



S U P E R I O R

# Buckner Model VBDW

Disassembly Instructions and  
Troubleshooting





# Index

## Disassembly Instructions

- Solenoid (2-4)
- Valve (5, 6)

## Repair Kits (11)

## Troubleshooting

- Valve will not close (7)
- Valve will not open electrically (9, 10)
- Water weeps past valve (7, 8)



# Solenoid Disassembly Instructions

1. Remove the metal clip at the top, then remove the plastic spacer and metal washer that sits on top of the metal U-frame.



2. Lift coil and U-frame off of the solenoid post.





# Solenoid Disassembly Instructions

3. Using a 5/8" wrench, unscrew solenoid post from valve bonnet. The wrench can be applied to the flats in the threaded base.



Photo below shows solenoid cavity and solenoid post assembly.





# Solenoid Disassembly Instructions

Photo below shows components of the 3-way solenoid post.



Photo below shows filter material from interior of lower section of post assembly. The filter prevents particulates from entering upper diaphragm chamber.





# Valve Disassembly Instructions

1. Remove top bolts, then lift bonnet assembly off of valve body.



2. Remove spring and diaphragm assembly from valve body.





# Valve Disassembly Instructions

Photo below shows top side of diaphragm assembly.



Photo below shows bottom side of diaphragm assembly which includes cone shaped seat which descends down into brass seat of valve body when valve is in closed position





# TROUBLESHOOTING

## **PROBLEM:**

Valve will not close, or closes but weeps.

## **CAUSE #1:**

Debris in valve body or embedded in rubber seat.

## **SOLUTION:**

Disassemble valve and check for debris and clean as necessary. If rubber seat is damaged, replace diaphragm/seat assembly.



## **PROBLEM:**

Valve will not close.

## **CAUSE #2:**

Clogged filter in solenoid is not allowing water to pass into diaphragm chamber.

## **SOLUTION:**

Disassemble solenoid and remove filter from lower section of solenoid post assembly using a paper clip or something similar. Clean filter with water or replace. The filter is made of Scotch Bright (very fine type A) which can be purchased at most super markets.





# Troubleshooting

**PROBLEM:**

Water weeps past valve and out of top of solenoid post.

**CAUSE:**

Malfunctioning solenoid. The solenoid plunger is not completely sealing exhaust port located at top of post.

**SOLUTION:**

Disassemble solenoid post and plunger assembly and look for debris that could prevent plunger from sealing exhaust port. Remove debris. If no debris is found, replace post and plunger assembly.





# Troubleshooting

**PROBLEM:**

Valve will not open electrically or manually.

**CAUSE:**

Torn diaphragm. This can be confirmed by attempting to open the valve electrically or manually (by turning screw at top of solenoid post clockwise as many turns as possible). If water exhausts continuously out of solenoid exhaust port located at top of solenoid post but valve does not open, or opens only part way, torn diaphragm is confirmed.

**SOLUTION:**

Replace diaphragm/seat assembly.





# Troubleshooting

## **PROBLEM:**

Valve will not open electrically.

## **CAUSE:**

Solenoid is not energizing. This could be due to:

- 1) no station output from the controller
- 2) broken or disconnected wire
- 3) bad solenoid coil.

## **SOLUTION:**

Using a volt meter, check the station power output from the controller. If 24 VAC output is confirmed, disconnect solenoid leads from valve wires and, using a volt meter, measure power at the valve. If there is a reading of 18 VAC (minimum voltage needed to open valve) or more, then replace solenoid coil. If there is no voltage reading, then the problem is due to a damaged wire between the controller and valve.





# Repair Kits

Solenoid 24 VAC Coil Kit (includes coil, U-frame, and retainer clip): HDCKIT

Solenoid Post and Plunger Assembly: P510530KIT

24 VAC Solenoid Assembly (includes coil, U-frame, retainer clip, post and plunger): VDWASKIT

Bonnet Repair Kit (includes bonnet and flow-control stem):  $\frac{3}{4}$ " & 1"-

VPRDW0710BKIT, 1  $\frac{1}{4}$ "-VPRDW12BKIT

1  $\frac{1}{2}$ "-VPRDW15BKIT, 2"-VPRDW20BKIT

Diaphragm Repair Kit (includes diaphragm assembly and spring):  $\frac{3}{4}$ " & 1"-

VDW0710DKIT, 1  $\frac{1}{4}$ "-VDW12DKIT, 1  $\frac{1}{2}$ "-VDW15DKIT, 2"-VDW20DKIT