KHF Series Regulators
Maintenance Instructions

Kit Contents

- Diaphragm
- Poppet spring
- Poppet
- Poppet seal and spring
- Seat
- Seat retainer
- Spring retainer
- Poppet seal retainer
- Lubricant MS-LT-WL8
- Inlet Filter

Symbols

- Discard
- Lightly lubricate
### Tools Required

<table>
<thead>
<tr>
<th>Tool</th>
<th>Size</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vise</td>
<td></td>
<td>Body</td>
</tr>
<tr>
<td>Socket</td>
<td>11/16 in. or 17 mm</td>
<td>Antitamper nut</td>
</tr>
<tr>
<td>Crow’s Foot</td>
<td>3/4 in. or 19 mm</td>
<td>Seat retainer spanner</td>
</tr>
<tr>
<td>Open-ended wrench</td>
<td>3/4 in. or 19 mm</td>
<td>Seat retainer spanner</td>
</tr>
<tr>
<td>Torque wrench</td>
<td>Capable of 236 ft·lb (320 N·m, 32.7 m·kg)</td>
<td>Cap ring spanner</td>
</tr>
</tbody>
</table>

### Swagelok Tools Available

<table>
<thead>
<tr>
<th>Tool</th>
<th>Size</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large cap ring spanner</td>
<td>2 7/8 in. or 73 mm</td>
<td>Cap ring</td>
</tr>
<tr>
<td>Seat retainer spanner</td>
<td></td>
<td>Seat retainer</td>
</tr>
<tr>
<td>Poppet seal insertion tool</td>
<td></td>
<td>Poppet seal and spring</td>
</tr>
<tr>
<td>Seal extraction tool</td>
<td></td>
<td>Poppet seal and spring</td>
</tr>
<tr>
<td>Filter insertion tool</td>
<td></td>
<td>Inlet filter</td>
</tr>
<tr>
<td>Filter pick tool</td>
<td></td>
<td>Inlet filter</td>
</tr>
</tbody>
</table>

*Note: See Pressure Regulators, MS-02-230, for tool ordering information.*
Note: Plated steel spring buttons shown.
Assemblies with the 316 SS spring buttons do not include the spring stabilizer.
WARNING
Before removing a regulator from the system for service, you must
• depressurize system
• purge the system to remove any residual system media left in the regulator.

Disassembly
1. Place the regulator in a vise.
2. Turn the handle counterclockwise until it stops.
   Note: If using an antitamper nut, remove it from the body.
   Then turn the stem counterclockwise until it stops.
3. Loosen the cap ring.
4. Remove the cap assembly and handle as one piece and set aside for later use.
   Note: The range spring may fall from the cap assembly when lifted. Set aside for later use.
5. Remove the diaphragm and the stop plate from the body. Set stop plate aside for later use.
   NOTICE
   Do not damage the diaphragm sealing surface on the body. Leakage could result.
6. Use the seat retainer spanner to loosen and remove the seat assembly. Discard the seat retainer and the seat.
7. Invert the body and remove and discard the poppet, the spring retainer, the poppet spring and the poppet seal retainer.
8. Thread the seal extraction tool into the body and remove the poppet seal and spring.
9. Remove the inlet filter from the inlet (marked ‘HP’) of the body using the filter pick tool. Discard old filter.
   NOTICE
   Be careful not to scratch the sides of the inlet port. Leakage could result.
**Reassembly**

**NOTICE**
Ensure all parts and tools are free of debris or damage.

10. Insert the inlet filter into the inlet (marked ‘HP’) of the body using the filter insertion tool.

**NOTICE**
Do not insert the inlet filter with a sharp tool. Damage to the filter could result.

11. Insert the **poppet seal and spring** into the body using the **poppet seal insertion tool** with the open end of the poppet seal and spring facing up.

12. Insert the **seat** with the groove facing up into the **seat retainer**.

13. Place the **poppet** through the **seat retainer**. Then place the **spring retainer**, the **poppet spring** and the **poppet seal retainer** onto the exposed end of the poppet.

14. Invert the **body** and thread the **seat assembly** into the body.

15. Tighten the **seat assembly** to 30 ft-lb (40 N·m, 4 m·kg).

**NOTICE**
Do not damage the diaphragm sealing face on the body. Leakage could result.

16. Install the **diaphragm** on the body with the large convolution facing towards the body.

17. Install the **stop plate** onto the diaphragm with the **boss** on the stop plate facing away from the diaphragm.
18. Reinsert the range spring into the cap assembly.

19. Thread the cap assembly onto the body and tighten the cap ring to 236 ft·lb (320 N·m, 32.7 m·kg).

20. Test the regulator for proper operation.

21. If using an antitamper nut, thread the antitamper nut onto the stem after the set outlet pressure is reached. Tighten the nut to 13 ft·lb (17.5 N·m, 1.8 m·kg).

For additional information, see www.swagelok.com.