

# Arrow II Prominent New Features

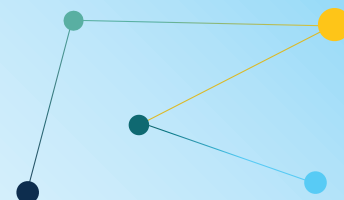
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Arrow II	Arrow I0	Arrow 9
A Parametric Study is a powerful new tool to evaluate how different parameter combinations affect the design of a system.	The Workspace Layers toolset significantly enhances model building by allowing centralized updates to pipe and junction size, color, display text, visibility, and more.	Visually analyze alternatives with Multi-Scenario Graphing, comparing profile graphs from multiple scenarios on a single plot.
Cross-App Heat Exchanger Thermal Link enables simultaneous execution of Fathom and Arrow to solve heat balance across a liquid-gas heat exchanger in a single, integrated workflow.	The new Valve Window clearly distinguishes between different data sources—User Specified, Characteristic, or Handbook—making it easier to evaluate available options.	The Library Manager (previously the Database Manager) has been completely revised and now offers a consolidated way to use and customize libraries of fluids, pipe materials, junctions, etc.
Graph Annotations add dynamic graphs to the Workspace that automatically update after each scenario run.	Utilize any image as a junction icon, simply by right-clicking on the Toolbox icon.	Use the new online Help System for centralized documentation and examples from your browser.
Scenario Comparison Layer allows users to visually compare multiple scenarios through graphical overlays directly within the Workspace.	New four-component slurry model for the SSL module, developed by leading industry experts, captures complex slurry regimes more accurately.	Streamline your setup from the new Analysis Setup menu, a user-friendly workflow condensing multiple model-wide specification windows into 1.
Estimated and Variable Heat Transfer Coefficient options allow greater flexibility in Physical (NTU) Model heat exchangers by enabling users to define or compute heat transfer coefficients based on system conditions or inputs.	The Design Alert Manager has been reorganized to improve the process of creating and applying user-defined alerts.	Convert Shear Rheometer data for Power Law and Bingham Plastic viscosity models with a helpful visual guide.
Use a Control Valve to size a valve or orifice, then seamlessly convert the junction type while retaining the calculated pressure loss value.	Draw on the isometric grid without forcing any particular pipe routing with Isometric Freeform drawing mode.	Apply the Herschel-Bulkley viscosity model for shear thinning or thickening fluids with a yield stress.
Better control on how the elements of a PCF file will be imported to the Workspace.	New Annotation shapes and a line tool allow more flexible markup such as revision numbers or change requests.	Warnings, errors and Design Alerts shown in the Output are now color coded and organized in a prioritized list for quick review.



# Full list of New Features you can use in Arrow II



## Significant New Features

- Parametric Study - A powerful new tool to perform parametric studies.
- Graph Annotations - Ability to add graphs to the Workspace which will update after the scenario is run.
- Scenario Comparison Layer - Compare Scenarios as a graphical representation on the Workspace.
- Cross-App Heat Exchanger Thermal Link - Solve heat balance for a liquid-gas heat exchanger by running Fathom and Arrow simultaneously.
- Estimated and Variable Heat Transfer Coefficient options to allow greater flexibility in Physical (NTU) Model heat exchangers by enabling users to define heat transfer coefficients based on system conditions or inputs.

## Notable Features

- New Loss Models for Inline Flow Coefficients (Cd) in Orifice and Venturi
- Design Alert Layer - Show Design Alert status on the Workspace
- Control Valve Sizing Tool - Use a Control Valve to size a Valve or Orifice, then automatically change the junction type while keeping the pressure loss value
- Improved PCF Importing - Better control on how the elements of a PCF file will be imported to the Workspace
  - Welded junction - now imported with a Zero-Length Connector
  - Pipe lengths units - Can be changed in the import preview
  - Pipe materials - Can be defined in the import tool
  - Multiple PCF files - Can now be imported together
- Global Junction Morph - Morph multiple junctions at once

## General Layer Improvements

- Consolidate Label and Object visibility controls
- Vary pipe thickness based on diameter
- Ability to create layer from current Output Control settings
- Easily select annotations to include/exclude in specific scenarios
- Quickly create Layer Folders
- Save and Load your layer definitions in files to standardize how your company presents models

## Library Improvements

- Save Libraries in custom locations other than the Local User Library
- New IPS and DIPS HDPE Piping Material Libraries from ASTM F714

## Output Grid Improvements

- Selection Calculations - Count, Numeric Count, Max, Min, Sum, and Mean will be displayed for selected cell

## General UI Improvements

- Exclamation mark indicates missing data in the Analysis Set-up and Property Menus
- Display XTS Time Step in Solution Progress Window
- Faster loading / more responsive Workspace - **90% faster!**

## General Modeling Additions and Improvements

- Password Protection for Read-Only Files or Scenarios
- Clarified Detailed Tee Behavior with new auto-sync option
- Allow Specification of Backup File Directory
- Expanded the ability to import PNGs as background images
- NFPA Report can now be Copy/Pasted to Excel

## Miscellaneous

- Improved Valve Characteristic percentage increments to whole numbers
- Improved monetary conversion example in the costing window