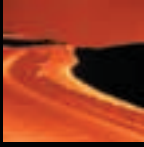


Troemner Calibration Services – Thermal Mass Flow



Precision & Balance Matched Only By Nature.



Troemner's Flow Meter/Flow Controller Calibration Program was developed to meet the most demanding requirements of precision gas thermal mass flow calibration and repair. Troemner can also calibrate and service variable volume meters (rotameters). The Thermal Mass Flow Calibration Laboratory is ISO/IEC 17025 compliant.

Facility and Equipment

Environmental conditions in the Thermal Mass Flow Calibration Laboratory are strictly monitored and

controlled. Our calibration process employs a laminar gas flow calibration method providing unprecedented levels of stability and precision by applying the most advanced data acquisition and processing technologies available today. Laboratory mass flow measurement accuracy is as low as +/- 0.2% of reading from 2 sccm to 100 slpm @ 1500 psi inlet pressure for N₂ and He (up to 240 slpm at 1,500 psi inlet pressure for H₂). Information is available for larger flow rates. All measurements are traceable to NIST.

Staff

Troemner's metrologists and technicians are thoroughly trained and authorized by a market-leading manufacturer of gas mass flow meters and flow controllers. Troemner's Mass Flow technicians are trained by several manufacturers and can repair and calibrate most brands of gas mass flow meter/flow controllers.

Processes

Troemner offers standard and custom calibration services. Gasses used for calibration include Nitrogen, Hydrogen, Argon and Helium. Service and repair options include pressure testing, replacement of seals and resizing flow rates. Oxygen cleaning is available.

Thermal Mass Flow Calibration Services Include:

- **A mass flow measurement accuracy** as low as +/- 0.2% of reading from 2 sccm to 100 slpm @ 1500 psi for N₂ & He (up to 240 slpm at 1,500 psi inlet pressure for H₂). Information available for larger flow rates.
- **Oxygen cleaning is available.**
- **Services include:** repair, resizing and calibration services for a wide variety of types and brands of gas mass flow meters and flow controllers
- **Our mass flow personnel are factory trained and authorized by a market-leading manufacturer of gas mass flow meters and flow controllers**
- **ISO/IEC 17025 compliant laboratory**
- **Fast turnaround time**

Three standard levels of service, as well as custom services are available. Below is a description of the Thermal Mass Flow services available from Troemner:

FLOW METER CALIBRATION SERVICES			
	Level 1	Level 2	Level 3
Mass Flow Meters & Controllers	•	•	•
Variable volume meters (rotameters)			• ⁺
ISO 17025 compliant	•	•	•
NIST Traceable	•	•	•
Uncertainty data	•	•	•
Turnaround time	Less than 2 weeks	Less than 2 weeks	Less than 2 weeks
Expedited service available	•	•	•
Helium leak and high pressure checks	•	•	Helium leak only
"As found" data	7 points *	7 points *	7 points typically **
Replace seals	•		
Repair parts/labor	Most repair parts & labor	Repair parts not included	Repair parts not included
Resize flow rate	•	•	
"As left" data	7 points *	7 points *	

* 7 point "As Found" / "As Left Data" @ 0%, 25%, 50%, 75%, 100%, 50%, and 0% full scale flow rate.

Troemner can tailor your calibration with additional or custom points for an additional charge.

+ Rotameters number of points dependent on scale