

Department	HydroLogic		Doc #	SOP - Dual-Level Float Switch	
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## Standard Operating Procedure (SOP); Dual-Level Electronic Float Switch

### 1. Purpose

The purpose of this SOP is to aid users in the general installation and operation of the HyperLogic dual-level electronic float switch; Hawthorne HGC741677. The dual-level float is used to top off a storage tank and control the on/off function of the RO system. You can plumb multiple storage tanks together, if self-equalizing with each other, to create one larger volume of water. Use of one float switch and one bulkhead fitting on the tank which the RO water feeds to. The buffer between the two floats prevents cycling of the RO pump that can be caused by water surface turbulence as the tank is filling.

### 2. Applicable To

This SOP is applicable to all HyperLogic Commercial Series RO systems [1-12 membranes] which utilize the ROC-300 or ROC-150 RO Control Board & which the user wishes to have the Dual-Level Electronic Float Switch control automated operation of the RO.

### 3. Prerequisites

Ensure you follow all state & federal guidelines for personal workplace safety prior to disassembly and/or maintenance of your HyperLogic equipment and related consumables. Work should be performed in compliance with all local and state electrical codes.

### 4. Materials/Reference

Suggested tools/materials required for this operation include, but may not be limited to, the following:

- Dual-Level Float Sw. HGC741677
- Hole Saw; Size appropriate for bulkhead fitting & tank material
- Ref. HyperLogic 'Owner's Manual'
- HyperLogic Commercial Series RO [ROC150 or ROC 300 compatible]
- 4 Conductor 16AWG SO Cord (or larger) & related wiring connectors

### 5. Procedure

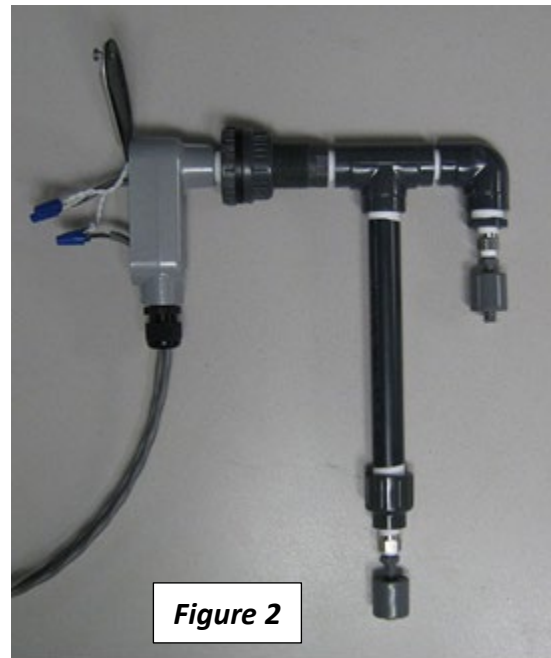
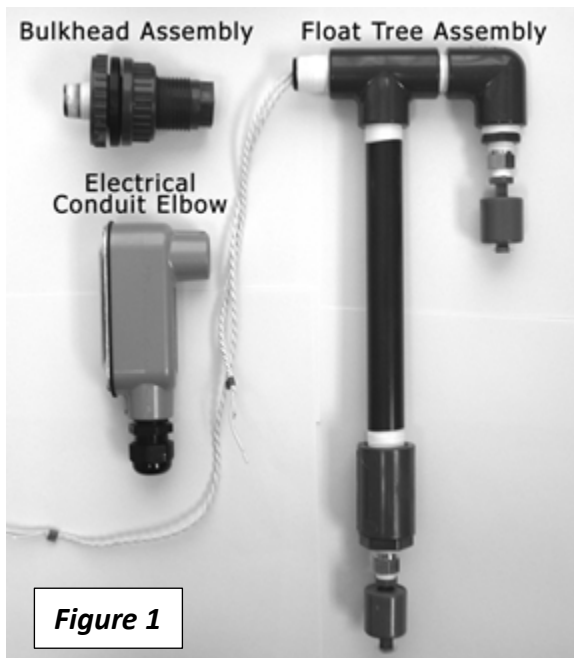
The general steps for HyperLogic Dual-Level Float Switch (Hawthorne item HGC741677) are as follows:

- Remove the bulkhead nut from the bulkhead fitting and place the bulkhead through the opening in the tank from the outside, making sure the bulkhead gasket is on the outside of the tank. Loosely connect the bulkhead nut. Do not tighten currently. Refer to 'Figure 1'.
- Position the float tree assembly on the inside of the tank and pull the float wires through the bulkhead fitting. Connect the float assembly tee to the bulkhead fitting by turning the bulkhead fitting from the outside of the tank. Tighten the bulkhead nut.  
*Caution: Do not tighten by turning the float assembly inside the tank, float damage can occur. Tighten only by turning the bulkhead fitting from the outside of the tank.*
- Position the electrical conduit elbow on the outside of the tank; pull the float wires into the conduit elbow. Thread onto the bulkhead fitting.

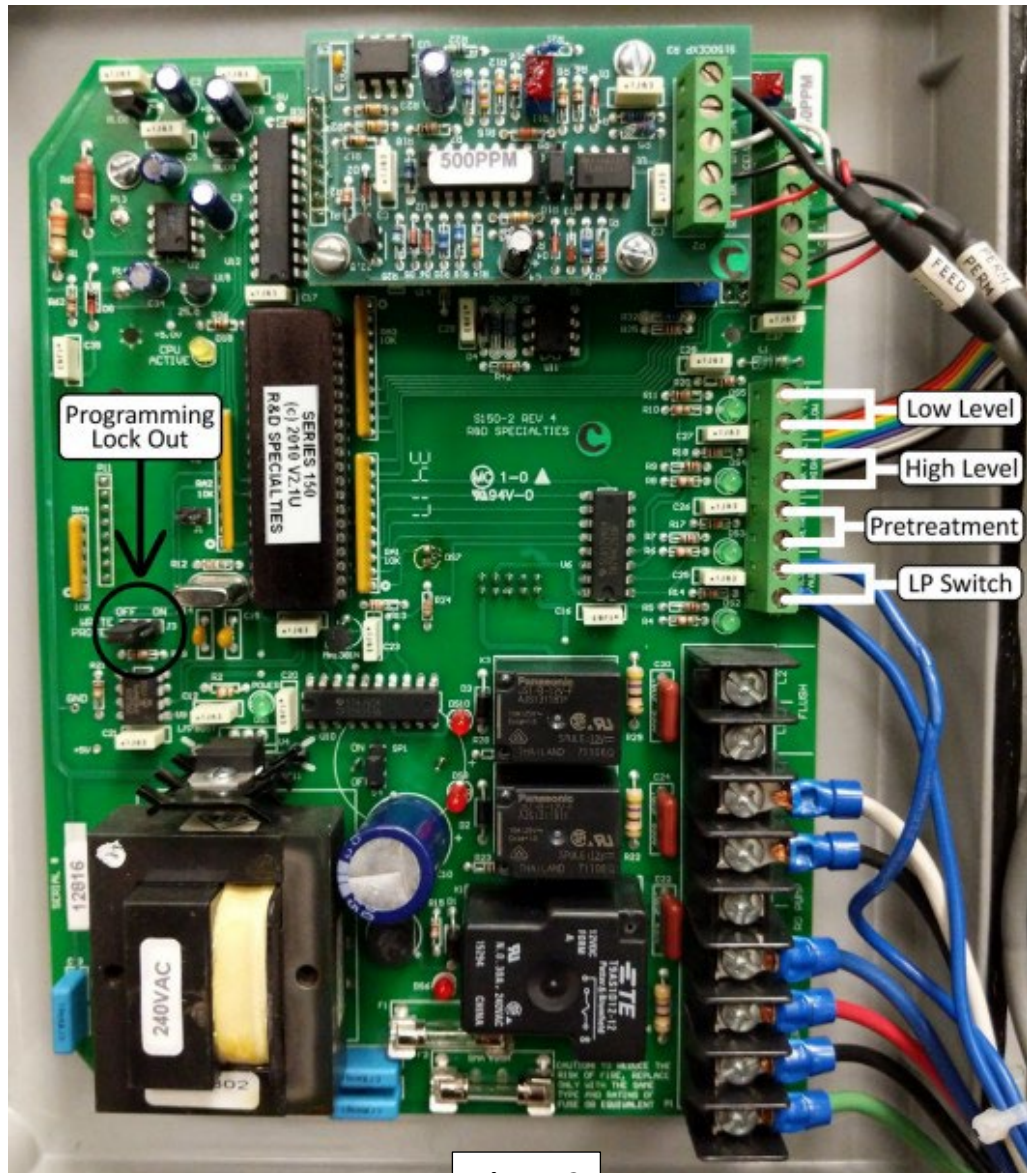
- d. Install SO cord (supplied by customer) through the strain relief fitting. Make sure enough wire is run into the conduit fitting.
- e. Connect the wires from the SO cord to the float switch wires with customer supplied wire nuts and replace cover. Refer to 'Figure 2' below.

*Note: It is recommended to evaluate the wiring by placing an OHM meter on the connections testing for possible short or ground & confirm the wiring of High vs. Low floats. All electrical connections shall be in accordance with the NESC guidelines and as dictated by local authorities holding proper authority for local/state and or by U.B.C., and U.M.C. guidelines for all mechanical means.*

- f. Disconnect power to HyperLogic RO. Run the SO cord to the RO control panel; Refer to the 'HyperLogic Owner's Manual' for additional details if necessary.



- g. Locate the "tank full high" and "tank full low" terminals on the controller circuit board as shown in 'Figure 3'. The wire with the red tape corresponding to the top float, which turns the RO off, gets connected to the "tank full high" terminal. The wire with the green tape corresponds to the bottom float, which turns the RO on, gets connected to the "tank full low" terminal. These are dry contacts, and they do not accept voltages such as 12-24VAC/DC, 120VAC. The 16AWG wires on the float switch do not conduct voltage. They will need to be extended to reach the terminals inside the controller. It is recommended to keep the wires as short as possible. The longer the transmission of current, the heavier or thicker gauge, the wire must be able to conduct the signal with the least amount of resistance. Please use 12AWG (maximum) stranded wire that is insulated per NEC code, found in any hardware store. Solid core wiring is not recommended. There is no polarity, so the color of the wire is not critical.



**Figure 3**

- h. Once wired to the RO control board & power is restored to the RO system, lifting & lowering each float will trigger the LED light located to the left of each set of corresponding float wiring terminals on the RO control board.
- i. Factory Default RO controller **SETPOINT** for 'Switch Select' is "0". If the RO display reads 'Tank Full' with both floats on the Dual-Level Electronic Float Switch in the down position, the programming may need to be changed.
- j. To reverse the Dual-Level Electronic Float Switch signal polarity from NC (Normally Closed) to NO (Normally Open) or vice-versa, change the 'Switch Select' from "0" to "12" and press ENTER to save. If the 'Switch Select' value is "12", change to "0" and press ENTER to save the signal polarity programming change.

END OF SOP DOCUMENT

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