

PFS Mini Venturi Flow Metering Systems

General Description:

Many applications in common practice require measurement of flow occurring in smaller line sizes, typically ½" to 3" in size. To accommodate these needs, users have frequently been forced to resort to flow metering schemes which, by their very nature, are less than reliable, prone to regular failure or maintenance demands, or have significant accuracy limitations, some of which may be inherently disguised by the elaborate theories and technologies surrounding them. Many solutions have the unfortunate characteristic of eventually degraded accuracy, yet the user has no reasonable means of verifying this in the field, therefore is unaware of its occurrence. Such shortcomings are especially damaging in instances where the metering involves custody transfer, billing and compliance reporting. There can be equally serious consequences with process control applications. Primary Flow Signal, Inc., an internationally recognized Leader in Reliable Flow Measurement has identified these problems and determined that it can be of great service to the marketplace by extending its unique flow metering technology to now include the small line size universe of applications. We can now offer not only high quality, highly accurate and reliable and optimally cost effective primary flow elements below 3.0" line sizes with the Mini Venturi Metering System that offers all of the well known features and benefits of the large line size primary family of products manufactured by PFS.

Applications:

The Mini Venturi can be used in many flow metering applications where the accuracy and reliability of the measurement is critical, but cannot be compromised by cost. A few considered applications for the Mini Venturi are:

Chemical Feed System **Multi-Product Blending**
Low Volume Gas Flow **NIST Traceable Flow Monitoring**
Custody Transfer **Billing or Compliance Reporting**
Boiler Efficiency **Aviation Fuel Metering**
Choked Flow Applications

Material of Construction:

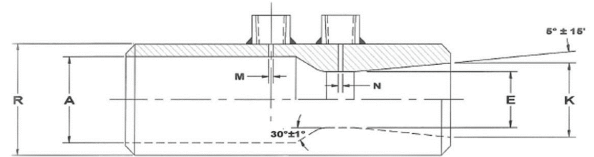
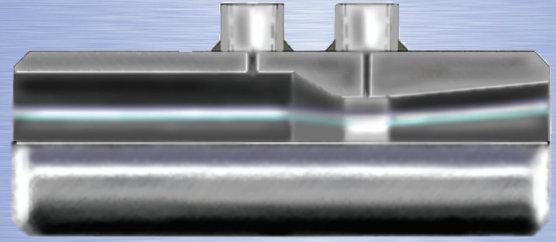
Due to the fabricated design of the Mini Venturi, the flow element can be constructed using any weldable and machinable materials. Typically materials can be mixed to balance economy with process considerations such as all S/S HVT-FV with Monel entrance section for particle impingement considerations in high velocity oxygen service. A list of suitable materials includes but is not limited to:

Carbon Steel	Chrome Moly	Inconel
316 Stainless Steel	Aluminum	Zirconium
304 Stainless Steel	Hastelloy B & C	Titanium
Duplex S/S	Monel	Tantalum
PVC	CPVC	HDPE
Kynar	Other Plastics	

PFS Venturi Model Numbers:

HVT-FVF	Fabricated Venturi, Flanged
HVT-FVS	Fabricated Venturi, Socket Weld Ends
HVT-FVT	Fabricated Venturi, Threaded Ends
HVT-FVW	Fabricated Venturi, Butt Weld Ends
HVT-FVWR	Fabricated Venturi, Butt Weld Ends, Run

Halmi Fabricated Type
Mini Venturi
(Pressure Vessel)



Product Specifications:

Accuracy:

+/-0.50% of actual reading (2 Sigma)
+/-0.25% of actual reading of better based on hydraulic calibration.

Stable Discharge Coefficient

Discharge Coefficient down to 75,000R_D (pipe Reynolds number) and well defined (known) coefficient down to 12,000R_D.

No minimum line velocity requirements,

and pressure or temperature limits are only those imposed by the materials of construction.

No downstream straight pipe requirements,

And minimal upstream straight pipe requirements

Can be manufactured with any end arrangement,

Including flanged, mechanical joint, threaded or weld-end

Low Permanent pressure loss (true energy loss)

Full PFS Standard 25 Year Warranty.

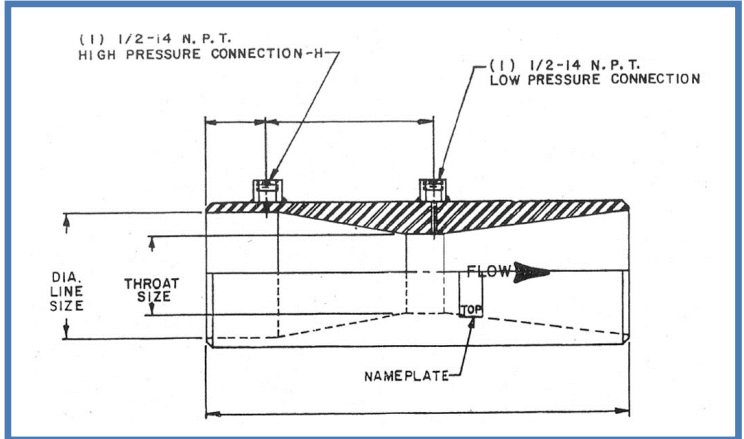
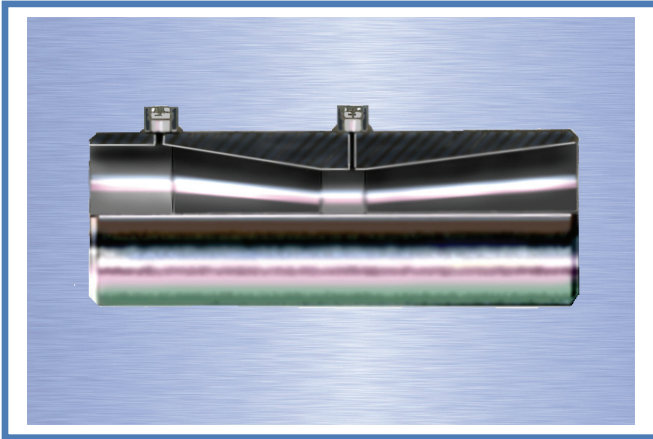
Far better than the short life expectancy of electronics type devices such as magnetic flow meters, thermal type devices or mass flow meters.

Design and Manufacturing Standards:

- All materials are mill certified and of first quality
- All applicable codes and standards are considered such as section 8 of the Boiler and Pressure Vessel Code as well as ASME B31.1 and 31.3 ASME fluid meters, MFC-3M-1985, ISO 5167, BS-7045, compliant.
- Designed for use with Raised Face, Flat Face, Weld End, Ring Joint or Van Stone Flanges of any flange rating of either U.S. or foreign standards.

Technical Data

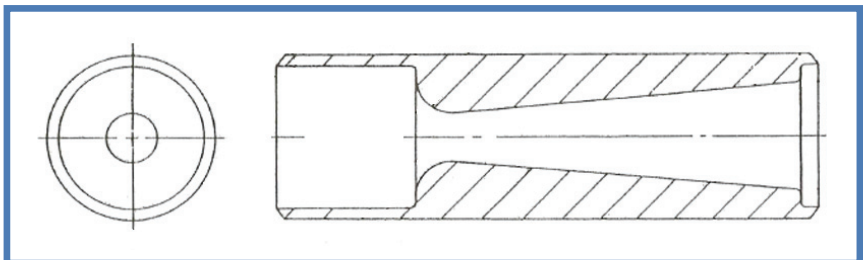
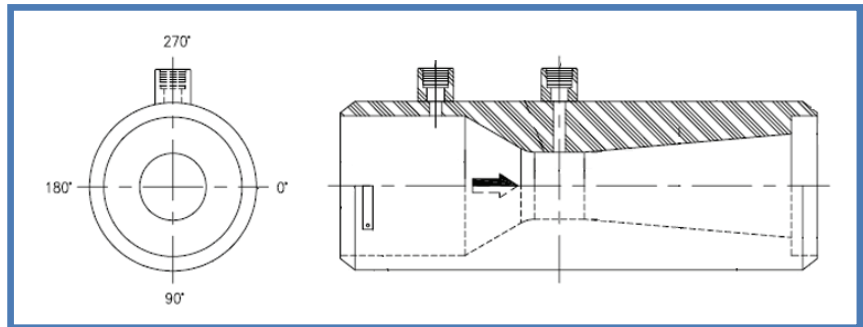
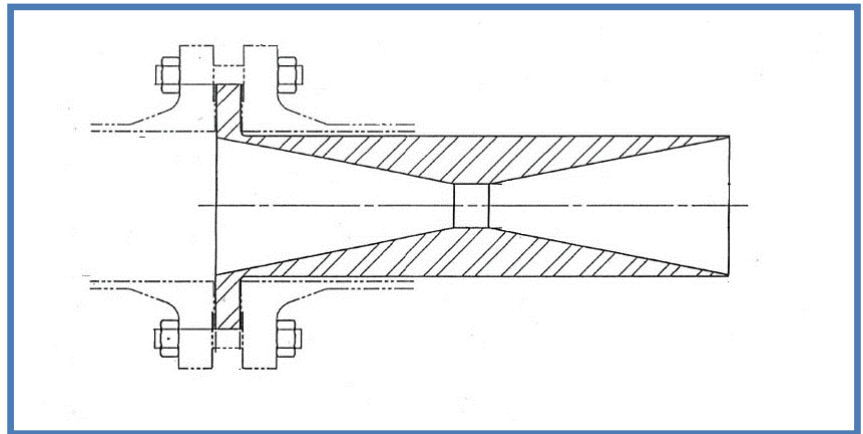
Mini Venturi



**Accurate and Reliable
Flow Measurement in
Small Line Size Gas or
Liquid Applications**

**All HVT Products are
directly traceable to
NIST insuring defend
ability unmatched in
the field of flow
metering.**

**For a Full Analysis of Your
Small Line Size Metering
Applications and a
Complete Range of Cost
Effective Solutions,
Contact:
Primary Flow Signal, Inc.**



Headquarters Location
800 Wellington Avenue
Cranston RI 02910
Ph: 877-737-3569
Fax: 401-461-4450

Tulsa Location
7136 S. Yale Ave., Suite 300,
Tulsa, OK, 74136
PH: 800-248-5111
FAX: 918-481-3205