

Alex-Tronix Service Bulletin No. 9, Rev 3, as of 09-30-2004

Controllers: WPC

Issue: General Tips, Testing & Extra Help.

Extra information to customers who use the “Crocodile” water playground controller,

Okay... you’re building a water park and now comes the fun part!

Let’s review operation procedures....

The Water Play controller used in water parks and other types of water play equipment is programmed by the following method:

There are two banks of “DIP” switches.... DIP standing for “Dual Inline Pin” switches. Snapping or sliding a switch towards the right turns them on, and the left side turns them off, (*or selects left sided functions*). To program the WPC, follow exactly these steps in order:

- 1) On the top bank of DIP switches, turn **POWER** on, and leave on-- If you turn it off and the controller tries to latch the solenoid, the controller will get out of sync, and the solenoid will miss the event, Soooo.... The solenoid may not turn on or turn off the valve. Don’t worry.... leaving the **POWER** switch “ON” does not use any extra energy.
- 2) Set **SEC** or **MIN**. Decide if the watering time that you will be setting, will be in seconds or minutes. Left or right position dictates this setting.
- 3) Set **WATER TIME**. All these settings will be in either seconds or minutes according to the **SEC/MIN** switch setting. The watering time switches can be used *individually or additive*, providing you the spray or fill time you need.
- 4) **OPTIONAL-** Set **PUSH BUTTON DELAY** time. This inserts a time delay, before water time, when the external push-button is pressed. This feature might be used if a “water dumping container” requires time to fill from an external pumping source. If you don’t want delay, leave these two slide switches in the “OFF” position and skip this step.
- 5) Set Day(s). On the bottom bank, set only the day that you are actually in: **MONDAY**, **TUESDAY**, etc. by setting the day switch towards “ON”. Don’t worry about setting the rest of the days right now.
- 6) 5) The last thing you must do is to switch **START TIME** to on. After about 5 seconds, the LED pulse light will flash, and you should hear the solenoid on the valve “snap”. This indicates that the solenoid “latched” and the valve should be flowing water.

7) If you want to use the controller on additional days, now is the time to set additional days--
After the controller activates the valve.

Optionally, if you want the WPC to start and stop at certain times of the day, that's where the **STOP TIME** switch comes in. This allows the WPC controller to ignore the push-button, should children enter in a water park after hours, and attempt to activate water play structures.

Here's out it works: Suppose you want the external push-button "useable" only between 9:00AM to 6:00PM on any selected day(s). Be at the site of the controller and turn on the **START TIME** switch at 9:00AM; the controller will now "see" the external push-button-- ready to be activated. Once again, at 6:00pm switch on the **STOP TIME** switch. This will immediately disable the external push-button switch and shuts valve off, if on.

The WPC has now memorized the **START** and **STOP TIMES** and will only "see" the external push button between the **START** and **STOP TIMES** (selected days only).

TEST: To test valve operation any time, slide the **TEST** switch to "ON", wait 5 seconds, and the valve should open for the duration set by the **WATER TIME**. When finished, you can return the **TEST** switch back to the off position any time.

HARDWARE ISSUES:

1) If you remove the panel from the box, make sure you plug the solenoid connector back in the correct pin header-- Marked: "SOLENOID" (Red & Black wires). The connector can only go one way--Wires headed towards the middle of the panel.

2) The external push-button switch must be plugged into the two pin header marked "SWITCH" (blue wires). The connector can only go one way--Wires headed towards the middle of the panel. Some versions may not have a connector; just "pigtail" leads.

3) Do not "Gorilla down" on the solenoid fastened to the valve. If you do, it may not work properly. Solenoid should be tightened to the point where it just feels snug.

4) If you are using a valve other than the one provided by Alex-Tronix, check our valve compatibility chart; you may need a special solenoid adapter. Contact our factory for additional information.

5) When replacing batteries, use metal jacketed lithium type, available from our factory or local electronic stores. Alkalines can also be used with reduced life.

6) When wiring an external switch, make sure connections are water tight (gel-type wire nuts suggested), and observe switch configuration: Switch must be Normally open (N.O.) type or at least wired that way for proper operation.

7) Do not use effluent water through the HIT Products 1” valve. It is not made to handle grit and sand.

8) Measuring 9 volt lithium batteries with a meter does not necessarily mean they are good. This type of battery needs to be tested under a load. If you are questioning the batteries, it is best to replace them.

FAQ's

Here are some frequently asked questions that we often get:

Q1) *“The controller keeps looping over and over.”*

A1) The most common problem is that the wrong switch was installed or configured incorrectly. A normally closed (N.C.) switch will cause this problem, and will shorten the life of the battery.

You can also check for shorted wires. Verify this by removing the panel and pull the connector marked “SWITCH” from the WPC; test wire continuity. It should not be making continuity unless the push-button is pressed.

Q2) *“The controller doesn't come on immediately after pushing the button.”*

A2) This is true, the controller requires charging time to “fire” the solenoid. It is gearing up to this within the 5 second delay, then latches. This characteristic is normal, and allows you to have incredibly long battery life.

Q3) *“How long do the 9 volt batteries last?”*

A3) This depends on usage, temperature, and other technical factors; however 30 to 60 thousand actuations which equate to several years is average.

Q4) *“What are some applications of the WPC?”*

A4) Filling water dumping containers, squirt nozzles, spray heads, alarming, lights, etc.

Trouble Shooting:

1) Controller appears to function but water does not flow.

A) Is main line coming in to valve pressurized? Verify no master valve is shut off.

- B) Try removing solenoid and plunger within. Clean sand and grit out if any.
- C) Wiring look okay to solenoid? Faded? cracked? If so, replace solenoid.
- D) Has sand and grit entered into the valve bonnet? If so clean or replace valve.
- E) Do you hear solenoid “Latch”? If not, remove from valve, hold in hand, push thumb slightly over plunger and activate controller. If plunger latches and releases, Valve should be questioned.

2) Controller does not seem to function.

A) Replace batteries. If controller still does not work, remove panel and disconnect solenoid from header. Test again. If controller does not work again, panel is defective and must be replaced.

B) Perform following field test:

1) Unscrew solenoid/w plunger and hold in hand.

2) You will notice that the plunger has “springiness” to it. Push it in enough so that the coil can pull in the solenoid, *but not too much other wise the plunger will latch to the coils internal magnet.*

3) With your thumb, slightly pushing on the solenoid, then activate the controller using minimum time settings and observe the plunger latching and staying into the coil. If it moves but does “catch” into the coil, replace batteries and test again. If it still does not work-- Replace panel.

4) Once latched, *make sure the solenoid releases as too.* If the controller pulsed and it does not release or fails to pulse when expected replace the panel.

One Additional Note:

For applications where you need to fill a container or automate a squirt nozzle, you can tie the switch leads together so that the controller will continuously loop on it's own. You would of course not use a push button with this configuration.

Questions??? Tech Support: Aram Tokatian 888-224-7630 or 559-276-2888.