

## Orifice Plate

### PEK780



#### Applications

- Power generation
- Oil production and refining
- Water treatment and distribution
- Gas processing and transmission
- Chemical and petrochemical industry

#### Special features

- Maximum operating temperature up to 800 °C
- Maximum operating pressure up to 400 bar
- Suitable for liquid, gas and steam flow measurement
- Accuracy  $\leq \pm 0.5$  % of actual flow rate
- Repeatability of measurement of 0.1 %

#### Features and Benefits

- Precision machining along with superior quality control heighten measurement accuracy and reliability
- Highly accurate flow measurement can be determined without the need for calibration
- Simple to operate and easy to troubleshoot in the field
- No moving parts ensure minimal maintenance
- Low cost of ownership

## Introduction

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.

Orifice Plates cover a wide range of applications of fluid and operating conditions. They give an acceptable level of uncertainty at lowest cost and long life without regular maintenance.

## Tab Plate

In the same material as plate and it is welded to orifice plate. Tab plate integral to the Orifice plate (i.e. without welding) can also be offered as a special case.

## Vent / Drain

Vent or Drain holes are provided as per customer's requirement. Depending on the medium a drain or vent hole may be required. The diameter of the vent or drain holes are as per IPS Standard.

## Materials

- SS304
- SS316
- SS316L as standard
- Hastelloy C276
- Monel 400
- Others on request

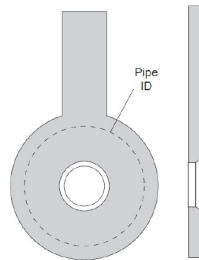
## Plate Thickness

- 3.2 mm to 12.7 mm
- Other on request

## Types of Orifice Plates

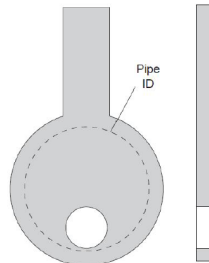
- **Square Edged Concentric**

These are most commonly used for flow measurement. This has special features such as simple structures, high accuracy, and ease of installation & replacement. The orifice plates are correctly finished to the dimensions, surface roughness, and flatness to the applicable standard. Square Edged Concentric design is intended for general applications in clean media and gases.



- **Eccentric orifice plate**

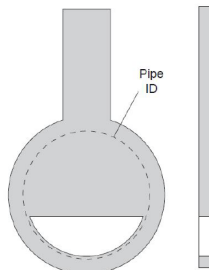
Eccentric orifice plate is used for liquids containing solid particles that are likely to sediment or for vapors likely to deposit water condensate, this orifice plate is used with its eccentric bore bottom flush with the bottom of the piping inside surface so that the sedimentation of such inclusions is avoided. Likewise, for gases or vapors, it may be installed with its eccentric bore top flush with the ID of the piping to avoid stay of gas or vapor in its vicinity. Eccentric orifice plate is used for measurements with two-phase, dirty and particle-laden media. However, for small pipe diameters an eccentric orifice plate is a better solution than a segmental orifice plate.



- **Segmental orifice plate**

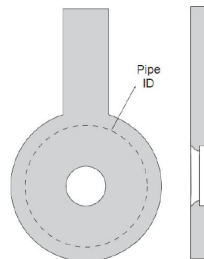
Segmental orifice plates are most useful where there are substantial entrained water or air and also if there are suspension in the fluids. This avoids build up in front of the orifice plate. The orifice hole is placed at the bottom for gas service and top for liquids.

Segmental orifice plate is used for measurements with two-phase, dirty and particle-laden media.



- **Quadrant Edge Plate**

The quarter-circle or quadrant edge orifice is used for high viscosity fluids. The orifice incorporates a rounded edge of definite radius which is a particular function of the orifice diameter.



### Sealing face for flanges

- **Raised Face**

Raised face is the most common sealing and can be used under uncritical pressure and temperature conditions.

The standard requires that the flange face and the sealing face of the orifice plate have a specified roughness to ensure the compatibility of the surface with the gasket and a high-quality seal.

- **Ring Tongue Joint**

This solution is used under high temperature and pressure conditions. The ring joint gasket can be manufactured in accordance with all relevant standards to suit the following flange standards. The surface finishing of the ring joint complies with these flange standards.

The Plate Holder Assembly is a combination of plate holder and an orifice plate designed for ring tongue joint (RTJ) flanges. The plate holder has a function of holding the orifice plate and also a function as a gasket to prevent leakage of the process fluid.

