

## OPERATION OF POOLS INSTALLED BY YORKTOWN POOLS & SPAS

This document is to assist in the operation of a pool installed by Yorktown Pools & Spas. It is meant to supplement your orientation. First, let's understand how the circulation works. There are suction lines that pull water to the pump, and there are return lines that return the water to your pool.

The suction lines are the skimmers and the bottom drain. There are valves by the pump that regulate how much water is pulled from these lines. The valves are set to be open during normal schedules. When you close any of the valves, more water is pulled from the other. The side opposite the handle will be labeled "closed". When that is turned toward a line coming into the pump, it partially or fully closes that line. **Never turn all of the valves to close when running your pump.** The following reasons describe when you would close a valve:

If the water level is lower than the skimmers, close the skimmer valves and use only the main drain valve to avoid air being sucked into the pump.

If there are two skimmers and you are vacuuming from one, closing the second valve will give you greater suction through that skimmer.

A good suggestion is to take a photo of the normal setting for the valves, as well as vacuum settings and low water settings.

Cleaning the baskets- There are filter baskets in the skimmer and pump to catch larger debris. These need to be cleaned at least weekly (more often if you have a lot of trees) The skimmer baskets are simply removed and dumped out.

To clean the pump basket, turn off the pump and twist the lid off of the pump. The pool Rx is in that basket, so be sure to put it back after cleaning it. Also, be sure to re-seat the gasket so it is not pinched. This basket may require hosing off, as it collects the smaller debris.

### Filter Operation

The filter operates by having the pool water pumped into the top through the valve. It spreads over the top of the sand where small particles are collected. It is pushed through small pipes at the bottom and then pushed up through a center pipe and out of the valve. After time, the top of the sand gets dirty and water flow slows down. Your filter gauge will rise as the sand gets clogged. The easiest way to tell when the filter needs backwashed is to put your hand in front of the return lines. If water is not forcibly pushing your hand away, but is gently flowing- backwash.

We recommend a minimum of 8 hours operation for your pool. This would turn the water over approximately twice (depending on the number of gallons). As the water warms and bather use increases, you may want to run the pump for 12 hours per day. That will increase the chlorine production and keep the water filtered better. Both of these helps to keep your pool clearer and free from algae. Of course, running your pump 24/7, is the optimum sanitizing/filtering setting.

### Valve Settings

When working with the filter valve, it is important that you never try to turn the valve handle while the pump is on. That will tear the gasket on the valve and it will not operate properly.

**Filter**-The regular setting for daily operation.

**Backwash**-Backwashing reverses the flow of the water to push water up through the sand washing the debris out the hose. Unroll the backwash hose before starting to backwash the sand. Turn off the pump and press on the handle to turn it to the backwash setting. Turn the pump back on and watch the water that flows into the little clear sight glass on the valve. You are losing water from the pool as you do this, so don't walk away. When the water looks clear, turn off the pump. Turn the handle to the **Rinse** setting. Turn the pump back on and run it for about 15 seconds to rinse the remaining dirty water. Turn the pump off, turn the handle to Filter and start the pump back up. Roll up the waste hose.

**Waste**-When the valve is turned to the waste setting, water bypasses the filter and travels out the backwash hose. This can be used to lower the water level or to vacuum a lot of debris out of the pool without clogging the filter. As with backwash, you will lose water if vacuuming to waste. However, it is a good way to clean up a pool in the Spring when the water is high and there is a bit of debris on the bottom of the pool.

**Recirculate**-This setting takes the water from the pool and returns it without going through the filter. This setting would only be used to move the water when something is wrong in the filter. It is seldom useful.

**Close**-This setting closes all the water coming into the valve. It would only be used for repairs to equipment beyond the filter to keep water from draining through the filter.

**Winterize**-This setting lifts the inside diverter off of the gasket to add to the life of the gasket. It is set to this setting at closing.

After the filter, water is sent through a heater if you have one. Heaters are pretty simple. They all have a no/off switch and a temperature control. There is no programming to be done, and the screen will tell you if there is an issue.

Next in the plumbing design is the Auto Pilot chlorine generator. This is where the salt in the water is broken down into Na (sodium) and Cl (chlorine). The chlorine does the sanitizing of the pool. It breaks down body waste, bacteria, viruses and prevents algae. The only way to lose salt in the pool is through dilution. Top up water and rain will dilute the salt concentration. When looking at the cell of the pool pilot, you should be able to see parallel grids of metal on the inside. A small amount of electricity passes between these grids causing the salt to break down into chlorine and be released. The control box nearby will tell you over time to “check cell”. There is a union nut on each side of the cell that is opened and the cell removed. Look down the parallel grids to see if they are clean. If there is a build-up of scale between the grids, it will need to be removed. The store sells a product called “cell cleaner” just for that purpose. After reinstalling the cell, press “select” on the control to reset it. There is also a small filter before the cell that needs checked occasionally. Open that union to reveal a screen that may become clogged with debris. When that is clogged, you will get a low flow message, and a red light will be blinking on the control panel. Now the water is filtered, heated, and sanitized and returned to your pool.

Valves after the filter will control any water features. Deck jets, waterfalls, sliding board water and bubblers will all be controlled by those valves.

### **The Pool Pilot Controls**



**SHOWN IN BLACK**



**SHOWN IN BLUE**

A typical readout on the Pool Pilot shows “Purifier %, Time of Day, and Water temperature. There is an up/down arrow on the left side and 4 buttons under the readout.

The Pool Pilot/ChlorSync controls the amount of chlorine being produced. The upper right shows the percentage of chlorine being produced. This will need to be monitored for a little while to determine the correct setting. A good starting point is 65%, but it depends how long the pump runs (minimum 8 hours). The chlorine is only being generated when the pump is

running. Use the test strips just before the pump is set to turn on (when chlorine in the pool is at its lowest point). That should read 1-3 ppm. If you are under 1 ppm, run the filter longer or increase the percentage by pressing the up arrow then “select”. To lower, press the down arrow then “select”. If you do not press the select button, it will revert to the original setting.

**To raise/lower the chlorine level, press the up/down arrow for each degree or hold the button to move up by ten percentage points at a time.**

**Note: The temperature will cause the percentage to fluctuate. The chlorine generator will not produce chlorine in the Spring until the water temperature is at least 60. Likewise, the percentage will increase with a warmer pool.**

After a storm that dumps debris into the pool, after a large group of people have been swimming in the pool, or the pool walls feel slippery, it is time to shock the pool. It is easier to prevent algae from growing then to clean it up afterward.

**To boost the pool**, press the “Boost” button once, then press select. That will make the Pool Pilot run at 100% for the next 24 hours the pump runs. After 24 hours, it will return to the normal setting.

There is a 72-hour boost. Press and hold the “boost” button to get to 72 hours. This can be used in the Spring to bring the chlorine level up. However, if the water is below 62 degrees, the Pool Pilot is inefficient in producing chlorine. An actual chlorine shock may be purchased to raise the chlorine initially.

**To boost the pool, press the up and down arrows simultaneously. This will make the ChlorSync run at 100% for the next 24 ours the pump runs. After 24 hours, it will return to the previous setting.**

**If you want to override the program temporarily**, to clean the pump basket, for example, press the pump button and the down arrow. This will shut the pump off. It will not turn on until the starting time of the next cycle. To restart, press the pump button and the up arrow. Likewise, if you want the pump to keep running after its normal cycle, press the pump button then the up arrow. This will keep it running until the next shut-off time.

**To override the program, turn the timer switch to “off”. This will turn the pump off so that water is not flowing to the chlorine generator.**

**Menu**-There are several menus. The only one we will address is the Owners menu and the program option. This menu option allows for the timing set-up of the Pool Pilot. To start, press the menu button. The readout will change to “Test Pool Pilot”. Press the up arrow until you see Owners Options. Press select. Press the up arrow until you come to “Program 1” and press select. Watch carefully, as it will display the start and stop times. If you want to change these times, press the up arrow. **If you press the down arrow, you will delete the present start and**

**stop times.** When you press the up arrow, it will read the start time in hours. Use the up/down buttons to change this, then press “select”. Skip the minutes, as they don’t make much difference. Press “select” again, and it will go to stop time. Again, change with the up/down arrows and press “select”. Skip the minutes by pressing select. When all is set, press the select button until you get to end menu. Again, press select.

**Red or red flashing lights at salt, cell or flow, indicate an issue to be addressed accordingly.**

### **Routine Maintenance**

**Test your pool weekly-**Dip one test strip into the pool about elbow deep away from the return jets. Compare to the colors on the bottle. pH should be 7.2-7.8. If you have a heater, it is better to be on the higher end of the range. We have already talked about the chlorine and adjusting the Pool Pilot. The alkalinity acts as a stabilizer for the pH. Finally, the last pad is for the stabilizer (also called conditioner and cyanuric acid). This keeps the sun from breaking down the chlorine in the water.

All of the balance chemicals are available in the retail store. Keep these things in mind when adding chemicals to your pool:

1. Always add chemicals to water-never water to chemicals. All chlorines (shock, tablets, etc) are oxidizer. That means if you add water to them, they immediately combust and create oxygen, which feeds the fire.
2. Stabilizer (conditioner/Cyanuric acid) is fed into the skimmer **VERY** slowly. If added too quickly, it forms a rock in the pipe.
3. Chemicals that are disbursed over the surface (Alkalinity, pH, calcium) should dissolve in the water. Do not let any chemicals lay on the liner-use your brush to stir until dissolved.
4. The salt level, stabilizer, calcium and alkalinity are only lost through dilution (rain and top-up water). They do not fluctuate easily. The pH and chlorine fluctuate with bather load and weather, and will need more adjustment.
5. When the Pool Pilot alerts you to add salt, it will tell you how much. Round up to the nearest 40 pound (the size of one bag). Add to the dep end and brush until dissolved.

**Boost the pool weekly-** As the water warms and more bathers use the pool, it is a good idea to boost the pool weekly. This will increase the chlorine output, to stay ahead of demand.

**Brush the pool weekly-** Using the vac pole and brush, brush the walls from top to bottom. Then run the brush over the bottom, directing the debris toward the bottom drain. Due to

surface tension, there is a fine layer of air between the liner and the water. Brushing keeps everything stirred into the water where it can be filtered.

**Vacuum as needed**-Sometimes you will want to vacuum manually. To do this, adjust the valves to create the greatest suction in the skimmer you are vacuuming from. Attach the vac head to the pole and the hose to the vac head (swivel cuff on the head). The flat vac plate attaches to the other end of the hose. Drop the vac head into the water and feed the hose hand-over-hand until water flows out of the end. Quickly place the vac plate over the skimmer basket in the skimmer. Proceed to vacuum. If the vacuum head comes out of the water, air will fill the hose and you will lose suction. You will need to feed the hose into the pool again. You can lift it from the water when finished to release that suction and retrieve the vac plate.

This all seems complicated and labor intense. The point of your pool is to enjoy it. Once you are used to the routine, everything will be easier. The retail store offers free testing of your water. Use that service until you are comfortable with the operation. We suggest new pool owners test monthly to check chemical levels. When you are comfortable, a Spring testing and balancing followed by a mid-season and end-of-the-year test and balance will be sufficient.

Finally, the service department and retail sales staff are trained to answer your questions. We hope you will find them to be courteous and helpful.

### Troubleshooting Tips

Pump basket is not full of water- Water coming into the pool will be full of bubbles, too. This means there is an air leak on the suction side. (Between the skimmer and pump) The most common causes are low water level and improperly seated/worn out gasket on the pump lid. To fix, raise the water level and/or check that the gasket on the pump lid is not worn or out of place. If neither of these are the issue, a service call may be in order.

Pump seems to be running, but no water is coming into the pool- First, check that the sand doesn't need backwashed. A dirty filter will slow the water returning to the pool. Secondly, it may be a clogged impeller. With the pump turned off, remove the lid and basket. Reach into the hole at the back of the pump and see if you can turn the impeller. You may even feel debris if it is clogged. Remove the front of the pump and remove the debris from the impeller. This is especially common with pine trees near the pool or in the Spring when smaller petals and tree blossoms are falling.

The gauge on the filter is reading high, but you just backwashed- Don't trust the gauge. They need replaced almost yearly. The best test of water flow is to put your hand in front of the return. If the water is pushing your hand away, the pressure is good. If the water is hardly moving-backwash.

Losing water in the pool- During the warmth of Summer, you can expect to lose around 1/4" per day to evaporation. That is 2" per week. To test your water loss, place a pencil mark on the skimmer faceplate at the level of the water. Wait 24 hours (rain free) and check the amount the water has dropped. If there is no rain for several days, you can check after a couple days to see what the average daily loss is. If the water seems to drop to a certain level and stop, look around the liner just above that line. There may be small holes that can then be patched. (My own kids were throwing a snorkel around, hitting the liner above the water line. They had punctures along the whole top of the water where it hit.) If you are losing 1/3" water a day, you are looking for about a 1/2" hole. Swim with a mask and look for a dirt spot that doesn't brush away. Patch with underwater glue and a vinyl patch. Cut the patch into a circle (no corners) Put a lot of glue on the patch and fold onto itself. Dive down, open it and press over the hole. Press from the center out to squeeze out the air. If possible, hold it for a few seconds or stand on it for a few seconds to set it.

If all attempts to find the leak are exhausted, Yorktown can come with a leak detector.

Fixing a cloudy or algae- filled pool- The point is to keep the water balanced. Once it gets ahead of you, it is much harder to clear up. Keep in mind these preventative measures:

- 1.Keep the pool balanced-all of the chemicals and mechanics operate best in a balanced pool
- 2.Test and make sure the chlorine is at least 1 ppm at the lowest point in the day. If you run your filter 8 hours per day, the lowest point will be just before the pump starts for the day.
3. Stay on top of problems-if the walls feel slimy, algae is forming. Brush the walls and shock or boost the chlorine. Add a dose of algaecide. If it gets a little cloudy, do not wait to see if it gets better on its own. Check the chlorine level. Backwash and/or add a clarifier to clump the fine particles together to make filtration better. Also, keep in mind the sand edges eventually round off. The sand should be changed every 3-5 years.