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# MAG Flow Meter Product Line Overview

**Note: The standard offering is the SS304 Flange Type with 150# ANSI Flanges and PTFE liner.**

|                |  |                            |                        |                   |                     |                      |  |                           |
|----------------|--|----------------------------|------------------------|-------------------|---------------------|----------------------|--|---------------------------|
| MAG Flow Meter |  |                            |                        |                   |                     |                      |  |                           |
| Categories     | Small size remote type   | Small size integrated type | Large size remote type | SS304 Flange type | SS304 Sanitary type | SS304 Insertion type | Battery powered                            | Battery powered with GPRS |
| Pressure       | 230 PSIG, 1.6 Mpa typical, others available  |                            |                        |                   | 230 PSIG, 1.6 Mpa   | 230 PSIG, 1.6 Mpa    | 230 PSIG, 1.6 Mpa                          |                           |
| Size           | 1/8" to 10 feet in diameter  |                            |                        |                   | 1/2" to 4" Sanitary | 8" and above         | 1/2" to 12" Flange sizes                   |                           |
| Flange         | ANSI B16.6 150# Standard, others available   |                            |                        |                   |                     |                      |  |                           |
| Power          | 24 VDC or 120 VAC  |                            |                        |                   |                     |                      | Battery                                    |                           |
| Outputs        | 4-20 mA / pulse (frequency)  |                            |                        |                   |                     |                      |  |                           |
| Communication  | RS-485   |                            |                        |                   |                     |                      |  |                           |
| Lining         | PTFE standard with the following options Rubber, PFA, F46, or Polyurethane   |                            |                        |                   |                     | Nylon (Probe)        | PTFE, or Rubber, PFA, F46, or Polyurethane |                           |
| Fluid          | For conductive liquids with conductivity greater than 5 µs/cm For reference note tap water has conductivity between 5 - 50 µs/cm |                            |                        |                   |                     |                      |  |                           |
| Electrode      | 316L with the following optional electrode materials available: Hastelloy B or C, Titanium, Tantalum and Platinum-Iridium        |                            |                        |                   |                     |                      |  |                           |
| Protection     | IP65 / IP67 / IP68   |                            |                        |                   |                     |                      |  |                           |
| Temperature    | Ambient: -25 to 65 Deg C / Medium: PTFE lining 70 Deg C max  |                            |                        |                   |                     |                      |  |                           |
| Ex-proof       | Yes  |                            |                        |                   |                     |                      |  |                           |

## Standard SS304 Flange type stocked MAG meters

Alarm indicator

Flow volume: **+282.92**

Unit: **FQH × 1 m<sup>3</sup> / h**

Flow velocity (FLS): **Σ +00000013.5 m<sup>3</sup>**

Percentage (FQP)

Ratio of emptiness (MTP)

Forward and reverse intergrated volumes

Deference of forward and reverse

Alarm

Enter

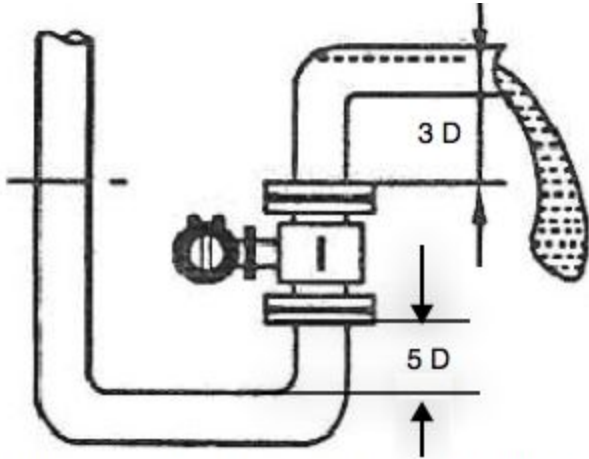
Up ; plus1, page up

Down ; minus1, page down

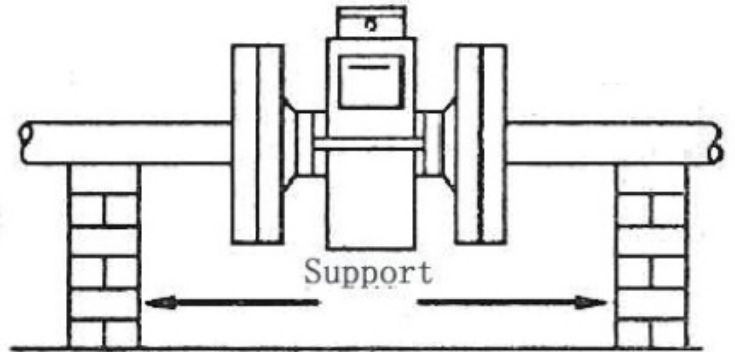
Compound

MAG FLOW METER, 1/2", 1", 2", 3", 4", 6", 8" & 12" ANSI PIPE FLANGE SIZE RANGES MAG MASS FLOW METERS FEATURE ACCURACIES OF 0.5% OF READING. AMAZING SENSITIVITY FOR CONDUCTIVITY ONLY REQUIRING A MINIMUM OF 5 MICROSIEMENS/CM (COMPARED TO MORE THAN 20 MICROSIEMENS/CM REQUIRED FOR CONVENTIONAL MAG METERS)

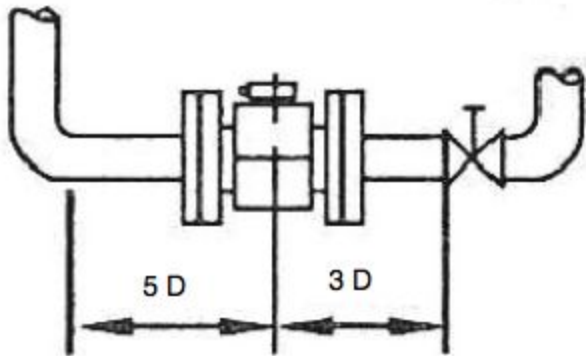
### Flow Inlet/Outlet Installation guidelines.



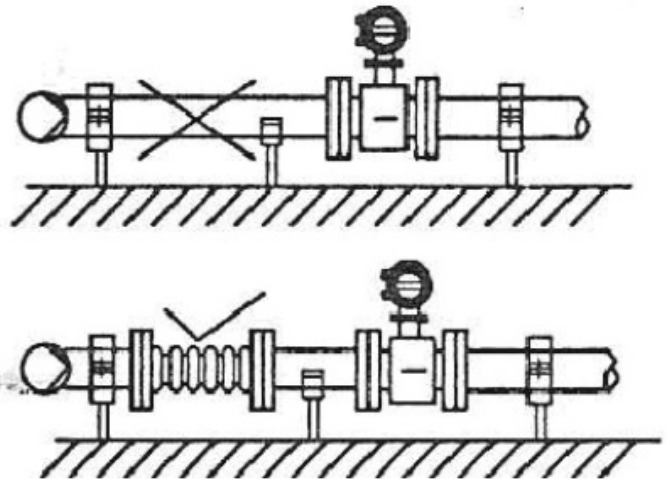
Install so that the meter is located so the outlet is at least 3 Pipe Diameters from any obstruction or elbow and the inlet is at least 5 Pipe Diameters and the meter is always submerged and there are no air bubbles



Install so that the meter is supported and not causing stress on the flanges.

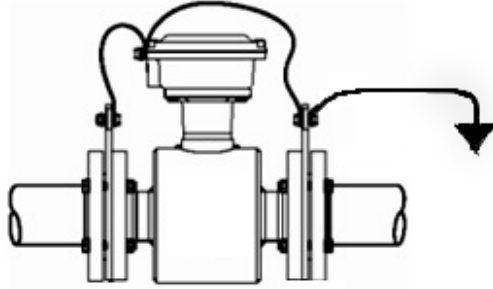


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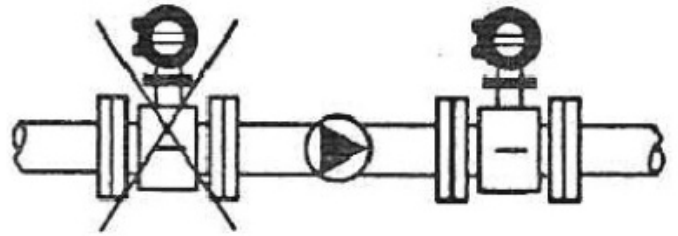


Isolate meter from vibration as shown

## VERY IMPORTANT



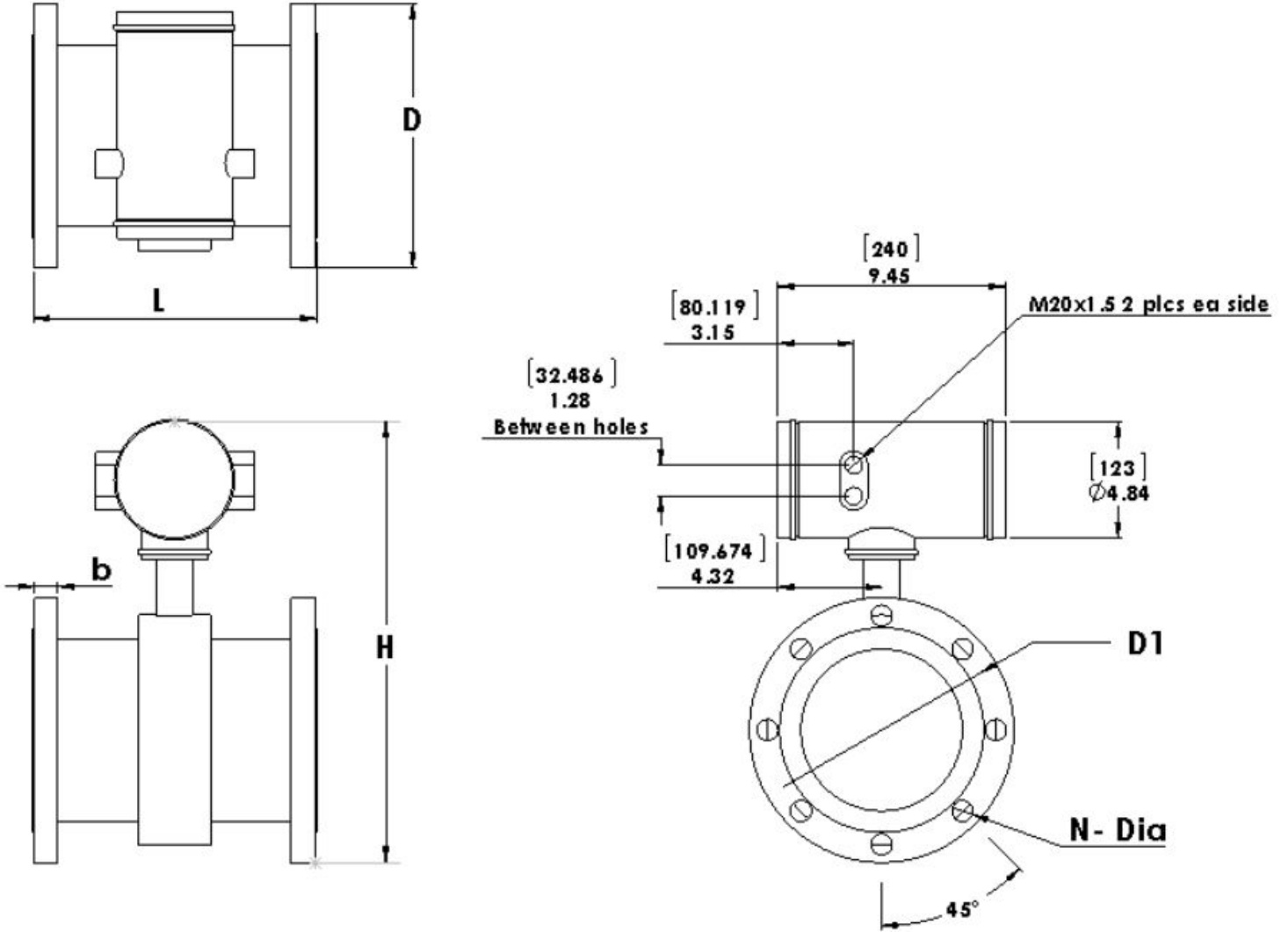
Install the MAG meter and connect the inlet and outlet to a proper GROUND line. This is the Solution Ground, called SG, and is very important for a stable ZERO FLOW measurement.



Do not install a MAG meter at the INLET of a pump as this will introduce bubbles. Instead, put it on the OUTLET with at least 5 diameters upstream.

**MAIN INSTALLATION REQUIREMENTS: Never let a MAG meter run with no liquid or do not run the meter downstream of a pump that can inject bubbles, or downstream of a valve that can create bubbles in the flow. The BEST installation is shown in the upper left graphic. Grounding is very important for stable Zero Flow measurements.**

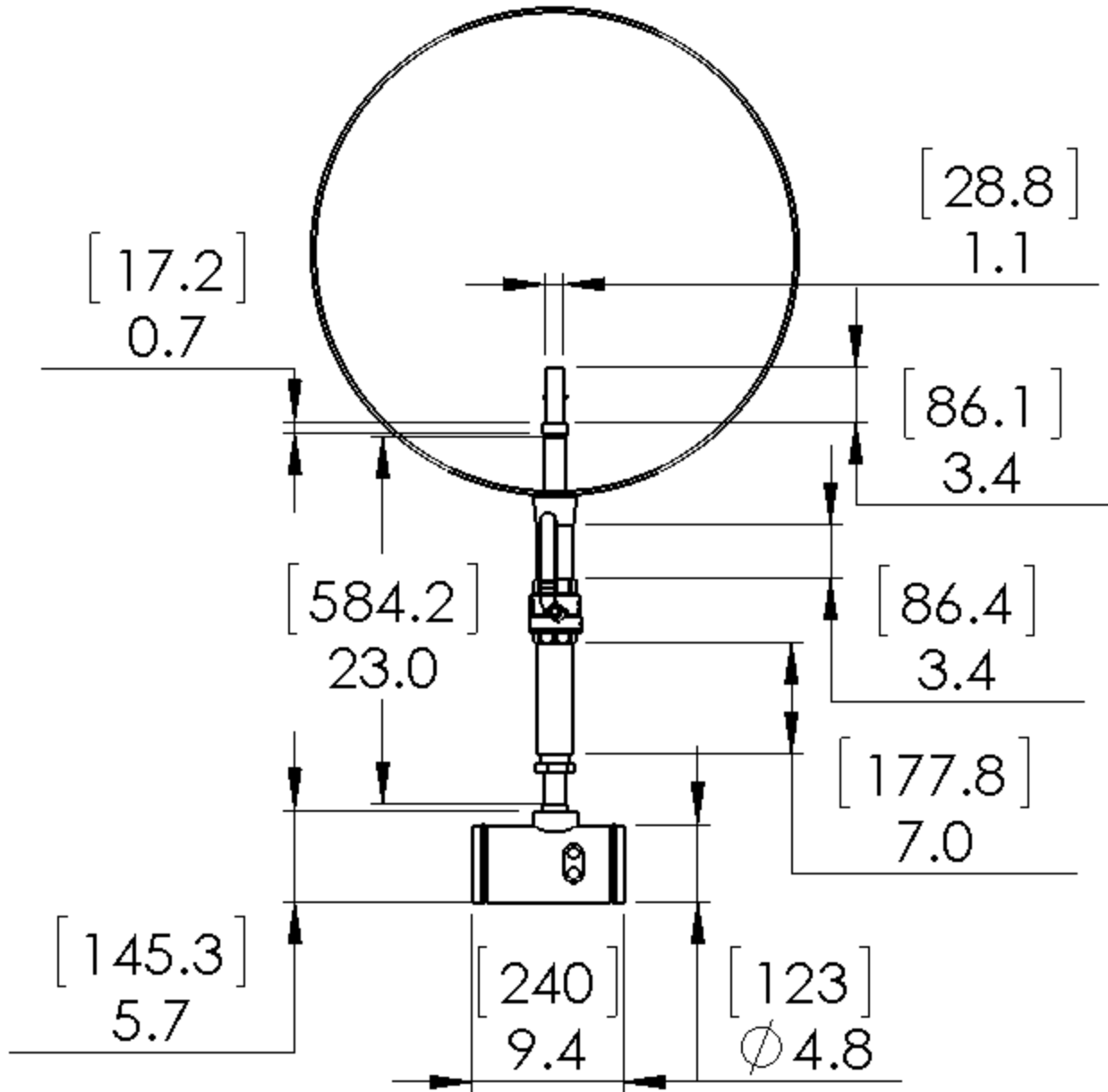
METER DIMENSIONS



| ANSI Size | DN Size | GPM @ 10 m/s | L               |     | b                |    | N-Dia           |        | N (# Bolts) | H            |     | D         |     |
|-----------|---------|--------------|-----------------|-----|------------------|----|-----------------|--------|-------------|--------------|-----|-----------|-----|
|           |         |              | L (Pipe length) |     | C (flange thick) |    | Flange Bolt Dia |        |             | Meter height |     | Flange OD |     |
|           |         |              | inches          | mm  | inches           | mm | inches          | mm     |             | inches       | mm  | inches    | mm  |
| 1/2"      | 15      | 30           | 7.874           | 200 | 0.551            | 14 | 2.375           | 60.325 | 4@ 0.625"   | 10.433       | 265 | 3.740     | 95  |
| 3/4"      | 20      | 50           | 7.874           | 200 | 0.630            | 16 | 2.750           | 69.85  | 4@ 0.625"   | 10.827       | 275 | 4.134     | 105 |
| 1"        | 25      | 80           | 7.874           | 200 | 0.630            | 16 | 3.125           | 79.375 | 4@ 0.625"   | 11.220       | 285 | 4.528     | 115 |
| 1 1/4"    | 32      | 130          | 7.874           | 200 | 0.709            | 18 | 3.500           | 88.9   | 4@ 0.625"   | 12.283       | 312 | 5.512     | 140 |
| 1 1/2"    | 40      | 200          | 7.874           | 200 | 0.709            | 18 | 3.875           | 98.425 | 4@ 0.625"   | 12.598       | 320 | 5.906     | 150 |
| 2"        | 50      | 315          | 7.874           | 200 | 0.787            | 20 | 4.750           | 120.65 | 4@ 0.75"    | 13.189       | 335 | 6.496     | 165 |
| 2 1/2"    | 65      | 530          | 7.874           | 200 | 0.787            | 20 | 5.500           | 139.7  | 4@ 0.75"    | 13.976       | 355 | 7.283     | 185 |
| 3"        | 80      | 800          | 7.874           | 200 | 0.787            | 20 | 6.000           | 152.4  | 4@ 0.75"    | 14.567       | 370 | 7.874     | 200 |
| 4"        | 100     | 1300         | 9.843           | 250 | 0.866            | 22 | 7.500           | 190.5  | 4@ 0.75"    | 15.354       | 390 | 8.661     | 220 |
| 5"        | 125     | 1950         | 9.843           | 250 | 0.866            | 22 | 8.500           | 215.9  | 6@ 0.875"   | 16.535       | 420 | 9.843     | 250 |
| 6"        | 150     | 2800         | 11.811          | 300 | 0.945            | 24 | 9.500           | 241.3  | 8@ 0.875"   | 17.717       | 450 | 11.220    | 285 |
| 8"        | 200     | 5000         | 13.780          | 350 | 0.945            | 24 | 11.750          | 298.45 | 8@ 0.875"   | 19.882       | 505 | 13.386    | 340 |

## Insertion MAG meters:

### Insertion MAG Meter Dimensions



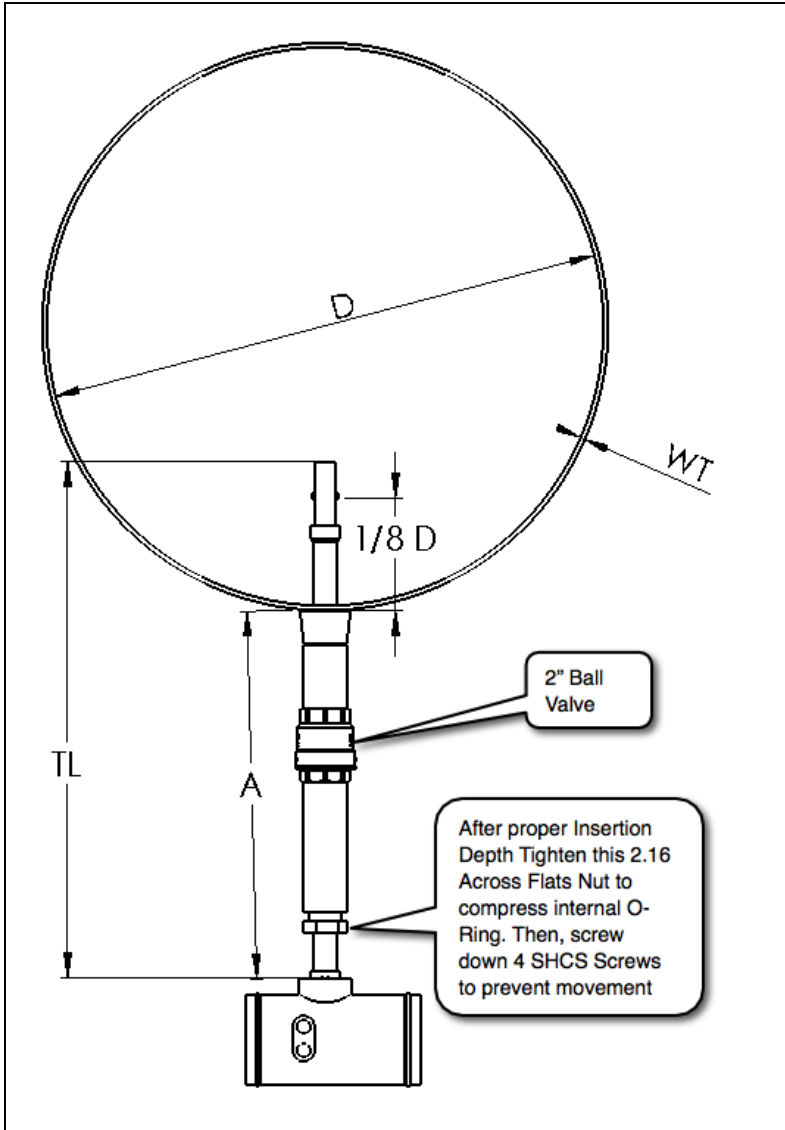
Please visit [INSERTION MAG meter product listing](#).



### Insertion MAG Meter Specifications. For pipe diameters 8" or above.

- Insertion 6" to 42" Diameter pipe
- Wetted Materials Teflon & 316 SS
  - Flow Body Material 304 SS
- Flows from 100 kg/h to 200,000 kg/h relative to water
  - Accuracy: +/- 0.5% of reading in water.
  - Repeatability of +/- 0.05% of reading
- 1/2" to 4" 150# ANSI Flange Connections, up to 6" available custom.
  - LCD Display
  - Temperature:
    - Gas: -58°F (-50°C) to 350°F (180°C)
    - Ambient: 14°F (-10°C) to 140°F (60°C)
- Power Requirement: Order either 24 VDC or 85-220 VAC, 15 Watts maximum;
- Output signals: Modbus RTU, 4–20 mA, and 0-10 KHz for flow rate indication
  - Digital communications: Modbus RTU
  - Proof Pressure 230 PSIG, 1.6 MPa.
- Display: Flow rate, Flow Rate 0-100%, and Total flow
  - Wiring connection to enclosure size: M20 x 1.5
    - Factory Final QC Test Certificate
    - Integral Electronics installation
  - Electronics Enclosure NEMA 4X / IP67
  - Conductivity > 5 microSiemens/cm

## Insertion Installation Drawing:



For clean water, the sensor may be placed at 1/8 of the inside diameter of the pipe.

Measure the tube from the top of the cap to the end of the sensor to find tube length

Calculate (1/8 D):  $1/8 D = 0.125 \times \text{Pipe ID}$

Add wall thickness(WT) to 1/8 D

Calculate distance A:  $A = TL - (1/8 D + WT)$

Position the top edge of the tube so that its distance from the OD of the pipe is equal to "distance A" Then Tighten as shown to the left.

