

Congratulations on your new swimming pool! You probably have a number of filter system, chemistry and maintenance questions that will hopefully be clarified in this basic guide. This guide is only a general guideline on the operation and maintenance of your swimming pool. Some questions or problems may need to be answered by a professional due to custom applications on some swimming pool designs.

## **I. What to do for the first two weeks**

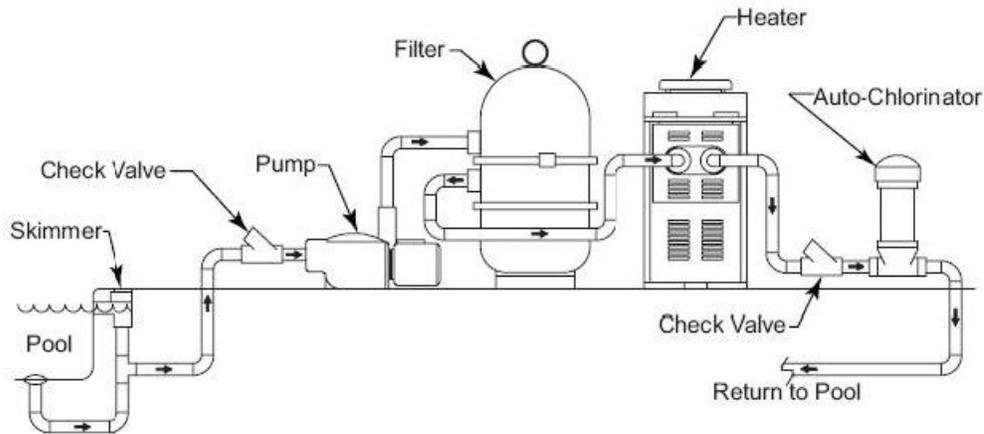
The first two weeks is important for the new pool owner. The following tasks should be performed in order to promote a smooth, clean finish on your pool.

- Brush down the pool walls and floor twice a day
- Run the filter system 24 hours a day
- Check pool chemistry daily and balance as needed (Always pre-dissolve chemicals in a bucket before adding them to the pool. To assure safety, always add the chemical to water, never add water to the chemical.)
- pH may need to be lowered daily until the pool balances. This may take a couple of weeks
- If equipped with a chlorine generating system, you may have to add chlorine manually until salt is added enabling your pool to produce its own. Salt will not be added for at least 4 weeks after the pool has been plastered.
- Check filter pressure gauge and backwash or clean if it reads 10 lbs above normal
- Do not use automatic pool cleaners
- Do not use hand pool vacuums with hard wheels
- Do not use heaters

Please note: Plaster is not a slick like finish, it is hand trowled as smooth as possible and is not perfect or flawless. You may see a certain amount of small cracks and crazing. These are called “checks” and are normal in all plastered pools. You may also notice a blotchy, gray discoloration develop on the plaster before the pool is filled, or after the water clears. This is the natural curing process of the plaster. Several months may go by before the plaster cures to a fairly even shade of the color you selected.

We strongly recommend having your water professionally tested at least once a week for the first few months. If the water chemistry goes too far out of range during the plaster curing process, the surface can become discolored and/or form scale.

## II. Filter System



The filter system on your swimming pool is made up of the components that move, filter, heat and sanitize your pool water. Some pools may not have all the above features or they may look slightly different.

- **Pump:** The pump is the part of the system that moves the water to and from the pool. Two popular models are single speed and variable speed.



- **Filter:** The filter is the part of the system that removes undissolved particles in order to keep the water clear. The three main types of filters are DE, sand and cartridge.



Some swimming pool designs include other “accessory” equipment that may be added in order to customize a particular customer’s needs. They include:

- **Heater:** Some pools have heaters which can heat pools or spas to comfortable temperatures



- **Automatic pool cleaner:** Pools with automatic cleaners force additional water to a connection on the inside of the pool. The pool cleaner attaches to this connection and when activated, cleans the pool. *The pool cleaner should only be used when the filter pump is running.*



- **Time clocks:** The time clocks are used to automatically turn on and off the filter system. Time clocks can also be manually controlled with the use of a switch located under the clock.



- **Chlorine generators:** These systems use salt to produce Sodium Hypochlorite (liquid chlorine). Some systems come with a mineral pack that allow homeowners to maintain a lower chlorine level.



- **Chemical feeders:** Chemical feeders are used to automatically add chemicals to the water. These are usually plumbed into the filter system and add a chemical or gas to the water when water is moving through the pipes.



- **Automation:** Automatic control systems enable the homeowner to program his/her filter system, lighting, temperature, valve positions, etc.



### III. Water Chemistry

Swimming pool chemistry is very important for the life of your plaster, pipes, and filter system as well as swimmer comfort. Your swimming pool chemicals should be checked and balanced at least once a week (after the first two week start-up period) in order to maintain a safe and long lasting pool. Depending on the amount of use and weather conditions, chemicals may need to be checked more often. *See reference guide for your pool capacity.*

In order to test the chemicals, you may choose to test them yourself, or take a sample to your local chemical supplier. If you test them yourself, here are a few guidelines:

- It is always a good idea to test and adjust water chemistry in the evening where sunlight and pool usage are at their ideal (lowest) levels.
- Test the water about a foot below the surface and away from skimmers or return lines.
- Make sure your test kit stays out of the sun, and has not expired

The following list describes the most important chemicals or measurements to keep in balance or add to your pool on a regular basis:

- **pH:** pH is a measurement of how acidic or basic the pool/spa water is. The proper pH level for a pool or spa is between 7.2 -7.8. Pools with a level below 7.2 tend to be acidic and aggressive. Pools with a level above 7.8 tend to be scale forming and may leave excess deposits on pool walls. The level 7.2-7.8 is also the ideal level for swimmer comfort. Levels out of this range may create skin or eye discomfort. *Lower pH with acids (Muriatic acid or sodium bisulfate), and raise pH with bases (sodium carbonate).*
- **Total Alkalinity:** The ability or capacity of water to resist changes in pH levels. For example, if the total alkalinity levels are in their proper range (80-120ppm), outside influences such as bather use or weather conditions will have little effect on pH levels. If the total alkalinity was out of range, the same weather or bather conditions will cause fluctuations in pH levels. *Raise TA levels with sodium bicarbonate. See pool professional if levels get too high.*
- **Chlorine:** Chlorine is the most popular method of sanitizing a swimming pool. The proper free chlorine level for a pool is between 1-3ppm. If levels fall below 1ppm, water discoloration and organic growth may occur. Sometimes it is necessary to raise the chlorine levels above 3ppm in order to kill off contaminants that may develop a resistance to regular chlorine levels. Your test kit should tell you when the proper time is to shock or super chlorinate your pool. *There are several types of chlorine (Liquid, granular or tablet forms). The amount you use will depend on what you use.*

- **Algicides:** Natural or synthetic substance used for killing or controlling algae. Refer to manufacturers recommendations for the amount and frequency needed. Different weather conditions, sanitizing methods or uses may affect the amount of algicide needed. *60% algicide or greater is recommended for summer use.*
- **Calcium Hardness:** The amount of calcium and magnesium dissolved in water. The ideal range for calcium hardness is between 200-500ppm. At levels below 200ppm (soft water), water tends to be aggressive. At levels above 500ppm, water tends to be saturated and calcium deposits may form on walls and equipment. *Increase calcium hardness with Calcium chloride. See pool professional if levels get too high*
- **Stain and scale controllers:** Stain and scale controllers should be used two to four times a year in order to prevent mineral stains. These chemicals gather the minerals and enable them to be filtered out. *This chemical should be added prior to pool closing, upon pool opening, and once or twice over the summer.*
- **Chlorine stabilizer (Conditioner):** A chemical that helps reduce the excess loss of chlorine in water due to the ultraviolet rays of the sun. Proper levels are between 40-120ppm. *In order to increase stabilizer levels, add cyanuric acid. To lower stabilizer levels, contact a pool professional.*

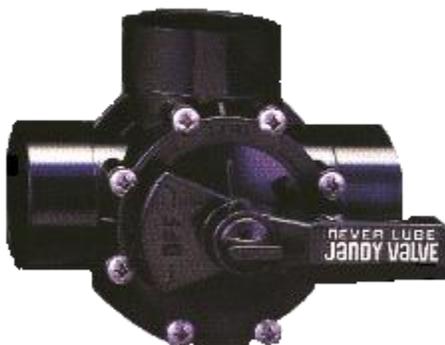
#### **IV. Seasonal Maintenance**

During the season, there will be a few tasks that should be taken care of from time to time. Even though pools these days are relatively easy to operate and maintain, there are a few things to keep an eye on.

- Check chemistry!!
- If you have a chlorine generating system, make sure the salt levels are between 2800 and 3400 ppm.
- During the season, you should run your pool filter 8-10 hours a day. This amount of time is generally sufficient in order to filter the entire body of water and maintain a clean pool. Excessively hot days, bad weather or excessive use may increase the need for extended cycles.
- Check skimmer baskets frequently to make sure that they are not blocked. The skimmer is a part of the filter system that collects debris on top of the pool surface. Also check the “weir”. The weir sits in the mouth of the skimmer and creates the draw that brings debris into the skimmer. If it seems like there is an extra amount of debris collecting on the pool surface, make sure the weir is in place.

- Check pump basket frequently to make sure it is not blocked. The pump basket is located in front of the pump and has a clear lid. To empty this basket, turn off the pump then remove the basket. After you have cleaned this basket and put it back in its place, turn the pump back on. It may take a few seconds or even minutes until the pump is pulling water through it again.
- Occasionally, air may build up inside the filter tank. To bleed this air out, turn the pump on, then turn the air relief valve counter-clockwise until water comes out.
- The filter will have a normal operating pressure upon start-up. Normal operating pressure is read when the filter is clean, all baskets are clean, and all valves are in their normal operating position. When the pressure gauge reads 10lbs above normal, it is time to backwash the filter. When the pressure is 3 or more lbs below normal, something may be clogging the intake lines, or stuck in the gauge itself. *See reference guide on how to backwash.*
- Occasionally, rodents may decide to invade your heater. It is a good idea to clean out the heater tray at least once a year. A shop vac normally does a good job.
- Check chemical feeder tubes (if equipped). Replace if cracked or brittle.
- Automatic pool cleaners should have their bags emptied at least once a week. If you notice your pool cleaner is slowing down, check the connection at the wall. Inside the connection is a screen, check to see if the screen is clogged. Pool cleaners normally only need to run 1-2 hours a day to keep the pool clean. *Remember to only run the pool cleaner when the filter pump is running.*
- Make sure the water level inside the pool is no lower than the middle of the tile. If the water level gets below this point, the skimmers could start to pull some air into the system.
- In some cases, you may decide to use the hand vacuum to clean the pool in those hard to reach places. *See reference guide to learn how to use the hand vacuum.*
- Brush walls and floor weekly to prevent algae growth.
- If you have a heater that uses propane, make sure your propane levels do not get too low. During the cool months, propane can get used up quickly.

**V. Valves (What to turn and where to turn it):**



Most of the swimming pools built these days have some kind of valve system which is used to create: water falls, balances between to bodies of water, greater suction from one location or more pressure at another. The following section will describe how to adjust your valves so that you can send the water in the proper direction.

Pools are built so that water can be pulled from the pool at certain locations, and sent back to certain locations. By adjusting the valves, we can adjust what water is being circulated, heated, or removed from the pool. Every pool built these days has at least one skimmer line, a main drain line, and a return line. Some may have additional skimmer lines, waterfall lines, and spa lines. In order to try to clarify the settings, the two main pool types will be divided into two separate sections.

- **Pool only:** The basic pool system normally has only one valve to adjust. It is on the suction side of the pump and diverts water between the main drain and the skimmer. The only reasons you may need to adjust this valve are to hand vacuum or to run the filter when the water level is too low. *Some systems are plumbed so that the main drain and the skimmer are together; therefore there is no way to divert between the two using a valve.*
  - Normal mode: All valves open
  - Hand vacuum mode: Close main drain line to maximize suction through the skimmer
  - Low water level mode: Close skimmer line
  
- **Pool/Spa combo:** The pool/spa set up is a little more involved. It makes it easier to understand if you remember water is being drawn from the pool or spa into the pump, out the pump and back to the pool or spa.
  - Normal mode: All valves open (both bodies of water heating)
  - Spa mode: Close pool suction lines and close pool return lines (spa heats up fast)
  - Pool mode: Close spa suction lines and close spa return lines
  - Spa fill/waterfall mode: Close spa suction lines and close pool return lines
  - Hand vacuum mode: Close all suction lines except one skimmer and open all return lines
  - Low water level mode: Close skimmer lines
  
- **Automated valve systems:** Some pool/spa combinations have an automatic valve control system. For these systems, certain modes are obtained by pushing a button on the control panel. *Please refer to your model's manufacturers' guide for a more in depth explanation of how to control your automated system.*

**VI. Commonly asked questions**

Q. When do most people winterize their pool?

A. Most people close their pools in September or October. It is not recommended to keep your pool open past November 1<sup>st</sup> unless otherwise stated by the pool builder or if you have a freeze protection device installed.

Q. When do most people open their pool?

A. Most people open their pools in April or May.

Q. How soon can we go in the pool after it has been chemically treated?

A. Since every pool is a little bit different, you will need to test the chemicals with your test kit to determine when it is safe to enter the water. When the chemicals are in their proper ranges, it is safe to enter the water.

Q. I can't seem to get my pH levels down, or they won't stay down.

A. For the first year after the pool is built or re-plastered, the pH levels in the pool will want to climb to the levels of the plaster's own pH. After the first year, the plaster should be fully cured, and you should be able to get a better handle on your pH levels. If you have a salt system on your pool, the pH will need to be lowered on a weekly basis. The chlorine that is produced by salt systems has a high pH.

## **Quick Reference Guide**

Length of time to run filter system per day	
Pool capacity	
Amount of DE required for filter	
Normal operating pressure for filter	
Proper salt level	

**Backwashing the filter:** When the pressure on the gauge reaches 10 lbs above normal, it is time to backwash the filter. To backwash filter:



### **Backwash valve**

1. Turn off pump
2. Roll out backwash hose located at bottom of filter
3. Open backwash valve by pushing down on the handle and turning it to backwash
4. Turn the pump back on and allow it to run until clear water comes out of the backwash hose (30 seconds to a minute)
5. Turn pump off
6. Turn handle back to filter
7. Turn pump on
8. Repeat steps 1-7 one more time
9. Add diatomaceous earth to one of the skimmers with the pump running to recoat the filter.
10. Pressure should be back to normal

**Hand Vacuuming the pool:** In order to hand vacuum the pool:

1. Adjust the valves so that only one skimmer is pulling water
2. Attach the vac head and hose to the pole
3. Submerge the vacuum and allow the hose to completely fill up with water (If air is in the hose, the vacuum will not work)
4. Remove the skimmer basket and stick the other end of the hose into the suction line at the bottom of the skimmer
5. After you are done vacuuming the pool, be sure to empty the pump basket. All the debris you vacuum will get caught in this basket



## **The Basics of Swimming Pool Operation and Maintenance**

For questions or service call...  
215-799-2294

Or visit our website at...  
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