

## 80672001-i - FLOAT SWITCH REPLACEMENT KIT INSTALLATION INSTRUCTIONS

### **Tools Required:**

- Wire cutter/stripper/crimper
- Utility knife
- Heat gun
- 3/16" T-handle Allen wrench
- #2 Phillips screwdriver
- Wet-type shop vac
- 30" X 40" Plywood for work platform

### **Optional Tools:**

- Work light or flashlight

### **IMPORTANT:**

- Read and understand the Safety and De-energization Procedure TP-604 before starting this procedure.
- Read and understand these instructions completely before starting this procedure.



FLOAT SWITCH AS INSTALLED IN BWC-2

### **Notes:**

- ① Refer to kit part# 80672001 for the complete bill of materials required for this procedure.
- ① Refer to Procedure "A" for all HWS, all RWS, and BWC units built prior to January, 2006. Refer to Procedure "B" for BWC units built January, 2006 to present.

### **⚠ DANGER**

#### **EXTREME pH LEVELS:**

Highly acidic (low pH) as well as highly alkaline/basic (high pH) solutions can cause severe burns, release toxic fumes and cause violent chemical reactions when mixed with water or when mixed together.

- pH values outside of the BHS allowable range of 5 to 9 should be treated as "extreme" and caution should be taken to avoid direct contact with such solutions.
- Always wear appropriate Personal Protective Equipment (PPE) including rubber apron, gloves, boots, and full face shield when working in contact with any battery wash water.

#### **TREATMENT CHEMICALS:**

Use of chemicals not approved by BHS to treat wash water may result in the release of toxic fumes.

**Procedure A: (HWS, RWS & PRE JANUARY, '06 BWC)**

1. HWS and RWS units:

- a. Lockout/tagout the RNS per your corporate policy.

BWC units:

- a. Lockout/tagout the RNS and BWC per your corporate policy.
- b. De-energize the BWC per BHS Safety and De-energization procedure TP-604.

- c. Place a piece of plywood or other suitable material on the rollers to create a clean, comfortable platform on which to work.

- d. Remove the debris screen protecting the float switch. If the water level is above the debris screen, perform Step 2 prior to removing the debris screen.

- 2. Check the pH of any wash water standing in the sump area. If the pH is beyond the allowable 5 to 9 range, adjust the pH accordingly until the pH is between 5 and 9.

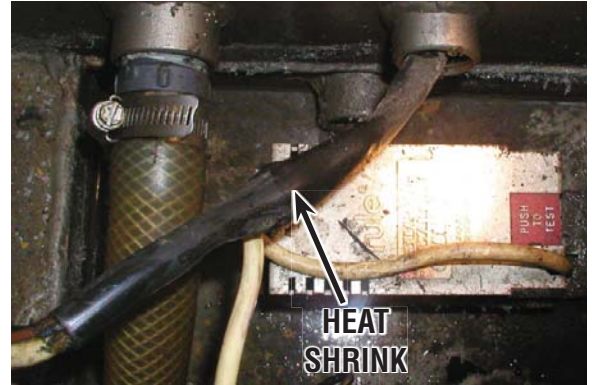
① *Note: 7.0 is the ideal, completely neutral pH reading.*

- 3. Use a wet-type shop vac to remove all wash water and any debris in the sump area.

- 4. For HWS and RWS units, disconnect the 12 volt power supply cord from the RNS to the sump pump/float switch. Remove the drain pan from the unit by sliding the pan out of the front of the unit.

- 5. Locate the wire bundle wrapped in heat shrink. Using a utility knife, carefully cut and remove the heat shrink. Be sure not to cut the wires inside. If more cable slack is required for BWC units, loosen the strain relief located on the outside of the drain pan. See Figures 1A & 2A.

- 6. Cut the (2) float switch leads emerging from the white float switch cable. See Figure 3A.



1A

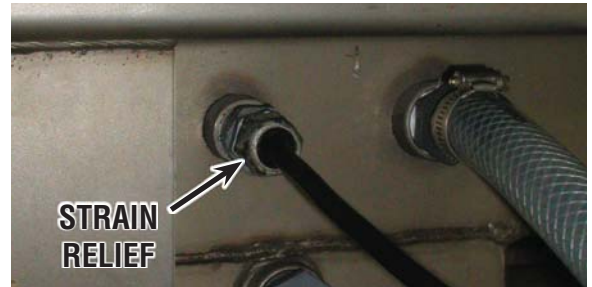


FIGURE 2A

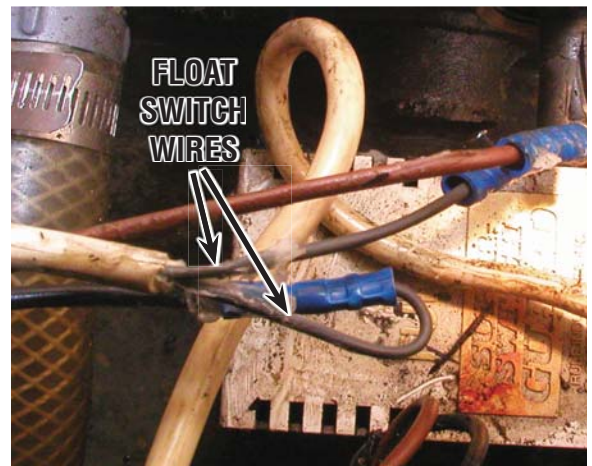


FIGURE 3A

7. Using a 3/16" Allen wrench, remove the (2) socket head mounting screws. See Figures 4A & 5A. Do not discard the mounting hardware as it will be required to attach the replacement switch.

① *Note: It is necessary to remove the float switch cover and lift up the float to access the second mounting screw. The cover simply snaps off - there are no fasteners to remove.*

8. Remove the float switch from the cabinet. Clean any remaining debris from the float switch mounting bracket. See Figure 6A.

9. Mount the replacement switch. Secure it in place using (1) of the socket head mounting screws removed in Step 10. See Figure 7A.

10. Trim the float switch wires, allowing sufficient slack to connect them to the 16-2 wires using the connectors supplied with the kit.

① *Note: Be sure to leave the float switch wires long enough to install the heat shrink over them so that it will not interfere with making the float switch connections.*

11. Remove enough of the 16-2 cable outer insulation to strip 1/4" of insulation from each of the 16-2 and float switch wires.

12. Make the following connections using the connectors supplied with the kit:

- A. 16-2 Black to the float switch black and sump pump black
- B. 16-2 White to the float switch brown w/red stripe
- C. Float switch solid brown to sump pump brown

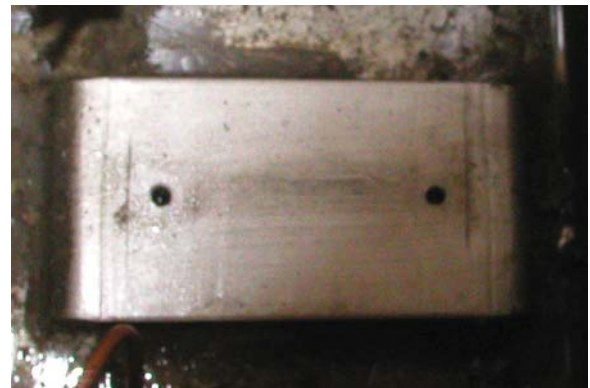
① *Note: Be sure the heat shrink is in place over the float switch wires prior to making float switch connections.*



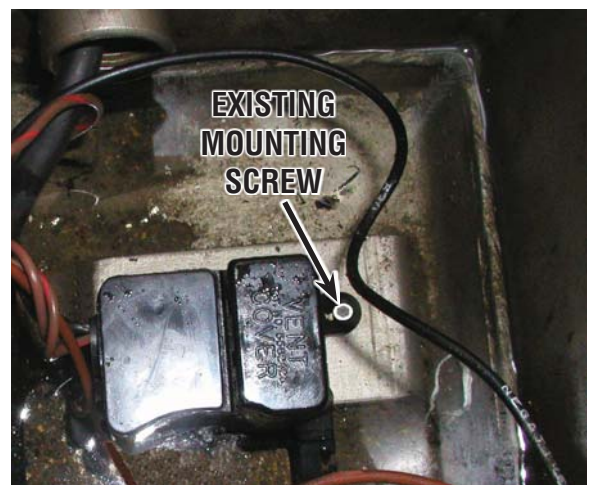
**FIGURE 4A**



**FIGURE 5A**



**FIGURE 6A**

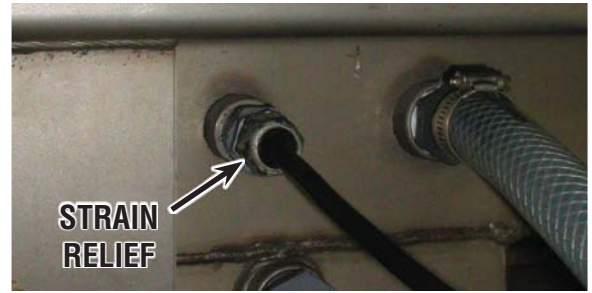


**FIGURE 7A**

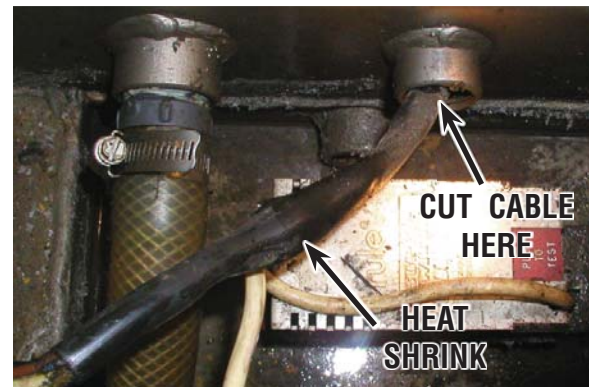
13. Slide the heat shrink so that all connections are covered. Use a heat gun to carefully apply even heat to the heat shrink until it no longer "shrinks".
14. For BWC units, install the debris screen, tighten the strain relief on the outside of the pan (if loosened earlier during installation), and remove the plywood platform.
15. For HWS and RWS units, reinstall the sump pan under the unit and reconnect the power cord to the RNS.
16. Remove lockout/tagout for RNS and BWC.
17. For BWC units, run a wash cycle to verify float switch and sump pump operation. For HWS and RWS units, fill the sump area using the RNS spray wand to verify proper float switch and sump pump operation.

**Procedure B: (JANUARY, '06 TO PRESENT BWC)**

1. Lockout/tagout the RNS and BWC per your corporate policy.
2. De-energize the BWC per BHS Safety and De-energization procedure TP-604.
3. Place a piece of plywood or other suitable material on the rollers to create a clean, comfortable platform on which to work.
4. Remove the debris screen protecting the float switch. If the water level is above the debris screen, perform Step 5 prior to removing the debris screen.
5. Check the pH of any wash water standing in the sump area. If the pH is beyond the allowable 5 to 9 range, adjust the pH accordingly until the pH is between 5 and 9.
  - ① *Note: 7.0 is the ideal, completely neutral pH reading.*
6. Use a wet-type shop vac to remove all wash water and any debris in the sump area.
7. Loosen the strain relief located on the outside of the drain pan. Pull the cable inside the drain pan until there is enough room to cut the 16-2 cable going into the heat shrink. See Figure 1B.
8. Cut the 16-2 cable. Remove it from outside of the drain pan. See Figure 2B.
9. Using a 3/16" Allen wrench, remove the (2) socket head mounting screws. See Figures 3B & 4B. Do not discard the mounting hardware as it will be required to attach the replacement switch.
  - ① *Note: It is necessary to remove the float switch cover and lift up the float to access the second mounting screw. The cover simply snaps off - there are no fasteners to remove.*



**FIGURE 1B**



**FIGURE 2B**

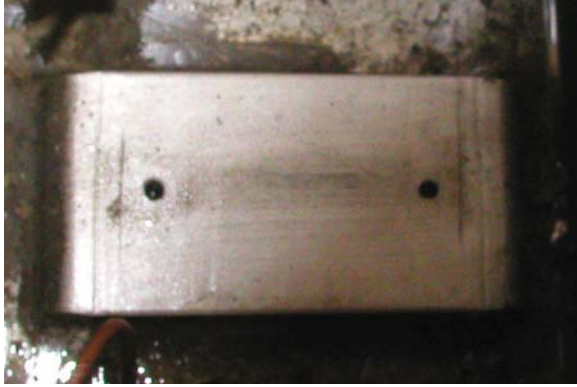


**FIGURE 3B**



**FIGURE 4B**

10. Remove the float switch from the cabinet. Clean any remaining debris from the float switch mounting bracket. See Figure 5B.



**FIGURE 5B**

12. Mount the replacement switch. Secure it in place using (1) of the socket head mounting screws removed in Step 9. See Figure 8B.



**FIGURE 8B**

11. Prior to installation of the new float switch, remove and discard the (2) screws and mounting plate as shown in Figure 6B & 7B.

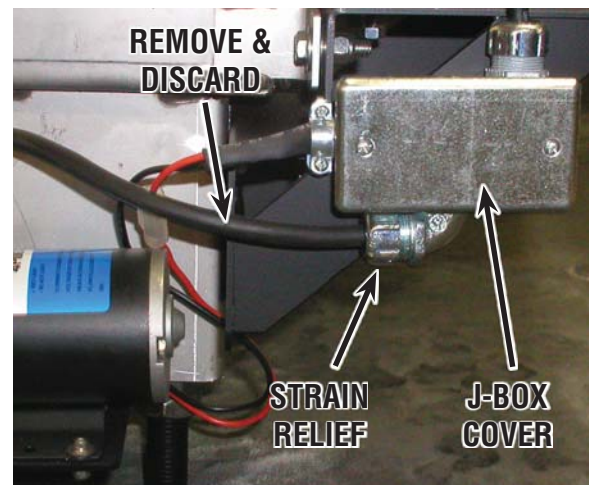


**FIGURE 6B**



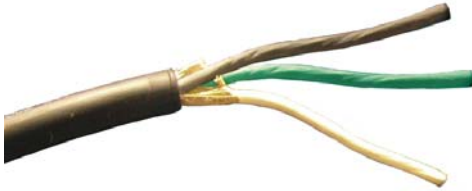
**FIGURE 7B**

13. Remove the cover from the sump pump junction box. Disconnect the 16-2 cable by cutting the wires connecting the 16-2 cable with the sump pump and control cable wires. Loosen the strain relief, remove and discard this cable as a replacement cable is supplied with the kit. See Figure 9B.



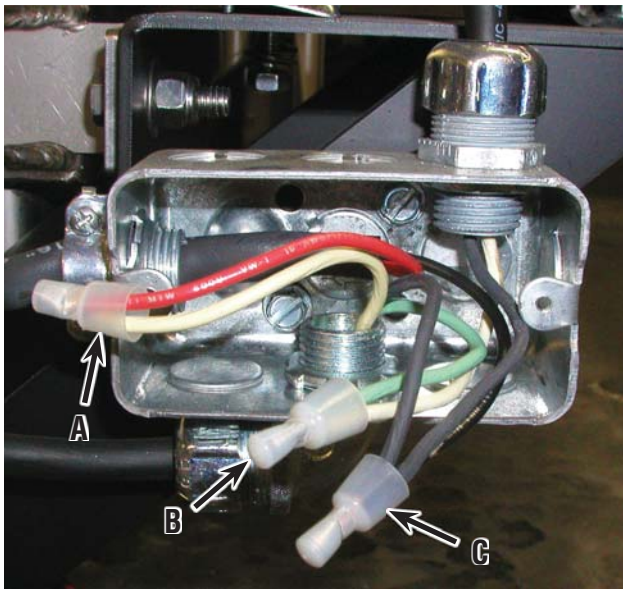
**FIGURE 9B**

14. Remove 3" of outer insulation from one end of the 16-3 cable supplied with the kit. Insert this end into the strain relief from which the 16-2 was removed. Tighten the strain relief. See Figure 10B.



**FIGURE 10B**

15. Strip 1/4" of each wire inside the junction box. Make the following connections using the connectors supplied with the kit as shown in Figure 11B:
- A. 16-3 White to the sump pump red (+)
  - B. 16-3 Green to the existing white (+ 12V) in j-box
  - C. 16-3 Black to the sump pump black (-) and the remaining black (- 12V) in the j-box



**FIGURE 11B**

16. Reinstall the junction box cover. Route the 16-3 from the junction box, along the drain hose and through the strain relief in the drain pan. Secure it using the cable ties supplied with the kit. Tighten the drain pan strain relief. See Figure 12B.



**FIGURE 12B**

17. Inside the drain pan, trim the 16-3 cable and float switch wires allowing sufficient slack to connect the wires using the connectors supplied with the kit.
- ⓘ *Note: Be sure to leave the 16-3 cord or float switch wires long enough to install the heat shrink over them so that it will not interfere with making the float switch connections.*
18. Remove 3" of outer insulation from the 16-3 cable. Strip 1/4" of insulation from each of the 16-3 and float switch wires.
19. Make the following connections using the connectors supplied with the kit:
- A. 16-3 Black to the float switch black
  - B. 16-3 White to the float switch solid brown
  - C. 16-3 Green to the float switch brown w/red stripe
- ⓘ *Note: Be sure the heat shrink is in place over the float switch wires prior to making the float switch connections.*
20. Slide the heat shrink so that all connections are covered. Use a heat gun to carefully apply even heat to the heat shrink until it no longer "shrinks".
21. Install the debris screen and remove the plywood platform.
22. Remove lockout/tagout for RNS and BWC.
23. Run a wash cycle to verify float switch and sump pump operation.