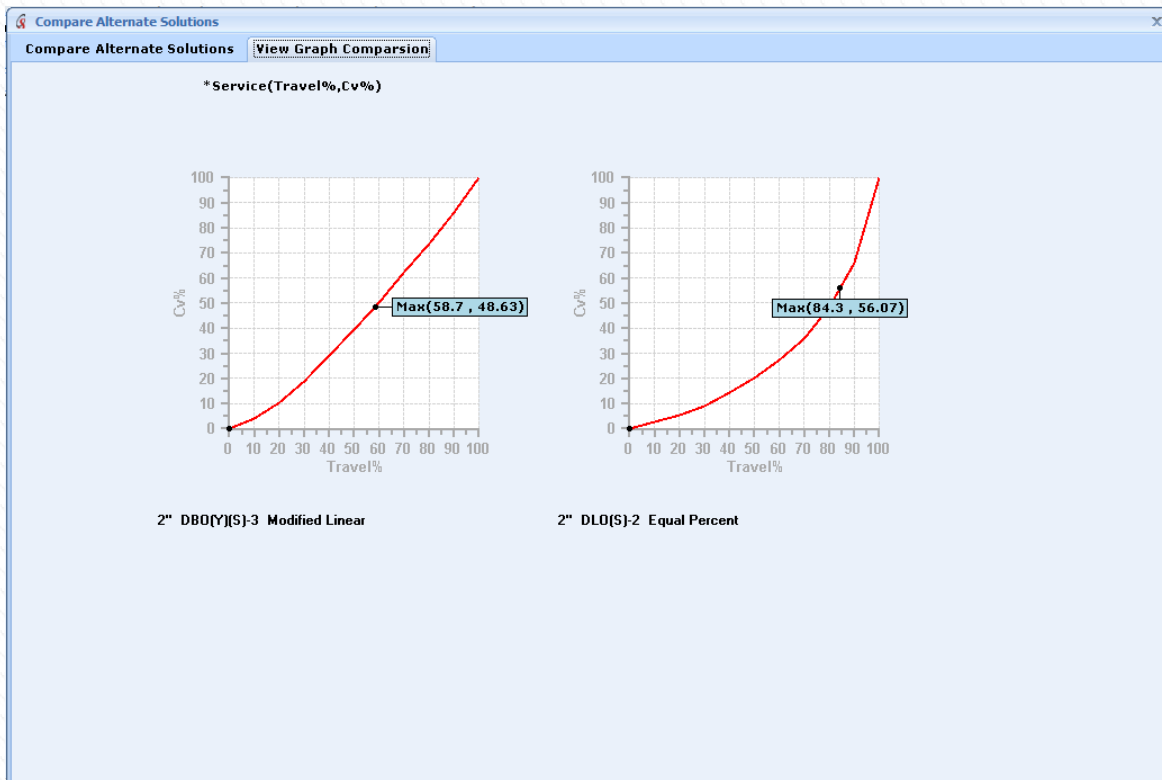
Hide Attributes to Compare

- Select All
- Body Material
- Trim Type
- Flow Characteristics
- Required Cv
- Rated Cv
- Travel (%)
- Pred. SPL, IEC (dBA)
- FL
- Velocity
- Flow Condition
- Actuator Type
- Total Net Price

Attributes	Max	Norm	Min	Cond4	Cond5
Body Material					
DBO(Y)(S)-3 2"					Cast Iron, ASTM A126 Class B
DLO(S)-2 2"					Cast Iron, ASTM A126 Class B
Trim Type					
DBO(Y)(S)-3 2"					
DLO(S)-2 2"					Standard Stainless Steel
Flow Characteristics					
DBO(Y)(S)-3 2"					Modified Linear
DLO(S)-2 2"					Equal Percent

View Graph Comparison

View Graph comparison allows users to quickly compare the flow curve depicting the Cv% v/s Travel% for Primary and Alternate Solutions.



8. Sizing/Selection

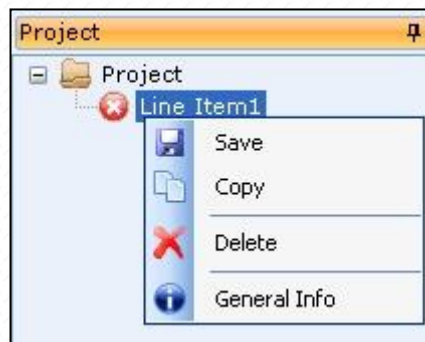
In **CIRCOR Select**, Sizing/Selection is the core of the program, enabling the user to calculate sizing parameters in order to fully configure and specify products. The Sizing/Selection menu contains the following menu options: Save, Item Information, Sizing/Selection, Actuator, Accessories, Materials, Factory Notes/QA Plan, and Reports, which are explained in detail below. The function of the Status Indicator is also addressed in this chapter.



Save Item

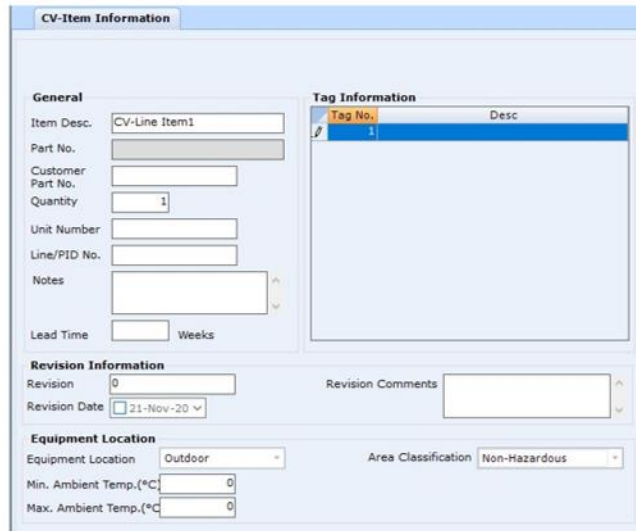
To save the current line item in **CIRCOR Select**:

- Click **Save** under the Items menu options or Sizing/Selection menu options,
or
- Press **CTRL + S** on the keyboard,
or
- Right click on the line item in the project/line item navigation pane, and then click **Save**.



Item Information

The **CIRCOR Select** Item Information screen allows the user to enter or change general information about the selected line item.



Tag No.	Desc
1	

- Click **Item Information** from the Sizing/Selection menu options to access the item information screen.
- Entering information in this screen is non-mandatory to save the file, however it is highly recommended that all fields are completed as much of this information is used on the output reports.
- **Item Information - General**
 - **Item Desc.** - Brief description of the line item; the default is Line Item#, where # is the next line item number. When changed by the user, the line item description in the Project Navigation pane is updated once the line item is saved. (Corresponding field on Sizing/Selection screen.)
 - **Quantity** - Required quantity of the line item.
 - **Unit Number** - Plant unit number where the product will be installed.
 - **Line/PID No.** - Plant line or PID number where the product will be installed.
 - **Notes** - Comments or special instructions associated with the line item product specification.

● Item Information - Tag Information

- Click in the **Desc.** field to enter the first tag number. The number of tag descriptions that can be entered is limited to the quantity entered in the general section of the item information. The first tag number is always given and cannot be deleted.
- To add more tag numbers, right click in the box to bring up the **Add / Delete** menu. Click **Add**, and then enter the next tag number. Repeat for each tag number required.



- To edit a tag number description, click (or double-click) on the description to make edits.
- To delete a tag number, first click on the tag number to be deleted, then right click in the box to bring up the **Add / Delete** menu. Click **Delete**, and then confirm deletion (if enabled - see User Defaults in Chapter 4 Application Startup). The first tag number cannot be deleted.

● Item Information - Revision Information

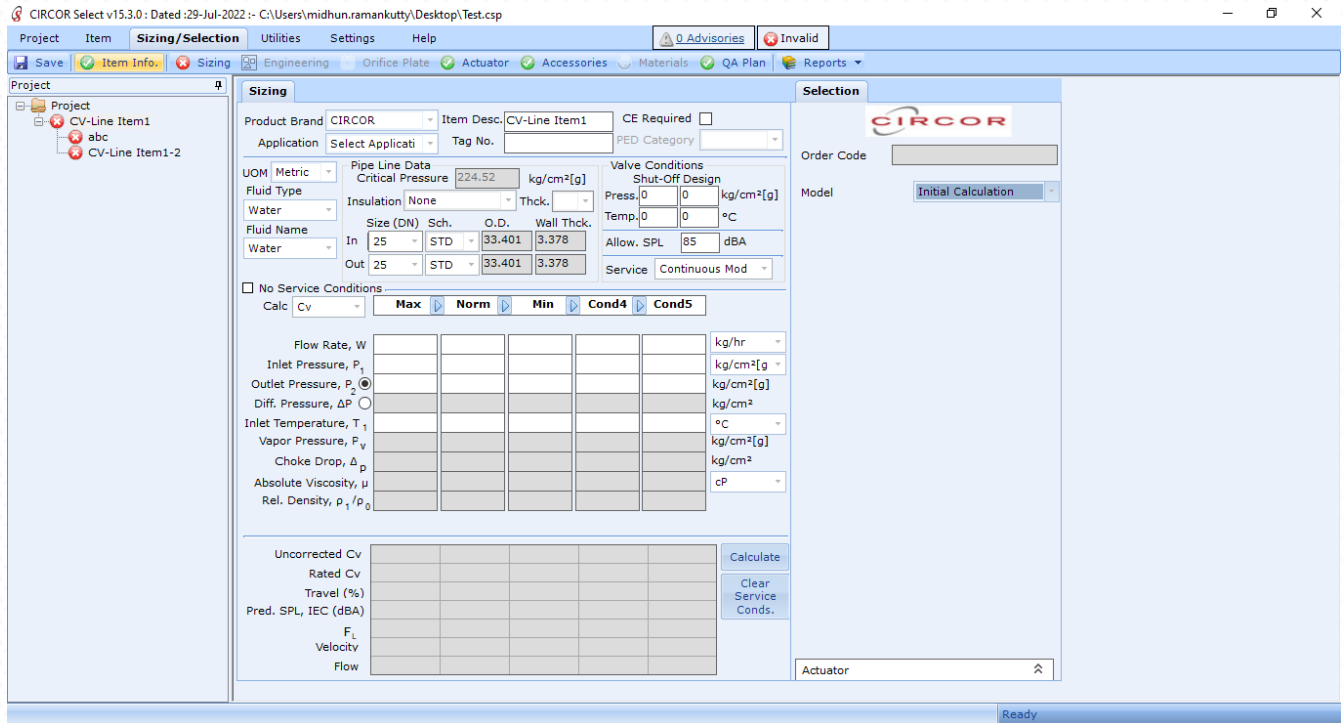
- **Revision** - Item revision number; defaults to zero first time line item is saved.
- **Revision Date** - Click check box to enable. Click down arrow to bring up calendar and select revision date. Defaults to current date.
- **Revision Comments** - Details of revision changes.

● Item Information - Equipment Location

- **Equipment Location** - Select indoor or outdoor; default is outdoor.
- **Min. Ambient Temp.** - Minimum ambient temperature exposure of the equipment.
- **Max. Ambient Temp.** - Maximum ambient temperature exposure of the equipment.
- **Area Classification** - Default is 'Non-Hazardous'. If the equipment is being installed in a hazardous location, select 'Enter Haz Loc Classification' and input the hazardous location area classification.

Sizing/Selection

CIRCOR Select is designed to be “sizing-centered” by displaying the Sizing/Selection screen whenever a project is started or opened or when adding a new line item. This is the initial screen to begin the product configuration process.



Product sizing and selection is basically a three-step process:

- Enter application requirements and service conditions for sizing then click **Calculate** to obtain uncorrected, or estimated, Cv.
- Select a model and appropriate product attribute.
- Click **Re-Calc** to obtain actual required Cv and confirm compatibility of product selection with application requirements and service conditions.

Details of this process and all screen parameters follow.

The Sizing/Selection screen contains the two tabs, **Sizing** and **Selection**. There are four distinct sections under the sizing tab as indicated in the screen shot above.

The screen is designed to flow from top to bottom, left to right within each section. Beginning at the top left:

● Sizing Section 1 - General Item Information

- **Product Brand** - Defines which product models will be available within the Selection tab. Defaults to the selected user preference (see Chapter 10 Settings), but it can be changed for the line item being sized. Changing the product brand here does not affect the user preferences. Mousing over the product brands displays a tool tip containing more information on the brands listed.
 - **Application** - List of common product applications. For an application not listed, select 'Other' at bottom of list and manually enter application. Mousing over the applications listed displays a tool tip containing more information and suggestions for product selection.
 - **Item Desc.** - Brief description of the line item; the default is Line Item#, where # is the next line item number. When changed by the user, the line item description in the Project Navigation pane is updated once the line item is saved. (Corresponding field on Item Information screen.)
 - **Tag No.** - Tag number of the line item. Only the first tag number can be entered (or displayed) in this field. For multiple tag numbers associated with the line item, all other tag numbers must be entered in the Item Information screen.
 - **CE Required (check box)** - Check this box if CE compliance of the line item is required for use in the European Union (EU). Checking this box enables "PED Category" to be selected.
 - **PED Category** - Enable this control by checking the "CE Required" check box. Lists available PED categories. If unsure or unaware of the PED category required, select 'Unknown' and the factory will advise.
- **Note:** To quickly size an application, no data is required to be entered in this section as the Product Brand is automatically selected from the User Defaults.
- **Note:** "CE Required" and "PED Category" apply to certain product line of **RTK and CIR3X00**.

● Sizing Section 2 - Application Requirements

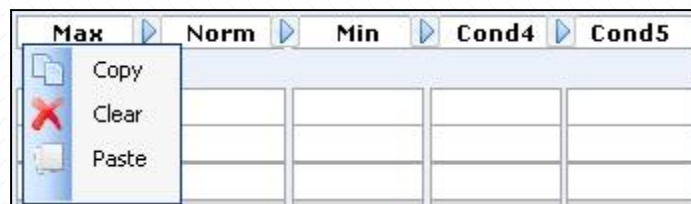
- **UOM** - Unit of measure (UOM) system to be used, English or Metric. Defaults to the selected user preference (see Chapter 10 Settings), but it can be changed for the line item being sized. Changing the UOM here does not affect the user preferences.
- **Fluid Type** - Type of fluid. Available fluid types are: Steam, Water, Gas, Liquid, and Two-Phase.
- **Fluid Name** - Name of the fluid. A fluid library is available for Gas, Liquid, and Two-Phase fluid types. If a fluid name is not present, select 'Other' and manually enter.

- **Pipe Line Data, Insulation** - Type of pipe line insulation. Pipe insulation affects noise calculations.
- **Pipe Line Data, Thck.** - Thickness of the selected pipe line insulation. This becomes enabled when pipe line insulation is selected.
- **Pipe Line Data, Size In** - Inlet pipe line size. In English UOM, the pipe size is given in Nominal Pipe Size (NPS); in Metric UOM, the pipe size is given in Diameter Nominal (DN). If pipe size is not listed, select 'Other' and enter the actual outside diameter of the pipe in the "O.D." text box.
- **Pipe Line Data, Sch. In** - Inlet pipe line schedule. Pipe schedule depends on pipe size. If pipe schedule is not listed, select 'Other' and enter the actual wall thickness of the pipe in the "Wall Thck." text box.
- **Pipe Line Data, Size Out** - Outlet pipe line size. Defaults to the inlet pipe line size. In English UOM, the pipe size is given in Nominal Pipe Size (NPS); in Metric UOM, the pipe size is given in Diameter Nominal (DN). If pipe size is not listed, select 'Other' and enter the actual outside diameter of the pipe in the "O.D." text box (limits are .405" [10.3 mm] to 60" [1524 mm]).
- **Pipe Line Data, Sch. Out** - Outlet pipe line schedule. Defaults to the inlet pipe line schedule. Pipe schedule depends on pipe size. If pipe schedule is not listed, select 'Other' and enter the actual wall thickness of the pipe in the "Wall Thck." text box (limit is less than ½ pipe OD).
- **Valve Conditions, Shut-Off Press.** - Pressure required for shut-off. It automatically populates with the highest pressure of all service conditions when the **Calculate** button is clicked, however a higher pressure may be entered. Shut-off pressure directly affects actuator sizing.
- **Valve Conditions, Shut-Off Temp.** - Temperature at shut-off. It automatically populates with the highest temperature of all service conditions when the **Calculate** button is clicked, however a higher temperature may be entered.
- **Valve Conditions, Design Press.** - Design or maximum system pressure is used to determine the ANSI class rating. Design pressure auto fills from Shut-Off pressure so it automatically populates with the highest pressure of all service conditions when the **Calculate** button is clicked, however a higher pressure may be entered.
- **Valve Conditions, Design Temp.** - Design or maximum system temperature is also used to determine the ANSI class rating. Design temperature auto fills from Shut-Off temperature so it automatically populates with the highest temperature of all service conditions when the **Calculate** button is clicked, however a higher temperature may be entered.
- **Valve Conditions, Allow SPL** - Allowable sound pressure level (SPL). Defaults to the selected user preference (see Chapter 10 Settings), but it can be changed for the line item being sized. Changing the allowable SPL here does not affect the user preferences.
- **Valve Conditions, Service** - The type of service, or usage, of the product. On-off or modulating for control valves are the basic service types, however modulating is sub-divided into three categories: Continuously Modulating, Intermittent Modulating, and 2% Intermittent, which indicates the product

is closed most of the time, controlling only about 2% of its life span. Service type, along with materials selected, affects velocity limitations.

● Sizing Section 3 - Service Conditions

- **No Service Conditions (check box)** - Check this box in order to bypass entering service conditions. This function is typically used when replacing a product in the field with limited or no service conditions available. Since shut-off and design pressure and temperature can still be entered, this function maintains attribute filtering and allows sizing of the actuator for the product selected, however flow condition warnings cannot be displayed.
- **Caution:** The user assumes all responsibility for the product meeting the application requirements.
- **Calc** - Type of calculation to be performed based on service condition entered. Defaults to Cv; calculations for Flow, P1 (inlet pressure), or P2 (outlet pressure) are also available. When calculating for Flow, P1, or P2, that particular parameter is changed to display “Rated Cv”. Enter the rated Cv of the selected valve in the appropriate box then click Calculate. The rated Cv is displayed in the results section below and the calculated parameter (Flow, P1, or P2) is displayed in its appropriate box.
- **Headings** - Names for the service condition columns. Defaults to the selected user preference (see Chapter 10 Settings), but it can be changed for the line item being sized. Changing any heading here does not affect the user preferences. Clicking on the arrow between headings copies the service conditions from the heading on the left to the heading on its right. Right clicking on a column heading displays a sub-menu to Copy, Clear, or Paste the contents the column providing the ability to copy the first column data into the third, fourth, or fifth column, for example, or clearing the contents of a single column.



- **Parameters** - Service condition parameters required for calculations appear on the left side of this section. Boxes with a white background require user input. Depending on the fluid type, different parameters are required to be entered. For listed fluid names, some parameters with white backgrounds are filled with approximated values indicated with an asterisk. These values can be changed if actual data is known. Values in boxes with a gray background cannot be changed.

- **Units** - Specific units of measurements based upon the UOM system chosen to appear on the right side of this section. Defaults to the selected user preference (see Chapter 10 Settings), but it can be changed for the line item being sized. Changing any unit here does not affect the user preferences. If service conditions are present, changing the unit type converts the given value. Changing the UOM in section 2 of this screen converts the values between the English and Metric systems. This facilitates the entering of service conditions with mixed units between the UOM systems and among the units available within a given UOM system.
- **Caution:** Some values require more than one parameter to convert such as a volumetric flow rate to a weight flow rate, or vice-versa, which requires density, or specific volume, for the conversion. If all the required parameters are unknown, then the entered values will not convert and remain as entered.
- **Sizing Section 4 - Results**
 - **Calculate/Re-Calc** - Upon clicking, performs the necessary calculations to provide Cv, travel, predicted SPL, velocity, and posts any flow condition warnings. If insufficient data is provided, a dialog box is displayed requesting the required data. Changing service conditions or product selections requires a recalculation to be performed. The button changes to “Re-Calc” and turns red to alert the user.
 - **Uncorrected/Required Cv** - Displays calculated Cv. After initially entering service conditions and prior to product selection, clicking Calculate gives an Uncorrected, or estimated, Cv based on assumptions of valve parameters. Once product selection is complete, clicking Re-Calc provides the actual Required Cv based on the valve parameters of the selected product.
 - **Rated Cv** - Displays the rated Cv of the product selected. Prior to selecting product, this box remains blank (when calculating Uncorrected Cv). If rated Cv is less than required Cv, then the box turns red to alert user.
 - **Travel (%)** - Displays the percent of travel position of the valve. Prior to selecting product, this box remains blank (when calculating Uncorrected Cv).
 - **Pred. SPL, IEC (dBA)** - Displays predicted sound pressure level (SPL) per the IEC standard in A-weighted decibel units. If predicted SPL is greater than allowable SPL, the box turns red to alert the user.
 - **F_L/X_T** - Displays appropriate valve parameter based on fluid type. For water, liquid, or two-phase, F_L is given. For steam or gas, X_T is given.
 - **Velocity** - Displays the state of the velocity as either “Normal” or “High”. Mousing over the result displays a tool tip containing the actual inlet, body, and outlet velocity along with the velocity limitation. If the inlet, body, or outlet velocity is greater than the velocity limit, then the box turns red to alert the user.

- **Flow Condition** - Displays the state of the flowing conditions as either “Normal” or “X Warnings”, where X equals the number of warnings present. Mousing over the result displays warnings if present and other data in some cases such as the cavitation index for water or liquids. Double clicking the flow condition result when warnings are present opens a dialog box listing the warnings and offer recommendations to resolve them. If warnings are present, the box turns red to alert the user.
- **Clear Service Conditions** - Clicking this button clears all the service conditions entered including the shut-off and design pressure and temperature.

● Selection

- **Order Code** - The ordering code, or part number, generated based off the product selections made. Manual edits to this field are not permitted.
- **Model** - Valve model lines available based on the Product Brand selected and the service conditions entered (once an initial calculation has been made). Mousing over the models listed displays a tool tip containing additional information on the specifics of the model line.
- **Attributes** - Product attributes appear once a model is selected. Attributes listed depend on the model line. See the **RTK and CIR3X00** product literature on the given model for details of the attributes. Attribute options are filtered based on fluid types, service conditions, and previously selected attributes. Some attribute options allow the user to select ‘Other’ and manually enter a desired value. The final attribute for all model lines is Rated Cv, which should be greater than or equal to the Uncorrected or Required Cv displayed in the results (section 4) of the sizing tab.

● Re-Calc and Confirm

- **Re-Calc** - Once all application requirements and sizing parameters have been entered and all product selections have been made, click Re-Calc as this is the final step to the basic sizing and selection process.
- **Confirm** - Review any and all advisories and flow condition warnings and check the status indicator (see Status Indicator section in this chapter) to ensure the product selection is compatible with the application sizing.
- **Reiterate** - Make adjustments to the application requirements, sizing parameters, and/or product selections based on the recommendations of the advisories and flow condition warnings, if any, to specify the most appropriate valve for the application and service intended.

Orifice Plates

In order to use the orifice plate (OP) option, end user (EU) needs to

- have fluid selection on Steam or Gas,
- have entered at least one set of service conditions,
- have selected a valve and
- have run the recalculation routine with the selected vave,

at which point the OP tab will become active. Once Tab is active click on it to enter the GUI (graphic users interface).

The screenshot displays the 'Orifice Sizing' software interface. It features several input sections: 'Select Mode' with a dropdown for 'No. of Plate's' set to 1 and buttons for 'Calculate', 'Accept', 'Reject', and 'Close'; 'Orifice Plate 1' with fields for 'Ordering Code' (SOJ0600D1WD0010XX), 'Size' (4"), 'Pipe Sch.' (STD (40)), 'Cv' (46.2), and 'Plate Type' (Wafer); 'Valve Info' with 'Valve Model' (AEROFLOW), 'Size' (4"), and 'Rated Cv' (60). The 'Conditions' section includes 'Flow Rate' (50000 lb/hr (PPH)), 'Inlet Temp' (534.2 °F), 'P1 System' (900 psig), 'P. System' (730.07 psig), and 'P2 System' (450 psig). A schematic diagram shows a valve between two pipe sections, with P1: 900, Pi1: 730.07, and P2: 450. Below the diagram are 'Valve' settings (Max: 46.5, Norm, Min, Cond4, Cond5) and 'Required Cv' fields. On the right, 'System SPL' (84 dBA) and 'Velocity' (0.096 Mach) are displayed.

Once in the OP Tab, please press the CALCULATE button to let the computer calculate the plate and outlet connection size. Once firmed and satisfied with results, press Accept to

- accept OP design and
- go back to valve sizing tab

If you are not satisfied with results, EU needs to return to the sizing tab and adjust service conditions and repeat steps from the top.

Actuator

The **CIRCOR Select** Actuator screen sizes and selects an actuator for the selected line item. It also allows the user to specify an alternate actuator, providing the data required for its proper selection.

Field	Value
Actuator Type	[Dropdown]
Actuator Action	[Dropdown]
Fail Position	[Dropdown]
Lock in Last Position	[Dropdown]
Service	Modulating
Leakage	[Dropdown]
Avail. Max Air Supply	[Input] barg
Avail. Min Air Supply	[Input] barg
Actuator Size	[Dropdown]
Span Spring No.)	[Dropdown]
Spring Setting (Range)	[Dropdown]
HOD/Override Type	[Dropdown]
Orientation	[Dropdown]
Actuator Model No.	[Dropdown]
Order Code	[Input]
Valve Model	[Input]
Valve Size (DN)	[Dropdown]
Trim Size (mm)	[Dropdown]
Char. (Control)	(Cage Throttling)
Flow Direction	[Dropdown]
Initial Bench Set	N/A psig
Final Bench Set	N/A psig
Actuator Forces	
Actuator Force up	0 psig
Actuator Force Down	0 psig
Actuator Force Minimum	0 psig
Opening/Closing Forces	
Opening Force	0 psig
Closing Force	0 psig
Minimum Force	0 psig

- Click **Actuator** from the Sizing/Selection menu options to access the actuator screen.
- **Actuator - Attributes**
 - **Actuator Type** - Type of actuation. Upon selecting a **RTK and CIR3X00** actuator, the program automatically sizes the actuator, selecting the smallest actuator to achieve the shut-off required. Default is 'None'. Specify an unlisted actuator type by selecting 'Other' and manually enter when prompted.
 - **Actuator Action** - Action of the actuator spring. Reverse acting indicates the spring extends the actuator stem. Direct acting indicates the spring retracts the actuator stem. This attribute is used for Mallard products only. Defaults to 'Reverse Acting'.
 - **Fail Position** - Position of the valve upon complete loss of air pressure or motive medium (e.g., electrical supply or hydraulic pressure) to the actuator. Also, identifies the valve position and motion of the actuator

based on the input signal (i.e. tending to open on increasing signal or tending to close on increasing signal), which is needed for double-acting type actuators. Defaults to 'Closed'.

- **Lock in Last Position** - Locks the valve at its existing position upon loss of air pressure or motive medium to the actuator using a Lock-up Relay Valve. Defaults to 'No'. Selecting 'Yes' requires the use of a lock-up valve; a message is posted alerting the user to specify it in the Accessories screen.
- **Service** - The type of service, or usage, of the product; displays 'On-off' or 'Modulating' based on the selection from the Sizing/Selection screen.
- **Leakage Class** - Amount of allowable leakage thru the seat ring per ANSI/FCI 70-2 unless otherwise noted within the program.
- **Avail. Max Air Supply** - Maximum air supply pressure available to the actuator.
- **Avail. Min Air Supply** - Minimum air supply pressure available to the actuator.
- **Actuator Size** - Size of the actuator. Defaults to the minimum required actuator size to achieve full valve shut-off.
- **Span (Spring No.)** - Differential pressure required to achieve full valve travel. The spring number associated with the listed Span values is provided in parentheses.
- **Spring Setting (Range)** - Pressure setting for choosing an actuator spring. The range associated with the listed spring settings is provided in parentheses. The differential pressure of the range is equal to the Span. This attribute is used for Mallard products only.
- **HOD** - Hand Override Device, typically a handwheel. Allows for manual override operation of the valve.
- **Orientation** - Orientation of the actuator with respect to the valve.
- **Actuator Model No.** - The Model No. of the RTK and CIR3X00 are specified.

● **Actuator - Valve Details**

- **Order Code** - The ordering code, or part number, generated based off the product selections made. Manual edits to this field are not permitted.
- **Valve Model** - Valve model line displayed based on product selection from the Sizing/Selection screen.
- **Valve Size** - Valve size displayed based on product selection from the Sizing/Selection screen.
- **Trim Size** - Valve trim size displayed based on product selection from the Sizing/Selection screen.
- **Char. (Control)** - Valve trim characteristic along with type of control displayed based on selections from Sizing/Selection screen.
- **Flow Direction** - Direction of flow thru the valve displayed based on product selection from the Sizing/Selection screen.

● Actuator - Parameters

- **Max. Allowable Air Press** - Maximum limit of air supply pressure to the actuator.
- **Min. Required Air Press** - Minimum amount of air supply pressure required for the actuator to achieve full valve travel.
- **Initial Bench Set** - Initial pressure to the actuator to initiate travel without any pressure in the valve.
- **Final Bench Set** - Final pressure to the actuator to achieve full valve travel without any pressure in the valve.

● Actuator - Requirements

- **Stem Thrust or Torque** - Thrust or torque necessary to achieve full valve shut-off.
- **Travel** - Distance or degrees required for the valve to fully change positions (i.e., move from fully closed to fully open and vice-versa).
- **Shut Off ΔP** - Differential pressure across the valve for full shut-off displayed based on user input from the Sizing/Selection screen.

Accessories

The **CIRCOR Select** Accessories screen provides optional auxiliary components to be specified for the selected line item.

CIRCOR - Accessories

Positioner
Mfg. and Model: None
Input (Control) Signal:
On Increasing Signal O/P:
Type:
Gauges:
By-Pass:
Characteristic:
Position Feedback:
Quantity:

Solenoid
Mfg. and Model: None
Voltage:
Quantity:

Mode Number
Positioner: None
Airset: None
Vol. Booster: None
Lockup Valve: None
Limit Switch: None
Solenoid: None

Limit Switch
Mfg. and Model: None
Contacts/Rating:
Type:
Actuation Points:
Quantity:
Voltage:

Airset
Mfg. and Model: None
Range:
Filter:
Gauge:
Quantity:

Lock Up Valve
Mfg. and Model: None
Range:
Connection:
Set Pressure: barg
Quantity:

Tubing/Fittings
Tubing Size and Mat'l: None
Fittings Mat'l:

Data Plate
Data Plate Mat'l: Stainless Steel

Volume Booster
Mfg. and Model: None
Quantity:

Volume Tank
Mfg. and Model: None
Quantity:

Special Notes
Note 1:
Note 2:
Note 3:
Note 4:
Note 5:
Note 6:
Note 7:
Note 8:

Ready

- Click **Accessories** from the Sizing/Selection menu options to access the accessories screen.
- Select manufacturer and model for accessories required to enable subsequent attributes, if any, in order to fully specify accessories chosen. Default for all accessories is 'None' except as noted.
 - **Important: Tubing/Fittings** must be specified when choosing accessories, except for limit switch selections (unless complemented with other accessories).

- **Note:** A **Data Plate** is standard on all Leslie products. ‘Brass’ is default. ‘Stainless Steel’ is available only if stainless steel tubing and fitting material is selected.

- Exceptions, deviations, or special instructions regarding selected accessories can be noted in Item Notes (see Item Information section in this chapter).

- Required accessories not available on this screen can be specified in user defined factory notes (see Factory Notes/QA Plan section in this chapter).

Materials

The **CIRCOR Select** Materials screen displays the materials of construction for the selected line item. In some cases, alternative materials may be specified.

The screenshot displays the 'Material' selection interface. It is organized into several sections:

- Trim Package:** A vertical list of 20 components, each with a dropdown menu for material selection. The components are: Stem, Plug, Seat Ring Gasket, Cage, Seat Ring, Seal Retainer, Guide Bushing, Shaft, Seat Gasket, Seat, Seat Ring Retainer, Spring, Bearing, Load Screws, Load Ring, Piston Ring, Seal, Pilot Plug, Pilot Plate, Socket Head Cap Screw, and Yoke.
- Material Selection:** A section containing three dropdown menus: 'Body/Bonnet Material', 'Actuator Housing', and 'Hammer Nut'.
- Packing Package:** A section containing seven dropdown menus: 'Packing', 'Packing Follower', 'Packing Flange', 'Packing Studs', 'Packing Nuts', 'Retaining Ring', and 'Packing Plug'.
- Bolting Package:** A section containing three dropdown menus: 'Body/Bonnet Studs', 'Body/Bonnet Nuts', and 'Body/Bonnet Gasket'.

- Click **Materials** from the Sizing/Selection menu options to access the materials screen.
- Materials are populated based on product selection from the Sizing/Selection screen. Components not applicable to the product specified remain disabled.
- If 'Other' is chosen for product material selections on the Sizing/Selection screen, the material entered by the user will also appear here, where individual component material specifications can be edited.
- Exceptions, deviations, or special instructions regarding selected materials can be noted in Item Notes (see Item Information section in this chapter).
- Alternate materials not available on this screen can be specified in user defined factory notes (see Factory Notes/QA Plan section in this chapter).

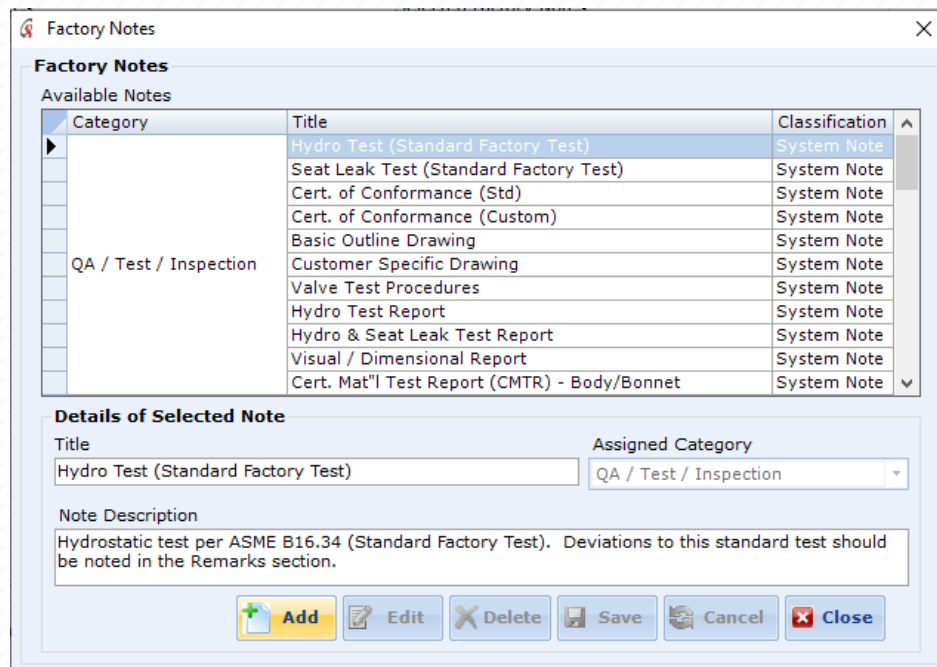
Factory Notes/QA Plan

The **CIRCOR Select** Factory Notes/QA Plan screen facilitates the attachment of factory notes and/or quality assurance requirements to the selected line item. In addition to the many factory notes available, user defined factory notes can be generated, edited, and attached to the selected line item.

The screenshot displays the 'Factory Notes' interface. It is divided into two main panels: 'Available Factory Notes' on the left and 'Selected Factory Notes' on the right. The 'Available Factory Notes' panel contains a table with columns for 'Category' and 'Title'. The 'Quality Assurance / Test' category is expanded, showing a list of notes including 'Functional Test', 'Cert. of Conformance (Std)', 'Cert. of Conformance (Custom)', 'Basic Outline Drawing', 'Customer Specific Drawing', 'Valve Test Procedures', 'Hydro Test Report', 'Hydro & Seat Leak Test Report', 'Visual / Dimensional Report', 'Cert. Mat'l Test Report (CMTR) - Bo', 'Cert. Mat'l Test Report (CMTR) - Pre', 'Weld Procedures', 'Radiography Procedure', 'Positive Mat'l Identificaion (PMI) - B', 'Positive Mat'l Identificaion (PMI) - P', 'NDE Report', 'Hold Point to Witness Test/Inspectio', 'Material Traceability w/Heat Numbe', 'Stroke Speed Test & Report', 'Hysteresis Test & Report', 'NACE Certification', and 'Hold for Cust. Drawing Approval'. The 'Selected Factory Notes' panel also has a table with 'Category' and 'Title' columns, showing 'Hydro Test', 'Functional Test' (highlighted), and 'Seat Leak Test'. Between the panels are four navigation buttons: '>', '>>', '<', and '<<'. Below the 'Available Factory Notes' table is a 'Selected Factory Note Description' field containing text about functional tests. Below the 'Selected Factory Notes' table is a 'Remarks for Selected Factory Note' field. At the bottom left is a button labeled 'Add/Edit User Defined Factory Note(s)'.

- Click **Factory Notes/QA Plan** from the Sizing/Selection menu options to access the Factory Notes/QA Plan screen.
- **Available Factory Notes** are contained in the panel on the left. **Selected Factory Notes** attached to the line item are contained in the panel on the right.
 - To add a factory note from Available Factory Notes to Selected Factory Notes, click on the Available Factory Note then click the “>” button.
 - To add all factory notes from Available Factory Notes to Selected Factory Notes, click on the “>>” button.
 - To remove a factory note from Selected Factory Notes to Available Factory Notes, click on the Selected Factory Note then click the “<” button.

- To remove all factory notes from Selected Factory Notes to Available Factory Notes, click on the “<<” button.
- **Note:** Hydro Test, Seat Leak Test, and Functional Test are standard factory notes that cannot be removed from Selected Factory Notes.
- **Factory Note Description** - Detailed description of the highlighted factory note. Click on any factory note within either panel to view its description.
- **Remarks for Selected Factory Note** - Enter exceptions, deviations, or special instructions to the Selected Factory Note in this box. Remarks can only be added to factory notes attached to the line item (i.e. within Selected Factory Notes).
- **Add/Edit User Defined Factory Note(s)**



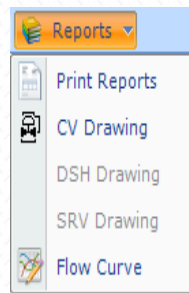
- Click on the **Add/Edit User Defined Factory Note(s)** button to access the user defined factory note dialog box.
- Click **Add** to generate a user defined factory note, and then enter the **Title** and **Note Description**. Select the **Assigned Category** then click **Save** to incorporate the user defined factory note into the Available Factory Notes. Other options such as **Edit**, **Delete**, and **Cancel** are available in user defined factory dialog box. Once completed, click **Close** to exit the dialog box.
- **Important:** Attach the newly created User Defined Factory Note to the line item by adding it into Selected Factory Notes; click on the User Defined Factory Note in the Available Factory Note panel then click the “>” button.

Reports

CIRCOR Select provides the following professional output reports:

- Specification Sheet
- Analysis Sheet
- Factory Notes/QA Plan
- Outline Drawing
- Flow Curve

The Reports menu contains the following menu options: Print Reports, Drawing, and Flow Curve.



***New features are added to the drop-down menu.**

- Click on the down arrow “▼” next to **Reports** from the Sizing/Selection menu options to access the Reports menu options.

● Reports - Print Reports

Selection	Config Status	Pricing Status	Description
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CV-Line Item1
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	abc
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CV-Line Item1-2

- Clicking **Print Reports** from the Reports menu options opens a dialog box to generate the desired output reports.
- **Print Options (check boxes)** - Checking the box prints out the data as indicated (see Preferences in Chapter 10 Settings for more information). Checking/Un-checking 'Select All' selects/deselects all options, which can then be selected/de-selected individually.
- **Reports (check boxes)** - Checking the box prints out the selected report. Checking/Un-checking 'Select All' selects/deselects all Report options, which can then be selected/de-selected individually. Each report provides the following data:
 - **Specification Sheet** - Service condition data, calculated results, and valve selection details along with the actuator and selected accessories presented in the ISA format.
 - **Analysis Sheet** - Service conditions, velocities, flow conditions, and advisories (if selected).
 - **Factory Notes/QA Plan** - Valve ordering code, listing of all tag numbers, accessories, selected factory notes are presented as line items. Project and item notes, if any, are included in this report.
 - **Outline Drawing** - Outline drawing with overall dimensions of the selected valve and actuator (if any).
 - **Flow Curve** - Graph and table of characteristic flow curve as a function of Cv versus travel.
- **Line Items (check boxes)** - Checking the box prints out the selected line item. Checking/Un-checking 'Select All' selects/deselects all options, which can then be selected/de-selected individually.
- **Generate PDF** - Once all printing selections are made, clicking 'Generate PDF' will prompt you to save the output report file. Upon saving, the PDF file displays the report. For hardcopies, print the PDF file to a printer.
- **Close** - Exits the Print Reports dialog box, returning to the main application.

● Reports - Drawing

Drawing

Valve Series: 5500

Valve Size: 2"

Pressure Class: 150

Construction Material: Carbon Steel - Standard Service

Exp./Red. Mat'l:

Inlet Pipe Size/Sch.: 2" NPS Sch. STD (40)

Outlet Pipe Size/Sch.: 2" NPS Sch. STD (40)

End Connection: 2" Raised Face (RF) Flange

Notes

1. Dimensions are in inches [mm].
2. Dimensions are for reference only.
3. CF* - Consult Factory

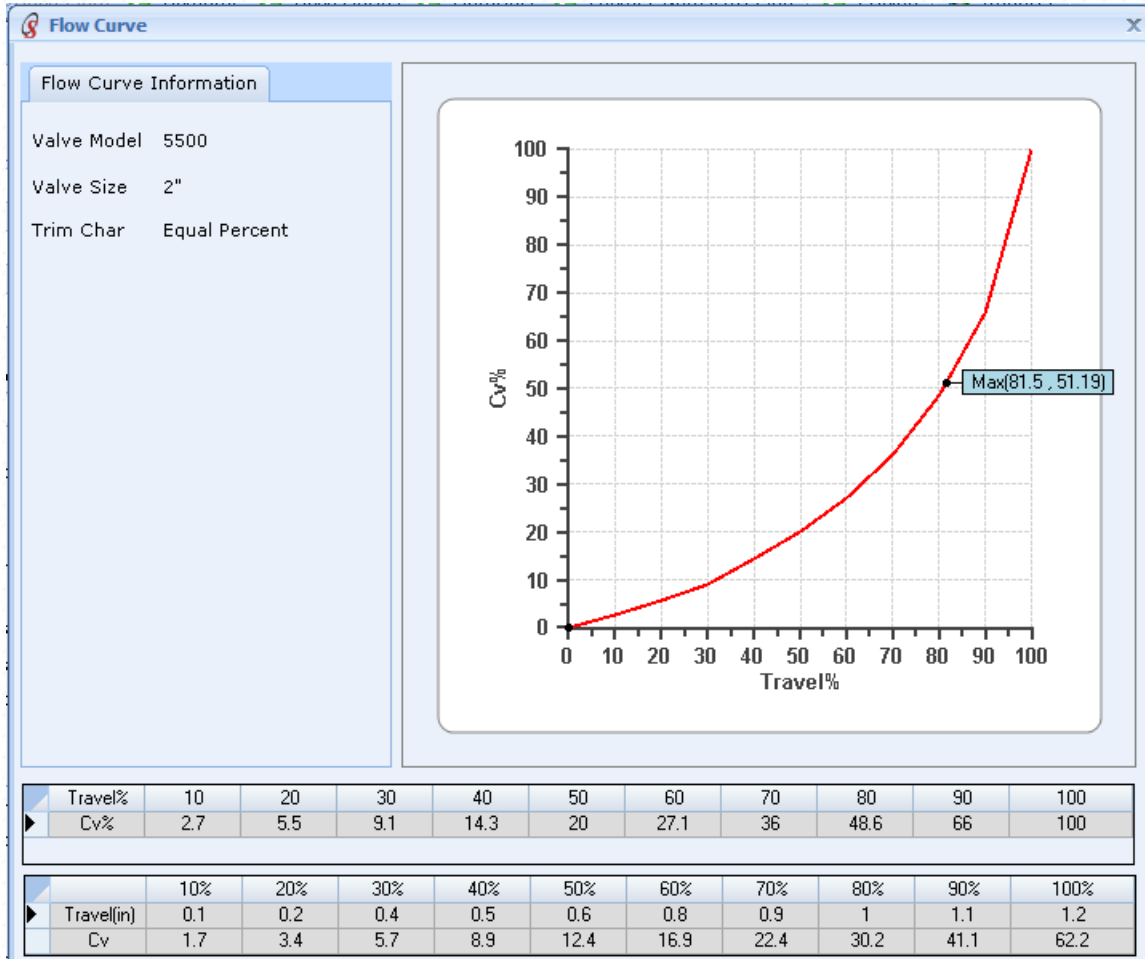
Outline

The drawing shows a valve with the following dimensions:

- Top flange diameter: 12.50 [317]
- Overall height from top flange to outlet flange: 23.88 [608]
- Outlet flange diameter: 10.00 [254]
- Distance from top flange to the start of the outlet flange: 9.00 [228]
- Distance from the start of the outlet flange to the centerline: 5.38 [136]

- Clicking **Drawing** from the Reports menu options displays a drawing of the selected line item on screen once a valve model has been selected.
- 'Zoom In' and 'Zoom Out' icon buttons are provided for the drawing view.
- To navigate away from the on-screen drawing, select a menu item or menu item option.

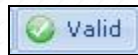
● Reports - Flow Curve



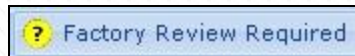
- Clicking **Flow Curve** from the Reports menu options opens a dialog box and displays a graph and table on screen of the characteristic flow curve as a function of Cv versus travel of the selected line item once a valve model has been selected.
- To exit the flow curve dialog box, click the 'X', or close button, at the top right corner of the window.

Status Indicator (Config Status)

The status indicator in **CIRCOR Select** reflects the current state of the selections made for the given line item. The status indicator displays Valid, Factory Review Required, or Invalid. The icon associated with each status is also reflected in the project navigation pane for each line item and for each of the Sizing/Selection menu item options.



- **Valid** - Indicates that all selections made for the line item or Sizing/Selection menu option are valid and complete.



- **Factory Review Required** - Indicates that one or more selections require review by the factory to confirm that they are technically viable or within the scope of supply. This status also calls attention to data manually input by the user.



- **Invalid** - Indicates that one or more selections are in error or incomplete. User is prompted to rectify errors and provide all required information. Line items with a status of 'Invalid' should be corrected prior to submission to the factory.



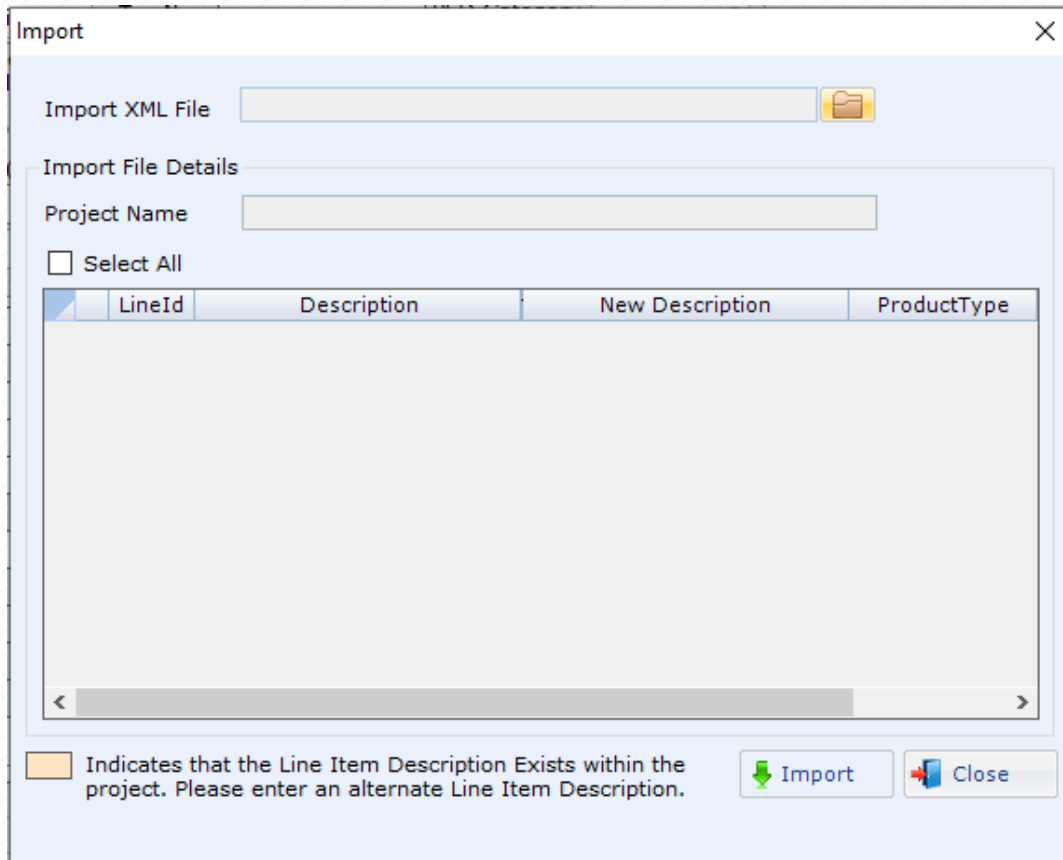
- **Calculation and Saving Required** - This status is applicable only on Alternate Solutions. On change of service conditions for Primary line item, the selections on Alternate solutions are required to be revalidated against updated service conditions.

9. Utilities

In **CIRCOR Select**, Utilities provide the ability to import or export line items from a project using .xml file types. It also contains a function to search line item data. The Utilities menu contains the following menu options: Import, Export, and Search Tag, which are explained in detail below.

Import

To import one or more-line items into the current project in **CIRCOR Select**:

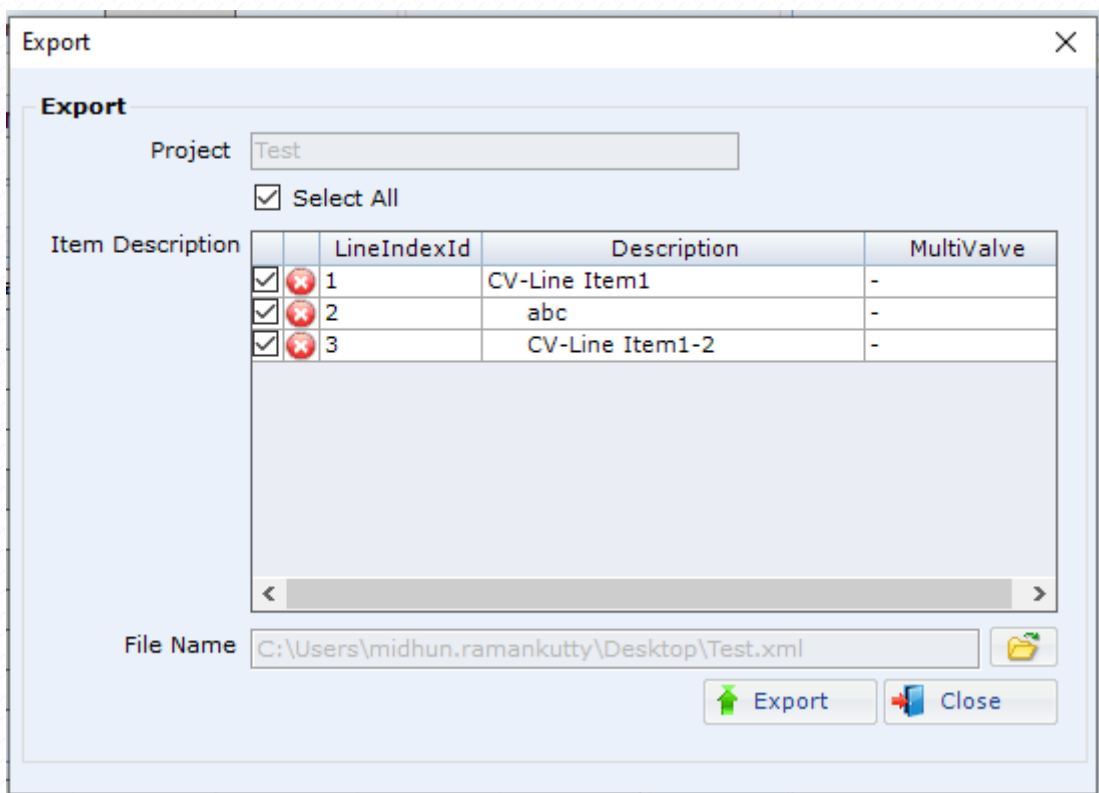


- Click **Import** from the Utilities menu to access the Import file dialog box.
- Click on the folder icon to access the Open file dialog box, navigate and select an .xml file, and then click **Open**. The details and line items of the selected file are displayed.

- All line items will be checked by default; check/un-check individual line items to select/de-select.
- Enter **New Description** for each line item to be imported.
- Click **Import** to import the selected line items into the current project.
- Click **Close** to exit the Import dialog box and return to the main program.
- **Note:** Only .xml files can be imported into a project; .xml files are created by exporting from a project.

Export

To export one or more-line items from the current project in **CIRCOR Select**:

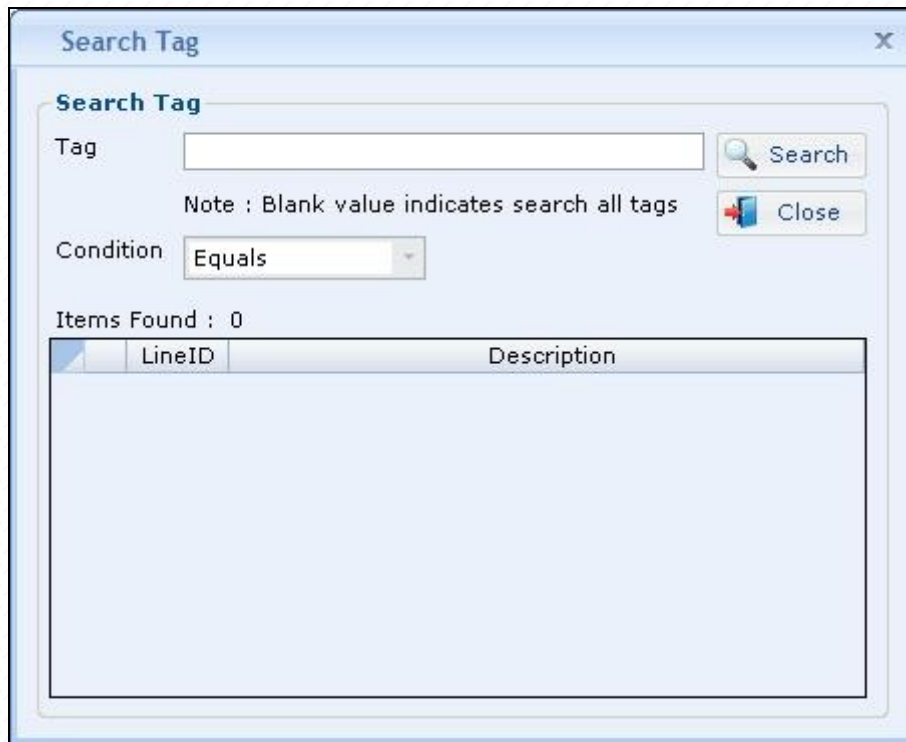


- Click **Export** from the Utilities menu to access the Export file dialog box.
- All line items will be checked by default; check/un-check individual line items to select/de-select.

- Click on the folder icon to access the Save As file dialog box, enter a location and file name, and then click **Save**.
- Click **Export** to export the selected line items and save the .xml file in the location specified.
- Click **Close** to exit the Export dialog box and return to the main program.

Search Tag

To search for line items based on tag numbers within a project in **CIRCOR Select**:



- Click **Search Tag** from the Utilities menu to access the Search Tag dialog box.
- Enter full or partial tag number, select the matching **Condition**, and then click **Search** to display a list of all the line items meeting the search criteria.
- The following matching **Condition** can be selected:
 - **Equals** - Tag number that is exact match with the tag number entered.
 - **Begins with** - Tag number that begins with partial tag number entered.

- **Contains** - Tag number that contains partial tag number entered.
 - **Ends with** - Tag number that ends with partial tag number entered.
- Double-click on a line item displayed from the search to navigate to the line item.
 - Click **Close** to exit the Search Tag dialog box and return to the main program.
- **Note:** Full tag number must be exactly entered for match condition 'Equals' otherwise it will not display any line items. For the other three match conditions, partial tag numbers can be entered for search results.

10. Settings

Settings contain the application defaults used while working in **CIRCOR Select**. The Settings menu contains the Preferences menu option.

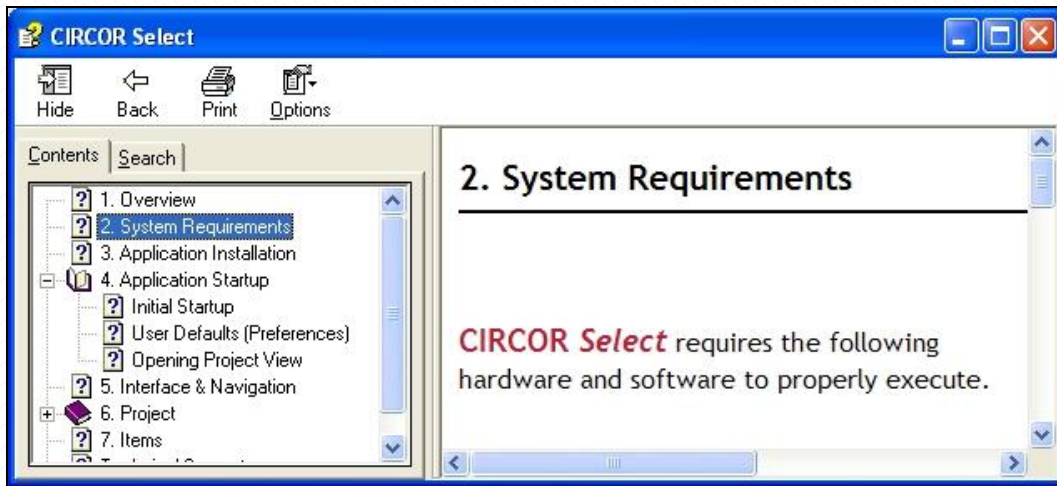
Preferences

- Click **Preferences** from the Settings menu to access the Preferences screen.
- See Chapter 4 Application Startup, User Defaults section for detailed information on all the preferences.
- Changes to preferences will apply to line items added subsequently. Existing line items would not be affected.
 - **Note:** For multiple profiles, the last selected profile is taken as the default profile for the next time the program is started. To use an alternate profile upon starting a new project, delete the existing line item, change the profile, and then add a line item to use the selected profile preferences.
- To navigate away from the Preferences screen, select a menu item or menu item option.

11. Help

CIRCOR Select is equipped with Help to assist the user while working in the application and also provides information on the application itself. The Help menu contains the Help Contents and About CIRCOR Select menu options.

Help Contents



- Click **Help Contents** from the Help menu to access the Help dialog box.
- The dialog box acts in the same fashion as standard help for Windows applications.
- To exit the Help dialog box, click the 'X', or close button, at the top right corner of the window.

About **CIRCOR Select**

- Click **About CIRCOR Select** from the Help menu to access the About CIRCOR Select dialog box.
- The dialog box provides the following pertinent information:
 - **Version** - Current version of the application.
 - **Date** - Release date of the current version.
 - **Copyright information**
- Click **Ok** to exit the About CIRCOR Select dialog box and return to the application.

12. Technical Support

For technical assistance, please send an email to:

support_circorselect@circor.com

Please use the following format to report any problems, errors, or issues with the program.

User Name : Your name
Company Name : Your Company name
Application : CIRCOR Select
Version : Current Program version
Operating System : Type and version of MS Windows®
Error Description : Provide the following information:

- Basic description of error
- Occurrence - On specific event and steps to reproduce the event
- Data, in all cases
- Screen shot(s)