

Capability

Fast, Batch Simulation

Enhanced Analysis and Solver Capability V7.7.2

Features

- Run parametric studies
- Create output parameters
- Link to applications with COM automation
- Integration with existing third party optimisation tools through open API's
- Examine dependencies in 2D or 3D charts
- Data or calculation results can be plotted directly against simulation number

Benefits

- Perform a greater number of 'what if' comparisons at the concept stage
- Find out how sensitive a system is to design or operating condition changes
- Flexibility to select the best optimisation approach: parametric studies, bespoke or third party optimisation tools

Overview

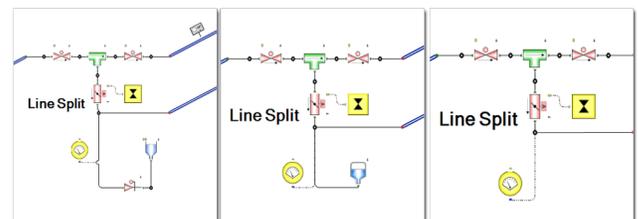
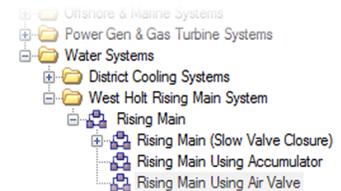
Flowmaster V7 enables users to model complete systems from the concept stage, through to system maintenance for increasing useable lifetime. The ability to perform parametric studies means you can rapidly evaluate system interactions and component influences from the digital prototype and optimise appropriately. Co-simulation with 3D CFD simulation tools means that system optimisation can occur concurrently with bespoke component design.

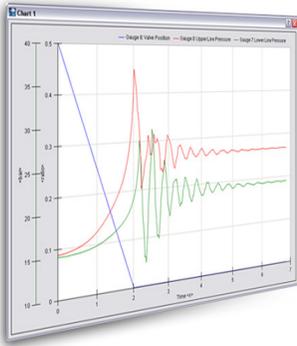
Flowmaster V7 provides users the flexibility to select the approach that best suits their needs. Users can:

- **Run parametric studies in batches from within Flowmaster V7**
- **Run parametric studies via bespoke applications using COM automation**
- **Link Flowmaster V7 to third party optimisation software tools**
- **Compare parametric studies with Flowmaster V7 post processing tools**

Run Parametric Studies within Flowmaster

Using the Variable Parameters functionality in Flowmaster V7, users can update the data values for multiple components with a single input change. When simulations are run in batches, to form parametric studies, users can investigate the system sensitivity to parameters such as pipe diameter or valve position. These studies can be completed from within Flowmaster V7 and exported directly to Microsoft® Excel. The SQL integration ensures that these studies are traceable and users can roll back to find the relevant result.

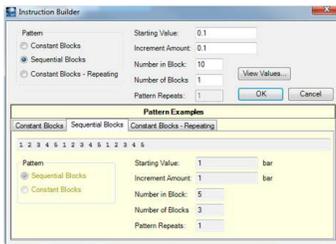




Flowmaster V7, when running a parametric study completes a series of simulations updating the parameters being studied:

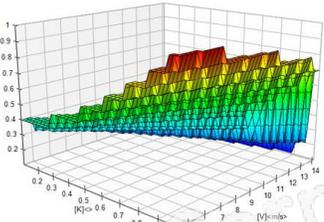
- **Users can specify a range of discrete or incremental values.**
- **Multiple component parameters can be varied during each simulation.**

Users can easily review parametric study results by selecting multiple results sets for comparison side by side using Flowmaster V7 post processing tools.



To ensure the greatest clarity of results Flowmaster also allows you to pre-select the desired output of values from a simulation. For example, in a valve closure analysis with numerous pipes and valves, you might select only to monitor a few output results, e.g. pressure downstream of the closing valve. In addition, the enhanced 'Build Instruction' dialogue box allows greater control over inputs.

Also included is the ability to build output expressions; of particular use when looking at cost and efficiency of systems where other values (such as cost of electricity) can be isolated.



The enhanced charting abilities allow for graphical representation of output results as 2D charts or 3D surfaces to examine the relationships between data and results.

Run Parametric Studies via bespoke applications

Flowmaster V7 also provides the flexibility to initiate parametric studies from external applications using COM automation. Users can integrate the powerful analysis capability of Flowmaster V7 within the organisations existing optimisation methodologies or optimise the design process by capitalising on Flowmaster V7 capability when required. Using COM automation users can develop a unique optimisation strategy, using third party tools.

The results of parametric studies run from within Flowmaster V7 can be sent **directly** to Microsoft® Excel.

For further information see our Secure, Traceable Data Capability sheet.

