



**Technical Service Bulletin # 52  
Ballast Pumps**

September 14, 2002, April 10, 2003

**The Jabsco pump will need to be replaced with Installation of Rule 1100 gallon pumps**

2000+2001 Models of Epic X22 and any soft ballast system with a Jabsco pump for a fill pump, and Digital Dash

**To order kits call Toyota Marine Sports. East Coast call Rick Cohn 407-701-4430 West coast call Jeff Dorge at 206-459-3698**

**Part kits need to be ordered with boat Hin Number.**

ITEM ID	DESCRIPTION	Order
MPM0010863	PUMP,BallastSysetm,Rule#66,1100GPH,12v	2
MPM0010904	Bracket,Rule#66Pump, Plastic	1
MPL001169706	Insert,Elbow,1"FIPT	1
MPL0011948	ThruHull,1",1"Hose,Plastic,White	1
MPL001167906	Fitting,90Degree,FemalePipeToHose	1
MPL001167907	Barb,HoseToHose,1",PVC	3
MPL001167908	Fitting,Bushing,1"MalePipeTo3/4"FemalePipe	1
MPL001169708	Elbow,InFloorBallast,3/4",90Degree,SX22	1
MCW0200686	Harness,BallastDrainPumpFieldFix-TSB52	1
MCW0011946	Fuse,AGC,7.5Amp,Each-TSB52	1
MHC0010015	HoseClamp,#15,SS,Lined,1",Narrow,TSB52	4
MHO001092601	Hose,Ballast,1"x120",PreCut,Black	1
MFSY200413	SCREW #8-1/2 PHIL PAN SS	2
DEALER SUPPLY	BUTT CONNECTOR BLUE	4
DEALER SUPPLY	TIE RAPS- 5 "	
DEALER SUPPLY	TIE RAPS- 12"	

**Dealer Supply**

Silicone + Teflon tape

TOOLS NEEDED		
Phillips screwdriver	Flathead screwdriver	Wire cutters
Electrical tape	Zip ties	3/8 deep socket
1 3/8 hole saw	Drill	3/8" Drill bit
Screw gun		Utility knife
Needle nose pliers	1/2" Wrench	

PUSH BUTTON SWITCH CONTROL		IF NEEDED NEW DECC
<b>MGA0011908</b>	Processor,Electronic,DECC,AllModels,RequiresProgramming	
<b>MCW0200375</b>	Cable,Main Communication,SwitchesToDECC,45"	
<b>MGA0011916</b>	SwitchPanel,6Button,00,01,02MY,TopPosition1To6,NotLabeled,w/Bezel	
<b>MGA001191601</b>	Bezel,6ButtonSwitchPanel,NoLabels,Black	
<b>MGA0011921</b>	SwitchPanel,4Button,00&01MY,Bottom7to10NoLabels,w/Jumper	
<b>MGA001192101</b>	Bezel,4ButtonSwitchPanel,w/Labels,Black	
<b>MCW0200661</b>	HarnessKit,Decc,TerminalBox,2Harnesses (4WireOrange+3WireR,B,P)	
<b>MCW001111505</b>	Label,"Fill",TrimSwitchPanel,	
<b>MCW001111506</b>	Label,"Drain"TrimSwitchPanel,	

**⚠ 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. 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.



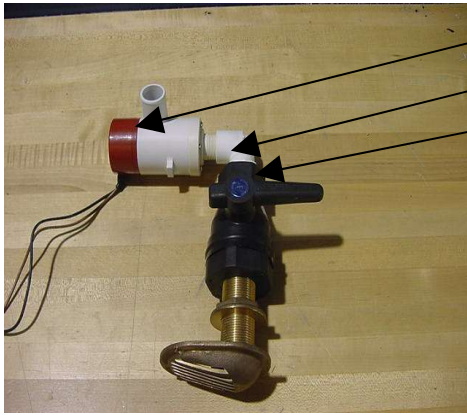
## Step 3– Preparing to install new ballast pump

Remove Jabsco pump. Install 1" PVC hose to hose fitting in its place.

## Step 4 – Installing new ballast pump



Cut out old connector and use heat shrink butt connectors on wire.  
Positive is Brown to Orange wire  
Negative is black.



**Rule Pump**  
**Street 90 degree  $\frac{3}{4}$  inch**  
**1 inch threaded to  $\frac{3}{4}$  inch threaded pvc adapter**

**Inspect bottom of boat brass thru hull fitting scoup should be facing bow.**

## **Step 6 – Run Fill hoses**

Secure one end to the ballast pump the other to the fitting on the ballast bag port side.

Choice run

Use hose in bilge, or along port gunnel if pump was in walk-thru door.

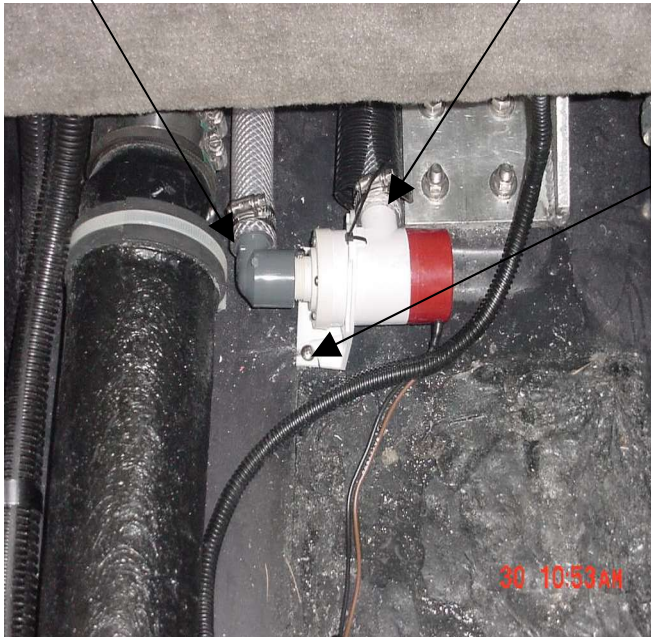
## **Ballast drain hose**

Step 7

Remove pump cap screws and install pump bracket as pictured below. Install ballast drain pump with 2 # 08 x  $\frac{1}{2}$ " inch screws and silicone on threads. Tie rap both side once pump is installed. Butt connect the wires to the pump.

**Remove the check valve and install 1 " pvc to 1" pvc hose union pvc adapter on the center bottom of the ballast bag.** Run hose from bag to 90 elbow. Install Teflon tape on threads of pump and install PVC 90 degree fitting. Install hose and cable guard from 90 threaded hose pipe. Then run 5 feet of hose with cable guard from outlet of pump to back under the center hole to the starboard side just aft of the vent hose. Drill using a 1  $\frac{3}{8}$ " hole saw . Silicone the plastic thru hole in place. Install the 1 inch hose with cable guard to the 1 in thru hull with clamp. Be careful not to kink hose.

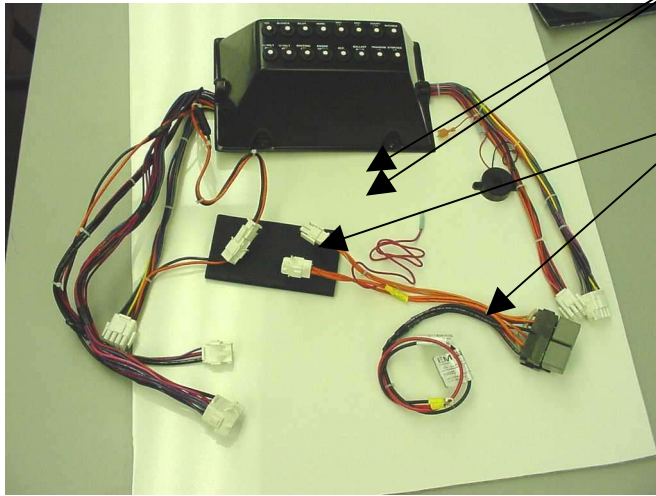
**Locate pump so the hoses clear the strut support and exhaust hose. Careful not to drill into liner beyond ¼ " and seal with silicone. Mount pump only on the liner. Ballast Bag to pump inlet and 90 fitting. Outlet to hull side 1inch thru- hull.**



**Drill 1 1/8 hole towards stern of vent thru- hull**

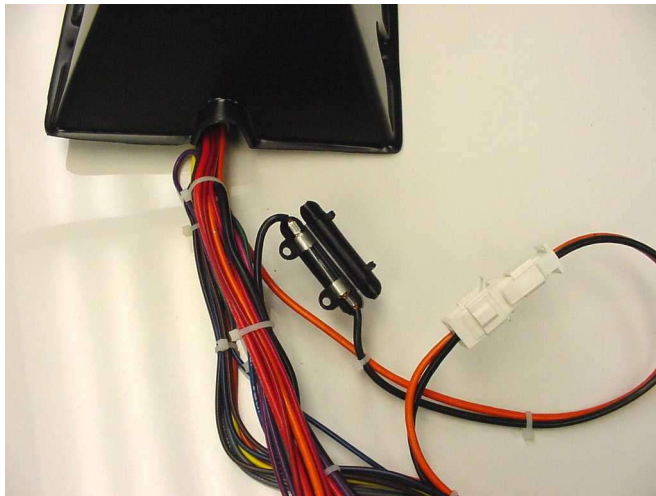
## Ballast System Wiring Diagram

Please take a look at the following photos that show step by step how to modify the wiring harness.



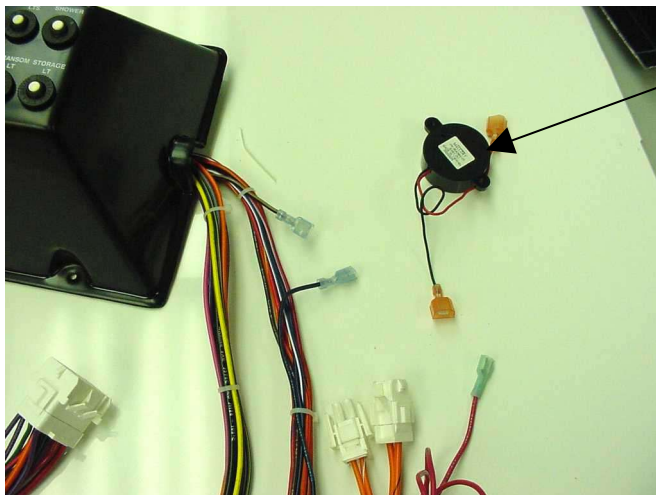
### Step #1

Remove Relay:  
Unplug 2 white 2 wire connectors  
Remove Red and Black wire at DECC.

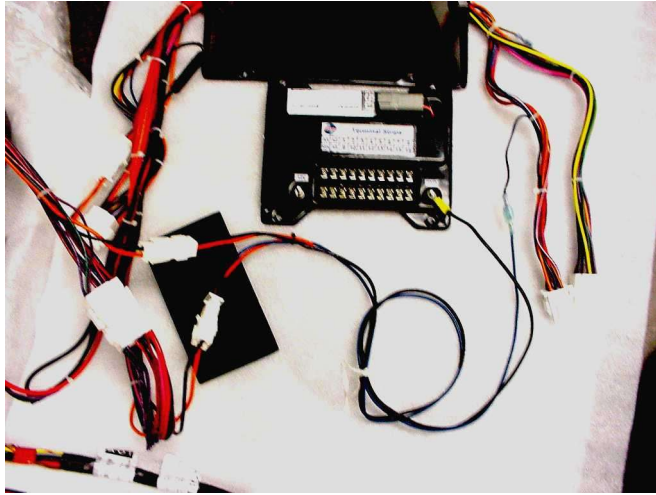


If no fuse is found go to  
STEP: ALT.

Change 15 AMP fuse to  
7 1/2 Amp supplied with  
kit.



Step # 3  
Cut tie- raps and remove  
warning buzzer.



#### **Step #4**

**Install wire harness 02-00686 supplied in kit**

**Install white connectors to removed relay wires.**

**Install black ground wire from new harness to DECC ground.**

**Connect blue wire to Black wire w/ Blue tracer from alarm.**

**If DECC is mounted under dash access hole, then relocate to the vertical bulkhead.**

#### **STEP ALT:**

**If no fuse is located next to circuit board follow instruction below:  
Install in line fuse holder on the TWO WIRES FROM DECC TO RELAY.  
Install 7 1/2 amp fuse and test to determine #10 as fill bottom left to orange wire on other connector to forward orange pump wire.**

**Install other fuse Number #11 Drain Bottom Right and connect to old alarm wire brown w tracer going to aft pump.**

Test system for leaks and fill and drain time.  
Estimate time to fill or drain is 6 –10 minutes



## CUSTOMER INSTRUCTIONS

### TO FILL:

Remove battery floor hatch.

Turn black valve handle to upright position



## FILL INSTRUCTIONS

Run boat at idle or above to help start water flow to pump and bag.

Press fill switch if light is on then the pump is on.

The bag should fill in about 5 –10 minutes.

When water flows out of starboard vent thru hull .

Press FILL switch TO TURN OFF PUMP

Shut of valve. ( HANDLE HORIZONTAL)

Install floor hatch.

\* IF Valve is left open bag may over-inflate with water ) \*



## DRAIN INSTRUCTIONS:

Press drain switch.

Operate boat at any speed.

The drain is located on the starboard side aft of the vent .

Slow water flow indicates empty or restricted water flow out of bottom of bag.

Press drain switch to turn drain pump off.

Bag may not empty fully.