



Flow Measurement System



MICROFLOW TEST

High precision flow measurement technology in a robust, production-ready system

This new MICROFLOW TEST design is the result of decades of fuel system processing experience on large scale automated systems. The new MICROFLOW TEST brings the same precision processing of a fully automated measure system, now packed into a smaller package as a stand alone machine.

The small scale robust design is scalable to your production requirements and delivers a combination of high precision, reliability, accuracy, and ease of use.



MICROFLOW TEST DUPLEX

FEATURES and BENEFITS

- + **Pressure and temperature compensation**
- + **Accuracy of $\pm 0.1\%$ of measured value**
- + **Repeatability of $\pm 0.25\%$ of measured value**
- + **Flow rate displayed in mass or volumetric flow with user configurable units**
- + **Robust industrial design setup for production environment**
Remote service tracking and standardized components brings production stability.
- + **Flexible manufacturing capability**
Modular design enables scalable production to meet varying production needs.
- + **Automation ready**
Easily integrate into part handling and robotic cells.
- + **Easy to use, easy setup**
Intuitive controls and HMI.





TECHNICAL INFORMATION

MICROFLOW TEST



MACHINE SPECIFICATIONS

Loading height from floor	1050mm (41.50")
Overall size	760mm (30") W x 2030mm (80") L x 2160mm (85") H
Weight	approx. 1250 kg

TESTING CAPACITY (STANDARD RANGE)

Maximum test pressure	14 MPa
Minimum test pressure	10 MPa <small>(NOTE: At pressures <10 MPa flow correlation may diminish.)</small>
Pressure control	±0.1%
Calibration fluid temperature range	20–40 °C controlled to ±1.5 °C

AVAILABLE FLOW RANGES FOR OPTIMUM PERFORMANCE

	flow rate range	maximum error
Option 1	10–275 gram /min.	±0.19–±0.10%
Option 2	200–2500 gram/min.	±0.13–±0.10%
Option 3	850–8500 gram/min.	±0.14–±0.10%

PROCESS METHODS

Flow measurements are accomplished by flowing calibration fluid through the part being tested at a precise pressure and measuring the mass flow rate using a Coriolis meter placed downstream. Compensations for pressure and temperature are performed so that the displayed measurements correspond to specified measurement conditions.

As an option, backpressure (up to 7 MPa) can be generated to meet measurement requirements (for instance, to avoid cavitation issues or to characterize part geometry more completely). While pressures above 0.17 MPa downstream of the part can be controlled automatically, downstream pressures below 0.17 MPa depend on the Coriolis meter that is being used.

The minimum flow rate for each meter is chosen to give a small maximum error. The maximum flow rate for each meter is chosen to give a maximum pressure drop of about 0.17 MPa. In the event the pressure drop is too high, the next larger meter should be used.

CALIBRATION FLUID

VISCOR 1487 (ISO 4113 compliant), other fluids available.

CHILLED WATER

Supplied by customer as specified by Extrude Hone – incoming at 10 °C.

FLOW TEST FLUID SUPPLY

Fluid tank	40 liter reservoir with flooded suction pumps.
Motors	5 hp (3,7 kW) motor for test fluid pressure supply. 1 hp (0,8 kW) motor for clamping and hydraulic circulation.
Indicators	Temperature and fluid levels are displayed on HMI.
Filtration	High pressure – 3 µm canister type with dirty filter indicator. Low pressure – 1 µm canister type with dirty filter indicator.
Noise	Maximum working noise level is 75 dBA.
Location	Inside machine base.
Cooling	A water/oil-type heat exchanger sized to remove required heat at maximum ambient temperature of 40 °C.
Fittings	Straight-thread, o-ring, seal-type SAE J1926-1 (ISO 11926-1).

PNEUMATICS

5 bar minimum input pressure.

Equipped with automatic pressure release at E-Stop.

Equipped with input pressure switch to ensure incoming pressure is suitable for operation.

ELECTRICAL

Input power	200–480 VAC, 3 Phase, 50/60 Hz
Input current	50/25 A depending on input voltage

CONTROLS

Programmable Logic Controller (PLC)	Allen Bradley/Siemens
Software	Allen Bradley/Siemens
Human Machine Interface (HMI)	10" industrial touch screen
Remote connectivity	Fast ethernet switch enables remote access to PLC and HMI.
Data collection	Production data logging and process data filing.

NOTE: Specifications and availability are subject to change without notice.