

**Service Campaign 2008
Ballast System Replacement
October 19, 2000**

This campaign effects all Epic X22's built prior to the release of the Millennium Dash, and all Epic 22's with a boarding package that were built prior to the Millennium Dash. The current wiring for the ballast system may be insufficient for proper power distribution, and would therefore need to be replaced. Additionally, the pump will need to be relocated for optimal performance.

Parts Needed

11708

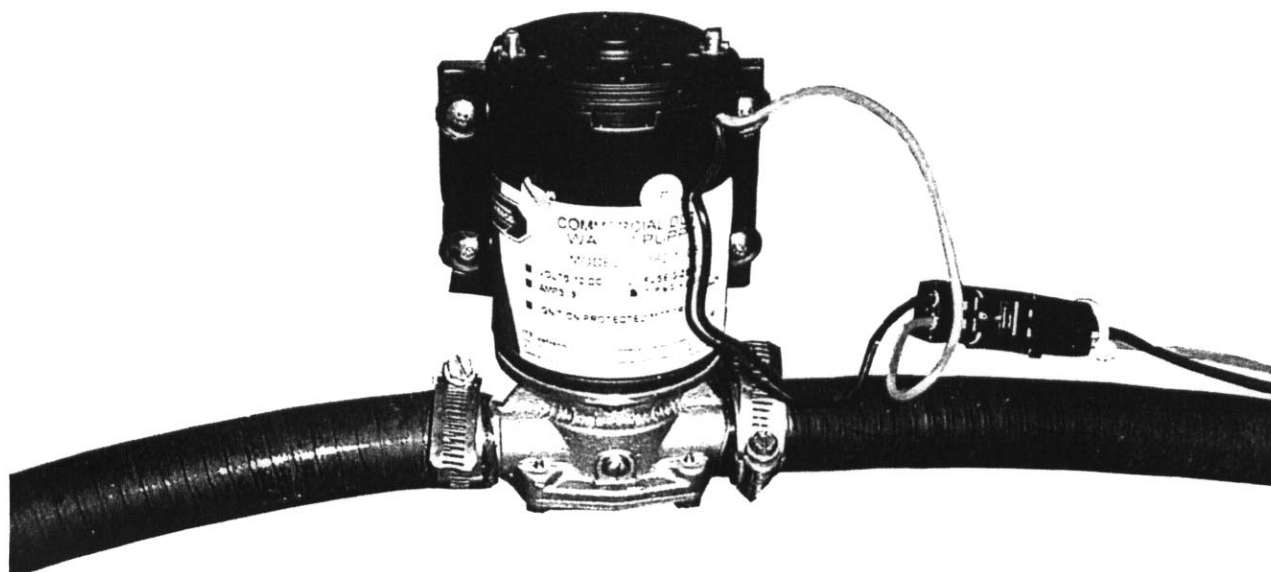
Ballast Add-on #MCW0010486	Ballast Pump #MPM0011016
Ballast Wiring Harness #MCW0011764	Ballast Switch #MDC0011280
Hose Clamps #MFSY200303	Hose, 120" #MHO001092601

Tools Needed

Phillips screwdriver	Flathead screwdriver	Wire cutters
Electrical tape	Zip ties	2 US currency nickels
2 US currency pennies	Drill	3/8" Drill bit
Needle nose pliers	1/2" Wrench	Scroll saw for aluminum

⚠ WARNING

Always be sure to wear OSHA approved eye protection when using a drill or other rotary tools as these have the potential to throw debris into the air. Always wear safety glasses when working on or around a battery, as sparks may cause explosion.



Procedure

Step 1 – Removing power

First, locate the battery switch on the front port side of the engine, and switch it to the OFF position. Next, remove the floor lid above the battery, and set outside the boat. Finally, remove the battery terminals using a 1/2" wrench, starting with the negative side first.

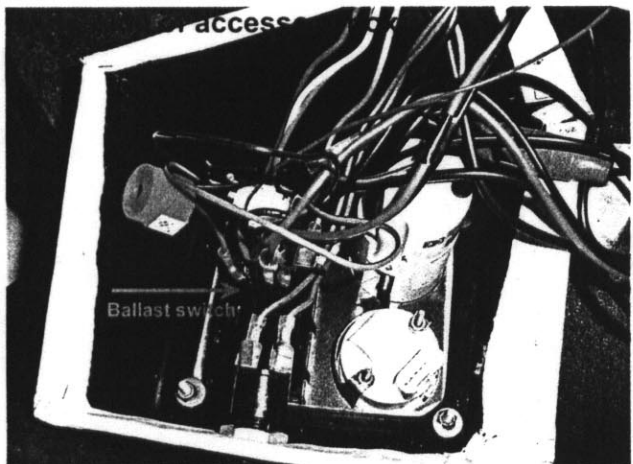
Step 2 – Removing the floor panel

First, remove the motor box. Verify that the battery terminals have been disconnected. Lift the floor panel slowly, angling slightly and rotating it around the tow pole as it passes the driver seat. Lift the floor panel free and set it outside of the boat. **NOTE:** The battery is attached to the floor panel, causing the unit to be quite heavy. It is recommended to use two people for this step, or to remove the battery first.



Step 3 – Remove the accessory box

First, remove the screws shown below securing the accessory box in place, making sure to store the screws in a safe location for later use. Finally, carefully remove the accessory box from its location, exposing the wiring. **NOTE:** Be careful when removing the box so as not to damage any existing wires.



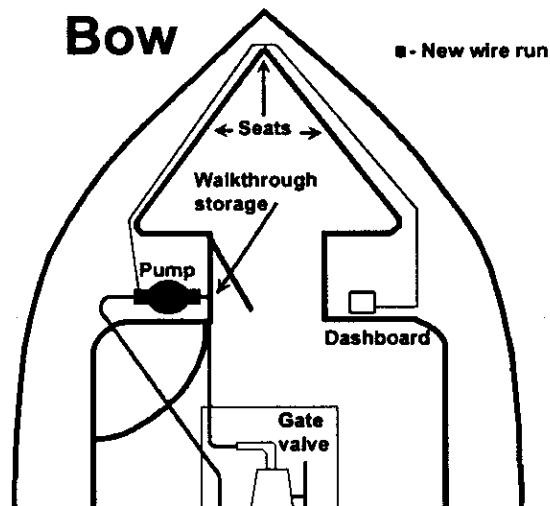
Step 4 – Removing the switch

Hold the accessory panel so that it is facing down. Remove all wire connections from the back of the switch. Insert the nickels into the slots on the sides of the switch, and then insert one penny each to the outside of the nickels, as shown below. Make sure the coins are secured snugly into place. When the coins have been secured, the switch should slide out easily.



Step 5 – Run new ballast pump wire

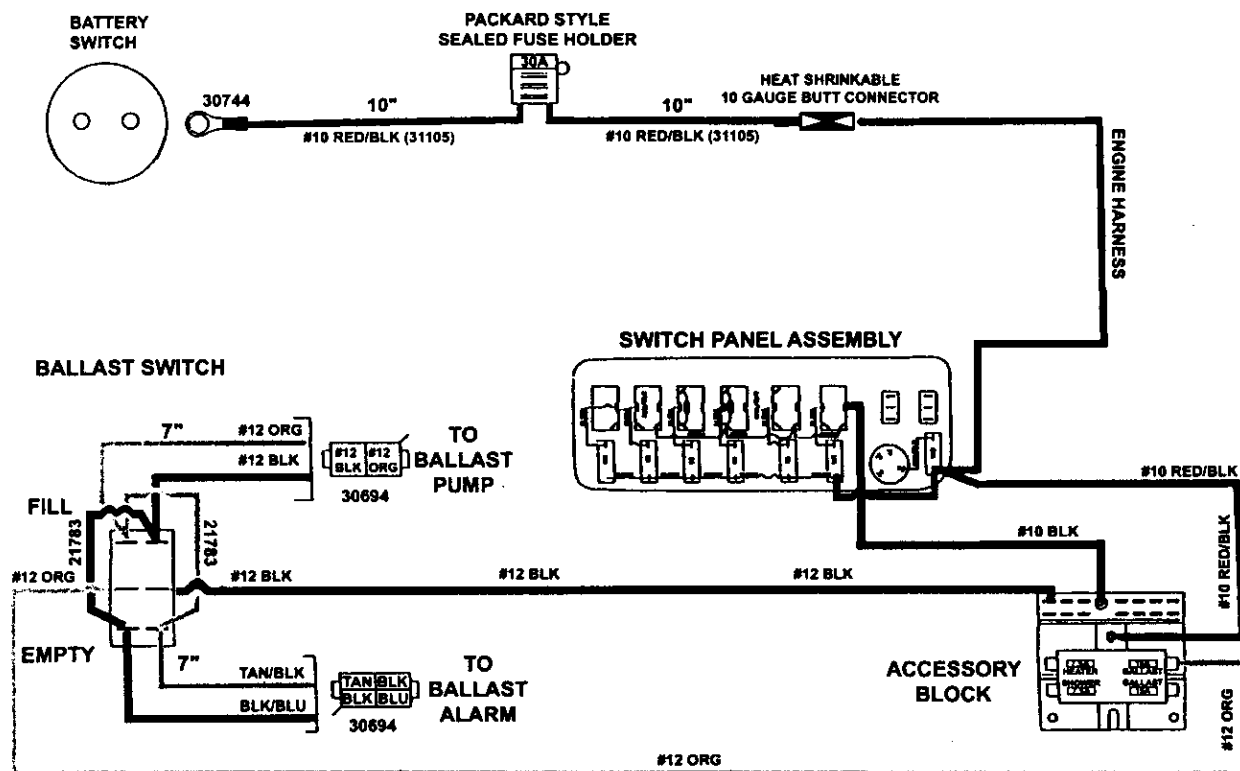
First, cut all zip ties from power wires to the ballast pump, both in the bilge and under the dash. Next, unplug the wires from the ballast pump. Pull wires through from under the dash, taking care that the wires do not get snagged on any other wires, connectors or other items. Finally, run the new wires under the dash, underneath the seats on the bow, and around to the walk-thru storage, as shown below.



Step 6 – Installing the new switch (Skip this step if boat has a twin pump system)

The new switch will slide in and snap into place where the old switch was located. Connect the wires to the switch according to the wiring diagram, shown below. Next, connect the power wires to the ballast pump.

Ballast System Wiring Diagram



Step 7 – Rewire power and ground to switch from accessory panel

First, disconnect the power and ground wires leading from the ballast system switch to the accessory block. Remove these wires from harness if possible, if not tie off in a secure location. Next, run new power and ground wires from switch to accessory block, and connect at both ends as shown in wiring diagram, above.

Step 8 – Rewire power and ground to accessory box

First, disconnect the power and ground wires leading from the switch panel assembly to the accessory block. Remove these wires if possible, if not tie off in a secure location. Next, run new power and ground wires from switch panel to accessory block, and connect at both ends as shown in the wiring diagram. Using zip ties, tie new power and ground wires securely to looms.

Step 9 – Reattach audible ballast alarm

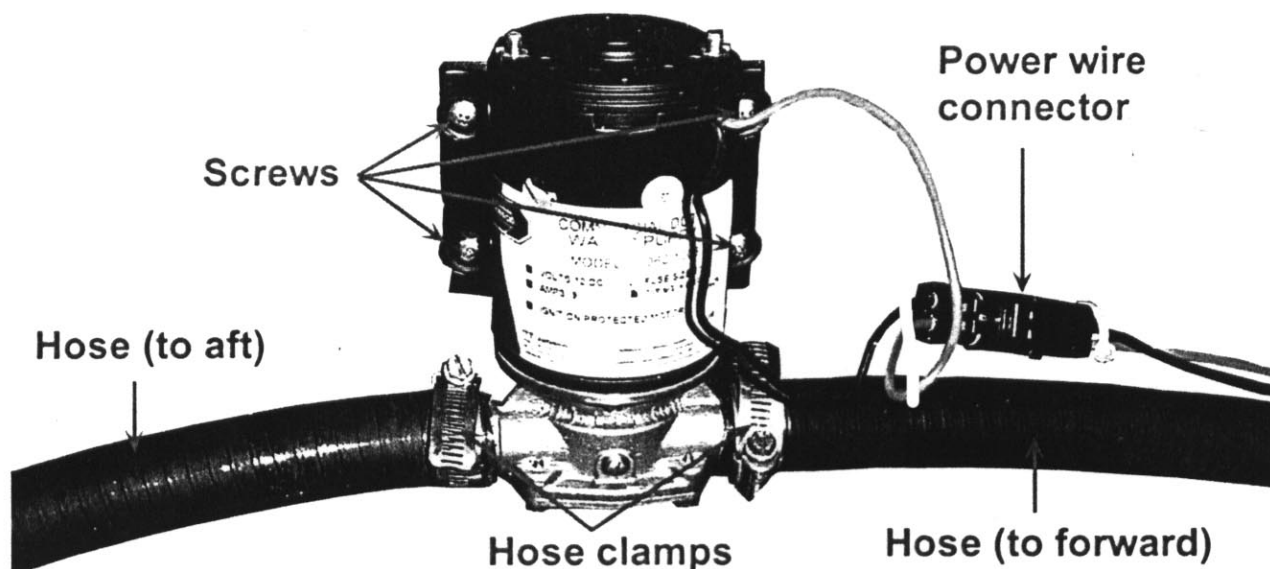
Reconnect wires to ballast alarm as shown in wiring diagram

Step 10 – Accessing ballast pump and hoses

Remove rear seat and rear bilge access panel and place them outside the boat.

Step 11 – Removing pump

Remove hoses and wires from ballast pump. Remove screws from ballast pump. Remove ballast pump.

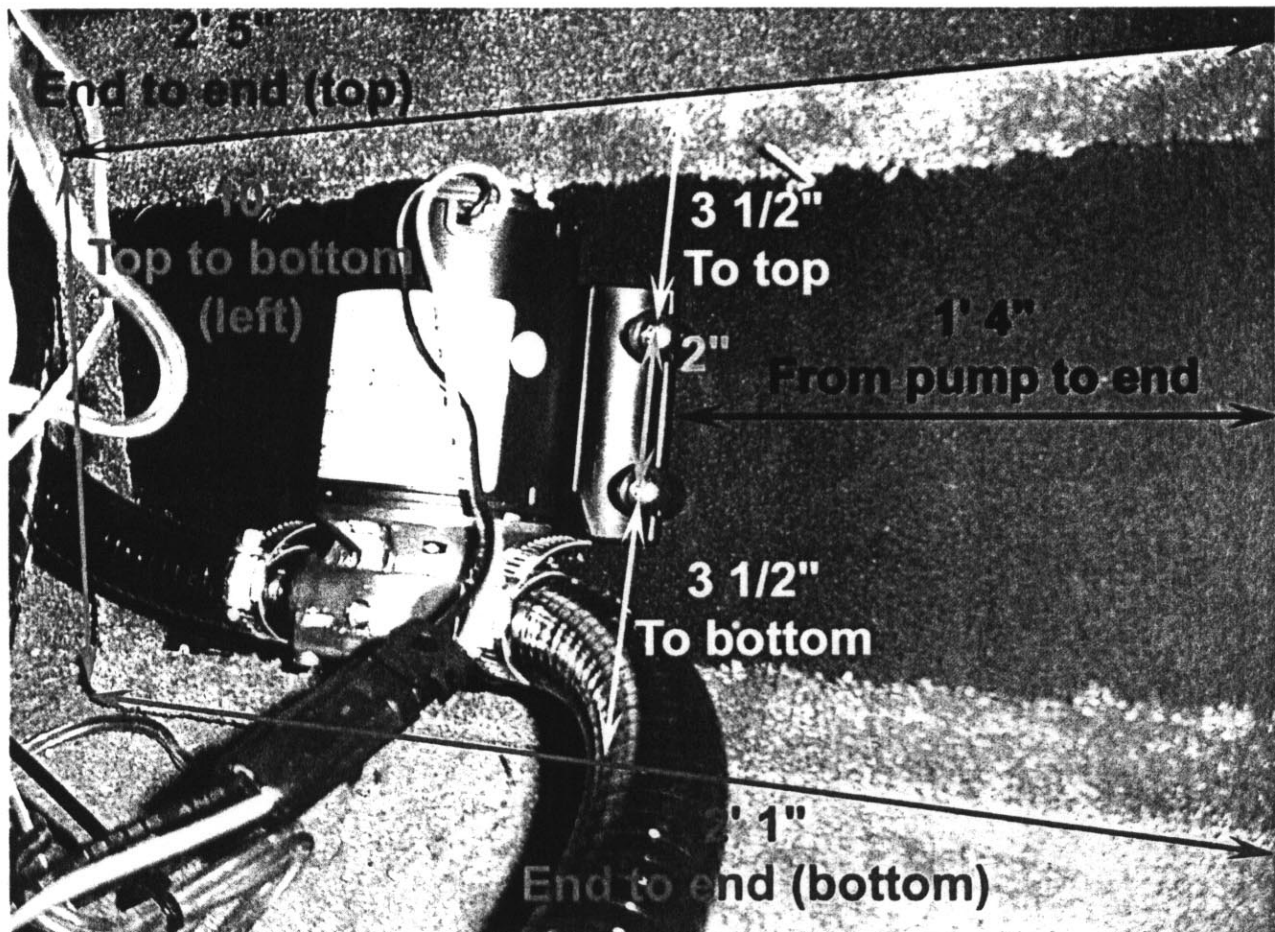
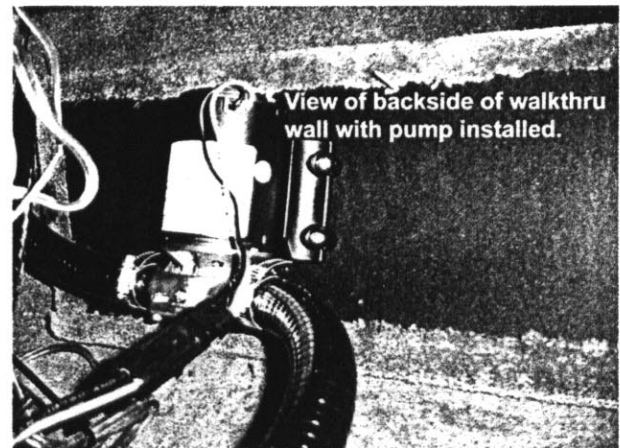
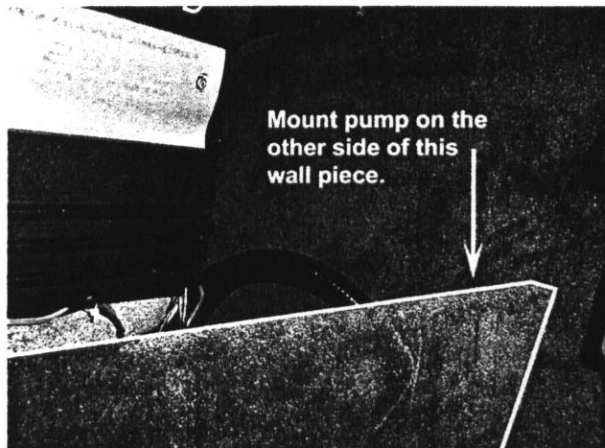


Step 12 – Running new hoses

The old hoses will need to be removed from the boat. Using a Flathead screwdriver, remove the hose clamps from the hose connected to the T-connector on the side coming from the pump. Remove hose clamp attached to gate valve. Store hose clamps in safe location for later use. Remove hose which runs from gate valve to ballast pump, and remove hose which runs from ballast pump to T-connector. Discard both hoses.

Step 13 – Preparing to install new ballast pump

The new ballast pump will be installed in the walk-thru storage in the area indicated below.



Step 14 – Installing new ballast pump

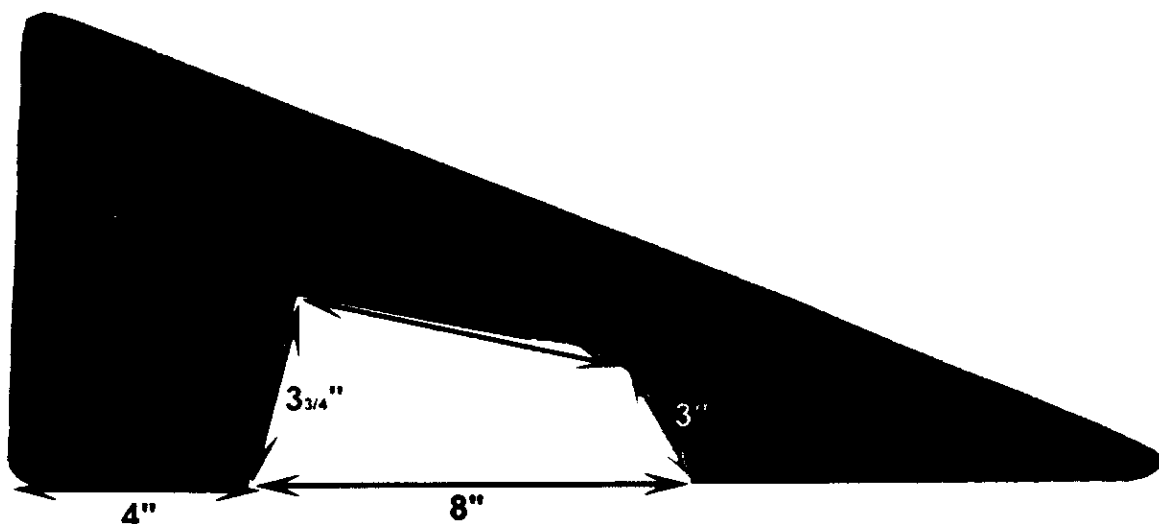
Measure up 3 1/2" distance from top of walkthru wall piece, and measure 1' 4" from right side of walkthru piece. Drill 3/16" size pilot hole into wall piece at the point where the two measurements intersect. Leave drill bit in hole, and slide ballast pump over drill bit lining up the bit with the upper right hole (please note that the pump is lined up with the brass impeller end down). After the ballast pump has been lined up, use a grease pencil to mark the other three holes. Remove pump, and using 3/16" sized drill bit, drill pilot holes at each of these locations. Replace pump and secure with screws in each of the four holes. **NOTE:** The walkthru wall piece can be removed from walkthru storage. It may be easier to remove the wall piece, install the pump to the piece on a workbench, and then replace the piece with the pump attached to it.

Step 15 – Attach new harness

Run the new harness along the front of the walkthru storage area below the door and secure it to the ballast pump. Insert the wire run into the pieces of adhering conduit. There will be one 2ft run for inside the walkthru, one 2ft run for each side of underneath the bow seats, and one 6" run for underneath the forward bow seat. Once the wire has been inserted into the conduit pieces, peel back the strip to reveal the adhesive, and secure the conduit pieces underneath the seats, as well as below the door in walkthru storage.

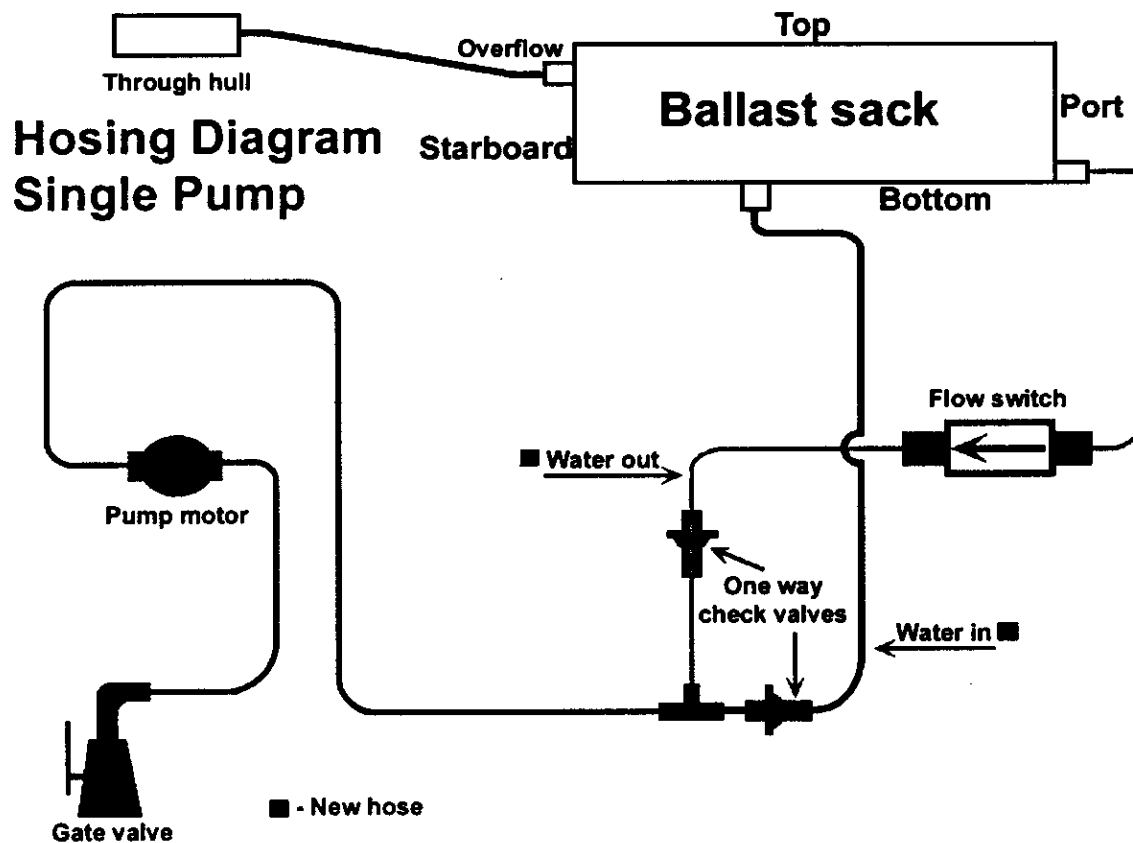
Step 16 – Cut triangle floorboard piece

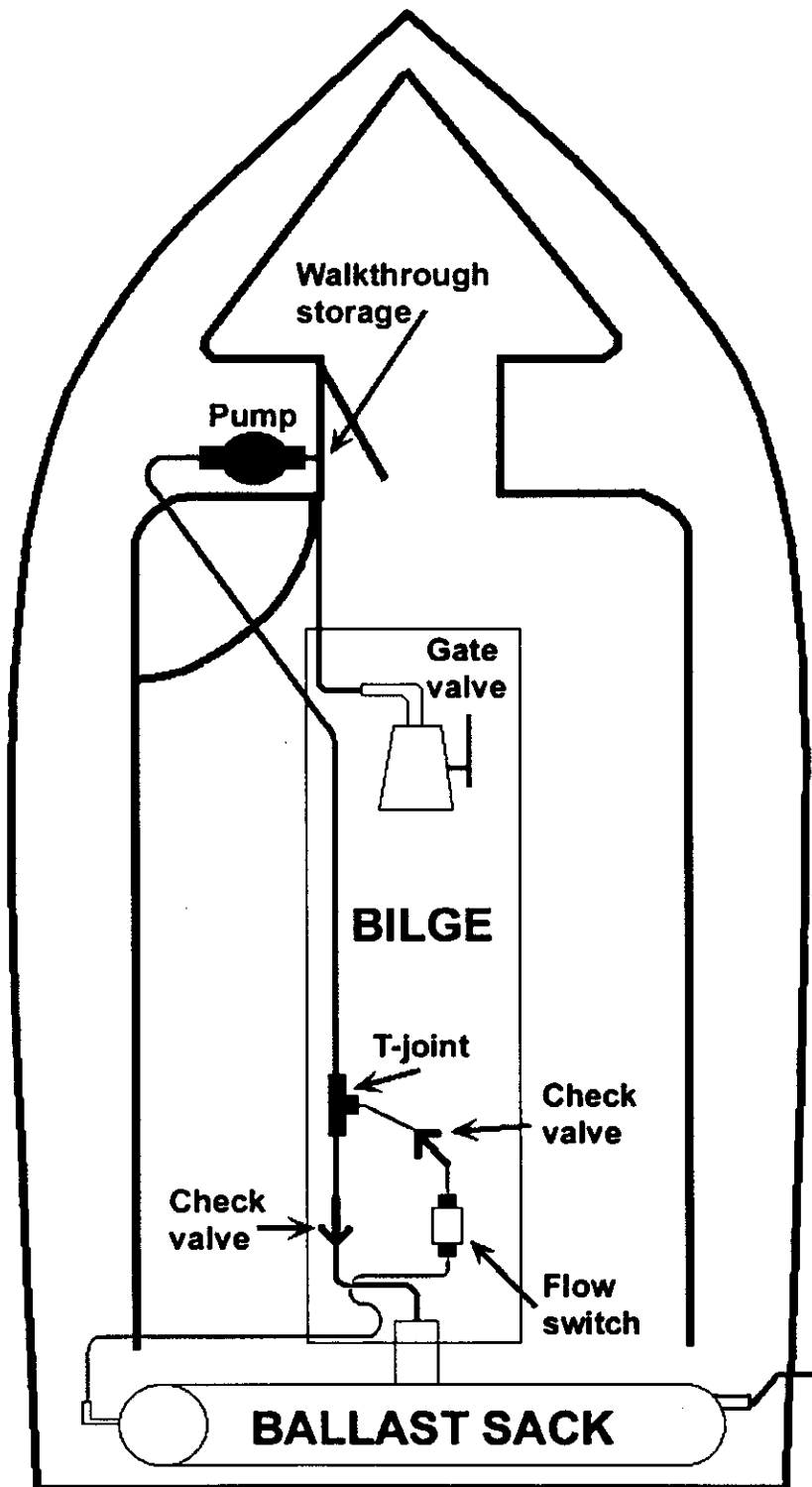
Using the template provided and a grease pencil, mark on the bottom of the triangle floorboard piece the area that you will be cutting out. Using a scroll saw, cut along the marked area. When finished, the piece should look like the piece shown below. After expanding the opening, secure the triangle floorboard piece back underneath the observer's seat.



Step 17 – Run hoses

Take the 14ft length of hose included in the kit, and run it along the bilge beneath the engine. Secure one end of the hose to the T-connector using one of the hose clamps. Run the other end of the hose up through newly created opening in the triangle floorboard. Secure the other end of the hose to the left side of the ballast pump, using a hose clamp. Take the 4ft length of hose included in the kit, and secure it to the gate valve using a hose clamp. Run the hose up through the newly created opening in the triangle floorboard. Secure the other end of the hose to the right side of the ballast pump, using a hose clamp. Resecure the walkthrough wall piece.





Step 18 – Replacing items and restoring power

Reverse steps 1 through 3 to reinstall the accessory box, floor panel, motor box, and battery power. Also resecure the rear bilge access panel and aft seat.