



Model 20183 Fabricated Venturi

Metering Flow... Naturally!

Description

To fill the varied demands in the field of fluid measurement, BIF offers the Universal Venturi Tube (UVT) in a series of designs that allow the use of many metals in the form of rolled plate, forgings, and bar stock. Thus, the combined advantages of power savings from low head loss, maximum accuracy, and short laying length can be obtained in metals proven best for a given application. The intermediate and larger flow tubes (generally from 8" up) are strong weldments of rolled or forged sections. Smaller tubes are machined from bar stock for customer savings, depending on availability of materials. All surfaces are precisely machined to UVT formula for accurate prediction of flow characteristics.

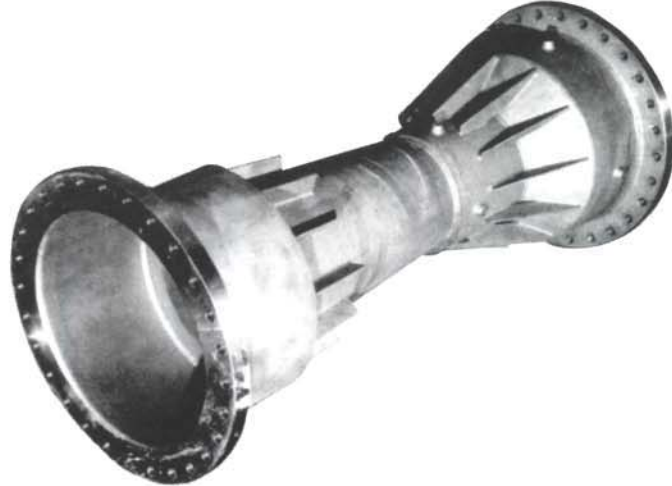
Welded construction provides the combination of structural strength with a wide selection of corrosion-resistant metals. Because of the UVT design, the tube can be more than ten times as efficient as the corresponding size of an orifice.

What makes the UVT so revolutionary is its interior hydraulic profile. Basically, the UVT has four sections: first, a straight cylindrical section with a static sensing tap; next, a sharply angled conical section, followed by a 7" throat cone (these inlet cones give the UVT its short laying length). The cones are followed by a cylindrical throat section with a static tap located in the middle of the throat section where full pipe flow occurs; the last section is a divergent truncated recovery section that accounts for the UVT's low head loss.

The UVT, weldment type, is offered in seven basic designs, as follow:

Figure 1 - For line sizes from 1" to 8", where weldments may be economically impractical. Either bar stock or forgings are used, depending on line size and material.

Figure 2 - The flanged-insert design is suitable for intermediate line sizes between 8" and 30". This tube is the most compact because it is mounted between companion flanges. High



- Seven Basic Designs
- High Accuracy $\pm 0.75\%$ (uncalibrated)

- Customized Applications
- Corrosion-Resistant Metals
- Low Head Loss

and low instrument taps are factory-installed to eliminate incorrect field installation. Enclosure within the pipe line eliminates one pair of flanges for the installation, a considerable dollar-savings on high pressure lines.

Figure 3 - Units are specifically designed for existing steel and reinforced concrete lines. Line sizes from 30" and up have been used as an insert. The tube is welded into position in steel lines. In concrete lines, grouting is used to securely lock the flow tube in place. Pressure taps are made in the field, but their location is not as critical as they are in an area where static pressure is sensed, and burrs and other projections into the pipe wall have little or no effect on differential pressure readings.

Figure 4 - Type units can be provided complete with containing pipe in line sizes 24" and below. They are available with flanged or plain ends for mechanical joints, or beveled for welding into line.

Figure 5 - Type units are used primarily for large pipe sizes, 24" and up, where the meter can be installed as

part of the transmission main. They have their own laying length, thus saving a substantial piece of pipe. They are suitable for steel, reinforced concrete, and prestressed concrete lines. They are furnished with plain ends for welded or mechanical joints, or flanged for high pressure service.

Figures 6 and 7 - Where unusual construction or flow exist, the weldment type UVT can usually be built to meet rectangular channel or bidirectional flow needs.

Engineering Specifications

Weldment type Universal Venturi Tubes can be furnished in the following metals: Carbon steel with stainless steel trim, all stainless steel, aluminum, bronze, monel, nickel, chrome-moly steel

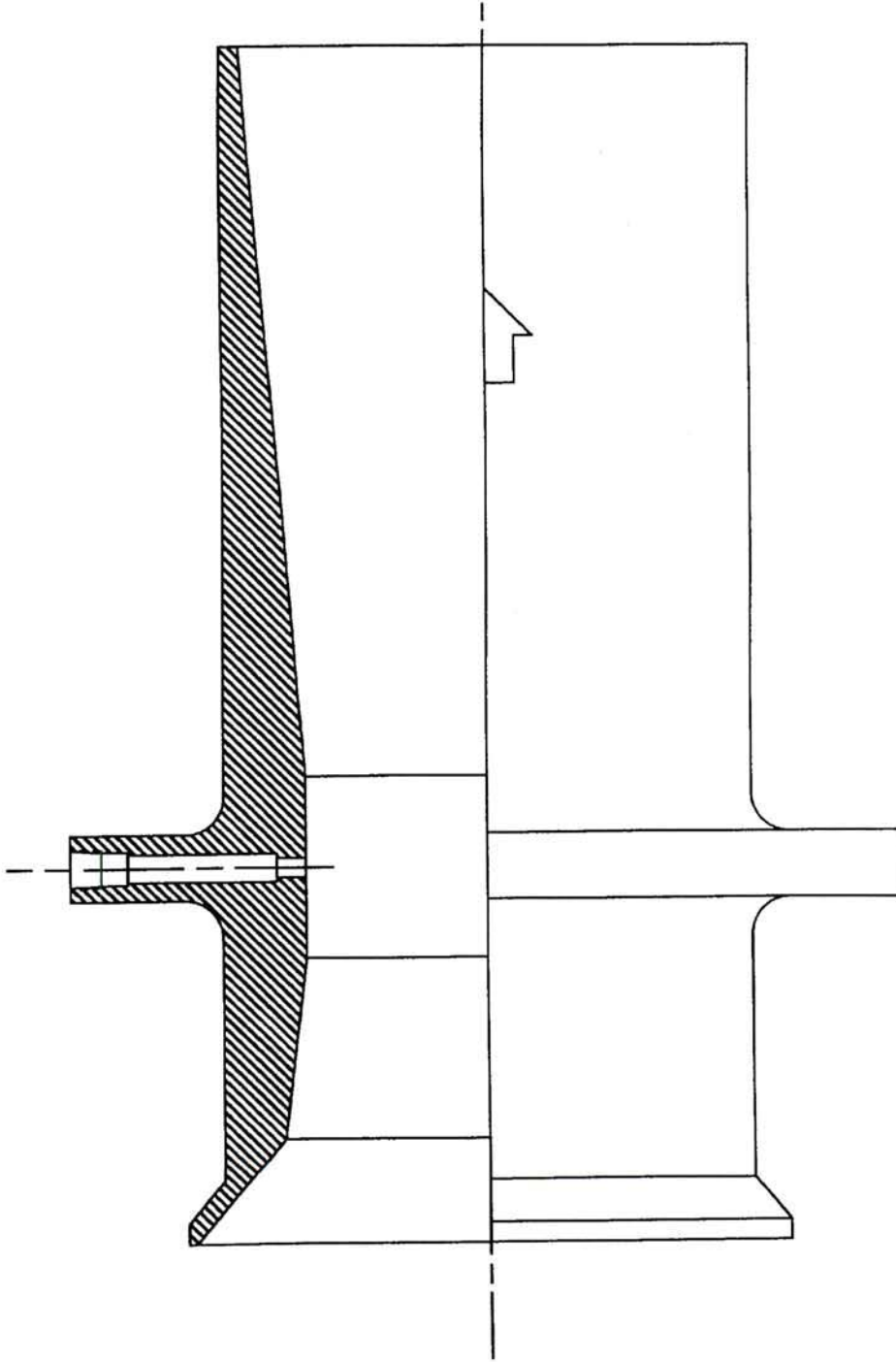
Finish - Coal tar paint, standard to 150°F; epoxy and mortar lining available

Special Codes - Welder qualifications, radiography, ultrasonic testing, magnetic particle, dye-penetrant, ANSI/ASME B31.1, etc., available.





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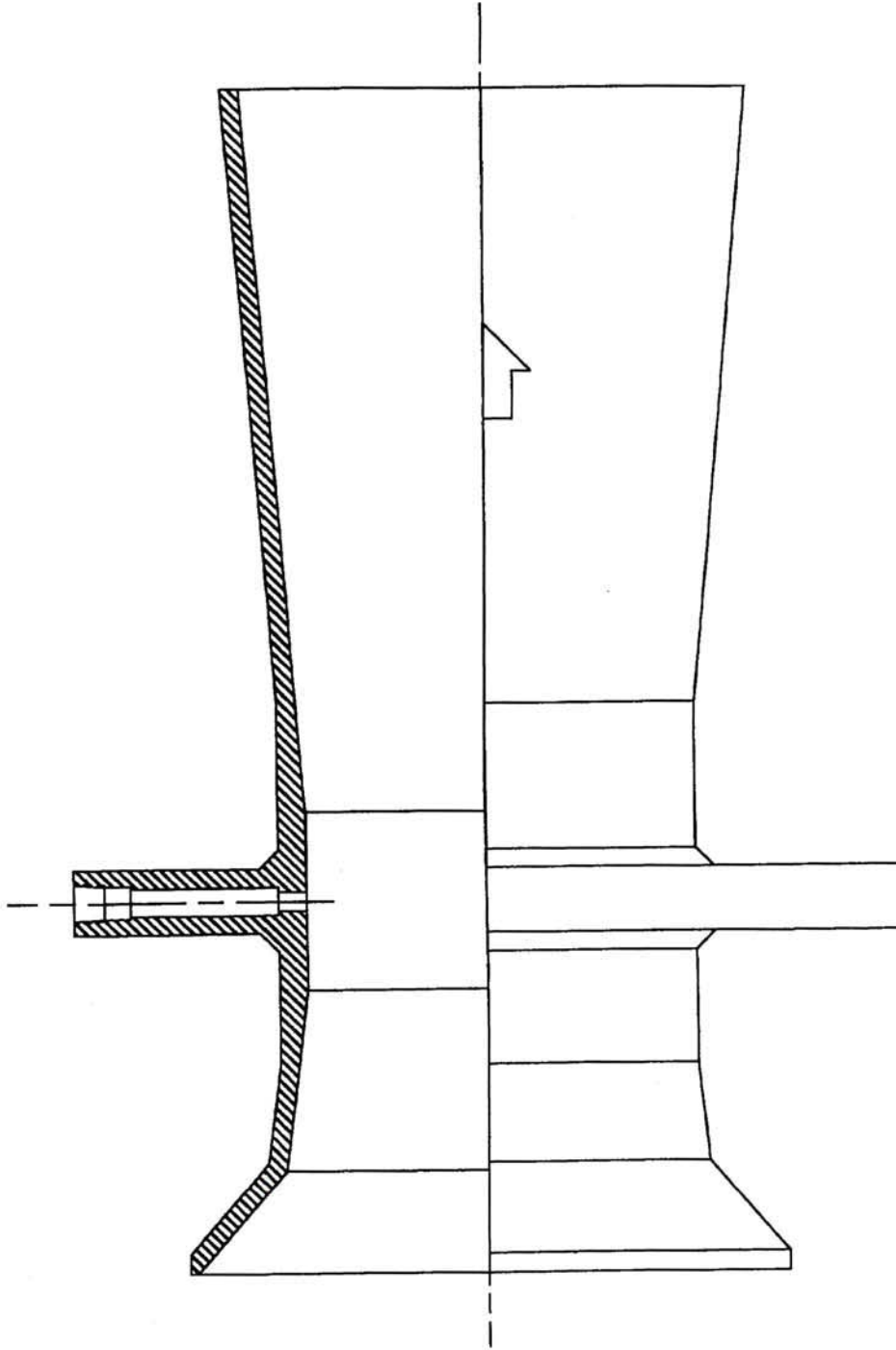
20183 Machined Insert Type Venturi



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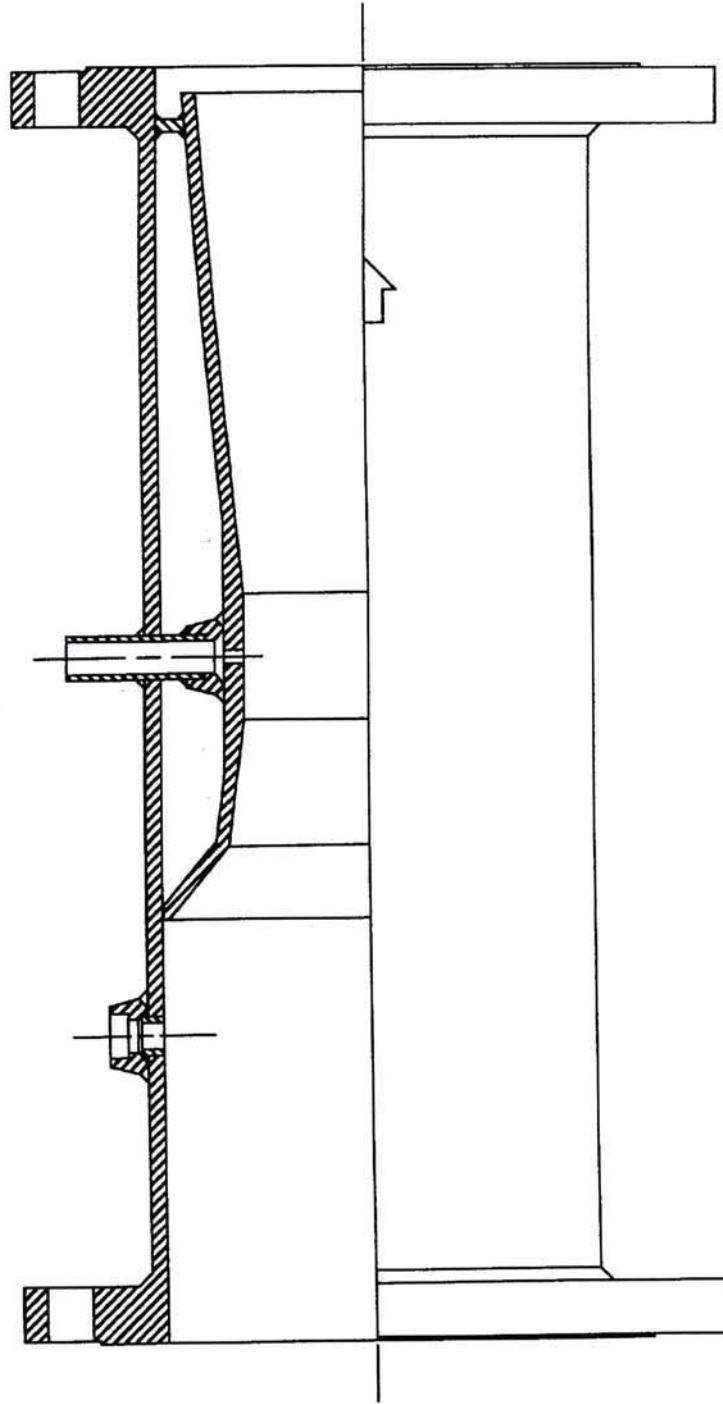
20183 Welded Insert Venturi



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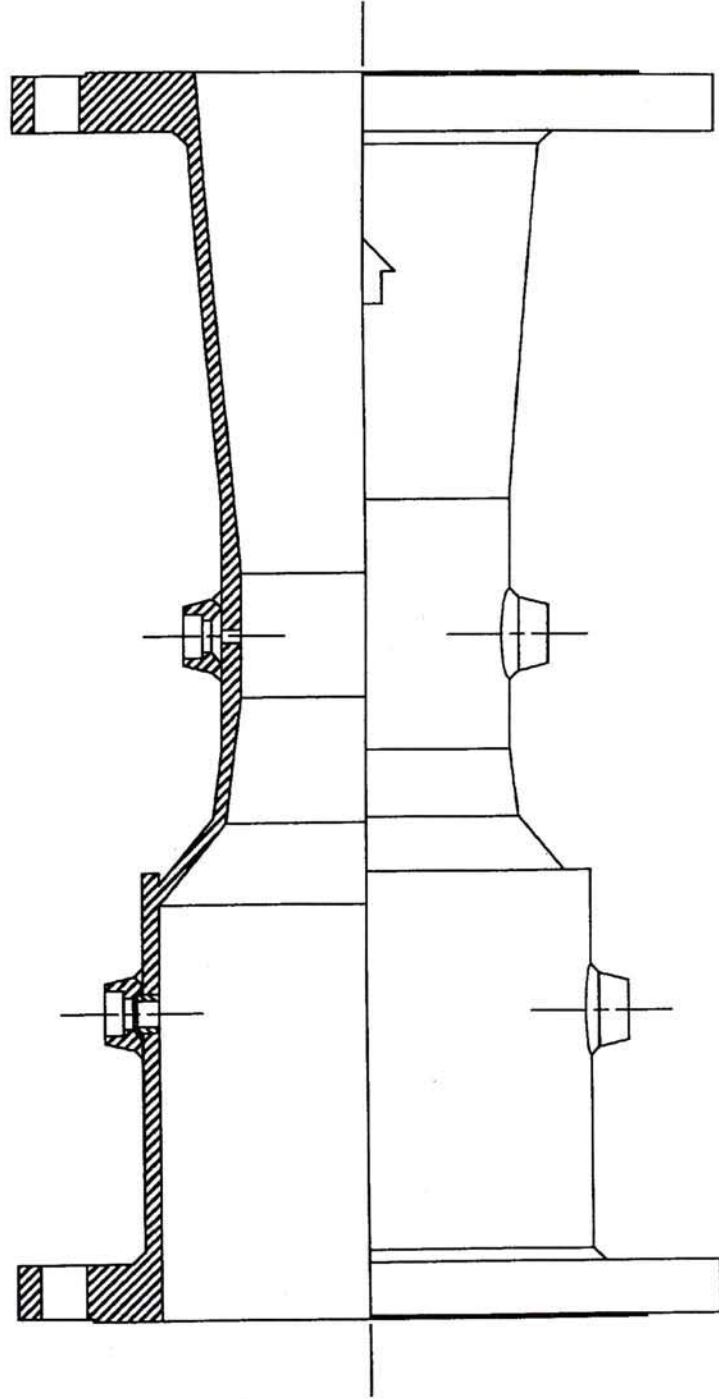
20183 Fabricated Insert Venturi In Pipe Section



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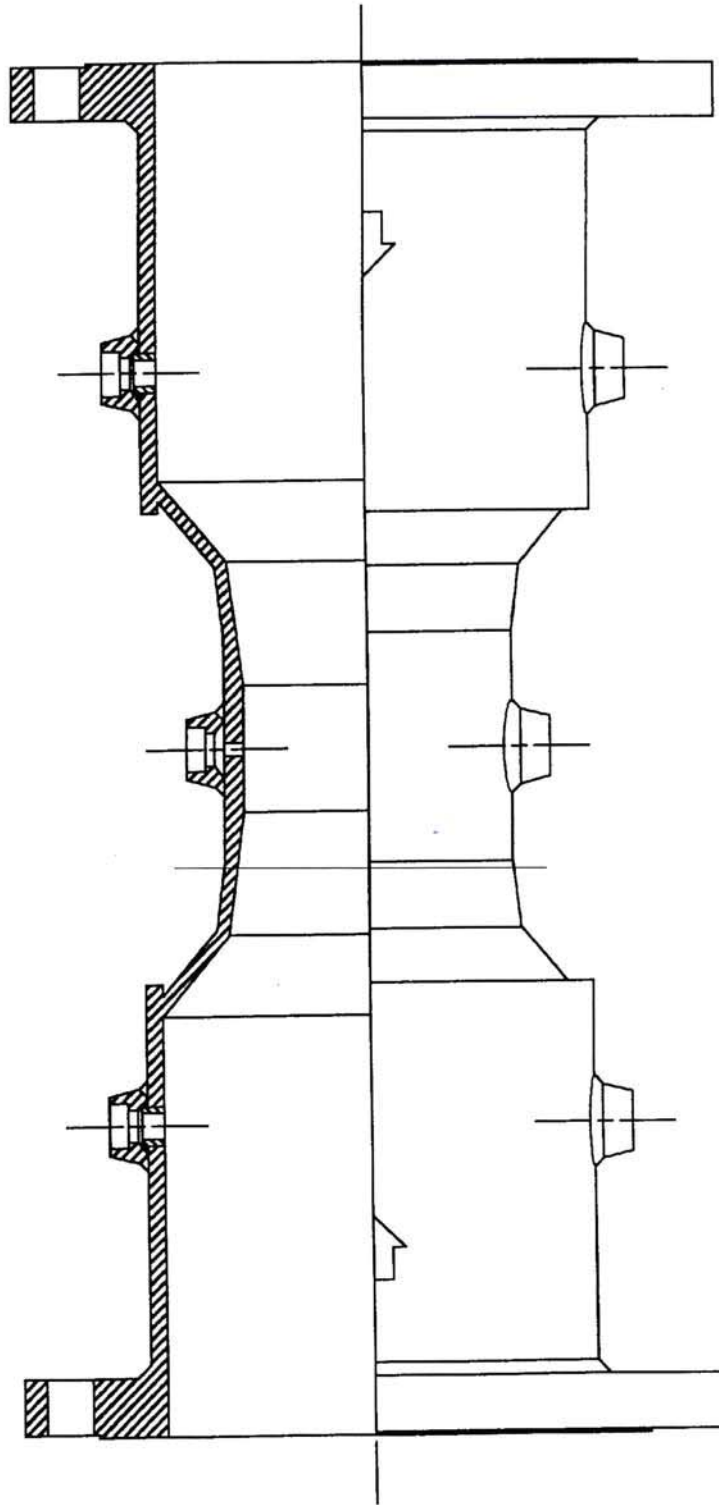
20183 Fabricated Full Body Flanged Venturi



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20183 Fabricated Bi-Directional Venturi



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