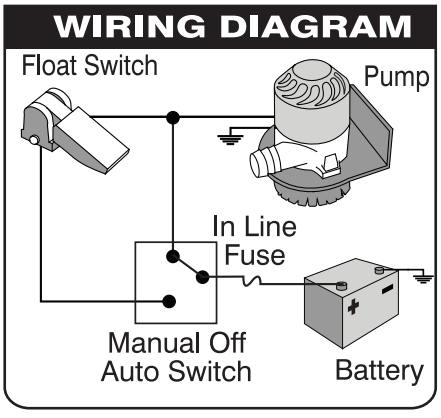
FLOAT SWITCH AND BILGE PUMP INSTALLATION INSTRUCTIONS

TOOLS NEEDED:

- **Phillips Head Screw Driver**
- **Pen, Pencil or Marker**
- **Drill**
- **Drill Bit (3/32 inch)**
- **Marine Sealant**
- **Wire Strippers / Crimpers**
- **Wire Ties**
- **Heat Shrink Connectors**
- **Torch / Lighters**
- **Tape Measure**



⚠ **CAUTION:** Before installing any bilge component, the bilge area **MUST** be free from any debris or chemicals such as fuels, oils or cleaners. Failure to follow these instructions may result in premature failure of the component or damage to the vessel.

⚠ **CAUTION:** Inspect all bilge pump components for proper function on a regular basis and before operation.

⚠ **CAUTION:** Read all instructions before attempting to install any bilge component. If you do not understand any part of the instructions, contact a certified marine technician to assist in the installation.

⚠ **CAUTION:** All wiring connections **MUST** be made above the waterline using heat shrink connectors. Failure to do so can result in premature failure of the component.

FINDING A MOUNTING LOCATION:

The Float Switch must be mounted in a position where it shuts off before the bilge pump is at risk of cavitation (sucking air into the impeller). Ensure the mounting location allows the switch to shut off with the bilge pumped out completely. This can be determined by running the bilge pump until it starts to activate. Mark the location of the water line on the bilge. The switch should be mounted with the paddle 1 in (2.54 cm) above this mark and at an angle no more than 20° from vertical. **NEVER** mount the float switch lower than or at the same level as the bilge pump. The Bilge Pump should be mounted in the lowest area of the bilge with sufficient clearance for installation and plumbing.

MOUNTING THE SWITCH:

Once a suitable mounting location is found in the bilge, use a pencil, pen or marker to mark the mounting slot and hole on the switch. After marking the mounting holes, remove the switch and carefully drill the slotted side first taking care not to drill through the bottom of the vessels hull. After the first hole has been drilled, apply marine grade sealant to mounting slot and stainless steel screw. Install the screw allowing the float switch to slide onto it. Next drill the other mounting hole, apply sealant and secure the switch making sure not to over tighten.

MOUNTING THE PUMP:

Determine suitable mounting location is found in the bilge. Remove strainer base from bottom of pump by releasing both retaining clips located on side of the pump. Place strainer base in desired mounting position, keeping in mind correct direction and clearance for wiring and plumbing. Using pencil mark mounting locations for hardware. Remove the strainer base and carefully drill hardware mounting locations. Use caution not to drill through bottom of hull or into any damagable components. Once mounting holes are drilled install stainer base into bilge using included hardware. Ensure all harwdare and access holes are sealed with a marine grade sealant. Clip Bilge Pump back into stainer base and connect Bilge Pump discharge hose to output barb utilizing hose clamp for security. Do not over tighten hardware or hose clamp.

WIRING THE SWITCH AND PUMP:

The float switch and pump must be wired in accordance to the diagram above.

⚠ **CAUTION:** Remove the positive side of the battery terminal or post and ensure there is no power to the vessel's electrical system before making wiring connections. If no fused connection is available through a switch or fuse panel, an inline waterproof AGC or ATO fuse holder can be used. After all connections have been made in accordance with the above diagram secure all loose wiring above the water line and test system.

CHECKING THE SWITCH AND PUMP:

Re-check all wiring and confirm it matches the above diagram and all connections are secure, sealed, and showing no bare wire. Reconnect the battery terminal giving the bilge pump and float switch power. Carefully lift up on the float switch until it activates the bilge pump. Once activated slowly move the float switch back to its resting position shutting off the pump. Check the float switch and bilge pump are working properly on a regular basis and before operating the vessel.

TROUBLESHOOTING GUIDE:

Problem: The Bilge pump stays running and won't shut off.

Solution 1: Check for dirt, debris or chemicals on the float switch. If found, clean or clear the float switch and check for proper operation.
Solution 2: Check the installation to ensure the switch is in the resting position when all of the water is pumped from the bilge.

Problem: The float switch does not activate.

Solution 1: Check that the bilge pump is operating on the manual side of the switch, if so, the problem is related to the float side.
Solution 2: Inspect the wiring and connectors for corrosion or loose components. Fix with Heat Shrink connectors if found.
Solution 3: Check for power at the float switch and bilge pump. The voltage should be 12 VDC at the connections.
Solution 4: Check the battery voltage to ensure it has at least 12 VDC.
Solution 5: Inspect the fuses in the float switch circuit. All fuses should be free from corrosion and secured tightly in the holder. If the fuse is blown, inspect the wiring for exposed components and replace the fuse.

Problem: The float switch works intermittently.

Solution 1: Inspect the wiring and connectors for corrosion or loose components. Fix with Heat Shrink connectors if found.
Solution 2: Ensure the float switch is secured tightly to the hull and has not worked loose.
Solution 3: Check the bilge for loose objects or debris that could cause the switch to jam.