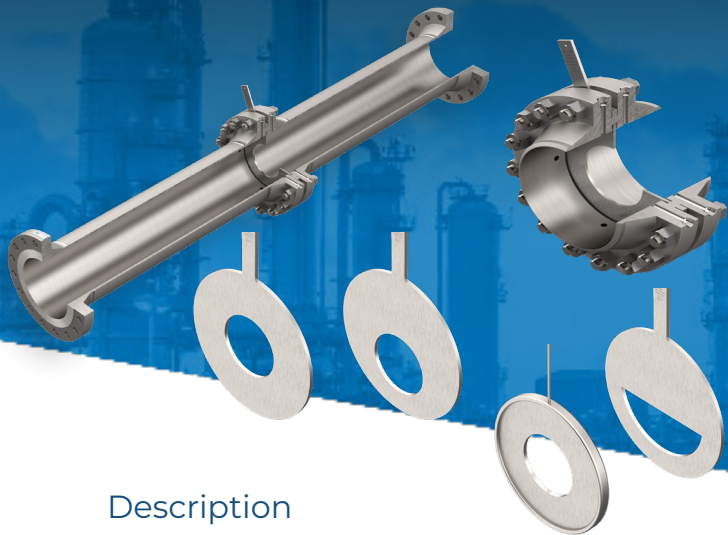


# Orifice Flow Measurement

## Orifice Flow Elements - Plates, Unions, Run



### Description

Orifice Plates, Unions, & Meter Runs are available separately or as a complete flow measurement package, ready for installation, that includes a manufacturer installed Orifice Union and Plate with the required up & down stream pipe sections. Stated uncertainties are contingent upon all code prescribed tolerances and finishes being met. The selection of a complete meter run ensures full conformance to all code specified geometric tolerances and finishes. In cases of smaller line sizes, the pipe sections may require honing in order to be compliant with the applicable code required finish. A fully fabricated run, complete with any combination of NDE required, is the only way to ensure this compliance.

### Common Materials

• Carbon Steel • 304 / 316SS

### Other Available Materials

• Aluminum • Tantalum • Duplex SS  
• Monel • Zirconium • 321 SS  
• Hastelloy B & C • Titanium • Chrome Moly

### Model Types

OP – Orifice Plate  
OUP – Orifice Union with Orifice Plate (see datasheet)  
OPTR – Orifice Plate, Threaded Run (No Flange Union)  
OPWR – Orifice Plate, Welded Run (No Flange Union)  
OUPFR – Orifice Union with Orifice Plate, Flanged Run

### Specifications

**Standard Line Size:** 1/2" to 48" Standard (Special Sizes Available)

**Head Loss (permanent pressure loss) in % of Differential:** 30% to 70% Beta Dependent

**Basic Accuracy (% of Total):** +/- 0.25% (Calibrated) +/- 0.50% to 0.75% Beta Dependent (Uncalibrated)

**Minimum Pipe Reynolds Number:** Must be greater than 10,000, Added uncertainty under 10,000

**Required Straight Piping:** Per ISO, AGA, ASME, API standard as applicable, 5 to 70 Pipe Diameters

**Beta Range:** 0.20 through 0.75

**Vent or Drain Holes:** Vent or drain holes are available to let trapped gas or condensate pass

**Service Functional Limits:** Clear Liquids & Gases. Special plate types for low Reynolds and contaminated fluids

### Applications

- Flow Restriction
- Pressure Reduction
- Flow Measurement
  - o Steam
  - o Gases
  - o Liquid
  - o High Viscosity
  - o Low Reynolds
  - o Entrained Solids Fluids
  - o Wet Vapors (<10% by weight)
  - o Sediment Containing Fluids

### Special Features

- Low cost maintenance & plate replacement
- Widely used for high pressure and high temperature steam, gas & liquid flow
- No annular chambers required therefore no plugging
- Useful for fluids with entrained gas or condensate, mitigated by vent/drain holes
- Turndown ratio of 10:1, 20:1, 50:1 and greater can be achieved depending on the specific model and design of the meter as well as the type of secondary instrumentation system utilized
- Mounts in any position
- Efficient and reliable
- Available in many materials and configurations
- Lengths supplied according to upstream disturbance and applicable code