

## V150 Spring Lock – Threaded Components

### The Most Accurate and Reliable Technology for Measuring Gas, Liquid and Steam...

Developed from aerospace technology, the VERIS Verabar® averaging pitot flow sensor provides unsurpassed accuracy and reliability. With its solid, one-piece construction and bullet shape, the VERIS Verabar® makes flow measurement leak resistant and precise.

The unique sensor shape reduces drag and flow induced vibration.

The location of the low-pressure ports significantly reduces the potential for clogging and improves signal stability.



V150

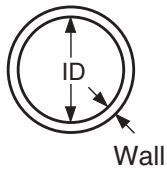
| V150 Spring Lock                         |   |
|--|---|
| <b>Pipe Connection</b>                   | Threaded (NPT)  |
| <b>Mounting Type</b>                     | Spring loaded sensor with packing gland   |
| <b>Features and Benefits</b>             | <ul style="list-style-type: none"> <li>• Best valued model</li> <li>• Blow-out and leak resistant design</li> <li>• Preloads sensor to opposite wall</li> <li>• Four times stronger than conventional mountings</li> <li>• Eliminates need for opposite end support</li> <li>• Compensates for changes in pipe diameter due to pressure, temperature or mechanical force</li> </ul> |
| <b>Applications</b>                      | <ul style="list-style-type: none"> <li>• Air (compressed, combustion)</li> <li>• Natural gas</li> <li>• Water (raw, cooling, feedwater)</li> <li>• High velocity fluids</li> <li>• Steam</li> </ul>   |
| <b>Special Designs — Consult Factory</b> | <ul style="list-style-type: none"> <li>• Custom mounting, lengths, materials, instrument connections, etc.</li> <li>• Short straight run</li> </ul>   |

| Temperature Pressure Limits<br>(ANSI Class)* |
|--|
| <b>600#</b>                                  |
| 1440 psig @ 100°F<br>(99.3 bar @ 38°C)       |
| 825 psig @ 800°F<br>(56.9 bar @ 426°C)       |

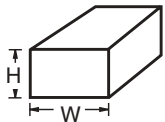
| Model Specifications         | V150  |                            |                             |
|------------------------------|---|----------------------------|-----------------------------|
| Sensor Code                  | 05  | 10                         | 15                          |
| <b>Sensor Diameter</b>       | 7/16" (11mm)                                  | 7/8" (22mm)                | 1-3/8" (35mm)               |
| <b>Accuracy</b>              | ±1% of flow rate; up to +/-0.5% if calibrated |                            |                             |
| <b>ANSI Class*</b>           | 600#  | 600#                       | 600#                        |
| <b>Pipe Size</b>             | 2" - 6"<br>(50mm-150mm)                       | 6" - 42"<br>(150mm-1050mm) | 12" - 60"<br>(300mm-1500mm) |
| <b>Instrument Connection</b> | 1/2" NPT or Direct Mount                      |                            |                             |
| <b>Components Furnished</b>  | Weld coupling, Spring lock mounting assembly  |                            |                             |
| <b>Weld Coupling Size</b>    | 3/4" NPT                                      | 1" NPT                     | 2" NPT                      |

\* DIN and JIS flanges available. Consult factory.

## 1. Enter Pipe Dimensions or Duct Dimensions



Pipe Size \_\_\_\_\_ Sch \_\_\_\_\_  
 Pipe ID \_\_\_\_\_ and  
 Wall \_\_\_\_\_ Pipe Material \_\_\_\_\_

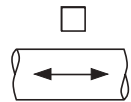


Height (H) \_\_\_\_\_  
 Width (W) \_\_\_\_\_  
 Wall \_\_\_\_\_  
 Duct Material \_\_\_\_\_

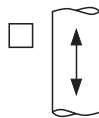
Dimension  
 Verabar® spans  
 (H) or (W)

## 2. Pipe or Duct Orientation

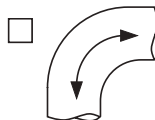
(Check one box)



(H) Horizontal



(V) Vertical



Short  
 Straight Run  
 Consult Factory

## 3. Enter Flow Conditions

| Fluid Name:       |  | Maximum | Nominal | Minimum | Units |
|-------------------|--|---------|---------|---------|-------|
| <b>Flow Rate</b>  |  |         |         |         |       |
| <b>All Fluids</b> | Pressure @ Flow  |         |         |         |       |
|                   | Temperature @ Flow   |         |         |         |       |
| <b>Gas</b>        | Specific Gravity, or<br>Molecular Weight                             |         |         |         |       |
|                   |  |         |         |         |       |
| <b>Liquid</b>     | Specific Gravity   |         |         |         |       |
| <b>Steam</b>      | VeraCalc Program can calculate Density from Temperature and Pressure |         |         |         |       |

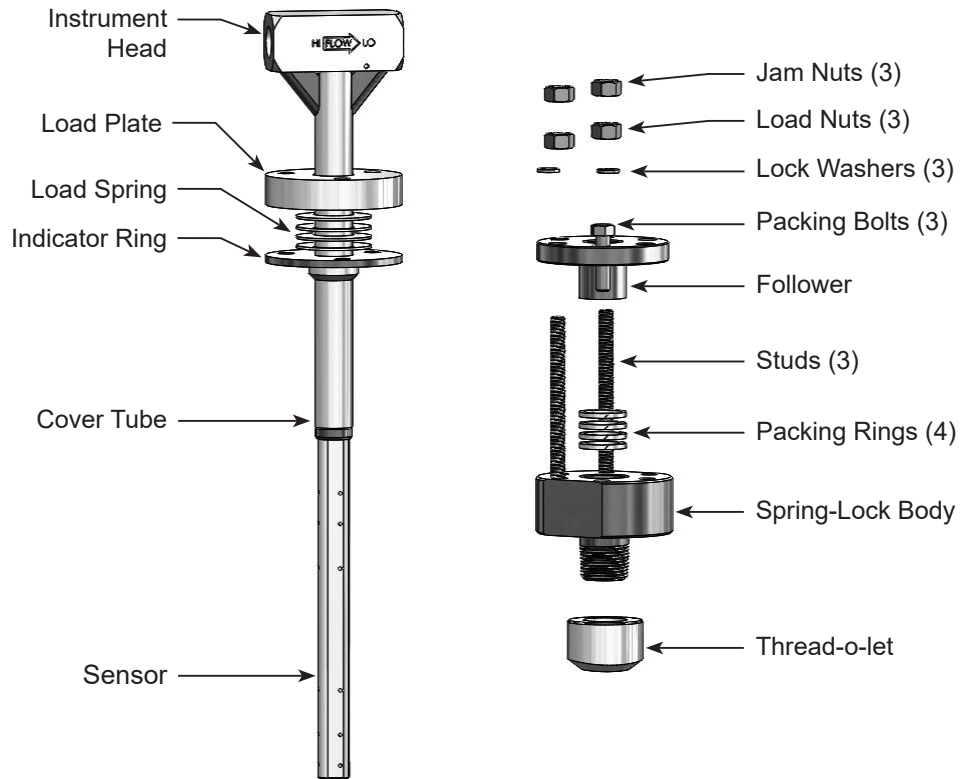
## 4. Select Model

(From Page 3)

Use the Ordering Information table on Page 3 to determine your model number.

## 5. Flow Calculation

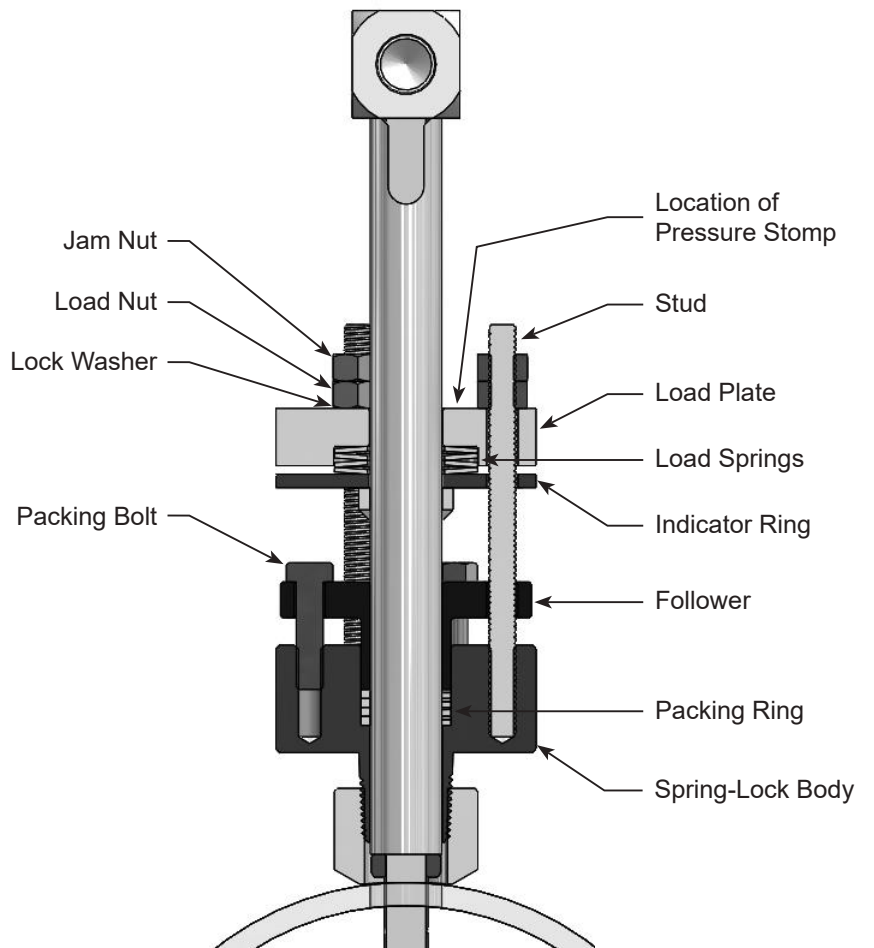
All VERIS Verabar® applications require a flow calculation to verify the DP, pressure and temperature limits, structural limits and to size the transmitter. VeraCalc is for use by representatives and end users. It is easy to operate and includes steam tables.

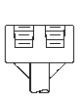
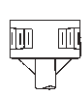
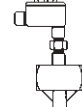
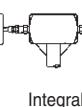
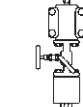
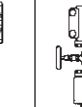

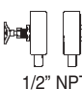
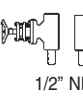


Verabar® Model V150

## Spring Lock Mount

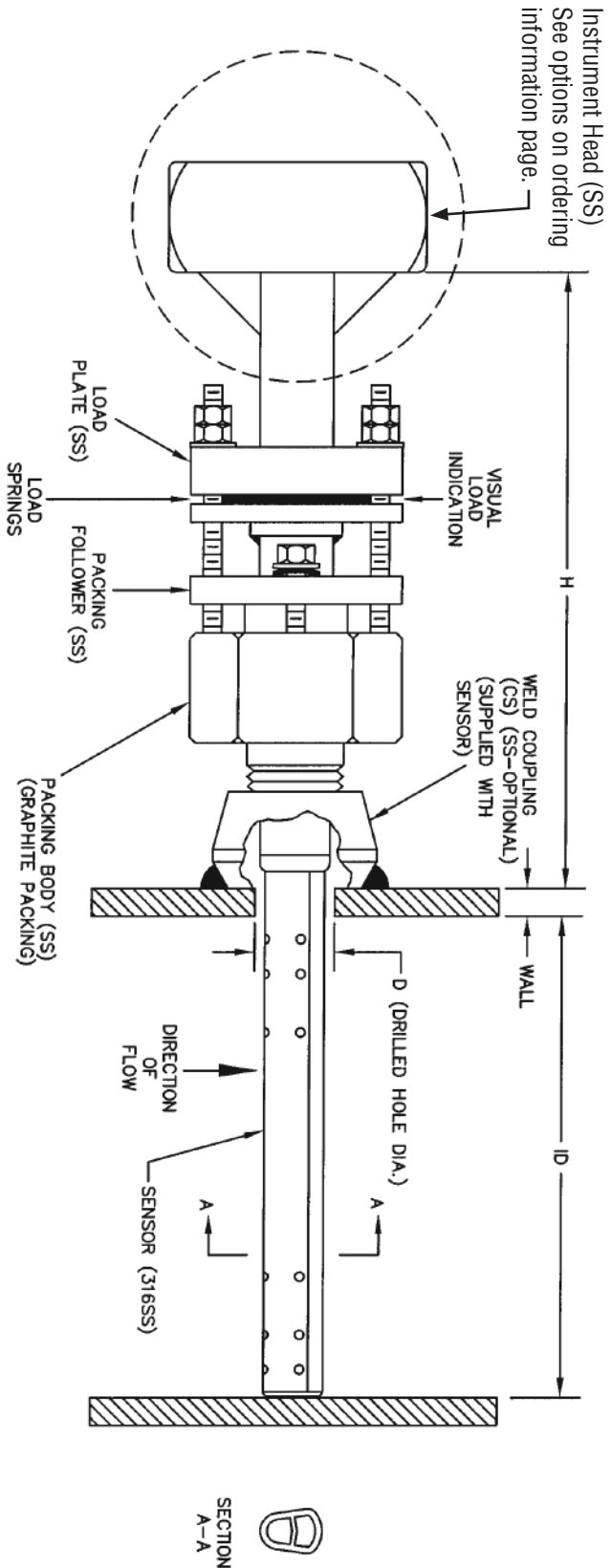
- Design ensures the sensor is sealed, locked and pre-loaded to the opposite wall, regardless of changes in pipe diameter due to pressure, temperature or mechanical vibrations.
- Leak resistant...compensates for differential in packing and body growth rates due to increased temperatures.
- Increases sensor strength (eliminates the need for an opposite wall support). A locked, pre-loaded sensor is four times stronger than a non pre-loaded, cantilevered sensor.
- By loading the sensor and packing independently, the sensor can move axially to maintain a precise load on the pipe wall.




|   |   |   |   |  |  |   |
|---|---|---|---|--|--|---|
| <b>Model</b>  | <b>Regular</b>  |   |   |  |  |   |
| <b>V150</b>   | Spring Lock   |   |   |  |  |   |
| <b>Pipe Size and Schedule or Exact ID and Wall Thickness</b>                                    |   |   |   |  |  |   |
| <b>Code</b>   | <b>Sensor Pipe Size Range</b>   |   |   |  |  |   |
| <b>05</b>   | 2" to 6" (50mm to 150mm)  |   |   |  |  |   |
| <b>10</b>   | 6" to 48" (150mm to 1200mm)   |   |   |  |  |   |
| <b>15</b>   | 12" to 60" (300mm to 1500mm)  |   |   |  |  |   |
| <b>Code</b>   | <b>Pipe Orientation</b>   |   |   |  |  |   |
| <b>H</b>  | Horizontal  |   |   |  |  |   |
| <b>V</b>  | Vertical  |   |   |  |  |   |
| <b>Instrument Connections (Select Remote or Direct Mount)<br/>(Transmitter sold separately)</b> |   |   |   |  |  |   |
| <b>Remote Mount Transmitter<br/>(1/2" NPT)</b>  |   |   |   | <b>Direct Mount Transmitter<br/>(Flanged 450°F/232°C Max.)†</b>                    |  |   |
| Parallel  | Regular   | RTD*  | Valve   | Transmount   | Mass Transmount  | Manifold  |
|                |                |  | <br>Integral |  | <br>Integral<br>RTD | <br>Integral |
| <b>P</b>  | <b>R</b>  | <b>D</b>  | <b>T</b>  | <b>F</b>   | <b>G</b>   | <b>M</b>  |
| <b>Instrument Valves (Opt.)</b>   |   |   | <b>Manifolds (Optional)</b>   |  |  |   |
| <b>Remote Mount</b>   |   |   | <b>Direct Mount</b>   |  |  |   |
| Needle  | Gate  | 3-Valve   |   | 5-Valve  |  |   |
| <br>1/2" NPT | <br>1/2" NPT | Soft Seat   | Hard Seat   | Soft Seat  | Hard Seat  |   |
| <b>C2NC (CS)</b><br><b>C2NS (SS)</b>  | <b>C2GC (CS)</b><br><b>C2GS (SS)</b>  | <b>F3SC (CS)</b><br><b>F3SS (SS)</b>  | <b>F3HC (CS)</b><br><b>F3HS (SS)</b>  | <b>F5SC (CS)</b><br><b>F5SS (SS)</b>   | <b>F5HC (CS)</b><br><b>F5HS (SS)</b>   |   |
| Optional  |   |   |   |  |  |   |
| <b>Code</b>   | <b>Options</b>  |   |   |  |  |   |
| <b>WNS</b>  | For stainless steel pipes.<br>For V150, furnished with one SS weld coupling.                    |   |   |  |  |   |
| <b>V150</b>   | <b>8"sch40</b>  | <b>10</b>   | <b>H</b>  | <b>R</b>   | <b>C2NC</b>  | <b>Typical Model Number</b>   |

\* For high pressure (>500psig) or high temperature (>500°F), remote mount RTD in a thermowell is preferred.

† Assuming adequate heat dissipation for transmitter.



| ITEM                          | SENSOR -05   | SENSOR -10    | SENSOR -15    |
|-------------------------------|--------------|---------------|---------------|
| ANSI RATING                   | CLASS 600#   | CLASS 600#    | CLASS 600#    |
| SENSOR DIA.                   | 7/16" (11mm) | 7/8" (22mm)   | 1-3/8" (35mm) |
| DIM 'D' DRILLED HOLE DIAMETER | 1/2" (13mm)  | 1" (26mm)     | 1-1/2" (39mm) |
| COUPLING SIZE                 | 3/4" NPT     | 1" NPT        | 2" NPT        |
| DIM 'H'                       | 7.5" (191mm) | 10.2" (259mm) | 11.7" (297mm) |



**VERIS Flow Measurement Group**  
armstronginternational.com/veris

**VERIS Verabar® V150**  
**Spring Lock,**  
**Threaded**

DATE: 09/20/01

Scale: NTS

DWG. No. **SUB-3935**

Rev: A

Page 1 of 1



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