ANTHONY & SYLVAN® POOLS

BUILT FOR LIFE™

GUIDE TO EASY POOL OWNERSHIP

The Pool Partner™

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INTERIOR FINISHES

Traditional white **Plaster**, also referred to as **Marcite**®, is a mixture of an aggregate of white marble sand or dust, white portland cement and water that is troweled over the concrete surface to seal and provide a hard, smooth finish. There are several things you should know about the care and use of your plaster pool interior. Follow your installer's specific recommendations for filling your pool, caring for and maintaining your pool's interior surface as these can vary from one region to another and one applicator to another. Today, unique additives and aggregates are available to produce a wide range of colors and finishes. These specialty finishes are discussed in greater detail on the following pages and have their own initial fill, start-up and care guidelines. The general recommendations below are for White Plaster or Marcite pool finishes.

Please Note: No two plaster finishes are the same and slight imperfections are normal. Plaster is a product of natural materials and mined minerals that will vary in appearance and characteristics. These variations may cause slight mottling (a grayish appearance), discolorations or mild crazing (hairline cracks), all of which are normal occurrences in the curing of cementitious materials. How closely you follow the initial fill, start-up and care procedures are imperative to the look and long-term performance of your plaster finish.

Pay special attention & care to the plaster surface on initial fill and for the first 30 days.

Your plaster finish will harden and cure underwater but this process takes time. More than 50% of the curing takes place within the first 30 days and the majority within 90 days but it can take up to a year for the finish to be completely cured. Your plaster surface is most susceptible before being filled with water — so fill quickly and take special care to avoid anything from entering the pool prior to it being filled with water. This includes footprints—**DO NOT** walk on fresh plaster (this includes pets)!

You should have the source water that will be used to fill your pool tested prior to completion of the plaster finish. If testing finds a high mineral or metal content in the water you will want to follow your pool professional's recommendations for treatment and have the proper sequestering chemicals on hand while filling your pool to prevent staining or discoloration to the new plaster surface. This should be added as water is being introduced so that it is well circulated before you add any balancing chemicals.

Initial Fill - Water should be introduced immediately upon completion of plastering and filled as quickly as possible to reduce crazing or checks (tiny cracks) and discoloration in the plaster. Two key things to remember are to ***Test First Then Fill Quickly and Carefully***. **DO NOT** allow water to forcefully enter the pool — cushion the flow in a puddle of water.

When filling with a garden hose:

- As mentioned above, have source water tested before you begin filling.
- DO NOT fill with water through a water softener; if you have a softener, bypass it.
- Use as many hose bibs or sources as available to speed the filling process.
- Be sure to diffuse the water and take care that the hose itself does not mark the floor. Tie a clean sock or cloth around the end of the hose to help to protect the surface.
- Once you begin filling, **DO NOT STOP** until the pool is full or 2/3 up onto the skimmer opening. If you stop filling and re-start, you will notice a visible waterline at that point. If the pool fills too slowly, variations in shades of the plaster finish may appear as the curing process may have varied underwater and above.

Hauled water:

- As mentioned above, have source water tested before you begin filling.
- To serve as a buffer, 6 to 8 inches of water should be introduced through a garden hose **BEFORE** you begin filling with hauled water.
- Water should be carefully diffused and added into the deep end of the pool.
- Once you begin filling, **DO NOT STOP** until the pool is full, 2/3 up onto the skimmer opening. If you stop filling and re-start, you will notice a visible waterline at that point. If the pool fills too slowly, variations in shades of the plaster finish may appear as the curing process may have varied underwater and above.
- Continue to run your garden hose between loads of hauled water.

If your pool is being started using the Acid method, refer to the ***Acid Start-Up*** section.
Otherwise, follow the directions below for brushing and start-up.

Frequent Brushing + Proper Water Balance = Helps to prevent Scaling and Staining

Once your pool is filled, consistent brushing and proper water chemistry will be critical to the final appearance and life of the plaster finish. The effort you spend during these first few weeks will be well worth the reward of a beautiful, long lasting surface in your pool. To understand why brushing and chemistry are so important, you need to know what takes place as the plaster cures underwater; this curing process is called hydration. Plaster or marble dust (calcium carbonate) is a by-product of hydration and must be removed or it will produce a rough scale on the plaster finish. Dirt too will want to attach itself to the finish during curing and must be brushed away and removed. Even if your pool appears to be clean and free of dirt — plaster dust is present and it must be brushed and removed. Not only will brushing remove dust and dirt but it polishes the plaster finish and helps prevent stains and algae from forming. Again, it is the first 30 days of the curing process that are the most critical. Brushing instructions are listed on the following page — PLEASE read and follow the recommendations.

Below are some additional **DO's** and **DON'Ts** to follow after initial fill and equipment start-up:

- ✔ **DO** begin circulating water immediately as soon as the water level reaches the half way point on the skimmer
- ✔ **DO** add Pool Start, or a sequestering agent, at a rate of 1 quart per 10,000 gallons. Dilute and add to water as pool is filling.
- ✔ **DO** allow filter to run 24 hours a day for 2 weeks drawing from the skimmer and (optional) main drain during the plaster curing process and collection of plaster dust.
- ✔ **DO** frequently check the filter pressure gauge and clean or backwash as indicated (increase of 10 psi over normal starting pressure) This may need to be done as early as the first day of operation as plaster dust will quickly clog the filter media; see ***Filtration*** section for detailed instructions.
- ✔ **DO** brush the walls, steps, benches and floor following the detailed instructions below.
- ✔ **DO** balance your pool water and test frequently following detailed instructions below.
- ✔ **DO NOT** add any sanitizer or stabilizer to your pool at this time. Wait until the water has been balanced and stain and scale chemicals have been introduced—see water balance and water chemistry details below.
- ✔ **DO NOT** add salt (if your pool has a chlorine generator) for the first 30 days. You will need to manually add chlorine to sanitize the pool for the first month.
- ✔ **DO NOT** run your pool heater for the first 14 days. Heat pumps can run immediately.
- ✔ **DO NOT** operate any water features, fountains or waterfalls for the first 3 weeks.
- ✔ **DO NOT** operate an automatic cleaner for the first 21 to 28 days.

Once the sanitizer level and balanced water have been established, your pool is ready for swimming. Depending on the time required to achieve these levels you should be able to enter the pool within 4 to 24 hours.

Brushing

- Use a soft nylon brush attached to a telescopic pole.
- Start at the shallow end brushing the entire wall, steps, swim-outs and then floor. Work forcefully and thoroughly pushing towards the deep end or main drain (optional).
- Water will become clouded during brushing — this is normal. The filter will remove the particulates, and as mentioned above, should be running continuously.
- Frequency:
  - ✔ Begin immediately, as soon as water is circulating
  - ✔ Brush 2 times a day for the first 30 days
  - ✔ Brush weekly after the first 30 days

NOTE: As mentioned earlier these are guidelines; your finish crew may have slightly different recommendations that may suggest brushing more frequently during the first few weeks.

Vacuuming

Detailed manual vacuum instructions are available in the *Vacuuming* section; however, when vacuuming a newly plastered interior you should note the following:

- **DO NOT** manually vacuum for the first week following initial fill.
- **DO NOT** operate an automatic pool cleaner for 21-28 days following initial fill.
- A manual vacuum head with a soft-bristled brush versus wheels will be less likely to mark the soft plaster surface as it is hardening and curing during the first 30 days. You may begin using a wheeled vacuum head or automatic cleaner after the first 21 to 28 days.
- Check the filter pressure before, during and after vacuuming, and clean or backwash as needed—this will happen frequently as you are picking up the plaster dust residual.
- Frequent vacuuming (after the first week) will help reduce and eliminate plaster dust. You may consider vacuuming daily to several times a week, before each brushing.

Water Balance

The calcium content of your pool water, measured by a calcium hardness test performed by your pool professional, along with the pH and Total Alkalinity readings will determine how corrosive or alkaline your water is. Water that is not properly balanced encourages staining or scaling and can actually deteriorate the plaster finish. Your pool water strives for this balance and if you don't keep it in check, your water will attempt to balance itself. Water with low calcium (below 200 ppm; exposed aggregate, below 175) and low Total Alkalinity readings (below 80 ppm) will aggressively seek to satisfy its calcium demand by leaching calcium from the plaster finish. If not corrected, it will begin to pitt and dissolve the surface. Water with a high calcium level (above 350 ppm; exposed aggregate above 250) will release (precipitate) the excess calcium in the form of scale deposits. Follow the chemical parameters listed below and test your water frequently (several times each day) during the first few days. Once the initial start-up and balancing is complete, you will only need to test your water weekly and make minor adjustments, see ***Basic Water Chemistry*** section. As mentioned earlier, your water should be tested by your pool professional to determine if excess minerals or metals are present in the source water **PRIOR** to the application of any chemicals. Metals can cause staining and metallic or mineral salts can cause scaling. A good stain and scale remover or sequestering agent should be used on initial fill and allowed to circulate for 24 hours before making water balance adjustments.

As the plaster cures, the calcium level, Total Alkalinity and pH levels of the water will continually rise. Knowing this, you will want to start out with lower than normal levels and test several times in the first 3 to 5 days, making adjustments as needed. The following recommendations suggest initial start-up levels for your newly plastered pool.

Step 1. Test and adjust Total Alkalinity as needed to achieve an 80 ppm reading.
Step 2. Test and adjust Calcium Hardness to a reading of 200 ppm (175 exposed aggregate).
Step 3. Test and adjust pH to a desired reading of 7.0–7.2.

NOTE: These levels are lower than the normal suggested readings, realizing that they will climb on their own as calcium from the plaster dust is released into the pool water. If testing indicates chemical adjustments are needed, be sure to thoroughly pre-dissolve all chemicals in water before adding to pool, always add chemical to water not reverse. Allow time for each chemical to disperse and circulate before adding another. Once an initial calcium level of 200 ppm is achieved, you should continue to monitor your Calcium Hardness but **DO NOT** add calcium chloride, as it will rise on its own. **DO NOT** make rapid changes in the pH or Total alkalinity or you may cause metals and minerals to precipitate and cause staining or scaling. You should gradually adjust the readings, adding no more than 1 quart of muriatic acid per 10,000 gallons per application; if using sodium bisulphate (pH -) no more than 3 pounds per 10,000 gallons per application. **USE CAUTION** when working with acid. Wear protective gloves and eyewear and follow all label instructions. **DO NOT INHALE** fumes. If you need to raise the calcium level, you can add calcium chloride. Pre-dissolve completely, add directly to pool while circulating and follow all manufacturer's instructions.

Test your water several times a day during the first week as the pH and alkalinity levels will rapidly rise. As the pH and Total Alkalinity rise it will be necessary to lower these levels using acid. You may need to do this several times per week. When making chemical adjustments to the pH or Total Alkalinity you should carefully follow the directions and DO NOT try to adjust too quickly. A rapid shift in any of these readings can cause metals and minerals to precipitate (fall out) of suspension and cause staining or scaling. Remember **DO NOT** add more than 1 quart of acid in one application. If larger amounts are required, you should add them incrementally waiting 4-6 hours between applications while the water is circulating and **DO NOT** exceed 1 gallon per day. You should continue to test and adjust throughout the first 30 days on a daily basis; after the first month alkalinity and pH levels should stabilize. You can then resume a normal routine of testing 2-3 times per week; see ***Water Testing*** section for details. Once the levels seem to stabilize you will want to resume normal chemical levels listed below:

Total Alkalinity	100–150 ppm
pH	7.4–7.6
Calcium Hardness	200–350 ppm, 175–250 exposed aggregate
Chlorine	1–3 ppm
Stabilizer	30–50 ppm

NOTE: Wait 14 days before adding stabilizer or running your heater; heat pumps can run immediately. Wait 30 days before adding salt (if you are using a salt chlorine generator).

Once you have established balanced, clear water and a normal sanitizer level, your pool is ready to swim in!

ACID START-UP

If your finish crew uses an acid start-up technique, your brushing requirements will be different than those mentioned in the Traditional and Exposed Aggregate start-up recommendations. Which method (traditional or acid) is used for start-up is entirely at the finish crew's discretion, so you should follow their recommendations. An acid start-up will reduce the brushing and filtering required during the initial start-up. You should still follow the initial fill procedures for your finish type: ***White*** or ***Natural finishes*** or ***Exposed Aggregate finishes***. Once the pool has been filled, the water should be tested and analyzed by a pool professional, and a sequestering agent, such as Pool Start, should be applied per recommendations. After this initial testing and treatment, all equipment should be turned OFF. Your finish crew will add acid to your pool water that will result in a Total Alkalinity reading close to 0. After 4 days, the crew will return and begin to neutralize the water using Total Alkalinity or pH Increaser. **DO NOT RUN EQUIPMENT UNTIL THE WATER HAS BEEN NEUTRALIZED**

Brushing

- Use a soft nylon brush attached to a telescopic pole.
- Brush pool at least once a day for the first 4 days.
- Brush weekly after the first week.

After 4 days

Once water has been neutralized with a Total Alkalinity reading of 60 ppm or higher and a pH of 7.2 or higher, you can start the pump to begin circulation.

- ✔ **DO** test the water frequently during the first few days and weeks and add the appropriate balancing chemicals to achieve the desired levels listed below.
- ✔ **DO** frequently check the filter pressure gauge and clean or backwash as indicated (increase of 10 psi over normal starting pressure). This may need to be done as early as the first day of operation as plaster dust will quickly clog the filter media; see ***Filtration*** section for detailed instructions.
- ✔ **DO NOT** add any sanitizer or stabilizer to your pool at this time. Wait until the water has been balanced and stain and scale chemicals have been introduced; see water balance and water chemistry details below.
- ✔ **DO NOT** add salt for the first 30 days, if your pool has a chlorine generator. *You will need to manually add chlorine to sanitize the pool for the first month.*
- ✔ **DO NOT** run your pool heater for the first 14 days; heat pumps can run immediately.
- ✔ **DO NOT** operate any water features, fountains or waterfalls for the first 3 weeks.
- ✔ **DO NOT** operate an automatic cleaner for the first 21–28 days.

Once sanitizer levels and balanced water are achieved your pool is ready to swim in.

Vacuuming

Detailed manual vacuum instructions are available in the ***Vacuuming*** section, however, when vacuuming a newly plastered interior you should note the following:

- **DO NOT** manually vacuum for the first week following initial fill.
- **DO NOT** operate an automatic pool cleaner for 21–28 days following initial fill.
- A manual vacuum head with a soft-bristled brush versus wheels will be less likely to mark the soft plaster surface as it is hardening and curing during the first 30 days. You may use a wheeled vacuum head or automatic cleaner after the first 21–28 days.

Water Balance

The calcium content of your pool water, measured by a calcium hardness test performed by your pool professional, along with the pH and Total Alkalinity readings, will determine how corrosive or alkaline your water is. Water that is not properly balanced encourages staining or scaling and can actually deteriorate the plaster finish. Your pool water strives for this balance, and if you don't keep it in check, your water will attempt to balance itself. Water with low calcium (below 175 ppm) and low Total Alkalinity readings (below 80 ppm) will aggressively seek to satisfy its calcium demand by leaching calcium from the plaster finish. If not corrected, it will begin to pitt and dissolve the surface. Water with a high calcium level (above 350 ppm) will release (precipitate) the excess calcium in the form of scale deposits. Follow the chemical parameters listed below and test your water frequently (several times each day) during the first few days. Once the initial start-up and balancing is complete, you will only need to test your water weekly and make minor adjustments; see ***Basic Water Chemistry*** section. As mentioned earlier, your water should be tested by your pool professional to determine if excess minerals or metals are present in the source water **PRIOR** to the application of any chemicals. Metals can cause staining and metallic or mineral salts can cause scaling. A good stain and scale remover or sequestering agent should be used on initial fill and allowed to circulate for 24 hours before making water balance adjustments.

As the plaster cures the calcium level, Total Alkalinity and pH levels of the water will continually rise. Knowing this, you will want to start out with lower than normal levels and test several times in the first 3 to 5 days, making adjustments as needed. The following recommendations suggest initial start-up levels for your newly plastered pool.

Step 1. Test and adjust Total Alkalinity as needed to achieve an 80 ppm reading.
Step 2. Test and adjust Calcium Hardness to a reading of 200 ppm (175 exposed aggregate).
Step 3. Test and adjust pH to a desired reading of 7.0–7.2.

NOTE: These levels are lower than the normal suggested readings, realizing that they will climb on their own as calcium from the plaster dust is released into the pool water. If testing indicates chemical adjustments are needed, be sure to thoroughly pre-dissolve all chemicals in water before adding to pool; always add chemical to water and not the reverse. Allow time for each chemical to disperse and circulate before adding another. Once an initial calcium level of 200 ppm (175 for exposed aggregate) is achieved, you should continue to monitor your Calcium Hardness but **DO NOT** add calcium chloride as it will rise on its own. **DO NOT** make rapid changes in the pH or Total alkalinity or you may cause metals and minerals to precipitate and cause staining or scaling. You should gradually adjust the readings adding no more than 1 quart of muriatic acid per 10,000 gallons per application; if using sodium bisulphate (pH -), no more than 3 pounds per 10,000 gallons per application. **USE CAUTION** when working with acid. Wear protective gloves and eyewear and follow all label instructions. **DO NOT INHALE** fumes. If you need to raise the calcium level, you can add calcium chloride. Pre-dissolve completely, add directly to pool while circulating and follow all manufacturer's instructions.

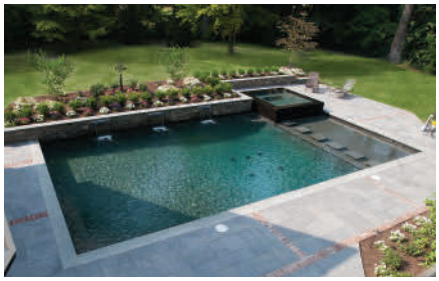
Test your water several times a day during the first week as the pH and alkalinity levels will rapidly rise. As the pH and Total Alkalinity, rise it will be necessary to lower these levels using acid. You may need to do this several times per week. When making chemical adjustments to the pH or Total Alkalinity, you should carefully follow the directions and DO NOT try to adjust too quickly. A rapid shift in any of these readings can cause metals and minerals to precipitate (fall out) of suspension and cause staining or scaling. Remember, DO NOT add more than 1 quart of acid per 10,000 gallons/application. If larger amounts are required you should add them incrementally waiting 4-6 hours between applications. You should continue to test and adjust throughout the first 30 days on a daily basis; after the first month alkalinity and pH levels should stabilize. You can then resume a normal routine of testing 2-3 times per week; see ***Water Testing*** section for details. Once the levels seem to stabilize, you will want to resume normal chemical levels listed below:

Total Alkalinity	100–150 ppm
pH	7.4–7.6
Calcium Hardness	200–350 ppm, 175–250 exposed aggregate
Chlorine	1–3 ppm
Stabilizer	30–50 ppm

After the water has been neutralized and is balanced, you can gradually begin to introduce a sanitizer. **NOTE:** Wait 14 days before adding stabilizer or running your heater; heat pumps can run immediately. Wait 30 days before adding salt (if you are using a salt chlorine generator).

Once you have established balanced, clear water and a normal sanitizer level, your pool is ready to swim in!

SPECIALTY INTERIOR FINISHES



White plaster is a combination of white marble sand or dust (calcium carbonate), white portland cement and water. As the plaster cures, referred to as hyrdration, calcium hydroxide (lime) is formed as a by-product. This calcium is in the "cream" or the surface of the finish, or the plaster dust. This is the softest and most vulnerable element of the finish as it is highly reactive to the water chemistry, soluble in nature and takes months to fully cure. Today, there are a variety of specialty finishes available beyond the traditional white plaster or Marcite® mentioned previously. These finishes use unique additives and materials mixed into a plaster application to offer a variety of color and material options as well as increased strength and chemical resistance. Polymers and pozzolans, ceramic, quartz and exposed aggregates are a few of these innovative admixtures that enhance, protect or replace the weakest link in traditional plaster, the calcium. In doing so this greatly reduces the threat of staining, etching, mottling, checking, discoloration and other concerns typically associated with white plaster.

Polymers - as well as silicones, protect the finish during the hydration (curing) process. They increase hardness, improve bonding and reduce water penetration.

Pozzolans - are used to convert the calcium hydroxide in the plaster into a less soluble cement compound for a more durable finish.

Adding one or more of these components may be done to enhance a traditional plaster finish or they may be combined with quartz, ceramic, or pebbles to create one of the many specialty exposed aggregate finishes described on the following pages.

Quartz - As mentioned earlier, traditional white plaster uses a marble sand or dust as the aggregate. If you remember back to chemistry class and Moh's table of hardness (running on a scale of 1-10, talc being a 1 and diamonds a 10), marble is a 3 and quartz a 7. So, it's easy to understand how adding a quartz or stone aggregate would result in a much harder surface than a marble aggregate plaster. Quartz aggregate, unlike marble, is completely insoluble, even in the presence of highly corrosive acid; so plasters using quartz are less affected by fluctuations in the water chemistry. This mix is a blend of choice quartz (sand, silica) along with quartz that is colored and fired in a kiln. After the material has set to a particular hardness, it is washed and brushed with water to expose the aggregate. For further exposure, acid washing is done.

Ceramic - New products have taken quartz aggregate and bonded it with an exterior ceramic coating. This coating — which contains inorganic pigments — provides a wide range of colors. Color crystals are added to more traditional plaster mixes by replacing a portion of the marble aggregate. Reducing the marble, and consequently the calcium, and adding this highly durable compound not only provides many color options, it provides a longer lasting, more durable finish with higher resistance to chemical balance and mechanical abrasion.

COLORED PLASTER NOTE: All plaster finishes are subject to mottling and shade variations or discoloration. Colored plasters are even more likely to exhibit these traits. Uneven shades of color, streaking and pigment stains are not uncommon or considered a defect in colored plaster pools, the darker the color the more this holds true. Also, variations of shade will exist between color sample chips and mixed plaster, and the color may fade completely or grow gradually lighter over time. Once again, the best defense is closely following the start-up procedures, chemical balance and care instructions for your particular pool finish.

EXPOSED AGGREGATE PEBBLE INTERIORS

Exposed aggregate pebble finishes are specialty finishes that combine portland cement with a pebble or smooth stone aggregate, eliminating the calcium carbonate (marble dust). Developed in Australia over 25 years ago, they include a variety of pebble surfaced products. As explained in the quartz description above, the marble dust used in traditional white plaster is very soft. By substituting the marble for a pebble or smooth stone aggregate, you eliminate the softest and most vulnerable element of plaster, the calcium. The result is a pool finish that is much more durable to both physical and chemical wear. Most exposed aggregate finishes contain color pigments, polymers and or pozzolans to enhance their performance. A pool plastered in this finish is intended to duplicate the natural appearance of a lagoon or stream bed with color variation and a textured finish as a desired result. The type, size, color and characteristics of each product's aggregate (pebble, stone, rock) varies. These pebble interior surfaces are much more resistant to acid and poor water chemistry than traditional plaster and generally requires less maintenance on the initial fill, start-up and care procedures than white plaster or Marcite.

NOTE: Pebbles or stones will come loose during the first few weeks of curing, this is normal.

NOTE: KNOW YOUR FINISH. If your finish is plaster with a colored pigment or additive, read the manufacturer's instructions and talk with your finish crew, as you may need to follow the traditional white plaster instructions. There are significant differences in the guidelines for plaster and exposed pebble aggregate finishes, which could cause harm to the finish if not followed properly. The initial fill, start-up, chemical treatment and care of specialty plaster finishes and exposed aggregates do vary from manufacturer to manufacturer and we encourage you follow those specific instructions.

EXPOSED AGGREGATE INITIAL FILL & START-UP

Below are some general guidelines for exposed aggregate pebble finishes. As stated earlier, it is important that you understand and follow the specific directions given by your installer.

Initial Fill - Leave it to the professionals to determine when to start filling your pool. Unlike traditional white plaster that should be filled immediately some exposed aggregate surfaces require a certain amount of air drying time BUT not too much. Filling these pools too soon can increase the chance of mottling while waiting too long can increase the chance of cracking. Some finishes require a misting of water for a certain period of time before you begin to fill. The best advice is your installer's advice as recommended by the product manufacturer.

When to fill is debatable but how to fill is not. Follow these recommendations to fill your pool.

Test First Then Fill Quickly and Carefully.

DO NOT allow water to forcefully enter the pool—cushion the flow in a puddle of water. When filling with a garden hose:

- As mentioned above, have source water tested before you begin filling.
- **DO NOT** fill with water through a water softener; if you have a softener, bypass it.
- Use as many hose bibs or sources as available to speed the filling process.
- Be sure to diffuse the water and take care that the hose itself does not mark the floor.
- Tie a clean sock or cloth around the end of the hose to help to protect the surface.

- Once you begin filling, **DO NOT STOP** until the pool is full or 2/3 up onto the skimmer opening. If you stop filling and re-start, you will notice a visible waterline at that point. If the pool fills too slowly, variations in shades of the plaster finish may appear as the curing process may have varied underwater and above.

Hauled water:

- As mentioned above, have source water tested before you begin filling.
- To serve as a buffer, 6 to 8 inches of water should be introduced through a garden hose **BEFORE** you begin filling with hauled water.
- Water should be carefully diffused and added into the deep end of the pool.
- Once you begin filling, **DO NOT STOP** until the pool is full, 2/3 up onto the skimmer opening. If you stop filling and re-start, you will notice a visible waterline at that point. If the pool fills too slowly, variations in shades of the plaster finish may appear as the curing process may have varied underwater and above.
- Continue to run your garden hose between loads of hauled water.

If your pool is being started using the Acid method, please follow the directions for ***Acid Start-Up***. Otherwise, follow the directions below for brushing and start-up.

Once your pool is filled, consistent brushing and proper water chemistry will be critical to the final appearance and life of your pool's finish along with the following **DO's** and **DON'Ts**.

- ✔ **DO** begin circulating water immediately as soon as the water level is half way up on the skimmer opening.
- ✔ **DO** add 1 gallon of Pool Start or a sequestering agent recommended by your pool professional to the water as pool is filling.
- ✔ **DO** allow filter to run 24 hours a day for 1 week drawing from the skimmer and main drain, when available
- ✔ **DO** frequently check the filter pressure gauge and clean or backwash as indicated (increase of 10 psi over normal starting pressure) This may need to be done often in the first days of operation as the filer media may quickly clog; see ***Filtration*** section for detailed instructions.
- ✔ **DO** brush the walls, steps, benches and floor following the detailed instructions below.
- ✔ **DO** balance your pool water and test frequently following detailed instructions below. Water should filter a minimum of 24 hours with an added sequestering agent, prior to adjusting water balance.

- ✔ **DO NOT** add any sanitizer or stabilizer to your pool at this time. Wait until the water has been balanced and stain and scale chemicals have been introduced — see water balance and water chemistry details below.
- ✔ **DO NOT** swim in the pool until the initial water balancing and sanitizer levels are established and the water has cleared; this generally will take 3–4 days.
- ✔ **DO NOT** add salt (if your pool has a chlorine generator) for the first 30 days. *You will need to manually add chlorine to sanitize the pool for the first month.*
- ✔ **DO NOT** run your pool heater for the first 14 days; *heat pumps can run immediately*.
- ✔ **DO NOT** operate any water features, fountains or waterfalls for the first 3 weeks.
- ✔ **DO NOT** operate an automatic cleaner for the first 21–28 days.

Brushing

- Use a soft nylon brush attached to a telescopic pole.
- Start at the shallow end, brushing the entire wall, steps, swim-outs and then the floor.
  Work forcefully and thoroughly, pushing towards the deep end or main drain.
- Water may become clouded during brushing — this is normal. The filter will remove the particulates and, as mentioned above, should be running continuously.
- Frequency:
  - ✔ Brush 2 times a day for the first week
  - ✔ Brush once a day for the second week
  - ✔ Brush once a week after the first 2 weeks

NOTE: As mentioned earlier, these are guidelines; your pool installer or product manufacturer may have slightly different recommendations which you should defer to.

Vacuuming

Detailed manual vacuum instructions are available in the ***Vacuuming*** section; however, when vacuuming your new pool interior you should note the following:

- A manual vacuum head with a soft-bristled brush versus wheels will be less likely to mark the surface. You may begin using a wheeled vac head after the first 14 days.
- **DO NOT** operate an automatic pool cleaner for 21–28 days following initial fill.
- Check the filter pressure before, during and/or after vacuuming, and clean or backwash as needed — this may be frequently required during initial start-up.

Water Balance

The calcium content of your pool water, measured by a calcium hardness test performed by your pool professional, along with the pH and Total Alkalinity readings will determine how corrosive or alkaline your water is. Water that is not properly balanced encourages staining or scaling. Your pool water strives for this balance and if you don't keep it in check, your water will attempt to balance itself. Water with low calcium (below 175 ppm) and or low Total Alkalinity readings (below 60 ppm) will aggressively seek to satisfy its calcium demand by leaching calcium from the pool's finish. If not corrected, it will begin to etch or attack the surface. Water with a high calcium level (above 250 ppm) will release (precipitate) the excess calcium in the form of scale deposits. Follow the chemical parameters listed below and test your water daily during the first few days. Once the initial start-up and balancing is complete, you will only need to test your water weekly and make minor adjustments; see ***Basic Water Chemistry*** section.

As mentioned earlier, your water should be tested by your pool professional to determine if excess minerals or metals are present in the source water PRIOR to the application of any chemicals. Metals can cause staining and metallic or mineral salts can cause scaling. Pool Start or another sequestering agent should be used on initial fill and allowed to circulate for 24 hours before making water balance adjustments.

As your pool finish cures the calcium level, Total Alkalinity and pH levels of the water will continually rise. Knowing this you will want to start out with lower than normal levels and test several times in the first 3 to 5 days, making adjustments as needed. The following recommendations suggest initial start-up levels for an exposed aggregate surface.

Step 1. Test and adjust Total Alkalinity as needed to achieve a 60 – 70 ppm reading.
Step 2. Test and adjust Calcium Hardness to a reading of 175 ppm (200 plaster).
Step 3. Test and adjust pH to a desired reading of 7.0–7.2.

NOTE: These levels are lower than the normal suggested readings, realizing that they will climb on their own as the finish cures. If testing indicates chemical adjustments are needed, be sure to thoroughly pre-dissolve all chemicals in water (always add chemical to water and not reverse) before adding to pool. Allow time for each chemical to disperse and circulate before adding another. Once an initial calcium level of 175 ppm is achieved, you should continue to monitor your Calcium Hardness, but **DO NOT** add calcium chloride, as it will rise on its own. **DO NOT** make rapid changes in the pH or Total alkalinity or you may cause metals and minerals to precipitate and cause staining or scaling. You should gradually adjust the readings adding no more than 1 quart of muriatic acid per 10,000 gallons per application; if using sodium bisulphate (pH -), no more than 3 pounds per 10,000 gallons per application. **USE CAUTION** when working with acid. Wear protective gloves and eyewear and follow all label instructions. DO NOT INHALE fumes. If you need to raise the calcium level you can add calcium chloride. Pre-dissolve completely, add directly to pool while circulating and follow all manufacturer's instructions.

Test your water at least once a day for the first week as the pH and alkalinity levels will rapidly rise. As the pH and Total Alkalinity rise, it will be necessary to lower these levels using acid. You may need to do this several times while the finish cures. When making chemical adjustments to the pH or Total Alkalinity, you should carefully follow the directions and **DO NOT** try to adjust too quickly. A rapid shift in any of these readings can cause metals and minerals to precipitate (fall out) of suspension and cause staining or scaling. Remember, **DO NOT** add more than 1 quart of acid per 10,000 gallons in one application. If larger amounts are required, you should add those incrementally waiting 4-6 hours between applications while the water is circulating. You should continue to test and adjust throughout the first 30 days on a daily basis; after the first month, alkalinity and pH levels should stabilize. You can then resume a normal routine of testing 2-3 times per week; see ***Water Testing*** section for details.

Once the levels seem to stabilize you will want to resume the normal chemical levels listed below

Total Alkalinity	100–150 ppm
pH	7.4–7.6
Calcium Hardness	175–250 ppm exposed aggregate (200–350 plaster)
Chlorine	1–3 ppm
Stabilizer	30–50 ppm

Once the water is clear and the pH and alkalinity are balanced, you can begin to add a sanitizer— this will generally be within 3 to 4 days. Begin adding gradually and do not shock the pool for the first 2 weeks. **NOTE**: Wait 14 days before adding stabilizer or running your heater. Wait 30 days before adding salt (if you are using a salt chlorine generator). This means you will need to manually add chlorine to your pool for the first month until the salt level has been established and the salt generator is running.

Once you water is balanced with the proper sanitizer level, your pool is ready to swim in!

ANTHONY & SYLVAN POOLS

BUILT FOR LIFE

Keeping Your Pool Water Clean

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BASIC POOL WATER CHEMISTRY

Understanding the basics of pool water chemistry will help you to properly maintain your pool. Clean and healthy pool water is achieved through chemical treatment, water balance, good maintenance (cleaning and vacuuming) and proper circulation/filtration. All of these elements work together to provide sparkling clear water and a comfortable pool.

Chemicals used to treat swimming pool water include:

1. Disinfectants to destroy harmful or otherwise objectionable organisms.
2. Alkalinity and pH Adjusters to maintain a consistent acid-base relationship and acid buffering capacity.
3. Chlorine Stabilizer to prevent unnecessary loss of chlorine.
4. Algaecide to kill and prevent algae.
5. Filter Aids to help remove foreign material.

Most chemical brands offer weekly treatment programs that will include some or all of the chemicals mentioned above. Be sure to read and follow all manufacturers' instructions for the chemical treatment program recommended by your pool professional.

The following is a listing of proper chemical parameters.

TEST	IDEAL
pH	7.4–7.6
Total Alkalinity	100–150 ppm
Free Chlorine*	1.0–3.0 ppm
Combined Chlorine	0–.02 ppm
Salt (Sodium Chloride) *When using a salt generator*	3,000 ppm

*If your pool is equipped with Clear Vision™ (Nature^{2}®), you can maintain a much lower chlorine level: 0.5 to 1.0 ppm

The following tests should be performed by your pool professional **BEFORE** you fill your pool or start-up in spring and 2 to 3 times throughout the season.

TEST	IDEAL
TDS (total dissolved solids)	1000–2000
Calcium Hardness	200–350 ppm 175–250 ppm for exposed aggregate or ansylbrite
Cyanuric Acid (conditioner/stabilizer)	30–50 ppm 40–75 ppm with salt generators, not to exceed 100 ppm
Metals- NO metals should be present	0

Sanitizers

Maintaining the proper level of sanitizer in your pool at all times is critical to the health and comfort of your pool water. To learn more about the different types of sanitizers, go to the Sanitizing Your Pool, Chlorine, Clear Vision™ and AquaPure™ Salt Generator sections.

pH 7.4 - 7.6

pH is the single most important element in swimming pool water chemistry. As it affects every other chemical balance in pool water. pH is the measure of acid vs. base of a solution. The pH scale runs from 0 to 14 with 7.0 being the neutral point. It is important to maintain a pH reading between 7.4 to 7.6, ideally at 7.4, to ensure swimmer comfort, water balance and to maximize the effectiveness of your sanitizer. The type of sanitizer you use can affect your pH as will rain water and many other things, requiring you to test and adjust your pH on a regular basis.

Low pH

When the pH reading is low (below 7.2) your pool water is acidic. Acidic pool water can cause damage to plaster pool walls while corroding metal plumbing and metal components in heaters, pumps and filters. Low pH water also causes skin and eye irritation, making the eyes look red (a condition often mistaken for too much chlorine). You will also find a rapid loss of your chlorine residual and alkalinity when the pH is too low.

High pH

When your pH reading is too high (over 7.8), your pool water is too alkaline. This condition will often make your water hazy or dull and can cause scaling of your pool walls, plumbing and equipment. Your sanitizer becomes less effective, requiring you to use more. A high pH can also cause skin and eye irritation.

Adjusting pH

To avoid the problems listed above, **pH must be maintained between 7.2 and 7.8**. The most desirable level for pH is between 7.4 and 7.6. Be sure to follow the manufacturer's label recommendations for applying chemicals and do not add any more than the recommended dosage per application. **DO NOT** make rapid changes in the pH or Total Alkalinity or you may cause metals and minerals to precipitate and cause staining or scaling. You should gradually adjust the readings and allow the water to re-circulate then retest in 4 to 6 hours to determine if further treatment is necessary. If problems with low pH persist, it may be necessary to raise Total Alkalinity to stabilize the pH.

Raising pH with pH Increaser (Sodium Carbonate)
If pH is too low, raise pH by adding pH Increaser (sodium carbonate). Never add more than 2 pounds per 10,000 gallons in a single treatment. If pH is under 7.2, add pH Increaser, (according to chart below), based on pH level and water gallons in pool, then retest.

GALLONS IN POOL							
pH	**1,000**	**5,000**	**10,000**	**15,000**	**20,000**	**25,000**	**50,000**
7.2–7.4	2/3 oz.	3 oz.	6 oz.	9 oz.	12 oz.	1 lb.	2 lbs.
7.0–7.2	3/4 oz.	4 oz.	8 oz.	12 oz.	1 lb.	1 1/4 lbs.	2 1/2 lbs.
6.6–7.0	1 1/4 oz.	6 oz.	12 oz.	1 lb.	1 1/2 lbs.	2 lbs.	4 lbs.
Under 6.7	1 1/2 oz.	8 oz.	1 lb.	1 1/2 lbs.	2 lbs.	2 1/2 lbs	5 lbs

If pH is too high, lower by adding sodium bisulfate or muriatic acid (hydrochloric acid). You should gradually adjust the readings adding no more than 1 quart of muriatic acid per 10,000 gallons per application; if using sodium bisulphate (pH -), no more than 3 pounds per 10,000 gallons per application. **Carefully** add acid at the deep end of the pool. **FOLLOW** all safety precautions when using acid including protective gloves and eyewear. Try not to pour acid near pool walls or fittings. **Remember**: When using or diluting acids, always add the acid to the water, never add water to acid. NOTE: 10 pounds of sodium bisulfate is roughly the same as 1 gallon of muriatic acid.

Lowering pH with Muriatic Acid
(If pH is over 7.8, add this amount of acid, then retest)

GALLONS IN POOL							
pH	**1,000**	**5,000**	**10,000**	**15,000**	**20,000**	**25,000**	**50,000**
7.8–8.0	1 1/2 oz.	8 oz.	16 oz.	24 oz.	1 qt.	1 1/4 qts.	2 1/2 qts.
8.0–8.4	2 1/2 oz.	12 oz.	24 oz.	1 1/4 qts.	1 1/2 qts.	2 qts.	1 gal.
Over 8.4	3 oz.	16 oz.	1 qt.	1 1/4 qts.	2 qts.	2 1/2 qts.	1 1/4 gal.

Total Alkalinity 80-120 ppm
Total Alkalinity (TA) is a measurement of the concentration of alkaline minerals in your pool water that provide a pH buffering capacity (the water's ability to resist sudden changes in the pH). Although Total Alkalinity is not the same as pH, it is instrumental in stabilizing the pH to prevent fluctuation. The ideal range to maintain your TA is 100-150 ppm. As mentioned earlier, you should refer to the ***Interior Finishes*** section for your pool type's specific recommendation.

When TA values fall below the recommended range, the pH is easily affected. Even a small amount of high or low pH material introduced into the water can result in large swings in pH values. Generally when TA is low, the pH remains low as well, causing your pool water to be corrosive and irritating to swimmers. At high TA levels, small additions of calcium can produce scale. The pH tends to remain high and attempts to lower pH are short-lived.

Adjusting Total Alkalinity
When the Total Alkalinity of your pool is low (below 80 ppm) you will need to raise it by adding an Alkalinity Increaser (sodium bicarbonate). This chemical will raise the TA level while having a moderate effect on the pH level. Follow the manufacturer's recommendations for application by either broadcasting the chemical or pre-dissolving. Adjust readings gradually; **DO NOT** add more than 2 pounds of sodium bicarbonate per application and do not raise more than 50 ppm at a time. Allow the water to re-circulate then retest in 4 to 6 hours to determine if further treatment is necessary. **NOTE**: When extremely low TA (below 50 ppm) or pH levels (below 7.0) exist, you should have your water tested for the presence of minerals or metals **PRIOR** to adjusting TA or pH. Add a sequestering or chelating agent as recommended.

Raising Alkalinity Using Sodium Bicarbonate

GALLONS IN POOL							
Increase (ppm)	1,000	5,000	10,000	15,000	20,000	25,000	50,000
10	0.14 lbs.	0.7 lbs.	1.4 lbs.	2.1 lbs.	2.8 lbs.	3.5 lbs.	7 lbs.
20	0.28 lbs.	1.4 lbs.	2.8 lbs.	4.2 lbs.	5.6 lbs.	7.0 lbs.	14 lbs.
30	0.42 lbs.	2.1 lbs.	4.2 lbs.	6.3 lbs.	8.4 lbs.	10.5 lbs.	21 lbs.
40	0.56 lbs.	2.8 lbs.	5.6 lbs.	8.4 lbs.	11.2 lbs.	14.0 lbs.	28 lbs.
50	0.70 lbs.	3.5 lbs.	7 lbs.	10.5 lbs.	14.0 lbs.	17.5 lbs.	35 lbs.

High Total Alkalinity levels (above 150 ppm) should be lowered by using an Alkalinity Decreaser (such as sodium bisulphate) or muriatic acid. Follow all manufacturer's recommendations and adjust the readings, gradually adding no more than 1 quart of muriatic acid per 10,000 gallons per application; if using sodium bisulphate (pH -), no more than 3 pounds per 10,000 gallons per application. USE CAUTION when working with acid. Wear protective gloves and eyewear and follow all label instructions. DO NOT INHALE fumes. When lowering TA using Sodium Bisulphate, you may be required to add the chemical in a "column method." Pouring the chemical in one section, or "column into the water," can have a greater affect on the TA while having a lesser affect on the pH. It is usually recommended that you do not add more than 1 pound of acid (dry or liquid) per application.

Lowering Alkalinity Using Sodium Bisulfate

GALLONS IN POOL							
Decrease (ppm)	1,000	5,000	10,000	15,000	20,000	25,000	50,000
10	0.21 lbs.	1.06 lbs.	2.13 lbs.	3.19 lbs.	4.25 lbs.	5.31 lbs.	10.63 lbs.
20	0.43 lbs.	2.13 lbs.	4.25 lbs.	6.38 lbs.	8.50 lbs.	10.63 lbs.	21.25 lbs.
30	0.64 lbs.	3.19 lbs.	6.38 lbs.	9.56 lbs.	12.75 lbs.	15.94 lbs.	31.88 lbs.
40	0.85 lbs.	4.25 lbs.	8.50 lbs.	12.75 lbs.	17.00 lbs.	21.25 lbs.	42.50 lbs.
50	1.06 lbs.	5.31 lbs.	10.63 lbs.	15.94 lbs.	21.25 lbs.	26.56 lbs.	53.13 lbs.

Lowering Alkalinity Using Muriatic Acid

GALLONS IN POOL							
Decrease (ppm)	1,000	5,000	10,000	15,000	20,000	25,000	50,000
10	2.56 oz.	0.8 pts.	0.8 qts.	1.2 qts.	1.6 qts.	2.0 qts.	1 gal.
20	5.12 oz.	1.60 pts.	1.6 qts.	2.4 qts.	3.2 qts.	1.0 gal.	2 gal.
30	7.68 oz.	1.2 qts.	2.4 qts.	3.6 qts.	1.2 gal.	1.5 gal.	3 gal.
40	10.24 oz.	1.6 qts.	3.2 qts.	1.2 gal.	1.6 gal.	2.0 gal.	4 gal.
50	12.80 oz.	2.0 qts.	1.0 gal.	1.5 gal.	2.0 gal.	2.5 gal.	5 gal.

Free Chlorine 1.0-3.0ppm

The most common disinfectant is chlorine. Free Chlorine (available) is the measure of chlorine's active disinfecting power. There are several forms of chlorine available today — granular, tablets, liquid, etc. Each may have a distinct advantage in ease of application, however, once they are in the pool they all do the same thing — sanitize, disinfect and oxidize your water. Organic material, bacteria and algae are regularly introduced into the swimming pool water, yet are not always visible to the naked eye. That is why it is important to maintain a Free Chlorine residual of 1–3 ppm to keep your water free of these micro-organisms. Be sure when testing your water that your test kit or strips are yielding Free Chlorine reading and NOT a Total Chlorine reading; see the following section for an explanation of Total Chlorine.

Adjusting Free Chlorine

TestMate 4 Pools™ can help you determine the amount of chlorine necessary (how and when to add) to maintain a Free Chlorine reading; this amount varies depending on your pool size and the type of chlorine being used. There are many factors that increase your pool's chlorine demand (how quickly the free chlorine is used), some of which include: rain, heavy bather load and high heat. Once you have found the maintenance dosage of chlorine that works for you, stick with it! This is the single most important factor in maintaining healthy pool water. Try not to let the Free Chlorine residual drop below 1 ppm; if it does and your test shows 0 Free Chlorine residual, you should Superchlorinate or "shock" the pool; see section on ***Shocking*** or ***Superchlorination***.

TOTAL CHLORINE 0 to < .02

Total Chlorine is a measurement of both the Free Chlorine (available) and the Combined Chlorine (chloramines) in your pool. As mentioned earlier, Free Chlorine is the active sanitizer available to disinfect your water. Combined Chlorine is formed when chlorine combines with organic compounds to form chloramines. This "used," or Combined Chlorine, has already done its job and needs to be removed from the water or it can cause skin and eye irritation and the "chlorine-odor" that is often associated with too much chlorine in the pool. Actually at that point the pool needs more chlorine, not less. It is the Free Chlorine that needs to be increased (see ***Shocking*** or ***Superchlorination***).

ADJUSTING TOTAL CHLORINE

When your Total Chlorine reading is higher than your Free Chlorine reading you need to shock or superchlorinate your pool to remove the combined chlorine (chloramines) and increase the Free (available) Chlorine. See section on ***Shocking*** or ***Superchlorination***, or use the Pool Partner CD and go to Water Analysis (from the Main Menu) to help you determine how and when to shock.

TOTAL DISSOLVED SOLIDS 1,000 - 2,000

The ideal range for Total Dissolved Solids (TDS) is 1,000 - 2,000 with a minimum acceptable reading of 300 and a maximum of 3,000. A proper level of TDS in the water will help maintain balance. This level can be changed by draining and refilling the pool with fresh water. A saltwater pool will be in the higher range of TDS.

CALCIUM HARDNESS 200-350 ppm white plaster; 175-250 ppm exposed aggregate or ansylbrite

Calcium Hardness is a measurement of calcium and magnesium in your water. Water hardness levels can vary quite a bit depending on what part of the country you live in. Having the proper level of calcium hardness is important to maintain water balance. If the level is too low, the water can be corrosive and plaster surfaces can begin to etch. If too high, staining, scaling and cloudy water can appear. In traditional plaster finish pools, Calcium Hardness levels that are too low (below 175 ppm) can be raised by adding a Calcium Hardness Increaser (calcium chloride). Levels that are too high (above 350 ppm) can be lowered by partially draining and re-filling with fresh water. Pools with an exposed aggregate or ansylbrite finish should maintain a lower Calcium Hardness level of 175 to 250 ppm. Be sure to test the make-up water going into the pool for the hardness levels.

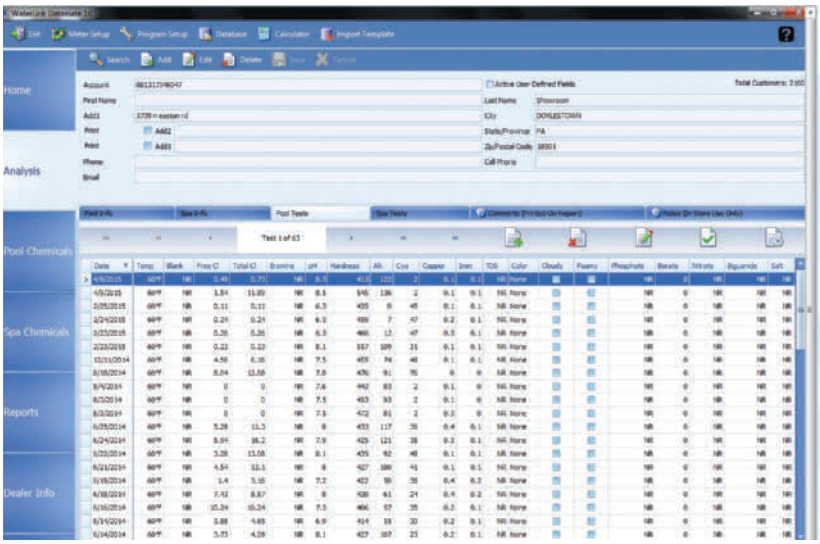
CYANURIC ACID 30-50 ppm; 40-75 ppm salt chlorine generators

Cyanuric Acid, also known as conditioner or stabilizer, shields chlorine from the sun, reducing chlorine consumption by up to 50%. Some chlorine products are stabilized, such as dichlor and trichlor chlorine products (contain cyanuric acid). Granular chlorine (calcium hypochlorite) and liquid chlorine (sodium hypochlorite) are not stabilized. Once added to the water, cyanuric acid does not leave the water. The levels can be lowered by rain or make-up water and raised by the use of stabilized chlorines. You should have your water tested for cyanuric acid levels by your pool dealer on a regular basis to maintain a 30-50 ppm reading; pools using salt generators should maintain a level of 40-75 ppm. As mentioned above, a cyanuric acid level that is too low (under 20 ppm) can cause rapid chlorine loss from the sun's UV rays. Levels that are too high (over 100 ppm) can cause a condition called "chlorine lock" where the chlorine is unable to do its job. In order to lower the Cyanuric Acid, water must be drained and new make-up water added to re-fill the pool. **NEVER** drain your pool without first consulting your Anthony & Sylvan pool professional.

METALS 0 ppm

There are various metallic substances that can be found in your pool water (copper, iron, manganese, etc.) which can cause staining and discoloration in your pool. These substances can occur naturally from the water used to fill the pool, or from metallic pool equipment parts if water has been acidic or corrosive. Your pool dealer can test for the presence of metals in your pool water and recommend a course of treatment for removal. Ultimately, you want to have NO metals present in your pool water. Metal or stain and scale removers are known as sequestering or chelating agents. Pools with plaster interiors need particular attention in this area. Water should be treated with a sequestering agent recommended by a pool professional on initial fill and as a part of your ongoing maintenance routine. See the ***Staining and Scaling*** section for more information.

WATER TESTING



Pool water testing can be performed with liquid test kits or test strips. Whether you are using a liquid test kit or test strips, be sure to read the provided directions. You should also have your water professionally tested at least one to two times every season — ask your dealer how often you should bring in a water sample. A professional water analysis will provide a wider range of tests and a detailed analysis of your pool water.

You should test your pool water a minimum of two to three times a week using your test kit or test strips. When testing your pool water, take a sample from approximately 12" to 18" below the water surface and away from the return inlet. You can then enter your test results into the Water Analysis section of the program, TestMate 4 Pools™. Accurate chemical recommendations and dosages to maintain balanced pool water will be provided. You can then enter your test results into our sureTREAT Water Test Tool found on our website www.anthonysylvan.com/my-pool/.

Test Strips — provide quick and accurate results for a variety of water tests. A typical 3-way test strip will provide chlorine (Free Chlorine), pH and Total Alkalinity readings. As with any test kit, there are several factors that can be controlled to ensure the validity of the test results. Following are some guidelines for using test strips to obtain accurate water analysis results.

- **Follow the directions that came with the kit.** Sounds simple, doesn't it? However, there have been many cases where a user inadvertently used the directions that came with another manufacturer's strips or used directions from an older kit. Most inaccurate test results occur when individuals do not follow directions or follow the wrong directions! Test strips are continually improving and becoming more accurate, and you should never assume that the directions on one container are going to apply to another container's strips. In addition, not all manufacturers' test strips are the same, so it is essential to read and follow the directions on each container.
- **Store test strips in a low humidity environment at room temperature.** Test strips will be most effective over a long period of time if they are stored properly. Suitable storage will give you confidence in your results until the product has reached the date of expiration.
- **Keep the cap on tight between uses.** Doing this will prevent moisture from entering the bottle of unused strips. It is important that moisture not be introduced to the test strips until you use them in your pool or spa.
- **Keep wet fingers out of the bottle.** The test strips won't know the difference between the water on your fingers and the pool or spa water! So, make sure that the only water your test strips are reacting with is the pool or spa water you intend to measure.
- **Do not use expired test strips.** Most containers of test strips will display an expiration date somewhere on the container. Always be aware of this date when using or purchasing test strips. Regardless of how the container has been stored or handled, test strips have a definite shelf life and should not be used after the product has expired. Using test strips after this date will likely lead to inaccurate results. Therefore, replace any bottles that have expired.

WATER TESTING SOFTWARE

The sureTREAT Water Test Tool found on our website www.anthonysylvan.com/my-pool/ creates a personalized water testing tool. We recommend testing your pool water at least two to three times a week. If the sanitizer, pH or alkalinity tests are not in the acceptable ranges, you will receive detailed instructions on how to correct from the sureTreat program. Here you will enter your test results and receive chemical recommendations with dosages to balance your pool water. Maintaining a consistent chemical routine is extremely important in keeping your pool clean, clear and healthy. Once you have started on a chemical program, stick with it. Chemical brands can vary quite a bit and mixing different chemicals can be dangerous. If you follow our recommended chemical routine along with good pool maintenance (vacuuming and filtration), your pool will look great and be easy to maintain.

sureTREAT will help you save time and money using only the chemicals you need, when you need them. Don't forget to have your pool water professionally tested at the start of every season and 2 to 3 times throughout the year. When performing in-store water analysis, a wide range of tests are performed to ensure your water is balanced. Your sureTREAT water-testing program will help you to maintain that balance throughout the season. Of course, if you are experiencing a water problem beyond your basic sanitizer, pH or alkalinity tests, you should have your water professionally tested.

ALWAYS READ ALL CHEMICAL INSTRUCTIONS AND FOLLOW ALL MANUFACTURER RECOMMENDATIONS FOR SAFETY WHEN HANDLING AND STORING ANY CHEMICALS.

If you are experiencing any difficulty with the operation of this software please contact JEDCO PRODUCTS at help@jedcopro.com or by calling toll free 866-234-0104. If you are having difficulty maintaining your pool or with the chemistry of your water, please contact your Anthony & Sylvan professional.

SANITIZING YOUR POOL

Clean, clear, healthy pool water is the result of proper sanitation, filtration and circulation. The term sanitize means to kill all disease-causing organisms. The sanitizer is the key component of your chemical program. In order to be effective, a chemical program used to treat pool water must not only sanitize but also disinfect — *kill all living organisms* and oxidize — *destroy organic waste*.

There are many sanitizer options available today. Your pool professional can help you in choosing the program that best suits your pool type, geographic region and lifestyle. Once you find a sanitizer program that works for you, stick with it! Maintaining a consistent level of sanitizer in your water will prevent bacteria and algae growth and provide sparkling clear water.

Many swimming pool products are incompatible with each other and should not be used with certain sanitizers, alternative sanitizers or pool types. Again, it is best to stick with the products offered in your brand specific chemical program.

The basics of water chemistry, found within this manual, explains the importance of water chemistry and the role that water balance plays in the effectiveness of your sanitizer. Be sure to review this section; see ***Basic Water Chemistry***.

Your chemical sanitizer options include ***Chlorine, Clear Vision ™(Nature^2®)*** and ***Aqua Pure™ Salt Generator***. Each of these sanitizers has certain advantages and benefits that you can discuss with your Anthony & Sylvan representative. He or she will be able to guide you in choosing the chemical program best suited for your pool type and lifestyle.

Each chemical program requires specific handling and storage precautions. Please read and follow all label directions as well as the safety recommendations listed in ***Chemical Safety***. In all cases, chemicals should be kept in a dry location out of the reach of children.

SANITIZING YOUR POOL WITH CHLORINE

Chlorine is a natural element belonging to the halogen group of elements. Chlorine has long been the most popular sanitizer treatment for pools because of its ability to:

- Sanitize: *To kill all disease-causing organisms*.
- Disinfect: *To kill all living organisms*.
- Oxidize: *Destroy ammonia, nitrogen-containing contaminants and swimmer waste*.

Because chlorine is a very strong oxidizer there are certain precautions you should follow when using, storing and handling this chemical. A few are listed below; see Chemical Safety for more detailed instructions.

- Always read and follow the manufacturer's instructions.
- Store chemicals in a cool, dry and shaded place.
- Never mix different types of chlorine – add each to the pool separately.
- Never mix chemicals together – add each to the pool separately.
- If pre-dissolving granular chlorine, **ALWAYS** add chlorine to water, not water to chlorine.
- Use a clean, dry bucket outdoors in a well-ventilated area.
- Avoid breathing fumes or vapors.
- Make sure pool chemicals are inaccessible to children.

There are several forms of chlorine available — liquid, stabilized granular and slow dissolving tablets, sticks and rods. Each type of chlorine has specific advantages. Again, your pool dealer will assist you in choosing a chlorine type that is right for your pool. When using chlorine as a maintenance sanitizer, it is very important to maintain a free chlorine reading of 1–3 ppm. You will notice an increase in the chlorine demand when the pool is being heavily used, during very hot weather, storms and heavy rain.

Free Chlorine 1.0-3.0 ppm

Free (available) chlorine is the measure of chlorine's active disinfecting power. Organic material, bacteria and algae are regularly introduced into the swimming pool water yet are not always visible to the naked eye. That is why it is important to maintain a Free Chlorine residual of 1–3 ppm to keep your water free of these micro-organisms. Be sure when testing your water that your test kit or strips are yielding Free Chlorine reading and NOT a Total Chlorine reading; see the following section for an explanation of Total Chlorine. If you are using Clear Vision Nature2®, you can maintain a much lower chlorine residual of 0.5–1.0 ppm. See the ***Clear Vision***™ section for detailed instructions.

Adjusting Free Chlorine

TestMate 4 Pools can help you determine the amount of chlorine necessary (how and when to add) to maintain a Free Chlorine reading. This amount varies depending on your pool size and the type of chlorine being used. There are many factors that increase your pool's chlorine demand (how quickly the free chlorine is used), some of which include rain, heavy bather load and high heat. Once you have found the maintenance dosage of chlorine that works for you, stick with it! This is the single most important factor in maintaining healthy pool water. Try not to let the Free Chlorine residual drop below 1 ppm; if it does and your test shows 0 Free Chlorine residual, you should Superchlorinate or "shock" the pool; see section on ***Shocking*** or ***Superchlorination***.

Total Chlorine 0 to less than .02 ppm

Total Chlorine is a measurement of both the Free Chlorine (available) and the Combined Chlorine (chloramines) in your pool. As mentioned earlier, Free Chlorine is the active sanitizer available to disinfect your water. Combined chlorine is formed when chlorine combines with organic compounds to form chloramines. This "used," or Combined Chlorine, has already done its job and needs to be removed from the water or it can cause skin and eye irritation and the "chlorine-odor" that is often associated with too much chlorine in the pool. Actually, at that point the pool needs more chlorine, not less — it is the Free Chlorine that needs to be increased (see ***Shocking*** or ***Superchlorination***).

Adjusting Total Chlorine

When your Total Chlorine reading is higher than your Free Chlorine reading, you need to shock or superchlorinate your pool to remove the Combined Chlorine (chloramines) and increase the Free Chlorine (available). See section on ***Shocking or Superchlorination***, or go to TestMate 4 Pools to find out how and when to shock.

TYPES OF CHLORINE

Always follow the label directions on the chlorine you are using and **DO NOT** mix different types of chlorine (or any other type of chemical). If you are using an automatic chlorinator or chlorine feeder, be certain to use ONLY a trichlotrizinetrione chlorine.

LIQUID CHLORINE (Sodium Hypochlorite)

Liquid chlorine can be added directly to the pool water and should be used daily to maintain a Free Chlorine level of 1–3 ppm. This fast acting, non-stabilized chlorine will dissipate quickly in the sunlight, therefore it is a good idea to chlrorinate in the evening and to maintain a conditioner or stabilizer reading (cyanuric acid) of 30–50 ppm. This type of chlorine carries a higher pH reading, which may raise the pH level of your water over time. Liquid chlorine (sodium hypochlorite) can also be used to superchlorinate or "shock" your pool by increasing the dosage. See ***Shocking*** or ***Superchlorination*** for further explanation.

STABILIZED GRANULAR CHLORINE (dichloro-s-triazinetrione)

Anthony & Sylvan Super Pool Treat™

Long-lasting stabilized chlorine is protected against the sun's damaging U.V. rays, allowing you to chlorinate every other day. This fast-dissolving formula is completely soluble with no calcium build-up, and it will not cause clouding and has a more neutral pH than non-stabilized granular chlorine. **NOTE**: Stabilized granular chlorine (dichlor) **CANNOT** be used in a chlorinator, automatic feeder or dispenser.

1" CHLORINE TABLETS (trichloroisocyanurate)

Anthony & Sylvan SYL-CLOR 1" tabs™

These stabilized 1-inch diameter tablets dissolve slowly for use in floating dispensers or automatic chemical feeders. Add every 5–7 days to maintain a Free Chlorine level of 1–3 ppm. This type of chlorine carries a lower pH reading, which may lower the pH level of your water over time.

3" CHLORINE TABLETS, RODS or STICKS (trichloroisocyanurate)

Anthony & Sylvan SYL-CLOR SUPER 3" tabs™

These giant 3-inch diameter stabilized tablets, rods or sticks are slow dissolving for use in a floating chemical feeder or automatic chlorinator. Add every 5–7 days to maintain a Free Chlorine level of 1–3 ppm. This type of chlorine carries a lower pH reading, which may lower the pH level of your water over time.

When using an automatic chlorinator or chemical erosion style feeder, use **ONLY trichloro type** slow dissolving chlorine tablets. Using ANY other type of chlorine can cause a fire or explosion. **DO NOT** mix chlorine with any other chemicals. When pre-dissolving chlorine, **ALWAYS** add chlorine to water NOT water to chlorine. Take proper precautions when storing and handling chlorine by carefully reviewing the ***Chemical Safety*** section of this manual.

CONDITIONER or STABILIZER

The sun is a natural enemy to chlorine residuals in your pool. In fact, an ideal level of chlorine in an "unstabilized" pool or spa can be lost in less than two hours on a bright, sunny day due to the UV rays of the sun. Cyanuric acid acts as a "stabilizer" that helps chlorine hold up better when exposed to the UV rays. You can think of cyanuric acid as blocking the effect that the sunlight has on breaking down the chlorine—kind of like a sunscreen for your pool. **Conditioner or Stabilizer** (cyanuric acid) is designed to reduce the sun's effects on chlorine. Also known as a stabilizer or conditioner, cyanuric acid is a hard granular product. The easiest way is to broadcast the granules over the pool. **CAUTION**, see your interior finish type's instructions for more information, as this method may not be advisable for your pool. You can also pour the granular conditioner into a clean stocking or pantyhose and tie in front of the return inlet to slowly dissolve. Whatever method you choose, the granules must continue circulating in the pool for a minimum of 48 hours (allow more time for cold water). Maintain a cyanuric acid level of *30 to 50 ppm to help control chlorine consumption. *Pools generating chlorine through the use of a salt water generator should maintain a cyanuric acid reading of 40–75 ppm. To raise cyanuric acid levels in the pool, simply add the proper amount of Conditioner or Stabilizer. However, be advised that cyanuric acid will make the pH of the water lower (more acidic), so you may have to adjust the pH upward as well.

Recommended Dosage of Granular Cyanuric Acid (Conditioner or Stabilizer)

Pool Capacity in Gallons	To Raise Stabilizer 10 ppm
5,000	8 oz.
10,000	1.0 lb.
15,000	1.5 lbs.
20,000	2.0 lbs.
30,000	3.0 lbs.

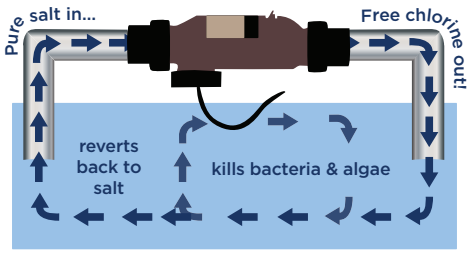
On the other hand, too much cyanuric acid will have an adverse effect on your chlorine, and in extreme cases, may lead to a condition called chlorine or ammonia lock. Some chlorine compounds already contain an amount of cyanuric acid. If you are using dichlor or trichlor as your primary chlorine sanitizer, you are already introducing cyanuric acid along with the chlorine. If the cyanuric acid level in your pool is too high, you will need to partially drain and refill with fresh water. **DO NOT** drain your pool without first consulting your pool professional.

Your professional pool dealer will be able to test your pool water for the cyanuric acid level at the beginning of each season prior to the addition of any conditioner or stabilizer. If you are having a difficult time maintaining a chlorine reading, despite the appropriate dosages of chlorine, you should bring a water sample to your pool dealer for a complete water analysis,including a cyanuric acid test.

Please review the ***Chemical Safety*** section of this manual and the safety recommendations for storage and handling of chlorine and other pool chemicals. Chlorine is a powerful oxidizer and precautions should be taken in the storage, handling and use of this product.

SALT CHLORINE GENERATORS

Saltwater Chlorine generators use electrolysis — water passing over the chlorine generator cell — to produce chlorine. The process begins with salt in the water (sodium chloride), which is converted to chlorine (sodium hypochloride) within the generator through electrolytic conversion. Then, like all chlorine, it becomes hypochlorous acid when added to water. Hypochlorous acid (free chlorine) is the active sanitizer that kills algae and bacteria in the water. Once sanitation takes place, the chlorine changes to salt and is used over and over again through each sanitation cycle. This means that your AquaPure™ salt generator is a closed-loop system that does not require continuous addition of a chemical sanitizer.



Step 1: Just add salt (only 3000 parts per million)

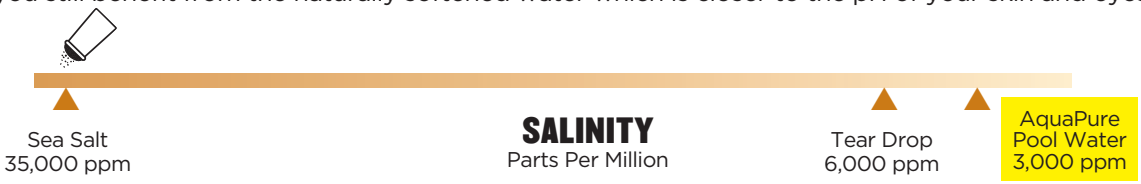
Step 2: Turn on the AquaPure™

Step 3: Sit back and relax

The benefits of this type of system are the automatic and continuous sanitation of the water without the need to manually add chlorine, providing softer, more pleasant water to swim in.

Salinity Levels

The most common question about the use of a salt chlorine generator is if the pool water will taste like saltwater. The answer is usually no. Ocean water typically has a salt content of 35,000 ppm, whereas the AquaPure™ generator requires a salt level content of 3000 ppm, about half the amount found in human tears. A very mild saline taste can begin to be detected at 3500 to 4000 ppm. Even though you can barely taste it, you still benefit from the naturally softened water which is closer to the pH of your skin and eyes.



The salt you should add to your pool is common food-quality salt, sodium chloride (NaCl). Generally, 40 to 80 lb. bags labeled "Coarse Solar Salt" are available from your pool professional or in hardware or building supply stores for use in water softeners. One pound of salt will increase 1,000 gallons of water by 120 ppm. Be sure the salt you are using is greater than 99% pure; **DO NOT** use rock salt. Water conditioning salt pellets are compressed forms of evaporated salt and may be used but will take longer to dissolve. If the AquaPure is wired-in (connected), use it to determine the salinity, otherwise you can use a salt test strip to establish the salt level. **It is important that you maintain the salt level in the ideal range of 3000 to 3500 ppm.** This will help your generator to sanitize the water properly, keeping it sparkling clear and clean. If the salt level gets too high (above 4000) you can damage your generator. If the level is too low (below 2500), the system won't be able to sanitize your water adequately. ***NOTE: DO NOT*** add salt to your new pool for the first 30 days while the finish is curing.

How to Add Salt to the Pool

1. Turn on pump to circulate pool water.
2. ***IMPORTANT*** - Turn the AquaPure OFF by pressing the arrow button **A** and setting the CHLORINE PRODUCTION Rate to 00%.
3. To determine the amount of salt required, go to the **Water Analysis** section from Main Menu and enter your salt reading. TestMate 4 Pools™ will provide you with the exact amount of salt required for your pool size based on your current salt level, OR you can refer to the table in the AquaPure™ operating manual; see below.
4. Broadcast or spread the salt into the outer perimeter of the pool, or into the shallow end of the pool for quick and even distribution.
5. To avoid clogging the filter or damaging control center and pump, do not add salt through the skimmer, main drain or surge tank.
6. Brush the pool bottom and allow water to circulate for 24 hours so the salt can dissolve completely and mix evenly with the pool water.
7. After 24 hours, verify correct salt reading.
8. Turn on the AquaPure and set to desired production rate (Press arrow button **B**).

NOTE: ***DO NOT*** add salt to your new pool for the first 30 days while the finish is curing.
DO NOT add salt with the Aqua Pure™ generator turned ON — unit should be OFF
DO NOT add salt through the skimmer — it should be broadcast over surface.

The chlorine production of your generator is controlled by the number of hours your filtration system is on as well as the setting of the output control. Power to the generator must be controlled by the pump timer as
the chlorinator functions only when the filter is running — which should be a minimum of 8 hours a day. As with all types of chlorinated pools, you should shock your pool every one to two weeks; see ***Shocking*** or ***Superchlorination*** for more details. Your chlorine generator has a Super Chlorination feature — BOOST — that will automatically super chlorinate (shock) the water for an approximated 24 hour period of pool pump operation. To use the Boost feature: Press and hold the Temperature button **D** for 10 seconds to enter the Boost mode (Note 'bo' will flash intermittently). Boost can be used to set chlorine production to maximum (100%) for 24 hours of operation. After 24 hours of chlorinator run time, chlorine production will return to previous setting. To clear the Boost mode, press and hold the Temperature button again for 10 seconds.

On initial start up, and if you experience a water problem that requires shocking (algae growth, cloudy water), a rapid chemical shock treatment should be manually added to the water using your choice of oxidizers:

- 1 pound of Granular Chlorine (calcium hypochlorite) per 10,000 gallons of water
- 1 gallon of Liquid Chlorine (sodium hypochlorite) per 10,000 gallons of water
- 1 pound of non-chlorine (potassium mono persulfate) per 10,000 gallons of water

Periodically, you should visually check the cell electrodes. Follow the operating manual instructions below for complete details on how often to check and how to clean.

Test your water 2-3 times per week using your test kit or strips for the following readings:

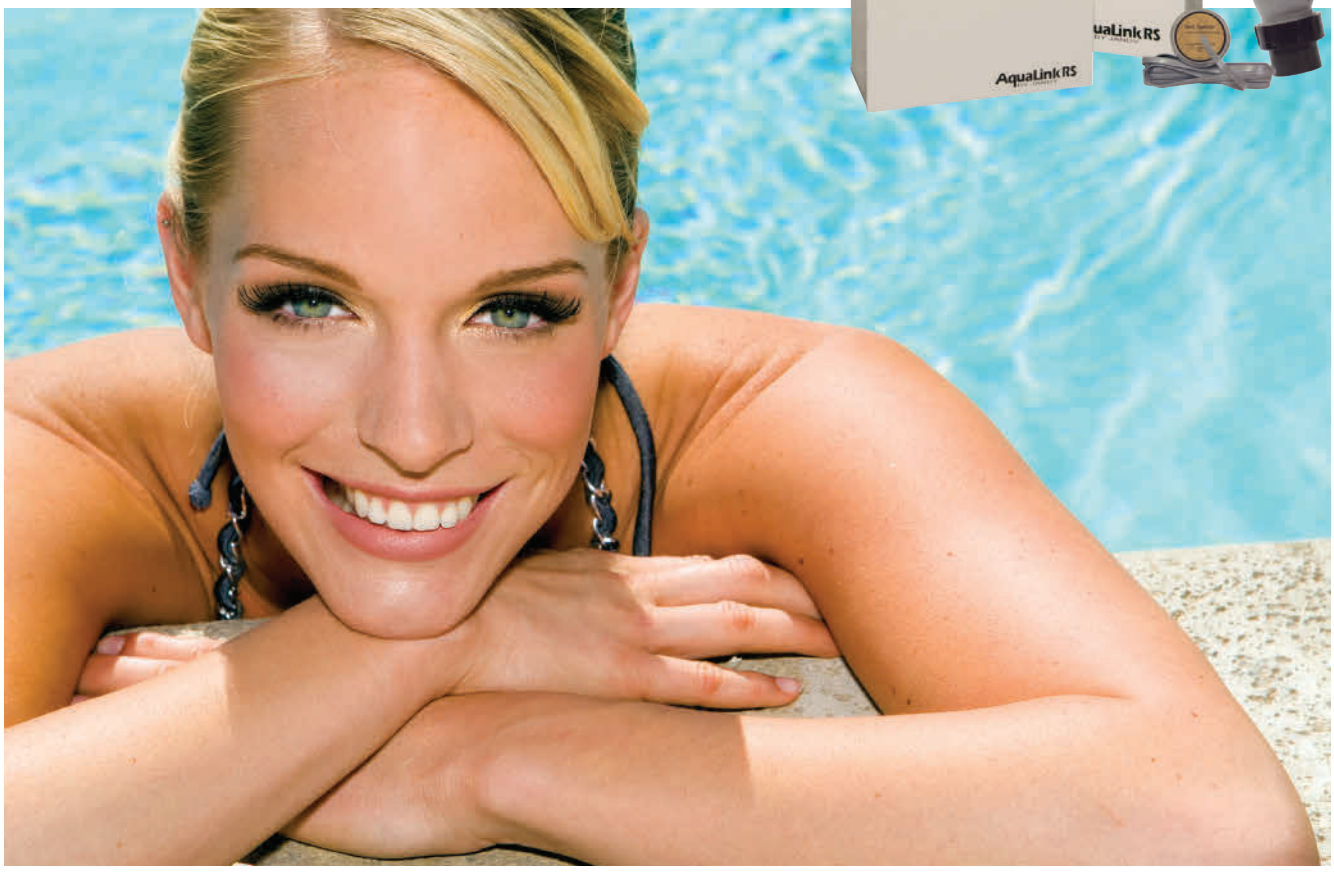
Free Chlorine*	ideal	1.0 – 3.0 ppm*
Total Alkalinity	ideal	100 – 150 ppm
pH	ideal	7.4 -7.6
**If you are using Nature 2®, you can maintain a much lower chlorine residual of 0.5–1.0 ppm.*		

Test monthly using test kit or strips or have your water tested by your pool dealer for the following readings:

sodium chloride (salt)	ideal	3000 to 3500 ppm
Cyanuric Acid range: (conditioner or stabilizer)	ideal	40-75 ppm

Chlorine Stabilizer (Cyanuric Acid) is needed to maintain proper levels of chlorine. Most unstable chlorine is destroyed by the UV radiation from the sun within 2 hours. Chlorine stabilizer should be maintained between 40–75 PPM. For more information, see ***Conditioner*** *or* ***Stabilizer*** in ***Basic Water Chemistry*** section.

PureLink™ incorporates the AquaPure™ Water Purification System electronics into the AquaLink® RS Power Center. This optional accessory combines the programming and activation of all your pool and spa features with Aqua Pure's water purification benefits.



NATURE^{2}® FUSION INGROUND MINERAL PURIFER MINERALS + CHLORINE UNITE

Nature^{2}® Fusion Inground is the ultimate chlorine and mineral sanitizing system for inground pools. By combining patented Nature^{2}® mineral technology with an automatic chlorine tab feeder, Nature^{2}® Fusion Inground delivers water that is noticeably cleaner, clearer and softer. Nature^{2}® is proven to destroy bacteria and control algae, so your pool water will be sparkling clean without having to add extra chemicals. Nature^{2}® is a natural supplement to chlorine, so it helps maximize chlorine investment, while reducing the annoying and harmful effects of harsh chemical use. No other system is this complete or easy to install, use and maintain. With Nature^{2}® Fusion Inground, you are just a few simple steps away from perfect pool water, naturally.

Nature^{2}® Cartridge Start Up and Installation Procedures

1. Before installing a new Nature^{2}® cartridge, clean debris and algae out of the pool and pool equipment. **Important**: Do not install the new cartridge until the pool water is clean and chemically balanced.
2. Balance pool water before installing Nature^{2}® cartridge:
   - pH 7.4-7.8
   - Calcium hardness 200-400 ppm
   - Total Alkalinity 80-150 ppm
3. Install the cartridge once the water is balanced. *See Nature^{2}® Operating Manual below.*
4. **Important**: Initial superoxidation with chlorine is required to burn off contaminants and activate cartridge; see Owner's Manual or ***Shocking*** or ***Superchlorination*** section
5. Run the circulating pump either:
   - 24 hours a day for 4 days, maintaining 1-2 ppm Free Chlorine throughout, OR
   - 6 hours a day for 14 days, maintaining 1-2 ppm Free Chlorine throughout.

6. Let chlorine dissipate to 0.5 ppm once the above start up period is completed.
   - **DO NOT** enter the pool if the Free Chlorine residual is over 3 ppm.
7. Follow the Low Chlorine Recipe as outlined below.

Low Chlorine Recipe

Once the 4-day or 14-day start-up period is done, allow the Free Chlorine residual to drop to 0.5 ppm by reducing the amount of chlorine you add, then:

- Every day: Run the pump and filter at least 6 hours each day.
- Once a week: Balance pH and Total Alkalinity.
- Twice a week: Check chlorine residual; add chlorine to maintain at minimum of 0.5 ppm
- As needed: If water is hazy, superoxidize with chlorine according to manufacturer's instructions.
- Additional shocking is recommended following rainstorms or heavy bather load.
- **DO NOT** re-enter the pool if the Free Chlorine residual is over 3 ppm.

SHOCKING or SUPERCHLORINATION

When you shock your pool, you use the process of oxidation to chemically remove (burn up) organic debris, such as body waste, particulate matter and perspiration, from the water. All pools require a shock treatment on a regular basis, every 1 to 2 weeks, to maintain optimum water quality. In addition to oxidizing undesired wastes, shocking will help eliminate algae and bacteria that might be hiding in filters and hard-to-sanitize areas. Contrary to what most people think, a strong chlorine smell is not an indication of too much chlorine in the pool but actually a red flag that a super dose may be required to correct the problem. In chlorine treated pools, shocking can be achieved by superchlorination (adding a much higher chlorine amount than normal). Hypochlorous acid is the form of chlorine that provides sanitation. Hypochlorous acid is very active and will react with ammonia and other nitrogen-containing organic compounds (i.e., perspiration, urine, etc.) and form chloramines. This "Combined Chlorine" is 40 to 60 times less effective than Free (available) Chlorine. Combined Chlorine, in addition to reduced effectiveness against bacteria, can cause eye irritation and so called "chlorine odor." This may also result in a dull or flat look to your pool. A properly balanced and chlorinated pool will have no discernible odor.

WHEN TO SHOCK

Every 2 Weeks:	When the temperatures are 80° F or below
Weekly:	When the temperatures are above 80° F Heavy bather load (after the pool party!)
As Needed:	At the first signs of visible algae (slippery walls or floor) Cloudy water (check water balance as well) Heavy rains or storms (increase organic debris in water)

- ✔ It is most effective to shock in the evening as chlorine shock dissipates very rapidly in sunlight.
- ✔ Remember, if you are using a chlorine shock treatment you will have a very high chlorine reading (10 ppm or higher). You must allow the Free Chlorine level to drop back down to the safe range of 3 ppm or lower before reentering the pool. This can take up to 24 hours, so plan accordingly when superchlorinating or use a non-chlorine shock (mono-persulfate) if the pool will be in use sooner. Non-chlorine shocks allow you to re-enter the pool within 15 to 30 minutes after treatment.

WHAT TO USE

CHLORINE and SALT GENERATOR TREATED POOLS

Anthony & Sylvan Super Pool Treat™ or Concentrated Dichlor Shock
11 ounces per 10,000 gallons

Anthony & Sylvan SCORCH Plus™ or Non-chlorine shock**
(potassium mono persulfate) 1 lb per 10,000 gallons

Liquid chlorine
(sodium hypochlorite) 1 gallon per 10,000 gallons

Superchlorinate-GENERATOR*** BOOST
(chlorine generated from saltwater chlorine generator) Run pump for 24 hrs.

For chlorine shocks to be effective you should achieve a 10 ppm or higher reading of Free Chlorine for a minimum of a 4 hour period.

*If directions suggest pre-dissolving these chlorines before application remember to **ALWAYS** add chlorine to water and **NEVER** water to chlorine. Dissolve in a clean bucket of water outside. DO NOT inhale as fumes will be very strong. See ***Chemical Safety*** section for more details.

** Non-chlorine shock (mono persulfate) can be added directly to the pool and you can resume swimming in 15 minutes. This is a very convenient method of shocking and is an excellent choice for water clarity issues. It is NOT, however, the best choice for algae treatment as it oxidizes but does not sanitize (kill disease) in the water.

***Your Aqua Pure™ Salt Chlorine Generator has a Super Chlorination feature — BOOST — that will automatically super chlorinate (shock) the water for an approximated 24 hour period of pool pump operation. To use the Boost feature: Press and hold the Temperature button D for 10 seconds to enter the Boost mode (Note 'bo' will flash intermittently). Boost can be used to set chlorine production to maximum (100%) for 24 hours of operation. After 24 hours of chlorinator run time, chlorine production will return to previous setting. To clear the Boost mode, press and hold the Temperature button again for 10 seconds. If a water problem exists or a rapid shock is required, it is suggested that you manually shock the water using a chlorine or non-chlorine shock treatment for quick results.

SPECIALTY CHEMICALS

There are many specialty chemical products available today to treat a wide range of water problems. Your pool professional will assist you in choosing the specialty chemicals best suited for your pool water and chemical treatment program.

Chelating or Sequestering Agents

These chemicals are used to prevent staining or scaling by binding metals or minerals in pool water together so they will not precipitate (fall out of solution). Often called stain or scale remover or inhibitor, these products work best to prevent discoloration PRIOR to the use of any sanitizer or balancing chemicals. Anthony & Sylvan Les-Iron™ or Les- Iron II™ or another chelating or sequestering agent should be added on the start-up or fill of your new pool with a maintenance dosage applied weekly thereafter. *(See **Staining** and **Scaling** section for more information)*

Clarifiers

Clarifiers help filter out suspended particles that cannot be oxidized. Made of Polyelectrolyte, clarifiers use the art of attraction to coagulate or bind small particles together making them large enough to be trapped by the filter. Anthony & Sylvan's Majestic Blue™, or another clarifier recommended by your pool professional, should be used according to the instructions on the bottle label. *(See **Cloudy Water** section for more information)*

Enzyme Products

Enzymes provide a natural method for combating organic matter in your pool water. Pools with heavy use or large amounts of organic material (suntan oils, cosmetics, body oils and wastes, leaves, worms, etc.) will benefit greatly from a weekly addition of an enzyme product. Enzyme products like Natural Chemistry's Pool Perfect® or Pool First Aid™ will reduce foaming and scum-lines, eliminate chemical odors, increase water clarity, and decrease backwashing frequency.

Filter Aids or Alternative Filter Media

Filter aids or alternative media such as Purifiber® Cellulose Filter Media can be used to enhance the filtering capabilities of a cartridge filter or replace the diatomaceous earth media in a D.E. filter. This cellulose is produced from wood pulp and is non-toxic and biodegradable. The ability of cellulose to trap and retain swimming pool pollutants is tremendous, including a natural affinity to absorb body and tanning oils. In general, the use of a Purifiber® powdered cellulose filter media increases the life of the filter run 2-3 times and requires only the weight of diatomaceous earth.

To enhance cartridge filter performance and aid in cleaning, add up to 1/4 pound Purifiber® per 25 square feet of cartridge filtering area. The cartridge should be clean and free of oil and dirt before adding Purifiber®. Clean cartridge, if necessary, by soaking in an appropriate cleaning solution. After pool water clarity is achieved, remove dirty cartridge and clean again to remove all dirt, debris and exhausted Purifiber®. Use on a continuous basis to protect cartridge and assist in cleaning.

Filter Cleaners

Your pool professional will recommend the correct filter cleaner for your filter type along with directions for usage. Generally, your filter should be chemically cleaned 1 to 3 times per season.

Phosphate Treatment

Phosphates are a primary nutrient for algae. By removing its food source, pool water becomes much less inviting for algae growth. A well maintained pool with proper sanitizer levels should not experience algae problems, but as the phosphate level increases the more likely it is that algae will flourish and the more resistant it will become. In most cases, phosphates enter the pool in the fill water, which runs from 100 parts per billion (ppb) to more than 1000 ppb (many water districts add phosphates to their water to inhibit corrosion). Other sources include rain water, fertilizers, some pool chemicals, organic debris (like bark or leaves) and people. In other words, phosphates are always entering a pool. Your pool dealer may wish to test your water for phosphate levels and determine if the regular addition of a phosphate remover such as Anthony & Sylvan's Phos-X™ is recommended for your pool.

Saltwater Chemical Programs

Salt water chlorine generators require a pre-determined level of sodium chloride (salt) to be established and maintained in the pool water. The ideal level of salt content for an Aqua Pure™ salt generator is 3000 ppm to 3500 ppm. (see ***Salt Chlorine Generators*** to learn more) The salt you should add to your pool is common food quality salt, sodium chloride (NaCl). 40 to 80 pound bags labeled "Coarse Solar Salt" are generally available from your pool professional or in hardware or building supply stores for use in water softeners. One pound of salt will increase 1,000 gallons of water by 120 ppm. Be sure the salt you are using is greater than 99% pure; **DO NOT** use rock salt.

Tetraborate

Potassium tetraborate prevents algae from processing carbon dioxide — which is necessary for its growth. If recommended by your pool professional, a specialty product can be used as directed.

Tile Cleaner

Your pool professional can recommend a swimming pool tile cleaner that will emulsify the oils that cause a waterline or "bathtub" ring. A mild solution of muriatic acid and water can also be used to clean your tile. Be sure to follow **ALL** safety precautions when working with acid (see ***Chemical Safety***, ***Acids*** for more information). Cleaning the pool's waterline often will prevent formation of a scumline and calcium build-up.

CAUTION: When using any chemical you should always read the label directions for usage and handling instructions. Follow all safety guidelines on the bottle as well as the Chemical Safety recommendations found within this manual.

ALGAE

Algae are microscopic plant life that exists in many types and species — yellow, green, brown or black. Green algae are the most common type and the easiest to get rid of. It can appear in patches or create an all-over cloudy green shade of water. Pink slimy algae are actually not algae but fungus bacteria, often appearing as streaks or spots in corners and crevices. Often it will appear as a pink or orange colored ring around the skimmer or waterline. Mustard algae prefer shady areas like pool step corners, along the walls and under the pool lights, ladders or other fixtures. Black algae often appear as dark colored spots on the walls or floor. Temperature, sunlight, pH, sanitizer level and the presence of carbon dioxide, phosphates and nitrates all affect the presence and growth rate of algae. Algae can be introduced into the pool by rain or wind, leaves and organic material, even fill water. In early stages of algae infestation you may notice the water circulation slowing. As the filter removes algae spores, the filter pressure builds and the return flow decreases.

In all cases, the prevention of algae growth is much easier than the cure.

Prevention

Preventing algae growth requires the following: regular pool maintenance, proper circulation and filtration, keeping the pH and free chlorine residual or other sanitizer at the proper level, keeping the pool clean and vacuumed, weekly shocking and adding a maintenance algaecide, algistat or specialty chemical to help prevent algae growth. **Proper sanitizer levels will prevent most algae growth**; however, there are some strains that are resistant to chlorine and other sanitizers. Therefore, we recommend regularly adding a dosage of a maintenance algaecide or a specialty chemical. Although you cannot test for algaecide levels in the water, regular use will be an effective deterrent to algae growth. Most maintenance algaecides contain 10% quaternary ammonia compounds. These “quat” algaecides may cause foam on the surface of the water due to their ability to decrease surface tension. The foam is normal and short lived. The “quats” generally work best in preventing algae as an algistat rather than as a treatment for active algae infestation. There are a variety of specialty chemicals available, such as phosphate removers, that prevent algae growth and chlorine enhancers, such as Yellow-X™; for more information go to ***Specialty Chemicals***.

Treatment

The most common method of treatment is to shock the pool with chlorine shock and administer an algaecide. Frequent brushing and increased circulation is also helpful to combat an algae problem. Algaecides kill algae working hand in hand with your sanitizer to help control and prevent algae growth. There are many different types of algaecides available; some are made to specifically fight certain types of algae. The key to choosing the right algaecide is to follow the manufacturer’s directions and to maintain a regular amount of algaecide in the water during treatment. Polymer based algaecides from 30-60% are non-foaming and effective in both prevention and killing of many types of algae. Copper, silver and magnesium based algaecides are often recommended for killing stubborn algae such as black or mustard. Caution should be taken when using mineral based algaecides such as copper or silver in plaster pools. We recommend using a sequestering agent to keep the metals/minerals in suspension to prevent staining on white plaster walls. Your pool professional will help you determine the type of algaecide needed based on the algae present and your pool type.

Green Algae

1. Check pH and adjust if necessary.
2. Shock pool — see **Water Analysis** from Main Menu for dosages. Chlorine shock (dichlor) is recommended over non-chlorine (mono persulfate) shocks for algae treatment.
3. See your pool professional for the appropriate algaecide (generally polymer) and follow treatment recommendations for your algae type and pool type. Pour algaecide directly into the water near or over the visible algae growth.
4. Remove solar cover and discontinue use during treatment of active algae growth.
5. Increase filter run time to 24 hours if possible to increase circulation.
6. The following day, brush and vacuum affected areas. Steel bristled brushes are recommended for fully cured plaster pools.
7. Check the filter pressure gauge and backwash if necessary.
8. Continue to maintain your sanitizer level at the high side of normal (Free Chlorine of 3.0 ppm) during treatment for algae infestation.
9. Continue to brush walls and vacuum; clean filter as necessary and add maintenance algaecide until pool is clear of all signs of visible algae.

Black Algae

Some types of algae, especially black algae, are very stubborn and require special treatment. Black algae forms a protective coating which makes it highly impervious to shock treatments and algaecide. The best treatment for black algae is to scrub the affected areas or spots prior to chemical treatment so the shock and algaecide will have an opportunity to penetrate the algae spores.

1. Vigorously scrub algae spots with a maintenance or algae brush. Steel bristled brushes are recommended for fully cured plaster pools.
2. Check pH and adjust if necessary.
3. Shock pool — see **Water Analysis** from Main Menu for dosages. Chlorine shock (dichlor) is recommended over non-chlorine (mono persulfate) shocks for algae treatment
4. See your pool professional for the appropriate algaecide for black algae (generally silver or high % polymer) and follow treatment recommendations for your pool type. Pour algaecide directly into the water near or over the visible algae growth.
5. Remove solar cover and discontinue use during treatment of active algae growth.
6. Increase filter run time to 24 hours if possible to increase circulation.
7. The following day, brush and vacuum affected areas again.
8. Check the filter pressure gauge and backwash if necessary.
9. Continue to maintain your sanitizer level at the high side of normal (free chlorine of 3.0) during treatment for algae infestation.
10. Continue to brush walls and vacuum, clean filter as necessary and add maintenance algaecide until pool is clear of all signs of visible algae.
11. After fighting a stubborn algae problem such as black or mustard algae, we recommend that you thoroughly clean your filter media, brushes, vacuum head and hoses. Algae spores remaining in any of these areas they can reinfest the pool.

Mustard Algae

This type of algae brushes off very easily. However, it is NOT an easy form of algae to get rid of. When brushing, the mustard algae tend to just spread throughout the pool. There are a variety of algaecides made specifically to combat mustard algae. Use the type recommended by your pool professional along with aggressively shocking your pool, as mustard algae is resistant to normal chlorine levels.

1. Check pH and adjust if necessary.
2. Shock pool - see Water Analysis from Main Menu for dosages. Chlorine shock (dichlor) is recommended over non-chlorine (mono persulfate) shocks for algae treatment.
3. See your pool professional for the appropriate algaecide for mustard algae (often sodium bromite) and follow treatment recommendations for your pool type. Pour algaecide directly into the water near or over the visible algae growth.
4. Remove solar cover and discontinue use during treatment of active algae growth.
5. Increase filter run time to 24 hours if possible to increase circulation.
6. Check the filter pressure gauge and backwash if necessary.
7. Continue to maintain your sanitizer level at the high side of normal (Free Chlorine of 3.0 ppm) during treatment for algae infestation.
8. Clean filter as necessary and continue to add a maintenance algaecide until pool is clear of all signs of visible algae.

After fighting a stubborn algae problem such as black or mustard algae it is recommended that you thoroughly clean your filter media, brushes, vacuum head and hoses. Algae spores remaining in any of these areas may reinfest the pool.

Anthony & Sylvan "PRO"-60 Algaecide™ is effective against green, black and mustard algae.

- No Foaming
- No Staining
- No Discoloration
- No Metals

CLOUDY WATER

On the initial fill of your new pool you can expect the water to be cloudy as the plaster dust settles; this is normal and is discussed in the initial start-up section of the manual. Aside from the initial start-up, cloudy water can be caused by a number of conditions; you should check for possible causes in the following order:

- Insufficient Filtration — Make sure your filter is clean and functioning properly. Your filter may be due for a more thorough cleaning than backwashing alone provides. Ask your pool dealer about a filter cleaner (see ***Filtration***). Has your pool been circulating a minimum of 6-12 hours a day, up to 24 hours a day? Be sure to allow your filter to run continuously, 24 hours a day, until your water clears.
- Unbalanced Water — High pH (above 7.8), high Total Alkalinity (above 150), high Calcium Hardness (above 400) are all capable of causing cloudy water. Test your water and enter the results under Water Analysis to determine if you need to make adjustments to balance your water.
- Low Sanitizer Level — Sanitizers can be consumed rapidly, especially in high heat and heavy bather loads. A low sanitizer residual can also allow for algae growth, which in the early stages can appear as cloudy water. Add a dose of your maintenance sanitizer and shock your pool. Shocking your pool with a non-chlorine shock (mono persulfate) at a rate of 1 pound per 10,000 gallons will oxidize any contaminants without adding calcium, found in granular chlorine (calcium hypochlorite), which can add to the cloudiness.

TREATMENT

You may still need to add a clarifier after running your clean filter, balancing and shocking your pool water. Clarifiers help filter out suspended particles that cannot be oxidized. Made of Polyelectrolyte, clarifiers use the art of attraction to bind small particles together making them large enough to be trapped by the filter. Clarifiers come in a variety of concentrations. Generally speaking, all clarifiers will perform well, but it is important to use them as the manufacturer suggests. A weak concentration in the pool will not yield satisfactory results, while using too much may cause shortened filter runs. Most clarifiers work best when diluted in 3 to 5 gallons of water and distributed evenly around the pool. This will ensure a faster, even disbursement of the product throughout the pool. Read and follow the bottle's instruction label on the clarifier recommended by your pool professional.

Your pool dealer may suggest using a **Flocculant** in extreme cases of cloudy water. Floc is made of aluminum sulfate, commonly known as "alum." It is used as a coagulant and a settling agent for turbid water. Alum floc is a white, gelatinous substance that attaches to free-floating matter in the water to form larger, heavier-than-water particles that settle to the bottom of the pool. Floc requires a higher than normal pH, above 8.2, to be effective. You will need to add pH increaser to raise the pH prior to treatment. Read the label directions carefully and broadcast the dry white powder over the surface of the water at a rate of 2 ounces per square foot of pool surface area and allow the pool to stand undisturbed overnight, up to 24 hours. After the debris has settled to the bottom, vacuum the pool on the waste or drain cycle (see Filtration) to rid the pool of the unwanted matter. This will mean water loss, so carefully consider this option prior to treatment and seek the advice of your pool professional.

STAINING AND SCALING

Prior to treating a stain you must first determine the cause. Algae or bacteria can cause green, black, yellow, brown or pink discolorations. Generally, these organic deposits will respond to chemical treatments such as sanitizers and algaecides. In most cases, they can be removed with a vigorous brushing of the pool surface, although they may grow back (see ***Algae*** for more information). Leaves, worms and other organic material left in the pool can also cause staining. This type of staining will usually respond to a sanitizer followed by a stain remover.

All water contains some levels of minerals and metals that will not be visible when dissolved or in suspension. Unbalanced pH, Total Alkalinity and the addition of sanitizers are all possible causes for such precipitation. Scaling occurs when metals or minerals form hard white deposits or crystals on the pool's surface. Heavy metals such as copper and iron will cause discoloration or staining. Copper or iron may appear as green stains; iron as red or black; and manganese as black or brown stains.

As with all water problems, prevention is preferred to treatment. The best way to prevent staining is to have your pool water tested by your pool dealer PRIOR to the initial fill and at the beginning of each pool season before adding ANY pool chemicals. Often the original source water you use to fill your pool may contain iron or other metals or minerals. Your pool dealer can test your water and recommend a treatment method such as the addition of a sequestering or chelating agent. These chemicals will help to bind the metals or minerals together to prevent precipitation. Another key to prevention is following the chemical guidelines for adjusting pH and Total Alkalinity, as high, rapid fluctuations can cause precipitation. Unbalanced pH and Total Alkalinity may also cause the corrosion of metal equipment components leading to metal precipitation. If staining or scaling does occur, your pool dealer can recommend a stain and scale remover for treatment. The penetrable surface of plaster pools make them more vulnerable to staining and scaling, requiring the routine addition of a sequestering or chelating agent such as Les-Iron™ or Les-Iron II™.

TIPS FOR PREVENTING STAINING AND SCALING

- Have your water professionally tested for metal content before initial fill and upon opening your pool each season. The results should be 0 ppm. **DO NOT ADD ANY CHEMICALS UNTIL WATER HAS BEEN TESTED.**
- If the water test indicates the presence of metals or minerals, follow your pool dealer's recommendation for treatment with a sequestering or chelating agent.
- Carefully follow water balance guidelines for pH, Total Alkalinity, Total Dissolved Solids and Calcium Hardness. When adding pH and Total Alkalinity adjusters, follow the application directions closely.
- To prevent precipitation, **DO NOT** add too much chemicals or make too rapid of an adjustment in a short time period.
- Routinely add a maintenance dosage of a sequestering or chelating agent if recommended by your pool dealer, especially in plaster pool finishes.
- Follow the proper use and care of your equipment to reduce the possibility of metal precipitation from poor filtration or circulation.

WATER MOLD OR PINK SLIME

Pink slime or pink algae are actually not algae, rather a bacteria or fungus, often appearing as streaks or spots in corners and crevices. Often it appears as a pink or orange colored ring around the skimmer or waterline, but it may have different appearances. A slippery feel, raised white spots or a sheet-like growth on the pool's surface can all be caused by the build-up of a slime coating produced by microorganisms on exposed surfaces. These microorganisms are constantly introduced into the pool environment and will begin to grow when conditions become favorable, such as low sanitizer, poor house keeping, etc. The film that is generated as these organisms grow makes them particularly difficult to treat as it protects the organisms(s) from the sanitizer. Water mold is nonpathogenic (does not cause disease) and, like algae, your pool can be sanitized and safe to swim in with water mold present. Also like algae, water mold originates from the environment around your pool. One common way of introducing water mold into a pool is by placing a pool cover on the ground where it comes in contact with soil that contains the mold. When the cover is placed on the pool, the mold is introduced into the pool. We recommend folding a cover and draping it over a chair or railing. Cold temperatures may slow its growth but will not kill water mold.

Although regular brushing and vacuuming will usually keep water mold and pink slime from growing in your pool, there may be areas where proper attention is not always given, such as, behind lights, under ladder treads, nooks and crannies, or a dirty filter, etc. Poor circulation is probably the biggest culprit, as water mold likes to grow in "dead spots." These are places that water does not readily circulate to and therefore the water becomes stagnant.

Treatment

The best overall treatment for pink slime or water mold is to vigorously brush the affected areas, shock the pool and add a recommended bacteriostat algaecide. Use caution when using silver or copper based algaecides as they may cause staining of your plaster finish.

1. Vigorously scrub affected areas with a maintenance or algae brush. Brush all surfaces very carefully, including the underside of ladder treads and skimmer faces behind pool lights, etc. Pink slime, in particular, has a gel-like protective coating that resists casual brushing.
2. Check pH and adjust if necessary to achieve a 7.4 to 7.6 reading.
3. Shock pool (superchlorinate) — see TestMate 4 Pools for dosages. Chlorine pool shock is recommended over mono persulfate shocks for algae treatment. Anthony & Sylvan's Super Treat™ or another Dichloro shock should be applied at a rate of 1 pound per 10,0000 gallons.
4. See your pool professional for the appropriate bacteriostat algaecide for pink algae. Pour algaecide directly into the water near or over the visible algae growth.
5. Submerge vacuum head, hose, brush and pole in the pool overnight for the shock and algaecide to disinfect the equipment.
6. Remove solar cover and discontinue use during treatment of active algae growth.
7. Increase filter run time to 24 hours, if possible, to increase circulation.

8. The following day, brush and vacuum affected areas again.
9. Check filter pressure and backwash if necessary. If you have backwashed or rinsed your filter and the pressure remains 8-10 psi above the normal starting pressure, you should chemically clean your filter.
10. Continue to maintain your sanitizer level at the high side of normal (Free Chlorine of 3.0 ppm) during treatment for algae infestation.
11. Continue to brush walls and vacuum, clean filter as necessary and add maintenance algaecide until pool is clear of all signs of infestation.

If pink slime or water mold is a recurring problem, you may want to discuss with your pool professional the need to more diligently brush the areas prone to infestation and to increase the dosage or frequency of your shock treatment.

CHEMICAL SAFETY STORAGE AND HANDLING

Handling swimming pool chemicals is safe and easy when they are used and stored properly. You can prevent careless mistakes and accidents by following the recommendations listed below and on the product label.

1. FOLLOW INSTRUCTIONS: MIX CHEMICALS ONLY AS INSTRUCTED.
2. NEVER add water to chemicals—slowly add chemicals to water .
3. ALWAYS use the exact dosage specified on the label by the manufacturer.
4. PROTECT eyes with glasses or a mask when handling chemicals.
5. ALWAYS open product containers in a well-ventilated area.
6. NEVER mix different chemicals together. This can produce a chemical reaction that can lead to a fire, toxic fumes or an explosion.
7. ALWAYS use a clean dipper, free of oil, grease or insecticides. Even a small amount of residue could combine with the chemicals to produce a dangerous reaction.
8. ALWAYS keep chemicals in their original containers, tightly sealed.
9. STORE your chemicals in a clean, dry and well-ventilated area away from household items such as fertilizers, gasoline, oil or other cleaning solutions.
10. NEVER store any liquid products directly over or directly next to dry pool products such as chlorine tablets or shock, balancers, etc.
11. KEEP liquid acid (muriatic) and liquid chlorine products away from each other and away from all shock products and chlorine-based products.
12. SEPARATE your pool care products by using lawn furniture, walls, plastic buckets, shovels, rakes, lumber, other inert items or empty space (at least 3 feet) as a buffer zone between products.
13. CAREFULLY read the active ingredient section on the front of the product label to determine what acids, balance chemicals or oxidizers it contains.
14. ALWAYS clean up spills immediately with a clean broom or dust pan. Dispose of spilled materials in a clean container. DO NOT PUT SPILLED CHEMICALS BACK IN THEIR ORIGINAL CONTAINER, as the chemicals may have been contaminated.
15. REMEMBER to rinse plastic dispensing containers with water after use.
16. KEEP chemicals away from electrical equipment and open flames.
17. NEVER FLUSH excessive amounts of chemicals down storm sewers. In case of large spills, contact your local fire department for assistance.
18. ALWAYS wash hands thoroughly after handling chemicals.

ACIDS AND OXIDIZERS SAFETY

Acids — are highly corrosive substances which must be handled with extreme care. Muriatic acid (hydrochloric acid) and sodium bisulfate are the acids most commonly used in the care of pools.

Protective Equipment

- Eyes: goggles or a full face shield when splashing may occur
- Hands: gloves (rubber, neoprene or PVC)
- Body: coveralls and impervious boots
- Lungs: proper ventilation

Handling Precautions

- DO NOT take internally
- Avoid contact with eyes, skin or clothing
- Upon contact with skin or eyes, rinse with water
- Avoid breathing vapor (muriatic acid) and dust (sodium bisulfate)
- Store all containers in a cool, dry place
- *Always add acids to plenty of water...Never add water to acids*

Conditions and Materials to Avoid

- Avoid contact with strong alkalies such as caustic soda, sodium carbonate, etc
- Avoid contact with all oxidizers
- Do not store in wet or moist conditions

Balance Chemicals — Although acids are balance chemicals, they have to be treated separately. The balance chemicals (pH +, Alkalinity increaster, etc.) Sodium bicarbonate, Sodium carbonate, and Calcium chloride are all basic (high pH) and increase pH, Total Alkalinity and Calcium Hardness.

Protective Equipment

- Eyes: goggles
- Hands: gloves (rubber, neoprene, or PVC)

Handling Precautions

- DO NOT take internally
- Avoid contact with eyes, skin or clothing
- Avoid breathing dust, spray or mist
- Store containers in a cool, dry place
- Always keep containers tightly sealed
- *Caution: DO NOT MIX balancing chemicals with anything other than water*

Conditions and Materials to Avoid

- Avoid contact with acids
- Avoid contact with organics and oxidizers
- Do not store near acids

Oxidizers — The precautions for oxidizers are important in handling the following: Calcium hypochlorite, Lithium hypochlorite, Sodium hypochlorite (Liquid shock, Bleach), Trichlor, Sodium dichlor, Bromine and Potassium peroxymonosulfate (Oxy shock, Non-chlorine shock).

Protective Equipment

- Eyes: goggles
- Hands: gloves (rubber, neoprene or PVC)
- Lungs: provide ventilation where dust is likely

Handling Precautions

- DO NOT take internally
- Avoid contact with eyes, skin or clothing
- Upon contact with skin or eyes, rinse with water
- Avoid breathing dust
- Store all containers in a cool, dry place
- Do not store containers in direct sunlight
- Do not store near combustible materials
- Do not mix oxidizers
- Use clean, dry utensils when handling oxidizers
- Keep all oxidizer containers off wet floors

Conditions and Material to Avoid

- Excessive heat — oxidizers will decompose, releasing toxic gasses and heat
- Solvents
- Acids
- Other pool chemicals such as acids, algaecides, clarifiers, sequestering agents, surface cleaners, etc.
- Organic materials
- *Do not mix chemicals with anything other than pool water.*
  Always add chemicals to plenty of water. Never add water to chemicals.

ANTHONY & SYLVAN POOLS

BUILT FOR LIFE

Understanding Your Equipment

Pages 46-67

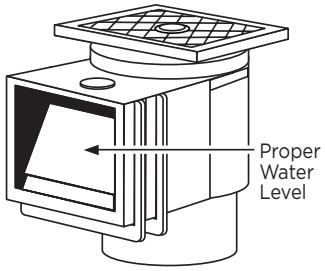
CIRCULATION

Your pool's circulation system is unique. The number and type of skimmers, bottom drains and return inlets, along with the size and type of plumbing and pump and motor, will vary from pool to pool. All of these factors can influence the length of time you should run your pump and motor to circulate and filter your pool water. Generally, this should be a minimum of 6 to 12 hours every day, up to 24 hours a day with 2-speed pumps and motors. Proper water circulation allows your sanitizer to work more effectively, helps prevent dirt build-up and algae and allows your filter to remove dirt and debris.

Circulation occurs as water travels into the Skimmer(s) and Drain (optional), and then passes through the Plumbing to the pump. It then is filtered and returned via the Return Inlet(s). Frequently checking the skimmer and pump baskets to be sure they are clean and free of debris, helps promote circulation. We recommend the water be circulating when adding chemical treatments to your pool, unless otherwise directed by product instructions.

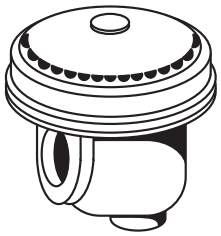
Skimmer

Your inground pool may have multiple skimmers installed in the sidewalls of your pool. Most skimmers have a weir door that flaps in and out of the skimmer opening to draw floating debris into the skimmer. The door simply snaps into place in the skimmer mouth and should always move freely to allow unrestricted water flow into the skimmer. The skimmer body contains a basket for catching leaves and debris before they enter the pump and possibly clog the impeller area. You should check the basket every few days and empty as needed. A cracked basket should promptly be replaced (take your old basket with you to order the replacement). Manual vacuuming is performed through the skimmer; go to the ***Vacuuming*** section of the manual for detailed instructions.



NOTE: You should monitor the water level in your pool to maintain a level that is 1/2 to 2/3 up on the skimmer opening. If the water level drops below these levels, the pump may begin to suck air and cavitate, possibly causing damage to the pump and motor by allowing it to run dry.

Bottom or Main Drains



If your pool is equipped with a bottom or main drain, it is used to provide an additional source of circulation by moving water from the drain to the suction side of the pump through underground plumbing. Originally designed as the main source of draining commercial concrete pools, they are generally located at the deepest (bottom) end of the pool, hence the name bottom main drain. Today, main drains are used primarily to enhance circulation (pulling water from the bottom and surface) as most pools do not require draining. In fact you should **NEVER** drain your pool unless you first consult with your Anthony & Sylvan pool professional.

VALVES

Your Anthony & Sylvan pool is plumbed with valves which direct and control the flow of water to specific equipment or water features. Jandy Never Lube™ Valves are designed and engineered to be totally maintenance-free using the best materials and best design for the ultimate combination of structural integrity and hydraulic flow. Rotating the handle on each valve will regulate the flow and allow certain functions.

IMPORTANT: ALWAYS turn pump OFF before changing valve positions.

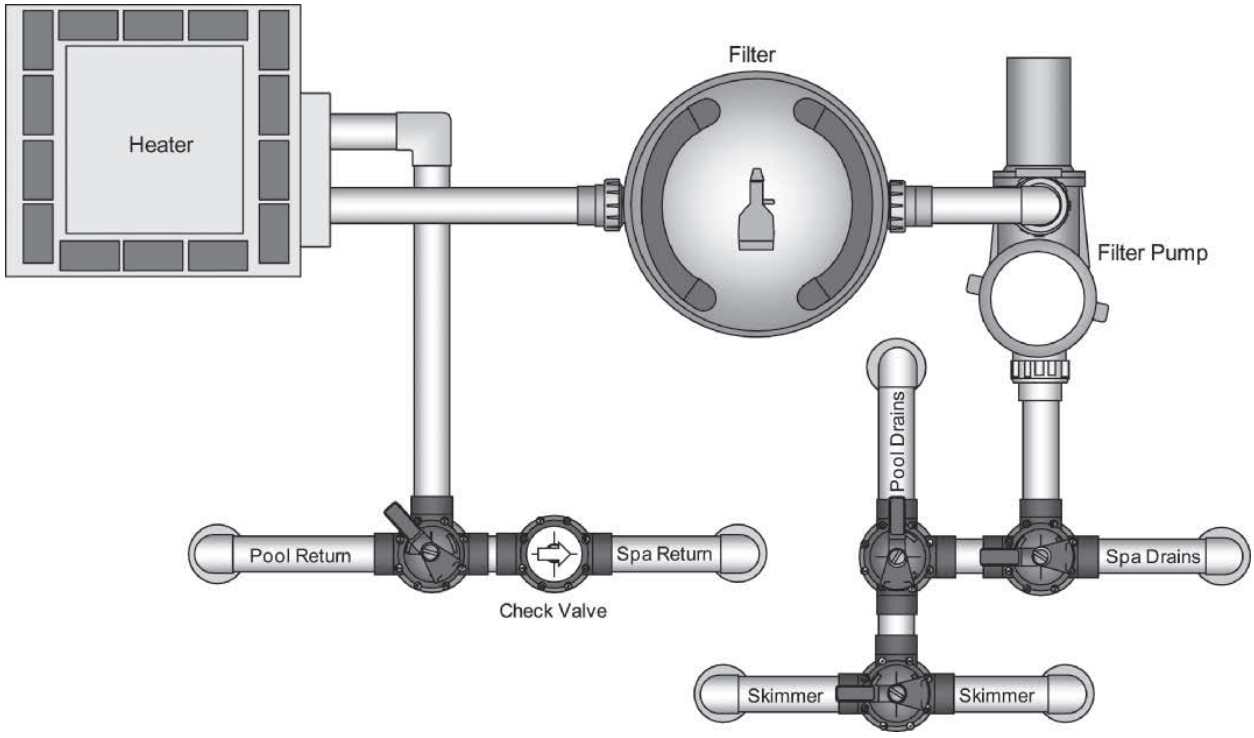
Valve Handle Use — NOTE: Valve handle must not be removed during use or warranty is void.

Lock Knob: Loosen the lock knob to turn the handle. To secure the handle, turn knob down finger tight.

Off Indicator: OFF area on indicator represents the exact position of the internal valve diverter seal.

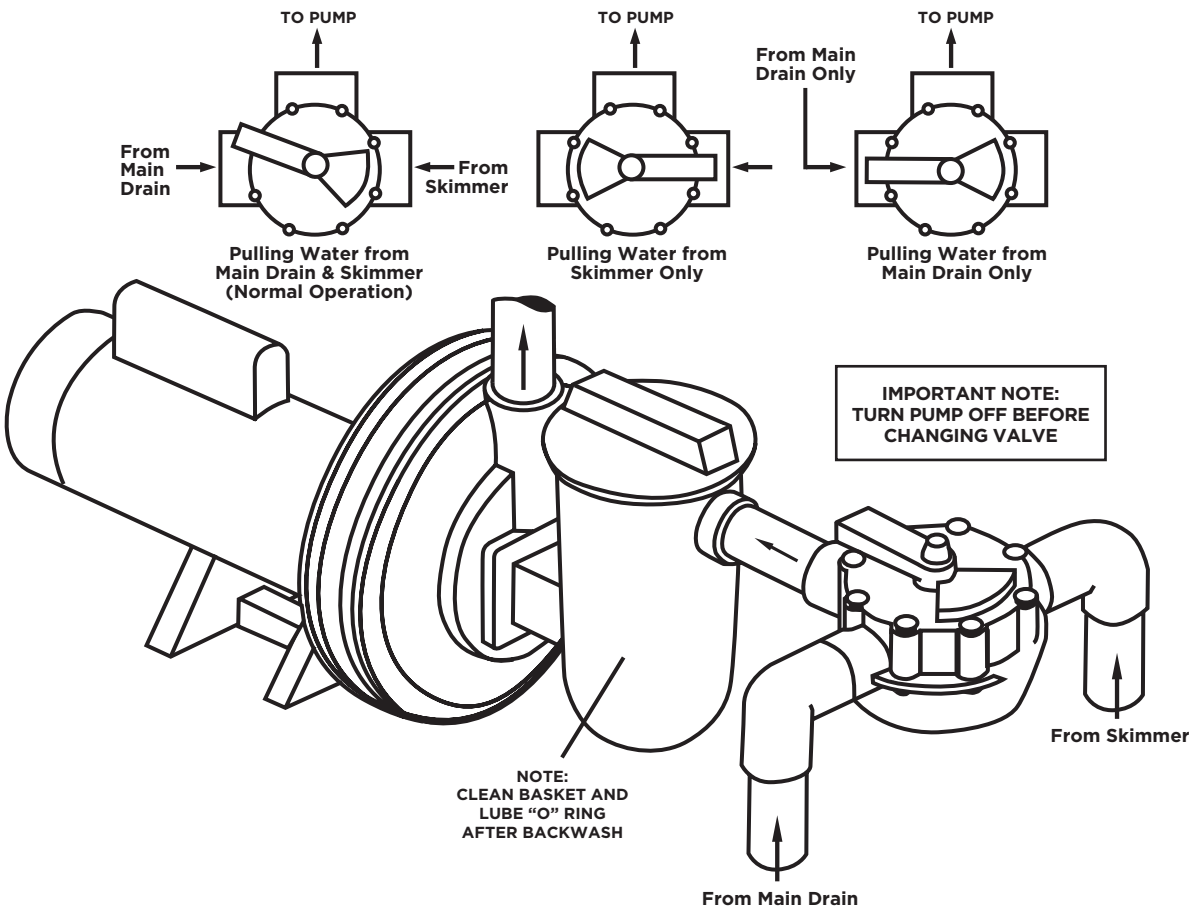
Handle Stops: Protruding pins located on valve cover will stop diverter in complete port shutoff position. Be sure the word "INLET" on the valve cover is over the incoming flow port.

It is **VERY IMPORTANT** that at least one valve returning water back to the pool is in the open position when the system is circulating water. If all valves are closed, the pump and motor can overheat, causing damage to the equipment and plumbing that is NOT covered under warranty.



Basic Pool & Spa Combination Plumbing

NOTE: Your equipment, plumbing and valve may NOT look like the illustration above. This figure represents a possible plumbing diagram using Jandy Never Lube valves.



The valve(s) closest to the pump control the suction from the skimmers and main drain. If you have an attached spa, normally one side of the valve will be marked "pool" and the other "spa." Normal position for the valve is about 90% of the systems resources sent to the "pool" and 10% directed towards the "spa." To activate the spa, you must turn two (possibly three) valves. For additional information on valve settings for spa use, please refer to the ***Spa*** section.

During periods of cold weather and possible freezing temperatures, you MUST position all valves to be slightly open to prevent freeze damage. Please see the ***Winterizing*** section for more details.

Jandy Valve Actuators are designed to meet the needs of today's more advanced, automatic pool equipment. These fully adjustable actuators offer versatile pool/spa automation with easy setups. All actuators work with the Jandy AquaLink® RS Control Systems and are available in 24 volt units.

AUTO-CLEAN™ IN-FLOOR CIRCULATION SYSTEM

A clean, healthy swimming pool is one with proper water circulation. Auto-Clean™ offers total circulation that distributes sanitized, filtered, cleaning water throughout the entire pool. It eliminates “dead-spots” that can cause algae growth while reducing the use and cost of chemicals. Whether heated with gas, propane, electric or by the sun’s natural rays, Auto-Clean’s total circulation automatically disperses the heated water at the bottom of the pool, where it is the most energy efficient, to evenly warm your pool and eliminate uncomfortable cold layering. Not only does it save on the cost of heating, it also helps to extend your swimming season.

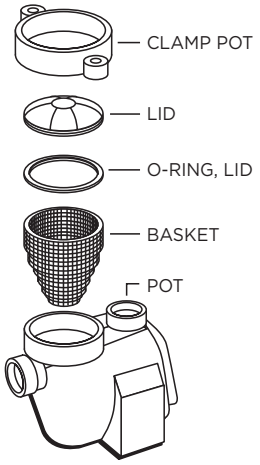
Auto-Clean’s virtually invisible cleaning heads are strategically located and built in flush throughout the floor, steps and benches of your pool and spa. The speed adjustable Auto-Clean™ Water Valve directs water to a set of two or more cleaning heads, which pop-up and send a stream of filtered, treated water across the floor and walls of your pool. The activated Cleaning Heads sweep dirt and debris into suspension to be removed through the pool skimmer and main drain to the filter. The Auto-Clean™ Water valve will then automatically direct water to the next set of Cleaning Heads. The previously activated Cleaning Heads will return flush with the floor of the pool while rotating to the next programmed position. This activation of Cleaning Heads will continue as long as the pool filtration system is operating.

The location of the cleaning heads are strategically chosen by our computer software for your specific pool application. They are placed so the entire pool will be addressed with overlapping jet streams of filtered, sanitized water. In about an hour, every square of your pool’s interior area will be swept...quickly, effectively and economically.

Auto-Clean™ is silent and nearly invisible while it cleans and thoroughly circulates filtered water throughout your entire pool and spa. And with no unsightly robots or hoses interfering with the beautiful pool designed to enhance your backyard...all you see is your beautiful, clean pool.

PUMP & MOTOR

Your pool water circulates as a result of your pump and motor which should operate between 6 to 12 hours every day, the goal being to turnover all of the water in your pool once every day. Your filter, sanitation and heating system relies on the circulating water movement from your pump and motor. If you begin to experience a water problem, such as cloudy water or algae, run the filter longer, up to 24 hours a day if necessary. Consider installing an automatic controller as a convenient way to control run-times. Your pump has a suction side and a discharge side. The pump housing holds an impeller that pushes water to the discharge side of the pump, where it then flows through the filter for cleaning and then it goes back to the pool through the return fitting. The front of the pump (housing) has a lint pot or strainer basket that the water passes through as it enters the pump. The pump strainer basket is positioned under a clear lid, so you can see when debris has collected inside and be certain the lint pot is filled with water (you should not see multiple air bubbles). **NEVER** run the pump dry. ALWAYS maintain proper water level in your pool (half way up skimmer opening). Should the water level fall below the skimmer opening, the pump will draw air through the skimmer, lose prime and cause the pump to run dry. This will result in a damaged seal, causing the pump to leak and will ultimately require a seal replacement.



You should inspect the pump basket weekly and empty as needed. A dirty basket will reduce the efficiency of the filter and heater and also put an abnormal stress on the pump motor. The lid on the lint strainer holds an O-ring that must be lubricated with an O-ring lubricant from time to time to ensure a good watertight seal. Only use a silicone-based O-ring lubricant from your pool supply store; Vaseline® should **NOT** be used as the petroleum can break down the rubber over time. When worn, cracked or stretched, the strainer lid O-ring will not seal properly, which can allow air into the lines causing the pump to not hold prime and for air bubbles to enter in the return inlet. Inspect the O-ring for wear and replace as needed. Your pump has (2) 1/4" drain plugs threaded into the pump housing; the drain plug is used to drain water out of the pump for winterizing. If your plugs come with O-rings, you should keep them lubricated to keep air from entering the pump and loosing prime.

PRIMING — While your Jandy PRO Series pump is self-priming, you may find an occasional need to manually prime the pump (remove air and fill with water), especially if your equipment is below the pool water level, after winter closing, servicing or periods of inactivity.

If you need to prime your pump, use the following steps:

- ✔ Ensure the water level in the pool is at the half-way point on the skimmer.
- ✔ Check the skimmer basket – empty if needed.
- ✔ Make sure the drain plugs are installed in the pump.
- ✔ Check that any valves leading to the pump are in the open position
- ✔ Remove the lid from the lint strainer at front of pump.
- ✔ Use a garden hose to fill the pump housing, which should automatically fill the suction line.
- ✔ When water begins to flow out of the pump housing, remove the hose.
- ✔ Replace the pump lid. Ensure the lid O-ring is securely in place so that no air gets into the pump housing.
- ✔ Quickly turn ON the power to the pump.

Within a minute or less you should see water beginning to fill the pump. If instead the lid immediately begins to fog up, turn OFF your pump and repeat the above steps. The pump should not run longer than 8 minutes before priming is achieved. **WARNING: DO NOT** open the strainer pot if the pump fails to prime or if it has been operating without water in the strainer pot. This may cause a build-up of vapor pressure and scalding hot water that could cause serious personal injury. In order to avoid the possibility of personal injury, make sure the suction and discharge valves are open and strainer pot temperature is cool to touch; then open with extreme caution.

The motor is what powers the pump to circulate water. The motor is the electrical side of the pump and is located opposite of the pump housing. Inground Pumps can be 110v or 220v and are generally hard wired. Motors are designed and built for maintenance-free operation. In order to keep your motor operating smoothly and extend motor life, you should follow these general maintenance guidelines:

- ✔ Keep the area in and around the motor clean. Excessive dirt in the area may be pulled into the motor, resulting in shortened motor life.
- ✔ If the motor is being stored when not in use, be sure that all surfaces are dry to prevent rust. If left outside, the motor should be covered to guard against blowing leaves, dirt, and snow. DO NOT SEAL THE MOTOR IN AIR TIGHT MATERIALS. Condensation may form, causing bearing and insulation damage.
- ✔ Most motors have permanently lubricated ball bearings. Thus, lubrication is not normally required.
- ✔ Keeping the motor cool is most important. Ambient temperatures should not exceed nameplate markings. Provide shade from direct sunlight. The area around the motor should be large enough to provide ample cross ventilation.

FILTRATION

Adequate filtration is the one of the most important elements of your pool and cannot be overemphasized in the overall program of sound pool maintenance and sanitary water. The combination of chemicals, circulation and filtration will keep your pool water clean and clear. Proper circulation and filtration of the water is one of the best defenses against algae formation and cloudiness. The filter system comprises the complete filter and pump and motor. The filter is passive and requires the pump and motor to pass water through it for cleaning.

Your Anthony & Sylvan pool is equipped with either a Cartridge (Element) or Diatomaceous Earth (D.E.) Filter system. They differ slightly in operation and the type of media that actually filters the particles (media refers to the actual cartridge or D.E. inside of the filter tank). **Filter types vary in popularity in different areas of the country. (There are certainly pros and cons to each type, although all of the filters are quite capable of providing excellent results with proper instruction and maintenance.)**

Jandy® Pro Series Cartridge Filters

Jandy® Pro Series Diatomaceous Filter

Circulation begins as water flows through the in-wall skimmer and drain (optional) into the pump and motor. It then is pushed into the filter tank where dirt and debris are trapped in the filter medium. Clean water then exits the tank through a return hose or plumbing line to the pool through the return inlet(s). Regardless of the type of filter system you have you should operate your system 6 to 12 hours per day. As dirt and debris accumulate within the media of the filter tank, the pressure gauge on the tank will begin to rise and the return flow of water going back to the pool will simultaneously diminish. When the pressure gauge increases 8 to 10 psi above the normal starting pressure, it is time to backwash or clean the filter. Refer to the operating instructions for each system type on the following pages. Read and follow all manufacturers' instructions on operation and winterizing prior to start-up.

CARTRIDGE FILTERS

Cartridge filters use one or more pleated elements or cartridges as the filter media to collect dirt and debris. Their unique advantages are minimal maintenance and less water loss than filters requiring backwashing. The cartridge element itself is removed and cleaned, generally every 6 months or 1 to 2 times per season. Cartridge filters utilize the debris they collect as an aid to improve filtration. As a result, cleaning too often does not allow the filter to work at optimum filtration efficiency, while not cleaning often enough will shorten the life of a cartridge element. When the pressure gauge rises 10 psi above the "normal" or starting reading, you should follow the steps below to remove and clean the cartridge element or follow the manufacturer's instructions provided with your filter. The cartridge elements will generally last 3 years before needing to be replaced (or when cleaning no longer allows adequate flow and reduced pressure).

General Cleaning Instructions for Cartridge filters

1. Shut off pump and motor.
2. **IMPORTANT** Release pressure in the tank by loosening the air relief bleeder valve.
3. Squeeze tabs on black ring in middle of the filter and unscrew lock ring off of filter.
4. Remove filter top or lid.
5. Remove cartridge element and thoroughly hose element top to bottom holding the nozzle at a 45 degree angle, and wash all the pleats with emphasis between pleats using a high-pressure hose.
6. Replace filter top and secure lock ring.

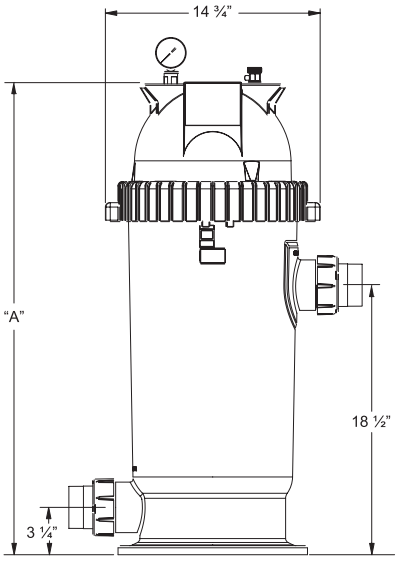
Chemical Cleaning — *Periodically you will want to chemically clean the cartridge; follow steps 1-5 above, then:*

1. Soak the cartridge element in a Filter Cleaner or Tri Sodium Phosphate (1 cup TSP to 5 gallons water) several hours or overnight to provide a thorough cleaning.
2. Rinse cartridge element and replace in tank.
3. **IMPORTANT** Release pressure in the tank by loosening the air relief bleeder valve.
4. Replace filter top and secure lock ring.

WARNING

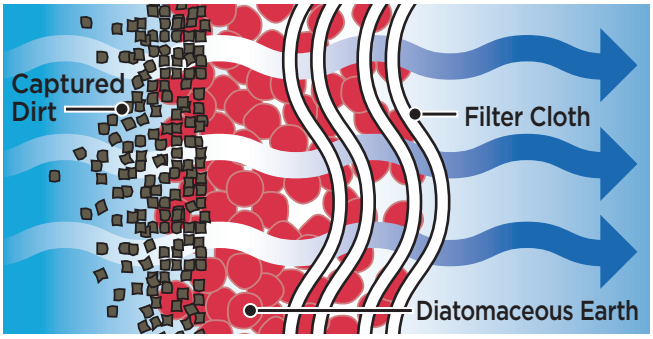
THIS FILTER OPERATES UNDER HIGH PRESSURE. WHEN ANY PART OF THE CIRCULATING SYSTEM (E.G. LOCK RING, PUMP, FILTER, VALVES, ETC.) IS SERVICED, AIR CAN ENTER THE SYSTEM AND BECOME PRESSURIZED. PRESSURIZED AIR CAN CAUSE THE LID TO BLOW OFF WHICH CAN RESULT IN SEVERE INJURY, DEATH OR PROPERTY DAMAGE. TO AVOID THIS POTENTIAL HAZARD, FOLLOW THESE INSTRUCTIONS.

1. Before repositioning valves and before beginning the assembly, disassembly or adjustment of the lock ring or any other service of the circulating system:
   a. Turn the pump OFF and shut OFF any automatic controls to assure the system is not inadvertently started during the servicing.
   b. Open air relief valve; and
   c. Wait until all pressure is relieved — pressure gauge must read zero (0).
2. When installing the filter lock ring, **follow the lock ring installation instructions exactly**.
3. Once service on the circulating system is complete, **follow system restart instructions exactly**.
4. Maintain circulation system properly. Replace worn or damaged parts immediately (e.g. lock ring, pressure gauge, relief valve, O-rings, etc).
5. Be sure that the system is properly mounted and positioned according to the instructions provided in the filter system owner's manual.



DIATOMACEOUS EARTH (D.E.) FILTERS

Diatomaceous Earth (D.E.) is a fossil material ground into a very fine white powder. D.E. filters contain internal elements or grids that become coated with the D.E. powder. Water passes through the D.E. coated element which strains dirt, algae and some forms of bacteria from the water. D.E. filters remove the tiniest of contaminants...particles as small as 5 microns; an average grain of sand is 1000 microns. Jandy® PRO Series D.E. filters are designed with curved grids to maximize filtration area. More filter area means better performance and longer periods between cleanings. Their exclusive internal design minimizes flow restrictions, and therefore requires minimal pumping power to achieve a needed flow rate, resulting in lower utility costs.



How a D.E. Filter Works

When diatomaceous earth (D.E.) is introduced into the filter system, it coats the filter cloth. As water passes over the filter grids, the D.E. particles capture even the smallest suspended dirt particles. When cleaning is needed, the water flow is simply reversed.

As dirt accumulates within the tank the filter pressure gauge reading increases and the return water flow to the pool decreases. To lower the pressure, you need to clean or backwash the filter to remove dirt and D.E. from the elements. Backwashing a D.E. filter reverses the flow of water through the filter. The water will stir up the D.E., knocking the dirt off the grids and out the filter through the backwash line. Backwashing should be performed when the pressure rises 8 to 10 psi (pounds per square inch) above the normal starting pressure. Once backwashing is complete, new D.E. is added through the skimmer to re-coat the internal elements in the tank. This process is called “charging” the filter. Filter agents, such as PuriFiber®, can be used as an alternative to D.E. to coat the grids inside a D.E. filter. PuriFiber is a form of cellulose produced from wood pulp and is non-toxic and is biodegradable.

When you find the pressure remains high and flow is still diminished after backwashing, it may be time to manually clean the internal elements inside the filter tank. Most filter manufacturers recommend a complete manual chemical cleaning of your D.E. elements at least once a year to maintain optimum performance and flow. You should refer to the cleaning instructions from your filter’s operating manual or contact your pool professional about performing this service.

New Pools/Initial Start Up

The filter on a newly filled pool will collect plaster dust and construction debris requiring it to be backwashed, disassembled and cleaned after approximately 48 hours of operation.

Backwashing a D.E. Filter

1. Ensure the water level is 1/2 to 2/3 up on skimmer opening.
2. Turn off the pool pump and **open the air relief valve on the filter tank**.
3. Unroll the collapsible backwash hose that should be attached to the bottom of the multiport valve.
4. Turn the multiport valve to the backwash position.
5. Turn on the pool pump and clean water will begin to exit the tank through the backwash hose or plumbing. Allow the filter to run for 2 to 3 minutes in this position.
6. Turn off the pump and return the handle to the filter position.
7. Once the valve is returned to the filter position, you will need to recoat the filter with D.E. Refer to section below: charging the D.E. filter.

Charging the D.E. Filter (adding D.E.)
After backwashing a D.E. filter, the D.E. powder will need to be replaced.
DO NOT operate filter for more than 2 minutes without introducing D.E. into the system.

1. Add 6 pounds of D.E. powder to a pail of water at the rate of about 2 cups to 1 gallon. Mix thoroughly to the consistency of milk. *1/2 pound of D.E. powder will fill a 13 oz. coffee can. It is convenient to use a one pound D.E. Scoop, available from your pool professional.*
2. Slowly pour this mix into the skimmer closest to the equipment with the pump turned on. *Pouring too quickly may result in uneven coating of the filter media.*
3. Open the manual air relief valve on top of the filter; close when water is flowing out.

Charging the D.E. Filter (adding PuriFiber® D.E. alternative)
After backwashing a D.E. filter, PuriFiber will need to be replaced.
DO NOT operate filter for more than 2 minutes without introducing PuriFiber® into the system.

1. Add 5 to 6 cups* of PuriFiber® to a pail of water at the rate of about 2 cups to 1 gallon. Mix thoroughly to the consistency of milk.
2. Slowly pour this mix into the skimmer closest to the equipment with the pump turned on. Pouring too quickly may result in uneven coating of the filter media.
3. Open the manual air relief valve on top of the filter; close when water is flowing out.

*If there is a heavy demand, as in a pool clean-up, use 6 cups. If your pool is cloudy, adding additional Purifiber® can speed up cleaning. The thicker coating actually filters the water more on each pass, reducing the time necessary to return the pool water to clear.

Cleaning the D.E. Filter (chemically cleaning)
A chemical filter cleaner should be used to chemically clean your filter, generally once to twice a season — read the operating manual below for more details.

WARNING

THIS FILTER OPERATES UNDER HIGH PRESSURE. WHEN ANY PART OF THE CIRCULATING SYSTEM (E.G. CLAMP, PUMP, FILTER, VALVE(S), ETC.) IS SERVICED, AIR CAN ENTER THE SYSTEM AND BECOME PRESSURIZED. PRESSURIZED AIR CAN CAUSE THE LID TO BLOW OFF WHICH CAN RESULT IN SEVERE INJURY, DEATH OR PROPERTY DAMAGE. TO AVOID THIS POTENTIAL HAZARD, FOLLOW THESE INSTRUCTIONS.

1. Before repositioning valve(s) and before beginning the assembly, disassembly or adjustment of the clamp or any other service of the circulating system:

   a. Turn the pump OFF and shut OFF any automatic controls to assure the system is not inadvertently started during the servicing.
   b. Open Air Relief manual air relief valve.
   c. Wait until all pressure is relieved.
2. Whenever installing the filter clamp, **follow the filter clamp installation instructions exactly**.
3. Once service on the circulating system is complete, **follow system restart instructions exactly**.
4. Maintain circulation system properly. Replace worn or damaged parts immediately (e.g. clamp, pressure gauge, valve(s), O-rings, etc).
5. Be sure that the system is properly mounted and positioned according to the instructions provided in the filter system owner's manual.

AUTOMATIC POOL CLEANERS

There are a variety of automatic pool cleaners available today that will keep your pool looking great while saving you time. Your Anthony & Sylvan professional can recommend the type of automatic cleaner best suited to your pool type and budget. Automatic cleaners not only remove dirt and debris but also improve your pool's circulation.

PRESSURE TYPE cleaners are powered by the force of the clean water coming back into your pool through the return inlets. There are two types of pressure style cleaners – those that rely on your filter's return water pressure only, like the Polaris® 360, and those that use an independent pump and motor specifically to boost the return water pressure to operate the cleaner, like the Polaris® 280 and TR35. Both styles have a fine mesh bag to collect the dirt and debris. These filter bags need to be emptied and cleaned but will in turn eliminate the debris from entering your filter system. As they clean your pool they enhance circulation by dispersing the chemicals and filtered water throughout the pool.

If you have upgraded to a Polaris® 280 or TR35 these automatic cleaners require a separate booster pump that allows your cleaner to work independently from the rest of your pool system. This enables the cleaner to work at 100% efficiency and provides greater vacuum power and faster cleaning. What powers your cleaner is just as important as the cleaner itself. At the heart of the Polaris® Booster Pump is a reliable and durable MagneTek motor. This superior motor, coupled with Polaris® quality and technology, sets the Polaris® TR35 and 280 apart from all other pool cleaners.

AUTOMATIC CONTROLS

Wireless AquaLink PDA

There are several Jandy automatic control options that will give you the power to manage all your pool and spa equipment, backyard lighting and more from the privacy of your home. Without ever stepping outside, you can control the following:

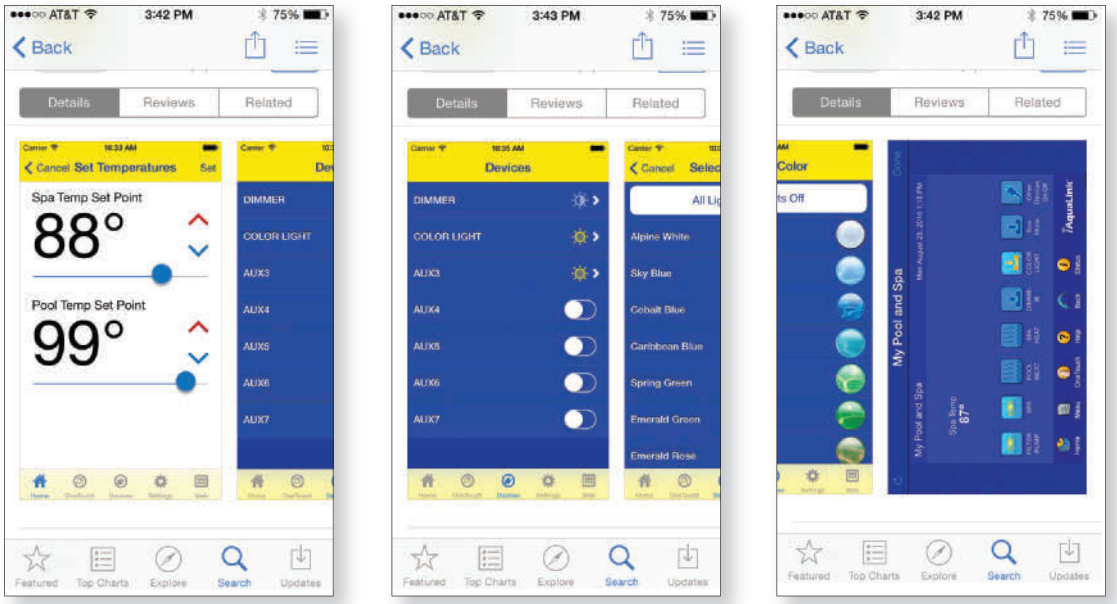
- Pool to spa switching
- Filter pump cycles
- Heater control and temperature settings
- Program ON and OFF times
- Yard lights
- Water features
- Pool and spa sanitization levels
- Pool and spa colored lights

The Jandy Wireless Pool Digital Assistant (PDA) controls virtually every pool and spa function in the palm of your hand. The compact remote operates on two AA batteries, is water-resistant and even floats! The Jandy PDA is a "stand alone" control system with self diagnostics and automatic equipment safety circuitry to protect your equipment. Utilizing wireless technology and Windows® style menus, you'll have complete control of all your pool and spa features.

Designed to be the "must have" add-on, the AquaPalm™ allows remote control of your equipment in an attractive, water resistant and portable handheld unit.

- Ultra compact, wireless, water-resistant, handheld remote that floats!
- Leading edge wireless technology offers a robust, reliable communication network for a flexible and simple installation
- 1000 ft. range of operation — does not require line of sight
- No wiring between the equipment and the control panel — that means no trench, conduit or indoor wiring
- Simplified Windows® style drop-down menus for control of filter pump, spa switch-over, heater, solar and up to 7 auxiliary circuits with the push of just one button
- Personalized programming/labeling of all equipment and service information
- AquaPure™ interface for control of on-site chlorine production
- Pool and spa colored light interface for convenient color changing
- Large backlit display of signal strength, battery charge, day, time, water temperatures plus complete equipment status

PureLink™ incorporates the AquaPure™ Water Purification System electronics into the AquaLink® RS Power Center for a simple and convenient installation. Add the benefits of water purification to your pool and spa control system.



iAquaLink®

Imagine, the power to control your entire backyard experience at your fingertips.

iAquaLink is a high-performance smart phone application that allows you to control your pool from where ever you are. This powerful, intuitive functionality integrates premium design ingenuity, and ease of use for the ultimate automation experience.

AquaLink® RS OneTouch™

Indoor or Wireless Control Panel

Designed to blend with any room decor, the OneTouch™ is as small as a double light switch and can be flush or surface-mounted. Discover the benefits of the famous Jandy OneTouch™ feature; with OneTouch you can “set it and forget it” or program your backyard to come alive.

HEATING YOUR POOL

Your pool won't contribute to your health or pleasure unless it's warm enough to swim in comfortably and when you want to swim. Heating your pool enables you to get the maximum value out of your investment by using your pool more often while enjoying the most comfortable water temperatures possible.

How warm you keep your pool is, of course, entirely up to you. Competitive swimmers prefer a temperature of 78˚ F, while recreational swimmers are generally more comfortable at 80° F, and the young and elderly closer to 82˚F. The sun alone usually can't keep your pool water at that comfort minimum of 78° F. By using a heater to warm your water you can add substantially to the daily use of your pool and extend your swimming season.

How long you can "stretch" the swim season depends on the climate in your area, the type of pool heating system you use and whether you use a pool cover. It's safe to say that in most cases, the swim season can be doubled (or better) with a heater or heat pump and cover. Heating your pool won't only extend your season — it will allow you to swim more often "in season." In Philadelphia and Conneticut, for example, even the July - August average mean temperatures are usually below 75° F and moderate heating would be essential for comfortable swimming. By contrast, average mean temperatures in summer are high and sustained. But "real" weather has a tendency to vary a lot from the mean, so it's a good idea to rely on a heater to brighten up the cool spots and lengthen the swimming season. There are several methods available to heat your pool, from gas heaters and electric heat pumps to solar heating systems. The cost of these systems varies quite a bit. First, there is the initial or one-time cost of the heater you select and its hook-up or installation charge. Second, there is the monthly energy cost, which varies with the type of heating system you buy, the use of your pool, the pool water temperature you prefer and other variables. Third, there is the matter of annual maintenance and service.

Operating costs can be kept to a minimum by installing an efficient, properly sized heater; using a good quality pool cover; and, of course, keeping your filter clean and your heating and filtering system well maintained. Your Anthony & Sylvan professional will help you in choosing the heating system that best suits your budget, geographic region and lifestyle. Heaters are sized mainly on the basis of the pool surface area and the difference between the pool and air temperatures. The average air temperature for the coldest month of pool use is used in the calculation. The heating load could also be affected by such things as excessive wind exposure or much cooler night temperatures than daytime air temperatures; in those cases, a heater with more capacity may be desirable. Another factor which may determine the size of the heater is the way you intend to use your pool. There are two common pool heating practices — "constant" temperature maintenance and "intermittent" heating. These are determined by whether you want your pool heated continually or on an intermittent basis. To heat a pool quickly after periods of intermittent shutdown, a larger heater is needed. And in colder climates, a larger than standard size heater is recommended for "constant" heating. Maintaining pool temperature requires the same amount of fuel regardless of the heater size. For intermittent heating, however, a larger heater actually saves fuel because it brings the pool to temperature more quickly. Again, your Anthony & Sylvan representative will be able to guide you in choosing a properly sized heater for your needs.

The following tips will help you conserve energy and heat your pool more economically.

1. Keep a thermometer in your pool. It will pinpoint accurately the temperature most comfortable for you.
2. Keep your thermostat at the lowest comfortable setting.
3. Mark the "comfort setting" on the thermostat dial. This will prevent accidental or careless over-heating and waste of energy.
4. Lower thermostat to 70° F when the pool is to be unused for three or four days. For longer periods, shut the heater off. You will save money on fuel consumption and conserve energy.
5. Protect your pool from wind, as winds above 3 to 5 miles per hour can lower the pool temperature substantially. A hedge, cabana or decorative fence can be an effective windbreak.
6. Use a pool cover when pool is not in use. This can reduce heat loss by as much as 50%. When you are vacationing for more than one week, turn the heater off completely, including any pilot light. *See **Solar Covers & Reels** for more info.*
7. Drain heater completely prior to freezing weather. Freezing water inside the heat exchanger can result in costly repairs. *Read and follow your heater's owner's manual.*
8. Your best ounce of prevention will be an annual maintenance checkup. Call your professional pool dealer for details. The cost is minimal and the service will keep your heater working efficiently for many years.

The following sections provide more details on the various heating methods: ***Pool Heaters, Heat Pumps***

POOL HEATERS

Pool heaters are available in natural gas or propane models. The Raypak® Digital gas heater comes with a microprocessor-based thermostat control. This control allows you to set your pool or spa temperature precisely at your favorite setting just by pressing an up or down temperature control button. The Digital display gives you a constant read out of your pool water temperature. Your Anthony & Sylvan professional will assist you in choosing the type of heater and model size best suited to your needs. Regardless of the heater style you choose, you will definitely want to read and follow the recommendations listed below, as well as those on the previous page:

Raypak Digital Control

PROPER WATER CHEMISTRY — This is critical to the maintenance and overall life of any pool heater. The copper heat exchanger inside of most heaters can corrode quickly if the pH, Total Alkalinity or calcium harness levels are not in balance.
PROPER USE OF CHEMICALS — Just as the water balance can affect the internal heater components, so can improper chemical use. Read and follow all label directions, particularly when using acids or oxidizers that can adversely affect the heater.
PROPER WINTERIZATION — Be sure to read and follow the operating manual instructions for draining and winterizing the heater — water left in the unit can cause freeze damage.
SAFETY FIRST — Realize that gas can be dangerous. Follow all of the safety precautions outlined in your operating manual. Gas and electric lines to heaters should be installed by professional plumbers and electricians following local and national codes.

WARNING: IF YOU SMELL GAS — Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions. If you cannot reach your gas supplier, call the fire department.

DO NOT try to light any appliance.

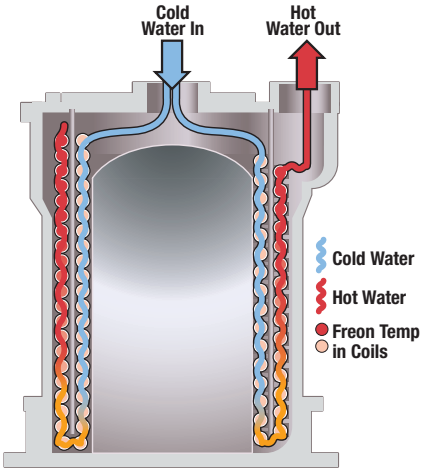
DO NOT touch any electrical switch.

DO NOT use any phone in your building.

TROUBLESHOOTING — Troubleshooting a gas heater has never been easier. The Raypak® Digital has on-board diagnostic controls that let the user and the service professional know what is going on with the heater at all times. In the event that you would ever have a problem with the heater, the digital display will show where the problem is in the control circuit. It's like having a service technician built into every heater. If you suspect a problem with your heater, don't take chances by trying to fix it yourself — call your heater professional or the local gas company.

Your heater's model and serial numbers are located on the rating plate found on the inside of the unit. To locate the rating plate, first loosen the door screw. Remove the door(s), pull up and out. The rating plate will be either a gold or silver color with the Raypak® logo. The serial number will have 10 digits. The date code is found in the first four digits of the serial number, for example, a unit made in April of 2005 will have the first four digits read as 0504. The model number will have both numbers and letters, such as: PR-335B-EN.

HEAT PUMPS



Electric heat pumps run like an air conditioner in reverse. Instead of removing the heat from inside a house and dumping it outside, heat is removed from the outside air and transferred to the swimming pool water via an exchange mechanism. The heat pump uses a refrigeration cycle exactly like your refrigerator or air conditioner. A fan moves and absorbs heat from ambient air, amplifying the process through compression action of the compressor and transfers it to the water in the heat exchanger as it passes by the freon gas in the evaporator coil. A heat pump's efficiency relies upon the amount of latent heat in the outside air and the relative humidity. The cooler the outside air and the lower the humidity, the less effective the unit is in heating the swimming pool. A typical 100,000 Btu/Hr. unit will only produce 83,000 Btu/Hr. when the air temperatures drop to 65° F. When sizing a heat pump it is important to install a unit that is large enough to heat the pool during the typical 8–9 hour run time for the pool pump. If this run time is also during the daylight hours, the efficiency of the unit is greatly enhanced. Your Anthony & Sylvan professional will help you in choosing the model best suited for your pool.

Although the initial investment in a heat pump is considerably more than that of a gas pool heater, heat pumps are growing in popularity because of their long life expectancy and inexpensive operating costs. When operating a heat pump, be sure to follow the recommendations listed below as well as the energy tips found previously in ***Heating Your Pool***.

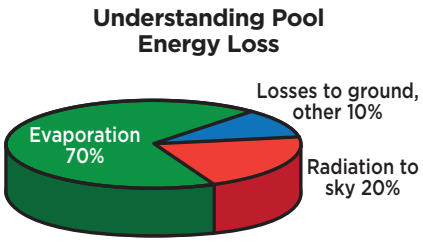
PROPER WATER CHEMISTRY — Good water balance will have an effect on the life of your heat pump. Metal components inside of most heat pumps can corrode if the pH, Total Alkalinity or calcium harness levels are not in balance.

PROPER WINTERIZATION — Read and follow the operating manual instructions for draining and winterizing the heat pump — water left in the unit can cause freeze damage.

TROUBLESHOOTING — If you are experiencing problems with the operation of your heat pump you can try following the troubleshooting steps listed below; if problems continue, call your pool dealer for service.

- ✔ Check that the heat pump is turned on and that the circuit breaker is on.
  Your heat pump will only operate when your filter system is running.
- ✔ Check thermostat, increase it to see if the unit will turn on.
- ✔ Check that the strainer baskets and filter are clean.
  Low water flow (caused by obstruction, dirty baskets or filters or closed valves) will cause the unit not to function.
- ✔ Outside temperature may be too low; refer to the owner's manual.
- ✔ Turn the heat pump on and off a few times.

SOLAR COVERS AND REEL SYSTEMS



For a variety of reasons, the single biggest energy conservation move that you can make is to put a cover on your pool or spa. A cover will reduce the heating bills by preventing heat loss. It will also reduce the amount of dirt and grime that enters the pool, thus reducing the amount of time it takes to remove them from the water through filtration or vacuuming.

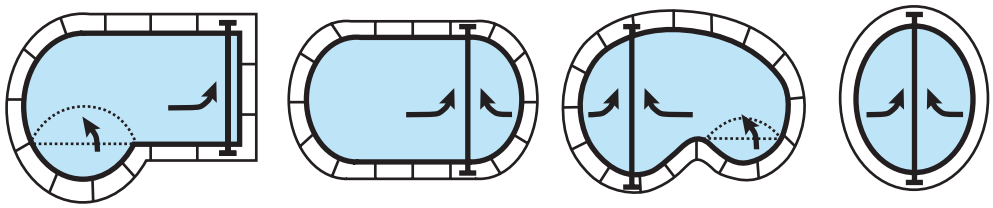
A solar cover goes one step further, collecting heat from the sun, which lessens the reliance on fossil-fuel burning heaters. In addition, the cover will save on the amount of chemicals and water needed. Covers also reduce evaporation, which can waste both water and heat and increase the Total Dissolved Solids level in the water. It is estimated that as much as 50 gallons a day can be lost in an uncovered pool from evaporation—that's more than 18,000 gallons of water wasted each year.

Please note the following tips when using your solar cover:

- ✔ **CAUTION**: Solar covers may pose a drowning hazard to children or pets who may try to walk across the cover. **ALWAYS** keep an eye on children around the pool and warn them that the cover will **NOT** support them and they should not try to play on or around.
- ✔ **DO NOT** swim with the cover on.
- ✔ Covers should float on the surface of the water- bubble side down.
- ✔ DO NOT remove your cover and lay it on the lawn. The intense UV rays of the sun will burnout the grass very quickly.
- ✔ Leave your solar cover off immediately after shocking your pool and during treatment for visible algae or cloudy water. This will help promote the circulation and water quality of the pool as well as extend the life of your solar cover.
- ✔ When your solar cover has been removed and reeled onto a solar reel, it should be covered with the protective white plastic supplied with the cover to protect the coiled cover from gathering heat in the sun and possibly sticking together.
- ✔ DO NOT leave your pool covered for 3 to 4 days or more without removing the cover from time to time to promote circulation and reduce algae growth. Leave your cover OFF while away for vacation or other absences.
- ✔ Solar covers should not be used when closing the pool for the season. (See ***Safety Cover*** section)

Installing a solar cover reel system will make for easier cover handling and better storage. Removal of the cover becomes a one-person operation. The life of the cover is extended by eliminating tugging, dragging and tearing. Solar reel systems are available for all styles of pools, including custom shapes. The illustration below shows how a solar reel can be placed on various pool shapes.

SOLAR COVER REEL SYSTEM PLACEMENT ON YOUR POOL



HydroCool™ Nicheless Underwater LED Light System

Light Synchronization (RGBW series lights)

Features

- Bright illumination that reduces energy costs using less wattage than ever before
- Triple-material, unibody construction design eliminates common leakage failure points
- The diffuser lens provides better blending of light for the clearest and most consistent lighting in its class
- Includes easily attachable Quarter-Moon and Half-Moon Lens Covers to eliminate "Halo Effect" and redirect light away from eyes on stairs, baja shelves, lap lanes, etc. (lenses come in gray, white and black).

Runs Cooler and Lasts Longer
An innovative aluminum body, overmolded with thermally conductive plastic, transfers heat from the LEDs into the water ensuring that our lights run cooler and last longer.*

Built to Last
Triple-material, unibody construction design prevents leaks and maximizes durability under water.

A More Even Glow
The diffuser lens provides better blending of colors for the clearest and most consistent lighting in its class.

Madeto Match
Lights come standard in black with complimentary gray and white cosmetic trim ring covers to match a larger variety of pool surfaces.

Optional Accessories
Quarter moon and half-moon lens covers eliminate reflective shadows and halos on the pool floor and help keep bright light out of swimmers' eyes in shallow areas.

*Based on internal testing.

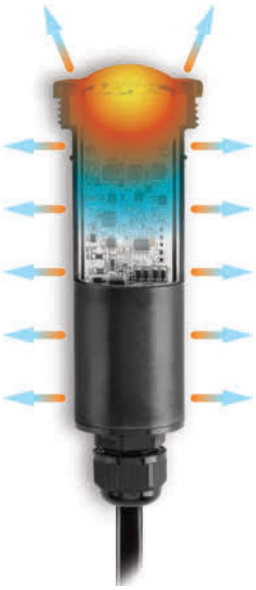
NOTE This section only applies to the color (RGBW) lights. All fixtures must be tied into the same transformer, circuit or switch for synchronization to occur.

1. Turn ON the light(s) (Light will display previously selected color).
2. Reset the light(s).
   - Turn the lights OFF for 5 seconds
   - Turn the lights back on (ALL the lights should return to Alpine White, otherwise repeat).
3. To select a color mode, turn the lights OFF for 1 to 3 seconds then back ON. Repeat this sequence until desired color is reached.
4. The lights have an internal memory and if left on for more than 7 seconds will retain the select color.

Example: If you followed step 3 and are now on Sky Blue and want the lights to be Violet, then the lights must be turned off and on 7 times to bring you to Violet

Sequence Order	Color Modes
1	Alpine White
2	Sky Blue
3	Cobalt Blue
4	Caribbean Blue
5	Spring Green
6	Emerald Green
7	Emerald Rose
8	Magenta
9	Violet
10	Slow Color Splash
11	Fast Color Splash
12	America the Beautiful
13	Fat Tuesday
14	Disco Tech

Table 3. Color Mode Sequence



NOTE: To synchronize colors on multiple HydroCool™ Nicheless Underwater LED Light systems wired to separate switches, perform the above actions on all of their switches simultaneously. All HydroCool™ Nicheless Underwater LED Lights will synchronize automatically if activated by the same switch. No other accessories are required.

Note: All fixtures must be tied into the same transformer, circuit or switch for synchronization to occur.

Troubleshooting		
All lights fail to illuminate	Lights are not receiving power	Check 120VAC power supply into transformer. Check for 12VAC output at transformer. Check or reset GFCI. Make sure 120 volts has not been used in the installation — if so damage is assured and is NOT WARRANTABLE.
One or more lights are dim, blinking or not working	Poor connection or improper wire gauge	Separate each light and independently wire 12V to the single light only. Repeat this process on each light. If junction box is being used, check for proper connection of light cord. Verify that the correct wire gauge is being used between the transformer and junction box.
Colored lights out of synch	Improper voltage supply or poor connection to the light	Verify that proper wire connections are being achieved for the lights that are out of sync. Reset all the lights to white by turning lights OFF for five (5) seconds, then turning ON
Light is blinking	Light is too hot	Confirm that the light is submerged in water that does not exceed a temperature of 104F (40C)

WaterColors LED RGBW Pool and Spa Lights

These energy-efficient pool and spa lights by Jandy offer an ultra-slim profile and easy installation. The addition of the White diode to our existing RGB lights will even further enhance the brilliance of the nighttime pool experience. WaterColors are ETL classified and fit into existing niches from Pentair and Hayward as well as Jandy ProNiches.

Features

- Dedicated white LEDs in addition to Red, Green and Blue LEDs
- Choose from nine vibrant colors or five dramatic light shows
- Long life, less than 50 watts of power, available in 120V and 12V versions
- Controlled by a single light switch or seamlessly interfaces with our Smart Color Control

To Operate the Light and Change Colors Turn the light ON. The first time the light is turned on, the color sequence begins with the Alpine White. To change the color, turn the light OFF and then ON within three (3) seconds. Continue turning OFF and ON until the desired light color mode is reached.

Color Mode Sequence Jandy Pro Series WaterColors Lights Sequence Sequence Order	Color Modes
1	Alpine White
2	Sky Blue
3	Cobalt Blue
4	Caribbean Blue
5	Spring Green
6	Emerald Green
7	Emerald Rose
8	Magenta
9	Violet
10	Slow Color Splash
11	Fast Color Splash
12	America the Beautiful
13	Fat Tuesday
14	Disco Tech

NOTE When the light is turned OFF for more than seven (7) seconds, it will remain in the color set that is currently active. When the light is turned back ON, the light will be on the same color set.

To Reset to the Beginning of the Color Sequence Turn the light OFF, wait four (4) to five (5) seconds, then turn ON, the light will return to the beginning of the color cycle (Alpine White).

NOTE If an AquaLink® RS control system is being used the color set can be selected using the indoor controller.

NOTE To synchronize colors on multiple Jandy Pro Series WaterColors RGBW LED Light systems wired to separate switches, perform the above actions on all of their switches simultaneously. All Jandy Pro Series WaterColors RGBW LED Lights will synchronize automatically if activated by the same switch. No other accessories are required.

SPAS

The same fine installation techniques that go into Anthony & Sylvan pools are also found in our spas. Attached spas incorporate a spillway or waterfall into the pool and are designed to receive a portion of the pool water at all times the pump is running. Normally the 3-way valve that controls the return path of filtered water will be labeled “pool” on one side and “spa” on the other. Normal position for the valve is about 90% of the system’s resources sent to the “pool” and 10% directed towards the “spa.” To activate the spa, you must turn two (possibly three) valves.

1. On the suction side of the pump there is a 3-way valve. One side of this valve is marked “pool” and the other side is marked “spa drain.” Turn the handle so that the word “off” is over the pool side; therefore, water coming into the pump is being received from the spa drain.
2. You must turn the cleaner off.
    a. If you have a pressure-side automatic cleaner (such as Polaris® 360 or 380) turn the valve so that the word “off” is facing the pool cleaner side.
    b. If you have an in-floor cleaning system, then you must turn the valve so that the word “off” is facing the cleaning head side.
3. Turn the handle that returns filtered water from the “pool” to the “spa” or “therapy jet” position. At this point, water in the spa should start to bubble and the water level remains constant.
4. If a heater and blower have been outfitted, turn them on in the following order:
    a. Heater first — allow the spa to obtain desired temperature before turning on the blower.
    b. Blower or bubbler can now be activated. Under NO Circumstances should you run the blower while heating your spa. If this is done, it will reduce the ability of the heater to raise the water temperature.

Air Pumps (Blowers)

The air blower is used to pump air under pressure to the therapies and/or air ring to provide therapeutic action. The blowers are normally controlled by a switch located in a convenient position at the water’s edge. Since the blower is used for therapy purposes, it should not be run for more than 15 minutes continuously — which is the maximum medically recommended time for heater therapy use.

CAUTION: Exceeding the recommended time of 15 minutes will cause excessive heat in the unit and subsequent damage, which will NOT be covered by your warranty.

Air Ring (Spa Only)

The air ring is an optional item that is built into the bench seat of the spa and provides for aerated water to aid in the therapy.

Unlike the therapy, the air ring does not have any provision for forced water. Its only source of action is pressured air. DO NOT OPERATE THE AIR RING UNTIL THE DESIRED TEMPERATURE OF THE WATER IS REACHED. The introduction of the air will significantly reduce the ability of the heater to raise the water temperature.

Once your session in the spa is done, the following shutdown is suggested.

1. Turn the heater “off” about 10 minutes before you plan on leaving the spa. This allows the system to cool slowly and also prevents the heater to be left on accidentally.
2. Turn the 3-way valve handle on the suction side of the pump to “pool.” It is NOT a good idea to leave the “spa main drain” on for any considerable amount of time.
3. Turn the 3-way valve on the return/pressure side of the system to allow 90% of the water to return to the pool, and about 10% of the water to go to the spa.
4. NOTE: Feel free to use whatever settings needed to give your spa overflow an appealing flow pattern. These are merely suggestions.
5. You may now turn your cleaner back on whenever you use it.

**If your attached spa has a spillway while operating, you may experience air bubbles coming through the jets. This is normal as air is being sucked through the air line by the venturi jets in your spa.*

ANTHONY & SYLVAN POOLS

BUILT FOR LIFE

Routine Maintenance

Pages 69-78

ROUTINE MAINTENANCE

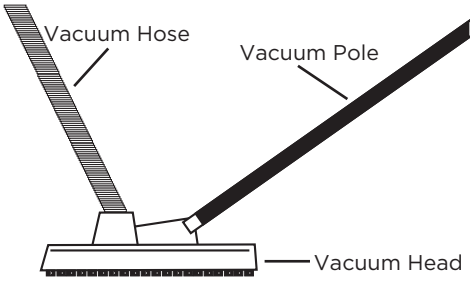
Keeping your pool physically clean is as important as the regular addition of chemicals. Debris in the pool is unsightly, increases sanitizer demand and may cause staining of the interior. During the swimming season, thoroughly clean your pool at least once a week. To ensure proper circulation and filtration you should run your system a minimum of 6 -12 hours per day.

1. DAILY — Maintain proper water level – 1/2 to 2/3 on skimmer opening (you can lose up to 3 inches of water per week through evaporation, splash-outs and backwashing).
2. DAILY — Skim pool surface with leaf skimmer.
3. EVERY OTHER DAY (2 to 3 times per week) – Test your pool water using your test kit or strips and follow a regular chemical treatment program.
4. WEEKLY — Brush walls and floor with proper brush to reduce vacuuming time.

5. WEEKLY — Vacuum pool as needed. See ***Vacuuming*** for complete instructions.
6. WEEKLY — Remove dirt ring from waterline with a tile cleaner.
7. WEEKLY — Empty skimmer baskets as needed.
8. WEEKLY — Clean out hair and lint basket at pump & motor as needed.
9. WEEKLY — Check filter pressure and backwash as needed – when pressure gauge raises 8 to10 psi above the normal starting pressure. See your filter operating manual for details.
10. AS NEEDED — Keep deck area clean near pool.
11. AS NEEDED — Check hoses and equipment and replace when needed.

VACUUMING YOUR POOL

Vacuuming your pool regularly will keep the pool floor clean by removing dirt and debris. If your pool is equipped with an Auto-Clean™ in-floor cleaning system or automatic cleaner this will be done automatically, refer to the ***Auto-Clean In-Floor Circulation*** section or ***Automatic Cleaner*** section for more details. If your pool is equipped with an optional automatic cleaner, DO NOT use it for the first 21-28 days in your newly filled pool. On the initial fill of your new pool, DO NOT vacuum the floor for the first one to two weeks. For the first 30 days, use a vacuum head with a soft bristled brush and not wheels, to prevent marking the soft plaster while it cures. When you manually vacuum, you are using your pool pump with vacuum attached to skimmer to pull dirt and debris from the pool floor to be trapped inside of your filter, returning the water back to the pool.



You should vacuum your pool on a regular basis, generally once a week, or as needed. Your manual vacuum consists of a vacuum head, vacuum hose, telescopic pole and (optional) skim-vac plate. The vacuum head attaches to the telescopic pole, the hose slips onto the vacuum head on one end (if you have a swivel-end on your hose attach the swivel-cuff end to the vacuum head) the other hose end will slip onto the skim-vac or directly into the suction opening in the skimmer. Once attached, you should follow the steps below to manually vacuum. Before you begin, check the filter pressure gauge to ensure the filter does not need to be cleaned or backwashed. A dirty filter will cause the vacuum to perform poorly. Once the hose is attached, the pressure reading will drop significantly — this is normal.

How to Manually Vacuum your Pool:

1. Gather the vacuum hose, vacuum head and the telescopic pole and lay the vacuum hose out on the deck.
2. Remove the lid of the skimmer, the skimmer basket and any diverter valves or devices from the skimmer.
3. If your pool is equipped with a Main Drain: At the pool pump, rotate the control valves so that **THE SKIMMER** is drawing water leaving the main drain slightly open.
4. While at the pump inspect the strainer basket to insure it is not filled with leaves and empty if necessary; check the pump timer to ensure it will allow the pump to run during your cleaning session.
5. Attach the vacuum head to the telescopic pole.
6. Attach the vacuum hose to the vacuum head.
7. Put the vacuum head and the telescopic pole into the water. It is a good idea to hold onto one end of the telescopic pole as it will start to drift in the water by itself.
8. Hold the unattached end of the vacuum hose over one of the fittings that return water to the pool to fill the hose with water. Completely fill the hose before attempting to vacuum or the pump will draw air and cavitate.
9. Carefully put the end of the vacuum hose into the skimmer. Grasp the hose several inches from the cuff and direct the hose into the port that is drawing water. Operate at a distance, as the draw from the pump can be substantial. The vacuum hose will be drawn into the skimmer port and the water will be drawn through the vacuum head and hose.
10. Move the vacuum head over the pool floor and walls at a moderate pace in a pattern that will allow you to cover the entire surface. If you vacuum too fast you will merely stir up the dirt and it will settle onto the floor later. Too slow, and you will waste time. While vacuuming, DO NOT remove the vacuum head from the water or you will lose suction.

11. Once the pool is vacuumed turn the pool pump off.
12. Remove the vacuum hose from the skimmer and remove the vacuum head, pole and hose from the pool and store them.
13. If your pool is equipped with a Main Drain: Return the valve settings to a combination of Skimmer and Main Drain.
14. Empty the pump lint strainer basket and turn the pump on.
15. Check the return flow of water and filter pressure gauge and clean or backwash the filter if the pressure gauge reads 8 to 10 psi over normal starting pressure.

Troubleshooting

If the vacuum head sticks to the floor of the pool making it difficult to operate, you should try:

- ✔ Raising the wheel of the vacuum head
- ✔ Opening the main drain valve slightly to adjust the suction

If you experience air bubbles coming from the return inlet or low suction (and the filter does not require backwashing), you may have an air leak on the suction side:

- ✔ Check the vacuum hose itself for pinholes or cracks that could be sucking air.
- ✔ Check the connection at the skim-vac or skimmer and make sure the hose is still submerged.
- ✔ Check the pump housing is it filled with water? The strainer lid on the pump housing holds an O-ring that should be checked as well. Lubricate with an O-ring lube from your pool dealer. If O-ring is worn, cracked or stretched it should be replaced. A filter system that is running fine can sometimes show air leaks when the suction is increased during vacuuming.

ENERGY CONSERVATION

General pool energy management is a great way to save you time, energy and money while helping to protect our environment. Here are a few guidelines to be noted:

- ✔ COVER your pool to prevent evaporation and heat loss. See ***Solar Cover and Reel Systems*** section for detailed explanation and savings.
- ✔ Keep in mind that each degree the pool temperature is increased, consumption is elevated by 10%.
- ✔ It is important to keep intake grates, skimmer and pump baskets clean.
- ✔ Reduce filtration time, if possible. The minimum recommended time is 6 to 8 hours per day.
- ✔ Only backwash your filter when absolutely necessary, 8 to 10 psi over normal starting pressure.
- ✔ Pool heater maintenance should be kept up-to-date with an annual service check-up.

WATER CONSERVATION

The following water conservation tips (courtesy of NESPA, Northeastern Spa and Pool Association) are especially helpful in drought prone areas or if a water restriction is in effect due to drought-like weather.

- ✔ **Buy and use a cover.** See ***Solar Cover and Reel Systems*** for additional information Covers reduce water loss due to normal evaporation.
- ✔ **Manually clean your filter.** See ***Filtration*** for detailed instructions. Cleaning the filter manually is a more thorough job and uses much less water. The average backwash uses between 250 and 1,000 gallons of water — without completely cleaning your filter.
- ✔ **Prohibit diving, splashing, and water fights.** Boisterous play causes large amounts of water loss from "splash-out."
- ✔ **Control filter cycle and chemical use.** Use the least possible filtration time and frequently test and treat your water chemically. Regular care will keep the pool/spa cleaner and will avoid the need to drain and refill to correct conditions caused by neglect.
- ✔ **Reduce heater temperature.** If you have a heater, reduce the pool/spa heater temperature because warmer water evaporates more quickly. See ***Heating Your Pool-Energy Conservation Tips***.
- ✔ **Plug the overflow line when swimming.** If your pool is equipped with an overflow line, this prevents water loss through the line when the pool is in use.
- ✔ **Gain advantage of roof runoff.** Redirect downspout water directly to pool via vacuum or backwash hose.
- ✔ **Turn off tile-spray on automatic pool cleaner.** This device's splashing causes water loss by evaporation. Over-spraying can send water right out of the pool.
- ✔ **Plant drought-resistant native trees and plants in the yard.**
- ✔ **Sweep instead of hosing off.** Sweep decks, patios, driveways and sidewalks instead of hosing.

POOL OPENING

If you live in a colder climate where your pool is "winterized" and covered, you will want to follow steps #1-10. If you live in a milder climate where you have simply reduced your chemical routine, you should have your water professionally tested, add the recommended chemicals and begin your normal sanitizing routine.

1. Remove standing water and debris from the winter cover using a cover pump or siphon without allowing debris to enter the pool water. Note: If you notice that your water level is dropping, there may be pinholes in your cover, at which time you would be draining pool water from atop your cover.
2. Once cover is removed, clean it with a cover cleaner and allow adequate time for drying to prevent mildew and deterioration. Fold the cover neatly and store. DO NOT lay cover out in the yard for an extended period, as it will burn and kill the grass in a very short time.
3. Remove any winter plugs, closing plates or freeze protectors from skimmer or return inlets. Install skimmer basket and directional "eyeballs" in inlets.
4. Check water level and, if necessary, add fill water to bring pool water to proper level — 1/2 to 2/3 up on the skimmer opening.
5. Use a leaf net or leaf bagger to remove leaves and large debris from water and pool floor.
6. Connect all hoses, valves and unions at pump and motor and filter system. Refer to your filter system's owner's manual for complete start up instructions. Ensure all drain plugs have been reinstalled in pump and motor, filter, chlorinator, etc. Lubricate all O-rings (pump strainer lid, filter, valves, unions, chlorinator lid, etc) with an O-ring lubricant and replace any that are worn, cracked or stretched. Be sure all equipment is in good working order.
7. Prime pump, open filter all air relief valves and start circulation and filtration. Clean or replace filter media if necessary.
8. Vacuum the pool. A thorough manual vacuuming is usually recommended. (Refer to the ***Vacuuming*** section for instructions.)
9. Prior to adding any chemicals, your water should be tested, especially if you suspect that metals or minerals may be present in your pool. It is recommended that you treat metals in the water prior to adding chlorine. Your Anthony & Sylvan store or local pool professional can provide you with a complete water analysis and treatment. Pool should be circulating at least 72 hours. Pool should run 24 hours a day for few days.
10. Re-install all equipment and accessories. Check the diving board, slide, stairs and ladders for any signs of looseness or corrosion. Tighten all hardware and replace any necessary fittings.

Once your water has been tested and is in balance, you can begin treatment with the sanitizer program of your choice. See ***Sanitizing your Pool*** section in this manual for detailed instructions.

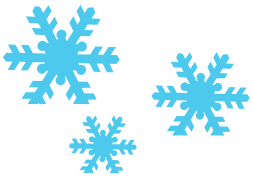
OPERATING YOUR POOL DURING WINTER MONTHS

If your pool will be running during projected periods of freezing weather, it is IMPORTANT that the pump be kept running so that the water will continue to circulate. Circulating water is less likely to freeze. If the pool is shut down, the static water could freeze and cause damage to the plumbing and heater or other equipment that is NOT COVERED UNDER WARRANTY. The primary difference between summer and winter seasons is chemical usage and protection from freezing. The following tips will guide you in maintaining your pool during the winter months. If you choose to close your pool for the winter please refer to the ***Pool Closing — Winterizing.***

1. During winter operation ALL valves should be slightly open (main drain, skimmer, automatic cleaner, returns, etc.). In the event of freezing weather, a closed valve that is NOT winterized can crack and will NOT be covered under warranty for freeze damage.
2. Your pump only needs to run 3–6 hours per day in the winter months — unless freezing temperatures occur — then it **MUST** run continuously. Set your pool timer to run the equipment during the coldest hours of the day. Freeze controllers are available to protect your equipment. These controllers are activated by air temperature and programmed to automatically turn on your pump and begin circulation if the air temperature reaches 38° F. The only time this feature would not work if the power was off.
3. Continue to remove any fallen leaves or debris from the pool as needed by net or vacuum.
4. Test the water every 3 to 4 weeks and make any necessary adjustments to balance the water at a pH reading of 7.4 –7.6 and Total Alkalinity of 80-120 ppm.
5. Very little chlorine is required in cold water but you should still maintain a low level of sanitizer, approximately 0.5 ppm. If you have an automatic chlorinator, adjust the dial to the lowest setting. If you have an AquaPure™ Salt chlorine generator, turn the CHLORINE PRODUCTION down to 10 – 20%. Otherwise, chlorine production will exceed the recommended level. At water temperatures below 51° F, chlorine production is not permitted. Operating your chlorine generator in cold water may result in the pool water becoming over chlorinated. If more chlorine should be needed, activating the “Boost” mode will override this cold water feature allowing chlorine production for 24 hours of operation. An optional Spooler Dummy Cell (Part Number AZ003) for the AquaPure unit is available to replace the cell during winterizing or cell maintenance. This will enable pool pump to circulate water with the cell out of the line.
6. Pool Heater operation can continue during short term cold spells. When temperatures are below freezing but above 0°F, flow (continuous pump operation) must be maintained. ***CAUTION***: *Do not use the heater to maintain water temperatures just above freezing or for freeze protection. When heater is used during freezing weather, care must be taken to avoid freeze ups.* Continuous pump operation is a must. Additional protection may be required. The heater is not warranted against freeze ups. Prolonged operation with water temperatures below 50°F is not recommended. When starting the heater with pool temperatures below 50°F, operate the heater continuously until higher temperatures are reached. Operating the heater for prolonged periods with pool water below 50°F can seriously damage the heater and is not covered by the warranty.

If you will be closing your pool for the winter season you will need to properly cover and shutdown the equipment. This will include the addition of closing chemicals and freeze protection. Please refer to the ***Pool Closing — Winterizing*** section.

POOL CLOSING — WINTERIZING



Due to underground plumbing and various circulation systems that require specific winterizing procedures, we highly recommend that you contact an Anthony & Sylvan service center or professional contractor to perform your pool closing and winterization. Call our National Customer Service Center at 877-891-7946.

If you choose to close your own pool you **MUST** carefully read and follow all manufacturers' winterizing recommendations that came with your pool and equipment; operating manuals are contained within your Pool Partner™ CD. Damage caused as a result of freezing or improper winterization is NOT covered under warranty. Before your pool is closed for the season, you will want to first be sure that the water is CLEAN AND BALANCED, this preparation needs to be done even if you have scheduled a professional pool closing. If you live in a milder climate that does NOT require closing and winterizing your pool, you should refer to ***Winter Operation*** section for instruction.

PREPARATION

Before you begin the steps to close your pool the water should be CLEAN AND BALANCED.

1. Brush and Vacuum the pool and remove any fallen leaves or debris. Any material left in the pool over the winter months could cause staining to the pool finish.
2. Test the water and make any necessary adjustments so the pH reads between 7.4 –7.6 and the Total Alkalinity between 100–150 ppm.
3. If you have or suspect you have excess minerals or metals in your water, have your water tested by your pool dealer and add the recommended sequestering agent or metal remover per label directions.
4. Purchase any necessary freeze protectors (LID'LSEAL™ snap-on closure plate or gizzmo® for your skimmer, air freeze pillows, plugs, etc.) that you will need for your pool.
5. Check winter cover and be sure it is in good condition, along with water tubes if you are using a tarp-style cover. Replace any worn or lost items.

POOL CLOSING — WINTERIZING

Follow steps 1-5 above, to prepare your pool and be sure water is clean and balanced

1. Add closing chemicals recommended by your pool dealer:
   a. Shock pool using chlorine shock *(see **Shocking and Superchlorinating** for choices)* follow label directions for winterizing.
   b. Add a maintenance dose of algaecide per label directions.
   c. Add a maintenance dose of sequestering agent to protect from staining.
2. **IMPORTANT** Run your filter continuously for 8 to 12 hours to make sure the chemicals have circulated thoroughly.
3. Backwash and clean filter following owner's manual for cleaning and winterizing. You should chemically clean your cartridge or D.E. elements at the end of each season. *See your filter operating manual within your Pool Partner™ CD for details.*

4. Drain all equipment: pump, filter, heater, chlorinator, etc. (store drain plugs in pump basket) and follow winterizing steps as recommended below. Unscrew and loosen any quick disconnect fittings or unions at your pump and filter system. If the water is all drained out of your pipes and fittings, it cannot freeze and expand and crack the pipes and fittings.

If your pool is equipped with an Auto-Clean™ In-floor cleaning system, refer to the Auto-Clean section of your Pool Partner™ CD for winterizing instructions.

FILTER:

a. For the longevity of the filter elements, we recommend you remove the internal grid assembly or filter cartridge and store in a dry area.

b. Reassemble the filter following the procedures in the filter operating manual.

c. Open air bleeder valve and open all system valves. DE Filters — position Push/Pull valve between port positions (winterize position) to allow passage to all ports and relieve pressure on the sealing gasket.

d. Remove drain plugs from filter and pump.

e. Drain system piping.

f. Cover the equipment with a tarpaulin or plastic sheet to inhibit deterioration from weather.

PUMP:

a. Shut off electrical power for the pump at the house circuit breaker.

b. Drain the water out of the pump case by removing the two thumb-twist drain plugs from the case. Store the plugs in the pump basket.

c. Cover the motor to protect it from severe rain, snow and ice.

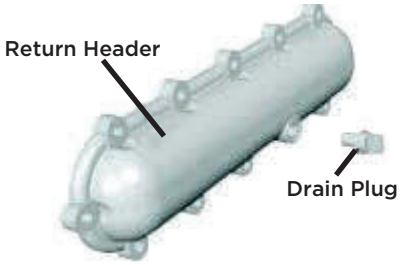
d. Do not wrap the motor in plastic. It will cause condensation and rust on the inside of the motor.

HEATER:

a. Turn off gas valve, manual gas valve, and electrical supply to the heater.

b. Open drain plug located on the inlet/outlet header (under water pipes). Remove the heat exchanger inspection panel on the side opposite water piping to gain access to the drain plug on the return header. Open drain plug on return header.

c. For ASME Heaters only: Disconnect compression fittings from the pressure switch and return header that connects to the 1/4" copper tube and allow the tube to drain



NOTICE: Water trapped in the heater can cause freeze damage. Allowing the heater to freeze voids the warranty.

AQUA PURE — Salt Generator: Prevent freeze damage to the Cell and Flow/Temp/Salinity Sensor by running pump continuously or winterize pool by draining water from pump, filter and all intake and return lines.

a. Remove the cell, clean and store it.

b. Disconnect the Flow/Temp/Salinity Sensor from the control center and then remove it from the threaded PVC Tee.

c. Wrap Flow/Temp/Salinity Sensor in a plastic bag or protective covering, and then coil Flow/Temp/Salinity Sensor and DC power cord cables around the control center for storage.

5. Shut off pump and motor.
6. PROTECT UNDERGROUND PLUMBING — before sealing off skimmer and plugging return inlet(s), you need to protect your underground plumbing. Blow out the lines using a canister type vacuum in the skimmer opening, plug return inlets with threaded plugs with O-rings and add swimming pool antifreeze to the lines at a rate of 1 gallon per 25 feet of plumbing. Cover exposed pipes to prevent any water from getting into them.
7. PROTECT YOUR SKIMMER(S) — this can be done by any ONE of the following methods:
   - Seal off with a closure plate OR
   - Install a device, such as a gizzmo®, to absorb expansion and contraction from ice
8. Lower the water level 6" to 8" below the skimmer(s) opening. Please note the following regarding the water level in your pool during the winter:
   - Keep water off of pool cover throughout the winter using a cover pump.
   - Check your water level throughout the winter, after each rain or snowstorm and be sure to maintain the level at 6" to 8" below the skimmer.
9. Remove ladder, handrails, boards and accessories.
10. Read manufacturer's instructions for winterizing your pool light, and if necessary, lower into deep end of pool or lift onto pool deck.
11. Cover equipment with a tarp to protect from the elements.
12. Secure winter pool cover. Tarp-style covers should lie on the surface of the water and be anchored securely at perimeter using water tubes/bags. Allow some room in the water tubes for expansion when the water freezes. **DO NOT** use cinder blocks or other sharp-edged, heavy materials to hold down the winter cover.

13. Safety covers are anchored with heavy-duty straps that crisscross your pool's surface. The straps are attached to stainless steel springs that attach to anchors in the pool decking, eliminating the need for water bags. Refer to ***Safety Covers*** for complete installation instructions.

14. Do not allow excessive water to accumulate on tarp-style winter or solid safety covers. Periodically remove standing water with a cover drain or submersible pump. **CAUTION**: standing water on covers can pose a drowning threat to children and pets!

Pool Cover Pump

Equipped with a microsensor.
Checks for water and automatically turns on.
When the water is gone, the pump shuts itself off.

SAFETY COVERS

Safety covers provide a virtually impenetrable shield against wandering children or pets. The pool cover stretches taut over the pool surface and is attached to the pool deck by a series of stainless steel springs that are anchored into the pool decking. Anthony & Sylvan offers the finest safety covers available by Anchor® Industries. Safety covers not only provide peace of mind, but they also make pool opening and closing much easier than with a tarp-style winter pool cover using water bags. A safety cover will seal out debris and keep the pool area attractive all year long.

Anchor® Safety Covers stretch tight across the pool to form a barrier over any in-ground pool, regardless of the pool's shape and size. The accuracy of Anchor's formfitting safety covers will conform easily to garden walls, spas, boulders, raised bond beams and other custom applications. Your Anthony & Sylvan professional will be able to provide pricing and guidance in choosing the cover that is right for your pool.

Unlike mesh safety covers, Anchor's Solid Safety Cover does not allow UV rays to penetrate the cover, thus preventing algae growth and making your spring pool opening a breeze. Anchor safety covers feature 360° tensioning for maximum strength and protection. 5-Star Covers™ are tough, constructed of 14 oz. coated vinyl with heavyduty springs that stretch to accommodate the weight of winter precipitation. Tension webs are welded into place, leaving no conventional sewing perforations to weaken the cover or leak and no cross webbing to clean around. Our covers meet the ASTM 1246 standard for safety pool covers and come with a limited 120 month warranty.

Pool Cover Pump

Equipped with a microsensor. Checks for water and automatically turns on. When the water is gone, the pump shuts off automatically.

Mesh safety covers provide a shield over the pool area while allowing rain and melting snow to penetrate the surface so there is never an accumulation of standing water on the cover — leaves and debris simply blow away providing for a clean, attractive appearance in any weather.

ANTHONY & SYLVAN POOLS

BUILT FOR LIFE

Swimming Pool Safety

Pages 80-83

www.anthonysylvan.com

SWIMMING POOL SAFETY

Safety is an important factor that must be considered when using or caring for your pool. Please read all of the pages contained within this section. Make it a habit of practicing basic safety in the use and care of your pool and equipment. When you are using your Pool Partner™ CD, you can also access pamphlets and additional information on each safety topic as well as safety information for your pool equipment within the owner's manuals found in the ***Understanding Your Equipment*** section of the CD. In this section, we will discuss four main subgroups of safety:

Chemical Safety ***Water Safety*** ***Electrical Safety*** ***Equipment Safety***

The following ***GENERAL SAFETY RECOMMENDATIONS*** are supplied by the APSP (Association of Pool and Spa Professionals) and provide an overview of the various safety aspects mentioned above.

- Establish pool rules for guests and family members and adhere to them.
- Never dive into an aboveground pool or shallow water. Nine out of ten diving injuries occur in six feet of water or less.
- Keep these basic safety items by the pool at all times:
  1. Shepherd's crook or long-handled hook
  2. Coast Guard approved life ring preserver
  3. First Aid kit with written instructions on how to administer CPR (Cardiopulmonary Resuscitation).
- Never leave children unattended or even out of eye contact in your swimming pool.
- Make sure pool is inaccessible to children when unsupervised or you are away from home.
- Don't leave toys around the pool or in the water. They could encourage an unsupervised child to enter the pool area.
- Make sure you are aware of and are in compliance with local requirements concerning fencing around pools.
- It is a good idea for all family members to become familiar with CPR. Training is normally available from a number of different groups, such as the American Red Cross and your local YMCA.
- In case of emergency, call 911 immediately. It is a good idea to have a cordless phone or cell phone available in the pool vicinity. Also, post the following emergency phone numbers near the pool:
  1. Police/Fire/Rescue
  2. Poison control
  3. Physician
  4. Ambulance/Hospital
- Be aware and prepared for unsafe weather conditions. All swimmers should leave the water immediately as soon as you see or hear a storm to prevent possible electrical shock.
- Pool alarms are required in some areas and are recommended for all families with small children or pets.
- Many serious pool accidents involve alcohol. Remember alcohol and pools don't mix!
- Glass and sharp objects should not be used on or around the deck of the pool.
- All electrical equipment (including power supply cords) used with or around the swimming pool should be protected by a ground-fault circuit interrupter (GFCI) at the power source.

Your licensed electrical contractor always supplies this circuit. Serious injury and even death can result from improper electrical hook-up.

Chemical Safety

When opening your pool or doing routine maintenance, remember to follow common-sense rules for safety. Using pool care products can be dangerous if you forget the right handling and storage procedures. For more information, refer to the section, ***Chemical Safety-Storage & Handling***. All chemicals used for any purpose in or around the pool should be handled very carefully, stored in a safe place and precautions noted. Chlorine and other pool sanitizers are classified as oxidizers. These chemicals require specific precautions; see ***Oxidizers***. Some pool chemicals, specifically balancing chemicals, are classified as acids and also require specific handling and usage instructions; see ***Acids***. Below are just a few of the important safety rules to remember when working with pool and spa chemicals:

- Keep all chemicals sealed in a cool, dry place and out of children's reach.
- Always read and follow all directions on bottle label.
- **NEVER** mix chemicals together.
- Always add chemicals to water, **NEVER** the reverse.
- Wash hands thoroughly after handling chemicals.

Water Safety

Pools are a great asset to any home or community, however, rules must be set and enforced, manuals must be read and re-read and knowledge of proper water safety is key to avoiding preventable accidents. Parents should teach children to swim at an early age. You can contact one of the following organizations online to locate a certified water safety instructor in your area: www.ymca.net or www.swimamerica.org. With a few precautions, the likelihood of a drowning incident may be significantly diminished.

Layers Of Protection

Your pool provides your family with the opportunity to enjoy healthy recreational activity together as well as the means to teach your children a lifelong respect for water. Pool owners should be continuously aware of the risk of a child drowning when around any body of water. Continuous adult supervision is the primary solution to childhood drowning. Many accidents occur when there is even a short lapse in supervision, whereby children may gain access to the pool through:

- ✔ **Open or unlocked house doors or windows**
- ✔ **Open, unlocked or broken fence gates.**

The APSP recommends that certain requirements be met at an absolute minimum to provide a layering effect of protection between your house and pool. The APSP recommends not relying on any one system, rather, you should use several together to provide the highest level of protection. Again, they are NOT to be used in place of adult supervision.

- Enclose all pools by a barrier.
- When the house is used as one side of the barrier, install a latching device on all windows. All doors should be self-closing and self-latching with the latch located at least 56" from the floor. Pay particular attention to the sliding glass doors that provide access to the pool area to ensure they are not left open or unlocked.
- All fence gates should be self-closing and self-latching and capable of being locked when the pool is not supervised.

Diving — refer to the Safe Diving Pamphlet from your Pool Partner™ CD. The pool area must be examined (depth, obstacles) and a diving technique should be discussed with all swimmers to ensure a safe and fun dive.

Entrapment

Entrapment occurs when a swimmer's hair or body parts are sucked into or held down by a strong vacuum through a suction fitting or main drain. Instruct all swimmers to **STAY AWAY** from the main drain and suction fittings. Regularly inspect the skimmer lids and main drain covers to be sure they are securely screwed in place without sign of cracking or deterioration. If a broken or missing grate or drain cover is detected, the pool should not be used until the hazard is fixed.

Electrical Safety

GFCI - All electrical equipment (including power supply cords) used with or around the swimming pool should be protected by a ground-fault circuit interrupter (GFCI) to protect from possible shock. Your licensed electrical contractor should supply this circuit. Serious injury and even death can result from improper electrical hook-up. The GFCI is located in either the junction box that connects the pool light to the electrical system or in the main load center for the pool (breaker box).

The GFCI consists of a reset button and a small square button marked "test." To test the effectiveness of the GFCI, first press the "test" button — it should trip. Next, depress the "reset" button — you should hear a clicking sound. This tells you that the shock protection is intact. Perform this test once a month to be sure your GFCI is in working order.

Codes — All electrical equipment and wiring must meet the requirements of the local and national codes which apply.

Grounding and Bonding — All electrical equipment must be grounded. All metal objects (ladders, diving platforms, etc.) must be electrically bonded together.

Extension Cords — Never use extension cords around a pool or spa. If they get wet, it's an invitation to a shock — possibly a fatal one.

For additional electrical safety information, all pool owners should read the document, ***Don't Swim With Shocks***, published by the American Red Cross — found in your Pool Partner™ CD.

Equipment Safety

Always read the complete owner's manual for all equipment to ensure you have a good understanding of their operation prior to start-up. Compressed air can become trapped within your pump and filter system, creating a dangerous amount of pressure — enough to actually blow the lids off of filters or strainers. The manufacturer's owner's manual for your filter system and pump will explain how to safely bleed the air out of your system. **NEVER** start your system without opening the air bleeder valves first. Following is a safety checklist you should routinely perform to be sure your pool and equipment are operating safely and efficiently:

- Main drain cover is installed correctly, screwed down, unbroken and certified for that application.
- All skimmer covers are in place, screw-fastened and unbroken.
- Filter pressure gauge is in good working condition and that the filter pressure is within the operating range specified in your filter's owner's manual.
- Filter O-rings are sealing properly and in good condition.
- Filter tank lock ring, clamps and bolts are in place, in good physical condition and correctly tightened. (**DO NOT** try to adjust clamps while the filter is under pressure.)
- **BLEED OFF ACCUMULATED AIR FROM THE SYSTEM.**
- Empty skimmer baskets and the pump strainer basket to ensure they are free of debris.
- Remove any debris or obstructions from the main drain cover.
- Remove obstructions and combustibles from around the pump motor air vents.
- All chemicals are properly stored (refer to ***Chemical Safety Storage and Handling***).
- Pool heater is functioning properly, with no smell of gas around the heater.
- All grounding and bonding wires are connected and in good condition.
- All wiring connections are tight and clean and that all wiring and electrical equipment is in good condition.
- If equipment is indoors, the area should be clear of leaves, debris and combustibles.

The APSP publishes several pool safety pamphlets that can be obtained online at **www.theapsp.org** or by calling 703-838-0083.

ANTHONY & SYLVAN POOLS

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Troubleshooting & Frequently Asked Questions

Pages 85-88

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TROUBLESHOOTING & F.A.Q.'s

Q. How long should I run my pump or filter?

A. *Your pump should operate between 6 to 12 hours every day. Your filter, sanitation and heating system rely on the circulating water movement from your pump and motor. If you begin to experience a water problem, cloudy water or algae, run the filter longer, 24 hours a day if necessary. See* ***Pump & Motor*** *section for more information.*

Q. How can I keep my pool safe?

A. *There are several areas to consider when discussing safety and your pool, all of which are very important:* ***Chemical Safety, Water Safety, Electrical Safety and Equipment Safety****.* ***ALWAYS REMEMBER*** *— Supervision and securing the access to your pool area are critical. Please read carefully and follow all of the safety information included in this manual. There are a variety of safety products available such as alarms and safety covers to help you keep your pool safe.*

Q. When should I backwash or clean my filter?

A. *You should backwash or clean the filter when the filter pressure gauge reading has increased 8 to10 psi above the normal starting pressure. How often you need to backwash depends on several factors: filter size, run-time and water quality. Cloudy water or algae can cause the pressure to build within hours. However, under normal conditions you can expect to backwash your D.E. filter every 1 to 2 weeks and clean your cartridge filter every 2 to 4 weeks. When the cycle time between backwashing or cleaning your filter shortens significantly (without an obvious water problem, it may be time to manually clean the filter. A thorough chemical filter cleaning should be performed 1 to 2 times per season.* D.E. Filter owners *— be sure to change your filter adding the correct amount of DE through the skimmer after backwashing. Too little D.E. will not properly coat the grids and the debris that you filter will get embedded in the grid cloth causing it to become clogged and the pressure to rise. See* ***Filtration*** *for details.*

Q. How often should I vacuum my pool?

A. *You should vacuum your pool on a regular basis, generally once a week. If your pool is equipped with an Auto-Clean™ in-floor cleaning system or an automatic cleaner, this cleaning will be performed automatically. For more information, refer to* ***Vacuuming****.*

Q. How do I keep my pool water clean and healthy?

A. *Clean, clear, healthy pool water is the result of proper sanitation, filtration and circulation. The term sanitize means to kill all disease-causing organisms. The sanitizer is the key component of your chemical program. Your chemical sanitizer options include* ***Chlorine****,* ***Clear Vision (Nature²)*** *and* ***Aqua Pure™ Salt Chlorinator****. Each of these sanitizers has certain advantages and benefits that you can discuss with your Anthony & Sylvan representative. Refer to the sanitizers listed above to learn more.*

Q. What does it mean to shock my pool?

A. *When you shock your pool, you use a larger dose of chlorine or non-chlorine shock to oxidize (burn up or destroy) organic debris, such as body waste, particulate matter and perspiration, from the water. Routinely shocking the water every 1 to 2 weeks will provide optimum water quality while eliminating algae and bacteria. See* ***Shocking*** *or* ***Superchlorination****.*

Q. How many gallons of water are in my pool?

A. The gallons of water your pool holds is recorded in your Anthony & Sylvan paperwork. If you do not have that figure available, the Pool Partner CD will calculate the gallons of water in your pool. Simply go to the Main Menu, click on Water Analysis, and then Estimate. Or, use the following formula: length x width x average depth x 7.5.

Q. How much water loss is normal due to evaporation?

A. *Water loss due to evaporation is normal, but how much varies considerably from pool to pool. If you maintain your pool at a high temperature, it is possible to lose up to 2" of water per week. Backwashing and splash-out will also account for "normal" water loss. In general, most pool owners expect to lose approximately 1/8" of water daily. Learn how you can greatly reduce water loss from evaporation by using a* ***Solar Cover****.*

Q. At what temperature should I maintain my pool water?

A. *How warm you keep your pool is, of course, entirely up to you. Competitive swimmers prefer a temperature of 78° F, while recreational swimmers are generally more comfortable near 80° F and the young and elderly closer to 82°F.*

Q. How do I close my pool for the winter?

A. *1. Thoroughly clean the pool.*
2. Treat the water using the recommended closing chemicals.
3. Lower water level.
4. Drain all equipment.
5. Cover your pool.
6. Keep water off cover.

Protecting your equipment and plumbing from freeze damage is vital when closing your pool for the season, as freeze damage is ***NOT*** *covered under warranty. Be sure to read and carefully follow all of the steps provided in the* ***Pool Closing — Winterizing*** *section, or contact your local service center to professionally close and winterize your pool.*

Q. How much will it cost to heat my pool?

A. *Several factors will influence how much it will cost to heat your pool, such as: the type of heater you use (electric heat pump, natural gas, solar, etc), air temperature, covered or un-covered, desired water temperature and pool size.*

Natural gas heaters use one therm (100,000) BTU per 100,000 BTU's heater size. Your gas is usually billed by therms. Propane heaters use one gallon of fuel per hour for each 91,000 BTU's of heater input. Example: A 400,000 BTU heater propane heater uses 400,000/91,000 = 4.40 gallon/hour

Operating costs can be kept to a minimum by installing an efficient, properly sized heater, using a good quality pool cover, keeping your filter clean and your heating and filtering system well maintained. NOTE — dramatic savings may be gained by maintaining the water temp. just 2° lower and even more by using a pool cover. See ***Energy Saving Tips*** *for heating your pool.*

Q. Should I cover my pool?

A. *YES, you should cover your pool! There are solar covers for use when the pool is open, in winter or safety pool covers to keep the pool clean and secure when the pool is closed. For a variety of reasons, the single biggest energy conservation move that you can make is to put a cover on the pool or spa. First, the cover reduces the heating bills by preventing heat loss. The cover can also reduce the amount of dirt and grime that enters the pool, reducing the amount of time it takes to remove them from the water through filtration or vacuuming. Some estimates say that as much as 50 gallons a day can be lost from evaporation in an uncovered pool. That is more than 18,000 gallons of water wasted each year.*

Q. What's it like swimming in a pool that is treated with a salt chlorine generator?

A. *The most common question about the use of a salt chlorine generator is if the pool water will taste like saltwater. The answer is usually NO. Ocean water typically has a salt content of 35000 ppm whereas the Aqua Pure™ generator requires a salt level content of only 3000 ppm — about Ð the amount found in human tears. A very mild saline taste can begin to be detected at 3500 to 4000 ppm. Even though you can barely taste it, you still benefit from the naturally softened water, which is closer to the pH of your skin and eyes. Go to* ***Salt Chlorine Generators*** *for a complete explanation.*

Q. How do I get rid of a strong chlorine smell?

A. *It is an over-abundance of combined chlorine (chloramines) and not enough free chlorine which causes the eye irritation and the strong, sometimes offensive odor often associated with chlorine. Many people incorrectly assume this foul smell comes from having too much chlorine in the water when actually increasing the free chlorine level by adding a large dose of chlorine or a non-chlorine shock (a procedure called* ***Shocking*** *or* ***Superchlorination****) will oxidize the chloramines and correct this condition.*

Q. What causes skin and eye irritation in pool water?

A. *There are several factors that can cause skin and or eye irritation in pool water. Chloramines (described above) are often a culprit and can be eliminated with routine shocking. High levels of sanitizer or improper water balance can also cause this condition. For bather comfort, the pH and Total Alkalinity must be in the ideal ranges: pH 7.4 to 7.6 and Total Alkalinity of 100 to 150 ppm. See* ***Basic Water Chemistry*** *for more details.*

Q. I've kept my pool open for the winter months, but if it gets too cold I'm worried about freezing.

A. *If your pool will be running during projected periods of freezing weather, it is IMPORTANT to keep the pump running so that the water will continue to circulate. Running water is less likely to freeze. If the pool is shut down, the static water could freeze and cause damage to the plumbing and heater or other equipment that is NOT COVERED UNDER WARRANTY. See* ***Winter Operation*** *for more information.*

Q. My pool pump won't prime.

A. *Your Jandy pump is self-priming, which means that when turned on the pump basket area should automatically fill with water. You may, however, occasionally need to manually prime it by removing air and filling with water.* ***IMPORTANT****: Your pump should never be run without water in it. Doing so will cause the pump to overheat, potentially causing damage to the liquid end and burning out the seal. Before you prime your pump, check the following:*

- ✔ *Ensure the water level in the pool is at the half-way point on the skimmer.*
- ✔ *Check the skimmer basket and empty if needed; make sure it is not plugged in.*
- ✔ *Make sure the drain plugs are installed in the pump.*
- ✔ *Check that any valves leading to pump are in the open position.*
- ✔ *Check the O-ring on the pump lid for signs of wear. Lubricate with O-ring lube.*

Once you have established that the above items have been met, you should:

- ✔ *Remove the lid from the lint strainer at the front of pump.*
- ✔ *Take a garden hose and put it into the pump housing. Fill the pump housing, which should automatically fill the suction line; remove hose when pump is full.*
- ✔ *Put the lid back on the pump over the basket area. Ensure the lid O-ring is in place so that no air gets into the pump housing.*
- ✔ *Quickly turn ON the power to the pump.*

Watch the lid on the pump to see if the water has started to come in; this should take a minute or less. If after a minute you don't see water and the clear lid is starting to fog up, turn OFF your pump and repeat the above steps. The pump should not run longer than 8 minutes before priming is achieved. ***WARNING*** ***DO NOT*** *open the strainer pot if the pump fails to prime or if the pump has been operating without water in the strainer pot. Pumps operated in these circumstances may experience a build-up of vapor pressure and may contain scalding hot water. Opening the pump may cause serious personal injury. In order to avoid personal injury, make sure the suction and discharge valves are open and strainer pot temperature is cool to touch. Open with extreme caution.*

Q. My pool heater doesn't seem to be heating the water.

A. *There could be several reasons why the pool water is not heating:*

- *Is the thermostat set too low?*
- *Is the air temperature too low? Gas Heaters should not run below 50°F*
  Heat pumps should not run below 45°F–48°F
- *Is the pool covered? A cover will greatly reduce heat loss — see* ***Solar Covers***
- *Is the filter running 8 to 10 hours per day? Remember your pool heater or heat pump is only working when the filter is running and the pool water is circulating.*
- *Is the filter system clean and running within a normal pressure reading? Heaters have pressure switches that will not allow the system to turn on if the water flow is insufficient. You should also check the skimmer and pump baskets and clean and empty if needed.*
- *Is the automatic timer in the ON position?*
- *Do you have electrical power to your electronic ignition heater or electric heat pump? Check the circuit breaker — if tripped, re-set. If it trips again, contact your electrician.*

If you have checked all of the above and your pool heater is still not working, you may want to contact your local service center, or see ***Pool Heaters*** *or* ***Heat Pumps*** *for more information as well as your complete heater operating manual.*

WARNING: *IF YOU SMELL GAS: Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions. If you cannot reach your gas supplier, call the fire department.*

DO NOT *try to light any appliance.*

DO NOT *touch any electrical switch*

DO NOT *use any phone in your building*

ANTHONY & SYLVAN POOLS

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Glossary

Pages 90-94

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GLOSSARY

Acid — Chemical which lowers pH.

Acidic — Having a pH below 7.0; the opposite of basic.

Acid Wash — A procedure using an acid solution to clean an interior surface of a pool with subsequent neutralization of the acid.

Acrylic — A thermoplastic material that can be extruded, injection-molded or vacuum-formed into usable shapes and surfaces.

Activated Carbon — A charcoal-like material used to remove colors, odors and/or excess oxidizer from water.

Aggressive Water — Water that is corrosive because it is low in pH and/or calcium hardness and/or total alkalinity.

Algae — Microscopic plants that enter your pool via rain, wind, dust, etc. and can cause discoloration of the water or pool surface.

Algaecide — Chemical that kills or prevents algae.

Alkaline — Having a pH above 7.0.

Alkalinity — All pool chemicals work most effectively when alkalinity remains in balance. Alkalinity prevents pH bounce. Low alkalinity is very corrosive to the filter and other pool equipment. High alkalinity promotes scale formation, cloudy water and reduces chlorine efficiency.

Alum (aluminum sulfates) — A compound used to cause suspended solids in water to form filterable masses (flocculant).

Ammonia — A chemical compound of hydrogen and nitrogen that combines with free chlorine in pools to form chloramines, or combined chlorine. Also combines with free bromine to form bromamines.

Antivortex Drain Cover — A plate or cover that is affixed to the main outlet of a swimming pool to prevent a vortex from forming as water passes through to the main outlet.

Backwash — The process of cleansing the filter medium and/or elements by the reverse flow of water through the filter.

Bacteria — Microscopic organisms that enter your pool from swimmers and dust, among other things, can cause irritation and infection.

Balanced Water — Total water chemistry that is right where it should be to prevent both corrosion and scaling. The factors to check for in balancing your water are pH, Total Alkalinity and water hardness.

Base — A chemical used to raise the pH and/or total alkalinity of pool water.

Basic — Having a pH above 7.0; the opposite of acidic.

Breakpoint Chlorination — The practice of adding a sufficient amount of chlorine to water to destroy the combined inorganic chlorine present. Normally, the amount added is 10 times the combined chlorine concentration.

Broadcasting — Tossing granules out over the deep end of your pool.

Buffer — Any chemical that, when dissolved in water, will resist pH change. Also any chemical solution used to calibrate pH instruments.

Calcification — Formation of calcium carbonate on walls of pools or pipes, or in a filter or heater, due to precipitation of calcium carbonate.

Cavitation — The formation of partial vacuums when pump capacity exceeds the water replacement supply.

Channelization — The undesirable process whereby filter sand is permeated by tubes or channels of calcified or oily material, allowing water to pass freely, without filtration.

Chloramine — A compound formed when chlorine combines with nitrogen or ammonia. It causes eye and skin irritation and has a strong, unpleasant chlorine odor.

Chlorinator — A device used to add or deliver a chlorine disinfectant at a controllable rate. Chlorinators should only be used with the chlorine compounds for which they are designed.

Chlorine — A chemical element that exists as a gas in its elemental form or as a part of a chemical compound. Used as an oxidant to sanitize and disinfect pool water.

Chlorine Demand — The amount of free available chlorine combined with nitrogen or other organic compounds.

Chelating Agents — and sequestering agents are used to prevent mineral/metal precipitation (fall-out) by bonding minerals or metals in solution in the water to prevent staining, scaling or water discoloration.

Circulation System — A system of mechanical equipment and/or components designed to ensure even distribution of heat, chemicals and filtration of water throughout a pool. Includes filters, heaters, pumps, piping, inlets, drains, skimmers and other devices.

Clarifier — A chemical that coagulates suspended particles in water. See Coagulant or Flocculant.

Coagulant — A chemical, usually alum, used in pools to gather and precipitate suspended matter.

Coping — The cap on the wall that provides a finishing edge around a pool. Can be formed, cast in place, precast or prefabricated from metal or plastic materials, brick or stone.

Corrosion — Eating away of metal surfaces in your system caused by water that's out of balance.

Cove — The radius that joins the floor and wall of a pool.

Cyanuric Acid (Stabilizer) — Maintaining an appropriate cyanuric acid level protects free chlorine from the sun's UV (Ultra Violet) rays by slowing the breakdown of chlorine by the sun. The ideal range is 30-50 ppm. If the test value is beyond 100 ppm, you may have to drain a portion of the pool's water and replace it with fresh water to reduce the cyanuric acid level. This test should be performed at the beginning of each pool season and twice during the season by your professional pool dealer. Stabilized chlorine (di-chlor and tri-chlor) are chlorines mixed with isocyanurates (stabilizer) and will increase the cyanuric level over time.

Etching — Corrosion on the surface; the pitting or eating away of a material such as the surface of plaster (marcite).

Filter Agitation — Mechanical or manual movement to dislodge the filter aid and dirt from the filter element.

Filter Aid — A powder-like substance such as diatomaceous earth or volcanic ash used to coat the filter media and trap a finer particle.

Filter Cycle — The operating time between cleaning or backwash cycles.

Filter Medium — A finely graded material (such as diatomaceous earth, polyester fabric, cellulose fiber, etc.) that removes solid particles from water.

Filtration — The process of capturing suspended particles and clarifying water.

Flocculant (floc) — A chemical substance (Alum) or compound that promotes the combination, agglomeration or coagulation of suspended particles in water.

Free Chlorine — A measurement of the available disinfectant (hypochlorous acid) remaining in the water to kill bacteria, algae and other contaminants found in the water.

Hardness/Calcium Hardness/Water Hardness — All three are measure of the amount of calcium and magnesium in your water.

Hydrogen Peroxide — A compound of hydrogen and oxygen used as an oxidizer to shock pools treated with a biguanide program.

Hypochlorous Acid (HOCl) — The active form of chlorine that kills algae and bacteria in your pool. HOCl is the most powerful disinfecting form of chlorine in water.

Mineralizer (or Mineral Purifier) — Used to treat the water with minerals such as silver, copper and zinc. Available in a variety of cartridge forms, it significantly reduces the need for sanitizer by trapping and assisting in killing bacteria.

Organic Matter — In a pool, material introduced to the water by users and the environment such as perspiration, urine, saliva, suntan oil, cosmetics, lotions, dead skin and similar debris.

Organism — Plant or animal life, refering to algae or bacteria-like growth in pool water.

OTO (Orthotolidine) — A colorless reagent used in liquid test kits. OTO reacts with chlorine or bromine to produce a series of yellow to orange colors, indicating the amount of chlorine or bromine in water. Effectively measures Total Chlorine NOT Free Chlorine

Oxidizer — A disinfectant that works to eliminate irritating organic compounds from pool water.

Ozone — A gaseous molecule composed of three oxygen atoms, generated on site and used for the oxidation of water contaminants.

Ozonator — A device that generates Ozone (a special form of oxygen) that kills bacteria and algae spores. The resulting material and microscopic debris is then "burned up" (oxidized) for removal by the pool filter.

pH — A measure of acidity and alkalinity of pool water. If the pH level is high (alkaline), it will cause eye and skin irritation, cloudy water and scale formation. Chlorine and filter efficiency will decrease. If pH is too low (acidic), it will cause eye and skin irritation, a breakdown of total alkalinity and corrosion of metal. Acceptable levels are 7.2-7.8, with an ideal reading of 7.6.

PPB — Part per billion, the measure of a chemical's concentration in your water (this measure is usually used when testing for phosphates).

PPM — Part per million, the measure of a chemical's concentration in your water.

Precipitate — A solid material that is forced out of a solution by some chemical reaction and settles out or remains as a haze in suspension (turbidity).

Priming — Refers to evacuating the air; in a pump strainer housing, you can manually prime the pump by filling with water and quickly replacing the lid.

Pressure Gauge — A gauge that measures the amount of pressure built up within a closed container, such as a filter.

Salinity — The sodium chloride or salt content of water.

Saturation Index — A rating that indicates whether water will have a tendency to deposit calcium carbonate from a solution or whether it will be potentially corrosive. Four factors are used in the computation: pH, total alkalinity, calcium hardness and temperature. Correctly balanced water will be neither scale-forming nor corrosive.

Scale — White, gray or brownish spots on pool surfaces or equipment caused by water that's out of balance.

Sequestering Agent — Sequestering agents and chelating agents are used to prevent mineral/metal precipitation (fall-out) by bonding minerals or metals in solution in the water to prevent staining, scaling or water discoloration.

Shock Treatment — The practice of adding significant amounts of an oxidizing chemical to water to destroy ammonia plus nitrogenous and organic contaminants.

Stabilized Chlorinating Products — A chlorinating compound that contains cyanuric acid protecting the chlorine residual against the negative effects of the sun. Lasts up to 5 times longer than unstabilized chlorinating compounds.

Superchlorination or Shock — The practice of periodically adding an oxidizer to destroy chloramines and other undesirable compounds that build up in your pool water. Free Chlorine levels must reach 10 ppm or higher for a minimum of 4 hours for a shock treatment to be effective. You should routinely shock your pool every 1-2 weeks with an increase in frequency during heavy bather loads, high heat or heavy rain. If water problems such as cloudy water or algae appear, you will want to shock the water.

Total Alkalinity — The ability or capacity of water to resist change in pH, also known as the buffering capacity. Measured with a test kit and expressed as ppm.

Total Chlorine — The measurement of your water is a combination of chlorine in the form of chloramines (already used chlorine) and free available chlorine (unused chlorine).

Total Dissolved Solids (TDS) — A measure of the total amount of dissolved matter in water, e.g., calcium, magnesium, carbonates, bicarbonates, metallic compounds, etc.

Turbidity — A cloudy condition of water due to the presence of extremely fine particles in suspension that interfere with the passage of light.

Winterizing — The process of preparing a pool for freezing weather. Includes chemical treatment of the standing water, plus physical and chemical protection against freezing of the pool and its equipment.

NOTES

GUIDE TO EASY POOL OWNERSHIP

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