



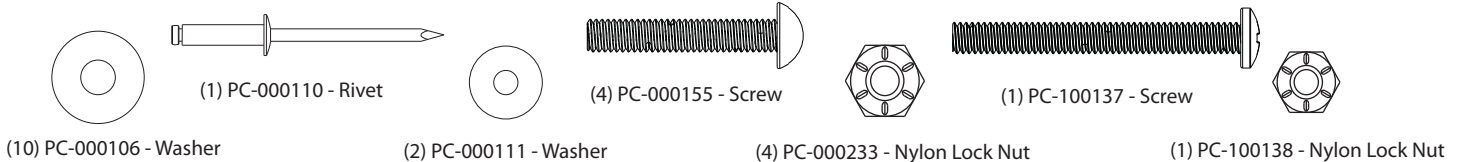
# FWD1 to FWD2 Fresh Water Delivery System FWD1-0501 Shurflo Conversion Instructions

## ~~Assembly Tools Required~~

- Phillips Screwdriver
- Wire Crimpers
- Rivet Gun
- Drill with 1/2", 13/64" and 5/32" Bits
- Slotted Screwdriver
- Wire Cutters
- Channel Lock
- Pliers
- Needle Nose Pliers
- Teflon Plumbers Tape
- Socket Wrench with 3/8" and 11/32" Sockets
- Scissors
- Scotch Tape

We recommend reading through the entire booklet prior to proceeding with installation, service or maintenance.

## Full Size Scale Fasteners



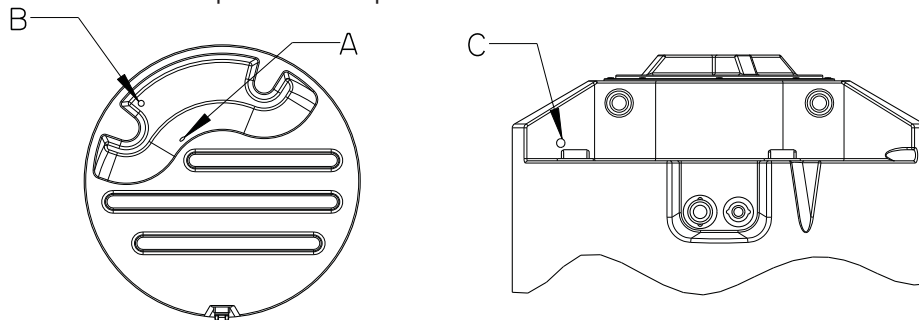
## Instructions

### Step 1: Disconnecting the Pump

Disconnect the power and drain the tank. Using a Phillips Screwdriver, loosen the (2) PC-000155 - Screws from the Pump cover and remove. Using a slotted screwdriver loosen and remove the PC-000351 - Hose Clamp and disconnect the PC-100313 - Elbow from the welded-in 3/4" raised pipe fitting on the left hand side of the PC-000611 - Shurflo Pump. Unscrew the PC-100312 - Wingnut Swivel Elbow from the pump and remove along with the 3-1/2" tube with hose clamp. Remove the Hatch cover and unscrew the 52" PVC intake pipe and remove. Disconnect the PC-000650 - Liquid Level Switch wire leads from the PC-000632 - Relay Mouser inside the electrical box. Unscrew the PVC pipe with the Liquid Level Switch/Reducer and remove. *Discard the two elbows, two hose clamps, 3-1/2" tube, two PVC pipes and the Liquid Level Switch/Reducer.* Disconnect the pump from the PC-000632 - Relay Mouser and PC-000660 - GFCI cord. **NOTE: The green pump wire will need to be cut in order to remove from the electrical box, also the cut ends will need to be stripped back to a 3/8" insulation.** Unscrew the (4) PC-000155 - Screws from the PC-000611 - Pump and the (2) PC-000166 - Screws from the electrical box. Remove the PC-000390 - Flexible Hose Connector from the pump and discard along with the Electrical Box. Set aside the pump with the PC-000359 - Elbow attached.

### Step 2: Modifying the Tank/Using the Template

Using a 1/2" drill bit, drill two holes in the bottom of the tank (labeled A and B in the diagram below). Drill an additional hole at the top of the tank (labeled C in the diagram below). **IMPORTANT: Make sure not to place hole "C" too close to the left edge of the wall, or the cover will not close.** Locate the template drawing provided in the parts bag and cut it out and place it on the tank shelf so that the two holes for the cover screws line up with the corresponding circles on the drawing. Secure the template in place using either scotch tape or the (2) PC-000155 - Screws for the cover. Using a 13/64" bit, drill one hole at each of the four drill spots on the template labeled "SHURflo PUMP 13/64"". Use a 5/32" bit to drill the final two holes labeled "5/32 DIA."



### Step 3. Inserting the Grommets & Tubing

Insert one PC-000415 - Grommet into each of the 1/2" holes at the bottom of the tank. **NOTE: Using liquid soap will help lubricate the tubing when feeding through the grommets.** Begin feeding the CT38-075 tubing through the grommet closest to the center of the tank (the location marked A in Step 2 diagram) until the tubing extends approximately 1/2" past the grommet. Feed the tube through the other grommet in the bottom of the tank until the curvature of the tube does not extend below the bottom surface of the tank. Insert a grommet into the 1/2" hole at the top of the tank from the inside pushing outward to secure the grommet in the hole. Proceed by feeding the CT38-075 tubing through the final grommet and into the pump area. **NOTE: Stop feeding the tubing through the grommet once the tubing on the interior of the tank has had most of the slack taken up.**

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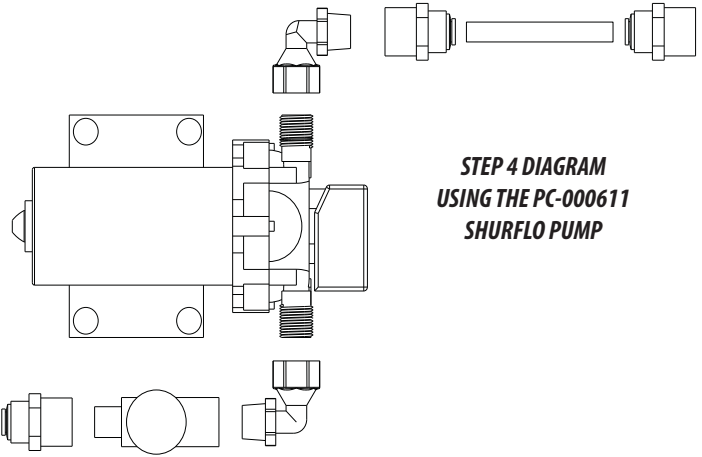
#### **Step 4: Installing the PC-000611 - Shurflo Pump**

Place the PC-000611 - Pump on the tank shelf matching up the holes in the tank with the holes in the feet of the pump.

**NOTE: Make sure that the arrows on the pump are pointing toward the center of the tank.** Fasten the pump in place using the (4) PC-000155 - Screws with (4) PC-000106 - Washers behind the head of the screws and (4) PC-000106 - Washers with (4) PC-000233 - Nylon Lock Nuts on the underside of the pump. Screw one of the PC-000359 - Elbows onto the intake side of the pump.

**NOTE: It is suggested to use Teflon plumbers tape to seal all connections.** Screw the PC-000299 - SHURflo 50 Mesh Strainer onto the intake port elbow and then connect one of the PC-100322 - Tube Fittings onto the strainer.

Make sure the end of the CT38-075 - Tube is cut square and then press it into the tube fitting. Screw one of the PC-100322 - Tube Fittings onto the PC-000359 - Elbow already attached to the discharge port of the pump. Make sure the end of the CT38-030 - Discharge Tube is cut square and then press it into the tube fitting. Push the last PC-100322 - Tube Fitting onto the other end of the discharge tube.



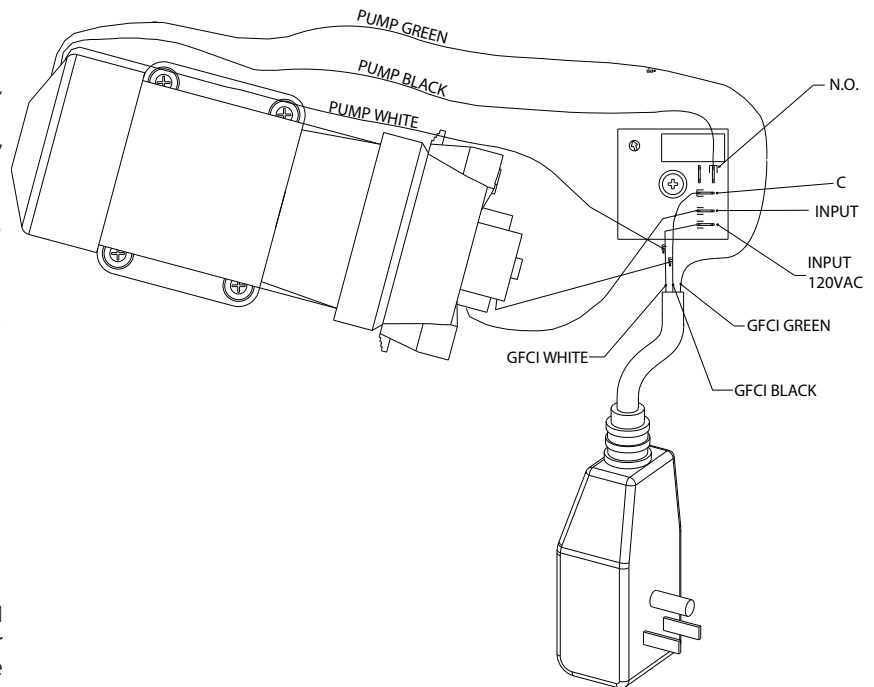
**STEP 4 DIAGRAM  
USING THE PC-000611  
SHURFLO PUMP**

#### **Step 5: Mounting the Time Delay Relay (TDR)**

Center the PC-000634 - Time Delay Relay (TDR) over the **inner** 5/32" hole on the tank shelf (*the one closest to the center of the tank*) and secure it into place using (1) PC-100137 - Screw, (1) PC-100138 - Nylon Lock Nut, and (2) PC-000106 - Washers (*1 behind the head of the screw and the other on the inside of the tank*). Make a knot in the GFCI Cord in the area of the cord just below where the wires come out of it. Wrap the PC-100143 - Nylon Loop Strap around the cord just below the knot (*in the area where it rests on the tank in the location of the outer 5/32" hole*). Centering the mounting hole of the loop strap, rivet it into place using (1) PC-000110 - Rivet and (2) PC-000111 - Washers (*1 washer on the topside of the loop strap behind the head of the rivet and the other inside the tank*).

#### **Step 6: Time Delay Relay Pump/Wiring**

Cut the black wire from the circular end of the pump approximately 3" from where it inserts into the pump housing. (*Strip back the ends of the cut wire to a 3/8" insulation*). From the parts bag, attach a PC-000656 - Butt Splice to the 3" wire and insert the PM-060003 - 10" Jumper Wire into the butt splice. Crimp on a PC-000662 - Female Flag Connector to the other end and then connect it to the tab on the TDR labeled "N.O." Pull the other section of the cut wire from the wire guide (*located on the bottom side of the pump*) and crimp on a female flag connector to it and then plug it into the tab on the TDR labeled "Input."



#### **Step 7: Male Spade Connectors**

Cut off the flag connector from the other black pump wire and remove it from the wire guide and then attach a PC-000659 - Insulated Male Spade Connector to it. Remove the pump's white wire from the crimp-on wire nut and attach an insulated male spade connector to it.

**NOTE: Do not connect these to anything at this time.**

#### **Step 8: Time Delay Relay/GFCI Wiring**

Cut the flag connector off of the black wire on the GFCI plug and replace it with a new female flag connector and connect it to the tab labeled "C" on the TDR. Take the white GFCI plug wire out of the crimp-on wire nut and attach a female flag connector to it and then plug this wire into the "Input 120 VAC" tab on the TDR. Snap a PC-000663 - Wire Tap onto the black GFCI plug wire and one onto the white GFCI plug wire. Attach the two pump wires with the insulated male connectors (*from step 7*) to the wire taps. **NOTE: Make sure you match the white pump wire to the white GFCI plug wire, and do the same for the black wires.** Attach an insulated male connector to the green GFCI plug wire and attach a female flag connector to the green pump wire and connect them together.

**NOTE: Five minutes is the suggested setting for the Time Delay Relay. Adjust accordingly from thirty seconds up to ten minutes, depending upon usage.**

#### **Step 9: Replacing the Cover**

Screw the (2) PC-000551 - Plugs with (2) PC-000346 - O-Rings into each of the welded-in pipe fittings on the tank shelf. Replace the cover using (2) PC-000155 - Screws with (2) PC-000106 - Washers. **NOTE: The electrical cord is routed where the water line used to come out and the water line is routed where the electrical cord used to come out.** The upgrade of your FWD1-1000 using the SHURflo Pump is now complete.

# FWD1-1000 - Fresh Water Delivery System Prior to Conversion

**\*\*NOT SHOWN**

- PC-100791 - Decal  
"Caution Disconnect Power"
- PC-100789 - Serial I.D. Plate
- (2) PC-000110 - Rivet
- (2) PC-000111 - Washer

PC-100312  
Elbow Wingnut Swivel

PC-000351  
#10 Hose Clamp

CH063-003  
5/8" x 3" Clear Hose

PC-000351  
#10 Hose Clamp

PC-100313 - Elbow  
1/2" Mpt x 5/8" Barb

PC-000361  
Plastic Float

PC-000360  
Float Valve Shutoff

PC-000362  
Float Valve Rod

PC-000359  
1/2" Fpt x 1/2" Mpt Hex

PC-100452 - Hatch & Cover  
(8) PC-000102 - Rivet  
(8) PC-000106 - Washer

FWD1-0002 - Pump Cover  
(2) PC-000155 - 10-32 x 1" Screw  
(2) PC-000106 - Washer

PC-000611 - Shure Flo Pump  
(4) PC-000155 - 10-32 x 1" Screw  
(4) PC-000106 - Washer

PC-000660 - Elec Box/GFCI Plug  
(2) PC-000166 - Screw-10-32 x 1/2"  
PC-000632 - Relay Mouser  
PC-000654 - Wire Connector  
PC-000656 - 14-16 GA. Butt Connector  
(5) PC-000657 - 14-16 GA. Wire Flag Terminal

PC-000390  
1/2" Mpt x 1/2" IPS x 16" Flex Hose Conn

PC-000551 - 1/2" Drain Plug  
PC-000346 - 1/2" O-Ring

PC-000555  
3/4" Plug Hex Head

CP050-40052  
1/2" Sch 40 x 52" Long PVC Pipe  
(2) PC-100562 - Coupler 1/2" Sckt x 1/2" Mpt

CP050-40050  
1/2" Sch 40 x 50" Long PVC Pipe  
(2) PC-100562 - Coupler 1/2" Sckt x 1/2" Mpt

PM-220560  
1/2" Raised Double Spinweld

PC-000301  
1/2" Ezy Filter

FWD1-0001  
Main Tank

PC-100561  
Reducer 1/8" Fpt x 1/2" Mpt

PC-000650 - Liquid Level Switch  
PM-060002 - Wire 18 GA. x 82" Long  
(2) PC-000655 - 22-18 GA. Butt Connector

# FWD1-0501 - Fresh Water Delivery System after Conversion Using Shurflo Pump

**\*\*NOT SHOWN**

- PC-100791 - Decal - "Caution Disconnect Power"
- PC-100793 - Decal - Caution Fill/Pump/TDR

