Valve Maintenance Instructions
Valve Information

**Design:**

Positive Guide Stem: High Pressure Equipment Company's patented "Positive Guide" stem assembly virtually eliminates lower stem rotation - one of the most common causes of premature stem failure. The lower section stem is manufactured from hardened 17-4 PH stainless steel for exceptional wear and corrosion resistance and can be easily serviced with no special tooling required. The one-piece upper section stem eliminates the need for continual adjustment and minimizes "loose handle" backlash.

The Positive Guide Stem is standard for all AF4, AF6, HF4, HF6, and HF9 valves, and 60,000 psi HF2 valves.

Rolled Style Stem: This simple two-piece design is also non-rotating and is ideal for smaller valves and for valves made from exotic materials. The standard lower section stem is manufactured from hardened 17-4 PH stainless steel. It is affixed to a one-piece upper stem requiring no periodic adjustment. The two stem components are free to rotate independently of each other, thereby minimizing rotation of the lower stem against the valve seat.

The Rolled Style Stem is standard for all AF1, AF2, NFA, NFB, LF4, LF6 valves, 30,000 psi HF2, XF4, and XF6 valves, as well as most valves requiring stems made from exotic materials. It is optional for any valve normally supplied with a Positive Guide Stem.

Pinned Stem Design: This variation on the Rolled Style Stem is a three-piece design in which the lower stem is pinned into a freely-rotating stem guide. It has all of the advantages of the rolled style stem, with the additional benefit of a replaceable lower section stem.

The Pinned Stem Design is standard for all NFC, NFD, NFF, NFH, LF9, LF12, LF16, and HF16 valves.
<table>
<thead>
<tr>
<th>Pressure Level</th>
<th>Tubing Size</th>
<th>Two Way Straight</th>
<th>Two Way Angle</th>
<th>Three Way Two Press</th>
<th>Three Way One Press</th>
<th>Three Way Two Stem</th>
<th>Replaceable Seat</th>
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<tbody>
<tr>
<td><strong>10,000 psi</strong></td>
<td>3/8&quot; x 3/16&quot;</td>
<td>10-11AF4</td>
<td>10-12AF4</td>
<td>10-13AF4</td>
<td>10-14AF4</td>
<td>10-15AF4</td>
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<td><strong>15,000 psi</strong></td>
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<td>10-11AF6</td>
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<td>10-15AF6</td>
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<td>15-12AF1</td>
<td>15-13AF1</td>
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<td>15-15AF1</td>
<td>NA</td>
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<td><strong>30,000 psi</strong></td>
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<td>30-11HF2</td>
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<td>30-15HF2</td>
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<td>100-12XF4</td>
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<td>150-15XF6</td>
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</tbody>
</table>
Valve Maintenance Instructions:

Valve Packing Gland Adjustment:

1. Relieve the system pressure. Remove the valve from the system and place it securely in a vice.
2. Fully open the valve stem.
3. Loosen the packing gland locking device.
4. Tighten the packing gland to the appropriate torque for the valve. Suggested packing gland torque values are listed in the Technical Information section of the HiP catalog.
5. Reinstall the packing gland locking device.

Packing Replacement:

1. Relieve the system pressure. Remove the valve from the system and place it securely in a vice.
2. Fully open the valve stem.
3. Remove the packing gland locking device.
4. Unscrew the packing gland and remove the packing gland and stem.
5. Remove the packing from the body. Note the packing and packing washer arrangement.
6. Replace the packing and place the packing and packing washers into the valve body.
7. Replace the stem and packing gland, tightening to the appropriate torque.
8. Replace the packing gland locking device.