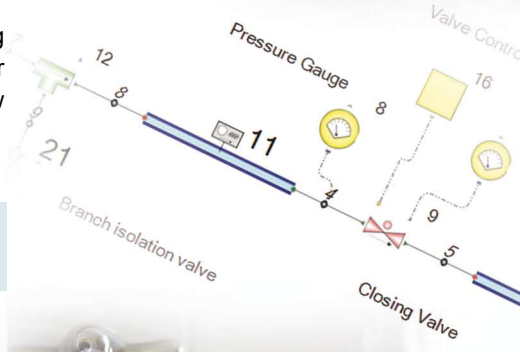
Flowmaster
Fluid thinking for systems engineers

Flowmaster V7 General Systems

Flowmaster V7 General Systems is a thermo-fluid system simulation tool used by companies in a wide range of industries which include Marine, Oil & Gas, Power Generation, Plant and Water. Built upon the Flowmaster V7 Platform, V7 General Systems allows engineers to design, optimise, validate and troubleshoot thermo-fluid system designs. The wide range of solver capabilities and supplied loss and performance data enables models to be generated from the very beginning of the development process.

Flowmaster V7 General Systems allows engineers to build system models quickly using the supplied component models using a modern and intuitive user interface. The multi-user relational database allows engineers to collaborate on projects and the open API's allow integration with other third party software tools to optimise the development process.



General Systems Modelling Packages

Flowmaster V7 General Systems is available in a number of scalable packages:

Liquid Systems

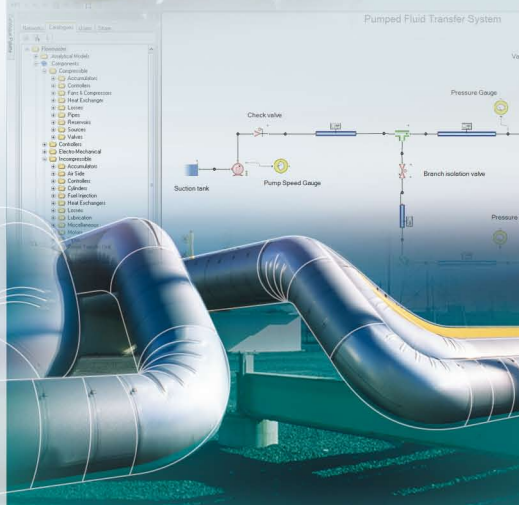
Designed as a solution for a wide range of **liquid-only** systems, this package provides incompressible modelling functionality and the ability to run **steady state** or **transient** analysis. Systems that can be modelled include:

- **Pressure Surge analysis**
- **Potable Water Systems**
- **Hydraulic Systems**
- **Domestic Water Distribution Systems**
- **Lubrication Systems**

Thermal Systems

The thermal systems package delivers the same capability as liquid systems but also includes the **Heat Transfer** solver. Systems that can be modelled include:

- **Cooling Systems**
- **Chilled Water Systems**
- **Geothermal Heating Systems**



Gas Systems

Designed as a solution for a wide range of **gas-only** systems, this package provides compressible modelling capability for **steady state** or **transient** analysis. Systems that can be modelled include:

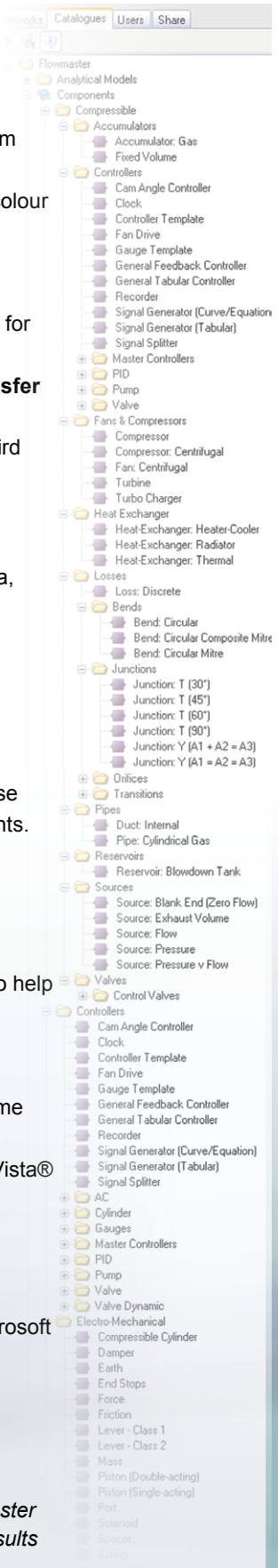
- **Ballast systems**
- **Gas transmission & Gas feed systems**

Fluid Systems

This comprehensive systems package includes liquid, gas and heat transfer modelling capabilities. Ideally suited for companies that design different types of fluid systems or consultancies that need flexibility to offer a full range of system modelling and analysis services. For example:

- **Heavy Duty Diesel Engine Systems**
- **FPSO (Floating Production Storage Offloading) Vessels**
- **Subsea Hydraulic Control**

Key Modelling and Simulation Features in detail:



System Modelling

- **Large library of component models** underpinned by empirical research data, including Loss Data from **DS Miller**.
- **Smart Modelling tools** which help prevent users from connecting incompatible components and use colour coded data entry fields to highlight required information**.**
- **Flow balancing module** for optimising component sizes around your system providing valuable cost savings and promoting greater performance efficiency.
- **Custom component creation** for developing a catalogue of components and sub-systems specifically for an organisation, including images to represent the component in the model.
- **Transient** and **steady state** simulation of **Compressible** and **incompressible** systems with **Heat transfer** analysis options.
- **Variable Parameter** functionality for running parametric studies from either within Flowmaster or via third party software using open API's.

Design Collaboration & Secure Data Management

- **Audit trail & tracking** of model history functionality keeps track of design changes and associated data, offering the user the ability to 'roll back' to previous versions to quickly compare results from different designs, saving valuable modelling time.
- **User group administration tools** allowing for the creation of project teams with difference access privileges to Flowmaster data.
- **Securely store legacy data** in an industry standard relational database. Store, share and track data securely, allowing for greater collaboration across project teams.
- **Database synchronisation** tool allow users to 'check out' Flowmaster networks from a central database enabling users to work away from the central Flowmaster server. Useful when working on site with clients.

Ease of Use

- **Intuitive graphical user interface** featuring validated data entry, reducing margin for error; optimising accuracy of results first time.
- **Advanced design visualisation** tools including the ability to add background images and use layers to help both users and non-users understand complex systems.
- **Dynamic real time colour visualization** shows pressure and flow rate changes on charts and by component colour changes as a simulation runs.
- **Flexible post-processing tools** allow results from multiple simulations to be compared easily in the time and frequency domain.
- **Non-western character support** for users of non-Latin alphabets supported by Microsoft® Windows Vista® and XP®, including Arabic, Chinese, Cyrillic, Greek, Hebrew, Indic, Japanese and Korean.

Integration

- **Open API Structure** for integrating with existing design and manufacturing software systems or for co-simulate with other leading CAE/CFD tools such as MATLAB®, STAR-CD, FLUENT®, iSIGHT and Microsoft Excel.

What our customers say about Flowmaster:

For a cooling system project "1D simulation using Flowmaster is very fast. A fully correlated model of the engine was available from the outset which meant re-engineering could be done very quickly using Flowmaster to change variables, run simulations and analyse results. For system validation; quality and accuracy of results from the outset is a major factor for choosing Flowmaster"

Ian Postlethwaite, Executive Engineer – Powertrain CAE of Lotus Engineering.

Our customers include:

Fuji Heavy Industries, Alstom Marine, Rolls Royce Marine Power, Samsung Heavy Industries, BAE Systems Marine, Babcock Marine, Northrop Grumman, BG Transco, BP Exploration, ESSO, Foster Wheeler, Tokyo Gas Company, GE Energy UK, Japan Atomic Energy Research Institute, Korea Electric Power Research Institute, Mitsubishi Heavy Industries, Siemens, Tokyo Electric Power Services, BASF, BP Chemicals, Shell UK, Technip Offshore, Mitsubishi Chemical Corporation Kurosaki Plant, Anglian Water Services, East of Scotland Water