

CVF

Air Flow System for Turbine Engine Component Testing

The TrigasDM Air Flow Test Stand is a Sonic Nozzle (Critical Venturi) based air flow measurement system and the culmination of more than 30 years of continually expanding the state of the art in gas flow measurement precision and reliability. It has been designed to take full advantage of the Sonic Nozzle's capability for highly accurate and repeatable measurement over a wide flow range. In this configuration, it measures the air flow through gas turbine engine components for both airborne and land-based applications.

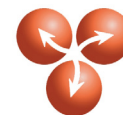
It is designed with flexibility and expandability in mind as each Turbine Engine manufacturer has unique testing specifications that must be met not only by them, but their suppliers as well.

Accuracy, repeatability, throughput and operational readiness are critical elements in the design of these test systems. Our air flow test systems currently comply with the in-house testing requirements of GE (formerly Alstom), Franke, Coatec Praxair, Chromalloy, Rolls Royce, Krohne Messtechnik etc.



Key Features and Advantages

- Made in Germany to the highest European and International standards
- Designed and Manufactured by Flow Specialists, with own ISO 17025 accredited flow measurement laboratory
- Traceable to European and American National Metrology Standards.
- Large inlet and outlet manifolds for optimal pressure stability and measurement accuracy
- Excellent accuracy and Reproducibility Characteristics thanks to no moving parts
- User Friendly, customizable controller interface for test automation and data acquisition and processing
- Open software structure, no user lockout. All Calibration functions are accessible through password to authorized Technicians/Engineers
- Service and operational availability are key:
 - Centrally located Service Organization. From our Munich base, we are able to respond to any emergency within hours
 - All critical components are either internally developed and stocked, or commercial of-the-shelf items
 - VPN Modem for remote control and maintenance



Accreditation and Traceability

TrigasDM Air Flow Test Stand sonic nozzles are calibrated in our ISO 17025 accredited calibration laboratory and they are traceable to among others the PTB (Germany), NIST (USA), NEL (UK) and LNE (France).

System Specifications

The Air Flow Test Stand family of products comes in different sizes and ranges as described in the specifications below.

Model	Flow range	Sonic Nozzle complement
CVF 10-5000-SM	10-5100 l/min	7 Sonic Nozzles, 0.031-0.250 inch (Single Manifold)
CVF 10-11000-DM	10-11000 l/min	8 Sonic Nozzles, 0.031-0.354 inch (Dual Manifold)
CVF 10-22000-DM	10-22000 l/min	9 Sonic Nozzles, 0.031-0.500 inch (Dual Manifold)

- Maximum inlet Pressure • 8 bar g
- Part Pressure Range • 0.07 – 1.4 barg (1-20 psig)
• 0.02 – 2 barg (0.25 – 30 psig) optional
• Custom ranges available
- Part Pressure Ratio Range • 1.07 – 2.36, 1.02 – 3.04 optional, custom range available
- Uncertainty • ±0.3% to ±0.5% of reading or better, depending on calibration accuracy
- Repeatability • Better than ±0.15%
- Cycle Time • 20 – 60 seconds, capacity dependent
- Flow Ports Connections • TriClamp® DN 50 (2")
- Pressure Connections • Swagelok, 6mm (1/4")
- Dimensions • 1500x110x1800mm (59"x44"x71") Single Manifold (SM) version
2250x110x1800mm (87"x44"x71") Dual Manifold (DM) version
- Weight • 350 kg (770 pounds)

Software

The LabVIEW™ based computer software not only accurately calculates gas flow, but also controls the selection of nozzles required to achieve it by opening and closing of appropriate flow paths. It controls the inlet pressure and air flow operating conditions in order to ensure that the nozzles are in the critical ("choked") state and the flow is stable. Test configuration files can easily be created, saved and retrieved and test results organized for transmission or printing.



Quality made in Germany