

DESCRIPTION

DAEHAN INSTRUMENT AVERAGING PITOT TUBE are using the pitot tube technology and can be used wherever flow rates of gases or liquids are to be measured. They have been proven in practice to be reliable, stable and accurate for more than 25 years.

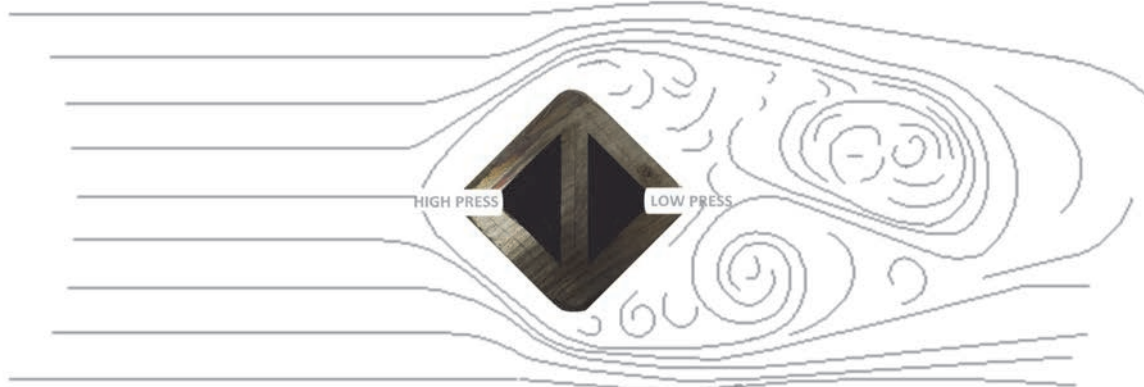
Due to the robust technology and the simple principle of measurement averaging pitot tubes can be used in many different ways even under difficult conditions and offer considerable advantages over other measuring technology from easy installation to long-term measuring stability.

BENEFITS

- ◇ Minimal pressure loss
- ◇ Improved performance in non-ideal conditions
- ◇ Easy installation and maintenance
- ◇ Low maintenance



AVERAGING PITOT TUBE



Profile shape

The upstream side is designed to generate a break point, due to which the medium passes around the pitot tube without causing any turbulence. This feature creates a stable pressure with a constant flow coefficient at the downstream measuring point, even at high flow rates.

Thus a very wide range of applications in the field of flow measurement is enabled.

■ APPLICATIONS

ISO10780 standard	This standard is an industry standard prepared without changing the technical content and composition of the corresponding international standard based on "ISO 10780, Stationary source emissions-Measurement of velocity and volume flowrate of gas streams in ducts" which was issued as the first edition in 1994.
Nominal diameters	DN25 to DN4800 (from 1 to 192 inches)
Maximum operating pressure	Limited by the flange rating
Limits of use	Reynolds No. : $10000 \leq Re$

■ MEASUREMENT FORMULA

Velocity of incompressible fluid is solved by Bernoulli Equation.

$$Q = AV = A\sqrt{2g \frac{P_1 - P_2}{r}} \dots\dots\dots \text{equation (1)}$$

P_1 : Total pressure

V : Velocity

P_2 : Static pressure

A : area

r : Specific gravity

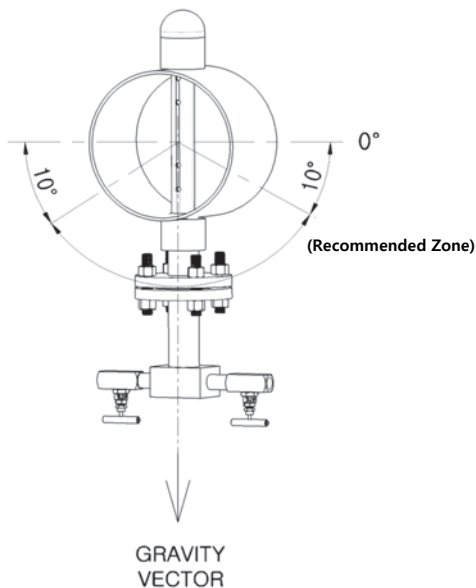
Actually, velocity of incompressible fluid is solved by application of velocity and pressure parameter which are obtained to experimental data.

$$Q = AV = AC\sqrt{2g \frac{P_1 - P_2}{r}} \dots\dots\dots \text{equation (2)}$$

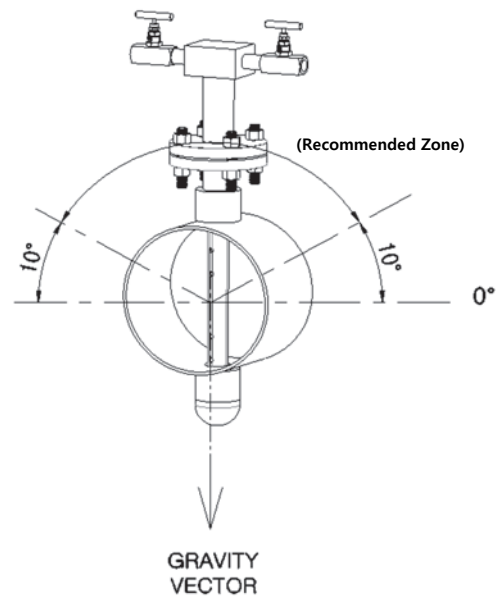
■ INSTALLATION, LOCATION AND ORIENTATION

Proper venting or draining must be considered when selecting a location. For liquid service, mount the side drain/vent valve upward this allows gases to vent. For gas service, mount the drain/vent valve down to allow any accumulated liquid to drain. In steam service, fill lines with water to prevent contact of the live steam with the electronics; condensate chambers are not needed because the volumetric displacement of the electronics is negligible.

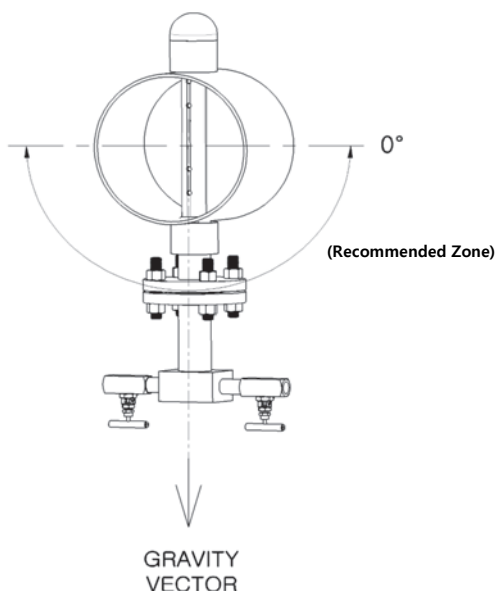
**Horizontal pipe mounting
<Liquid service>**



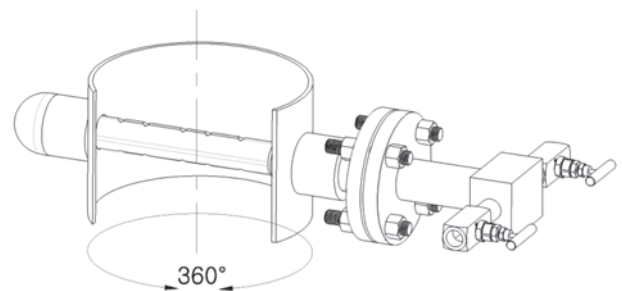
**Horizontal pipe mounting
<Gas service>**



**Horizontal pipe mounting
<Steam service>**



**Vertical pipe mounting
<Gas/Liquid/Steam service>**

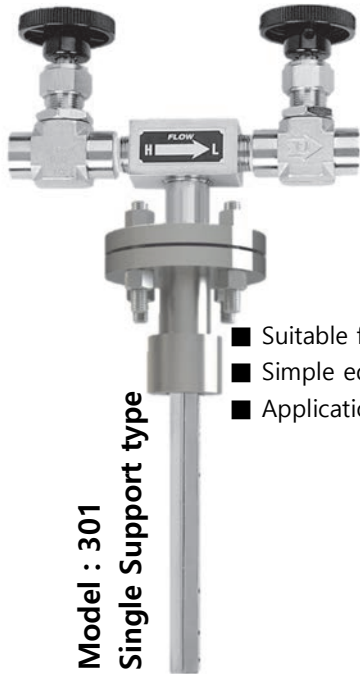




AVERAGING PITOT TUBE

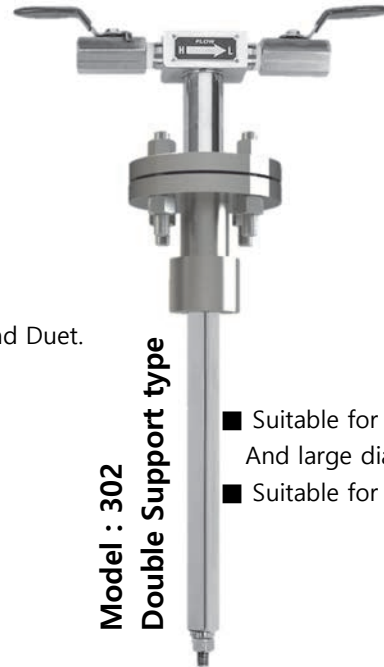


■ AVERAGING PITOT TUBE TYPE



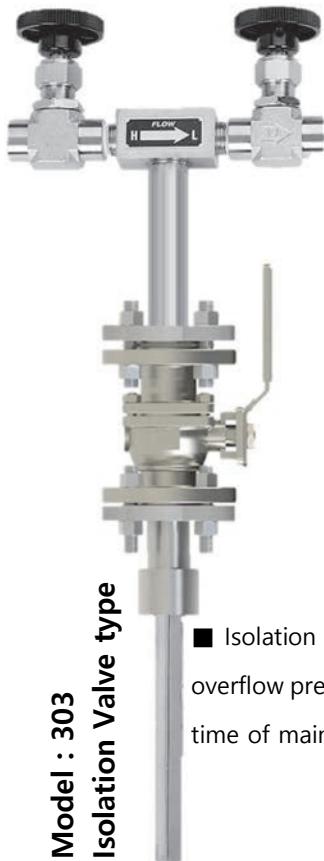
Model : 301
Single Support type

- Suitable for low pressure(under CL150) and Duet.
- Simple equipment.
- Application size : 1B to 6B



Model : 302
Double Support type

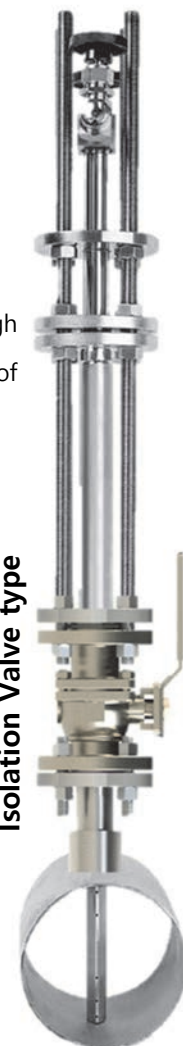
- Suitable for high pressure(CL150~900)
And large diameter(6B~120B)
- Suitable for fast fluid velocity.



Model : 303
Isolation Valve type

- Isolation valve installed in order to overflow prevention of liquid in tube at time of maintenance and repair.

- Overflow prevention system in high pressure condition at the time of maintenance and repair.



Model : 304
Isolation Valve type



AVERAGING PITOT TUBE



STRAIGHT PIPE REQUIREMENTS

Installation conditions.	Upstream Dimension * Values expressed as multiples of internal diameter D					Downstream Dimension
	Without Conditioner		With Conditioner			B
	In Plane A	Out Plane A	A'	C	C'	
	7D	9D				3D
			6D	3D	3D	
	9D	14D				3D
			8D	4D	4D	
	19D	24D				4D
			9D	4D	5D	
	7D	8D				3D
			8D	4D	4D	
	7D	8D				3D
			8D	4D	4D	
	24D	24D				4D
			9D	4D	5D	



AVERAGING PITOT TUBE



ORDERING INFORMATION

MODEL	SUFFIX CODES	DESCRIPTION	
SERIES	301 _____	Single support type	
	302 _____	Double support type(Opposite-support)	
	303 _____	302 type With Isolation valve	
	304 _____	303 type With Pressure chamber and Draw bolt retraction	
D/P CONNECTION	2 _____	1/2" NPT(PT)	
	3 _____	3/4" NPT(PT)	
	4 _____	1/4" NPT(PT)	
	8 _____	3/8" NPT(PT)	
MOUNTING CONNECTION	1 _____	1" NPT(PT)	
	2 _____	1 1/2" NPT(PT)	
	3 _____	2" NPT(PT)	
	4 _____	ANSI/ASME CLASS 150# 1 1/2"	
	5 _____	ANSI/ASME CLASS 150# 2"	
	6 _____	ANSI/ASME CLASS 150# 3"	
	7 _____	ANSI/ASME CLASS 300# 1 1/2"	
	8 _____	ANSI/ASME CLASS 300# 2"	
	9 _____	ANSI/ASME CLASS 300# 3"	
	10 _____	ANSI/ASME CLASS 600# 1 1/2"	
	11 _____	ANSI/ASME CLASS 600# 2"	
	12 _____	ANSI/ASME CLASS 600# 3"	
	13 _____	ANSI/ASME CLASS 900# 1 1/2"	
	14 _____	ANSI/ASME CLASS 900# 2"	
	15 _____	ANSI/ASME CLASS 900# 3"	
	16 _____	Other	
LINE SIZE	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> A _____	mm (100mm = 100A)	
	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> B _____	Inch (1" = 1B)	
ELEMENT MATERIAL	4 _____	304SS	
	4L _____	304L	
	6 _____	316SS	
	6L _____	316L	
	O _____	Other	
TAP VALVE / ISOLATION VALVE	If apply	A	A105
		B	304SS/304L
		C	316SS/316L
		D	Other
DP TRANSMITTER	If apply	T	Included (Remort type)
		TI	Included (Integral type)
DRAW BOLT RETRACTION & PRESSURE CHAMBER	If apply	C	Carbon Steel
		S	Stainless Steel