

# AFT Arrow™

## Add-on Modules



## Take Your System Designs to a New Level

The AFT Arrow Goal Seek & Control (GSC) Module frees you from time-consuming manual iteration so you can quickly find the input values necessary to meet the hydraulic behavior you want to simulate. Simply enter your variables and goals, and the module will automate the iterative process for you.



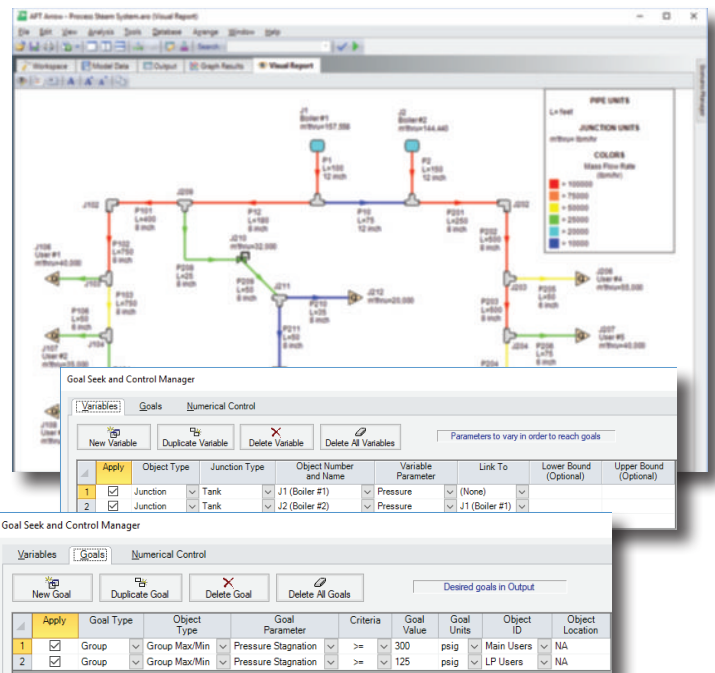
## Goal Seek & Control GSC Module

### Benefits

- Evaluate the effects of changing system parameters
- Save time by avoiding manual iterative analyses

### Capabilities

- Define multiple variables and goals at multiple locations throughout the system
- Define goals as single point, differential or sum
- Modeling parameters for variables or goals include
  - Compressors/fans - speed, flow, pressure rise
  - Valves - open percent, Cv/K, delta P, flow
  - Tanks - pressure, temperature
  - Control valves - setpoint, open percent
  - Orifice - diameter, area
  - Heat exchangers - heat rate, temperatures, area, U value
  - Spray discharge - area, discharge coefficient, exit pressure
  - Pipes - friction, scaling, insulation thickness



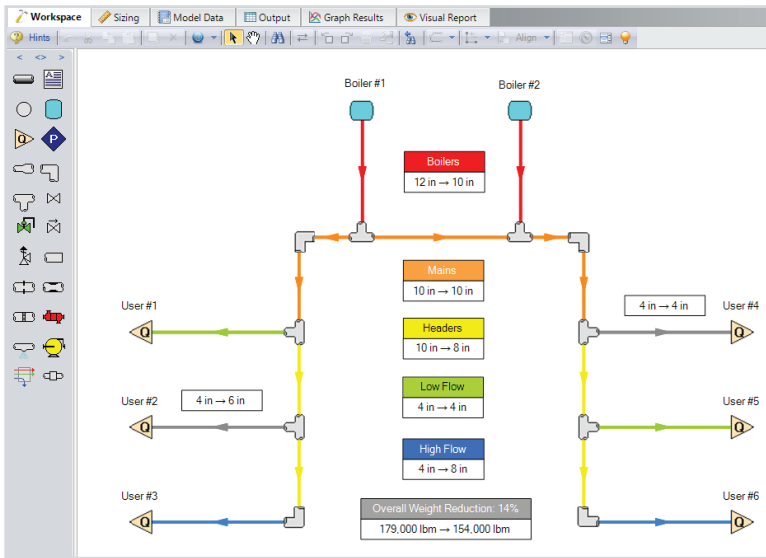
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# Automated Network Sizing

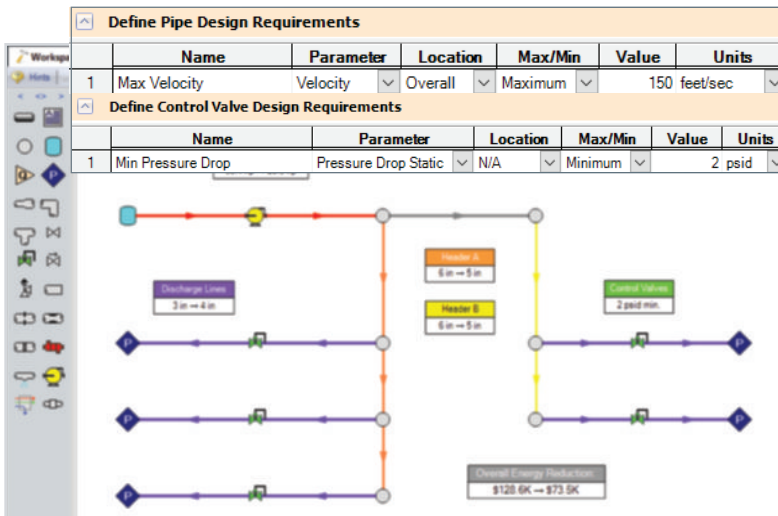
## ANS Module

### Benefits

- Enter your design requirements and the ANS module will automatically size all piping and system components in an integrated manner to minimize weight and monetary cost.



The ANS module intelligently sized the pipes of this steam supply system. Total pipe weight was reduced by 14% while enforcing common pipe groups such as Main and Header lines. Design requirements, such as the minimum supply pressures at each user, were also maintained during sizing.



The ANS module of an air distribution system shows 43% reduction in energy consumption over the system's 5-year lifecycle. Design requirements, such as minimum flows through control valves, were maintained during sizing.

The ANS module uses IntelliFlow®, which uses a combination of numerical searching algorithms and pipe flow simulation.

The technology was developed by AFT and has been a solution proven to save both capital and recurring costs as well as significantly reduce energy usage. It evaluates the complex interaction of variables in your system design, revealing combinations of parameters that minimize cost or weight.

## Size to Reduce Pipe Weight

Minimize your initial system costs without the legwork required for a cost database.

- Out-bid competitors on initial system cost.
- Minimize system costs such as pipe weight, surface area, or volume to avoid developing a monetary cost database.
- Easily demonstrate the potential savings gained by using the ANS module.
- Automatically size an initial system while accounting for planned, future expansions. Or, size an expansion for an existing system.

## Size to Reduce Energy Cost

Manage your carbon footprint by sizing your system to minimize energy costs.

- Justify an increased initial investment for long term energy savings, reducing total cost over the system's lifecycle.
- Size to minimize energy costs for a given budgetary limit.
- Account for future costs by using the time value of money and adjusting for variable recurring costs.
- Determine the cost effectiveness of replacing existing pipes in a system.

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