

Multi Flow Controller Test Procedure

Please follow this test procedure before sending a controller in for repair. Most problems are a simple fix and will not require sending back the controller.

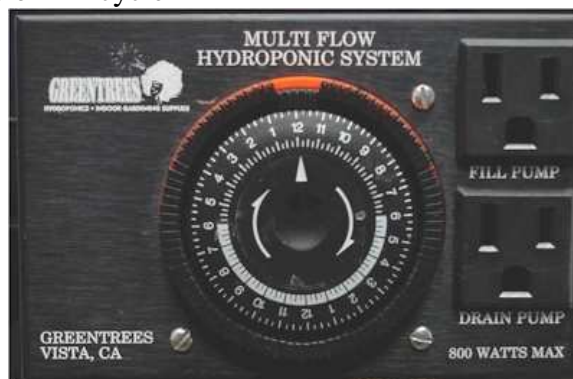
Preparation

Drain the water and disconnect the controller from the system. You will need either a multimeter, a light bulb, or anything that draws less than 800 watts to test the outlets. Do not use the pumps to test the outlets.

Understanding Timer Operation

The timer dial rotates clockwise only. Forcing it to turn counter-clockwise will break the gears damaging the timer. If it rotates freely in both directions, the timer has been broken by force. We have used two different timer modules in the Multi Flow. The newest timers are black and white. The old timers are black and white with an orange ring under the pins. On the new timer, the pins are pushed away from the center of the dial for a fill cycle. On the old timer, the pins are pushed toward the center for a fill cycle.

New and old timers on fill cycle



The rest of the pins should be in the opposite position for the drain cycle.

New and old timers on drain cycle



Fill Cycle Test

Set a few pins for a fill cycle and rotate the timer clockwise to line the pins up with the indicator arrow. Plug your test device into the fill pump outlet to test for power. The power should be **ON**. The two upper level sensors control the fill pump outlet.



Manually lift the float on the lower of the two upper sensors. The power should still be **ON**.



Then lift both of the upper floats. The power should go **OFF**.



Release only the upper float. The power should still be **OFF**.



Finally release the lower float. The power should go back **ON**.



If it does not operate exactly as described, check the floats for correct orientation. See “Water Level Sensor Float Orientation” page 6.

The drain outlet should have no power when the timer pins are in the fill cycle.

Drain Cycle Test

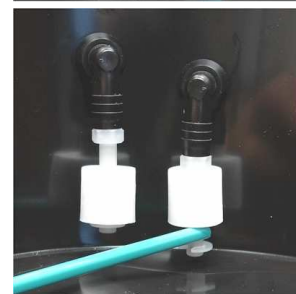
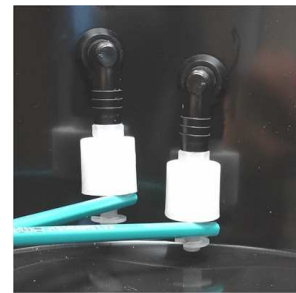
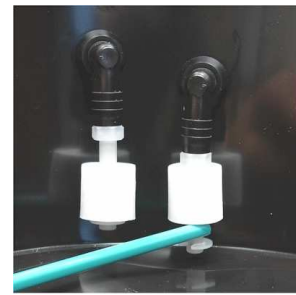
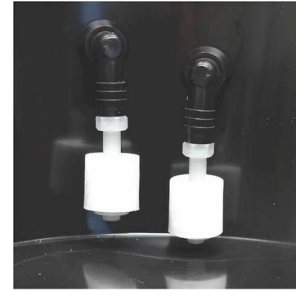
Rotate the timer clockwise to line up an off pin to the indicator arrow. Plug your test device into the drain pump outlet to test for power. The power should be **OFF**. The two lower level sensors control the drain pump outlet.

Manually lift the float on the lower of the two lower sensors. The power should still be **OFF**.

Then lift both of the lower floats. The power should go **ON**.

Release only the upper float. The power should still be **ON**.

Finally release the lower float. The power should go back **OFF**.



If it does not operate exactly as described, check the floats for correct orientation. See “Water Level Sensor Float Orientation” page 6.

The fill outlet should have no power when the timer pins are in the drain cycle.

Fill/Drain Tube Set Inspection

The fill/drain tube set is a simple but important part of the system. If it's modified or not installed correctly, the system could overflow. It consists of two tubes one for the fill pump and one for the drain pump. They both are fixed to the top of the reservoir with the fill/drain tube mount (part number 134868). The older systems use a tube strap (part number 132392). At the point where the tubes enter the reservoir are siphon break holes. The newest version has them built into the fill/drain tube mount. Older versions had ½" elbows with small holes drilled in the corner. Some of the oldest systems had ¼" elbows poked through the side of the tubing. The siphon breaks must not be obstructed in any way. They should be checked periodically to make sure there is no build up closing the holes. The tubes also have a rigid outer wrap to keep them from bending where they go over the edge of the reservoir.

Fill/drain tube mount with siphon break holes.



Second version of the fill/drain tube mount with ½" elbows and a small hole drilled for the siphon break.



Original fill/drain tubes with ¼" elbow siphon breaks



Timer Operation Test

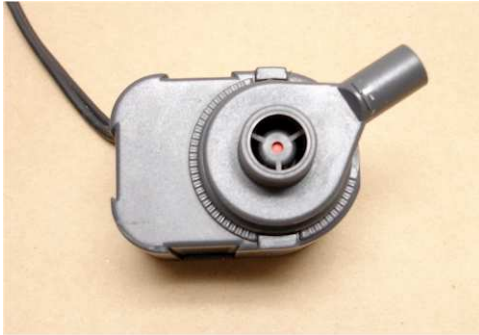
Set a random number of pins on and off and set the timer to the current time. Take note of the time you start. Plug in the power and let the system run for a few hours then check the timer to see if it has the correct time. Then let the system run for a full day and check the timer again.

Pump Inspection and testing

The pumps can be tested first out of water by plugging them into an outlet. Don't use the controller outlets to test the pumps. Operate them for approximately ten seconds to make sure they continue to turn. Test this a few times. Connect a five foot section of tubing to the pump and submerge the pump in a large basin of water. You can use the reservoir for this. Hold the tube in a u shape so the curve is about three feet high. Plug in the pump and make sure it starts and has enough power to pump three feet high. Test this a few times. The pumps have one movable part, the impeller. You can examine the impeller by removing the front of the pump as shown in the images below. If the plastic part of the impeller can rotate completely around independent from the magnet on the impeller, the impeller is damaged and it will not pump water.

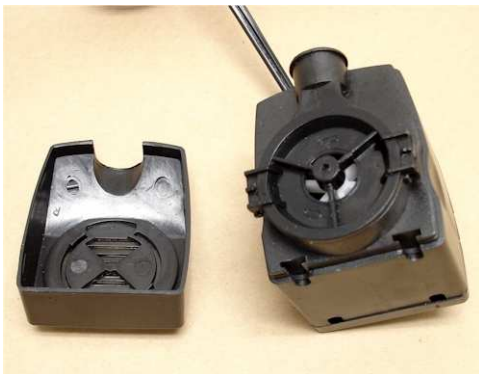
Maxi Jet pump

Line up the cover as shown then pull straight out. The cover will only line up with the tabs one way.



Fountain Tech pump

Remove cover, twist off impeller cover.



Water Level Sensor Float Orientation

The water level sensor floats are directional. If they are removed they must be replaced in the correct orientation or the system will not work correctly.

The floats have magnets just below the surface that can be seen as two dark spots on the flat side.



The two upper floats have the magnets pointed up and the two bottom ones are pointed down.

