



Metering Flow... Naturally!

BIF Model 20182 UVT Plastic Insert

The BIF Model 20182 Fiberglass Reinforced Plastic (FRP) insert Universal Venturi Tube (UVT[®]) is a differential producing primary element for measuring Water, Air, Gas, acids,alkalies and many other fluids, where low head loss and high accuracies are required.

Standard tubes are manufactured for standard line sizes from 4" to 24". Specials are available in any line and throat diameter.

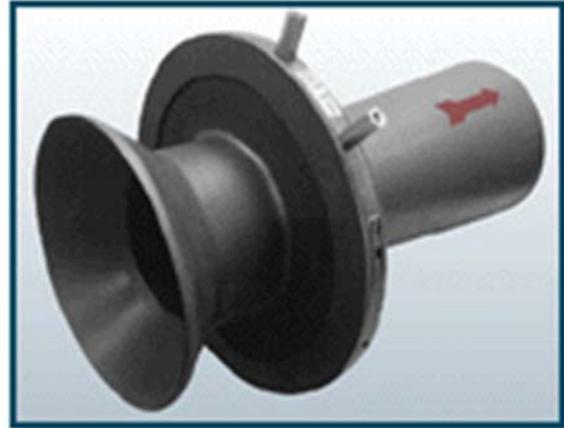
This corrosiion resistant, low cost and light weight Universal Venturi Tube is constructed of fiberglass reinforced epoxy Vinyl ester resin Ashland "Derakane[®]".

The Model 20182's design and construction make it less costly and competitive with metal orifice plate technology.

The insert design permits installation within a flanged pipe joint wuth no special equipment foundations required.

The Model 20182 with its high enduring accuracy of $\pm 0.75\%$ of actual flow rate, has been established and proven by thousands of laboratory trials, and is ensured by it's rugged, durable and self-scouring construction.

*High enduring accuracy of
 $\pm 0.75\%$ of actual flow rate
(Uncalibrated)*



The proven UVT Hydraulic profile conditions the flow profile as it enters the venturi so that differential signal is stable and predictable. This profile is also responsible for the overall performance of the Universal Venturi Tube.

Annular chambers at the high and low pressure taps are no longer needed thus avoiding concerns about collection of solids and sediments and their associated maintenance concerns. No in-line or on-line calibration is ever required for this primary element.

Typical Applications

Raw Potable Water

Finsihed PotableWater

Filter Effluent Water

Aeration Air Flow

Blower Discharge Flow Rate

Reverse Osmosis Permeate Flow

Transmission Main Metering

Filter Wash Water Flow

Other specialty applications as per the factory



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Engineering Specification

The metering design shall be a differential pressure producing type, utilizing "corner Tap static pressure at the inlet & pure static pressure sensed at the throat. The differential pressure shall indicate static pressure change only.

The 20182 Universal Venturi Tube has three sections: A sharply angled conical section followed by a 7° throat cone, these inlet sections give the UVT its short laying length,

A sharply angled conical section followed by a 7° throat cone give this UVT its short laying length.

The throat section shall be a cylindrical section with a length at least 0.50 times the throat diameter. The low-pressure tap shall be installed in the throat section.

The pressure recovery section (outlet cone) shall be truncated and have an included angle of 10 degrees. This truncated recovery section accounts for the low head loss exhibited by the Model 20182 Insert.

High metering accuracy of $\pm 0.75\%$ of actual flow rate (Uncalibrated), or to $\pm 0.25\%$ with factory available flow laboratory calibration

High Metering accuracy of $\pm 0.75\%$ of actual flow rate (Uncalibrated).

The metering element shall not have debris collecting cavities or annular chambers, and

shall have a single pressure connection at the inlet and throat.

Inlet, throat, center holding flange and outlet sections are constructed of epoxy vinyl ester resin with high strength fiberglass matting material, not less than 30% by weight. All interior sections of the venturi are coated with a very smooth epoxy vinyl ester gel coat. Vinyl ester resin is Ashland Derakanel. The Model 20182 center holding flange shall be equivalent to ANSI Class 125 Flat Faced.

Coefficient values and tolerances shall be based on actual calibrations, performed by a hydraulic laboratory, with standards traceable to NIST and in conformance with standard calibration protocol

The substantiation data shall indicate that the venturi meter discharge coefficient is independent of line size and beta ratio. In addition, the test data shall prove that the coefficient remains constant over the range of Reynolds Numbers and down to 75,000.

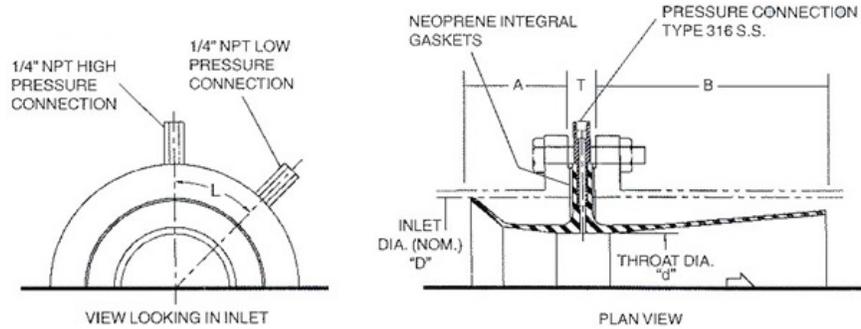
Test results from the calibration of at least 30 hydraulically similar meters used for this substantiation shall show that the discharge coefficient 2 times standard deviation is no greater than $\pm 0.75\%$.

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Effects of upstream piping configuration shall be known and based on testing performed by a recognized hydraulic laboratory.



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INLET PIPE DIA "D"	THROAT DIA "d"		MODEL	CLEARANCE		T	L° APART
				A	B		
4	A	1.800	20182-04	4	11	7/8	90°
	B	2.400					
	C	2.900					
6	A	2.700	20182-06	6	12	7/8	45°
	B	3.600					
	C	4.350					
8	A	3.600	20182-08	8	15	7/8	45°
	B	4.800					
	C	5.800					
10	A	4.800	20182-10	9	17	7/8	30°
	B	5.800					
	C	7.250					
12	A	5.800	20182-12	10	20	7/8	30°
	B	7.250					
	C	8.700					
14	A	6.300	20182-14	12	23	7/8	30°
	B	8.700					
	C	10.150					
16	A	7.250	20182-16	13	25	7/8	45°
	B	10.150					
	C	11.600					
18	A	8.700	20182-18	14	29	7/8	45°
	B	10.150					
	C	13.050					
20	A	10.150	20182-20	16	32	7/8	36°
	B	11.600					
	C	14.500					
24	A	11.600	20182-24	16	38	7/8	36°
	B	14.500					
	C	17.400					

"T" Dimension does not include gasket thickness or pipe flange raised face dimensions

** "A" Dimension is manufacturers recommended upstream spool length

** "B" Dimension is manufacturers recommended downstream spool length.

Finish Derakane Gel Coat – Light Grey with Red Flow Directional Arrow on Recovery Cone