

**HAM-LET**  
**SCREWED BONNET**  
**NEEDLE VALVES**  
H-99 & H-99HP SERIES



**FEATURES**

- Blow-out Proof Stem
- MAWP up to 10,000 psi (690 bar)
- MAWT up to 600°C (1112°F)
- Size range: 1/8" to 1" or 6mm to 25mm

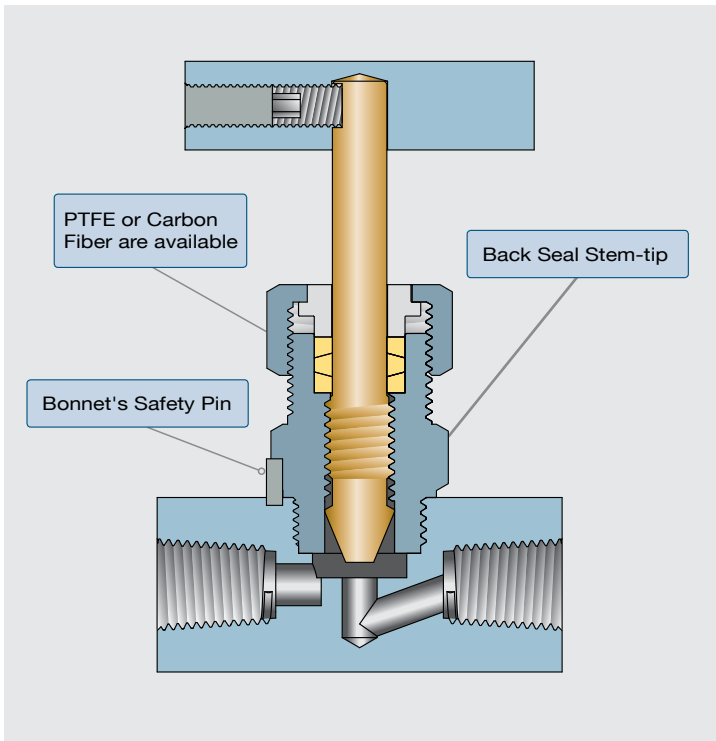
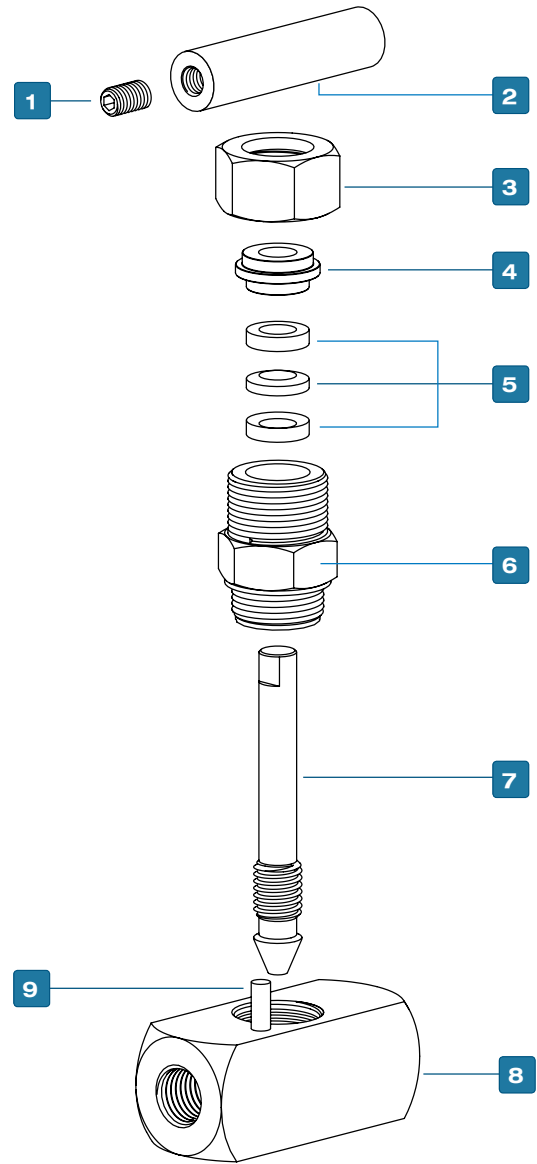
**GENERAL**

The H-99 & H-99HP Series offers a general-service valve of rugged design and construction. It is available in stainless steel to suit a wide range of services.

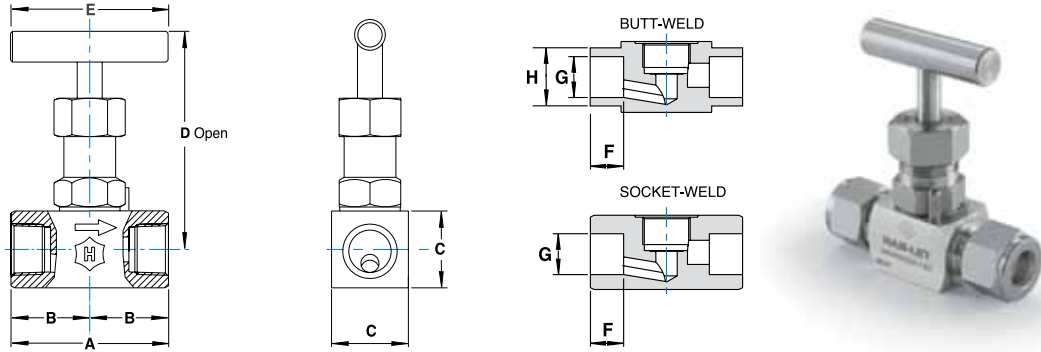
Capable of withstanding high pressures (10,000 psig max) and high temperature.

This valve is typically used in a severe environment, high pressure sampling systems, high pressure shut-down systems and test stands.

| MATERIALS OF CONSTRUCTION |               |       |                     |
|---------------------------|---------------|-------|---------------------|
| No.                       | Components    | Qty   | Material            |
| 1                         | Set Screw     | 1     | SS 304              |
| 2                         | Handle        | 1     | SS 304              |
| 3                         | Gland Nut     | 1     | SS 304              |
| 4                         | Upper Gland   | 1     | SS 304              |
| 5                         | Packing       | 1 / 3 | PTFE / Carbon Fiber |
| 6                         | Bonnet H-99HP | 1     | ASTM A276 Gr, 316   |
|                           | H-99          | 1     | ASTM A351 Gr, CF8M  |
| 7                         | Stem          | 1     | SS 316              |
| 8                         | Body H-99HP   | 1     | ASTM A276 Gr, 316   |
|                           | H-99          | 1     | ASTM A351 Gr, CF8M  |
| 9                         | Safety Pin    | 1     | SS 304              |



SCREWED-BONNET NEEDLE VALVES H-99 & H-99HP SERIES



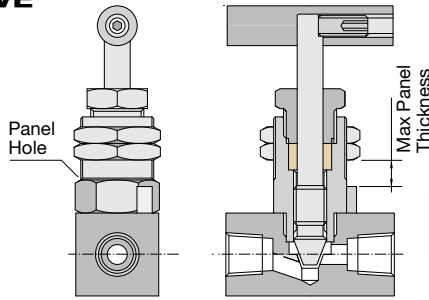
| STANDARD CONFIGURATION DIMENSIONS               |      |         |      |      |      |      |      |       |       |       |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |
|---|------|---------|------|------|------|------|------|-------|-------|-------|------|------|------|------|------|------|------|------|-----|------|-----|------|-----|------|-----|
| End   |      | Orifice |      | A    |      | B    |      | C     |       | D     |      | E    |      | F    |      | G    |      | H    |     |      |     |      |     |      |     |
| Connection                                      | Size | mm      | in   | mm   | in   | mm   | in   | mm    | in    | mm    | in   | mm   | in   | mm   | in   | mm   | in   | mm   | in  |      |     |      |     |      |     |
| Let-Lok®<br>Inch                                | 1/4" | 5.00    | 0.20 | 72.7 | 2.9  | 36.4 | 1.4  | 25.0  | 1.0   | 75.0  | 3.0  | 50.0 | 2.0  |      |      |      |      |      |     |      |     |      |     |      |     |
|   | 3/8" |         |      | 72.7 | 2.9  | 36.4 | 1.4  |       |       |       |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |
|   | 1/2" |         |      | 78.3 | 3.1  | 39.2 | 1.5  |       |       |       |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |
|   | 3/4" | 6.00    | 0.24 | 85.3 | 3.4  | 42.7 | 1.7  | 30.0  | 1.2   | 87.0  | 3.4  | 60.0 | 2.4  |      |      |      |      |      |     |      |     |      |     |      |     |
| Let-Lok®<br>Metric                              | 6mm  | 5.00    | 0.20 | 72.8 | 2.9  | 36.4 | 1.4  | 25.0  | 1.0   | 75.0  | 3.0  | 50.0 | 2.0  |      |      |      |      |      |     |      |     |      |     |      |     |
|   | 8mm  |         |      | 73.0 | 2.9  | 36.5 | 1.4  |       |       |       |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |
|   | 10mm |         |      | 73.2 | 2.9  | 36.6 | 1.4  |       |       |       |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |
|   | 12mm |         |      | 78.2 | 3.1  | 39.1 | 1.5  |       |       |       |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |
| Female<br>Thread<br>(NPT/ISO)                   | 1/8" | 5.00    | 0.20 | 58.0 | 2.3  | 29.0 | 1.1  | 25.0  | 1.0   | 75.0  | 3.0  | 50.0 | 2.0  |      |      |      |      |      |     |      |     |      |     |      |     |
|   | 1/4" |         |      | 58.0 | 2.3  | 29.0 | 1.1  |       |       |       |      |      |      |      |      |      |      |      |     |      |     |      |     |      |     |
|   | 3/8" | 6.00    | 0.24 | 65.0 | 2.6  | 32.5 | 1.3  | 30.0  | 1.2   | 87.0  | 3.4  | 60.0 | 2.4  |      |      |      |      |      |     |      |     |      |     |      |     |
|   | 1/2" |         |      | 70.0 | 2.8  | 35.0 | 1.4  | 35.0  | 1.4   | 90.0  | 3.5  | 60.0 | 2.4  |      |      |      |      |      |     |      |     |      |     |      |     |
|   | 3/4" |         |      | 80.0 | 3.1  | 40.0 | 1.6  | 45.0  | 1.8   | 103.0 | 4.1  | 80.0 | 3.1  |      |      |      |      |      |     |      |     |      |     |      |     |
| 1"  | 8.00 | 0.31    | 80.0 | 3.1  | 40.0 | 1.6  | 45.0 | 1.8   | 103.0 | 4.1   | 80.0 | 3.1  |      |      |      |      |      |      |     |      |     |      |     |      |     |
| Tube<br>Socket Weld<br>Inch                     | 1/4" | 5.00    | 0.20 | 58.0 | 2.3  | 29.0 | 1.1  | 25.0  | 1.0   | 75.0  | 3.0  | 50.0 | 2.0  | 6.4  | 0.3  | 6.5  | 0.3  |      |     |      |     |      |     |      |     |
|   | 3/8" |         |      |      |      |      |      |       |       |       |      |      |      | 9.7  | 0.4  | 9.7  | 0.4  |      |     |      |     |      |     |      |     |
|   | 1/2" |         |      |      |      |      |      |       |       |       |      |      |      | 12.7 | 0.5  | 12.9 | 0.5  |      |     |      |     |      |     |      |     |
|   | 3/4" |         |      |      |      |      |      |       |       |       |      |      |      | 6.00 | 0.24 | 65.0 | 2.6  |      |     | 32.5 | 1.3 | 30.0 | 1.2 | 87.0 | 3.4 |
|   | 1"   | 70.0    | 2.8  | 35.0 | 1.4  | 35.0 | 1.4  | 90.0  | 3.5   | 60.0  | 2.4  | 19.2 | 0.8  | 25.6 | 1.0  |      |      |      |     |      |     |      |     |      |     |
| Tube<br>Socket Weld<br>Metric                   | 6mm  | 5.00    | 0.20 | 58.0 | 2.3  | 29.0 | 1.1  | 25.0  | 1.0   | 75.0  | 3.0  | 50.0 | 2.0  | 6.0  | 0.2  | 6.2  | 0.2  |      |     |      |     |      |     |      |     |
|   | 8mm  |         |      |      |      |      |      |       |       |       |      |      |      | 7.9  | 0.3  | 8.2  | 0.3  |      |     |      |     |      |     |      |     |
|   | 10mm |         |      |      |      |      |      |       |       |       |      |      |      | 12.7 | 0.5  | 10.2 | 0.4  |      |     |      |     |      |     |      |     |
|   | 12mm |         |      |      |      |      |      |       |       |       |      |      |      | 12.7 | 0.5  | 12.2 | 0.5  |      |     |      |     |      |     |      |     |
|   | 25mm | 6.00    | 0.24 | 70.0 | 2.8  | 35.0 | 1.4  | 35.0  | 1.4   | 90.0  | 3.5  | 60.0 | 2.4  | 19.2 | 0.8  | 25.2 | 1.0  |      |     |      |     |      |     |      |     |
| Pipe<br>Socket Weld                             | 1/8" | 5.00    | 0.20 | 58.0 | 2.3  | 29.0 | 1.1  | 25.0  | 1.0   | 75.0  | 3.0  | 50.0 | 2.0  | 9.0  | 0.4  | 10.8 | 0.4  |      |     |      |     |      |     |      |     |
|   | 1/4" |         |      |      |      |      |      |       |       |       |      |      |      | 14.0 | 0.6  | 14.0 | 0.6  |      |     |      |     |      |     |      |     |
|   | 3/8" |         |      |      |      |      |      |       |       |       |      |      |      | 14.0 | 0.6  | 17.5 | 0.7  |      |     |      |     |      |     |      |     |
|   | 1/2" |         |      |      |      |      |      |       |       |       |      |      |      | 6.00 | 0.24 | 65.0 | 2.6  |      |     | 32.5 | 1.3 | 30.0 | 1.2 | 87.0 | 3.4 |
|   | 3/4" | 70.0    | 2.8  | 35.0 | 1.4  | 35.0 | 1.4  | 90.0  | 3.5   | 60.0  | 2.4  | 18.0 | 0.7  | 27.5 | 1.1  |      |      |      |     |      |     |      |     |      |     |
| 1"  | 8.00 | 0.31    | 80.0 | 3.1  | 40.0 | 1.6  | 45.0 | 1.8   | 103.0 | 4.1   | 80.0 | 3.1  | 20.0 | 0.8  | 34.5 | 1.4  |      |      |     |      |     |      |     |      |     |
| Tube<br>Butt Weld<br>Inch                       | 1/4" | 5.00    | 0.20 | 58.0 | 2.3  | 29.0 | 1.1  | 25.0  | 1.0   | 75.0  | 3.0  | 50.0 | 2.0  | -    | -    | 3.1  | 0.1  | 6.4  | 0.3 |      |     |      |     |      |     |
|   | 3/8" |         |      |      |      |      |      |       |       |       |      |      |      | 6.0  | 0.2  | 6.2  | 0.2  | 9.5  | 0.4 |      |     |      |     |      |     |
|   | 1/2" |         |      |      |      |      |      |       |       |       |      |      |      | 6.0  | 0.2  | 8.5  | 0.3  | 12.7 | 0.5 |      |     |      |     |      |     |
|   | 3/4" |         |      |      |      |      |      |       |       |       |      |      |      | 6.00 | 0.24 | 65.0 | 2.6  | 32.5 | 1.3 |      |     | 30.0 | 1.2 | 87.0 | 3.4 |
| 1"  | 70.0 | 2.8     | 35.0 | 1.4  | 35.0 | 1.4  | 90.0 | 3.5   | 60.0  | 2.4   | 10.0 | 0.4  | 19.3 | 0.8  | 25.4 | 1.0  |      |      |     |      |     |      |     |      |     |
| Tube<br>Butt Weld<br>Metric                     | 6mm  | 5.00    | 0.20 | 58.0 | 2.3  | 29.0 | 1.1  | 25.0  | 1.0   | 75.0  | 3.0  | 50.0 | 2.0  | -    | -    | 3.1  | 0.1  | 6.0  | 0.2 |      |     |      |     |      |     |
|   | 8mm  |         |      |      |      |      |      |       |       |       |      |      |      | -    | -    | 4.8  | 0.2  | 8.0  | 0.3 |      |     |      |     |      |     |
|   | 10mm |         |      |      |      |      |      |       |       |       |      |      |      | 6.0  | 0.2  | 6.7  | 0.3  | 10.0 | 0.4 |      |     |      |     |      |     |
|   | 12mm |         |      |      |      |      |      |       |       |       |      |      |      | 6.0  | 0.2  | 7.8  | 0.3  | 12.0 | 0.5 |      |     |      |     |      |     |
|   | 25mm | 6.00    | 0.24 | 70.0 | 2.8  | 35.0 | 1.4  | 35.0  | 1.4   | 90.0  | 3.5  | 60.0 | 2.4  | 10.0 | 0.4  | 18.9 | 0.7  | 25.0 | 1.0 |      |     |      |     |      |     |
| Pipe (S40)<br>Butt Weld                         | 1/8" | 5.00    | 0.20 | 58.0 | 2.3  | 29.0 | 1.1  | 25.0  | 1.0   | 75.0  | 3.0  | 50.0 | 2.0  | 6.0  | 0.2  | 7.1  | 0.3  | 10.5 | 0.4 |      |     |      |     |      |     |
|   | 1/4" |         |      |      |      |      |      |       |       |       |      |      |      | 9.2  | 0.4  | 13.7 | 0.5  |      |     |      |     |      |     |      |     |
|   | 3/8" |         |      |      |      |      |      |       |       |       |      |      |      | 12.5 | 0.5  | 17.1 | 0.7  |      |     |      |     |      |     |      |     |
|   | 1/2" |         |      |      |      |      |      |       |       |       |      |      |      | 6.00 | 0.24 | 65.0 | 2.6  | 32.5 | 1.3 |      |     | 30.0 | 1.2 | 87.0 | 3.4 |
|   | 3/4" | 70.0    | 2.8  | 35.0 | 1.4  | 35.0 | 1.4  | 90.0  | 3.5   | 60.0  | 2.4  | 10.0 | 0.4  | 21.0 | 0.8  | 26.7 | 1.1  |      |     |      |     |      |     |      |     |
| 1"  | 8.00 | 0.31    | 80.0 | 3.1  | 40.0 | 1.6  | 45.0 | 1.8   | 103.0 | 4.1   | 80.0 | 3.1  | 12.0 | 0.5  | 26.6 | 1.0  | 33.4 | 1.3  |     |      |     |      |     |      |     |
| Male Thread<br>to<br>Female Thread<br>(NPT/ISO) | 1/4" | 5.00    | 0.20 | 60.0 | 2.4  | 29.0 | 1.1  | 25.0  | 1.0   | 75.0  | 3.0  | 50.0 | 2.0  |      |      |      |      |      |     |      |     |      |     |      |     |
|   | 3/8" |         |      | 70.0 | 2.8  | 32.5 | 1.3  |       |       |       |      |      |      |      |      |      |      |      |     | 30.0 | 1.2 | 87.0 | 3.4 | 60.0 | 2.4 |
|   | 1/2" |         |      | 75.0 | 3.0  | 35.0 | 1.4  |       |       |       |      |      |      |      |      |      |      |      |     | 35.0 | 1.4 | 90.0 | 3.5 | 60.0 | 2.4 |
|   | 3/4" | 85.0    | 3.3  | 40.0 | 1.6  | 45.0 | 1.8  | 103.0 | 4.1   | 80.0  | 3.1  |      |      |      |      |      |      |      |     |      |     |      |     |      |     |
| 1"  | 8.00 | 0.31    | 85.0 | 3.3  | 40.0 | 1.6  | 45.0 | 1.8   | 103.0 | 4.1   | 80.0 | 3.1  |      |      |      |      |      |      |     |      |     |      |     |      |     |

Dimensions are for reference only, and are subject to change. Face to face dimensions for LET-LOK® end connections (dimensions A and B) are finger tight.

**HIGH PERFORMANCE NEEDLE VALVE FOR EASY MOUNTING**

H-99M & H-99HPM SERIES

All flow data, dimensions and application of use are same as H-99 & H-99HP

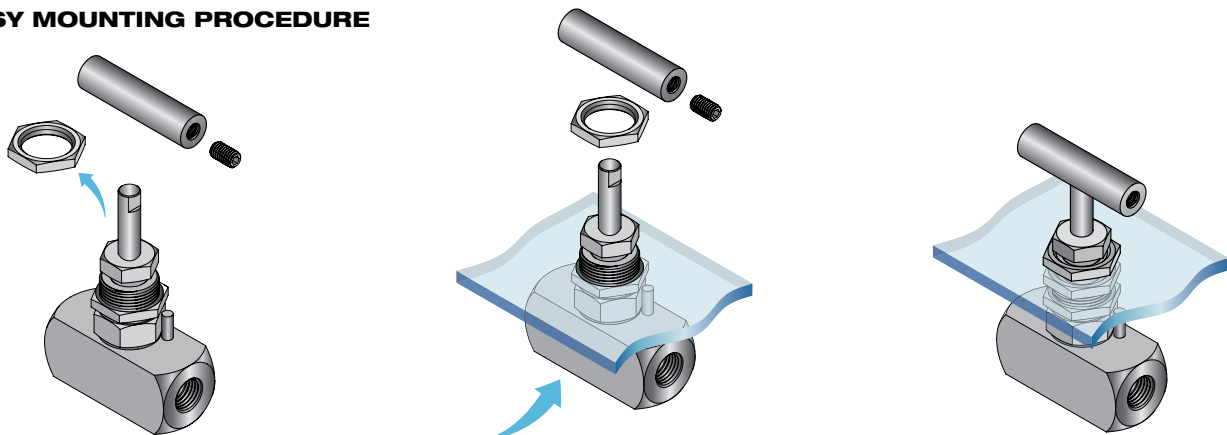


Pat. Pending

| MOUNTING CONFIGURATION DIMENSIONS |      |            |      |                     |      |
|-----------------------------------|------|------------|------|---------------------|------|
| End                               |      | Panel Hole |      | Max Panel thickness |      |
| Connection                        | Size | mm         | in   | mm                  | in   |
| Let-Lok®<br>Inch                  | 1/4" | 22.0       | 0.87 | 6.35                | 0.25 |
|                                   | 3/8" |            |      |                     |      |
|                                   | 1/2" |            |      |                     |      |
|                                   | 3/4" |            |      |                     |      |
| Let-Lok®<br>Metric                | 6mm  | 22.0       | 0.87 | 6.35                | 0.25 |
|                                   | 8mm  |            |      |                     |      |
|                                   | 10mm |            |      |                     |      |
|                                   | 12mm |            |      |                     |      |
| Female<br>Thread<br>(NPT/ISO)     | 1/8" | 22.0       | 0.87 | 6.35                | 0.25 |
|                                   | 1/4" |            |      |                     |      |
|                                   | 3/8" |            |      |                     |      |
|                                   | 1/2" |            |      |                     |      |
| Tube<br>Socket Weld<br>Inch       | 1/2" | 25.0       | 0.98 | 6.35                | 0.25 |
|                                   | 3/4" |            |      |                     |      |
|                                   | 1"   |            |      |                     |      |
|                                   | 1"   |            |      |                     |      |
| Tube<br>Socket Weld<br>Metric     | 6mm  | 22.0       | 0.87 | 6.35                | 0.25 |
|                                   | 8mm  |            |      |                     |      |
|                                   | 10mm |            |      |                     |      |
|                                   | 12mm |            |      |                     |      |
| Tube<br>Socket Weld<br>Metric     | 25mm | 25.0       | 0.98 | 6.35                | 0.25 |
|                                   | 25mm |            |      |                     |      |
|                                   | 25mm |            |      |                     |      |
|                                   | 25mm |            |      |                     |      |

| MOUNTING CONFIGURATION DIMENSIONS               |      |            |      |                     |      |
|---|------|------------|------|---------------------|------|
| End   |      | Panel Hole |      | Max Panel thickness |      |
| Connection                                      | Size | mm         | in   | mm                  | in   |
| Pipe<br>Socket Weld                             | 1/8" | 22.0       | 0.87 | 6.35                | 0.25 |
|   | 1/4" |            |      |                     |      |
|   | 3/8" |            |      |                     |      |
|   | 1/2" |            |      |                     |      |
| Tube<br>Butt Weld<br>Inch                       | 3/4" | 25.0       | 0.98 | 6.35                | 0.25 |
|   | 1"   |            |      |                     |      |
|   | 1"   |            |      |                     |      |
|   | 1"   |            |      |                     |      |
| Tube<br>Butt Weld<br>Metric                     | 6mm  | 22.0       | 0.87 | 6.35                | 0.25 |
|   | 8mm  |            |      |                     |      |
|   | 10mm |            |      |                     |      |
|   | 12mm |            |      |                     |      |
| Pipe (S40)<br>Butt Weld                         | 25mm | 25.0       | 0.98 | 6.35                | 0.25 |
|   | 25mm |            |      |                     |      |
|   | 25mm |            |      |                     |      |
|   | 25mm |            |      |                     |      |
| Male Thread<br>to<br>Female Thread<br>(NPT/ISO) | 1/8" | 22.0       | 0.87 | 6.35                | 0.25 |
|   | 1/4" |            |      |                     |      |
|   | 3/8" |            |      |                     |      |
|   | 1/2" |            |      |                     |      |
| Male Thread<br>to<br>Female Thread<br>(NPT/ISO) | 3/4" | 25.0       | 0.98 | 6.35                | 0.25 |
|   | 1"   |            |      |                     |      |
|   | 1"   |            |      |                     |      |
|   | 1"   |            |      |                     |      |

**EASY MOUNTING PROCEDURE**



**1.** Disassemble the handle, using appropriate hex key. Take off the upper panel nut. Set the lower panel nut into the desired place to determine mounting height.

**2.** Insert the valve into the panel hole and reassemble the upper panel nut. Firmly tighten the upper nut.

**3.** Reassemble the handle. Firmly tighten the hex screw.

**CLEANING & PACKAGING**

HAM-LET H-99 & H-99HP Needle Valves are treated with HAM-LET Passivation Cleaning and Packaging (Procedure 8075). Special Cleaning for Oxygen service is available upon request

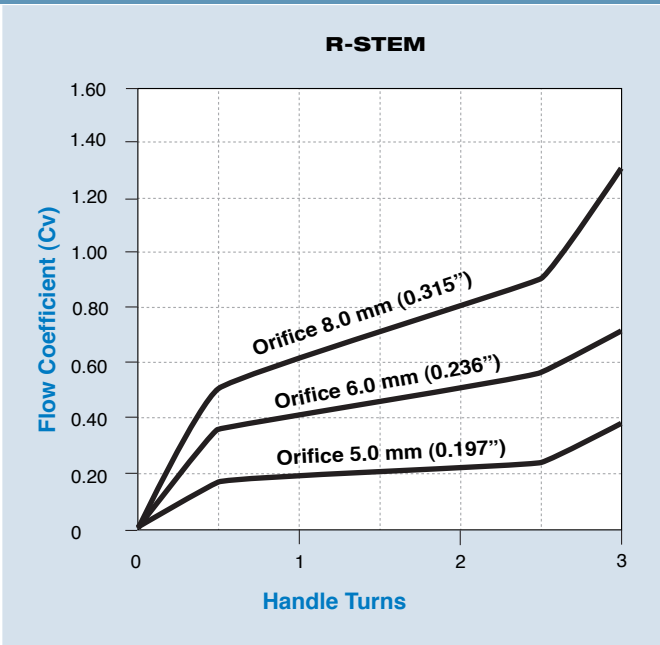
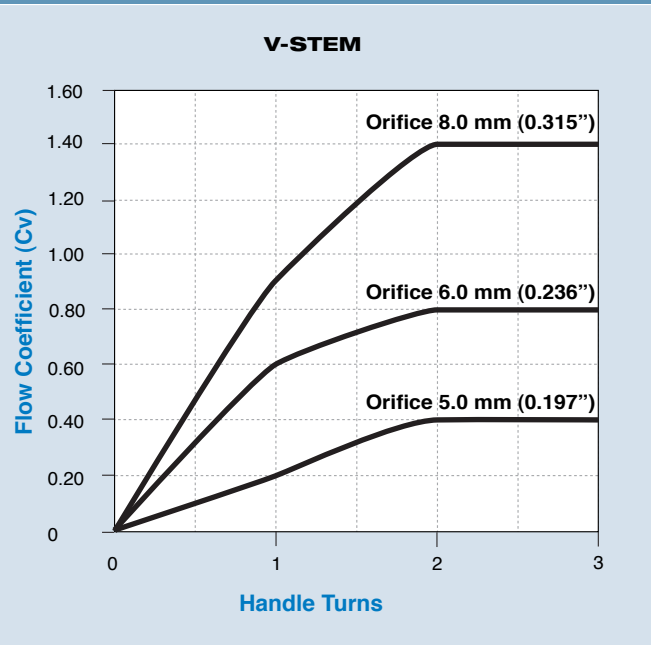
**TESTING**

The H-99 & H-99HP Series Needle Valve designs have been tested for Proof and Burst. Every H-99 & H-99HP Needle Valve is factory tested with Nitrogen at 1000 psi (69 bar). The maximum allowable leakage across seat is 0.1 std cc/min.

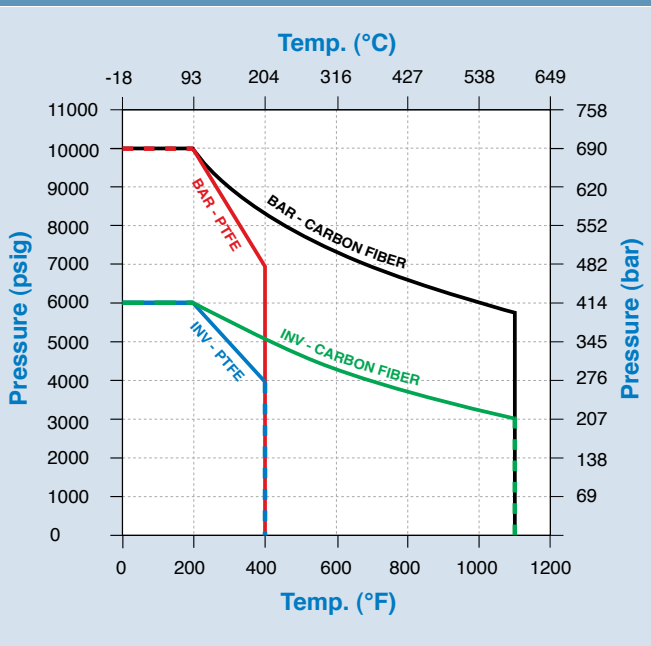
**PACKING ADJUSTMENT**

Due to the varied service applications of the valve, packing adjustment may be occasionally necessary. Valve's Packing is factory preadjusted to 1000 psig service. Initial packing adjustment is recommended after installation and prior to start-up.

**FLOW DATA AT 100°F (37°C)**



**PRESSURE TEMPERATURE RATING THREADED & WELD CONNECTION**



**MAX. PRESSURE RATING AT 70°F (21°C)**

| Body Raw Material  | Pressure |     |
|--------------------|----------|-----|
|                    | psi      | bar |
| Investment casting | 6000     | 414 |
| Bar Stock          | 10000    | 690 |

**MAX. ALLOWED WORKING TEMPERATURE**

| Packing Material | Max. Temperature |      |
|------------------|------------------|------|
|                  | °C               | °F   |
| PTFE             | 204              | 400  |
| Carbon Fiber     | 600              | 1112 |

The max. allowable pressure of welded connected valve, is limited to the max. allowed working pressure of the tube.

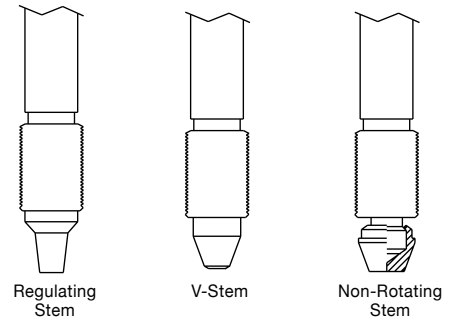
**ALTERNATIVE STEMS**

HAM-LET Needle Valves are available with a choice of stem-tip options to allow greater flexibility.

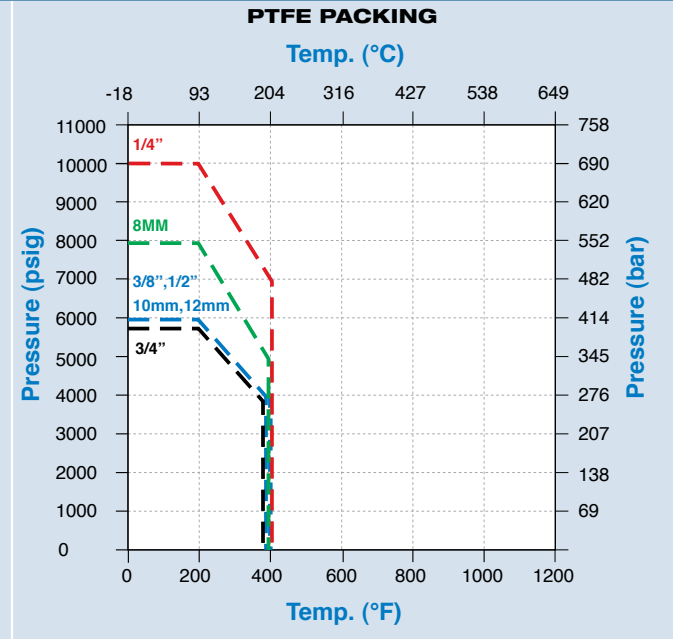
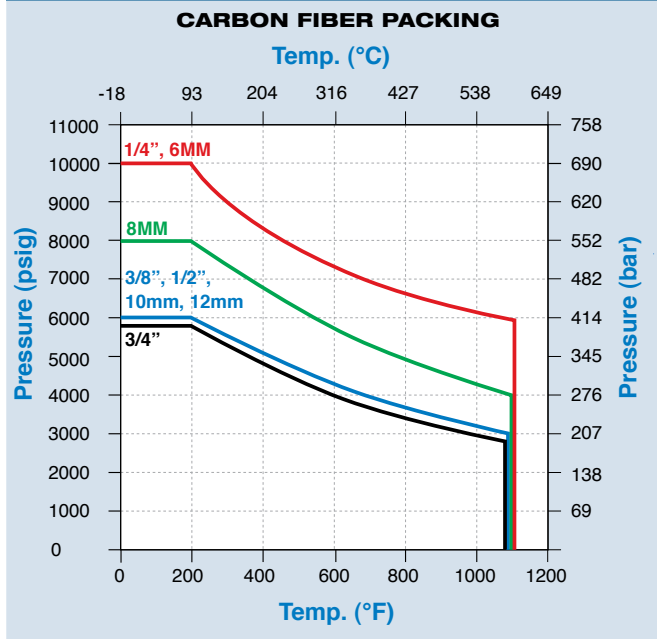
**Regulating:** Used where some degree of flow control is required.

**V-Stem:** A standard stem tip used for general-purpose liquids and gases.

**Non-Rotating:** Typically used in high-cycle applications to extend valve life. It is designed to prevent galling between the seat and stem.



**PRESSURE TEMPERATURE RATING LET-LOK CONNECTION**



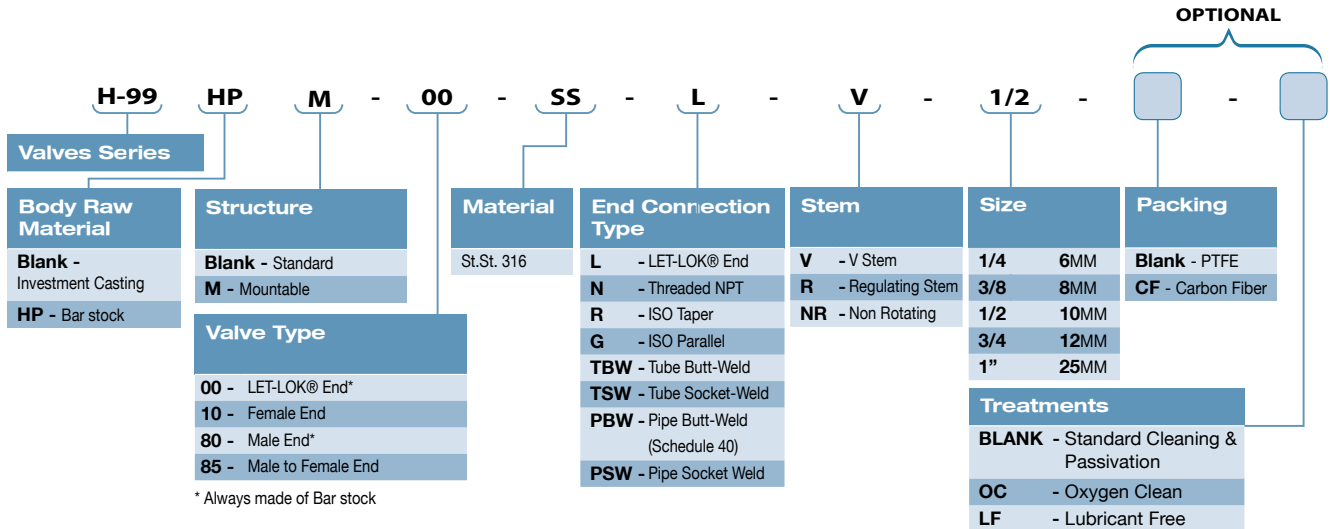
**MAX. PRESSURE RATING AT 70°F (21°C)**

| Let-Lok Size |           | Let-Lok Size |           |
|--------------|-----------|--------------|-----------|
| in           | Pressure  | mm           | Pressure  |
| 1/4          | 10000 psi | 6            | 10000 psi |
| -            | -         | 8            | 8000 psi  |
| 3/8          | 6000 psi  | 10           | 6000 psi  |
| 1/2          | 6000 psi  | 12           | 6000 psi  |
| 3/4          | 5850 psi  | -            | -         |

**Note:** Valves with Let-Lok ends are always made of barstock body.

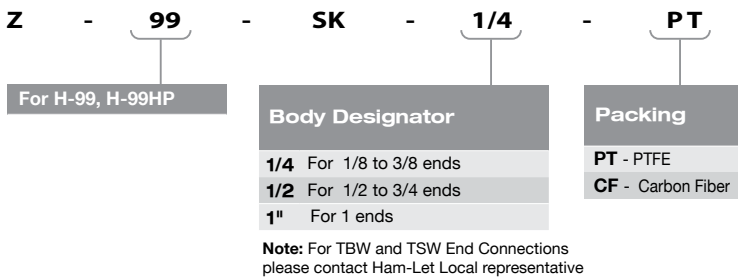
The max. allowed pressure of Let-Lok connected valve, is limited to the max. allowed working pressure of the tube.

H-99 SERIES ORDERING INFORMATION



SEAL KIT

Included: Packing & Label



**Warning**-Select the right component for safety's sake: The total design of the system must be taken into consideration when selecting components in order to ensure that your HAM-LET products provide safe, trouble-free operation. It is the responsibility of the system designer and the user to consider the compatibility of the materials, of the components and system, the function of the component, appropriate ratings and to ensure proper installation, operation and maintenance. Improper selection or use of products can cause property damage or personal injury, in respect of which the system designer and/or the user shall be solely liable and responsible.

