

## HVT-PI Composite Insert

The Industry Standard in Flow Metering for Liquid and Gas

**P**rimary Flow Signal, Inc. is a leader in the design and manufacture of Venturi differential flow meters. Field-proven in hundreds of thousands of installations worldwide, differential metering ensures the most accurate and reliable metering available anywhere. Through innovation, coupled with peerless engineering and technical expertise, PFS delivers customers versatile, ultra-long lasting liquid and gas metering solutions for a variety of applications and industries.

The **HVT-PI Halmi Composite Insert Venturi** delivers best-in-class performance at the greatest value. This insert type meter is composed of a mix of rugged materials for minimal cost, weight, permanent pressure loss, and laying length; while delivering maximum accuracy, repeatability, reliability and performance substantiation (to 2 Sigma). The Halmi Insert Venturi

product line offers maximum design flexibility because any Beta ratio is available (Beta ratio is the meter throat size divided by the line size) to increase the flow rate range of the meter and manage energy consumption.

Designed to be inserted within system pipes, HVT-PI contains nozzles made of fiberglass-reinforced polyester resin, 304 stainless steel throat joints, and a tough carbon steel attachment flange. Secured by flanges between abutting pipe ends, this meter insert has no pressure limit, and delivers high accuracy metering (+/- 0.25% or better). It is ideal for a myriad of liquids and clean gas applications.

Static inlet taps and grouted-in taps are available for larger line sizes, as well as special HVT-DG models fitted with high, and low-pressure tap vent cleaners to allow clearing buildup on the piezometer taps.



### HVT-PI Composite Insert Features

**Accuracy:**

+/- 0.50% of actual reading  
(2 Sigma)

+/- 0.25% of actual reading  
or better based on hydraulic  
calibration

**Beta ratios:** custom sized and  
designed for Beta ratio from  
0.30 to 0.75

**Line size:** range is unlimited, with  
examples between 0.5" and 120"  
in service

**Materials:** wide range of materials  
available depending on service  
conditions (see back for standard  
materials)

**Temperature:** -60° F to 300° F  
(as limited by secondary devices)

**Line pressure capacity:** unlimited

**Line fluid capabilities:**

Gas or liquid

With minimal particulate

**Cones:** fiberglass-reinforced  
polyester resin with 304 steel  
cone edges

**Throat liner:** 304 stainless steel  
(or any stainless steel material)

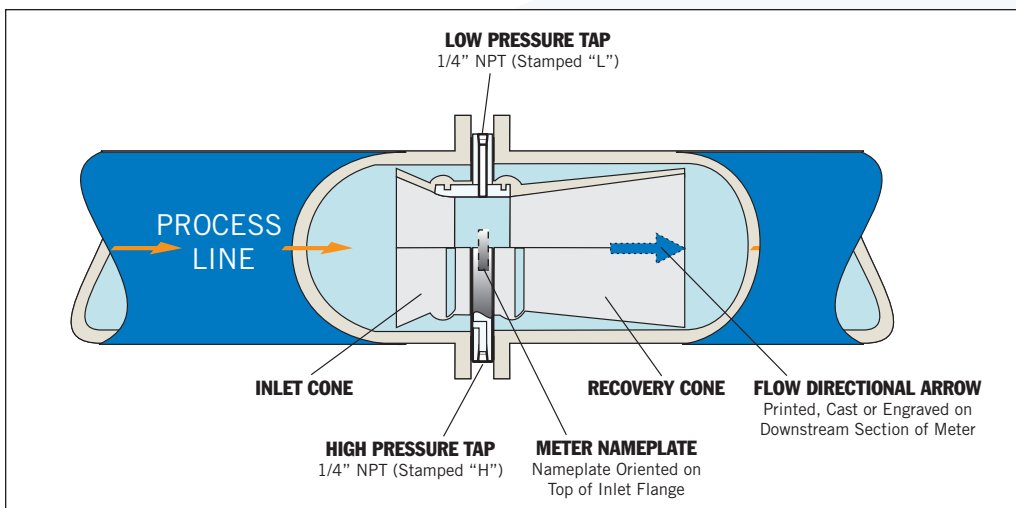
## HVT-PI Composite Insert Features

**Flanges:** carbon steel coated with epoxy designed for use between raised face, flat faced, ring joint, or van stone flanges of any flange rating per domestic U.S. or foreign standards. Stainless steel flanges are also available.

**Pipe Reynolds number  $R_D$  capability:** discharge coefficient is constant above 75,000  $R_D$

**Permanent pressure loss:**  
Varies from 3% of differential and up depending on Beta ratio and recovery cone geometry  
Ratios including Beta and exit cone truncation can be engineered to meet requirements

## HVT-PI Composite Insert Typical Configuration



When installing: 1) orient pressure taps horizontally; 2) provide adequate clearances; 3) tighten flange bolts to industry flange assembly standards to avoid leakage; 4) ensure tolerances are within industry standards.

## Support Services

In addition to a wide range of differential producing Venturi flow meters, orifice plates, WedgeType™ flow meters, and open channel flow elements, PFS provides comprehensive, specialized services for new and existing flow meters, including rehabilitation, hydraulic analysis, and full engineering support.

## Certifications

ISO 9001, ASME S, U, R; European PED Module H; and other internationally recognized certifications, such as GOST, IBR, and CRN.

**Contact a Application Field Engineer for assistance.**



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Primary Flow Signal, Inc. products and operations are certified to industry standards for safety and performance. Visit our web site for details.



**All PFS products are proudly made in the U.S.A.**