

shopvalves.com  
**ASME Flow Nozzle**  
**Installation and Operation Manual**



**Please read and save  
these instructions.**

# Installation Procedures

## ASME Flow Nozzle Installation Procedure

### Caution:

- This is a high quality flow meter.
- If improperly installed, it must be reinstalled.
- If damaged, it must be replaced.
- Handle it from its outside.
- Do not damage its inside.
- Install meter in the pipe line so that the “Flow Directional Arrow” agrees with the direction of the flow.
- Do not use meter as a pipe support.
- Orient Pressure Taps HORIZONTALLY or BELOW HORIZONTAL.
- Provide necessary clearances as deemed practical for installation, inspection and maintenance.

**FAILURE TO FOLLOW ABOVE DIRECTIONS MAY VOID WARRANTY.**

## Start-Up Procedures

Determine that the flow element is properly installed. The flow nozzle is a piping component and should be handled accordingly with the same precautions. DO NOT HANDLE FLOW ELEMENT FROM ITS INSIDE.

Determine that the pressure connections are properly made and are appropriate for the intended service.

Determine that the flow meter has been installed in strict conformance with the “Installation Directions” included in this manual.

Do not over-pressurize flow meter. Refer to approval drawing for design pressure.

Do not subject flow meter to shock pressures or water hammer.

When filling pipe line, bleed-off air in the proper fashion.

Determine that pressure piping to secondary instrumentation is installed correctly.

If the meter appears damaged in any way, contact Armstrong.

## Shut-Down Procedures

If it is necessary to isolate the differential pressure signal from the secondary instrumentation, close the isolation valves (if provided) and disconnect impulse piping. If secondary instrumentation is to be disconnected for an extended period, use pipe plugs appropriate for the line pressure.

If the nozzle is to be removed from the line for any reason, depressurize and drain the pipe line. Move meter with slings or strapping appropriate for the weight and geometry of the meter.

## Preventive Maintenance

1. Check Flange and Pressure Tap Connections for Leaks	Annually	By Instrumentation Operator or Mechanical Personnel
2. Inspect Exterior Finish for Scrapes, Dings, or Blistering	Annually	By Instrumentation Operator or Mechanical Personnel

- No special tools or skills are necessary for preventive maintenance tasking.
- No preventive maintenance parts list applicable.

## Corrective Maintenance

In case of loss-of-signal or erratic output, check taps and impulse piping to secondary instrumentation for blockage or debris. Check impulse piping for leaks, trapped condensation (in the case of compressible gas flow), or trapped air (in the case of liquid flow.) In case of blockage, purge lines with air or water (as is appropriate) pressurized to approximately 30 PSI above line pressure.

**WARNING: IN NO CASE SHOULD FLUSHING PRESSURE EXCEED THE DESIGN PRESSURE OF THE PROCESS OR IMPULSE PIPING.**

In case of trapped condensate or trapped air, remove by use of bleed valves or plugs, or through the manifold at the flow transmitter.

Stop leaks by tightening, resealing, or re-gasketing as necessary.

Touch-up exterior finish with the same or a compatible coating system as necessary.

There are no test points, adjustments, or user-serviceable parts in the flow nozzle, nor is there any assembly or disassembly. If the problems persist, contact Armstrong.

- Corrective maintenance can be performed by mechanical or plant personnel.
- No special tools are required for corrective maintenance.

## Spare Parts

The flow nozzle provided was designed and manufactured specifically for this project. The flow nozzle project has no moving or removable parts.

There is no parts list and there is no recommended stocking level.

## Safety

### Prior to Start-Up:

- Determine that the meter is properly installed. The flow nozzle is a piping component and should be handled accordingly with the same precautions. DO NOT HANDLE METER FROM ITS INSIDE.
- Determine that the pressure connections are properly made and are appropriate for the intended service.
- Determine that meter has been installed in strict conformance with the “Installation Directions” included in this manual.
- If the meter appears damaged in any way, contact Armstrong.

### At Start-Up:

- Do not over-pressurize the meter. Refer to approval drawing for design pressure.
- Do not subject meter to shock pressures or water hammer.
- When filling pipe line, bleed-off air in the proper fashion.

### After Start-Up:

- Do not over-pressurize the meter. Refer to approval drawing for design pressure.
- Do not subject meter to shock pressures or water hammer.
- Conform to “Preventive Maintenance” procedures included in this manual.

# Storage Requirements

## Indoor Storage:

- The flow nozzle can be stored indefinitely indoors in a clean, non-corrosive environment. If environment is not clean, meters must be covered.
- Meters should be stored away from high traffic areas in order to minimize damage risk.
- Meters must not be stacked.
- Flanged meters may have bare iron or steel flange faces, or lightly primed flange faces as required by the specification. If meters will be stored in humid or corrosive areas, the flange faces may need to be coated with a suitable rust preventative. Note that any coating or sealant may need to be removed prior to installation; refer to the specification and applicable standards or codes. Temperature and humidity fluctuations should be minimized.
- Prolonged exposure to sunlight or other ultraviolet sources (fluorescent lights, etc.) may discolor, degloss, or chalk the exterior finish. See specific meter coating information.
- If storage is to be long-term, it is recommended that meters be covered with a tarp or heavy plastic sheeting.

## Outdoor Storage – Short Term (less than 3 months):

- Meters should be stored away from high traffic areas in order to minimize damage risk.
- Meters must not be stacked.
- If meters will be stored in humid or corrosive areas, the flange faces may need to be coated with a suitable rust preventative appropriate for outdoor exposure. Note that any coating or sealant may need to be removed prior to installation; refer to the specification and applicable standards or codes.
- The ends are capped to eliminate foreign matter from damaging the internal portions of the meter. These caps must not be removed until installation.
- The pressure sensing tap connections have pipe plugs to eliminate the possibility of clogging. These caps must not be removed until installation.
- If the exterior finish gets damaged, it must be touched-up with the same or a compatible coating system. Note that prolonged exposure to sunlight may discolor, de-gloss, or chalk exterior finish.
- It is recommended that the meters be covered with a tarp or heavy plastic sheeting.

## Long Term Storage:

- Long-term storage requires indoor storage where temperature and humidity fluctuations are minimized. Otherwise, contact Armstrong.

## Meter Transport:

- Depending on unit and order size, the flow nozzle/s are strapped or lagged onto pallets or custom skids.
- Using the skids, the meters can be moved by a forklift of adequate capacity. DO NOT DRIVE THE FORK THROUGH THE FLANGE CAPS OR INTO THE METER INTERIOR.
- The meters can be lifted by a crane or forklift in conjunction with an appropriate sling.
- Avoid scraping or scratching the coated surfaces. Touch-up coatings as needed.

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**VERIS, Inc.**  
**Limited Warranty and Remedy**

Veris, Inc. ("Veris") warrants to the original user of those products supplied by it and used in the service and in the manner for which they are intended shall be free from defects in material and workmanship for a period of five (5) years from the date of installation, but not longer than 63 months from the date of shipment from the Veris factory, unless a Special Warranty Period applies, as noted below. This warranty does not extend to any product that has been subject to misuse, neglect or alteration after shipment from the Veris factory. Except as may be expressly provided in a written agreement between Veris and the user, which is signed by both parties, Veris **DOES NOT MAKE ANY OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.**

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Special Warranty Periods are as follows:

Vortex Shedders, Venturi, Orifice Plates, Flow Nozzles and Wedge Meters: one (1) year from the date of installation, but not longer than 15 months from the date of shipment from the Veris factory.

Electromagnetic Flow and BTU Meters, Ultrasonic Flow and BTU Meters: 21 months from the date of installation, but not longer than 24 months from the date of shipment from the Veris Factory.

Electronic components, including without limitation, differential pressure transmitters, multivariable transmitters, flow computers, rate or totalizer displays: one (1) year from the date of installation, but not longer than 15 months from the date of shipment from the Veris factory.

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*Designs, materials, weights and performance ratings are approximate and subject to change without notice.*  
Visit [armstronginternational.com](http://armstronginternational.com) for up-to-date information.



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