

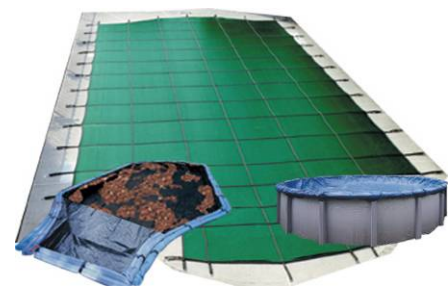
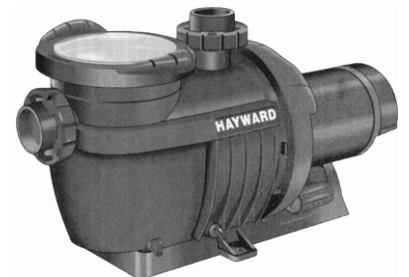
# The Comprehensive Guide To Swimming Pool Ownership



By Larry Couture, Jeff Grotte, and Michael Dewar

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## INTRODUCTION

Some of the best childhood memories, or the longest ones retained, will typically revolve around the family swimming pool. In many areas a swimming pool is needed just to cool off. Lately swimming pools have become an integral part of fitness or therapy.

This book is an attempt to save the reader numerous hours of time and frustration in the operation of their pool and is the collaborative effort of over 10 pool professionals with a combined 200 years and 20,000 swimming pools built and supported. This pool experience has come in the vinyl markets in the north (Minnesota), the gunnite markets in the desert (Arizona), and the moderate climate, service oriented geography of California. The book reflects, in every case, the swimming pool owner's perspective. As with all works of this nature, the information includes some philosophy but the reader can be assured the book's main purpose is to encourage swimming pool ownership and provide the first comprehensive guide to owning a swimming pool. We have looked for a document of this nature and it did not exist.

Whether you are a do-it-yourself or a hands free pool service client, we are sure – information in this book will make your swimming pool ownership a very pleasant experience.



# FIGURING OUT WHAT YOU OWN: SWIMMING POOL OVERVIEW

## Equipment Sheet (Circle or Fill-in)

NAME: \_\_\_\_\_ Phone \_\_\_\_\_

SITE ADDRESS: \_\_\_\_\_  
 Street City State Zip

SURFACE TYPE: **PLASTER** \_\_\_\_\_ **VINYL** \_\_\_\_\_ **FIBERGLASS** \_\_\_\_\_  
 Finish Type

DIMENSIONS: \_\_\_\_\_ IF FREE FORM: \_\_\_\_\_ Perimeter (in ft. or m)

GALLONS Est.: \_\_\_\_\_ MAX DEPTH: \_\_\_\_\_

FILTER TYPE: **SAND** | **D/E** | **CARTRIDGE(S)**  
 FILTER SIZE: 200 300 500 900 | 24 36 48 60 72 | 75 150 200 Other: \_\_\_\_\_

PUMP TYPE: ¼ HP 1.0HP 1½HP 2.0HP Other: \_\_\_\_\_

# SKIMMERS: 1 2 3 4 Other: \_\_\_\_\_

# JETS: 1 2 3 4 Other: \_\_\_\_\_

VACUUM TYPE: **Skimmer** **Robot** **Pressure Side Sweep** **Hand Vacuum Only**

VACUUM BRAND: \_\_\_\_\_

COVERS: Solar  With Reel  
 Winter  With Waterbags  
 Safety  Open Mash  
 Automatic  Below Track  
 Solid Mesh   
 Above Track

HEATER/HEAT PUMP: Natural Gas Propane Electric **HEAT PUMP**

HEATER SIZE IN BTU: 120 180 265 325 400 Other: \_\_\_\_\_  
 Brand

MAIN DRAINS: YES NO Antisuction 2 Main Drains

LIGHTING: IN-POOL PERIMETER LED FIBEROPTIC

AUTOMATED CONTROLS: JANDY COMPOOL PENTAIR INTERMATIC

ALTERNATIVE SANITIZERS: SALTWATER GENERATOR OZONE / OXYGEN IONIZATION IONIZATION / OXYGEN  
 Brand: \_\_\_\_\_

ATTACHED WATER FEATURE: SPA WATERFALL DIVING BOARD SLIDE

BUILDER (If Known): \_\_\_\_\_ PHONE: \_\_\_\_\_

OTHER NOTES: \_\_\_\_\_

**Complete this form before seeking advice or quote and bring to counter for computerized water analysis.**

## Inventory Your Pool: Chemicals on Hand

As you calculated the number of gallons in your pool, a complete overview form for the pool is found on the following page. Included are the most common sizes, styles, and brands. This form will be the most helpful when buying water in for testing or making upgrades to the pool.

<b>TEST KITS:</b>		Please circle if applicable			
	pH	Phenol Red		Bromethyl Blue	
Alkalinity	_____				
Sanitizer	_____	Cl	Br	Cu	NONE
Calcium Hardness	_____	YES	YES	YES	NONE
Cyanuric Acid	_____	YES	NO	NO	NONE
Meters (if any)	_____				NONE
<b>CHEMICALS:</b>					
	<b>pH UP</b>	Sodium Bicarbonate Soda Ash			
	<b>pH DOWN</b>	Sodium Bisulfate Muriatic Acid			
	<b>ALGAECIDE</b>	_____			Brand
	<b>SANITIZER</b>	_____			Chlorine
		_____			Bromine
		_____			Bacquacil
		_____			Other
	<b>SHOCK</b>	_____			Brand
		Chlorine	Non-Chlorine	Circle	
	<b>SCALE CONTROL</b>	_____			Brand
	<b>METAL REMOVER</b>	_____			Brand
	<b>CLARIFER</b>	_____			Brand
	<b>HARDNESS INCREASER</b>	_____			
	<b>BALANCE PACK</b>	_____			

# POOL VOLUME

To calculate the amount of water in your pool,  
insert the requested measurements in the correct equation.  
\*You will use this number to calculate your **CYCLE TIME**

### Rectangular Pool:

$$\begin{array}{|c|} \hline \text{LENGTH} \\ \hline \end{array}
 \times
 \begin{array}{|c|} \hline \text{WIDTH} \\ \hline \end{array}
 \times
 \begin{array}{|c|} \hline \text{AVG. DEPTH} \\ \hline \end{array}
 \times 7.5 =
 \begin{array}{|c|} \hline \text{GALLONS} \\ \hline \end{array}$$

### Circular Pool:

$$\begin{array}{|c|} \hline \text{DIAMETER} \\ \hline \end{array}
 \times
 \begin{array}{|c|} \hline \text{DIAMETER} \\ \hline \end{array}
 \times
 \begin{array}{|c|} \hline \text{AVG. DEPTH} \\ \hline \end{array}
 \times 5.9 =
 \begin{array}{|c|} \hline \text{GALLONS} \\ \hline \end{array}$$

### Oval Pool:

$$\begin{array}{|c|} \hline \text{MAX WIDTH} \\ \hline \end{array}
 \times
 \begin{array}{|c|} \hline \text{MAX WIDTH} \\ \hline \end{array}
 \times
 \begin{array}{|c|} \hline \text{AVG. DEPTH} \\ \hline \end{array}
 \times 5.9 =
 \begin{array}{|c|} \hline \text{GALLONS} \\ \hline \end{array}$$

# CYCLE TIME CALCULATION

$$\frac{\begin{array}{|c|} \hline \text{GALLONS} \\ \hline \end{array}}{\begin{array}{|c|} \hline \text{PUMP GPM}^* \\ \hline \end{array} \times 60} = \begin{array}{|c|} \hline \text{THIS IS YOUR CYCLE TIME} \\ \hline \end{array}$$

• To calculate your cycle time, enter the appropriate measurements into the equation.

\* Gallons Per Minute (GPM) can be found on the side of filter pump or written within pump instruction manual. Usually 55 or 70 GPM.

**EXAMPLE** If my pool is 40' x 20' with an average depth of 5', and a GPM of 70, then...

**40 x 20 x 5 x 7.5 = 30, 000 gallons** (use this number...)

**30,000 / (70 x 60) = 7.14 hour cycle** (about 7 hours, 8 minutes)

## **POOL TALK: GETTING READY**

### **Turnover Cycles**

Use the conversion charts on the following page to determine the time necessary for your pump and filter to completely cycle the water in your pool once. The sanitizer requires at least one complete cycle per day in order to maintain crystal-clear water. The time required for one complete cycle varies among pools and setting your pump and filter to run 1½ cycles (See Cycle Time Calculation). Running the pump during daylight hours is necessary to achieve good results.

### **What Causes Algae Problems?**

There are over 21,000 known varieties of algae! Algae spores constantly enter the pool, brought in by wind, rain or even contaminated swimsuits or equipment. When conditions are right, an algae bloom can occur seemingly overnight. These conditions include imbalanced water, warm temperatures, sunlight, and the presence of nitrates. Of course lack of proper filtration, circulation, and sanitation may be the primary causes of algae. A suction vacuum is highly recommended by most manufacturers, as is backwashing only after pressure rise.

Algae are living aquatic creatures that multiply rapidly in warm, sunny conditions. Containing chlorophyll, algae utilizes photosynthesis to grow. That is, they take in carbon dioxide and expend oxygen as a byproduct.

The two main problems with algae are, first, people do not want to go swimming, and second, it takes time and money to rid the water completely of algae. Algae itself is not harmful to swimmers, but pools with algae may also be residence to other pathogens.

Proper water balance and filter maintenance are necessary to prevent algae growth. Also regular brushing prevents dirt from harboring in the pores of your pool surface, where algae colonies like to start. The use of specialty chemicals or algaecides may be necessary as a back up to the sanitizer and existing filtration. Filtration upgrades will solve 99% of these problems.

### **Confirming Your Cycle**

Once you have calculated your turnover time you can confirm the number of operating daylight hours needed to properly filter your pool. Whenever the swimming pool does not look right, your pump and filter must operate 24/7 until the pool looks crystal clear. This assumes of course that your pump and filter are properly sized.

### **Visiting Your Pool Store**

We have enclosed pages four and five two comprehensive forms to give all of the information you need to visit a pool store. A completed form will allow the swimming pool professional to give you the proper advice.

## TESTING YOUR WATER: WEEKLY TESTING IS REQUIRED

Regardless of what sanitation method you choose, you must test the water every week and in desert climates at least twice per week between May and September if you wish to operate a crystal clear pool. The number of swimming pools that operate crystal clear 52 weeks in southern climates or 26 weeks in northern climates may be zero, but certainly 95 percent of them experience six to eight consecutive week runs of crystal clear water on a regular basis.

Unfortunately during these six to eight week periods both homeowners and pool services become complacent, particularly in the area of water testing. You must own and perform the following weekly tests if you seek the 52 week elusive goal of crystal clear pool water. Categorized by sanitizer and frequency of the test per their manufacturers.

### To Achieve 52 Weeks Crystal Clear:

	<b>Chlorine/ Bromine</b>	<b>SALT- Chlorine</b>	<b>Ionization</b>	<b>Ozone</b>
<b>FREE CL/BR</b>	Daily/Weekly	Weekly	NA	Weekly
<b>TOTAL CL/BR</b>	Daily/Weekly	Weekly	NA	Weekly
<b>pH</b>	Weekly	Weekly	Weekly	Weekly
<b>CH</b>	Quarterly	Quarterly	Annually	Quarterly
<b>aK</b>	Weekly	Monthly	NA	Weekly
<b>Cyanuric acid</b>	Monthly	Monthly	NA	Monthly
<b>Total Salinity</b>	NA	Monthly	NA	NA
<b>Phosphates</b>	Semi-Annually	Annually	Annually	Annually
<b>Copper</b>	Annually (to remove)	NA	Weekly	Annually

If you employ a pool service it is reasonable to request your weekly water test results, particularly if extra charges apply for chemical or extra maintenance issues. It is not reasonable to expect 365 days of crystal clear water, regardless of the price paid for weekly pool services or the sanitation method used.

If you seek the elusive 365 days be prepared to learn your pool, help your service, pay for or perform preventative maintenance and communicate with your suppliers regularly, not just when issues arise. The swimming pool industry has invested in water testing services which are excellent for problem solving but requires a weekly visit to the pool computer for best results. Use the inventory sheets in this book to receive the best advice and materials.

## UNDERSTANDING YOUR COMPUTERIZED WATER ANALYSIS

There are several factors for running a swimming pool that is balanced.

**PH:** Potential hydrogen is important for sanitation to work properly. For chlorine or bromine pools the ph needs to be maintained between 7.4 and 7.8. For Bacquacil the ph needs to be between 7.2 and 7.6. For alternative sanitizers like ionization 6.8 to 7.2 is appropriate. In all three of these cases you are actually running at neutral as chlorine raises the neutrality to 7.4.

**Calcium Hardness:** Calcium is also very important to running a swimming pool. For this reason, pools should not be filled with soft water. All pools should maintain a minimum of 200 ppm, with 400 ppm being ideal for ionization.

**Chlorine/Bromine:** Chlorine/Bromine needs to be measured for a chlorine/bromine based pool. The ideal level of sanitation is 1.5 ppm (one important note, chlorine loses its effectiveness if the temperature goes over 90 degrees).

**Copper:** Copper needs to be measured for ionized pools. The ideal level of sanitation is between 0.4 and 0.7 ppm if there is zero chlorine can be maintained at 0.4 ppm if free chlorine is 0.5ppm. Either number being higher can result in staining of the pool.

**Biguanide:** The ideal level of Biguanide for a Bacquacil pool is 30 to 50ppm. Hydrogen peroxide shock and algaecide also need to be added weekly.

**Alkalinity:** Alkalinity is a factor for chlorine, bromine or bacquacil pools. Proper alkalinity levels can help to stabilize the ph of the pool. Typically, this should measure between 80 and 120ppm.

**Phosphates:** Phosphates these can cause significant problems to running a pool properly. They ideally should measure 0ppm. If they measure less than 1000ppm then a product like Zero-Phos is effective at removing them. If over 1000ppm, then aluminum sulfate should be used to remove them. (See page 10.)

**TDS:** Total Dissolved Solids are measured as anything solid that can dissolve in water. If this level reaches a level of over 2000ppm then the pool needs to be drained and refilled.

### **CYA**

Cyanuric Acid (cyanide) is a stabilizer used to extend the life of chlorine. 35 is the ideal level. Not compatible with ozone or oxygen based sanitation. At a level of 100ppm there can be significant health effects so this level should be monitored.

### **Salt**

Sodium is often measured as a function of your TDS. Levels over 3000 can pit your concrete, ruin landscaping and give bacteria a place to hide as with high TDS levels generally.

## **PHOSPHATES: WILL FERTILIZE YOUR POOL**

The proper procedure for using aluminum sulfate on phosphate removal **when levels are over 1000** is as follows:

The ph must be at 7.4 or higher. Add 5lbs of aluminum sulfate per 10,000 gallons of water. Recirculate the water for 2 to 3 hours. Allow the pool to settle (approximately 18 to 36 hours), when the water is clear, vacuum to waste. Then rebalance your pool. This will knock the phosphates down to about 200 ppm so Phos Free will still need to be added when rebalancing.

They typically come from fertilizers in a variety of ways. They can be tracked into the pool by walking across a chemically treated lawn. They can blow into the pool from an airplane that is spraying a farmer's field. With the new eased up restrictions on water quality, they can even be found in your water supply that you are refilling the pool from. In recent years the new "clean air act" has changed air quality requirements for burning coal or refining petroleum.

Phosphate will create all kinds of issues for the pool that may seem unexplainable. A murkiness to the pool that won't go away, a fluorescent green pool, proper sanitation levels impossible to maintain, come and go algae blooms, these are all signs of phosphates in the pool.

Phosphates act as a food source for algae and will counteract all known sanitation methods. They also tend to load in certain types of Medias, like Zeolites, and can be very troublesome to remove. If you can locate the source of them, you have a chance of being able to eliminate them.

If they are found in your water supply, a carbon filter on the end of the hose, will keep them out of the pool. Avoiding walking on lawns that have been sprayed or covering the pool when fields are being sprayed will also help.

Whether your pool uses conventional chlorine or an alternative sanitizer, you must confirm phosphates at zero. There are 2 methods of removing phosphates from the water based on the level found. Phosphates are measured in parts per billion. At 1000 or less, a product like Phos Free will work on them. If they are over 1000 then aluminum sulfate will be required to knock them down to a level where Phos Free will work.

### **PHOSPHATES OVER 2,000 PPB – STEP 1**

#### **Procedure for aluminum sulfate removal:**

**Ph must be 7.4 or higher**

**Add 5 lbs. aluminum sulfate per 10,000 gallons of water**

**Let pool run in recirculate mode for 2 to 3 hours**

**Shut the pool off and allow it to settle until water is clear (18 to 36 hours)**

**Vacuum pool to waste**

**Add liquid phosphate remover to get them to zero.**

## PHOSPHATES... THE NEW POOL INDUSTRY BUZZWORD.

**Author:** Natural Chemistry® Newsletter – Vol. 11, March 2007, p. 2)

**Phone:** 1-800-753-1233

**URL:** <http://www.naturalchemistry.com/>

### **What is a phosphate?**

Phosphates have been around since long before any pools or spas were built. However, recently the detrimental impact of phosphates on pool and spa water has been proven, making phosphates the "buzzword" in the industry. Two of the most frequently asked questions on Natural Chemistry's pool tech line ... are, "what is phosphate and "how do phosphates get into my pool or spa?"

### **How are phosphates introduced into pools and spas?**

#### ***Some of the more common sources of phosphate contamination are:***

**SOURCE WATER** - many municipalities are now using varying forms of phosphate based chelating agents in an effort to preserve the water main lines from corrosion. These added chemicals **will** increase phosphate levels.

**POOL CHEMICALS** - many of the stain and scale inhibitors, as well as metal sequestering agents are phosphonic/phosphoric acid based. This can be confirmed by checking MSDS sheets and product labels. Once these products are added to a pool or spa they begin to deteriorate and will increase phosphate levels.

**ENVIRONMENT** - debris such as dust, pollen, dirt and leaves will contribute to phosphate levels in pool and spa water.

**FERTILIZERS** - both lawn and general agricultural fertilizers will increase phosphate levels.

**REMEMBER!** - Although phosphates from these sources are usually poly-phosphates or organically bound, all **will** degrade to "ortho" or reactive phosphates with time.

## DOES MY POOL LEAK?

The water for your swimming pool must always be above your skimmer inlet. While this may be stating the obvious some not so obvious issues can occur.

### Autofills

Automatically introduce water to the pool, often tapped into the irrigation or misting system. If a leak is suspected the first step is to disable the autofill by unplugging it or turning the valve.

### Evaporation

Based on an eight five foot perimeter pool, a week without rainfall, with high heat of 100°F-120°F (TX, AZ, and NV), and a 3" minimum – 6" maximum water loss. Without an autofill, add one or two inches of water. With moderate heat of 95°F-100°F the water loss is ½" minimum to 1½" maximum. With low heat of 70°F to 90°F the water loss is 0" minimum to ½" maximum.

A daily loss of ⅛" or less is hard to qualify but if the pool requires hose filling in moderate temperature or rainfall weeks it is likely leaking.

**Plaster Pool:** Look for holes, they often have brown/black stains

**Fiberglass Pool:** Look for cracking

**Vinyl Pool:** Watch for stair frame screws, skimmer, light gasket, and main drain gasket

### Leak to Level

In freeze climates the owner is logically afraid of a broken underground pipe. These are relatively rare and can be confirmed by allowing the pool to leak to level, with and without the pump running. A pressure test is ordered from a pool company after it is determined the pool will leak below the skimmer.

### Money saving search for leaks

Raise pool water two inches per day after allowing it to leak to level. Using your liquid Phenol red from your PH kit, Squirt a few drops at any jet rings, ladder, stair step or skimmer trim. The red liquid will be drawn to leak.

### Sonic Leak Detection

If you fail to find the leak yourself using the above methods, sonic leak detection through the nearest American Leak Detection local franchise is your next best move.

## TYPES OF IN-GROUND POOLS: PLASTER / VINYL / FIBERGLASS

### Plaster Pools

These pools are also referred to as plaster, granite, concrete, pebbletech, marble light, marcite, or diamondbrite pools. The dominant form of pool, particularly in the southern US and Europe is a rebar reinforced, plaster or concrete based shell and a top finish. The terms granite, pebbletech, marble light, and diamondbrite apply to the finish. Absent one of these finishes, a ceramic tile or glass pool should be cared for in the same manner. A growing trend to resurface these pools with fiberglass finish has been noticed over the last 12 years.

### Plaster Types:

- **Grey or White** – These are the least expensive, least life and highest maintenance surfaces. Basically, they are portland cement with or without a tint additive. For, longer life stone, glass accents and other durable items have raised the life of the finish and widely expanded the color choice.
- **Pebble Tec® (Small stones in plaster)** – The developer of the imitated small stone in the plaster has been Pebble Tec®. Offering a multi color, more water resistant finish. These finishes are more stain resistant and cost the builder at least three times more in terms of material and labor and are absolutely reflected in the cost of the pool or replaster work.



Examples of Pebble Tec® Finish

### Operating Issues:

1. These pools must never allow calcium hardness to fall below 200 ppm.
2. These pools must be brushed weekly in high season or employ a suction vacuum.
3. These pools will stain or bleach, require 7 to 10 year reapplication of the finish, and are the most amicable to attached custom water features.
4. These are the only pools which allow large, free form designs and multiple water features attached with one filtration and purification system.

Because they lend themselves to free form design, plaster pools will always be a dominant force in the swimming pool industry. In northern markets they are significantly more money to construct.

## Vinyl Pools

Since 1980, the vinyl liner has made substantial inroads to the swimming pool and has become the dominant choice. In the northern seasonal markets some have argued vinyl pools are crack resistant during a freeze, their 7 to 15 year window on vinyl replacement is less expensive than a replaster project and the vinyl surface is always friendly to the swimmer. Liner replacement is typically \$3000 to \$4000, less than a replaster in every North American market.

A growing number of vinyl builders have been found in Texas, California and Florida although the Fiberglass builders have made in-roads in the desert pools of Arizona and Nevada. Ninety plus percent of the Northern U.S. pools are lined with vinyl and these pools have begun showing up in Texas, Florida, and California.

### Operating Issues:

As with plaster pools the calcium hardness should be maintained above 200ppm and pH above 6.6 (7.2 if using chlorine or bromine). Sanitizer levels above 5.0ppm free chlorine can bleach the liner as can improper handling of chlorine or acid. They are more resistant to stains, less resistant to mold underneath the pool or damage from concentrated chemicals. Confirm all drainage flow from the house is directed away from the pool.

### Maintenance Issues:

Vinyl pools require little maintenance and have a 6 to 20 year life dependant on water chemistry. Liners are replaced at a cost of \$3,000 to \$4,000 and come in hundreds of colors. If your liner pool is built in clay (vs. sand) soil environment, proper back filling and drainage are needed to keep water from forming under the liner and giving you water mold issues.

Make certain ALL drainpipes are pointed away from the pool. If water is running toward your pool from the neighbor's higher elevation house, installing a French drain system may be necessary.

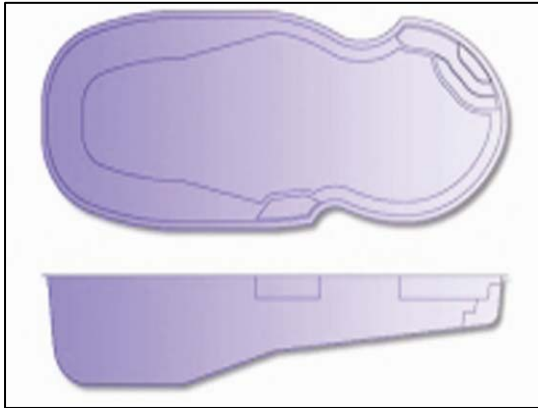
Vinyl pools do not require weekly brushing to avoid algae in high season but do have other issues. Shocking the pool with chlorine must be done with care to avoid bleaching and spotting. Distribute shock (liquid or solid) around the pool and emphasize the deep end. Dilute liquid acid with water in five gallon bucket and "pool" it in the deep end of the pool when adjusting pH down. Keep calcium above 200 ppm and pH above 6.6 to avoid the liner becoming brittle before its ten year life.

## Fiberglass Pools

Perhaps the fastest growing surface choice is a fiberglass pool. This trend is consistent with pools in general getting smaller and not having diving boards or deep ends. The entire shell has been trucked in as one piece so the size is predetermined and freight expenses along with road restrictions limit the size.

### Operating Issues:

The fiberglass pool will generally require less maintenance if it has been properly installed, whether it is an entire fiberglass shell or fiberglass applied over plaster. The smooth source will not usually require brushing.



### Maintenance Issues:

Keeping calcium above 200 ppm and avoiding high sanitizer levels will keep this surface from staining or spotting. Fiberglass owners with well water may wish to put an iron filter on their outdoor swimming pool feed line. Use Vitamin C tablets to remove spots or granular ascorbic acid if it is available, no more than **one kilogram** per 10,000 gallons.

### Stain Spot Removal

Ascorbic acid or pure vitamin C is the best method to remove black or brown spots from any fiberglass surface. The proper dosage is **one kilogram** per 10,000 gallons or a small quantity at located at the spotted area.

**Note:** Any pool using carbon dioxide must stop the co2 for three days prior using ascorbic acid.

## **MAINTENANCE ITEMS: REGARDLESS OF POOL SURFACE**

### **Weekly Tasks for All Pools**

- TEST PH
- TEST SANITIZER
- EMPTY SKIMMER BASKET
- EMPTY PUMP BASKET
- VACUUM ALL LEAVES
- CONSIDER BACKWASH if pressure has risen on filter. Clean the cartridge.

### **Annual Maintenance Items: Tests**

- TEST PHOSPHATES AND REMOVE w/CHEMICAL.
- TEST CALCIUM HARDNESS AND ADJUST
- TEST CYANURIC ACID ON CHLORINE POOL

### **Annual Maintenance Items: Filter**

- REPLACE CARTRIDGE (12 TO 24 months life)
- SOAK DE GRIDS IN ACID/WATER (5 parts water, 1 part acid)
- CHECK BED DEPTH ON SAND FILTER ANNUALLY (2-3 in Southern markets, 1-2 times in Northern markets):
  - Sand
  - ZEOLite
  - GLASS

(Filter bed depth should be six to eight inches from the top of the filter and, if short, will result in murky water and/or increased chemical use.)

In southern pools these items will result in extra charges from the service. With northern pools they can be ordered with an opening or closing and also involve charges.

## FILTERS: THE KEY TO TIME and CHEMICAL SAVINGS

Three basic types of filters exist for both above ground and in-ground swimming pools:

- Sand Filter
- Diatomaceous Earth
- Cartridge

It is important to confirm the size of filter is adequate for your pool and your pool pump is rated for your filter. Generally the filter cannot be oversized, in other words the bigger the better. An undersized filter will easily double your chemical use, double your time spent on water chemistry and give you many days of murky water. Very few above ground pools are sold with an adequate filter.

Sand Filter Size	Maximum U. S. Gallons
180 LBS	9,000
200 LBS	12,000
300 LBS	26,000
500 LBS	36,000
600 LBS	50,000
900 LBS	75,000

Pools with inadequate filters can either add a second filter or increase the size by replacing an existing filter. In the case of sand filters an upgrade in the media itself may permit a marginally sized filter to successfully operate the pool. Media options will result in a specific micron removal with a properly sized pump.

Sand Filter Media Options	Microns Filtered
Quartz Silica Sand	50
Zeolite	2 – 10*
Glass Media	2 – 5*

\*With proper horsepower / filter size combination

In soft water areas and with pools using a mineral purifier, many zeolites sold will prove incompatible. Only testing after purchase and install, remove calcium hardness or copper, silver or zinc from your pool. All zeolites are incompatible with metal remover, flocculant, and clarifier and will load phosphate if it is contained in your rainfall or source water. The manufacturers do not acknowledge these issues and they do not accept returns.

The use of glass began around 2004 and is the most expensive option with both the lowest micron rating and longest life of the media itself. Glass is available in either multi color or white, and may or may not come pre-sterilized. Some of these manufacturers do take returns and offer money-back guarantees.

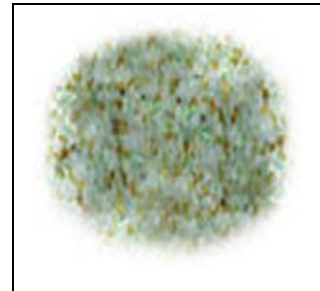
<b>SAND FILTER TROUBLESHOOTING CHART</b>	
<b>PROBLEM</b>	<b>PROBABLE FIX</b>
Valve handle is hard to move	Spider "O" ring
Water trickles out backwash hose	Spider "O" ring
Sand or media comes out jets	Dirty filter / Broken distributor
Sand or media comes out hose	Bent or Broken



Sand



Zeolite



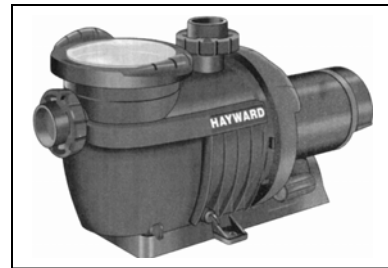
Glass

If any of these Medias are found in the pool or backwash site glass; make sure that certain media have been installed properly with a pea gravel bed fully covering the laterals.

## PUMPS

### The 1 HP Rule

The HP rating of the swimming pool pump is most critical in successful operation of the pool and specific accessories. The most common misconception as consumers update pools with aftermarket pumps is that a 2 HP pump is superior to a 1 HP pump. A 2 HP pump will not function with a 300 LB sand filter, a 48 sq ft DE or a 53 square foot cartridge, the most popular builder sizes.



All pumps have a GPM rating as do the filters. A 72 GPM 1 HP pump is the proper rating for the aforementioned filters and a 96 GPM 2HP pump will require at least a 600 lb sand filter or a 72 square feet DE filter.

While subtle issues exist related to the plumbing manifolds (1.5” pipe vs. 2” pipe), total feet of pipe between skimmer and the pump is also a consideration.

The exception to this are accessory water features and in floor cleaning systems, usually new construction issues only. The trend is to incorporate both a separate pump and in many cases a separate filter, always required for more in floor cleaning systems.

Variable flow pumps, “Intelligent” engineering as the manufacturers call it, are now being marketed all through the U.S. mechanical track record and claimed energy savings are nebulous at best.

Two operating issues need to be considered beyond HP and variable speed or flow analysis:

- 1) The pool must circulate during daylight hours since algae are dormant at night.
- 2) Timing systems require the pool owner to be able to reprime their pump on occasion or pay for a service call if the pool fails to restart.

Many builders run the pump and filter 24 hours to avoid these issues. This “off peak” circulation adds between \$10 and \$20 per month to the monthly electric bill at average U.S. rates.

The leading North American swimming pool pump manufacturers are Hayward, Sta-Rite, Pentair, Jandy and Jacuzzi, all with service and parts networks to support their customers.

A pump failing normally overheats (shutting the pool off), trips the breaker or cavities the flow. Normally this gives homeowners some advance warning. The pump consists of an electric motor, wet end and basket. Because rebuilding the motor requires two trips and usually an outside vendor and those two trips, most pool professionals will recommend replacement of the pump, or at least a brand new motor. Do it yourselfers may save half of their money or more with a motor rebuild only. They are unlikely to get the same useful life of replacement.

## VACUUMS

### Hand Vacuum:

**Skimmer mount:** TOP

### Suction Side:

**Skimmer Mount:** FACE

**Pressure Side Sweep:** Separate Pump

If your pool has one skimmer only, vacuums such as Baracuda this is not the vacuum for your pool. If you have a DE filter this is not the vacuum for your pool.



### Robotic with Countdown Timer:

These DC voltage driven vacuums are the most expensive and arguably the best.

### KREEPY KRAULEY

### In-Floor and Pop-Up:

Proper Filter to pump ratios must be checked on any in-floor system or “pop up cleaning.”



### Operation

### Hand Vacuum:

**Set up:** The pool pole attaches to the vacuum head; the head is attached to one of skimmers. Enough hose is required to reach the longest end from the skimmer, or you may move from one skimmer to the other. You must partially close the skimmer you are not mounting the vacuum to for the best results. Vacuum through a filter. Vacuum to waste.

If your pool has two skimmers, close the one not supporting the vacuum one half turn to maximize your suction.



### DOLPHIN OR TIGERSHARK



# POOL LIGHTING:

## Fiber Optics



## Light with no electricity or heat

Fiberstars fiber optic lighting systems are safe and affordable. Featuring metal halide technology, their fiber optic lighting systems offer you the same lamp technology you find in many luxury cars today. Fiberstars – now part of Energy Focus Incorporated – offers the utmost quality in manufacturing, engineering and safety.

Fiberstars offer synchronized fiber optic units for multiple light installations. They also have the ability to combine our exclusive line of fiber optics with their new [JAZZ®](#) light. Run the two systems independently for a dramatic, multi-colored effect or synchronize them to enjoy the full ambiance of each color. Add [Water Features](#) for an even more impressive creation.

## The first, brightest and world's number one choice for automated color-changing spa lights

Automated color in a compact package? Now you can enjoy the dramatic color lighting effects of SAM® in your spa. SAL® Spectrum AquaLight® produces the same revolutionary 7-color spectrum as the SAM light, but it comes in a compact package. Especially designed for spas, SAL provides breathtaking color at the flip of a switch just like SAM. And if you have a pool/spa combination, you'll be glad to know that SAL easily synchronizes with SAM and PG2000® FreedomSync models to provide a uniform display of ever-changing aquatic color.



## INSTALLING NEW MEDIA

Many brands of sand filters require a pea gravel base to cover the water distribution laterals (or fingers) and this is not well documented by various replacement media sellers. Failure to cover the laterals with gravel on all Pentair, Jacuzzi or Sta-Rite filters will result in the sand, zeolite or glass plugging the razor like openings and after two or three months media will pass to the pool, filter bed depth will fall, the filter media will channel NO AMOUNT of chemical will clear the pool for more than a few days.



### SAND FILTER LATERAL

Pea Gravel Must Cover All Laterals Fully with Glass or Zeolite.

Glass manufacturers, even though their material is machined to a sugar-like consistency are universal in their pea gravel bed requirement. U.S. ZEOLite supplies do not document their gravel. Only the British and Australian ZEOLites come with a stone size large enough to cover the laterals on every brand.

## REPLACING THE SAND

# INSTALLATION INSTRUCTIONS



1. Remove tank cover. Cover the exposed vertical pipe.



2. Remove the sand; use of wet vacuum is helpful.



3. Check all piping or correct fit and defects. Cover laterals w/pea gravel or glass bead base.



4. Add balance of fine glass media. Put back the tank cover and introduce water.



5. Backwash until water is clear; much less time than sand or ZEOLite. **OR just put filter in service if you are using sterile glass.**

**TOLL FREE SUPPORT AT 1-800-ION-SWIM**  
**Video Testimonials at [www.ecosmarte.com](http://www.ecosmarte.com)**

GLASS, ZEOLite OR 20 Quartz Silica Sand (Regular Sand Will Not Work)

Sand Every 3 yrs (Acid wash each year)

ZEOLite Every 3 to 5 yrs (Bed depth check each year)

GLASS Every 5 yrs (Backwash w/pressure rise or every five weeks, whichever is first)

**(Bacquacil users will need to change sand or Zeolite every year)**

## BACKWASHING YOUR SAND FILTER

Sand filters must plug and have pressure rise on their gauge to remove small particles from the pool. A functional pressure gauge is necessary to successfully operate the pool. Pools with 1970 to 1980 **slide valves** instead of multiport valves should upgrade the slide valve to a 6 way multiport as their most cost effective pool purchase they can make.

Without a rinse feature the slide valve is incapable of removing algae spore, phosphate, and human cells from water. Many slide valve owners report "dog breath" odors near their filter or eventually in the entire pool.

Backwashing the pool should occur after 6 lb pressure rise on the gauge and prior to a 10 lb rise over starting pressure. The starting pressure must be recorded after a proper backwash. The gauge can be marked with a waterproof marker so any pool professional or family member will know the operating status of your filter.

The proper method is 2 minutes backwash followed by 30 seconds rinse AND a second 2 minute backwash followed by rinse to clear in the small site glass at the top of your filter. **YOU MUST TURN THE PUMP OFF** between each movement on the multiport valve or you will damage the "spider" o-ring inside the valve. The multiport valve should easily and distinctly lock into position.

When finished with the second backwash/rinse cycle the pump should be turned off and the valve returned to the "filter" position. The pool should be operating at your starting pressure. The "recirculate" and "waste" settings are covered under "Problem Solving" and vacuum chapters of this book.

Backwashing too frequently will result in more chemical use and less water clarity with a sand filter, especially if zeolite or glass media is used. Any sand filtered pool that has gone four weeks without a pressure rise should backwash the pool regardless of pool clarity.

### TWO COMPLETE CYCLES: FULLY PURGE THE MEDIA



1. Turn off pool pump
2. Set multiport valve to "Backwash"
3. Turn on pool pump for 2½ minutes
4. Turn off pool pump
5. Set multiport valve to "Rinse". Rinse to clear in site glass (15 to 45 seconds)
6. Repeat the process

## DE BACKWASHING: A DIATOMACEOUS EARTH FILTER

The diatomaceous earth filter for backwashing purposes operates on a similar principle to sand but will not require a pressure rise. The maximum pressure rise, usually 12-16 lbs is more important with this platform to avoid damage to the filter itself and early backwashing will not hurt the overall filter performance. It may be prudent, for example, to backwash the filter if the gauge has a 4 lb rise and the owners or pool service will be gone for several days. Too much back washing with a DE filter is not a problem as with sand filters assuming proper procedures are followed.

The use of the multiport valve is identical to a sand filter; you must turn off the pump between each valve handle movement. The DE platform requires **three** two minute backwashes followed by rinse to clear, usually less than 30 seconds.

The backwash of a DE filter is designed to knock down all powder and contaminant from the grids and slapping (like the bottom side of a newborn infant) the side of the filter after each rinse cycle will yield optimum results as dirty powder drops to the bottom of the filter to be rinsed out.



**Pentair Multiport Valve**

Failure to get all used powder the bottom of the filter will not allow new powder to coat the grids evenly. At least twice per year the grids must be removed and soaked for trouble free performance. A one hour soak in five parts water, one part muriatic acid and 1 LB TSP (Trisodium Phosphate). It is usually a good idea to hire a pool professional if this is your first swimming pool or your first D/E filter.

D/E FILTER TROUBLESHOOTING CHART	
SYMPTOM	CAUSE
Powder in the pool:	<ul style="list-style-type: none"> <li>Hole in grids</li> <li>Valve to separation tank is faulty or open</li> <li>To much powder put in the filter</li> </ul>
"Murky" water or oil slick:	<ul style="list-style-type: none"> <li>Not enough powder</li> <li>Grids need to be cleaned</li> <li>Grid assembly is cracked</li> <li>Breather cap plugged</li> </ul>



The 60 sq. ft. DE Filter typically contains six or seven fabric "grids" that must be perfectly maintained with the carriage assembly and grids soaked. The filter must be reassembled squarely and with even tension on the cartridge.

## **ALTERNATIVE SANITIZERS**

### **Chemicals**

Chlorine is the dominant form of pool sanitation but Bromine, Soft Swim, Bacquacil, and Sodium Tetraborate sanitation has a statistical presence.

Those pools using an alternative form of chemical sanitation will most likely be required to drain the pool to convert back to chlorine or install an alternative sanitizing device. The number of alternative chemical pools is falling dramatically while the percentage of pools with a device is increasing.

Bromine users will operate the pool testing free bromine, total bromine, pH, calcium hardness and total alkalinity, all critical as with chlorine.

Bromine users will typically use non-chlorine shock to respond to cloudy water and often need weekly algaecide treatment.

Bromine salts themselves typically cloud water and movement to a copper sanitizing device will require draining the pool to avoid copper salts which can be toxic as well as cloud the water.

Bromine has better microbe kill rates on hot water (versus chlorine), has become the dominant sanitizer for spas but very few pool companies inventory the larger packaging to support a swimming pool or employ the expertise to operate one.

### **Bacquacil (and private label bioguanides such as Soft Swim)**

By far the dominant chemical other than chlorine in swimming pools is Bacquacil. The sanitation chemical itself (and the shock) is considerably less irritating and is more expensive than chlorine, requires regular algaecide supplement and annual filter media change out but does provide some economies on alkalinity up and calcium hardness increase. Bacquacil is much less corrosive than chlorine or bromine, although some evidence exists that each year the pool water is in the pool, the more sanitation chemical is required regardless of weather. Bacquacil users should consider draining and refilling the pool (in addition to filter media change out) every 3 to 5 years instead of the 7 to 10 year window with chlorine.

### **Sodium Tetraborate Pools: PROTEAM**

These pools are referenced because a statistical presence exists. The manufacturer of this patented system, The John Girvam Company in Florida should be contacted directly for assistance in operating these pools and updating proprietary test kits. Materials are generally shipped from Florida.

## ALTERNATIVE SANITIZING DEVICES

Numerous alternative devices, many dating back to the late 1980s exist to reduce or eliminate the use of certain pool chemicals. Many of them completely eliminate the use of chlorine stabilizer, (cyanuric acid) and the obvious human health issues.

### Ionization

The oldest methods involve copper or copper/silver ionization using ionic metals to kill algae, bacteria and virus. Early Roman fountains and modern day wishing wells easily demonstrate the water clarity achieved from the stable part per million metal residuals. NASA legitimized this science in the 1960s by using ionization on three week Apollo missions to the moon when fear of moon microbes was tantamount. Only since 1999 have efficacy studies confirmed superior kill rates on Legionella, Polio Virus, Ecoli and Coliform with the use of ionization. The issues, however, revolve around staining and the need for oxidation.

### Ionization / Oxygen and Ionization / Ozone

The problem in swimming pool applications however is that ionization alone does not address body oils, uric acid, and other organics brought into the water by swimmers. Therefore an oxidation supplement or method is required.

The less expensive ionization products (\$800-\$1400) recommend the use of household bleach or non- chlorine shock on a regular basis to accomplish the needed oxidation (Caribbean Clear, Pioneer, Sigma, Challenger, Lifeguard). The more sophisticated and successful manufacturers will incorporate a second device (ozone or oxygen generators) to eliminate the regular use of halogen chemicals (Clearwater, Superior Aqua, Ecosmarte). These Dual systems, while not necessarily doubling the cost (\$1900-\$4500) should be scrutinized, particularly if ozone is used to ensure proper sizing based on both the size of the pool and projected swimmer volume. Tens of thousands of pools operate without regular chemical to the pool a fact that North American pool professionals have acknowledged only after Wal-Mart, Sam's Club and Canadian Tire garnered over 30% of the swimming pool chemical business.



### Ozone

Has been accepted chemical reduction standard in water treatment since the early 1900's. The short life of the ozone, however, makes both oxidation supplement and algacide use a necessity. The main problem with ozone generators in residential applications is the cost of electricity and element replacement. (Residential ozone generators require 24 hour circulation and annual bulb/element replacement)

Ozone generators are rated in grams per hour and a 2-3 gram output is required to have an impact on the chemical demand of the pool. As with salt chlorine generators, ozone devices require high amperage AC voltage to operate.

## AUTOCOVERS: TURN THE KEY and POOL IS COVERED

A growing trend to cover pools with a retractable cover has occurred in North America. If your pool has such a cover and you are experiencing issues the following troubleshooting guide has been compiled using information from manufacturers.

<b>TROUBLESHOOTING GUIDE: AUTOCOVERS</b>		
<b>Symptom</b>	<b>Problem</b>	<b>Solution</b>
<b>Cover will not move forward or will not reverse</b>	<ol style="list-style-type: none"> <li>1. Circuit breaker or GFI is tripped</li> <li>2. Water on cover</li> <li>3. Water accumulated between roll-up tube and pool</li> <li>4. Cover adhering to deck</li> <li>5. Torque limiter loose</li> <li>6. Motor needs service</li> </ol>	<ol style="list-style-type: none"> <li>1. Reset circuit breaker</li> <li>2. Pump water from cover</li> <li>3. Sweep water off cover</li> <li>4. Lift cover and billow air under cover. Use replaceable welcome mat, etc., to break deck adhesion</li> <li>5. Tighten both torque-limiter bolts ½ revolution until it engages</li> <li>6. Call for service</li> </ol>
<b>Water leaking onto cover</b>	<ol style="list-style-type: none"> <li>1. Cover caught on something sharp</li> <li>2. Abrasion pinhole</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove sharp object and use patch kit to repair</li> </ol>
<b>Cover retracts out of square (Some unevenness may be unavoidable due to pool configuration)</b>	<ol style="list-style-type: none"> <li>1. Rope length is unequal</li> <li>2. Uneven drag on cover as it retracts off pool</li> </ol>	<ol style="list-style-type: none"> <li>1. Re-pin the rope onto the rope reel so the extra rope around the reels is exactly the same on both sides</li> <li>2. Tighten rope reel brakes slightly. Do not overtighten</li> </ol>
<b>Cover not even at end of pool</b>	<ol style="list-style-type: none"> <li>1. Rope length is unequal</li> </ol>	<ol style="list-style-type: none"> <li>1. Re-pin the rope onto the rope reel so the extra rope around the reels is exactly the same on both sides</li> </ol>
<b>Cover seems to be running under stress</b>	<ol style="list-style-type: none"> <li>1. Excess friction during operation</li> <li>2. Cover adhering to deck</li> <li>3. Debris in housing</li> <li>4. Cover too tight</li> <li>5. Brake too tight</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean guides with hose. Clean all turning parts</li> <li>2. Billow cover by lifting fabric to break adhesion</li> <li>3. Clean housing of debris</li> <li>4. Raise water level to mid-tile or replace cover</li> <li>5. Loosen brake</li> </ol>

Adding a retractable cover to an existing pool is expensive, although energy and water chemistry savings can be achieved. There are two types of covers, each either electric or hydraulic.

### **Top Track**

Track is mounted in the concrete deck. This is the only retrofit option unless you are prepared to replace your concrete deck.

### **Below Track**

Track is built under the concrete deck with no exposed runners, over with a cantilevered edge..

Without entering into the debate it is not wise to use these covers as winter covers in northern freeze climate, despite manufacturers' claims. A fabric replacement due to an ice tear is \$3,500 to \$5,000, excluded from their warranties. Investing \$1,500 to \$4,000 in a true safety cover is the idea way to winterize an autocover pool, extending the life and simplifying the maintenance. Leaf stains accumulated in the fall can also ruin the appearance.

## **OPERATING ISSUES**

### **Cover Pump**

A small sump pump is required to pump water off of the cover, especially before opening it. A leaf blower or pressure washer also simplifies clean up.

The manufacturers that recommend their autocovers for winter use expect the cover to be regularly pumped as water accumulates and before ice forms. They also expect you to pump it as ice melts. The fabric itself will become very dirty over winter month and must be cleaned each spring.

### **Sun Light**

It is a good idea to expose your pool to the UV frequently regardless of the sanitation methods used. Saltwater chlorine generators and ozone generators will destroy both the fabric and the track if the cover is not opened every day.

### **Heating the pool**

Keep the cover closed and realize your energy saving benefit with the autocover. Generally, two to four hours with a properly sized heater will raise the pool water temperature for planned swimming events. This permits the heater to be turned off or down on days when the homeowner knows there will be unlikely use of the pool.

### **Load Bearing Covers (major remodel)**

## **WINTER CLOSING**

### **Closing Northern Pools - Frozen Water**

1. Test copper and pH. Lower pH to the lowest acceptable range. Raise sanitizer to the highest acceptable range.

### **Day of Closing**

1. Drain water below skimmer level. You can achieve this by running your pump to waste through only the main drain.
2. Turn off pump. Disconnect power to Electronic Control Box and remove lead wires from chamber. Store Box indoors for the winter.
3. Lay out all winterization hardware (caps, Gizmos, etc.).
4. Unscrew return jets, stand-by with jet plugs.

### **Return Lines**

1. Twist off ECOsmarte Electrode Chamber (store indoors). The 12" gap will be your "blow spot."
2. Using a shop-vacuum or other power blower, blow toward the return side of the piping from the "blow spot" with all returns open.
3. Close all return valves. Using the winter plugs, plug all jets finger tight except the nearest jet to the pump. Open return line nearest pump and blow air through that line, from the "blow spot." Repeat this procedure for each return line, re-plugging each jet after water is purged.
4. Carefully pour one gallon RV Anti-Freeze into the return side of the piping (most likely from the "blow spot"); blow Anti-Freeze through with shop-vacuum until you can see anti-freeze come out of the intended jet. Repeat this procedure for each line starting with the furthest jet and working toward the pump.

### **Prior to Suction Side Winterization**

1. Remove drain plug from hair and lint basket (sump). Allow to drain completely.
2. Remove drain cap from filter (if sand filter, remove smaller of two caps).

### **Skimmers**

1. Close skimmer and main drain valves.
2. Working from the suction side of your pool piping, open and blow out skimmers, one at a time, from the nearest skimmer to the furthest. Close skimmer valves after blowing.
3. Pour one gallon RV Anti-Freeze directly into each skimmer.
4. Plug skimmers. If Gizmo is not used, leave an empty plastic Anti-Freeze jug in skimmer cavity (plastic jug will absorb winter expansion).

### **Main Drain**

1. With skimmer valves closed, open main drain valve.
2. Open hair and lint basket (sump) at pump. Remove basket. Replace drain plug.
3. Pour approximately two gallons of RV Anti-Freeze into hair and lint basket. Close basket cover.
4. Blow from suction side of "blow spot" with main drain valve open, until you can see small trace of Anti-Freeze entering the pool.
5. Close valve quickly.

## SOUTHERN POOL CLOSING PROCEDURE

If you are located in a region where freezing water is not a concern, then lower pH to 7.2 (neutral) and raise sanitizer levels. There is no need to run the pump and filter everyday. You must however run the pool if a frost warning is issued. Southern pool owners may adjust pH every 2 or 3 weeks in a non-circulating pool for maximum control.

Southern Pool owners will use the auto cover in their winterization strategy. "Swamping" a southern pool and cleaning it up in the spring makes little sense and annoys the neighbors.

### Miscellaneous

- Stuff rag or sock in each end of "blow spot". Rubber bind or duct-tape rags in place.
- If you have a slide, water-powered vacuum (Polaris, Kreepy Krauly, etc.), or water-fill hose installed on your pool they will need to be blown out and filled with Anti-Freeze. Use above procedure in most cases. Some slides, however, may need to be blown from the spot of disconnection.
- Set sand filter 7-way Valve to the "Winter" or "Closed" position.
- Remove ladder and railings. Lift cover plate and unfasten 7/16" or 1/2" bolts.
- If diving board is greater than 8' long and snow is expected, remove and store inside for the winter.
- Cover pool with winter cover. If water bag cover is used, fill water bags half-full to prevent winter cracking. Also, allow cover's slack to fall into pool and anchor with as little on deck as possible (1 to 2 feet is ideal). This will prevent the cover from collapsing into the pool under a load of snow.

### Safety Option



This load bearing cover allows the indoor pool to become a party room when the pool is not in use.

## SAFETY OPTIONS



A safety cover, capable of supporting a deer, child, or moose can be starched. Merlin Industries® **Smart Mesh™** allows only water to pass through the cover. The straps allow the cover to rise if the ice rises and the anchors mount flush to the deck during swimming season.

### **Winterizing: Autocovers are not true safety or winter covers**

Regardless of whether you own an above or below track auto cover you do not want the cleaning, fabric or track replacement that occurs in northern climates from ice damage. Even those manufacturers who recommend this usage expect you to pump off surplus water. An ice tear in the fabric sells for \$4,000, cleaning the cover without the winter accumulated dirt and tree tannins is also an easier plan for owners in northern markets.



### **TOP TRACK REQUIRED ON FREE FORM POOLS**



**BELOW TRACK IS OPTIMUM FOR RECTANGULAR POOL**

**Attractive cantilever decking as well as a concrete lid system to hide the tracks.  
Below track autocover models permit retrofitting. This can occur with a liner and or  
concrete deck replacement.**

## MANUFACTURERS and THEIR CONTACT INFORMATION

<b>Manufacturer</b>	<b>Product Categories</b>
3M/Industrial Business Phone: (651) 733-6486	Adhesives, Concrete
A.O. Smith Phone: (937) 667-2431 <a href="http://www.aosmithmotors.com">www.aosmithmotors.com</a>	Pump Motors
ABER Hot Tub Mfg. Phone: (800) 263-7727 <a href="http://www.aberhottubs.com">www.aberhottubs.com</a>	Spas
Acu-Trol Phone: (800) 273-4667 <a href="http://www.acu-trol.com">www.acu-trol.com</a>	Chemical Controllers, Controls, Programmable Controls, Flow, pH ORP Meters
Acura Spa Systems, Inc. Phone: (951) 684-6667 <a href="http://www.acuraspa.com">www.acuraspa.com</a>	Electromechanical Controls, Spa Heaters, Spa Pillows, Spa Pumps
Air Energy Heat Pumps Phone: (800) 334-4328 <a href="http://www.air-energy.com">www.air-energy.com</a>	Heat Pumps, Above-Ground Pool Heaters, Spa & Hot Tub Heaters
Alden Leeds, Inc. Phone: (800) 822-5387 <a href="http://www.aldenleeds.com">www.aldenleeds.com</a>	Algaecides, Antifreeze, Bromine, Pool & Spa Chemicals
Aldrich Co. Phone: (309) 695-2311 <a href="http://www.aldrichco.com">www.aldrichco.com</a>	In-Ground Pool Heaters, Spa & Hot Tub Heaters
All Valley Solar Phone: (323) 850-0720 <a href="http://www.allvalleysolar.com">www.allvalleysolar.com</a>	Solar Equipment
ALL-PRO a Scheu Co. Phone: (800) 325-7057 <a href="http://www.allpro-heaters.com">www.allpro-heaters.com</a>	Above-Ground Pool Heaters, Heaters Accessories
ALPS Spas Phone: (800) 733-7665 <a href="http://www.alps-spas.com">www.alps-spas.com</a>	Above-Ground Pool, In-Ground Vinyl Liner, Portable Spa
American Leak Detection, Inc. Phone: (800) 755-6697 <a href="http://www.americanleakdetection.com">www.americanleakdetection.com</a>	Leak Detection, Leak Repair
Aqua Creek Products, LLC Phone: (888) 687-3552 <a href="http://www.aquacreek.com">www.aquacreek.com</a>	Grate Drain Covers, Pool Filters, In-Ground Pool Steps

Aqua Jet, LLC Phone: (800) 337-5032 <a href="http://www.aquajet.cc">www.aquajet.cc</a>	Automatic Pool Cleaners, Robotic
Aqua Products, Inc. Phone: (800) 221-1750 <a href="http://www.aquaproducts.com/aqua">www.aquaproducts.com/aqua</a>	Automatic Pool Cleaners, Robotic Pool Equipment
Aqua Vac Systems, Inc. Phone: (800) 327-0141 <a href="http://www.aquavacsystems.com">www.aquavacsystems.com</a>	Automatic Pool Cleaners, Robotic Pool Equipment
AquaCal, Inc. Phone: (800) 786-7751 <a href="http://www.aquacal.com">www.aquacal.com</a>	Heat Pumps, Spa & Hot Tub Heater
AquaCheck Pool and Spa Test Strips Phone: (800) 548-4381 <a href="http://www.aquacheck.com">www.aquacheck.com</a>	Test Kits, Water Analysis
Aquamatic Cover Systems Phone: (800) 262-4044 <a href="http://www.aquamatic.com">www.aquamatic.com</a>	Pool Covers, Spa Covers
Aquascape Design, Inc. Phone: (800) 306-6227 <a href="http://www.aquasapedesign.com">www.aquasapedesign.com</a>	Water Gardens/Ponds, Waterfalls
Aquatemp Products Corp. Phone: (310) 225-3333 <a href="http://www.aquatemp.com">www.aquatemp.com</a>	Air Blowers, Ozone Generators, Spa & Hot Tub Heater, Spa Lights, Underwater Lights
Aquatherm, Inc. Phone: (800) 535-6307 <a href="http://www.warmwater.com">www.warmwater.com</a>	Above-Ground Pool Heaters, In-Ground Pool Heaters, Solar Heaters
Arch Chemicals. Inc. Phone: (800) 478-5727 <a href="http://www.archchemicals.com">www.archchemicals.com</a>	Algaecides, Pool Chemicals, pH Adjusters, Winterizing Products
Automatic Pool Covers, Inc. Phone: (800) 878-5789 <a href="http://www.automaticpoolcovers.net">www.automaticpoolcovers.net</a>	Automatic Pool Covers, Safety Pool Covers
AutoPilot Systems, Inc. Phone: (800) 922-6246 <a href="http://www.autopilot.com">www.autopilot.com</a>	Bromine Generators, Chlorine Generators
Bio-Dex Laboratories Phone: (800) 617-3477 <a href="http://www.bio-dex.com">www.bio-dex.com</a>	Algaecides, Acid Washing Equipment, Clarifiers, Pool & Spa Chemicals

BioGuard Pool & Spa Products Phone: (800) 859-7946 <a href="http://www.bioguard.com">www.bioguard.com</a>	Algaecides, Chlorine Shock, Clarifiers, Pool & Spa Chemicals
BioLab, Inc. Phone: (678) 502-4000 <a href="http://www.biolabinc.com">www.biolabinc.com</a>	Algaecides, Chlorine Shock, Clarifiers, Pool & Spa Chemicals
Blue Hawaiian Fiberglass Pools Phone: (888) 840-7699 <a href="http://www.bluehawaiianfiberglasspools.com">www.bluehawaiianfiberglasspools.com</a>	Fiberglass Pools, Wading Pools, Swim Spas
Cantar/Polyair Corp. Phone: (800)448-2343 <a href="http://www.cantar.com">www.cantar.com</a>	Fences, Winter Covers
Carefree Clearwater, Ltd. Phone: (800) 364-5710 <a href="http://www.carefreeclearwater.com">www.carefreeclearwater.com</a>	Algaecides, Anodes, Sacrificial Catalytic Purifiers, Ionizers, Mineral Purifiers
Caretaker Systems, Inc. Phone: (800) 762-0647 <a href="http://www.swimcsi.com">www.swimcsi.com</a>	Alarms, Gate Doors, Automatic Pool Cleaners, Pool Plans, Fittings
CCSI International, Inc. Phone: (800) 537-8231 <a href="http://www.ccsiusa.com">www.ccsiusa.com</a>	Sun Rooms, Pool & Spa Enclosures, Skylights
Chemical Automation Technology Phone: (800) 657-2287 <a href="http://www.chemauto.com">www.chemauto.com</a>	Chemical Controllers, pH Meters & Controls, Water Chemistry Sensors, Water Analysis Equipment
Chemtrol, Div. of Santa Barbara Control Systems Phone: (800) 621-2279 <a href="http://www.sbcontrol.com">www.sbcontrol.com</a>	Water Analysis Equipment, Water Analysis Software, Chemical Controllers, pH Meters & Controls, Water Chemistry Sensors
Clayton & Lambert Phone: (800) 626-5819 <a href="http://www.claytonlambert.com">www.claytonlambert.com</a>	Stainless Steel/Steel Pool Walls, In-Ground Spas, In-Ground Vinyl Liner Pools
ClearWater Enviro Technologies, Inc. Phone: (800) 756-7946 <a href="http://www.clearwaterpoolsystems.com">www.clearwaterpoolsystems.com</a>	Antiscale, Water Conditioner, Ionizers, Ozone Generators, Scale Controls
ClearWater Tech, LLC Phone: (800) 262-0203 <a href="http://www.cwtozone.com">www.cwtozone.com</a>	Ozone Generators, Ozone Injectors

ClorMatic Phone: (800) 548-7883 <a href="http://www.clormatic.com">www.clormatic.com</a>	Chlorinators, Chlorine Generators, Heat Exchangers, Commercial Pool Equipment
Cover-Pools, Inc. Phone: (800) 447-2838 <a href="http://www.coverpools.com">www.coverpools.com</a>	Pool Enclosures, Above-Ground/In-Ground Automatic Pool Covers, Vinyl Repair Kits
Coverstar, Inc. Phone: (800) 617-7283 <a href="http://www.coverstar.com">www.coverstar.com</a>	Automatic Pool Covers In-Ground Pool Covers Spa Covers
Covertch Phone: (800) 837-8961 <a href="http://www.covertchfab.com">www.covertchfab.com</a>	Insulation, Above-Ground/In-Ground Pool Covers, Solar Blankets, Water Bags
Del Ozone Phone: (800) 676-1335 <a href="http://www.delozone.com">www.delozone.com</a>	Air injectors, Clarifiers, ORP Meters, Ozone Generators, Commercial Pool Equipment
Doughboy Recreational Phone: (662) 536-4333 <a href="http://www.doughboy-pools.com">www.doughboy-pools.com</a>	Automatic Suction Pool Cleaners, Filters, Cartridges, Above-Ground Pool Ladders, Liners
Earth Science Laboratories, Inc. Phone: (800) 257-9283 <a href="http://www.pristineblue.com">www.pristineblue.com</a>	Algaecides, Pool & Spa Chemicals, Scale Control, Test Kits, Nonchlorine Shocking Agents
Eco-Matic Salt Water Pool Systems Phone: (800) 881-2284 <a href="http://www.ecomatic.com">www.ecomatic.com</a>	Algaecides, Bromine Generators, Chlorine Shocking Agents, Chlorine Generators
ECOSmarte Planet Friendly, Inc. Phone: (800) 466-7946 <a href="http://www.ecosmarte.com">www.ecosmarte.com</a>	Ionizers, Oxygen Generators
Enersol Solar Products Phone: (800) 884-6444 <a href="http://www.enersol.com">www.enersol.com</a>	Solar Heater, Solar Collectors, Solar Equipment
Environmental Pool Systems, Inc. Phone: (800) 671-9629 <a href="http://www.dry-air.com">www.dry-air.com</a>	Dehumidifiers, Pool Enclosures, Commercial Pool Equipment
Esther Williams Swimming Pools, Div. of Delair Group Phone: (800) 235-0185 <a href="http://www.estherwilliamspools.com">www.estherwilliamspools.com</a>	Above-Ground Pools, Decking, Ladders, Fiber-Optic Lights,
Feherguard Products, Ltd. Phone: (905) 876-4766 <a href="http://www.feherguard.com">www.feherguard.com</a>	Tile & Vinyl Adhesives, Pool & Spa Ladders, Repair Kits

Fiberstars Phone: (800) 327-7877 <a href="http://www.fiberstars.com">www.fiberstars.com</a>	Fountains, Lights, Waterfalls
Fibre Tech, Inc. Phone: (800) 393-7283 <a href="http://www.poolpreserver.com">www.poolpreserver.com</a>	Pool Coating, Pool Finishes, Resins
Focus Temp International Phone: (450) 796-4333 <a href="http://www.focustemp.com">www.focustemp.com</a>	Heat Exchangers, Heat Pumps
Fort Wayne Pool, Inc. Phone: (219) 432-8731 <a href="http://www.surfthepool.com">www.surfthepool.com</a>	Aluminum Coping, Cover Fabrics, Injection Molding, Foam Pool Walls, Steel Pool Walls, Steps
Garrett Liners, Inc. Phone: (800) 222-3650 <a href="http://www.garrettliners.com">www.garrettliners.com</a>	Garden/Ponds Water, Hot Tub & Pool Liners, Vinyl Repair Kits
<a href="http://www.glasspackfilter.com">www.glasspackfilter.com</a> Phone : (800)-466-7946	Recycled Glass Media – Sterilized for sand filters.
GLB Pool & Spa Phone: (800) 445-2059 <a href="http://www.GLBPoolSpa.com">www.GLBPoolSpa.com</a>	Algaecides, Pool & Spa Chemicals, Enzymes, Winterizing Products
Goldline Controls, Inc. Phone: (800) 343-0826 <a href="http://www.goldlinecontrols.com">www.goldlinecontrols.com</a>	Chlorine Generators, Freeze-Protection Controls, Programmable Controls
Guardian Pool Fence Systems, Inc. Phone: (800) 366-7233 <a href="http://www.guardianpoolfence.com">www.guardianpoolfence.com</a>	Pool Enclosures, Fences
Hanna Instruments, Inc. Phone: (800) 426-6287 <a href="http://www.hannainst.com">www.hannainst.com</a>	Chemical Controllers, Programmable Controls, ORP Meters Water Analysis Equipment
Hayward Pool Products, Inc. Phone: (888) 429-9273 <a href="http://www.haywardnet.com">www.haywardnet.com</a>	Automatic Suction Pool Cleaners, Filters, Heaters, Pumps
Heliocol Solar Pool Heating Phone: (800) 797-6527 <a href="http://www.heliocol.com">www.heliocol.com</a>	Heat Exchangers, Above-Ground/In-Ground Pool Heaters, Spa & Hot Tub Heaters, Solar Equipment
Hydrotech Pool & Spa Products Phone: (800) 959-7946	Algae & Spot Remover, Algaecides, Pool & Spa Chemicals, Filter Cleaners
Inter-Fab, Inc. Phone: (800) 737-5386 <a href="http://www.inter-fab.com">www.inter-fab.com</a>	Benches, Water Garden/Ponds, Fountains, Handrails, Waterfalls, Ladders, Slides
Jack's Magic Phone: (800) 348-1656 <a href="http://www.jacksmagic.com">www.jacksmagic.com</a>	Algae & Spot Remover, Algaecides, Chlorine Removers, Rust Stains Removers, Concrete Cleaners

Jacuzzi Pool Equipment Phone: (866) 370-2664	Cartridge , D.E. Pressure, & Gravel/Sand Filters, Lights, Pumps, Tanks
Kafco Manufacturing Limited Phone: (888) 721-7665 <a href="http://www.kafko.com">www.kafko.com</a>	Aluminum Coping, Pool Covers, Skimmer Baskets, Steps
King Technology, Inc. Phone: (800) 222-0169 <a href="http://www.kingtechnology.com">www.kingtechnology.com</a>	Floating Chemical Feeders, In-Line Chemical Feeders, Pool & Spa Chemicals, Chlorinators
LaMotte Co. Phone: (800) 344-3100 <a href="http://www.lamotte.com">www.lamotte.com</a>	Water Analysis Software, ORP Meters, pH Controls & Meters, TDS Meters, Test Kits, Labs
Life Saver Pool Fence Systems, Inc. Phone: (800) 282-3836 <a href="http://www.poolfence.com">www.poolfence.com</a>	Pool Alarms, Fences
Lifeguard Purification Phone: (800) 678-7439 <a href="http://www.lifeguardsystems.com">www.lifeguardsystems.com</a>	Catalytic Purifiers, Programmable Controls, Ionizers, pH Adjusters, Controls, Meters
LOOP-LOC, Ltd. Phone: (800) 562-5667 <a href="http://www.looploc.com">www.looploc.com</a>	Cover Fabrics, Pool Covers, Safety Covers
Mazzei Injector Corp. Phone: (661) 363-6500 <a href="http://www.mazzei.com">www.mazzei.com</a>	Ozone Injectors, Venturi Injectors
Merlin Industries Phone: (800) 289-1836 <a href="http://www.merlinindustries.com">www.merlinindustries.com</a>	Covers, Fences, Liners, Swim Training Equipment, Safety Covers
Miami Filter Phone: (888) 642-6482 <a href="http://www.miamifilter.com">www.miamifilter.com</a>	Pool Filters, Commercial Pool Equipment
Micro Pure Phone: (780) 452-1577 <a href="http://www.micropure.com">www.micropure.com</a>	Filter Bags, Cartridges, Media, Zeolite, First Aid Equipment
N. Jonas & Co., Inc. Phone: (800) 523-6533 <a href="http://www.njonas.com">www.njonas.com</a>	Algae & Spot Remover Algaecides, Antifreeze, Antiscale, Pool & Spa Chemicals
Natural Chemistry, Inc. Phone: (203) 295-2300 <a href="http://www.naturalchemistry.com">www.naturalchemistry.com</a>	Pool & Spa Chemicals, Controllers, Enzymes, Test Kits
Pacific Industries, Inc. Phone: (800) 833-3800 <a href="http://www.pacificpools.com">www.pacificpools.com</a>	Aluminum Coping, PVC Coping, Pool Covers, Walls, Safety Covers, Diving Towers & Stands, Overflow Systems
Pebble Technology, Inc. Phone: (800) 937-5058 <a href="http://www.pebbletec.com">www.pebbletec.com</a>	Chlorinators, Pool Coating & Finishes

Pentair Pool Products, Inc. Phone: (800) 831-7133 <a href="http://www.pentairpool.com">www.pentairpool.com</a>	Salt Water Chlorinators, Programmable Controls, Filters, Heat Pumps, Heaters, Pumps, Lights, Skimmers
Plastimayd Corp. Phone: (800) 348-2600 <a href="http://www.plastimayd.com">www.plastimayd.com</a>	Vinyl Adhesives, PVC Coping, Domes, Liners, Covers, Repair Kits
Polaris Pool Systems Phone: (800) 822-7933 <a href="http://www.polarispoolsystems.com">www.polarispoolsystems.com</a>	Air Blowers, Automatic pool Cleaners, Chemical Controllers, Spa Chemicals, Chlorinators, Fountains, Spa Vacuums
Pool Cover Specialists Nat.'l, Inc. Phone: (800) 369-5152 <a href="http://www.powertrackcovers.com">www.powertrackcovers.com</a>	Covers, Cover-Removal Systems, Safety Covers, Spa Covers, Pumps
Protect-A-Child Pool Fence Systems Phone: (800) 992-2206 <a href="http://www.protectachild.com">www.protectachild.com</a>	Child Safety Fences
Raypak, Inc. Phone: (805) 278-5300 <a href="http://www.raypak.com">www.raypak.com</a>	Electromechanical Controls, Heat Pumps, Heaters
S.R. Smith Phone: (888) 677-7776 <a href="http://www.srsmith.com">www.srsmith.com</a>	Anchor Sockets, Diving Stands, Boards, & Towers, Slides, Pool Toys & Games, Ladders, Rail Goods
San Juan Products, Inc. Phone: (800) 535-7946 <a href="http://www.sanjuanpools.com">www.sanjuanpools.com</a>	Fiberglass Pools, Spa Shells, Spa Gelcoat, Swim Spas
Sentry Pool, Inc. Phone: (800) 443-8625 <a href="http://www.sentrypool.com">www.sentrypool.com</a>	Aluminum Coping, PVC Coping, Pool Walls, Swim Spas
Silbrico Corp. Phone: (800) 323-4287 <a href="http://www.silbrico.com">www.silbrico.com</a>	D.E. Alternative Filter Media, Perlite Filter Media
SmartPool, Inc. Phone: (888) 560-7665 <a href="http://www.smartpool.com">www.smartpool.com</a>	Gate/Door Alarms, Pool Alarms, Solar Heaters, Lights, Solar Equipment
Speck Pumps Phone: (800) 223-8538 <a href="http://www.usa.speck-pumps.com">www.usa.speck-pumps.com</a>	Pool & Spa Equipment Packs, Spa Filters, Swim Jets, Pumps, Skimmers, Multiport Valves
Splash SuperPools Phone: (800) 927-7527 <a href="http://www.splashpools.com">www.splashpools.com</a>	Pool Decking, Ladders, Portable Pools & Spas
Trevi Pools, Inc. Phone: (888) 777-0447 <a href="http://www.etrevi.com">www.etrevi.com</a>	Pool Liners, Walls Canada's Largest

United Chemical Corp. Phone: (800) 524-5550 <a href="http://www.swimpool.com">www.swimpool.com</a>	Pool Chemicals, Algaecides, Alkalines, Bromine, Clarifiers, Filter Cleaners pH Adjuster, Scale Controls
Viking Pools, Inc. Phone: (800) 854-7665 <a href="http://www.vikingpools.com">www.vikingpools.com</a>	Fiberglass Pools, Spa Shells, Swim Spas
Waterpik Technologies Phone: (800) 227-1442 <a href="http://www.jandy.com">www.jandy.com</a>	Chlorine Generators, Programmable Controls, Filters, Heaters Lights, Valves, Waterfalls
Waterway Plastics Phone: (805) 981-0262 <a href="http://www.waterwayplastics.com">www.waterwayplastics.com</a> <a href="http://www.wutgroup.com">www.wutgroup.com</a>	Air Blowers, Filters, Injection Molding, Spa Lights, Main Drains Spa Jets, Pump, Skimmers
Zeotech Corp. Phone: (800) 575-7887 <a href="http://www.zeotechcorp.com">www.zeotechcorp.com</a>	Load bearing autocovers  D.E. Alternative Filter Media, Zeolite Filter Media

## **WEB URLs: By Manufacturer**

ECOsmarte Planet Friendly, Inc.  
[www.ecosmarte.com](http://www.ecosmarte.com)

Aquamatic Cover Systems:  
[www.aquamaticcovers.com](http://www.aquamaticcovers.com)

Dolphin Pool Cleaner:  
[www.dolphin-swimming-pool-cleaners.com](http://www.dolphin-swimming-pool-cleaners.com)

Hayward Pool Products:  
[www.haywardnet.com](http://www.haywardnet.com)

Inter-Fab, Inc.:  
[www.interfab.com](http://www.interfab.com)

Jandy Pool Products, Inc.:  
[www.jandy.com](http://www.jandy.com)

Jacuzzi Pool Products:  
[www.jacuzzipoolproducts.com](http://www.jacuzzipoolproducts.com)

Merlin Industries:  
[www.merlinindustries.com](http://www.merlinindustries.com)

Pentair Pool Products:  
[www.pentairpool.com/poolproducts.htm](http://www.pentairpool.com/poolproducts.htm)

Sta-Rite:  
[www.starite.com](http://www.starite.com)

Cantar Pool Products  
[www.cantar.com/home.asp](http://www.cantar.com/home.asp)

Plastimayd Corp.:  
[www.plastimayd.com](http://www.plastimayd.com)

Protect-A-Child Pool Fence Systems:  
[www.protectachild.com](http://www.protectachild.com)

S.R. Smith:  
[www.srsmith.com](http://www.srsmith.com)

The Pool Tool Co.:  
[www.pooltoolco.com](http://www.pooltoolco.com)

Waterway Plastics:  
[www.waterwayplastics.com](http://www.waterwayplastics.com)

Wutpool covers  
[www.wutgroup.com](http://www.wutgroup.com)

ZEOBrite:  
[www.zeobrite.com](http://www.zeobrite.com)

## TOLL-FREE SUPPORT LINES

In this day of on-line emphasis it is difficult to bring your computer to the pool. The following toll-free support lines are offered by manufacturers to encourage successful pool ownership and safety.

## American Association of Poison Control Centers: 1-800-222-1222

ABER Hot Tub Mfg.  
Phone: (800) 263-7727

Aquamatic Cover Systems  
Phone: (800) 262-4044

CCSI International, Inc.  
Phone: (800) 537-8231

Acu-Trol  
Phone: (800) 273-4667

Aquascape Design, Inc.  
Phone: (800) 306-6227

Chemical Automation  
Technology  
Phone: (800) 657-2287

Air Energy Heat Pumps  
Phone: (800) 334-4328

Aquatherm, Inc.  
Phone: (800) 535-6307

Chemtrol, Div. of Santa  
Barbara Control Systems  
Phone: (800) 621-2279

Alden Leeds, Inc.  
Phone: (800) 822-5387

Arch Chemicals, Inc.  
Phone: (800) 478-5727

Clayton & Lambert  
Phone: (800) 626-5819

ALL-PRO a Scheu Co.  
Phone: (800) 325-7057

Automatic Pool Covers, Inc.  
Phone: (800) 878-5789

ClearWater Enviro  
Technologies, Inc.  
Phone: (800) 756-7946

ALPS Spas  
Phone: (800) 733-7665

AutoPilot Systems, Inc.  
Phone: (800) 922-6246

Aqua Creek Products, LLC  
Phone: (888) 687-3552

Bio-Dex Laboratories  
Phone: (800) 617-3477

ClearWater Tech, LLC  
Phone: (800) 262-0203

American Leak Detection, Inc.  
Phone: (800) 755-6697

BioGuard Pool & Spa  
Products  
Phone: (800) 859-7946

ClorMatic  
Phone: (800) 548-7883

Aqua Jet, LLC  
Phone: (800) 337-5032

Blue Hawaiian Fiberglass  
Pools  
Phone: (888) 840-7699

Cover-Pools, Inc.  
Phone: (800) 447-2838

Aqua Products, Inc.  
Phone: (800) 221-1750

Cantar/Polyair Corp.  
Phone: (800)448-2343

Coverstar, Inc.  
Phone: (800) 617-7283

Aqua Vac Systems, Inc.  
Phone: (800) 327-0141

Carefree Clearwater, Ltd.  
Phone: (800) 364-5710

Covertch  
Phone: (800) 837-896

AquaCal, Inc.  
Phone: (800) 786-7751

Caretaker Systems, Inc.  
Phone: (800) 762-0647

Del Ozone  
Phone: (800) 676-1335

AquaCheck Pool and Spa  
Test Strips  
Phone: (800) 548-4381

Earth Science Laboratories,  
Inc.  
Phone: (800) 257-9283

Eco-Matic Salt Water Pool  
Systems  
Phone: (800) 881-2284

ECOSmarte Planet Friendly, Inc.  
Phone: (800) 466-7946

Enersol Solar Products  
Phone: (800) 884-6444

Environmental Pool Systems, Inc.  
Phone: (800) 671-9629

Esther Williams Swimming Pools,  
Div. of Delair Group  
Phone: (800) 235-0185

Fiberstars  
Phone: (800) 327-7877

Fibre Tech, Inc.  
Phone: (800) 393-7283

Garrett Liners, Inc.  
Phone: (800) 222-3650

[www.glasspackfilter.com](http://www.glasspackfilter.com)  
Phone : (800)-466-7946

GLB Pool & Spa  
Phone: (800) 445-2059

Goldline Controls, Inc.  
Phone: (800) 343-0826

Guardian Pool Fence Systems, Inc.  
Phone: (800) 366-7233

Hanna Instruments, Inc.  
Phone: (800) 426-6287

Hayward Pool Products, Inc.  
Phone: (888) 429-9273

Heliocol Solar Pool Heating  
Phone: (800) 797-6527

Hydrotech Pool & Spa Products  
Phone: (800) 959-7946

Inter-Fab, Inc.  
Phone: (800) 737-5386

Jack's Magic  
Phone: (800) 348-1656

Jacuzzi Pool Equipment  
Phone: (866) 370-2664

Kafco Manufacturing Limited  
Phone: (888) 721-7665

King Technology, Inc.  
Phone: (800) 222-0169

LaMotte Co.  
Phone: (800) 344-3100

Lifeguard Purification  
Phone: (800) 678-7439

Life Saver Pool Fence Systems,  
Inc.  
Phone: (800) 282-3836

LOOP-LOC, Ltd.  
Phone: (800) 562-5667

Miami Filter  
Phone: (888) 642-6482

Pebble Technology, Inc.  
Phone: (800) 937-5058

Pacific Industries, Inc.  
Phone: (800) 833-3800

N. Jonas & Co., Inc.  
Phone: (800) 523-6533

Pacific Industries, Inc.  
Phone: (800) 833-3800

Pebble Technology, Inc.  
Phone: (800) 937-5058

Pentair Pool Products, Inc.  
Phone: (800) 831-7133

Plastimayd Corp.  
Phone: (800) 348-2600

Polaris Pool Systems  
Phone: (800) 822-7933

Pool Cover Specialists Nat.'l, Inc.  
Phone: (800) 369-5152

Protect-A-Child Pool Fence  
Systems  
Phone: (800) 992-2206

S.R. Smith  
Phone: (888) 677-7776

San Juan Products, Inc.  
Phone: (800) 535-7946

Sentry Pool, Inc.  
Phone: (800) 443-8625

Silbrico Corp.  
Phone: (800) 323-4287

SmartPool, Inc.  
Phone: (888) 560-7665

Speck Pumps  
Phone: (800) 223-8538

Splash SuperPools  
Phone: (800) 927-7527

Trevi Pools, Inc.  
Phone: (888) 777-0447

United Chemical Corp.  
Phone: (800) 524-5550

Waterpik Technologies  
Phone: (800) 227-1442

Zeotech Corp.  
Phone: (800) 575-7887

Waterway Plastics  
Phone: (805) 981-0262

Viking Pools, Inc.  
Phone: (800) 854-7665