



## AFT xStream 3.0.1106

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### AFT xStream 3.0.1106:

AFT xStream emerges as a robust fluid dynamic simulation tool tailored for addressing high-speed, acoustic transients prevalent in steam and gas piping systems. By accurately simulating these events, it mitigates uncertainties in design and operations, saving both time and resources.

### Key Applications:

- **High-Speed Transient Simulation:** Accurately simulate high-speed transients, even under choked flow conditions, within steam and gas piping systems.
- **System Response Evaluation:** Assess the overall system response and transient pipe forces following steam and gas turbine trips.
- **Predictive Capabilities:** Predict transient supply pressures, temperatures, and flows to operating gas compressors and turbines, particularly when one trips offline.
- **Comprehensive Modeling:** Simulate tank blowdowns, charging processes, and the time required to reach desired pressures. Additionally, predict transient pressures and flows resulting from heat exchanger tube ruptures.
- **Flexible Input Handling:** Easily modify system input data, including transient valve positions, compressor operations, control set points, pressures, temperatures, and more.
- **Transient Initiation:** Initiate transients based on either predefined time intervals or specific events occurring within the system.
- **Steady-State Solver Integration:** Incorporates a built-in steady-state solver to automatically initialize the system before transient analysis.
- **Automatic Pipe Sectioning:** Automatically segments pipes based on steady-state acoustic velocities for enhanced accuracy.
- **Compound Transient Event Logic:** Utilizes compound transient event logic to effectively model complex control sequences.
- **Scenario Manager:** Tracks all design variants and operational possibilities within a single model file for streamlined management.
- **Graphing and Reporting Integration:** Offers integrated graphing and reporting tools for comprehensive analysis.
- **Animation Tools:** Provides animation tools for visually interpreting complex transient interactions.
- **Compatibility with Pipe Stress Models:** Generates force imbalance files compatible with leading pipe stress dynamic models such as CAESAR II®, ROHR2, AutoPIPE, and TRIFLEX®.
- **User-Friendly Interface:** Offers a choice between a 2D flow diagram or isometric view interface for enhanced user experience.
- **Fluid and Fittings Libraries:** Includes built-in libraries of fluids and fittings, including NIST REFPROP and ASME Steam Tables, which can be extended and customized.
- **Chempak™ Add-On Utility:** Provides access to a thermophysical database of nearly 600 gases through the Chempak™ add-on utility, enabling the definition of non-reacting pre-mixtures and dynamic flow mixing simulation.



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