

Master list of solutions for bug boxes

## Bilge Pump Troubleshooting Box

Note: \* items indicate correct answer to bug

Bug 1-	Battery Voltage Low Missing wire from battery to fuse Open wire from battery positive to TP1 Shorted fuse Open fuse Blown fuse Blown Fuse- replace with same amperage and style* Broken fuse holder Missing fuse	Battery voltage should be +12.6v Check TP1 voltage again Check TP1 voltage again Indicates a good fuse Not the most complete answer Not the most complete answer Correct answer How can you tell? Who took the fuse out?
Bug 2-	Blown Fuse Defective switch in manual position Defective switch in Auto position Open wire from TP2 to TP4 Open wire from TP8 to TP11* Switch open between TP-5 and TP-8 Auto Float switch defective Bilge pump defective	Check TP-2 voltage again Check TP-8 voltage again Bilge pump works in auto position Check voltage at TP-4 again Correct answer Normal condition for this switch Bilge pump works in Auto Position Not the answer, try again
Bug 3-	Bilge pump defective Blown fuse Defective switch in auto position Open wire from TP-4 and TP-7 Open wire from TP-6 and TP-10 Float switch not functioning Open wire from float switch to Bilge pump* Bad bilge pump	But the bilge pump works! But the bilge pump works! Check voltage at TP-10 again Check the voltage again Check TP-10 voltage again Check TP-9 voltage again Correct answer But the bilge pump works
Bug 4-	Bilge pump always on Defective Auto-Manual Switch Float switch shorted Added wire from TP-10 to TP-9 Defective float switch- shorted* Defective switch in Manual position Defective switch in Auto position TP-6 and TP-7 Shorted TP-7 and TP-8 Shorted	True, but what's the problem Not the correct answer, try again When the switch is on, it's shorted Would cause the same effect Correct answer Wrong answer, try again Wrong answer, try again True when the switch is in auto position Check TP-8 voltage again
Bug 5-	Open wire between TP-2 and TP-4 Defective Bilge pump* Open wire from manual switch to bilge pump	Check TP-4 voltage again Correct answer Check TP-11 voltage again

Auto float switch not good  
Low voltage at bilge pump TP-11  
Bilge pump impellor broken  
Bad battery connection  
Open wire from auto float switch to bilge pump  
Open wire from Auto-manual switch to bilge pump

Check Float switch operation again  
Check voltage again  
Pump does not work  
Check TP-1 voltage again  
Check TP-9 voltage again  
Check TP-11 voltage again

Bug 6- Bilge pump not working  
Auto manual switch broken  
No voltage on TP-11  
TP-12 has +12V  
Open wire from TP-12 to battery negative\*  
Bad fuse- open  
Bilge pump motor is shorted  
TP-11 and TP-12 shorted together  
Bad Auto float switch

That's obvious, try again  
Check switch voltage again  
Check TP-11 voltage again  
It does, pump does not work  
Correct answer, this is an open ground  
Check TP-2 voltage again  
Fuse would have blown  
Fuse would have blown  
incorrect answer, try again