

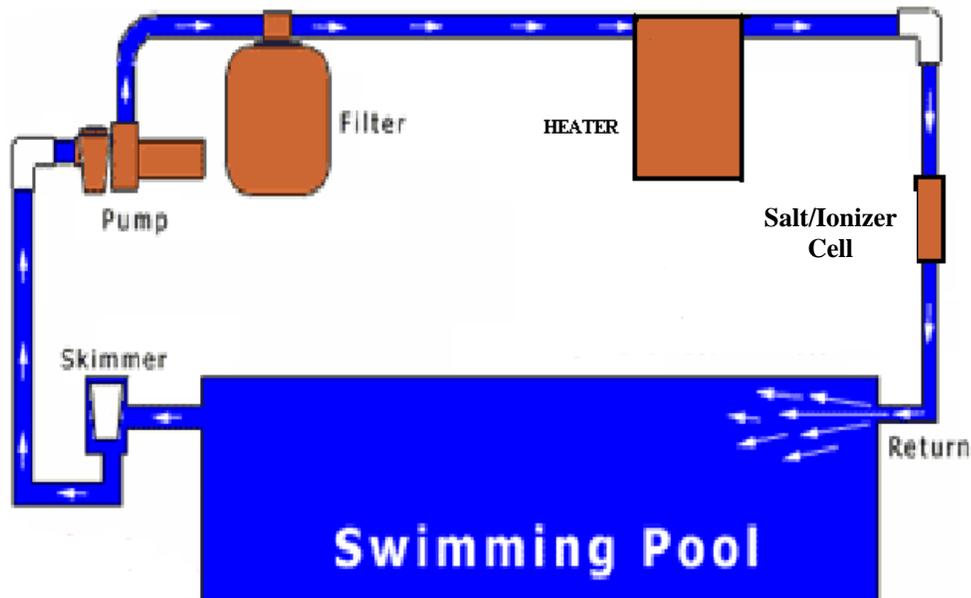
Mermaid[®]
SINCE 1965

POOLS • SPAS

POOL SCHOOL

SALT/IONIZER SYSTEMS

Basic Operation of Swimming Pools



Skimmer

- The skimmer basket should be checked and emptied at least once a week.
 - This will have to be done more frequently during the spring and fall seasons.
 - For finer filtration in the basket use skimmer socks.
- The weir is a plastic and foam insert, inside the skimmer, which floats up and down to regulate the amount of air and water entering the rest of the pool system.
- The water level in the pool should reach $\frac{1}{2}$ to $\frac{3}{4}$ of the way up the skimmer faceplate.
- Pucks should not be used directly in the skimmer.

Circulating Pump

- Should always have water in the strainer basket area when it is running.
- Pump and filter system should have at least 8 hours of continuous operation daily. Proper chlorine levels (1-3ppm) should be maintained.
 - 50% of water problems are because of poor water circulation and filtration. It is important to run the pump effectively and efficiently to avoid water issues.
- The pump basket should be checked on a regular basis, through the lid, and cleaned as needed.

Cartridge Filter

A cartridge filter has a lower pressure which produces a higher rate for water turn over. The pressure will generally sit between 8-10 psi, however every pool is different. The filter has a potential to run at a psi outside of this range on a regular basis.

- There is a 3-way valve in between the pump and the filter that will allow for drainage when needed.

Cleaning

- Pressure rise on gauge.
- Remove filter from housing.
- Pressure wash from inside with a pressure wand or garden hose with a high pressure nozzle.
- Work from the top down at a 45° angle.
- Rinse until all dirt and debris is gone.
- Brush pleated areas and allow to dry before storing.
- To clean algae, suntan oil and body oils, the filter should be soaked in filter cleaner and rinsed well.

Filter Head Positions And Their Functions

3 OPENINGS: PUMP, RETURN, WASTE

Filter: Directs the water from the top of the filter tank, down through the sand and clean water flows up the center pipe and returns to the pool.

Backwash: Water is driven down the center pipe to the bottom of the filter and up through the sand to remove particles of debris that have been filtered. Water with dirt exits to the **waste** opening with its sight glass. Backwash for 3 to 5 min.

Performing a Backwash for Sand Filters

1. Turn off pump. Change the dial setting to **Backwash**, place backwash hose to the desired draining location.
2. Turn on pump for 3 to 5 minutes. The water will exit through the backwash hose.
 - a. There is a clear sight glass on the side of the filter. The water will appear cloudy when the backwash first starts, once the water appears clear the backwash is complete.
3. Turn off pump. Change the setting to **Rinse**.
4. Turn on pump for 30 seconds.
5. Turn off pump. Set dial back to **Filter** and turn pump back on to resume normal filtration.

Rinse: This has the identical path to the **filter** setting but the water leaving the filter goes to the **waste** opening. This position is used after **backwash** to eliminate any fine dirt or sand which might remain near the pipes at the bottom of the filter. Rinse for 30 seconds.

Recirculate: Moves the water through the top of the filter only (very seldom used)

Waste: Water travels into the filter head and directly out, to the **waste** opening. This is used to lower your water level, particularly in fall, when **winterizing** a pool to its proper level.

Closed: Blocks the flow of water. Used to empty strainer baskets, especially on above ground pools.

Winterize: Used after the pool water has been lowered in the fall. Protects the rubber seal on the diverter inside the filter head. It also vents the tank when draining for the winter.

Maintaining Your Pool

Vacuuming

When cleaning your pool manually, it is important to distinguish between the fixed end (or cuff) of the vacuum hose and the one that swivels. The vacuum head should be attached to the telescopic pole and the pole lengthened to 12' – 13'. The **swivel** end of vacuum hose is then attached to the vacuum head. Place the pole, with the hose attached, into the pool so that the vacuum head rests on the bottom.

Submerge the hose and place it up to the return jet in order to eliminate all air. A vacuum plate can then be attached under the surface of the water. Cover the opening of the vacuum plate with your hand and quickly flip it over the edge of the pool releasing it into the skimmer. The pump will cause enough suction to keep the vacuum plate securely in place.

As the vacuum is maneuvered around the bottom of the pool, the full flow of water and dirt is drawn through the vacuum hose, into the pump, and is captured by the filter. A backwash (or rinsing of the cartridge) may be required after this process depending on the amount of dirt in the pool.

Automatic cleaners are connected in a very similar way. They are supplied with sectional hoses that are joined together and attached to the unit. It is then submerged, unit first, to the bottom of the pool. The hose is filled with water and attached to the skimmer – all automatic cleaners will operate under a solar cover.

NOTE: Never remove or disconnect any part of the vacuum while the pump is still running (or during vacuuming). This will draw air into the system.

Salt Chlorinator

An electronic device which turns salt into chlorine. Salt (NaCl) is added into the pool to a concentration of 2700 – 3200 ppm for the Goldline (Hayward) system.

As the water containing salt passes through the device, pure chlorine is produced by breaking apart the sodium and the chlorine ions. These free chlorine ions work as regular chlorine in the pool (kills bacteria). When they are no longer needed it finds the sodium ions and reproduces salt. Salt is normally only added at the beginning of the season to compensate for the water drained out in the fall. It might need to be topped up during the season due to backwashing or splashing out.

Proper water balance is important to this type of chlorination system – in particular, having the appropriate level of stabilizer to maximize the chlorine produced by the machine.

The system can be run on the auto function on an everyday basis. The salt cell will need to be cleaned at least once a season, if hard water is being used it will require multiple cleanings.

It is a trial and error process to find the perfect percentage output for a specific pool. A general guideline to use is start the system at 40% output and test the water for the chlorine levels. Adjust the percentage output as needed until the desired level of chlorine is reached.

Ionizer

An electronic device which disperses ions of the metals contained in the cell (Zinc, Copper, and Silver) which act together as a natural way of killing a wide array of germs, bacteria, and viruses.

With the ionizer system you are only required to keep a chlorine reading of 0.5 ppm (parts per million), which is less than the allowed chlorine content in drinking water. To do so, all that is required is one chlorine puck a week in order to ensure the full spectrum of organic matter is eliminated from your pool water.

Water Balance

The purpose of achieving proper water balance is to make the most efficient and economical use of your sanitizing chemicals. This, in turn, results in maximum bather comfort. The two most significant factors are the chlorine or bromine level and the pH. This can be tested quite easily, on a daily basis, using a home test kit. We recommend the Aqua-Check strips for their accuracy and ease of use.

Chlorine

The chlorine level should be maintained between 1 and 3 parts per million (this level will rise when the pool is **shocked**) and works best at a pH of 7.5. The chlorine works to kill any bacteria or micro organisms (including algae) that are in the pool water.

If the smell of chlorine is present around the pool it means more chlorine is required. Liquid or granular chlorine may be added to the salt water pool or the pool can be superchlorinated.

pH

The pH is best between 7.2 and 7.8. Low pH will cause eyes to burn because of acidity. A similar effect occurs when the pH is too caustic (high). Chlorine effectiveness drops off drastically when the pH is above or below this range.

Three other factors, which impact on the efficient use of chlorine and pH stability, are **total alkalinity, calcium hardness, and Stabilizer** levels.

Total Alkalinity

When it is set to the correct level (between 80 & 120 parts per million {ppm}) it will buffer the pH and make it resistant to change. Change in pH tends to occur when chemicals are added or when there is a lot of rain. When the **total alkalinity** is set within the proper range, only small amounts of pH adjusters are required to correct the pH to its proper level.

Calcium Hardness

When it is too low, it contributes to corrosiveness of metal components, particularly in heaters. When it is too high, it will cause scale to form on liners and inability to clear cloudy water due to a saturation of dissolved solids. City water tends to be overly soft whereas well water is often quite hard. The normal range for hardness is between 200 – 300 ppm. Soft water is treated with **calcium plus** to increase the hardness and water with high levels should have **stain prevent** added, this forces hardness to stay in suspension so that it does not precipitate out to form scale.

Stabilizer (aka Cyanuric Acid)

At the appropriate level (ideal 30 – 50 ppm, acceptable up to 100 ppm) it slows down the rate at which chlorine is burned off by the sun. Without it, you tend to use four times as much chlorine to achieve the same effect. When the level of this chemical is too high (above 100 ppm), stabilizer will hold onto the chlorine and not permit it to work - pools like this will have high levels of chlorine and still remain green with algae.

The Water Test Centre at the back of our store is set up for comprehensive water analysis. Mermaid has a no charge policy for water analysis. You will receive a **water analysis result sheet**. This includes the products needed to correct any deficiencies and the appropriate amounts for your specific pool based on its water volume.

It is normally done at start up in the spring and periodically throughout the summer, particularly to monitor the stabilizer level. **Please call or drop in anytime. By the end of the summer, you'll be an expert.**

Pool chemicals

Balancing chemicals

	pH	Alkalinity	Calcium	Stabilizer
To Increase Levels	Alkalinity Plus Or pH Plus	Alkalinity Plus	Calcium Plus	Salt one
To Decrease Levels	pH Minus	pH Minus	Stain Prevent	Drain Water

Specialty Chemicals

- **Salt Cell Saver:** cleans the salt cell.
- **Filter Cleaner:** Cleans the filter medium (both sand and cartridge).
- **Salt Revise:** A monthly additive for salt water pools which extends the life of the cell and improves bather comfort.
- **Stain Prevent** is used in order to combat issues with metals and as weekly maintenance for pools using well water.
- **Phos Defence:** Kills any phosphates that are contained in the water leading to the death of algae's "food".
- **Amaze:** An all purpose pool cleaner especially for vinyl.
- **Enzymes:** Breaks down organic matter in order to enhance the chlorine's performance.
- **Terminator:** Lowers high levels of chlorine.
- **Cover Cleaner:** Cleans any dirt or debris off solar covers and winter covers with ease.

Algaecides

- **Normal Strength** (5% and 10%) If added on a weekly basis, they compensate for times when chlorine levels drop below required amounts.

- **High Strength** (30% and 50% PolyQuats) is effective on chlorine resistant algae, **mustard, black, brown, green**

Other Products

Solar Blankets

Solar blankets help retain heat, reduce the evaporation of pool water, and lower chemical usage. Our new blankets have an improved warranty of 5 & 7 years.

Heaters

A heater will prolong the swimming season. We have a variety of types of heaters. Please visit our store to find out the benefits of each type.

UV Generator

The effectiveness of type C ultraviolet rays as a means of sanitization has been known for more than a century and has been used in various applications such as drinking water, aquaculture, fish farming and in hospitals and the pharmaceutical industry.

After filtration, water then circulates through the Elektra UV sanitizer for complete disinfection - the bacteria, viruses and algae are completely destroyed without causing any side effects or dangerous by-products.

As the water passes through the sanitizer, all micro-organisms are killed, leaving the cleanest and purest water possible for return back into your pool. This effectiveness allows you to lower the amount of chemicals that you will use in your pool. Unfortunately it is not possible to build a pool where 100% of the water passes through a filter, so you will still need to maintain a small residual of chemicals in your pool at all times in order to kill any micro-organisms that do not find their way into the UV sanitizer.

