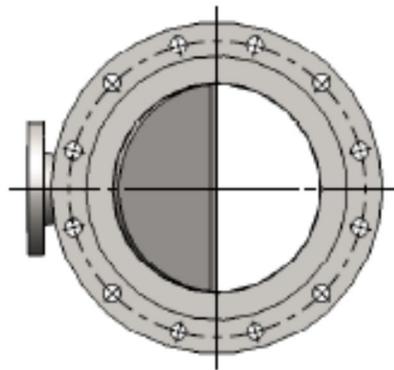


# Wedge Meter Manual

## 1. INSTALLATION

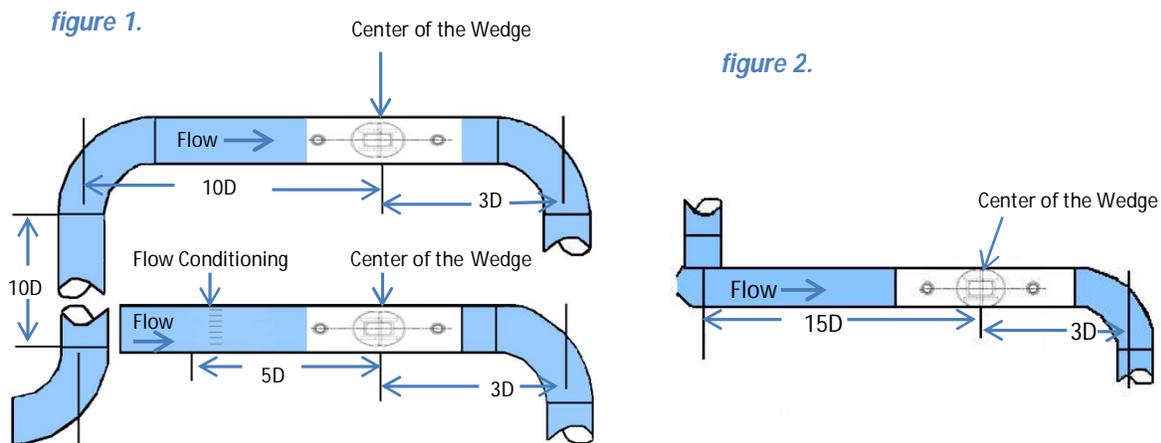
### Mounting Location

It is recommended to install the Wedge Meter on horizontal pipe runs. The Pressure taps should be oriented 90 degrees to the top of the pipe. The Wedge element will be obstructing flow on one side of the pipe allowing for entrained gas to vent along the top of the pipe and for solids or liquids to move along the bottom of the pipe. Other orientations can be accommodated however certain process conditions and elevation issues of the pressure taps will have to be considered.



## Straight Pipe Run Requirements

For most piping configurations and obstructions straight runs of 10 pipe ID (inside diameter) measured from the center of the Wedge, is required upstream, and 3 pipe ID is required downstream (*figure 1*). Modulating valves or multiple elbows out of plane may require up to 15 pipe ID upstream and 3 downstream (*figure 2*). The use of a Flow Conditioner can reduce the required pipe run to 5 pipe ID upstream of the wedge after the conditioner provided there is a straight run of 3 to 5 pipe ID upstream of the Flow conditioner depending on the preceding obstructions (single or multiple elbows; modulating valve; etcetera).



**Prior to installation** ensure that the proper pressure and temperature ratings of the Wedge Meter are not exceeded by the application.

Prior to installation the Wedge Meter should be inspected for any damage that may have occurred during transport. If the meter is being re-installed then inspection should include a visual inspection of the interior of the meter for any signs of corrosion or erosion.

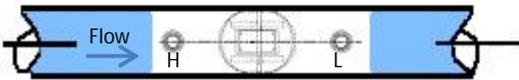
Installation of the Wedge Meter in the piping may be achieved through welded in, threaded in, or flanged in process connections. Proper practices and regulations should be followed by the purchaser to ensure a safe and proper installation. Gaskets are required for flanged in process connections and care must be exercised to ensure that the gaskets are centered so as not to affect the flow profile entering the meter. The process flanges are to be bolted in following the torque recommendations for the classification of the flanges. Gaskets and bolts are not supplied by **idSolutions** and it is the responsibility of the purchaser to properly select the gaskets and bolts for the application.

## For Remote Transmitter Mount

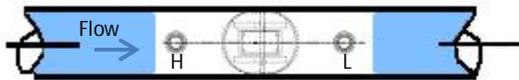
Air / Gas



DP Transmitter  
Above Centerline

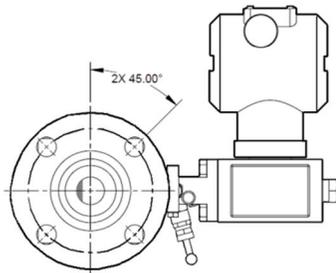


Liquid / Steam



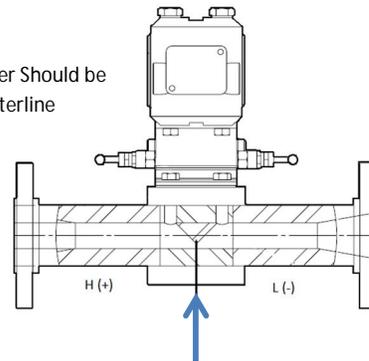
DP Transmitter  
Below Centerline

## For Direct Transmitter Mount



side view

Orientation of Transmitter Should be  
Directly Mounted at Centerline



Center of the Wedge

top view

## **2. Operation**

Measurement of flow is achieved by measuring the differential pressure across the Wedge element. Each Wedge meter is supplied with a calculated coefficient from either theoretical or empirical data that allows the flow to be determined by the differential pressure reading. Prior to operation the differential pressure transmitter must be zeroed in line. Before any true zero reading can be taken it is necessary to establish that the process pipe and flow element are completely filled with the process fluid and that there is no flow. All trapped gas or air must be purged out of impulse lines directly connected to the differential pressure transmitter is.

### **Zero Check**

Follow the specified procedure of the particular brand of differential transmitter used to measure across the wedge element. If possible repeat the zero procedure by cycling the flow to ensure that the transmitter does return to zero at no flow.

### **Span Check**

With each Wedge meter there is either a calculated flow rate versus differential pressure or a flow report derived from results of tests in the laboratory for the specific Wedge meter. The span of the transmitter can be adjusted using the data to set the high flow value. The actual span of the transmitter should be bench tested according to procedures for the particular brand of differential transmitter used prior to installation in the field.

## **3. MAINTENANCE**

The Wedge Meter has no Moving Parts that require routine maintenance. There may be periodic verification or cleaning of the process lines due to the particular process conditions. The meter should be included in any scheduled piping inspections for the line in which it is installed.

Visual inspections should be made periodically for leakage at the process connections and at the instrument connections to the differential transmitter.

If the meter is taken out of the line all procedures for installation should be followed during re-installation.