

# AFT Fathom 7.0

## Incompressible Pipe & Duct Flow Modeling

The challenges are clear—now the answers are, too. Functionality is no longer enough. Your fluid handling systems must be cost and energy efficient while providing a high degree of operability and reliability, tightly integrated with other systems. The days of analyzing line by line are past. Meeting today's challenges requires a systems approach to your design. *AFT Fathom™* is the preferred piping network analysis and system modeling software, providing the engineer a logical and flexible graphical interface.

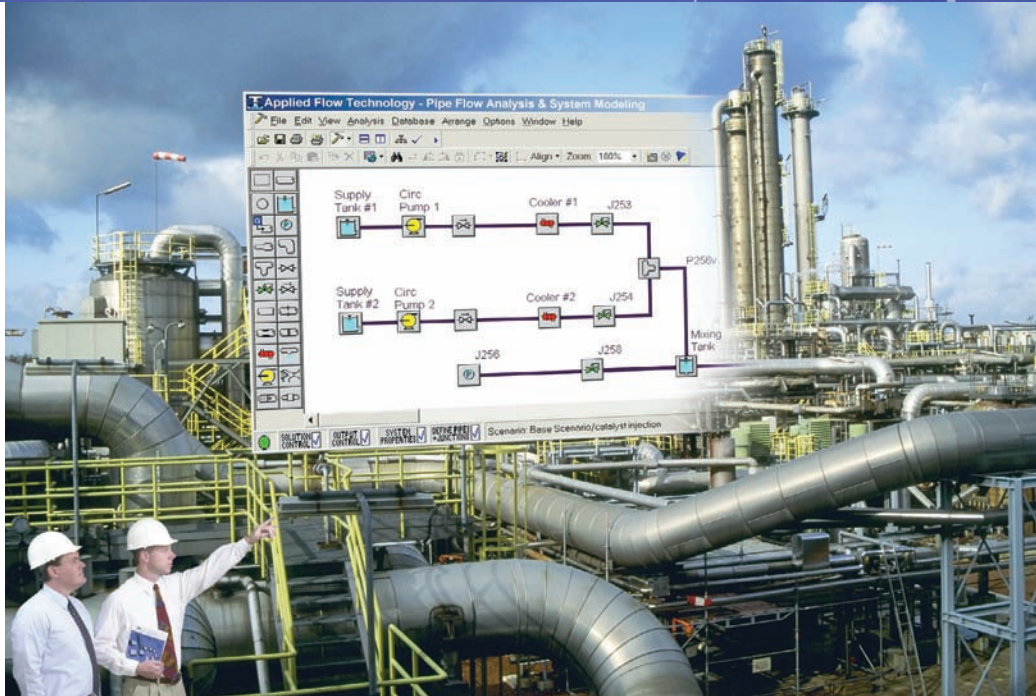
Equipment characteristics, analysis and output are tightly integrated with your system's schematic representation. *AFT Fathom* implements a wide array of features without sacrificing the engineer's need for a short learning curve and ease of use.

### Comprehensive Capabilities

Just as the demands on your system design increase in scope, *AFT Fathom 7.0*, the latest version of the world's most advanced pipe flow modeling software, provides an amazingly broad scope of capabilities. Addressing open and closed systems, *AFT Fathom* includes a built-in library of fluids and fittings, variable model configurations, pump and control valve modeling and much more. *AFT Fathom* goes beyond the boundaries of fluid flow analysis, with pump energy cost analysis, thermal analysis capabilities including piping heat transfer, heat exchanger modeling and varying fluid properties.

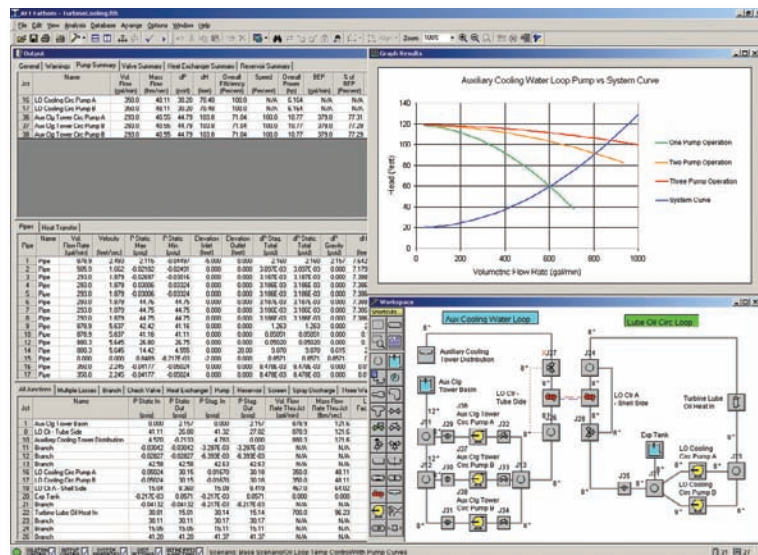
Optional add-on modules further expand your system modeling capabilities to include extended time simulation, design automation through goal seeking, control simulation and system costing. The optional Chempak add-on provides a thermo-physical database of almost 700 fluids.

Whether you are working on a new design, a modification of an existing design or simulating system operation, *AFT Fathom* provides everything you need to develop comprehensive models of your piping systems.



### Analytical Power with Effective Control

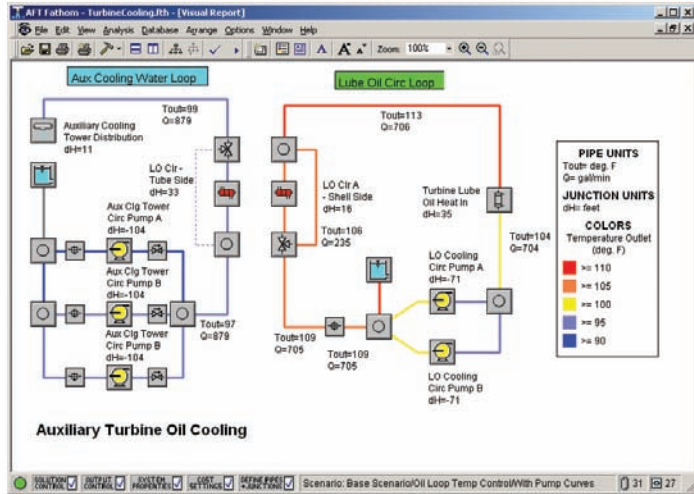
*AFT Fathom* employs a robust solver using proven matrix methods to solve the governing equations of pipe flow. The full power of this technical sophistication is readily accessible through an advanced visual interface. From the powerful drag-and-drop model building features to the fully customizable output, *AFT Fathom* becomes an extension of the engineer's mind, freeing him or her to focus on their system, not the mechanics of software manipulation. Scenario Manager raises the what-if potential of system modeling to a new level. Multiple system configurations varying by any modeling parameter are easily managed within a single model file with a familiar hierarchical interface. Changes in the base model are automatically inherited by alternate design cases.



**Applied Flow Technology**  
Dynamic solutions for a fluid world.™



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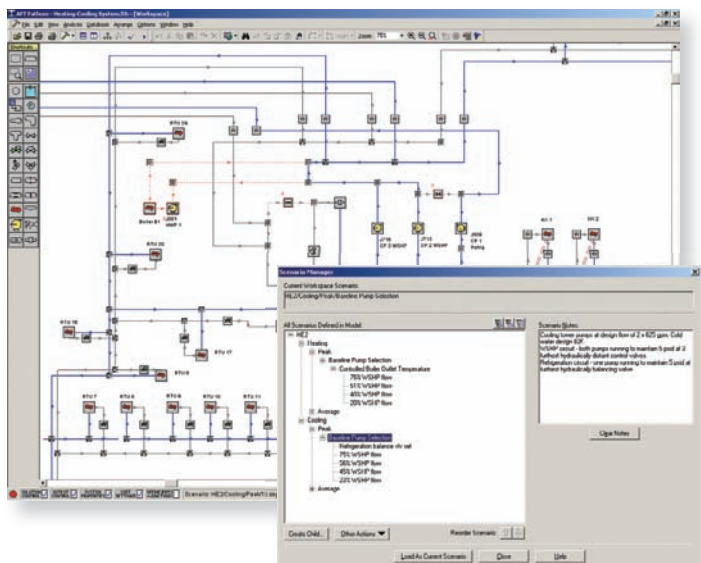


## Experience and Responsiveness

Confirming the proven track record of the tens of thousands of applications of its predecessors with innovative and powerful new features, *AFT Fathom 7.0* has, once again, raised the standard for pipe flow analysis and system modeling software. *AFT Fathom's* leading edge flow analysis is backed by a technical support team of engineers. More than software support, Applied Flow Technology provides the pipe flow analysis knowledge that comes with extensive real world experience.

## New In Version 7.0

- Enhanced pump vs. system curve generation also includes individual head curves and composite efficiency
- Output Control window interface improved
- Simultaneous display of output parameters with different units
- Enhanced Excel™ import
- Pump viscosity correction utilizing ANSI/HI method
- Pipe submergence calculated using HI standard



## Applications

### Pipe Sizing

*AFT Fathom's* extensive capabilities for friction modeling include pulp & paper and non-Newtonian fluids. The comprehensive output details the contribution of individual line losses to the overall system. Visual Report's color mapping by selected criteria clearly illustrates individual lines in the context of the entire system.

### Pump Selection

Fully explore the interaction of pumps and your system. Pump modeling capability includes parallel and series pump operations, flow vs. head, NPSHA vs. NPSHR, varying pump speeds, viscosity corrections and pump power and associated energy costs. Able to import external databases and online linking to Intelliquip™ powered pump selectors, *AFT Fathom* allows the system engineer to quickly evaluate a large range of potential pump selections.

### Coupled Thermal Analysis

Modeling heat transfer across heat exchangers between multiple loops and heat transfer across pipe boundaries, including insulation effects, your cooling or heating system model becomes a comprehensive fluid and thermal analysis.

### System Operation

A system's operating envelope can be fully explored by quickly and easily varying system parameters and configuration. Change the number of pumps in operation, pump speed, control valve settings, valve positions, fluid properties—virtually any modeling parameter. An *AFT Fathom* model provides a realis-

tic and accurate representation of your system's characteristics allowing testing under a wide variety of conditions long before committing to hardware.

### Control Valve Selection

With comprehensive output and ease of changing component specifications, determining control valve capacity and insuring adequate pressure drop is greatly facilitated. *AFT Fathom* goes beyond this by simulating pressure and flow control valves so that interaction with the system can be tested in the design stage. The valve summary report displays effective  $C_v$  and K factor values for all valves in the system.

### System Requirements

- Windows 98 and higher or Win2000 and higher
- 64 MB RAM minimum
- 800 x 600 display minimum
- Stand-alone or network



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