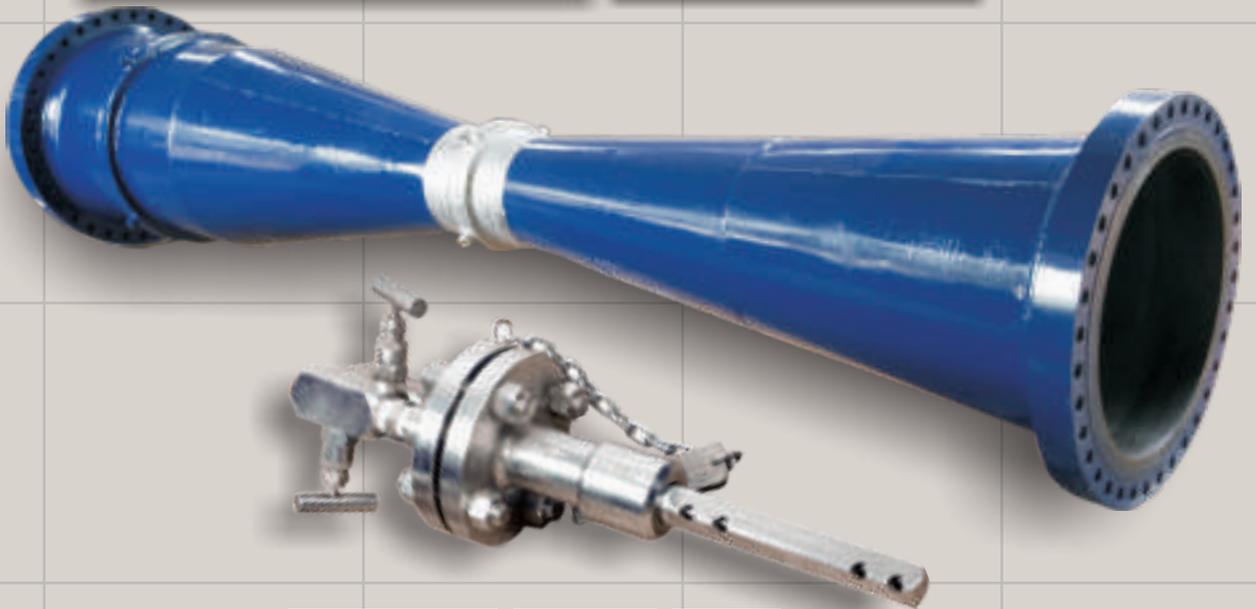
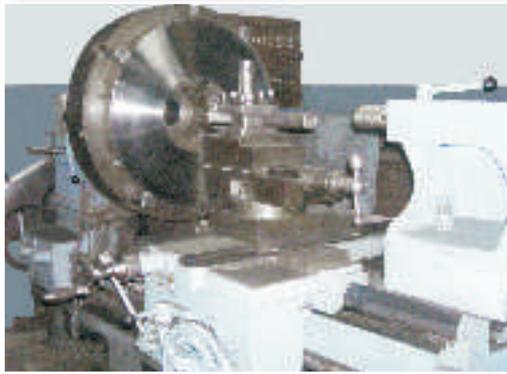
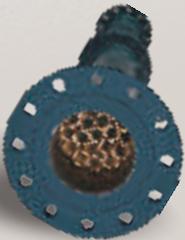


# Flowing with Advancing Technology



# Orifice Plates & Assemblies

Orifice plates are most commonly used primary elements for flow measurement in pipelines based on the principle of measurement of 'differential pressure' created when an obstruction is placed in the fluid flow, due to increase in fluid velocity.

We manufacture orifice plates, restriction orifice plates, with or without carrier ring, meter run assemblies, integral orifice plates to suit customer's requirements.

We have fully equipped integrated designing, manufacturing and testing facilities which are among the best in country. Over the years we have manufactured and supplied orifice plate assemblies to many prestigious projects in the domestic as well as international market.



## Typical assemblies

- ❑ Orifice Plate with Weld Neck Flange Union
- ❑ Orifice Plate with Slip On Flange Union
- ❑ Orifice Plate with Male-female Carrier Ring and Flanged Union
- ❑ Orifice Plate Assemblies with RTJ Holder

## Types of Orifice Plates

- ❑ Square Edged Concentric
- ❑ Eccentric
- ❑ Segmental
- ❑ Quadrant Edge
- ❑ Conical Entrance

## Restriction Orifice

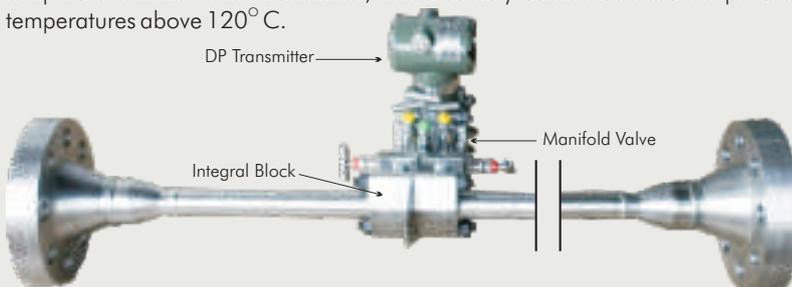
The restriction orifices are used for reducing fluid pressure and are designed somewhat different from the orifice plates that are used for measuring flow rates. They are designed to slip between the piping flanges.

While single restriction orifices are often sufficient to meet the requirements, there are situations where limitations arise due to process conditions making the single restriction orifices unacceptable. In such situations, use of multiple restriction in series is a better solution.

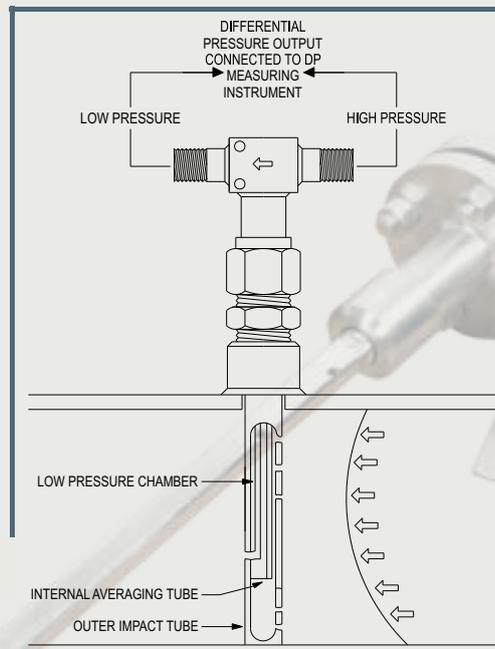


## Integral Flow Orifice Assembly

Integral Flow Orifice Assembly is used when Differential Pressure Transmitter has to be directly mounted on the orifice assembly. This eliminates cost of installation of Differential Pressure Transmitter with impulse piping up to the orifice assembly. The transmitter is mounted on the orifice assembly through a 3/5 Valve H-type manifold. Available with line sizes of 2" & below. However due to process temperature limits of the transmitter, this assembly cannot be used for process temperatures above 120°C.



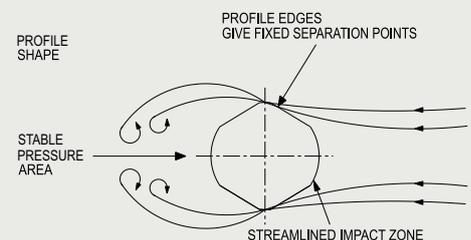
Integral Orifice Assembly, Manifold valve, DP transmitter & end flanges



## Averaging Pitot Tube

Averaging pitot tubes are generally used for large line sizes or ducts where other primary devices become relatively expensive.

- Unique profile shape enables high flow rate turn down
- Dual averaging for better accuracy
- Suitable for Liquid ,gas and steam flow measurement
- Repeatability of measurement  $\pm 0.1 \%$
- Short upstream and downstream straight pipe lengths
- Long term accuracy unaffected by wear.



## Flow Nozzles

Flow Nozzles are manufactured in strict accordance with ASME MFC-3M, BS-1042 and ISO-5167 standards.

There are three types of Flow Nozzles

- ISA 1932, with corner taps
- ASME long radius, low beta ratio ( $0.20 < \beta < 0.5$ ), with throat tap
- ASME long radius, high beta ratio ( $0.25 < \beta < 0.8$ ), with radius taps ( $D$  &  $D/2$ )

### Salient features & benefits

- Widely used for high pressure & high temperature steam flow
- Useful for flow measurement at high velocities
- Rounded inlet not subject to wear or damage, extending product life
- Lower susceptibility to erosion



## Venturi Tubes

Venturi tubes are machined up to 12 inches from a single solid bar-stock. Above 12 inches the venturi is fabricated from sheet. Rectangular type venturi used in ductwork are also fabricated from sheet.

### Salient features & benefits

- Can be used on slurries and dirty fluids
- Short upstream piping required
- Low installation costs
- Low permanent pressure loss
- Vertical or horizontal installation



## Aerofoil

Aerofoil is primary flow element use to measure air flow in rectangular duct.

An aerofoil is having the shape of the cross section of the aircraft wing, with the function of producing a controllable net aerodynamic force.



## Condensate Pots

We manufacture these condensate pots as per customer's requirement and design in various sizes 2", 3" and 4" etc.

Condensate pots are manufactured in various grades of Carbon steel, Alloy steels & stainless steel.



## Meter Runs

Meter runs are supplied as a complete unit of normally 1M length to ensure the necessary straight pipe length to achieve highest possible efficiency.

We comply Meter Tube Internal Diameter Roundness Tolerance, in strict accordance as per American Gas Association Report No. 3 Part 2.



## Conditioning Plate & Flow Straightener

These are installed on the upstream side of flow elements to remove swirl resulting from a complicated piping layout, and to restore an acceptable velocity profile.



Flow conditioner

Flow straightner