

## 4A-100 / DC4A Series

### MAINTENANCE INSTRUCTIONS

#### 1/2" – 2"

#### A. Disassembly – Check Valves

1. Close #2 shut-off valve, then close #1 shut-off valve.
2. Bleed pressure from the assembly by opening #2, #3, and #4 test cocks.
3. Unscrew cap using hex head provided.
4. Push down and turn the spring retainer 90 degrees to remove. Remove the spring. Remove the poppet from the check seat.
5. Normally, the check seat need not be removed. If removal is required, rock it back and forth while pulling outward.

#### B. Disassembly – Check Valve Poppet

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

1. Holding the poppet assembly in one hand, remove screw and retaining washer.
2. Remove the seat disc.
3. 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.

#### C. Assembly – Check Valve Poppet

1. Install new disc in poppet and secure with washer and screw.

#### D. Assembly – Check Valve

1. If the check seat was removed, install the new o-ring and lubricate. Line up the seat with the bore and push it firmly into place.
2. Place and center the poppet assembly in the check seat.
3. Install the spring onto the poppet.
4. 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.**
5. Apply a thin coat of Apollo supplied lubricant or DOW 111 or equal on cap o-ring.
6. Install cap.

## MAINTENANCE INSTRUCTIONS

### 4A-100 / DC4A 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.

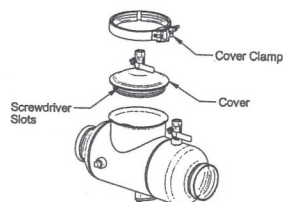


Figure 2

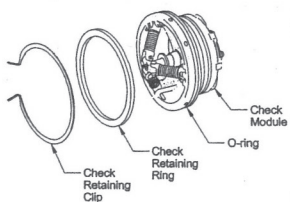


Figure 3

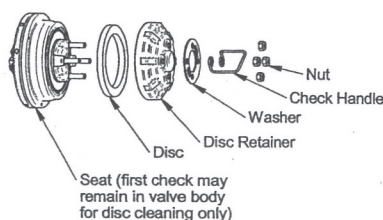
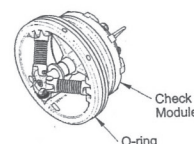
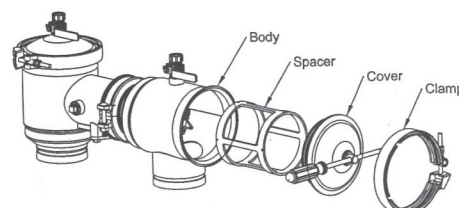


Figure 4

4A Series



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## 4A-100 / DC4A Series 8 – 12"

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 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. The gasket may remain on the valve body.
2. Lift off the cover. See Figure 5.
3. Remove the six (6) nuts for 8" valves / eight (8) nuts for 10" & 12" valves with a 3/4" socket and ratchet.
4. Slide the entire check module off the body studs and remove from body (see Figure 6).

Either check may be removed without disturbing the other (8" – 12" sizes only).

### B. Check Maintenance

If only cleaning of the first check is necessary, simply remove the six (6) nuts for 8" valves / eight (8) nuts for 10" & 12" valves on the black plastic disc retainer (See Figure 7). 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.

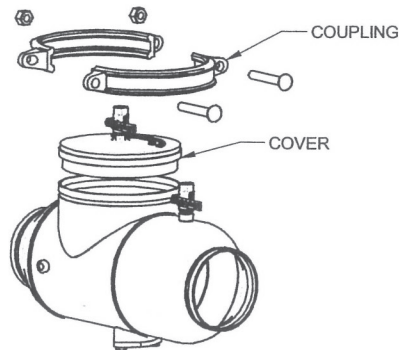


Figure 5

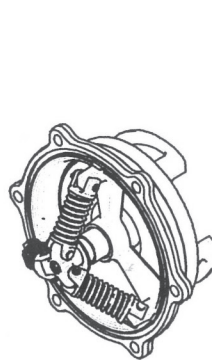


Figure 6

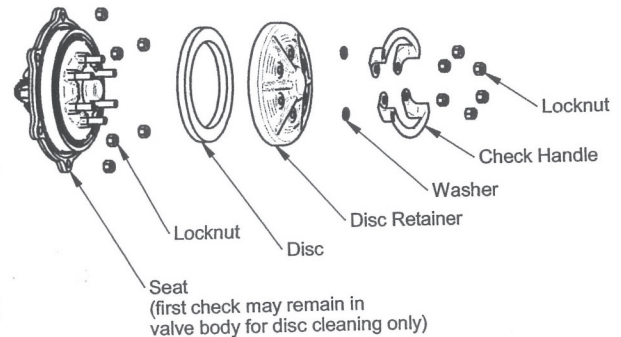


Figure 7

## IV. MAINTENANCE INSTRUCTIONS 4A-200 / RP4A Series 1/2 - 2"

### A. Disassembly – Check Valves

1. Close #2 shut-off valve, then close #1 shut-off valve.
2. Bleed pressure from the assembly by opening #2, #3, and #4 test cocks.
3. Unscrew cap using hex head provided.
4. Push down and turn the spring retainer 90 degrees to remove. Remove the spring. Remove the poppet from the check seat.
5. Normally, the check seat need not be removed. If removal is required, rock it back and forth while pulling outward.

### B. Disassembly – Check Valve Poppet

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

1. Holding the poppet assembly in one hand, remove screw and retaining washer.
2. Remove the seat disc.
3. 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.

### C. Assembly – Check Valve Poppet

1. Install new disc in poppet and secure with washer and screw.

### D. Assembly – Check Valve

1. If the check seat was removed, install the new o-ring and lubricate using Apollo lubricant of DOW® 111 or equal. Line up the seat with the bore and push it firmly into place.
2. Place and center the poppet assembly in the check seat.
3. Install the spring onto the poppet.

4. 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. 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.**
5. Apply a thin coat of Apollo lubricant of DOW® 111 or equal on cap o-ring.
6. Install cap.

### E. Disassembly – Relief Valve

1. Remove cover bolts, cover, and diaphragm.
2. Grasp the diaphragm plate and pull the assembly straight out of the body.
3. Holding the relief valve assembly in one hand, remove the screw (and retaining washer on 1 1/4", 1 1/2", & 2" models only).
4. Remove the seat disc.
5. Turn the assembly over, keeping the spring compressed by holding down on the diaphragm plate, remove the screw
6. Remove the diaphragm plate, spring, and bushing from the R.V. stem. Note the orientation of the bushing with respect to the spring.
7. Remove the o-ring from the R.V. stem.
8. Normally, the R.V. seat need not be removed. If removal is required, rock it back and forth while pulling outward.
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.

### F. Assembly – Relief Valve

1. Apply a thin coat of Apollo lubricant of DOW® 111 or equal on o-rings before installing.
2. Install o-ring on R.V. seat. Line up the seat with the bore and push firmly into place.
3. If the R.V. stem has been disassembled, install o-ring onto R.V. stem.
4. Slide bushing over R.V. stem and position spring onto bushing. Note the correct position of the bushing from step #6 in disassembly instructions. (Spring must fit over the smaller shoulder of the bushing upon reassembly.)
5. Position diaphragm plate and compress spring, install screw into R.V. stem.
6. Turn the assembly over and install seat disc, (and retaining washer on 1 1/4", 1 1/2", & 2" models only), and screw.
7. Install o-ring onto bushing.
8. Slide complete assembly into the body.
9. Position diaphragm over flange, install cover, and tighten bolts evenly.
10. Open #1 shut-off valve and bleed air out of the unit through #2, #3, and #4 test cocks; then open #2 shut-off valve.
11. Test complete assembly to ensure proper operation.