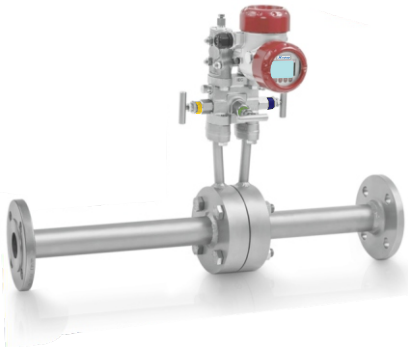


## Integral Orifice Plate

### Introduction

Flow measurement in pipelines is critical for various industrial processes. **Arrotop's Integral Orifice Assembly** offers a precise and efficient solution for measuring fluid flow. By integrating the orifice plate with the measuring instrument, this assembly simplifies installation, improves accuracy, and reduces maintenance costs.

### Product Overview



The **Arrotop Integral Orifice Assembly (ARO-OPA-IOA)** is designed to provide accurate and reliable flow measurement for liquids, gases, and steam. This fully integrated flow meter eliminates the need for additional fittings, tubing, valves, adapters, and mounting brackets, thereby reducing welding and installation time. By directly mounting Differential Pressure Transmitters on the orifice assembly, installation costs and potential leak points are significantly reduced.

### Technical Specifications

Model Number	ARO-OPA-IPA
Material	Orifice Plate, Body, Pipe, SS 304/L, 316/L, Duplex, Super Duplex, Hastelloy, Duplex, Monel, Inconel, Titanium (special alloys on request)
Process Temperature Limits	-40 to 230°C for direct / remote mount
Line Size	1/2", 1", 1.1/2"
Process Connection	Flanged, NPT
Fluid Types	Liquid, Gas, Steam
Pressure Tapping	Corner tapping recommended for sizes upto 1.1/2, flange taps from 2" onwards
Accuracy	± 0.5% of volumetric flow rate
Routine Tests	PMI Test, Dye Penetration Test, Hydro Test, Radiography Test, Calibration, NACE
Mounting	Direct mounting through three / Five-Valve H-type manifold
Meter Run Pipe Length	Upstream length of 750 mm and downstream length of 250 mm
Differential Pressure Measurement	Integrated design reduces ID uncertainty and plate misalignment issues

### Advantages

- Cost- Effective Installation
- Enhanced Accuracy
- Reliable and Maintenance
- Compact and Integrated Design
- Versatile Application
- Improved Velocity Profile
- Elimination of Long Impulse Lines

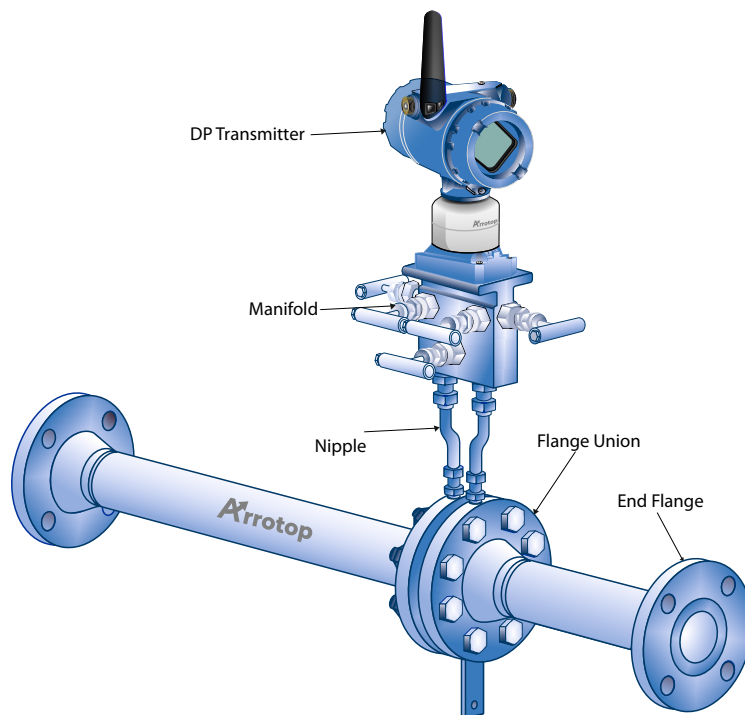
### Applications

- Energy Generation
- Chemical Processing
- Oil and Gas
- Water Treatment
- Food And Beverage
- HVAC System
- Pharmaceutical

Liquid Applications	Gas Applications	Steam Applications
Open high and low side valves.	Open high and low side valves.	Remove pressure from the line.
Open the equalizer valve.	Open the equalizer valve.	Open high, low, and equalizer valves.
Pressurize the line	Pressurize the line	Fill manifold and transmitter with water using drain vents.
Ensure no gas remains by bleeding drain/vent valves	Ensure no liquid remains by opening drain/vent valves	Pressurize the line. Tap components to remove trapped air
Check transmitter zero	Check transmitter zero	Check transmitter zero
Close the drain/vent valves.	Close the drain/vent valves.	—
Close the equalizer valve.	Close the equalizer valve.	Close the equalizer valve.
Close the low side valve	Close the low side valve	Close the low side valve
Open the low side valve to start the system.	Open the low side valve to start the system.	Open the low side valve to start the system.

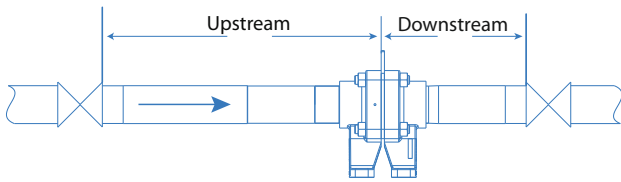
## Direct Mounting Capability

The **ARO-OPA-IOA Integral Orifice Assembly's** direct mounting capability allows for the easy attachment of Differential Pressure Transmitters via a Three/Five-Valve H-type manifold. This configuration streamlines the installation process and enhances measurement accuracy by eliminating potential sources of error associated with long impulse lines.

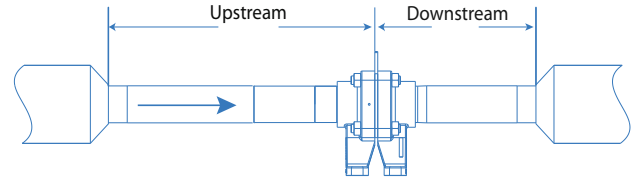


## Mounting - Straight Length

### Fully Open Gate/Ball Valve

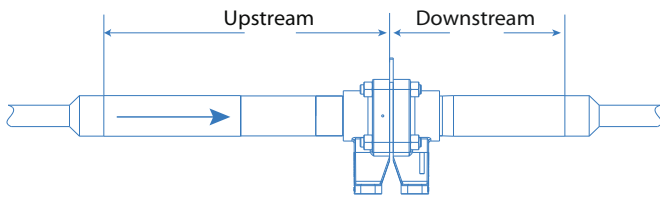


### Reducer



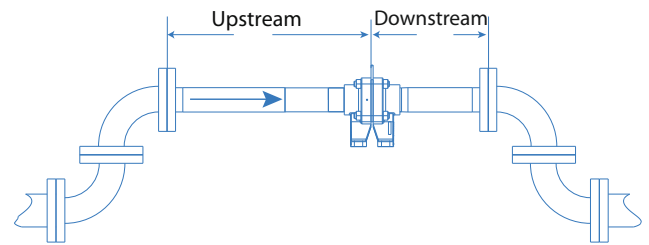
(Transitioning from  $2d$  to  $d$  over a length of  $1.5d$  to  $3d$ )

### Expander

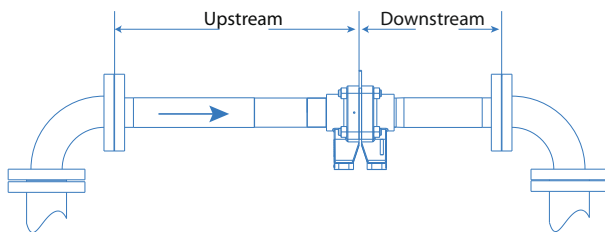


(From  $0.5d$  to  $d$  over a length ranging from  $d$  to  $2d$ )

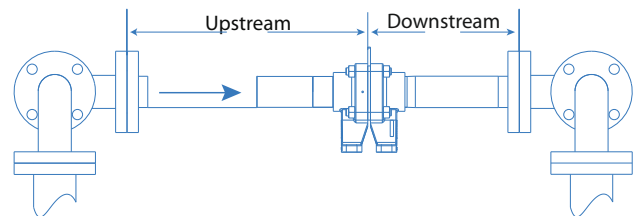
### Multiple 90° bends in the same plane



### Flow from a single branch with a 90° bend



### Multiple 90° bends in different planes



## Conclusion

Discover Arrotop's precision-engineered flow control solutions, crafted for reliability and superior performance. With a commitment to quality and innovation, our products ensure optimal efficiency across diverse industrial applications. Explore our catalog and elevate your fluid handling capabilities with Arrotop."

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