



CLEAR WATER PLAN

© 2008 Lloyds Material Supply, Inc.



www.calspas.com

Contents

Cal Spas Clear Water Plan

<i>Alternative Sanitation Options</i>	1
<i>Before You Begin</i>	2

Chemical Overview

<i>Chemical Safety</i>	4
<i>Chemical Descriptions</i>	5

Traditional Chemical Start Up

<i>Start Up</i>	8
<i>Bromine Clear Water Plan</i>	9
<i>Chlorine Clear Water Plan</i>	10
<i>Ozonator Clear Water Plan</i>	11
<i>Cal Clarity Automatic Bromine Generator Clear Water Plan</i>	12
<i>Cal Inline Sanitation System Clear Water Plan</i>	15
<i>Maintenance</i>	17



Copyright 2007-2008 Lloyd's Material Supply, Inc. All rights reserved. Duplication without written consent is strictly prohibited.

Cal Spas™ is a registered trademark.

Due to continuous improvement programs, all models, operation, and/or specifications are subject to change without prior notice.

LTR20081023, Rev. A
12/18/07

CONTACT INFORMATION

For customer service, please contact your authorized dealer immediately. If you need additional information and/or assistance, please contact:

L.M.S. Customer Service Department
1462 East Ninth Street
Pomona, CA 91766

Toll Free: 1-800-CAL-SPAS
Fax: 1-909-629-3890

www.calspas.com

Cal Spas Clear Water Plan

Great spa water is easily achieved when the right chemicals and / or systems are used and the Cal Spas “Clear Water Plan” is implemented. The key to clean, clear, and safe water is to fully understand how spa water reacts to users, system operation and chemical use. The “Clear Water Plan” will help give you that understanding.

The first thing to understand about taking care of your spa water is that preventive actions are much easier to do than correcting water quality issues. For this reason, we offer the “Clear Water Plan” as a simple, easy to follow guide to clean, safe spa water.

Follow the Right Plan

You will need to decide which chemical plan or alternative sanitation option works best for your spa water. Consult your Cal Spas dealer for the right decision with regards to your lifestyle and spa usage. Whichever plan you decide on, follow it completely and don't take shortcuts. These plans will provide you with clean, safe, clear spa water with a minimum of effort.

Traditional Chemical Options

Choose from either Bromine tablets or Chlorinating granules as your sanitizer of choice. Both work well when the appropriate “Clear Water Plan” is followed. Make sure you follow all instructions and use only Cal Spas brand chemicals.

Alternative Sanitation Options

Cal Zone Quest 2000 Ozonator

This system automatically generates ozone gas and injects it into the spa water. Ozone gas is far superior to chemical bromine or chlorine in sanitizing spa water. Saves replacement chemical cost and guards against forgetting to add chemicals.

Cal Clarity Automatic Bromine Generator

This system automatically generates and releases free bromine into the spa water. No more need to add chemical bromine tablets or chlorine granules. Saves replacement chemical cost and circumvents the need to add chemicals on a regular basis.

Cal Inline Sanitation System

This system incorporates minerals that work continuously with low levels of Bromine to sanitize the spa while creating water that feels soft and is crystal clear. Uses pre-filled cartridges that save on measurement hassle and works for weeks without replacing.

Before You Begin

Before you begin a “Clear Water Plan”, you should understand that chemicals or systems alone will not take care of your spa water. Other factors such as Filtration and Bather Load also play an important part.

Filtration

The filter is the part of your spa that removes the debris from the water. Even though Cal Spas uses the advanced Bio Clean filter cartridge that protects itself from bacterial growth, the filter still needs to be cleaned on a regular basis to maximize your spa’s filtering performance and heating efficiency.

In addition to spraying off the filter weekly to remove surface debris, your filter should be deep cleaned periodically to dissolve scale and other contaminants that get lodged deep within the filter fibers and impede the filtration process. Even if the filter looks clean, the contaminants can clog the fibers and prevent water from flowing through the filter resulting in the most common spa problem—no heat, caused by a dirty filter.

Filter Cleaning

- Place the dirty filter into a bucket of water deep enough to cover the filter. Add 8oz of Cal Spas “Liquid Filter Cleaner” to the bucket of water.

Note: It is a good idea to keep a spare filter to be deep cleaned while the regular filter is in the spa. This way, you can rotate the filters and both will last longer.

- Soak the filter for a minimum of 24 hours.
- Remove the filter and spray clean with a water hose. Spray each pleat carefully.
- Allow filter to dry completely (a minimum of 2 days drying time is recommended).
- Reinstall filter as described in the “Clear Water Plan”.

Filtration Cycles

The filtration cycle of your spa is the process that allows the water to flow through the filter. Your spa will filter automatically twice each day. The factory set default time for filtration is usually enough for normal use, however heavy bather load or frequent use may require longer filtration times or more frequent filtration cycles to keep the spa water clean. Consult your Owner's Manual for setting your spa's filtration times.

Bather Load

"Bather Load" is the term used to describe the number of people using a spa, combined with the length of usage, and the frequency of usage. All these factors have a great effect on the spa water. The higher the bather load, the more chemicals need to be added and a longer filtration time will be needed.

All versions of the Cal Spas "Clear Water Plan" are designed for spas with average bather load. (3-4 people, 15 minutes of usage, 3 times a week at 100 degrees) If your bather load exceeds these guidelines, and you experience water quality problems, increase the amount of filtration first (go to the next higher filtration number), then if water quality is still not adequate, consult the advise of your Cal Spas dealer for additional chemical or system recommendations. Be sure to give them your bather load information.

Chemical Overview

The following information is intended for use with Cal Spas chemicals only. Other brands of chemicals may have similar names and/or usage descriptions but due to manufacturing differences, use of other chemicals can increase the likelihood of under or over-dosing the spa chemicals. Damage to the spa or spa's components from improper chemicals or chemical usage is not covered under the spa's warranty.

Chemical Safety

- Failure to follow chemical directions may result in serious injury, sickness, or even death.
- Read and follow all printed instructions listed on bottles, packages and in your owner's manual.
- Do not exceed chemical dosages as recommended in this Clear Water Plan, or on chemical bottles and packages. (Most chemical instructions are figured for a 500 gallon spa, however most spas hold less than 500 gallons. Consult your owner's manual for the approximate gallons of your spa.)
- Never mix chemicals together.
- Never change chemical brands or types without completely draining, flushing and thoroughly cleaning the spa and cover first.
- Always protect your eyes while introducing chemicals into the spa. Wear protective eyeglasses to prevent powdered chemicals from blowing into the eyes or liquid chemicals from splashing into the eyes.
- In the event of overdosing a sanitizing chemical (chlorine or bromine), immediately turn off the power to the spa and drain water to a safe and approved area. Refill with fresh water and proceed with the Clear Water Plan start up.

Physical Chemical Hazards

- Do not allow chemicals to come in contact with skin, eyes or clothing.
- Always wear rubber gloves, protective eye wear and clothing to reduce the risk of chemical contact and irritation.
- Remove and wash clothing that may have been exposed to chemical contact prior to wearing them again.

- Inhaling or ingesting chemicals will cause serious injury, sickness, or even death.
- Do not mix chemicals. Mixing chemicals together can cause dangerous chemical reactions including the release of toxic gas, fire and explosions.

Chemical Storage

Chemicals must be stored completely out of the reach of children in an area that is well vented, cool, and dry. Failure to provide a proper area for chemical storage may result in serious injury, sickness, fire explosion and even death. Do not store your chemicals inside the equipment area of your spa.

Chemical Descriptions

The following descriptions and recommendations are intended for use with Cal Spas chemicals only. Many of these chemicals will be used with alternative sanitation systems as well.

Test Strips -- Bromine



Provides accurate spa water testing for Bromine, pH, and total Alkalinity.

For use with bromine "Clear Water Plan".

Test Strips – Chlorine



Provides accurate spa water testing for Bromine, pH, and total Alkalinity.

For use with chlorine "Clear Water Plan".

Test Strips -- Sodium Bromide



Provides accurate spa water testing for Sodium Bromide.

For use with Cal Clarity Automatic Bromine Generator "Clear Water Plan".

Go Brom



Establishes a bromide reserve in spa water.

Use during start up.

For use with bromine "Clear Water Plan".

Brominating Tablets



Long lasting sanitizer / disinfectant for spa water.

Add to bromine floater.

For use with bromine "Clear Water Plan".

Stain And Scale Defense



Helps prevent minerals from damaging spa components.

Use with any "Clear Water Plan".

Chlorinating Granules



Quick acting sanitizer / disinfectant for spa water.

For use with chlorine "Clear Water Plan".

Ph / Alkalinity Up



Raises pH and alkalinity levels in spa water.

Use with any "Clear Water Plan".

Oxidizer Shock



Destroys ammonia, organic contaminants, and odor causing wastes in spa water.

Use with any "Clear Water Plan".

Ph / Alkalinity Down



Raises pH and alkalinity levels in spa water.

Use with any "Clear Water Plan".

Metal Protector



Helps prevent metals in water from staining spa.

Use during start up.

Use with any "Clear Water Plan".

Liquid Hardness Increaser



Helps reduce foaming and corrosion by increasing hardness levels in spa water.

Use with any "Clear Water Plan".

Spa Brite



Helps to quickly clear up cloudy spa water.

Use with any "Clear Water Plan".

Enzyme Formula



Biodegrades body oils, suntan lotions, and organic contaminants in spa water.

Do not on same day as adding Chlorine Granules.

Use with any "Clear Water Plan".

Foam Gone



Quickly breaks up existing foam on spa water.

Use with any "Clear Water Plan"

Multi-Purpose Cleaner



Special formula designed to clean spa surfaces without leaving foam-causing residue.

Use with any "Clear Water Plan".

Fast Sheen



Water based, reactive, silicone polish that seals, shines, and protects spa acrylic surfaces.

Use with any "Clear Water Plan".

Vinyl And Leather Cleaner



Specifically designed to clean and protect spa covers and pillows from chemical and ultraviolet damage. Use with any "Clear Water Plan".

Filter Cartridge Cleaner



Deep cleans filter cartridge. Dissolves scale and removes imbedded organic contaminants from filter cartridge fibers.

Use with any "Clear Water Plan"

Cal Balance Magnetic Water Stabilizer



Promotes clean water naturally by organizing water molecules into appositive charge.

Helps coagulate debris for improved

filtration, and also traps calcium and scale into a suspension that gives spa water a soft, silky feel. Use with any "Clear Water Plan".

Traditional Chemical Start Up

Prior to filling a spa for the first time, or after a routine draining, you will want to follow this start-up plan to extend water life and performance. If you are following either the Bromine or Chlorine “Clear Water Plans”, you will notice that both start-up processes are the same with the exception of Step 7. As with all chemical dosages listed in these “Clear Water Plans”, start-up dosages are intended for 500-gallon spas. Please adjust the chemical dosages to the capacity of your particular spa.

Start Up

1. Clean surface of spa with Cal Spas “Multi-Purpose Cleaner”.
2. Apply a protective coat of Cal Spas “Fast Sheen” to the acrylic surface.
3. Fill spa to proper water level with normal tap water (Do not use soft water)
4. Use test strip and balance the spa water:
5. Adjust total alkalinity (acceptable range is 80-120ppm),
6. Then adjust pH if necessary. (between 7.2 to 7.8)
7. Pour in 16 oz of Cal Spas “Metal Protector” to center of spa.
8. Add either Bromine or Chlorine (According to your preferred plan)

Bromine

- Add 2 oz of Cal Spas “Go Brom” to establish a bromine base.
- Add 2 Cal Spas “Bromine Tablets” to Bromine Floater.
- Set floater opening at #2.

Chlorine

- Add two tablespoons of Cal Spas “Chlorine Granules” to the spa water.
9. Sprinkle 2 oz of Cal Spas “Oxidizer Shock” in the center of the spa and turn on jets for 15 minutes. Leave spa uncovered during this time.
 10. Put cover on spa and allow to heat up to desired temperature.

Bromine Clear Water Plan

This plan and its chemical dosages are intended for Cal Spas chemicals only. Most chemical manufacturers use different chemical formulas and strengths. Only Cal spas chemicals are specially formulated to provide chemical balance at lower dosages. Always read and follow printed instructions on chemical bottles and packages.

Day One (Monday)

1. Test spa water using “Bromine Test Strips”.
2. Based on the Test Strip readings:
 - Adjust total alkalinity first (acceptable range of 80-120 ppm)
 - Then adjust the pH if needed. (range is between 7.2 to 7.8)
 - Add “Bromine Tablet(s)” if needed. (Do not add more than 2)
 - The recommended level of bromine is 3-5 ppm.
3. Add 2 oz of “Stain and Scale Defense”.
4. Remove dirty filter from the spa and rinse off. Allow to dry.
5. Place your extra clean filter cartridge back into the spa.
6. Vacuum debris from the bottom of your spa with the “Spa Vacuum”.

Day Two (Wednesday)

1. Test spa water using Bromine Test Strips.
2. Based on the Test Strip reading: Adjust total alkalinity, then the pH if needed.

Day Three (Friday)

1. Test spa water using Bromine Test Strips.
2. Based on the Test Strip reading:
 - Adjust total alkalinity, then the pH if needed.
 - Add one Bromine Tablet (if needed).
3. Add 2 oz of Oxidizer Shock to spa. Run Spa for 15 minutes with cover off.
4. Replace cover.

Chlorine Clear Water Plan

This plan and its chemical dosages are intended for Cal Spas chemicals only. Most chemical manufacturers use different chemical formulas and strengths. Only Cal spas chemicals are specially formulated to provide chemical balance at lower dosages. Always read and follow printed instructions on chemical bottles and packages.

Day One (Monday)

1. Test spa water using “Chlorine Test Strips”.
2. Based on the Test Strip readings:
 - First adjust total alkalinity (acceptable range of 80-120 ppm)
 - Then adjust the pH if needed. (range is between 7.2 to 7.8)
 - Add 2 tablespoons of Chlorine Granules.
 - The recommended level of Chlorine is 3-5 ppm.
3. Add 2 oz of “Stain and Scale Defense”.
4. Remove dirty filter from the spa and rinse off.
5. Place your extra clean filter cartridge back into the spa.
6. Vacuum debris from the bottom of your spa with the “Spa Vacuum”.

Day Two (Wednesday)

1. Test spa water using Chlorine Test Strips.
2. Based on the Test Strip reading: Adjust total alkalinity, then the pH if needed.

Day Three (Friday)

1. Test spa water using Chlorine Test Strips.
2. Based on the Test Strip reading:
 - Adjust total alkalinity, then the pH if needed.
 - Add 2 tablespoons of Chlorine Granules. (if needed)
3. Add 2 oz of Oxidizer Shock to spa. Run Spa for 15 minutes with cover off.
4. Replace cover.

Ozonator Clear Water Plan

This plan and its chemical dosages are intended for spas equipped with the optional Cal Zone Quest 2000 Ozonator (portable spas only) or Del Zone Eclipse (in-ground models only). The chemical references are designed for Cal Spas chemicals only.



Start Up

1. Follow the Spa Start Up procedures for Chlorine “Clear Water Plan”.
2. Set the spa’s filtration time for “F-4”. This activates the ozonator and produces the ozone gas. (Follow the instructions in the owner’s manual)

Note: Filtration time may need to be increased with heavy bather load.



Day One (Monday)

1. Test spa water using chlorine “Test Strips”. (you will need to use a small amount of chlorine as a supplemental sanitizer)
2. Based on the Test Strip readings:
 - First adjust total alkalinity (acceptable range of 80-120 ppm),
 - Then adjust the pH if needed. (range is between 7.2 to 7.8)
 - Add 1 tablespoon of Chlorine Granules.
 - The recommended level of Chlorine is 1-3 ppm.
3. Add 2 oz of “Stain and Scale Defense”.
4. Remove dirty filter from the spa and rinse off.
5. Place your extra clean filter cartridge back into the spa.
6. Vacuum debris from the bottom of your spa with the “Spa Vacuum”.

Day Two (Friday)

1. Test spa water using Chlorine Test Strips.
2. Based on the Test Strip reading:
 - Adjust total alkalinity, then the pH if needed.
 - Add 1 tablespoon of Chlorine Granules. (if needed)
3. Add 2 oz of Oxidizer Shock to spa. Run Spa for 15 minutes with cover off.
4. Replace cover.

Cal Clarity Automatic Bromine Generator Clear Water Plan

This plan and its chemical dosages are intended for spas equipped with the optional Cal Clarity Automatic Bromine Generator. The chemical references are designed for Cal Spas chemicals only. Note: Following these instructions is very important to ensure proper operation of your Cal Clarity Automatic Bromine Generator.



Start Up

1. Clean surface of spa with Cal Spas “Multi-Purpose Cleaner”.
2. Apply a protective coat of Cal Spas “Fast Sheen” to the acrylic surface.
3. Fill spa to proper water level with normal tap water. (Do not use soft water.)
4. Use Bromine Test Strip and balance the spa water:
 - Adjust total alkalinity (acceptable range is 80-120 ppm).
 - Then adjust pH if necessary (between 7.2 to 7.8).
5. Pour in 16 oz. of Cal Spas “Metal Protector” in the center of the spa.
6. Test for TDS (total dissolved solids, also known as conductivity)
 - The ideal range is 50 to 300 ppm.
 - TDS / conductivity **must** be less than 500 to start with.
7. Phosphate level should be below 200 ppb. Remove phosphates if necessary.
8. Determine the gallons capacity of the spa. Be accurate as this determines the amount of TRU BLU that will be added. Consult the Pre-Delivery Guide for spa gallons.

9. Power up the spa and make sure all the spa's pumps are set to high speed. Turn the dial on the face of the Cal Clarity Bromine Generator to "OFF".
10. Sprinkle evenly over the surface of the spa, one 2 lb. bottle of TRU BLU sodium bromide per 100 US gallons (370 liters) of water. DO NOT ADD TOO MUCH!

Note: Since each bottle of TRU BLU will raise TDS / conductivity amount approximately 500 ppm in a 500 gallon spa, the amount needed for your spa could be less. It is recommended that you add half the required amount, then follow steps 11 and 12 before adding additional TRU BLU sodium bromide.

11. Allow spa to run for 15 minutes so the TRU BLU can dissolve completely before proceeding to the next step.
12. Use Sodium Bromide Test Strips (not bromine) and adjust sodium bromide level to 7.4 to 8.2 (equates to 1700 to 2500 ppm TDS / conductivity level).
13. Add 2 oz. of Cal Spas "Oxidizer Shock" to help burn out impurities in fill water.
14. Turn the dial on the bromine generator clockwise until the LED display reads 10.
15. This will initiate the build up of a bromine bank.
16. Set the filtration cycle to "continuous" (F-C) for the first 24 hours.
17. Put the cover on and allow the spa to heat to desired temperature.

Adjusting The Proper Bromine Levels

1. After start up, decrease the filtration cycle to F-4 and monitor the bromine level until it is within the recommended range.
 2. Use bromine test strips to achieve a 3-5 ppm recommended level.
- Note: It can take several days for the bromine level to stabilize because the fill water that was used sometimes contains contaminants that need to be neutralized, thereby using up the initial bromine that is generated.
3. Once the desired level has been achieved, turn the dial down until a maintenance setting is achieved.
 4. The common maintenance setting for an average bather load is #4.

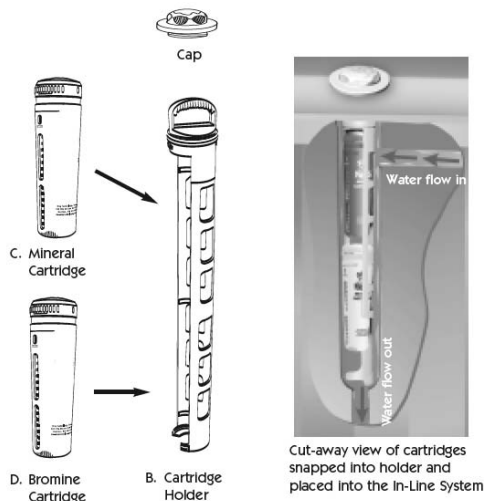
Note: When changing the setting, use bromine test strips to determine when you have reached the level you want.

Once A Week

1. Test spa water with bromine test strip.
2. Based on test strip readings:
 - First, adjust alkalinity if necessary.
 - Then, adjust pH if necessary.
 - Increase / decrease bromine production with dial if required.
3. Remove dirty filter from the spa and rinse off.
4. Place your clean, extra filter cartridge back into the spa.
5. Add 2 oz of Cal Spas "Oxidizer Shock" to spa. Run spa for 15 minutes
6. Vacuum debris from the bottom of your spa with the "Spa Vacuum".
7. Replace cover.

Cal Inline Sanitation System Clear Water Plan

This plan and its chemical dosages are intended for spas equipped with the optional Cal Inline Sanitation System. The chemical references are designed for Cal Spas chemicals only. Note: Following these instructions is very important to ensure proper operation of your Cal Inline Sanitation System.



Start Up -- First Day

1. Clean surface of spa with Cal Spas "Multi-Purpose Cleaner".
2. Apply a protective coat of Cal Spas "Fast Sheen" to the acrylic surface.
3. Fill spa to proper water level with normal tap water (Do not use soft water)
4. Balance the spa water using a bromine test strip.
 - Adjust total alkalinity (acceptable range is 80-120ppm).
 - Adjust pH if necessary (between 7.2 to 7.8).
 - Pour in 16 oz of Cal Spas "Metal Protector" to center of spa.
 - Sprinkle 1 oz of Cal Spas Chlorinating Granules over surface of water.
 - Power up spa and allow it to heat to desired temperature.

Start Up--Next Day

Now that the spa has reached its normal operating temperature, it is time to add the pre-filled mineral cartridge and bromine cartridge.

1. Turn the power off to the spa.
2. Take a new Cal Spas "Mineral Cartridge" and open to #6. (Hold the top of the cartridge and turn the bottom counter clockwise)
3. Take a new Cal Spas "Bromine Cartridge" and open to #3 (if the spa is less than 400 gallons, open to #2) Note: These settings are start up settings only. They may need to be adjusted up or down depending on your spa usage.

4. Unscrew the Cal Inline Sanitation System Cap located on the top lip of the spa.
5. Grasp the handle of the cartridge holder and turn counter-clockwise then pull up.
6. Remove the cartridge holder and discard spent cartridges (if any)
7. Snap the Bromine Cartridge into the bottom portion of the holder and the Mineral Cartridge into the top portion of the holder. (make sure the cartridges go into the correct position as over-bromination will occur if they are switched).
8. Line up the arrow on the top of the cartridge holder with the arrow on the top of the system.
9. Lower the holder containing the cartridges down into the system until the tabs on the holder line up with the tabs on the system. Rotate the cartridge holder clockwise until it stops. (To ensure a locked position, attempt to pull the holder up. If it stays in place, the lock is secure)
10. Screw cap back on. Do not over-tighten.
11. Power spa back up and set to desired temperature.

Once A Week

1. Test water using Bromine Test Strips.
2. Based on the Test Strip readings:
 - First, adjust total alkalinity. (acceptable range of 80-120 ppm)
 - Then, adjust the pH if needed. (between 7.2 to 7.8)
 - Check level of Bromine. (Maintain bromine at 1-2 ppm.)
 - Note: adjust bromine cartridge setting up or down if needed.
3. Add 2 oz of Cal Spas "Stain and Scale Defense".
4. Add 2 oz of Cal Spas "Oxidizer Shock". Run spa for 15 minutes on High speed.
5. Remove dirty filter from the spa and rinse off. Set aside to dry.
6. Place your clean, extra filter cartridge back into the spa.
7. Vacuum debris from the bottom of your spa with the "Spa Vacuum".
8. Replace cover.

Maintenance

Regardless of which “Clear Water Plan” you are using, you should also do the following:

Every Month

1. Deep clean your spa’s filter. (Follow “filter cleaning” instruction at beginning of “Clear Water Plan”)
2. Check inside the equipment area for leaks, rodents, and insects.
3. If a leak is discovered, contact your Cal Spas dealer for service.
4. If you see evidence of rodents or insects, take necessary actions to remove them and precautions to prevent them from returning.

Every 3 To 4 Months

1. Drain and clean your spa with “Multi-Purpose Cleaner”.
2. Polish the acrylic surface with “Fast Sheen”.
3. Clean and treat spa cover, pillows, and Cal Select cabinet (if equipped) with “Cover Protector”.
4. When re-filling your spa, follow your specific “Clear Water Plan” Start Up procedures.
5. If you are using the Cal Clarity Automatic Bromine Generator Clear Water Plan, don’t forget to add new TRU BLU sodium bromide to the water.
6. If you use the Cal Inline Sanitation System “Clear Water Plan”, don’t forget to replace the Mineral and Bromine Cartridges.

Once A Year

1. Clean and treat redwood spa cabinets and gazebos with “Nu-Spa Redwood Stain Renew and Brightener”.
2. If you use the Cal Zone Quest 2000 Ozonator, you will need to replace the ozone cartridge.
3. Check the filter cartridge pleats. If they are frayed, replace the cartridge.



L.M.S. Customer Service Department
1462 East Ninth Street
Pomona, CA 91766

Toll Free: 1-800-CAL-SPAS
Fax: 1-909-629-3890

www.calspas.com