

Welcome to Your New Pool

by

Custom Pools & Remodeling.

POOL/SPA OPERATING INSTRUCTIONS

Welcome to the World of Swimming Pool Ownership.

In the coming weeks you are likely to find lots of new items, new phrases, new concepts, all of which are related to your new pool. Do not let yourself be intimidated, it is not all that difficult to become proficient at pool operation.

The first few weeks of ownership are very important. You will be asked to brush the walls and floor of the pool and/or spa twice a day, and vacuum the pool once per week if you do not have an in-floor cleaning system. After this initial period, the work required to maintain the pool is minimal. Let's examine the requirements that all swimming pools share.

POOL DESIGN – Pool – Deck – Screen

Your pool is a steel reinforced concrete structure, generally referred to as shotcrete or gunite. All pool or pool/spa combinations are designed to circulate water from the pool to the filter and returned to the pool. The re-circulation system may contain one or more pumps, one of several types of filters and a variety of optional equipment. The re-circulation system is designed to filter and return the equivalent of the entire pool volume in a given period of time. This "turn-over" time is 8 hours maximum and is the recommended "minimum" operating time for pools during the warmer seasons.

Most pools are finished on the inside surface with a marble based plaster called "Marcite". The function of Marcite is as a waterproofing element in concrete construction, not primarily as an aesthetic feature. Your warranty contains specific disclaimers on Marcite. You may have chosen an upgrade such as an exposed aggregate which offers a stronger warranty and is not covered under the Marcite disclaimer.

Dirt finds its way into your swimming pool through a variety of sources – from the air, from the deck, from the feet of swimmers and from the curing of the pool finish itself. Once it is in the water, this dirt must be removed. All forms of dirt are not the same. Some of them tend to cling to the walls and floor of your pool. Dirt that has an affinity for concrete must be removed by means of a soft brush applied to the walls, floor and steps. If ignored, it eventually will weld itself into the pool finish and form something called scale. It is principally to prevent the formation of scale that we strongly encourage regular brushing.

For the first 30 days, your swimming pool interior is still curing and is very prone to accept staining and produce scale. For that reason, it is advised that the owner gently brush the walls (starting at the tile line and brushing down to the floor), the steps, the swimout and the floor *twice per day*. We have included a stain and scale preventer that is most potent during the first month. Your brushings will assist this material in preventing stains.

After the first 30 days, the need for brushing should be somewhat reduced. You might consider brushing the walls and floor of your pool once per week after the first 30 days. NOTE: Your pool may LOOK clean, and still require brushing. Remember that you are removing the equivalent of DUST from the pool finish.

Pools should be checked once a week under normal conditions. Heavy bathing loads, rain and high temperatures may make testing or treatment more frequent.

Daily: **“Look – Listen – Skim”** “Look” at pool and deck. Check water level – Adjust. “Listen” to pool equipment for abnormal noises. If in doubt, turn off the equipment. “Skim” surface of pool to remove floating debris. This will remove debris before saturation occurs and makes vacuuming necessary.

Weekly: **“Check – Sweep – Vacuum”** “Check” water chemistry – adjust. “Sweep” pool vigorously from tile down wall and floor. “Vacuum” pool. Hose off deck. Clean tile.

Monthly: **“Check – Clean”** “Check” whole system. “Clean” screen enclosure (use light soapy water on aluminum.) Hose off screen fabric. “Clean” deck.

From time to time it is necessary for aesthetic purposes to remove dirt and other substances from the deck and tile.

Deck Cleaning:

Kooldecks

Mildew and algae as well as dirt can grow on the pool deck. For dirt removal, the use of a pressure nozzle on a garden hose may be sufficient. If further cleaning is required, solutions of pool bleach and water (1 part bleach to 4 parts water) can be applied to the deck with a sprinkler can, and then hosed off after an hour or two. Use Chlorox directly on algae or mildew areas – brush – let sit. **Do not put acid on deck!** Rinse accidental spills quickly. **Do not mix chemicals.**

Acrylic Decks

Rinse deck – use soapy water – brush to remove light dirt stains – rinse. Acrylic decks are more slippery when wet than kooldeck – especially when soapy – **“Be Careful”**.

Note: (Do not enter house from treated deck – chlorine will destroy carpet).

Tile Cleaning

All tile accumulates oils. Body oils, suntan lotions and even pollen from nearby trees will deposit a scum on the tile that should be removed. Tile may be cleaned with a mild solution of pool acid and water, or better yet, the use of a commercial pool tile cleaner such as “Guardex”. This will emulsify the oils and permit their removal.

Basic Pool/Spa Water Chemistry and Testing

Perhaps the greatest single factor in your satisfaction with your new swimming pool is your mastery of the single procedure of testing the pool water and making minor corrections that are indicated so your pool water is always clean, pure and appealing. We suggest that you check your pool water at least weekly.

The term “water balance” is one you will hear very often when dealing with pool people. When water is “balanced” several key factors, pH, chlorine residue, calcium hardness, total alkalinity, temperature and total dissolved solids are able to co-exist together with no harmful side affects. There are several key factors in keeping a pool balanced, only a few of which you can test. For purpose of instructions, we are going to briefly cover the essentials. Our goal is not to frighten or intimidate the pool operator/owner. Everything we list will be found in the instructions that will come with your test kit.

Your pool water is professionally balanced when the pool is started. The balance will modify itself each time you add water, chlorine, or it rains. To restore balance, it is necessary to *test the water* on a regular basis (once a week) and add what the test results suggest. We further suggest that you take a sample of pool water to a reputable pool supply store and request the personnel there to check the water for you on a monthly basis. This service is usually free.

Chlorine Test

The purpose of a pool or spa disinfectant is to sanitize (kill all living organisms), disinfect (kill all disease causing organisms), and oxidize (destroy ammonia, nitrogen containing contaminants and swimmer waste). A disinfectant must be continually active in the water so that it may react instantaneously with bacteria, algae and other organic matter as they are introduced into the water. Providing this measurable “sanitizer residual” to the water is a very important job of any disinfectant. Without it all protection for the swimmers is lost.

For our purposes, the level of chlorine we find desirable in the pool ranges between 1.0 Parts per million and 3.0 parts per million of *free available chlorine*. Less than 1.0 parts per million and your pool will begin to grow algae. A residual of more than 3.0 parts per million is wasteful.

Test your pool water following the directions contained in the test kit. If the color of the water sample in the test tube indicates that the chlorine level is above 1.0 parts per million and the chlorine residual is below than 3.0 parts per million, it is suggested that you turn the swimming pool chlorinator off for a few days.

If the chlorine residual is below 1.0 parts per million, check the chlorinator to make sure you have not run out of materials. If your pool has an erosion feeder and the feeder has run out of tablets, fill the chlorinator with the appropriate form of chlorine. For pools with a salt generator, assure that your generator has not run out of salt (there is an indicator rod that should be in the “up” position and make sure the power supply is turned “on”).

If there are sufficient supplies in the chlorinator, you may increase the “Feed Rate” setting on the chlorinator. If the “Feed Rate” is at maximum and there are sufficient materials in the chlorinator, you may wish to increase the number of hours that the pool pump runs.

If the pool chlorinator is ***below 1.0 parts per million***, swimming is not advised. Add ½ gallon of pool bleach (obtained from the pool supply store) per 15,000 gallons. Wait 1 hour, and then you may swim.

Note: Small adjustments in chlorine residual may also be obtained with ***HTH*** granular chlorine or similar products. We do not recommend them due to the relatively slow rate at which they dissolve in water, and the failure of most people to follow the instructions for use.

Super-Chlorination

Although the pool chlorinator does a fine job of routine feeding, there are times when the pool requires an extra dose of disinfectant to remove either algae or nitrogen-based wastes (such as fertilizer, sweat, etc.). Usually algae growth is evident. The build-up of nitrogenous wastes may not be so easy to detect.

- 1) When you check the chlorine residual during the weekly check, note the reading you obtain in the first few seconds adding the 5 drops of “OTO”. This indicates what we call the “FREE AVAILABLE CHLORINE” the free available chlorine is the chlorine that is free to disinfect and clarify the water.
- 2) After 30 seconds, note the chlorine reading. If there is no change between the instantaneous reading and that which you allow to develop, there is no need to super-chlorinate. If however, there is noticeable difference between the first reading and that, which is obtained after 30 seconds, then your water contains “Combined Average Chlorine”. It is the Combined Average Chlorine that irritates the eyes and makes the water smell like chlorine.

An over abundance of combined chlorine causes eye irritation and strong, sometimes offensive chlorine odors. Most people think there is too much chlorine in the water when they smell this strong odor. However, just the opposite is true, all the free chlorine has combined with swimmer waste and has created those foul smelling combined chlorine products.

How to Super Chlorinate your Pool

The need to super chlorinate your pool occurs from time to time in every pool. It usually requires a bit of planning. Your pool will be rendered unusable for 24 hours. Most people elect to super chlorinate at the end of the week (Sunday evening) since the pool then can recover over a period of time.

- 1) Test the pH of your pool water and lower it to 7.4, if needed. (This makes the chlorine more potent)
- 2) Add either:
 - 1 Gallon of pool bleach per 15,000 gallons, or
 - 1 Pound of Cal Hypo per 15,000 gallons, or
 - 6 Ounces of Tri-Chlor per 15,000 gallons, or
 - 1 Pound of “O2 Shock”, non-chlorine based oxidizer
- 3) Turn your pools chlorinator off**
- 4) You have successfully “Super chlorinated” your pool.

Note: Be sure to re-test the pool water before swimming. If the chlorine reagents begin to turn white or “bleach out”, this indicated that the level of chlorine is above 1.0 parts per million and the use of the pool is not advised. Wait until the residual falls to 3.0 or less before remaining normal use.

Testing for pH

Of all the chemical tests on your pool you perform, the most important one is the pH test. A pool may be completely free of chlorine, and you may swim without any problem but if the pH is out just a bit, you can immediately experience irritation of the eyes, ears and skin.

Your test kit should contain the information you need to test the pH. Follow the directions. The kit will even tell you how much acid to add to the pool water to bring the pH into proper range. pH left unattended, will tend to rise to above 8.3 or more due to the interaction of water with the pool finish. So even if you are not using the pool, even if you have not added chlorine in quite a while, your pool water can be in desperate need of treatment. Lowering the pH of your pool is accomplished by adding either “pool acid” (this is 20 baume’ hydrochloric acid or “muratic” acid), or sodium bisulfate (dry acid).

Adding Acid to your Pool

- 1) Determine the amount of acid that will be required to treat the pool water with the test kit. If the amount of acid indicated exceeds 1 qt, then divide the acid to be added into several feedings. It is not a good idea to add more than 1 qt of acid at a feeding (assuming the pool has 15,000 gallons).

- 2) Take a plastic bucket and half fill with pool water.
- 3) From **off the deck** measure the acid into a bucket of water.
- 4) With the pool running, add the acid/water mix to the **deep end of the pool**. The objective here is to prevent the acid from lying on the bottom of the pool where it can eat the marcite rather than treat the pool water. You want to stir it up!

Diffusion should occur (the acid should be mixed thoroughly in the pool) in about a half hour you can resume swimming.

Total Alkalinity

One of the test that will actually reduce your work is the test for total alkalinity. Alkalinity is defined as the ratio of carbonate to bicarbonate ions present in the pool water.

Total alkalinity is the measure of the pool water's ability to accept and hold a change in pH. A high total alkalinity means that the pool water, once set at a desirable pH will hold that pH and it will take much more effort to alter that. At a lower alkalinity, the pH of the water will respond much more quickly to outside chemicals and stimuli. Stable pH means that your pool water will not demand very much attention and will not deposit stains as easily onto the interiors finish, it means that the addition of pool acid will be much less frequent.

Alkalinity substances buffer your water against changes in pH. It is important to prevent pH changes that can cause scaling or corrosion of metal fixtures. The total alkalinity is in the right range at 80 to 120 ppm (parts per million) if sodium dichlor or trichlor are being used as sanitizers. Total alkalinity levels of 80 to 100 ppm are considered to be in the right range if calcium, sodium, or lithium hypochlorites are being used as sanitizers. pH intensity is measured on the pH scale, a numerical scale extending from (one) 1 (extremely acidic) to 14 (extremely basic). A pH of 7.0 is considered neutral. The right pH levels less than 7.2 can also cause swimmer discomfort and cause corrosion of pool fixtures and equipment.

If your test indicates that your pool water is deficient in pH, and the addition of "total alkalinity increaser" is required, one may use baking soda or a commercially packaged product.

While there are no special precautions in adding total alkalinity adjusters, some special techniques are used.

- 1) Add your total Alkalinity Increaser in three (3) equal feedings, spaced at least 12 hours apart.
- 2) You may pour the alkalinity into the pool and brush the Increaser to help distribute it.
- 3) Do not attempt to check or adjust your pH for 72 hours. The Alkalinity Increaser will give you false readings for quite a few hours until the water absorbs the chemical.

Note: Rain contains no total alkalinity. It is therefore possible to have a rainy week throw your pool's alkalinity out of balance. In rainy weather it might be wise to check and adjust the alkalinity more often than monthly.

Other Pool Chemicals

The water chemistry of your pool is ultimately more complicated than we have shown thus far. We have only addressed those tests that you can be expected to perform yourself. Some other tests should be performed but by a pool store or pool professional. The reason for this is while the tests are important, the value of these test will not change very readily, therefore time is not essential in dealing with these chemicals.

Other factors of your pool water that are important and should be monitored by taking samples to a pool supply store is:

- Calcium Hardness
- Iron & Magnesium
- Cyanuric Acid
- Stain & Scale Preventer

Calcium Hardness:

Calcium hardness is especially important for marcite pools. Water, if deficient in calcium will attempt to draw it from anything in or near the water. Concrete such as that in the marcite interior lining of the pool is a rich source of calcium but without calcium, the finish will become pitted and mushy. Therefore, we suggest giving the pool somewhat of an excess of calcium to prevent this "leaching" from taking place. We have found that a calcium hardness of 250 or more to be adequate to protect concrete finishes from being robbed of calcium.

Diamond Brite, Marquis, PebbleTec, and exposed aggregate finishes should be maintained at or near 70 parts per million. These finishes are less reactive than marcite.

Iron & Magnesium:

These materials in the pool water cause staining. If your pool water contains these in any appreciable quantity, your pool store will suggest a chemical (usually phosphoric or phosphonic acid) to remove these minerals from the pool water. This is not particularly common for city water sources, but very frequent for wells.

Cyanuric Acid:

This material is introduced into the pool water to slow down the action of chlorine near the surface of the pool preventing the chlorine from leaping off into the air. If cyanuric acid levels are low, the pool will not hold chlorine and you will experience a “low” reading no matter where you set your chlorine feeder. Cyanuric acid is very stable, and once in the water does not break down, it can be removed only by splash-out or draining.

For pools with erosion feeders, maintain a minimum of 30 parts per million of stabilizer. For pools with a Unichlor, maintain at least 65 parts per million of stabilizer.

Stain and Scale Preventer:

Some pool chemicals are just gimmicks, tricks and junk. Others are very important and useful. Among the latter are the stain and scale preventers. The effective life of these is approximately 6 months. Your pool was started with a stain and scale preventer, since it is very easy to stain new concrete. We suggest that you refresh this stain and scale preventer with “Metal Magic”, “Sequa Sol”, “Super Sequa Sol”, or other chemical equivalent at the rate of 1 quart per 10,000 gallons each 6 months. The benefit of this is that leaves, toys, sticks and other potential stain producers will be much less likely to leave marks on your pool floor or walls when this chemical is installed. Furthermore, if a heater is installed, the life of the heat exchanger will be greatly extended. When the seasons change and the water temperature cools, you will be less likely to experience gray stains caused by your pool water losing its capacity to hold dissolved solids.

BRUSHING YOUR POOL

- 1) Attach the soft nylon brush onto the tele-pole provided
- 2) Turn the Pool Pump “On”
- 3) Turn the Skimmer “Off” (Operate on Main Drain only)
- 4) Starting at the shallow end of the pool, push the nylon brush down the pool wall taking care to cover the entire wall and step area
- 5) After brushing the walls and steps, brush the floor working from the shallow end toward the main drain. Remember, Work SHALLOW TO DEEP

- 6) The water will become somewhat clouded by the dirt the brushing has loosened. The pool filtration will shortly remove this trash from the water. Leave the pump running until the water becomes clear
- 7) Once the water clears, you may turn the pump “Off” and open the skimmer valve

VACUUMING THE POOL

- 1) Gather the vacuum hose, the vacuum head and the telescopic pole (also called tele-pole and lay the vacuum hose out on the pool deck. Note which end of the vacuum hose swivels
- 2) Remove the lid of the skimmer, the skimmer basket and any diverter valves or devices from the skimmer
- 3) At the pool pump rotate the control valves so that **ONLY THE SKIMMER** is drawing water. (Your pool valves should be marked to indicate this position by our Service Technician) While there, inspect the strainer basket to insure it is not filled with leaves or debris and check the pump timer to make sure it will allow the pump to run during your cleaning session.
- 4) Attach the vacuum head to the tele-pole.
- 5) Attach the vacuum hose to the vacuum head, taking care to put the swivel end of the vacuum hose on the vacuum head.
- 6) Put the vacuum head and tele-pole into the water. It is a good idea to hold onto one end of the tele-pole. It will drift into the water otherwise.
- 7) Hold the unattached end of the vacuum hose over one of the fittings that return water to the pool. The effect is that this will fill the hose completely with water. It is essential that the hose be completely filled before attempting to vacuum.
- 8) Carefully put the end of the vacuum hose into the skimmer, directing the hose into the port that is drawing water. It is wise to operate at a distance since the draw from the pump can be substantial. (Grasp the hose several inches from the cuff) The vacuum hose will be drawn into the skimmer port, and water will be drawn in through the vacuum system.
- 9) Move the vacuum head over the pool floor and walls in a pattern that will allow you to cover the entire surface. It is best to move at a moderate pace. Too fast and the dirt will merely be stirred only to settle out later. Too slow and you can waste time.

- 10) Once the pool is vacuumed, go to the pool pump and turn it off. Remove the vacuum hose from the skimmer and remove the vacuum head and tele-pole from the pool and store them.
- 11) Return the valve settings to a combination of **“Skimmer”** and **“Main Drain”**. Empty the pump hair and lint strainer if necessary and turn the pump back on.

You have now successfully vacuumed your pool.

Some Helpful Hints

Vacuum cleaning of the pool may be done as often as needed. Most pool owners who do not have an automatic cleaner consider once per week in the swimming season to be adequate.

In the event your pool is equipped with an in-floor cleaning system, and it is possible to divert the flow to an alternate route, your cleaning job will be made much easier.

If your pool is screen enclosed, you may wish to attach a tennis ball to the end of the tele-pole to act as a bumper. This will prevent accidental punctures of the screen and scratching of the screen cage.

Storage of the vacuum hose stretched on a fence is decorative, but will result in very early failure of the equipment. Please consider using a large garbage can as a container for this costly piece of equipment. It will save you money in the end.

If your pool filter is very dirty (evidenced by a high pressure reading on the pressure gauge), it may be wise to clean the filter before vacuuming the pool. A dirty filter will cause the vacuum to perform poorly.

If the vacuum head sticks to the floor of the pool, thus making it difficult to operate the unit, two things can be done:

- A) The wheels on the vacuum head can be raised or
- B) The Main Drain valve can be opened a little

If the vacuum head becomes attached to an in-floor cleaning head, it can be removed by giving it a firm tug. You will hurt neither the cleaning equipment nor the floor head by doing this.

FILTER CLEANING AND MAINTENANCE

The function of your pool filter is to remove dirt and wastes from the pool water to permit you to expel them from your pool. We currently offer 2 filter packages, Cartridge and D.E. based systems. We will include instructions for both; disregard the section that does not apply to your pool.

Cartridge Filters – Routine Maintenance

Weekly:

- 1) Inspect the pressure gauge atop the filter dome. If you notice the filter pressure is elevated, remove the cartridge from the filter casing and hose it off.
- 2) While the pool pump is running, gently grasp the filter pressure gauge and turn it about ¼ turn. This acts as an air relief valve and will allow trapped air to escape.

Monthly:

- 1) Soak the filter cartridge in a 10% pool acid and water solution to remove minerals from the filter element.
- 2) On another occasion, soak the filter cartridge in a solution containing water and a cup or two of trisodium phosphate (available from paint or hardware stores). This will remove suntan lotion and body oils.

Yearly:

Replace tank O-ring and pressure gauge.

Every 2-3 years:

Replace filter element.

D.E. Filter – Routine Maintenance

D.E. (Diatomaceous Earth) Filters come in several sizes, the most common being 24 Square Feet, 36 Square Feet and 48 Square Feet. These numbers relate to the size of the filter area and give an indication of how much water can flow through the filter and how long you should go between routine cleanings called **backwashing**.

Weekly:

- 1) Inspect the filter pressure indicated by the gauge on top of the filter dome. The higher this number the more dirt has been accumulated. When one of the three conditions occurs:
 - A) The filter pressure has become elevated more than 5 pounds above the Fresh reading indicated by a mark on your gauge - or
 - B) One month has elapsed - or
 - C) Your pool has had an infestation of algae.

You will be well advised to clean the filter by “backwashing”.

How to backwash:

This sounds complicated but really is quite simple.

- 1) Make sure you have a normal fill of water in the pool – that is, you will want the water well onto the tile since you will be removing some water by cleaning.
- 2) Turn off the pool pump.
- 3) Unroll the collapsible backwash hose attached to the bottom of the “Push-Pull Valve”.
- 4) On most filters, turn the push-pull valve handle a half turn. Once it is raised fully, lock it into position.
- 5) Turn on the pool pump. Water will begin to rush out of the blue discharge hose. This is normal and will carry dirt and debris out of the system.
- 6) Allow the filter to run about 2-3 minutes in this position.
- 7) Turn the pump “off” and return the handle to the “down” position.
- 8) Restart the pump and introduce Diatomaceous Earth (D.E.) into the skimmer. You will need to measure this according to the filter size.

24 Square Feet = 3.5 Pounds of D.E. (7 – 1 pound coffee cans)

36 Square Feet = 5.5 Pounds of D.E. (11 – 1 pound coffee cans)

48 Square Feet = 7.0 Pounds of D.E. (14 – 1 pound coffee cans)

Congratulations! You have successfully backwashed your filter.

Yearly D.E. Filter Maintenance

It is advised you disassemble the filter and wash the filter grids manually to remove accumulated suntan lotion and body oils that cannot easily be removed by backwashing. You may wish to consult your filters owners’ manual for the specifics on how this is done.

PUMP INSTRUCTIONS

How Your Pump Works

Your centrifugal pump is designed to operate for years with proper maintenance. The pump housing, seal plate, diffuser hair and lint pot and impeller are made from high quality thermoplastic materials. These materials have been selected for their corrosion

resistance. When installed, operated and maintained in accordance with these instructions, your pump will provide years of service.

Your centrifugal pump is driven by an electric motor. The motor is directly attached to the pump impeller. As the electric motor turns, it causes the impeller to turn and this causes the water to flow. The water flows into the hair and lint pot inlet and through the basket assembly to pre-strain large particles. The flow then enters the center of the pump housing. If the pump does not contain the hair and lint pot assembly, the flow simply enters the center of the pump housing. The flow goes through the impeller into the stationary diffuser and out the pump discharge port.

Initial Start Up

- 1) Relieve all system pressure and open all air bleeders on total hydraulic system prior to starting the pump.
- 2) Ensure that all fittings, clamps, closures and couplings are tight and in accordance with equipment manufacturer's recommendations.
- 3) Open suction and discharge valves to allow free flow of water. On flooded suction pumps with strainer pot, the water source is higher than the pump. The water will flow into the pump strainer pot and the pot will fill with water. On flooded suction pumps without strainer pot, the water will fill the pump housing.
- 4) On non-flooded suction systems, the pump lid will have to be removed by unscrewing the lid counter-clockwise.
- 5) The pump strainer pot should be filled with water up to suction opening on the pump.
- 6) It is good practice to lubricate the lid "O" Ring with silicone lubricant each time the lid is removed. The "O" Ring should be cleaned and inspected every time the strainer pot is opened.
- 7) The lid should be replaced on the pot. Turn the lid clockwise to tighten.

CAUTION: Never run the pump dry. Running it dry may damage the seals and pump housing. This could allow water leakage and flooding.

- 8) The pump is now ready to prime. Energize the motor and the pump will prime. The time to prime will depend on the suction lift and the distance and size of suction piping. Turn off power if the pump does not prime within five minutes and refer to the Trouble Shooting Guide.

WATER FEATURES

Part of the fun of owning a pool is having water features that show off your pool's beauty and add character. However one should be aware that while they are inexpensive to operate, they are by no means free, they are very costly.

Water, when it tumbles does three very predictable things:

- It loses temperature
- It loses chlorine
- It gains nitrogen from the air (the stuff algae feeds on in the water)

Thus it is advised that tumbling, bubbling or moving water be kept to a minimum unless you are actually there to enjoy the feature. Most systems supplied by Elite Pool & Spa, Inc. are powerful enough to compensate for the adversities posed by water features, but the operating costs can be much higher. It makes very little sense to heat water with a heater, and then cool it off with a "Florida fall".

To Operate Water Features

Waterfalls, bubblers and cold-water spas operate as if they were pool returns. There is a valve provided that would allow you to share some water from the re-circulation system with the normal re-circulation system. This is usually a 3-way valve that is labeled "returns" on one portion and "feature" on the other. To activate the feature, open the "feature" valve the minimum amount required to give desired water action. Once done, return the valve to the normal position.

Spas are a bit different. They incorporate a waterfall or spillway designed to receive a portion of the pool water at all times the pump is running. Normally the 3-way valve that controls the return patch of filtered water will be labeled "pool" on one side, and "spa" on the other. Normal position for this valve is about 90% of the systems resources sent to the "pool" and 10% directed toward the "spa". To activate this feature you must turn two valves.

1. On the suction side of the pump there is a 3-way valve. Half of it is marked pool and the other side is marked spa. Turn the handle so that the water coming in to the pump is being received from the spa.
2. Then, on the pressure side, turn the handle that returns filtered water to the system from the pool to the spa or therapy jet position. At this point water in the spa should start to bubble and the water level should remain constant.
3. If heater and blower have been outfitted, turn them on in this order:
 - a) Heater first. Allow the spa to obtain desired temperature before Turning on the blower.
 - b) Blower or bubbler can then be activated.

Once your session in the spa is done, the following “shut down” is suggested:

- 1) Turn the heater “off” about 10 minutes before you anticipate leaving the spa. This allows the system to cool slowly; it also prevents accidental heating of the pool to 103° degrees the following morning because the heater was accidentally left on.
- 2) Turn the 3-way valve handle on the suction side of the pump to “Pool”. It is not a good idea to leave the “Spa Main” on for any measurable amount of time.
- 3) Turn the 3-way valve on the return/pressure side of the system to allow 90% of the water to return to the pool, and about 10% of the water to go to the spa.

Note: These figures are relative and you should feel free to use whatever setting is needed to give your spa overflow and appealing flow pattern.

SUGGESTED MAINTENANCE DATA

Filter Pump Run Time	2-3 Hours (Winter) 8-12 Hours (Summer)
Filter Cleaning	Cartridge Filter 1-2 weeks Replace Cartridge 2 years

When pH is higher, and when chlorine
Residual is more than 1.0 parts/million

*** If your water comes from a well and is processed by a water softening device, it is important to bypass the softener when filling or adding water to your pool. The process that softens the water also softens the pool finish!