

## COMBINATION AIR VALVE BARAK, MODEL D-46

### INSTALLATION

1. The D-46 combination air valve should be installed vertically on a riser on the crown of the pipeline.
2. An inlet isolating valve should be installed underneath the air valve.

### PERIODIC MAINTENANCE

- Routine service is an integral part of the standard procedure for maintenance of a water supply system.
  - Recommended routine maintenance - at least once a year, according to the type and quality of the liquids in the system.
1. Shut the isolating valve under the air valve before servicing.
  2. **WARNING – Air Valve under Pressure**
    - A. For air valves with the pressure release outlet (Fig. 3), slowly open the Pressure Release Plug/ Tap (Fig. 3, 7) until all pressure is released.
    - B. For air valves without a pressure release outlet (Fig. 1), slowly unscrew the flange bolts and nuts until all the pressure is released from the valve.
    - C. Make sure to drain the air valve of all liquid prior to commencing maintenance.



#### Maintenance – D-46 2" Model (Fig. 1, 2)

1. Unscrew the flange bolts and nuts and remove the air valve from the isolating valve.
2. Manually remove the Locking Ring (Fig. 1, 8) and Float Lock (Fig. 1, 7) from the base of the air valve Body (Fig. 1, 5).
3. Remove the Float and Seal Assembly (Fig. 1, 6) by sliding it out from the air valve Body.
4. Wash the Float and Seal Assembly thoroughly under clean running water, paying special attention to the Air Release Orifice (Fig. 2, b), the Air Release Rolling Seal (Fig. 2, c) and the Air & Vacuum Seal (Fig. 2, a).
5. Visually examine the Air Release Rolling Seal for cracks or tears.
6. If the seal needs to be replaced, follow the instructions below for: Replacing the Rolling Seal.
7. Visually examine the Air & Vacuum Seal for cracks or tears. Remove and replace, if necessary. Manually verify the free and unhindered movement of the slots between the Upper and Lower Components of the Float and Seal Assembly (Fig. 2). Clean any debris that might cause interference.
8. Manually unscrew the Flange Nuts (Fig. 1, 1) and remove the Discharge Outlet (Fig. 1, 2) from the air valve Body. Thoroughly wash the Discharge Outlet and the air valve Body under clean running water. Remove all debris from the Discharge Outlet screen.
9. Visually inspect that the O-ring and rubber Gasket (NS models only) are intact and positioned properly on the top of the Body.
10. Place the Discharge Outlet on the Threaded Rods (Fig. 1, 4) of the air valve Body and manually tighten the Flange Nuts.
11. Slide the Float and Seal Assembly into the air valve body, Air & Vacuum Seal side first.
12. Insert the Float Lock into the air valve Body and close with the Locking Ring.
13. Wash the flanged area of the Isolating Valve.
14. Make sure the flange gasket is intact and seated properly.
15. Bolt the D-46 Air Valve to the Isolating Valve by tightening the bolts and nuts using the crossover method. The closure tightness of the bolts and nuts shall be according to the standard torque for their specific size.
16. Slowly open the Isolating Valve. In the event of leakage or float disturbance, close and slowly reopen the isolating valve.

## Maintenance – D-46 3" and Higher Flanged Model (Fig. 3, 4)

1. Manually unscrew the Flange Nuts (Fig. 3, 2) and remove the Discharge Outlet (Fig.3, 1) from the air valve Body (Fig.3, 5).
2. Maintenance of the Air Release & Air/ Vacuum Components:
  - A Unscrew and remove the Automatic Air Release Assembly (Fig. 4, a,b,c,f) from the Float and Seal Body (Fig. 4, d,e).
  - B Thoroughly wash the entire Automatic Air Release Assembly under clean running water with an emphasis on the Air Release Rolling Seal (Fig. 4, f).  
Inspect the Air Release Rolling Seal for tear or cracks. If the seal needs to be replaced, follow the instructions below for: Replacing the Air Release Rolling Seal.
  - C Wash the inside of the air valve Body including the Float and Seal Housing (Fig. 4, e) under clean running water. Make sure the drain outlet plug or ball valve is open to enable drainage.
  - D Inspect the Air & Vacuum O-ring (Fig. 4, e) for tear or cracks. Replace if necessary. Remove the D-46 from the isolating valve by unscrewing the Bolts. Remove the Locking Ring and Float Lock. Remove the Float and Seal Housing. Replace the Air & Vacuum Seal and assemble in the reverse order.
  - E Insert the Automatic Air Release Assembly into the Float and Seal Housing and screw closed.
3. Check that the Drain Elbow (Fig.3, 6) is clear of debris. Inject a stream of water into the Elbow and visually inspect that the water passes through to the inside of the air valve body. If clogged, clean with a thin wire.
4. Thoroughly wash the Discharge Outlet Elbow under clean running water. Make sure the inner screen is clean and free of debris.
5. Place the Discharge Outlet on the Threaded Rods (Fig.3, 4) of the air valve Body and manually tighten the Flange Nuts.
6. If loosened in step D, bolt the D-46 Air Valve to the Isolating Valve by tightening all the bolts and nuts using the crossover method.  
The closure tightness of the bolts and nuts shall be according to the standard torque for their specific size.
7. Very slowly open the Isolating Valve. In the event of leakage or float disturbance, close and slowly open the isolating valve.

### Replacing the Air Release Rolling Seal

1. Shut the isolating valve under the air valve before servicing.
  2. **WARNING** – Air Valve under Pressure
    - a. For air valves with the pressure release outlet (Fig. 3), slowly open the Pressure Release Plug/ Tap (Fig. 3, 7) until all pressure is released.
    - b. For air valves without a pressure release outlet (Fig. 1), slowly unscrew the flange bolts and nuts until all the pressure is released from the valve.
- A. 2" Model D-46 (Fig. 1)**
1. Unscrew the flange bolts and remove the air valve from the pipeline.
  2. Release the Float Lock (Fig. 1, 9) and the Locking Ring (Fig. 1, 10) from the bottom of the air valve.
  3. Slide out the Float and Seal Assembly (Fig. 1, 6).
- B. 3" and Higher Model D-46 (Figs 3, 4)**
1. Unscrew the Flange Nuts (Fig. 3, 2) from the Threaded Rods (Fig. 3, 4).
  2. Remove the Discharge Outlet Elbow (Fig. 3, 1).
  3. Unscrew the Air Release Cover (Fig. 4, a) and lift out with the attached Air Release and Float Assembly (Fig. 4, a,b,c,f).

Continue, using the following instructions, which pertain to all models (Figs. 1-4):

1. Hold the Float (Fig. 2, d - Fig.4, c) of Air Release and Float Assembly (Fig. 1, 6 - Fig. 3, 8) in the palm of one hand. With the other hand, insert the end of a flat screwdriver in the space between the Float and the Air Release Component (Fig. 2, c - Fig. 4, c), specifically under one of the slots open at the bottom.
2. Lift the screwdriver up against the lower part of the Air Release Component, prying it up over the protrusion until both parts separate.
3. Remove the old Rolling Seal ((Fig. 2, e - Fig. 4, d) from both ends and discard.
4. Insert the thick end of the new Rolling Seal into the appropriate slot on the upper portion of the Float.
5. Hold the Float in the palm of one hand, using the index finger to push down on the Rolling Seal from the top.
6. Hold the Air Release Component in the palm of the other hand, with the open slot in the Air Release Component positioned between the thumb and the index finger.
7. Thread the tail end of the Rolling Seal through the slot from the inside of the slot to the outside, until the end of the rolling seal extends outward from the side of the component.
8. Pull on the tail end of the Rolling Seal until it locks in place between so that each of the two protrusions on the rolling seal sits exactly on either side of the slot. Cut off the extra length of the tail of the Rolling Seal.
9. Insert the Float into the Air Release Component making sure to align the two protrusions on the float opposite the two long closed slots of the Air Release Component.
10. Push one side against the other until the two protrusions sit inside the two slots and both sides move freely.

**Assembly**

- A. 2" Model D-46
  - 1- Slide the Float Assembly into the air valve body.
  - 2- Insert the Float Lock into the bottom of the air valve, lock in place with the Locking Ring.
  - 3- Place the air valve on the isolating valve, screw and tighten the flange bolts.
  - 4- Open the isolating valve.
- B. 3" and Higher D-46
  - 1- Screw the Air Release Cover with attached Air Release and Float Assembly into the body of the air valve.
  - 2- Place the Discharge Outlet Elbow on the corresponding screws.
  - 3- Screw the Flange Nuts on the corresponding Threaded Rods and tighten.
  - 4- Open the isolating valve.

**TROUBLESHOOTING GUIDE**

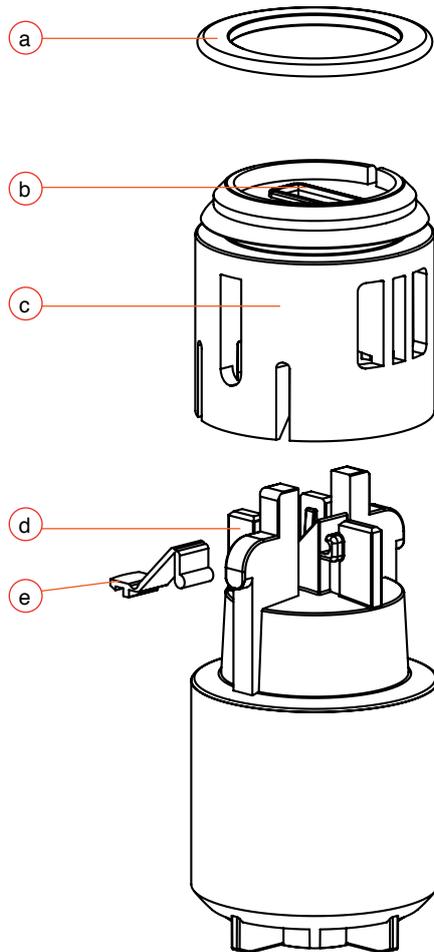
PROBLEM	REASON	SOLUTION
Discharge Outlet Leak	a. Debris caught in the Rolling Seal b. Debris caught between the Air & Vacuum Seal and the Body. c. Torn or cracked Rolling Seal and/or Air & Vacuum Seal.	Perform: B. PERIODIC MAINTENANCE
Discharge Outlet Broken	Air valve was hit or mishandled.	Unscrew and replace.
Drain Outlet Plugged	Debris caught in the outlet.	Clean the outlet opening with a thin wire and clean running water or a burst of air.



**Fig. 1**

**MODEL D-046 2"  
PARTS LIST**

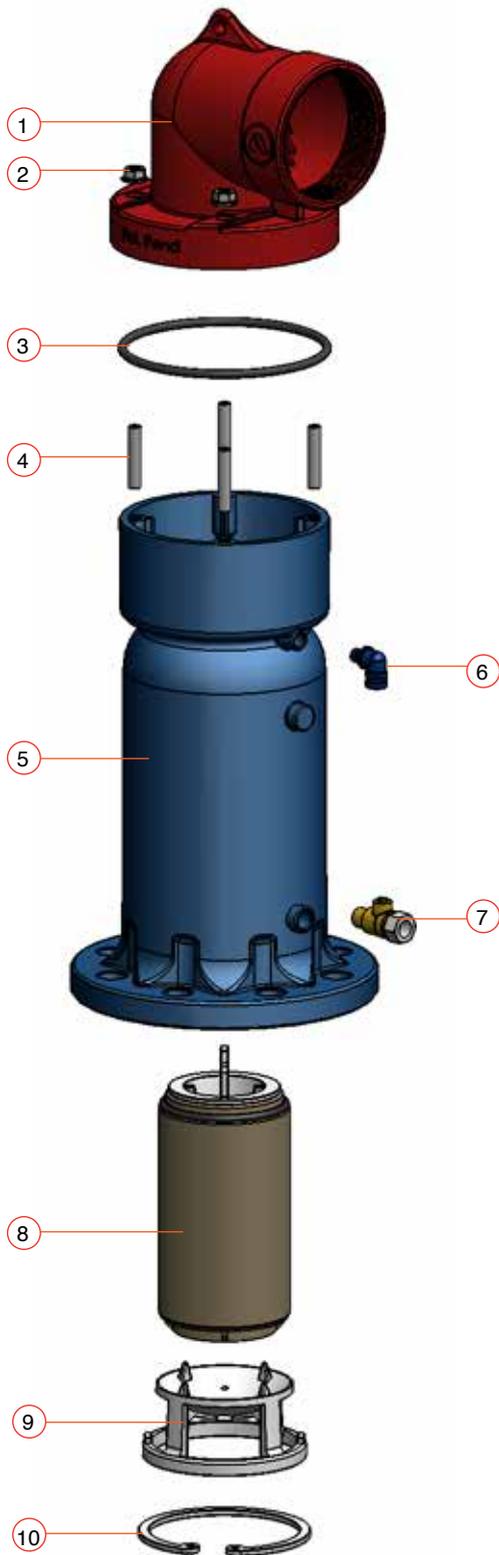
No.	Part
1.	Flange Nut
2.	Discharge Outlet
3.	O-Ring
4.	Threaded Rod
5.	Body
6.	Float and Seal Assembly
7.	Float Lock
8.	Locking Ring



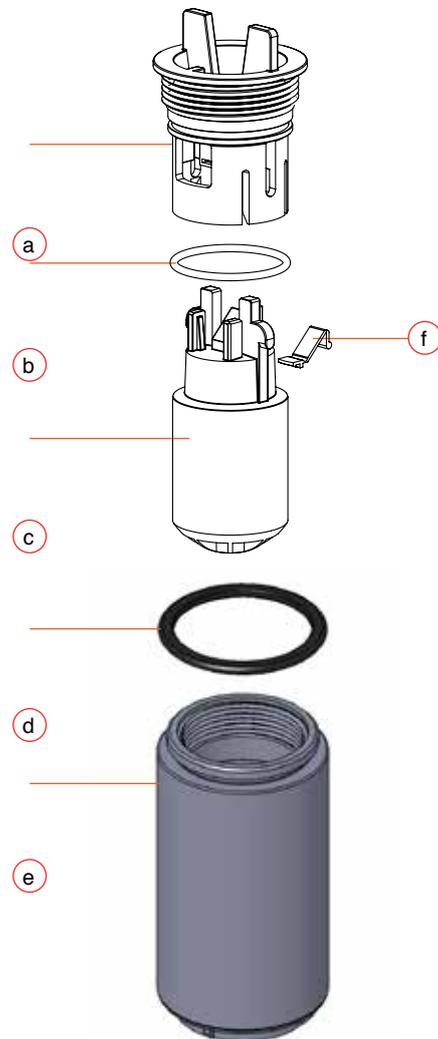
**Fig. 1**

**MODEL D-046 3", 4"**  
**PARTS LIST**

No.	Part
1.	Discharge Outlet
2.	Flange Nut
3.	O-Ring
4.	Threaded Rod
5.	Body
6.	Drain Elbow
7.	Pressure Release Tap/ Plug
8.	Float and Seal Assembly
9.	Float Lock
10.	Locking Ring



**Fig. 3**



**Fig. 4**

