

Straight-Tube Friction Flow Testing

The Grace Instrument M9250 Friction Flow Tester is designed to use a straight tube flow structure to evaluate the performance of a friction reducer for oilfield use. This automated system circulates test fluid through multiple tube sections of varying diameters in order to test flow rate vs. differential pressure under various diameters.

Automatic Computer-Controlled System

This system comprises a standard 30 gallon plastic tank with paddle stirrer to fully mix additives into the base fluid. The test fluid will then be pumped into the friction loop, with the flow rate set by using the mass flow meter. Differential pressure transducers are mounted on two sides of the test sections, and the differential pressure is logged into the analysis software directly.

Analytical Software Included

The friction loop system includes interactive graphics-based software which allows the user to automatically control and operate the loop system, while recording the data for pressure, flow rate, and temperature. A data graph can be generated in order to analyze the effectiveness and performance of friction reducer.



Operational Features

- *Fill Automation*
- *Coriolis mass flow meter*
- *Safety control - Over-pressure relief valve*
- *DP Transmitter (up to 30 psi and 100 psi)*
- *Flow rate of 15 gallons per minute*
- *Mixing tank holds up to 50 gallons*
- *1/2" and 3/4" O.D., 25' straight tube length (10' test section)*
- *Real-time display of Reynolds number, flow rate, temperature, and differential pressure*

Friction Flow Loop Specifications:

Pressure Range:	Atm. up to 150 psi
Flow Rate Range:	2 - 15 gal/min
Fluid Temp. Range:	60°F - 90°F
Mixing Tank:	15 - 30 gallons
DP Pressure Accuracy:	0.1% of full range
Particle size limit in fluid:	Up to 0.44 inch

Dimensions - Height:	6 ft
Dimensions - Width:	30 ft
Dimensions - Depth:	4 ft