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AFT xStream 3	AFT xStream 2	AFT xStream
The Workspace Layers toolset significantly enhances the model building process. Easily update Pipe & Junction size, color, Display Text, visibility, and more from a centralized location.	Model transient heat transfer in piping walls, including internal/external convection and thermal capacitance for more realistic simulation	A specialized Method of Characteristics is used to solve the transient mass, momentum and energy equations of pipe flow
The new Valve Window now clearly distinguishes between different data sources such as User Specified, Characteristic, or Handbook, to understand the 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.	Built-in steady-state solver to automatically initialize system before the transient
Retain Partial Transient Output to access and analyze the results up to the point where the simulation was interrupted.	Updated Analysis Setup window with new areas and better user feedback of items changed or which still need to be defined	Use the NEW online Help System for centralized documentation and examples from your browser
Model single or double-acting multi-cylinder reciprocating compressors, accounting fully for all fundamental thermodynamics.	Finite tank now allows specified transient heat transfer into or out of the tank, specified tank volume change over time, and more flexible initial conditions	Generates force imbalance files that can be automatically read into CAESAR II ®, ROHR2, AutoPIPE and TRIFLEX ® pipe stress dynamic models
The Design Alert Manager has been reorganized to improve the process of creating and applying user-defined alerts.	Warnings, errors and Design Alerts shown in the Output are now color coded and organized in a prioritized list for quick review	Multi-Scenario Comparison: Data can be compared between multiple scenarios to show changes made
Draw on the isometric grid without forcing any particular pipe routing.	New equation of state options are available for Soave-Redlich-Kwong and Peng-Robinson	Automatic pipe sectioning based on steady-state acoustic velocities
Transient Checkpoints enable you to save the state of a transient simulation at any given point and resume it later from that exact point.	Run batch runs "silently" in the background to minimize interruptions as each scenario completes	Pulsation Frequency Analysis Add-on Module identifies pipe acoustical frequencies to avoid resonance from excitation, especially in systems with reciprocating compressors.

Ready to access these new features? Email info@aft.com

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Full list of **New Features** you can use in AFT xStream™ 3

Significant New Features

- **Workspace Layers** - The Workspace Layers toolset significantly enhances the model building process, providing unparalleled customization options.
- **Reciprocating Compressor** - Model single or double-acting multi-cylinder reciprocating compressors, accounting fully for all fundamental thermodynamics.
- **Transient Checkpoints** - Enable you to save the state of a transient simulation at any given point and resume it later from that exact point.
- **Retain Partial Transient Output** - Access and analyze the results up to the point where the simulation was interrupted, just like regular results.
- **Improved Valve Window** - Clarifies and expands the available valve loss models, and makes it easier to define a valve characteristic, which can be critical for an accurate model.
- **Streamlined Design Alerts** - Allows easier and faster specification of important design limits.

Notable Features

- **Custom Junction Icons** - Use your own images.
- **Isometric Freeform Drawing** - Draw without forcing any particular pipe routing.
- **New Annotations -** Use shapes and tools to allow flexible markup such as revision numbers or change requests.
- **Set Workspace Print Area** - Show printing page borders on the workspace and customize the printing area.
- **Customize Graph From Workspace Options** - Custom selection of any graph parameter on the Workspace.
- **PFA Module Improvements** - The PFA module has an improved interface, and can now find a Steady State Pulsation solution, allowing better analysis of pulsating systems.

Modeling Additions and Improvements

- **Zero-Length Connector Improvements** - now behave like standard pipes, including selection and graphing tools.
- **Distinguish User and AFT Fluids** -Easily find custom entries.
- **Control Valve Fully Open Cannot Regain Control** - Keeps the control valve in a locked-open position during transients.
- **Simpler Force Definitions** - Difference forces spanning more than 2 pipes no longer require the definition of a group.
- **API 618 Limitations in PFA Module** - API 618 outlines frequency-dependent pulsation limits - you can now check for violations graphically, and see locations where the limit is exceeded.

Improved Importing

- **Import Bend r/D** - Import with appropriate r/D
- **Import Speed Increase** - Import up to 10x faster
- **Better Defaults and Display** for Imported Models
- **Improved Import of Pipe Material Links**
- **Display CAESAR II Node Names** as junction names.

Behind the Scenes Improvements

- **Graphing Optimizations** - Provides additional stability now and more capabilities in the future.
- **eLicense Access Improvement**s - Improved security and the release of license seats not in use.
- **Output Improvements** - Improvements to backend output code provides additional stability.
- **Timed Recovery Fil**e - Automatically generate a backup of your model to recover unsaved work.

Output Parameters and Messages

- **RPM Output Parameter** - Report speed in RPM, in addition to percent.
- **Dimensionless Heat Transfer Output Parameters -** Grashof, Nusselt, Prandtl, and Rayleigh Numbers have been added as Output parameters.
- **Dimensionless Heat Transfer Output Parameters -** Grashof, Nusselt, Prandtl, and Rayleigh Numbers have been added as Output parameters.
- **Valve xT Output Parameter** - Report and graph the xT value used for valves.
- **Estimated xT Output Parameter** - Provide estimated xT value as used in the solver for valve loss models that do not use the Cv/xT loss model.
- **Profile Graphs for Temperature Saturation and Temperature Superheat** - Graph temperature above saturation (superheat) along flow paths.
- **Laminar Caution** - Alerts the user if flow at junctions is in a laminar range.
- **POR/AOR in Compressor Summary** - Show the values for Preferred and Allowed Operating Ranges in the Compressor Summary.
- **Events Messages in New Format** - Events are now shown in a cleaner, collapsible format similar to Warnings.

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