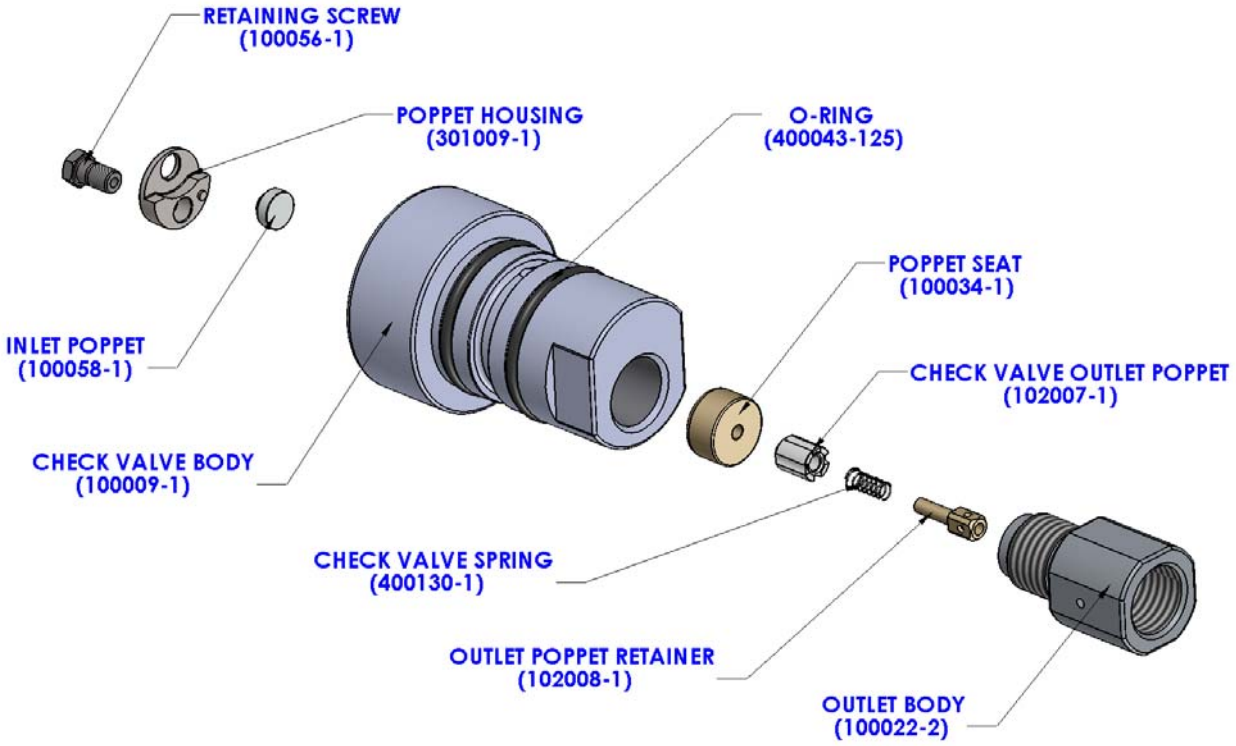
CHECK VALVE REBUILD KIT (302003-1)

This service procedure is for the installation of the Check Valve Rebuild Kit (302003-1).

The following parts and tools are required to perform this rebuild:

- ♦ 302003-1 (Check Valve Rebuild Kit)
- ♦ 400 Grit Sandpaper
- ♦ Hydraulic oil
- ♦ Lapping Block
- ♦ 1 1/4" Wrench
- ♦ 5/16" Wrench
- ♦ Water
- ♦ Spanner Wrench (400025-1)

The check valves are located between the HP Cylinder and the End Cap. The components of the check valve are shown below.



CHECK VALVE ASSEMBLY,60K
(301002-3)

When the check valves require service, one or more of the following conditions are usually present.

- High-pressure water temperature at the outlet fitting exceeds 120^{O}F [49^{O}C] indicating excessive back-flow through the outlet check valve.
- Hydraulic piston slams to the end of travel indicating excessive back-flow through the inlet check valve.
- Repetitive spiking of the high-pressure water pressure indicating that one or both of the valves may be leaking excessively.
- Warm water on the inlet water hose to the intensifier indicates a leaking Inlet Poppet.

Note: If the check valves are the only part of the intensifier being serviced, the intensifier does not have to be removed from the cabinet. However, the area must be free of airborne dust and particles.

1. Outlet Check Valve Rebuild

1. Shut down the system.

WARNING

Place the main electrical disconnect in the OFF position and bleed down all high-pressure lines. Place an "Out of Service" tag on the main electrical disconnect and lock it out. Failure to do so may result in damage to equipment or injury to personnel.

2. Loosen the Outlet Body.

3. Remove the End Cap from the Intensifier using the Spanner Wrench.

4. Remove the Check Valve Assembly from the End Cap.

5. Remove the Outlet Body from the Check Valve Body.

6. With the Outlet Body removed, the Outlet Poppet and Spring will normally stay in. The Outlet Poppet is easily removed and the Poppet Seat can be removed with a magnet.

7. Discard the Poppet Seat, Check Valve Spring, Check Valve Outlet Poppet, and Outlet Poppet Retainer. See **Figure 1** for reference.

8. Replace the Poppet Seat. The seat is not symmetrical, and the rounded side should face the Check Valve Body. When reinstalling the Poppet Seat, apply a thin film of Anti-Seize Goop to the rounded face only.

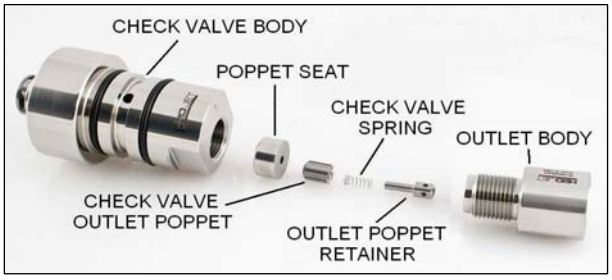


FIGURE 1

Note: *DO NOT apply Goop to the flat face of the Poppet Seat or the sealing face of the Outlet Body.*

9. Install Outlet Poppet Retainer into Outlet Body as shown in **Figure 1**.

10. Note the larger end of the Check Valve Spring. Slide the Check Valve Spring onto the Outlet Poppet Retainer, with the large end facing away from the Outlet Body.

11. Slide the Outlet Poppet into the Outlet Body, ensuring free movement of the poppet.

12. Apply Anti Seize Goop to the Outlet Body threads only and install the Outlet Body into the Check Valve Body, being careful not to drop the Outlet Poppet.

13. Using a torque wrench, torque the Outlet Body to 45 to 50 ft-lbs [61-67 Nm].

2. Inlet Check Valve Rebuild

1. Unscrew the Retaining Screw from the Check Valve Body. Discard the Retaining Screw, Inlet Poppet, and Poppet Housing. See **Figure 2**.

2. Examine the Check Valve Body for cracking, scratches, and excessive damage that would prevent the HP Seal from sealing.

3. Refinishing the Check Valve Body's Inlet face is mandatory when rebuilding the Check Valve Body. See **Figure 3** for resurfacing instructions.

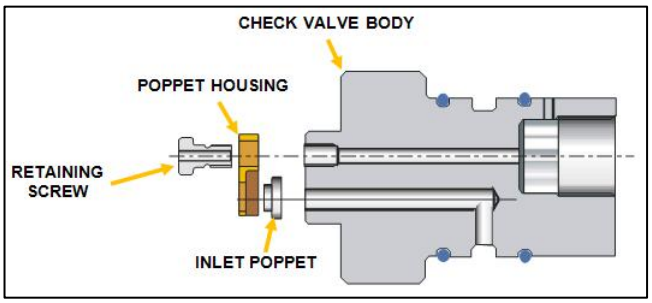


FIGURE 2

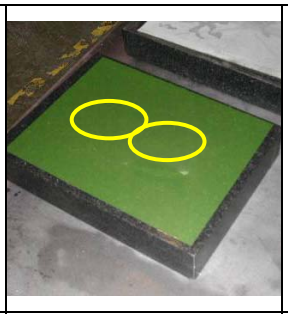
Use Hydraulic Oil to adhere 400 grit abrasive paper to a granite lapping block. Make sure that there are no air bubbles between the sheet and the granite block. Place a few drops of water on the abrasive paper. Lap the Check Valve Body in a figure-8 pattern until all surface imperfections have been removed.		**To finish the lapping process, draw the check valve body in a straight line along the abrasive strip once, then rotate the body 90 degrees and repeat the score. This will give a cross-hatch appearance and show any uneven areas due to improper lapping. Carefully clean the newly-lapped check valve body and re-inspect the part.**	

FIGURE 3

4. Thoroughly clean the lapped seat and threads of the Check Valve.

5. Assemble the Inlet Poppet and inspect the assembled unit to insure that the poppet moves freely.

3. O-Ring Replacement

1. Remove both old O-Rings from the Check Valve Body and discard them, being careful not to scratch the O-Ring groove.

2. Apply lubricant to the O-Ring groove closest to the Inlet Poppet to avoid dragging lubricant across the surface of the Check Valve Body. Slide first O-Ring back into groove.

3. Repeat previous step with O-Ring closest to Outlet Body. Make sure that O-Rings are in appropriate groves by referencing **Figure 4**.

FIGURE 4

4. Reinstallation

1. Apply Blue Goop to both "shoulders" of the check valve. Push the Check Valve Assembly into End Cap.

2. Thread the End Cap onto the HP Cylinder. Lightly tighten with the Spanner Wrench or torque to 85ft-lbs (115Nm) using the H2OJet Torque Tool.