AFT Fathom™ 10

Incompressible Pipe Flow Analysis
& System Modeling Software

Dynamic solutions for a fluid world ™

AFT
Applied Flow Technology

Evaluate New Designs & Improve Your Installed Systems

Tackle your most challenging pipe systems using AFT Fathom, a fluid dynamic simulation software used to calculate pressure drop and flow distribution in liquid and low velocity gas piping and ducting systems.

Capabilities

- Experiment with operating conditions and scenarios
- Easily change system input data, including valve positions, pump operation, control set points, pressures, temperatures and more
- Model a wide range of system components for both design and operational cases
- Vary your system line-up: open / close pipes and valves, turn pumps on or off, set control valves to fail position
- Specify alerts that automatically highlight output values that are out of range for flow, pressure, velocity, pump best efficiency point and more
- Select pumps from online manufacturer catalogs
- Compile catalogs of your frequently used piping components and select them from a drop down list
- Address viscosity and frictional changes associated with pumping non-settling slurries and non- Newtonian fluids
- Output data summarizes the codes and standards used within the models
- Calculate the cost of system pipes and components as well as energy cost

Benefits

- Understand the hydraulic behavior of your system and predict how pipes, valves, pumps and other components interact with each other
- Evaluate the performance of new designs and assure all design requirements are met
- Identify and correct operational problems in installed systems
- Produce less costly, more efficient and more reliable piping systems

Applications

- Pipe sizing
- Pump sizing and selection
- Control valve sizing and selection
- Simulate system operation and component interaction
- Evaluate heat transfer in pipes and heat exchangers
- Troubleshoot existing systems to determine the cause of operational problems

Add-On Modules

GSC

Goal Seek & Control

Identifies input parameters that yield desired output values and simulates control functions

XTS

Extended Time Simulation

Models dynamic system behavior and how critical system parameters vary over time

SSL

Settling Slurry

Models the effects of pumping fluids containing settling solids using the Wilson/GIW method

Features

- 2D flow diagram or isometric view interface
- Detailed modeling for centrifugal and positive displacement pumps
- Scenario Manager to track all design variants and operational possibilities in a single model file
- Pump vs. system curve generation including individual and composite head curves and efficiency
- Thermal analysis including piping heat transfer and heat exchanger modeling
- Supports Newtonian and non-Newtonian fluids, including non-settling slurries
- Optional Chempak™ add-on utility provides a thermophysical database of almost 700 fluids

Data Integration

- Import piping layouts and dimensional data from GIS shapefiles, EPANET, CAESAR II and ROHR2 Neutral files, as well as PCF files from AutoCAD Plant 3D, SmartPlant, PDS, CADWorx, and others
- Robust import/export Excel integration
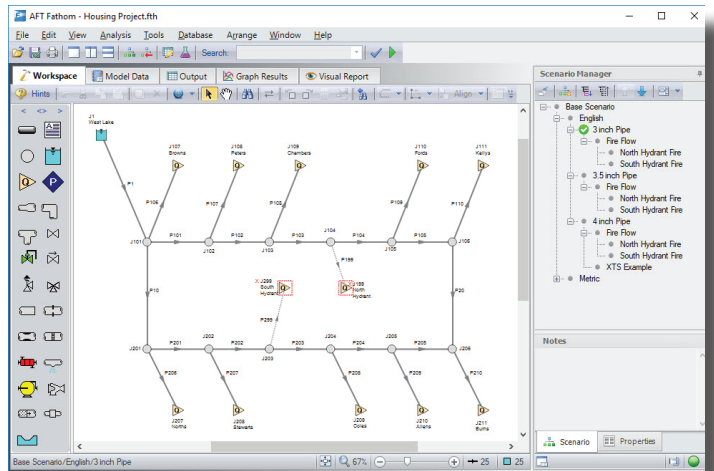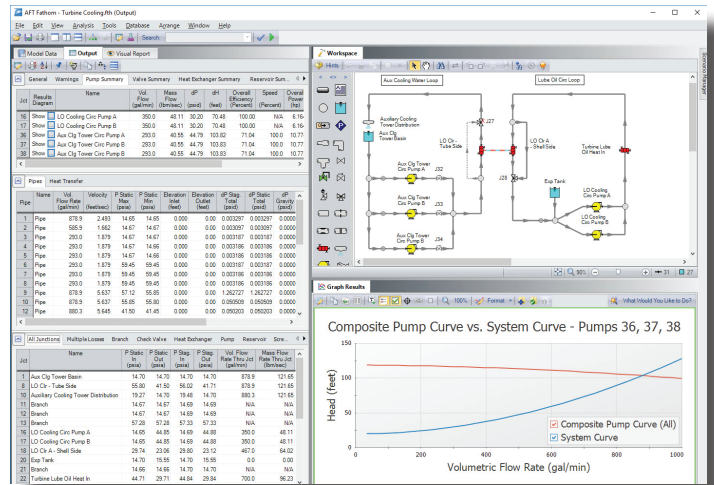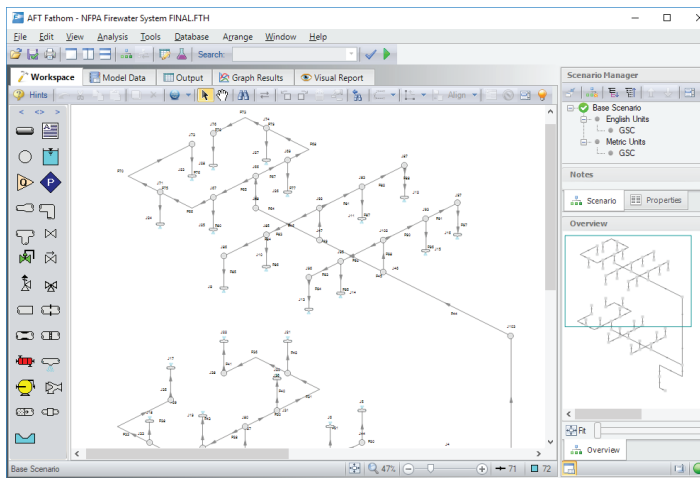
How Does It Work?

AFT Fathom's hydraulic solution engine uses the Newton-Raphson matrix iteration method plus proprietary methods developed by AFT to solve pipe flow and duct flow applications. AFT Fathom uses the Bernoulli Equation and Reynolds Number-based relationships for pipe friction calculation.

World Class Support

Your software includes one free year of product upgrades and technical support.
Additionally, AFT offers a variety of training for all levels of knowledge.

Training Seminars
This classroom style setting accelerates your skills and teaches you how to be an AFT analysis and simulation expert.

Free Webinars
Hosted webinars talk about products and solutions-based uses. Recorded webinars are located on our website.

Expert Assistance
Have more projects than you can handle or need expert analysis? Extend your team with our Flow Expert Package.

Tips & Tricks
Each month, an AFT engineer gives newsletter readers a new tip and trick to keep you up to date.