

# Orifice Plate

## A DIFFERENTIAL PRESSURE TYPE FLOW SENSING ELEMENT

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 the fluid velocity and decrease in the pressure. It is one of the most common differential producer type flow element for measuring liquids, gases, and low-velocity vapor (steam) flow. The difference in pressure is measured and converted into a DP flow measurement for a simple measurement solution. Their bore diameter is calculated to generate the specified differential pressure at full scale flow rate. This solution is widely used for gas, liquids and steam applications, including high temperature and high pressure environments. The technologies are field-proven and well suited for a variety of applications.

The design offers optimum flexibility which is ideal for applications with many diverse existing piping schemes, and require considerably lower investment for the initial purchase of equipments. They give an acceptable level of uncertainties at lowest cost and long life without regular maintenance.

Although a number of different types of flow- rate measuring devices are available, the differential pressure type of flowmeter- orifice plate still makes up the largest segment of the total flow measurement in the market.

Mechanical Engineers manufactures all types of orifice plate: square edged, conical entrance, annular and integral orifice assembly. And further distinguished as an orifice plate assembly with corner tapplings,  $d$  &  $d/2$  tapplings, and flange tapplings with or without carrier ring. Drain holes are provided as per standard and based on application. For larger pipe multiple tapplings in the form of piezometric ring tapplings are provided.

## ADVANTAGES

- May be used on Liquid, gas or Steam
- Offers low capital investment
- Low maintenance and Life expectancy typically 10-15yrs
- Range ability dependent on DP cell used
- Materials of Construction in all metal
- Easy to install and No moving parts
- Easy to replace and simple construction
- Transmitting instruments are external
- Wide application of flowing fluids



## Types of Orifice Plate



Multi Stage Orifice



Integral Orifice



Carrier Ring Orifice



Segmental orifice