

MAINTENANCE INSTRUCTIONS

4A-200 / RP4A Series 2 1/2" - 6"

Open test cocks #2, #3, and #4 to relieve pressure from the device. Both shut-off valves must be closed.

A. Check Removal

Note: If the first check seat disc needs only to be cleaned, it is not necessary to remove the entire check module from the valve body. See the next section, "Check Maintenance", for seat disc cleaning instructions. **Note:** The first check must be removed for maintenance of the second check.

1. Remove the cover clamp by backing off the nut until the latch can be disengaged from the T-bolt. Pull the clamp apart and slide away from the valve. See Figure 2.
2. Lift off the cover. A flat screwdriver will aid in lifting the cover out of the body. Screwdriver slots are provided on the perimeter of the cover. The first check must be removed first and then the second check may be removed.
3. Remove the check-retaining clip by pinching the clip ears together. This will disengage the clip from its groove. Remove clip and check-retaining ring. Pull check module straight out of body. The check module is sealed in place with an O-ring. See Figure 3.

4A Series only

4AN Series only

3. Remove the check-retaining spacer from the body. Pull the check module straight out of body. The check module is sealed in place with an O-ring.

B. Check Maintenance

If only cleaning of the first check is necessary, simply remove the three (3) nuts for 2 1/2" & 3" valves / four (4) nuts for 4" & 6" valves on the black plastic disc retainer (See Figure 4). Remove the check handle and washer and lift the disc retainer and disc out of the body. Rinse the disc with clean water or replace if necessary. The disc may be flipped over for a temporary repair, but should be replaced if damaged. Replace the disc, disc retainer, washer, handle, and nuts. Do not over tighten locknuts.

NOTE: The springs are factory installed and should not be removed or adjusted. Serious injury could occur if springs are disassembled.

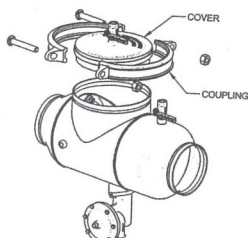


Figure 2

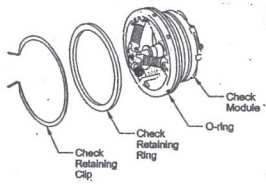


Figure 3

4A Series

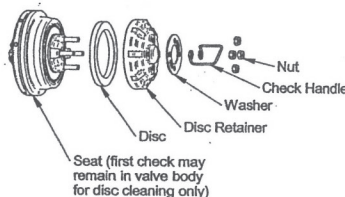
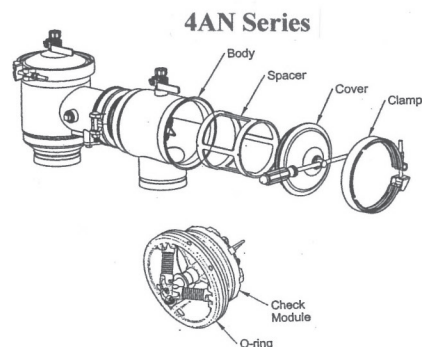


Figure 4



C. Relief Valve Maintenance 2 1/2" - 6"

1. Unscrew the sensing hose from the nipple (sensing hose is not shown). See Figure 5.
2. The RV can be serviced while still attached to the valve or it can be removed (rarely needed).
3. Remove the clamp by backing off the nut until the latch can be disengaged from the T-bolt. Pull the clamp apart and slide away from the RV.
4. Remove the RV cover.
5. Remove the RV module by grasping the diaphragm plate and pulling straight out.
6. Inspect the RV seat disc for debris or damage. To clean or replace the RV seat disc, remove the 5/16" screw on the seat disc washer. The RV disc may be flipped over for a temporary repair, but should be replaced if damaged. Replace the seat disc, seat disc washer, and 5/16" screw.
7. Lubricate the bushing O-ring with Apollo supplied lubricant, Dow 111 or equal, and insert the RV module into the valve body. The RV diaphragm has a rubber bead that fits into a groove in the RV body. Ensure the diaphragm bead is seated properly in the RV body before installing the RV cover.

If it is necessary to disassemble the RV module and/or remove the RV seat:

1. Remove the RV module as described above.
2. Remove the 5/16" screw on the diaphragm plate. Use caution as this will disengage the spring.
3. Remove the 5/16" screw on the seat disc washer.
4. Inspect all components for damage, paying particular attention to the diaphragm, seat disc, O-rings, and stem. If any of these components are worn or damaged, they should be replaced.
5. Lubricate the stem, stem O-ring, and RV seat O-ring with Apollo supplied lubricant, Dow 111 or equal.
6. Reassemble RV module.
7. Remove the RV seat by grasping the cage and pulling straight out. A flat screwdriver may aid in removal.
8. Inspect the seat and seat O-ring for damage. If damaged, they should be replaced.
9. Insert the seat into the RV body. Ensure that it is fully seated.
10. Lubricate the bushing O-ring with Apollo supplied lubricant, Dow 111 or equal and insert the assembled RV module into the valve body. Ensure the diaphragm bead is seated properly before installing the RV cover.
11. Replace the cover and clamp.
12. Inspect the sensing hose and replace if damaged.
13. Reinstall the sensing hose to the nipple.

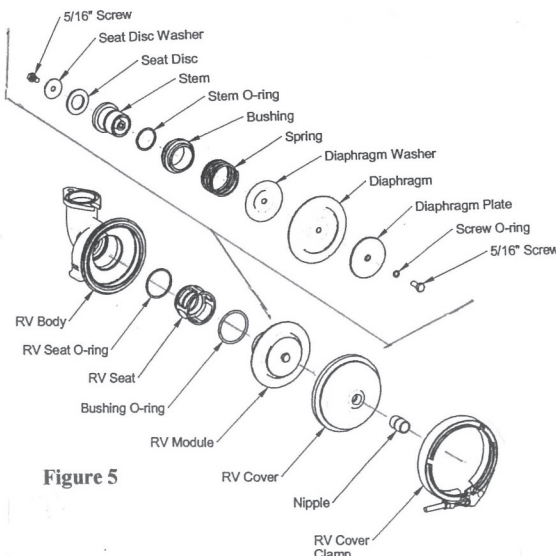


Figure 5

4A-200 / RP4A Series 8 – 12"

Open test cocks #2, #3, and #4 to relieve pressure from the device. Both shut-off valves must be closed.

Note: On 10" & 12" models, the flow divider (FD) must be removed before the checks should be removed. To remove the FD, remove the 1/4" nut holding it in place. Then rotate the FD 90° and lift up and out of the valve body. Pay attention to which side of the body the FD is attached. The FD's tab should be oriented on the same side as the cover of the relief valve body. If the relief valve needs to be turned 180°, the FD must also be rotated 180°.

A. Check Removal

Note: If the first check disc needs only to be cleaned, it is not necessary to remove the entire check module from the valve body. See the next section, "Check Maintenance", for disc cleaning instructions.

1. Take off the cover coupling by removing the two bolts and nuts.
2. Lift off the cover. The gasket may remain on the valve body. See Figure 6.
Note: The 10" & 12" valves are equipped with lifting tabs for cover lifting only. This tab should not be used to lift the entire valve.
3. Remove the six (6) reusable locknuts for 8" valves / eight (8) nuts for 10" & 12" valves on the check seat with a 3/4" socket and ratchet. *SUGGESTION: Place a rag over the relief valve opening inside the valve body to prevent the locknuts from falling into the relief valve.*

B. Check Maintenance

If only cleaning of the first check is necessary, simply remove the six (6) reusable locknuts for 8" valves / eight (8) nuts for 10" & 12" valves on the black plastic disc retainer (See Figure 8). Remove the check handles and washers and lift the disc retainer and disc out of the body. Rinse the disc with clean water or replace if necessary. The disc may be flipped over for a temporary repair, but should be replaced if damaged. Replace the disc, disc retainer, washer, handle, and nuts. Do not over tighten locknuts.

NOTE: The springs are factory installed and should not be removed or adjusted. Serious injury could occur if springs are disassembled.

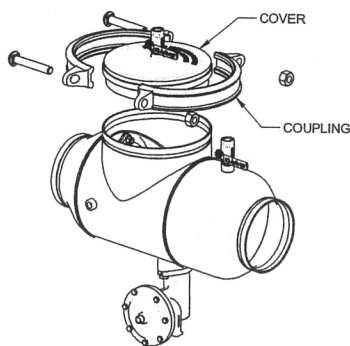


Figure 6

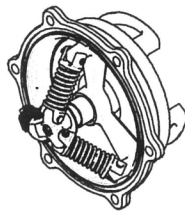


Figure 7

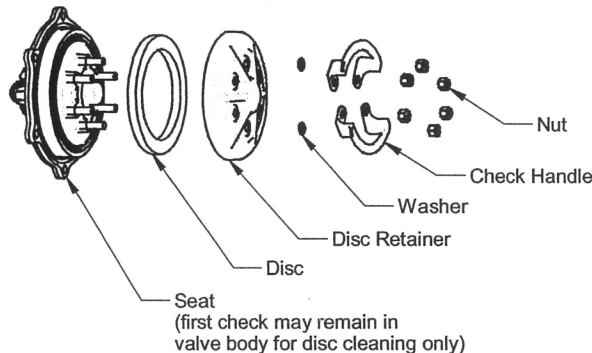


Figure 8

C. Relief Valve Maintenance 8" only

Note: See Figure 9.

1. Unscrew the sensing hose from the relief valve (RV) cover nipple (sensing hose is not shown).
2. The RV can be serviced while still attached to the valve or it can be removed (rarely needed). To remove the RV, unscrew the two 1/4" bolts securing the RV to the valve body.
3. Remove the RV cover by removing the seven (7) 1/4" bolts.
4. Remove the diaphragm.
5. Remove the RV cartridge by grasping the diaphragm plate and pulling straight out. A bushing o-ring may remain in the body. Ensure this o-ring is not damaged.
6. Inspect the RV seat disc for debris or damage. To clean or replace the RV seat disc, remove the 1/4" screw on the seat disc washer. The RV disc may be flipped over for a temporary repair, but should be replaced if damaged. Replace the seat disc, seat disc washer, and 1/4" screw.
8. Insert the RV module into the valve body.
9. Replace diaphragm, cover, and bolts.
10. Inspect sensing hose and replace if damaged.
11. Reinstall sensing hose to RV cover nipple.

If it is necessary to disassemble the RV module and/or remove the RV seat:

1. Remove the RV module as described above.
2. Remove the 1/4" screw on the diaphragm plate. Use caution as this will disengage the spring.
3. Remove the 1/4" screw on the seat disc washer.
4. Inspect all components for damage, paying particular attention to the diaphragm, seat disc, o-rings, and stem. If any of these components are worn or damaged, they should be replaced.
5. Lubricate the stem, stem o-ring, and RV seat o-ring with DOW 111 or equivalent lubricant. Reassemble RV cartridge.
6. Remove the RV seat by grasping the cage and pulling straight out. A flat screwdriver may be necessary to aid in removal.
7. Inspect the seat and seat o-ring for damage. If damaged, they should be replaced.
8. Insert the seat into the RV body. Ensure that it is fully seated.
9. Ensure the bushing o-ring is positioned in the RV body, then insert the assembled RV cartridge into the valve body.
10. Replace diaphragm, cover, and bolts.
11. Inspect sensing hose and replace if damaged.
12. Reinstall sensing hose to RV cover nipple.

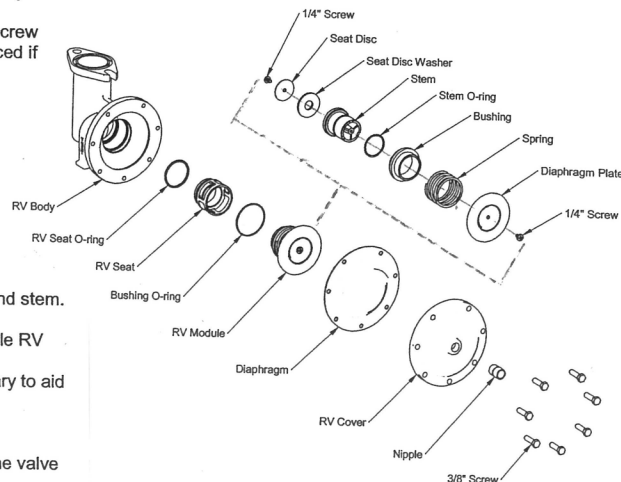


Figure 9

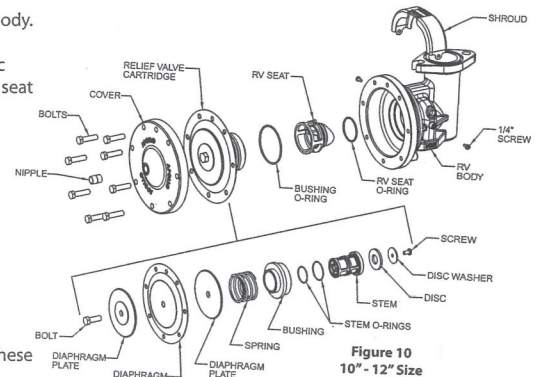
D. Relief Valve Maintenance 10 – 12”

NOTE: See Figure 10.

1. Unscrew the sensing hose from the relief valve (RV) cover nipple (sensing hose is not shown).
2. The RV can be serviced while still attached to the valve or it can be removed (rarely needed). To remove the RV, unscrew the two 3/4” bolts securing the RV to the valve body. NOTE: When removing the RV from the valve body, take care not to damage flow divider (See Figure 10). The shroud does not need to be removed to service the RV.
3. Remove the RV cover by removing the eight (8) 1/2” bolts.
4. Remove the RV cartridge by grasping the diaphragm plate and pulling straight out. A bushing o-ring may remain in the body. Ensure this o-ring is not damaged.
5. Inspect the RV seat disc for debris or damage. To clean or replace the RV seat disc, remove the 3/8” screw on the seat disc washer. The RV disc may be flipped over for a temporary repair, but should be replaced if damaged. Replace the seat disc, seat disc washer, and 3/8” screw.
6. Insert the RV module into the valve body.
7. Replace cover and bolts.
8. Inspect sensing hose and replace if damaged.
9. Reinstall sensing hose to RV cover nipple.

If it is necessary to disassemble the RV module and/or remove the RV seat:

1. Remove the RV module as described above.
2. Remove the 5/8” screw on the diaphragm plate. Use caution as this will disengage the spring.
3. Remove the 3/8” screw on the seat disc washer.
4. Inspect all components for damage, paying particular attention to the diaphragm, seat disc, o-rings, and stem. If any of these components are worn or damaged, they should be replaced.
5. Lubricate the stem, stem o-ring, and RV seat o-ring with Apollo supplied lubricant, DOW 111 or equal. Reassemble RV cartridge.
6. Remove the RV seat by grasping the cage and pulling straight out. A flat screwdriver may be necessary to aid in removal.
7. Inspect the seat and seat o-ring for damage. If damaged, they should be replaced.
8. Insert the seat into the RV body. Ensure that it is fully seated and that the seat's tab aligns with the notch in the RV body.
9. Ensure the bushing o-ring is positioned in the RV body, then insert the assembled RV cartridge into the valve body.
10. Replace cover and bolts.
11. Inspect sensing hose and replace if damaged.
12. Reinstall sensing hose to RV cover nipple.



4A-500 / PVB4A Series 1/2 - 2”

A. Disassembly

1. Close #2 shut-off valve, then close #1 shut-off valve.
2. Bleed pressure from device by opening test cocks #1 and #2.
3. Remove the air inlet canopy by loosening the two screws, rotating the canopy to the left, and lifting up.
4. Unscrew and remove the bonnet and float assembly. **DO NOT USE CANOPY TO UNSCREW BONNET! DAMAGE TO THE CANOPY MAY OCCUR.**
5. Remove float cage.
6. Push down and turn the spring retainer 90 degrees to remove. Remove the spring. Remove the poppet from the check seat.

CAUTION: Do not use pliers or other tools, which may damage or scratch the plastic stem.

7. Holding the poppet assembly in one hand, remove screw and retaining washer.
8. Remove the seat disc.
9. All parts should be carefully inspected for any damage or excessive wear and thoroughly rinsed in clean water prior to reassembly. Replace worn parts as necessary.
10. Normally, the check seat need not be removed. If removal is required, rock it back and forth while pulling outward.

B. Assembly

1. If the check seat was removed, install the new o-ring and lubricate with Apollo supplied lubricant, DOW 111, or equal. Line up the seat with the bore and push it firmly into place.
2. Install new disc in poppet and secure with washer and screw.
3. Place and center the poppet assembly in the check seat.
4. Install the spring onto the poppet, ensure that it is centered around the raised spring pad.
5. Install the spring retainer onto the spring by pushing down into the grooves of the check seat and turning 90 degrees. Ensure spring retainer pops up about .1” and locks into the lugs. **CAUTION: Ensure the spring retainer orientation matches that in the parts list drawing or the device's flow will be significantly restricted.**
6. Install float cage and float. See drawing for correct orientation.
7. Apply a thin coat of Apollo supplied lubricant, DOW 111, or equal onto o-ring, screw bonnet into body.
8. Test device to insure proper installation.
9. Install air inlet canopy.

