



Cal Clear Salt Filtration

Chlorine Generator System

2026 Owner's Manual

Hydrotherapy to Heal Minds and Bodies™



Safety Instructions



SAVE THESE INSTRUCTIONS

THOROUGHLY READ THIS INSTRUCTION BOOKLET,
WHICH IS SPECIFIC TO THE CHLORINE GENERATOR.

Introducing, the Cal Clear Salt Filtration Elite System.

Congratulations, and welcome to the Cal Clear Salt Filtration system. By reading this instruction manual, you will be able to fully take advantage of the in-line chlorine generator. We urge you to carefully read, understand, and follow all the information in this user manual before using the Cal Clear Salt Filtration system. Warnings, instructions, and safety guidelines mentioned within this instruction manual, addresses common risks when using chlorine generation systems within a hot tub for recreation purposes. This instruction manual cannot cover all risks and dangers in all cases that could occur when operating a chlorine generator. Always use common sense, and good judgment when enjoying your spa.

Retain this instruction manual for future use.

IMPORTANT SAFETY INSTRUCTIONS

Warning - To reduce the risk of injury, do not permit children to touch, move, or contact the salt cell when servicing the unit.

Warning - Neither the salt generator, or the spa appliance must not be used by individuals (Including Children) with reduced sensory, physical, or mental capabilities. Individuals whom are not familiar to the operation of the chlorine generator and/or the spa should not attempt to operate either component without proper guidance & supervision.

Caution - The spa must be connected only to a GFCI protected circuit. Test the GFCI circuit before using the spa.

Warning - Modifying, cutting, or re-plumbing the in-line salt cell will void the warranty of both the salt cell and the spa.

Caution - Always refer to the spa owners manual for general spa operation instructions, alongside this instruction manual in order to fully understand and operate your salt water spa.

Warning - If the spa will remain without use for more than 2-3 weeks, drain the spa. Allowing the spa to operate with its chlorine generator without regular water testing may cause the water to over chlorinate causing chemical damage to the spa. Neglect of the chlorine generator falls under Neglect and Chemical Abuse. Damages caused by chemical abuse, and/or neglect is not covered by the limited warranty of the Spa.

Caution - Always check chemical levels regularly and adjust as a needed prior to using the spa.

Warning - Do not exceed the recommended salt ppm amount recommended within this manual. The target level is 2000ppm.

Warning - Do not exceed free chlorine levels above 5+ ppm, prolonged exposure to high chlorine conditions will corrode and damage jets/components. Damages relating this chemical abuse are not covered under warranty.

Caution - Only pure salt (NaCl) should be used in spas equipped with the in-line chlorine generator. This salt must not contain anti caking agents, iodine, or mineral contamination. This salt can be purchased from your spa dealer or from pool supply stores.

Warning - Do not exceed chlorine output more than one interval of 25% within a 24-48hr period of time. Raising the output of chlorine by an interval of 50% or 75%, will cause over chlorination of the spa. Over chlorination may lead to damage to jets/components and is classified under chemical abuse. Damages caused by over chlorination are not covered by the limited warranty of the spa.

USA & Canada - FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions.

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation

Any changes or modifications to the equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply within the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

USA & Canada - FCC Compliance Cont.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures

- Re-orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a different circuit from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For products available in the USA/Canada market, only channels 1 to 11 are available for 2.4GHz WLAN. This device and its antenna(s) must not be co-located or operated in conjunction with any other antenna or transmitter except in accordance with FCC's multi-transmitter procedures.

ADDITIONAL OPERATING INFORMATION

Warning - NEVER MIX SANITIZER TYPES. THE IN-LINE CELL GENERATES CHLORINE FROM THE SALT WITHIN THE SPA. ONLY USE CHLORINE GRANULES TO PROVIDE A SHOCK TO THE SPA IF ADDITIONAL SANITATION TREATMENT IS NECESSARY. **DO NOT USE BROMINE OR BROMINE SHOCK WITHIN SPAS OPERATING A CHLORINE SALT CELL.**

Caution - The chlorine generator uses wifi connectivity to communicate with smartphone devices to adjust settings, such as duration, operating strength, and self cleaning cycle time. The spa must be within a 75 foot radius of the main wifi access point or from a wifi extender. This distance may be shorter due to obstructions such as walls in the home or landscaping between the wifi modem and the spas salt cell.

Warning - When cleaning or performing maintenance on the chlorine generator, never poke, scratch, or puncture the conductive plates within the generator. Damage to this component will cause operation issues and/or risk of electrical damage. Never clean the plates directly, only use a solution of 2:1 vinegar and water to descale the conductive plates.

Warning - THE CHLORINE GENERATOR IS NOT AN AUTOMATIC SYSTEM, AND DOES NOT PROVIDE THE FUNCTION OR CONTAIN SENSORS FOR ACTIVE SANITIZER MONITORING OR ADJUSTMENTS, AN AUTOMATIC SANITIZER SYSTEM REFERS TO A SYSTEMS ABILITY TO DECREASE OR INCREASE SANITIZER LEVELS AUTOMATICALLY BASED ON DETECTED SANITIZER LEVELS INSIDE OF YOUR SPA. ITS THE RESPONSIBILITY OF THE SPA OWNER TO REGULARLY TEST THE SPA WATER, MONITOR & ADJUST SANITIZER LEVELS WHEN ABOVE OR BELOW THE RECOMMENDED SANITIZER LEVEL OF 3-5ppm OF FREE CHLORINE. LOW SANITIZER LEVELS MAY LEAD TO UNHEALTHY WATER CONDITIONS, INCREASING THE RISK OF CONTRACTING WATERBORNE ILLNESS. HIGH LEVELS OF SANITIZER MAY CAUSE CHEMICAL DAMAGE MAY OCCUR AT SANITIZER LEVELS ABOVE THE RECOMMENDED 3-5PPM OVER AN EXTENDED PERIOD OF TIME.

Warning - Never scrape or poke at the electrolysis plates within the Cal Clear system when performing maintenance on the salt cell.

Warning - Inspect the power cord for the salt cell seasonally. Never operate the Cal Clear system with a damaged power cord. Disconnect the cord from the salt cell if signs of damage are visible.

Warning - Control of the Cal Clear system is separate from the main controls of your spa. Refer to either the spas owners manual or this Cal Clear owners manual for a better understanding of either system.

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Contact Information

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

Lloyd's Material Supply Company, Inc.
Customer Service Department
1462 East Ninth Street
Pomona, CA 91766

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

Water Requirements

Chlorine generator systems create chlorine from salt water to sanitize the spa water. They are very effective in maintaining a constant chlorine bank, and ensuring the spa water is ready to be used at a moments notice. The following section will provide guidance on how to use your chlorine salt system, with initial fill up steps and water requirements, to ensure proper operation.



Never Use the Chlorine Generator Without Properly Balancing the Water Within Your Spa.

- The salt cell within the spa will not operate properly unless the spa is within its specified recommended levels.
- Improper water balancing may lead to damage to the spa and/or growth of harmful bacteria.



Test the Spa Water Regularly to Keep the Spa Water Within Acceptable Ranges.

- The spa water should be tested 2-3 times a week, to monitor chlorine levels with test strips or a reagent kit.



Never Fill a Salt Water Spa Without a Pre-filter, or With Water from a Well or Softener System.

- When filling your spa with water, make sure that a carbon pre-filter is used to remove contaminants and heavy metals from the water.
- Never fill the spa with well water or water from a water softener system, due to high TDS.



Never Use or Enter a Spa Without Proper Sanitizer Levels.

- Do not use the spa until the spa water tests within the 3-5ppm range for chlorine.
- Do not mix sanitizers such as bromine with chlorine, only shock the spa with chlorine granules when deemed necessary.

Scan the following QR code to watch a full video guide on how to start up your Cal Clear equipped spa.



Initial Start Up

Fig 1.01

Category	Target Value
Free Chlorine	3-5ppm
pH	7.2 - 7.8
Calcium Hardness	150-250 ppm
Total Alkalinity	100-120 ppm
TDS	50-400 ppm

Using test strips or a reagent kit, verify that the spa water is within the parameters written on the data table to the left. Use a pre-filter when filling the spa through the filter canister. Refer to the fill up procedure on your owners manual, ensuring that there is no airlock in the plumbing. The following steps will guide you in finishing the set up of the spa for the salt cell to work properly.

Do not use the spa until 3-5ppm of chlorine is detected in the water.

Note: 24hr Filtration Must be enabled in this spa.

Note: When adding any chemical(s), or salt to the spa, you must turn on all pumps to high speed, and sprinkle the chemical(s) across a broad area of the water. This helps the chemicals dissolve and disperse throughout the entirety of the spa. Always wait at least 15 minutes after adding any chemicals to the spa water, before retesting the water to allow time for it to dissolve and circulate throughout the spa.

1. Your spa should be filled with fresh tap water through the filter basket, using the carbon filter provided in the startup kit. The carbon filter is able to remove trace amounts of dissolved minerals, and heavy metals usually found in tap water. These contaminants are usually referred to TDS (Total Dissolved Solids), lower TDS levels will help guarantee optimal performance of the salt cell within the chlorine generator. **Do not use softened water to fill the spa**, as this can further increase minerals in the spa water. Additionally, **do not fill the spa with water from a well source (Well Water)**, as these water sources have high levels of TDS, causing problems with sanitation and water regulation.

Note: Always have the spa turned off when filling or draining the spa. The power must be turned off until the spa is fully filled. Never power on a spa with no water inside of the unit.

2. After filling your spa, turn the power to the spa back on, then you must test the spa water for pH and Alkalinity. There are two methods you can use to test your water.

TEST STRIPS: The pads on these test strips react by changing colors when you dip them in water. To avoid faulty test results, make sure your hands are dry and use care when removing a testing strip from the packaging. Pull out one test strip with your hand, and seal the container immediately, to prevent moisture activating the other strips in the container. Dip the test strip into the water and follow the instructions supplied with test strips.

TESTING REAGENT KIT: A reagent test kit uses reagent chemicals to provide water quality information, from a water sample obtained from your spa. These kits usually have small test tubes and gauges that can be used for testing, combined with reagent chemicals to give accurate data, rather than a test strip. Be careful to follow the instructions on your kit, filling the container(s) to the appropriate levels and then dropping the instructed reagent chemical into the container. Compare the colors of your water sample to the provided water guide within the kit, to determine any modifications that must be done to your spa water. Always follow the instructions within the testing kit. Depending on the testing kit is being used, ensure that you are performing a water test for total alkalinity, pH, chlorine and calcium hardness.

3. If the pH levels and Total alkalinity levels are not within range, you may adjust these levels with chemicals approved for spa use, using chemicals such as pH Increaser or pH Reducer chemicals . The ideal pH level for the salt cell is between 7.2-7.8 for optimal performance. When adjusting these chemical levels, multiple rounds of testing and the additional chemicals may be required to achieve proper water chemistry. Refer to bottle labels for further details and timing between each water test.

NOTE: Improper use of chemicals will result in unsanitary and/or unsafe water conditions as well as discoloration, degradation, damage to the spa surfaces, and chlorine generator plates, as well as components such as pumps and heaters.

4. Once the water parameters are within the acceptable ranges mentioned on fig 1.01(excluding chlorine), Power the spa on, and ensure that there is no airlocks within the circulation pump. Once that is completed, activate all pumps within the spa on high speed in order to begin adding salt and chlorine to the spa.

Note: Chlorine granules are used only in the initial set up, or when the spa encountered a large body load to assist the salt cells chlorine generation or shocking of the spa.

5. Once all pumps are activated, you may begin to slowly sprinkle chlorine granules into the spa. This chlorine is used to establish a safe baseline to keep the water clean during the set up process, about 1 teaspoon of chlorine granules per 200 gallons. Use a water test strip or the reagent kit to verify that at least 3ppm has been reached. Once this is verified, you may begin adding the provided salt to the spa.

Spa Size	Teaspoons
7 x 7 Spas 400-450 Gal	2.0-2.25tsp
8 x 8 Spas 450-500 Gal	2.25-2.5tsp
Deck Spas 750-800 Gal	3.75-4tsp
F-1655 2300 Gal	11.5tsp

Adding Salt

First, make sure that all pumps within the spa are operating on high speed, when adding salt to the spa, **never drop the entire bag(s) or cups fulls of salt into the filter basket or suddenly poured into the center of the spa. The salt must be slowly introduced to the spa water,** its advised to increase the spa water temperature to at least 80F to help dissolve the salt faster.

The salt must be sprinkled into the spa water by hand to ensure the proper dissolving of the salt in the water. This process take about 20-35 minutes depending on the size and required salt amounts. Failure to properly disperse the salt into the spa water may lead to stress on components such as pumps, the heater, or the spas salt cell. Damage caused by improper mixing of salt to your spa water will void your warranty. Pumps may need to be activated a second time for proper mixing.



6. The total amount of salt needed varies based on the spa model, but the ratio that you will need to follow is for every 100 gallons of water, add 1.65 lb of salt. Most of our 7x7 spas are between the ranges of 350-450 Gallons, and 8x8 spas are within the range of 400-475 Gallons. Verify your spa volume by contacting your dealer or visit our website, and search for your spa models line drawing on the product page. Use the provided Salt Test Strips to verify that the salt level has reached ≈ 2000 ppm of salt. Follow the instructions provided on the salt test strips for guidance.

The Golden Rule
For each 100 gallons, you must use
1.65lb of salt

(Ex) 550 Gal $\rightarrow 550 \div 100 = 5.5$

$5.5 \times 1.65 \approx 9.1\text{lbs}^*$ * (=9.075)

Gallon Amount	Salt Required for 2000 ppm
200	3.33
300	4.95
400	6.60
500	8.25
600	9.9
700	11.5
800	13.2
900	14.85
1000	16.5

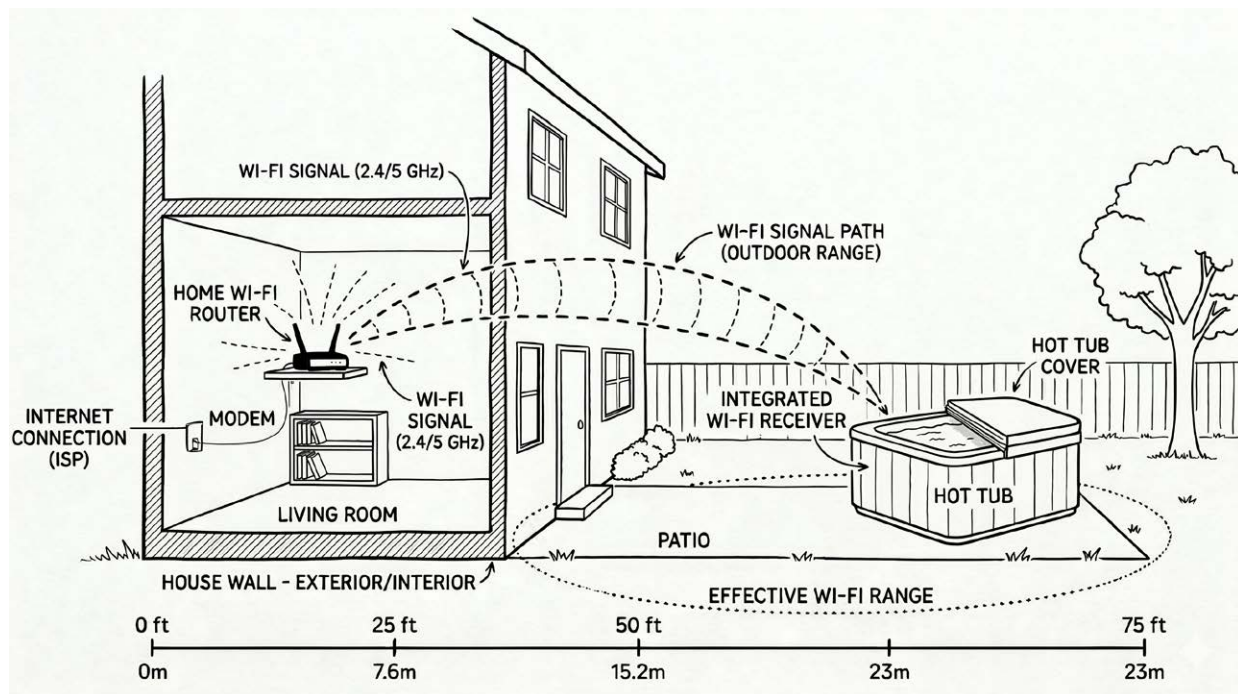
7. After verifying salt ppm levels and confirming that all salt has been dissolved, we can begin the process of pairing the salt cell to your home wifi network.

Note: the module is controlled via wifi, and requires good signal range from the router of the home to operate properly.

The following section will provide information, on how to begin the set up of your chlorine generator with the Tuya smart home app.

Salt Cell Wifi Connectivity

The in-line chlorine generator is controlled and monitored using a wifi connection and the Tuya smart home app. The chlorine generator uses a wifi antenna to communicate with your home router, it is important to place your spa within the homes wifi range, or in the range of a wifi extender. On average the chlorine generator is able to communicate effectively within a 75 foot range from the wifi source. This range may be shorter due to obstacles between the spa and the router, obstacles such as walls and/or landscaping between the two objects.



Do not place the spa more than 75ft from the wifi source.

- Ensure that the spa is facing towards the wifi source.
- Keeping a proper wifi connection will allow you to control the salt cell.
- A stable connection is necessary to control the salt cell. Direct control is possible directly on the salt cell itself if the network is interrupted.



Verify that your smartphone is connected to the wifi network, That the Spa will Connect too.

- Your smartphone/tablet must be connected to the intended wifi network, that the spa will connect too.
- Verify that Bluetooth is activated on your smartphone/tablet for the pairing process.

Initial Connection

The chlorine salt cell's smart home software, can be used to control production of chlorine in your spa. The salt cells wifi receiver needs to be paired to your smartphone & the homes wifi network. The "Tuya" application allows you to change the strength of the salt cell, the duration of salt cell operation, and how long the self cleaning* phase lasts for the salt cell. The app will also save error messages and operation data of your salt cell.

**Note: Self cleaning process helps reduce corrosion and calcium in the internal metal plates used for chlorine generation. Regular maintenance of the salt cell must still be done based on water quality and effectiveness of chlorine generation.*

Download the Tuya Smart life app from either the Apple App store or Google's Play Store. This app will be used to set up, control, and monitor the conditions of your salt cell.



Smart Home Wifi Information

The salt cell can be controlled using the Tuya smart home app, which requires that the spa is placed within wifi range. If the spa is placed in a distant location on the property, its advised to relocate the home router or place wifi extenders between the router and the spa for proper signal reach. Ensure that the front of the spa is facing the home or the source of wifi to get the best range possible.

The Tuya smart home app is designed to adjust and control the chlorine generator, the app does not actively monitor and adjust chlorine based on needs. Adjustment and water monitoring is the responsibility of the spa owner, and the spa water must be adjusted or corrected based on the results obtained from frequent testing. It is important to regularly test your spa water to verify that the water chemistry matches the specified values within this owners manual (fig1.01).

[On/Off] - Flow Error Codes



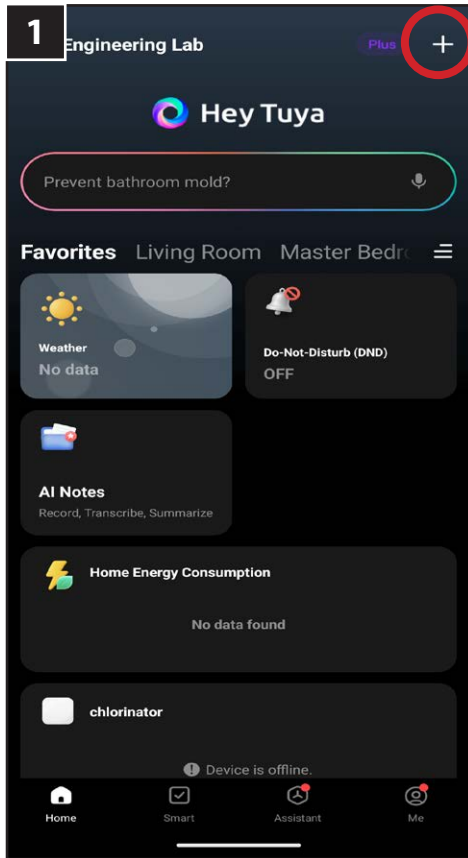
Attention: Flow Error Code Will Appear When A Primary Pump Activates.

This is considered normal and the system will reactivate 5-10 minutes after the primary pumps in the spa are turned off. Additionally Swim spas are built with hard wired circulation pumps due to water volume.

Additional Info

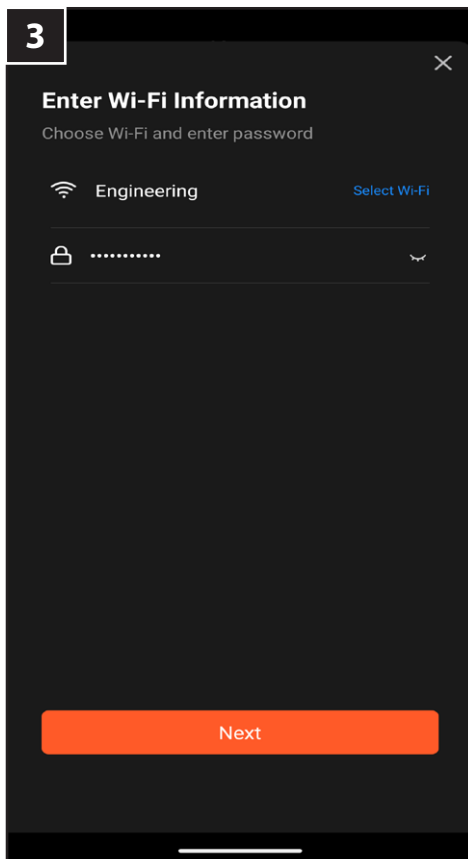
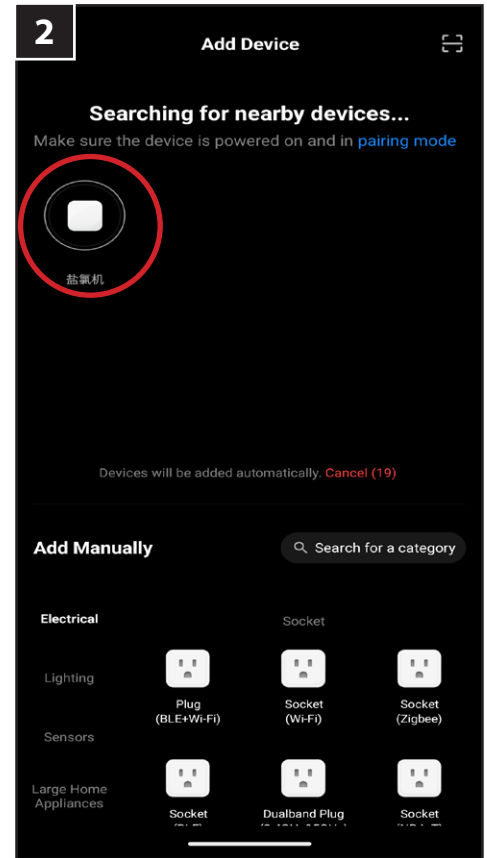
The circulation pump will always deactivate, when a primary spa pump is activated. This occurs with traditional 7 foot, 8 foot, and Deck spas. This may result in a error message appearing in the smart home app, when the Cal Clear system detects a change in water flow. This is considered normal and the system will reactivate 5-10 minutes after the primary pumps in the spa are turned off. Additionally Swim spas are built with hard wired circulation pumps due to water volume.

Connecting to the App



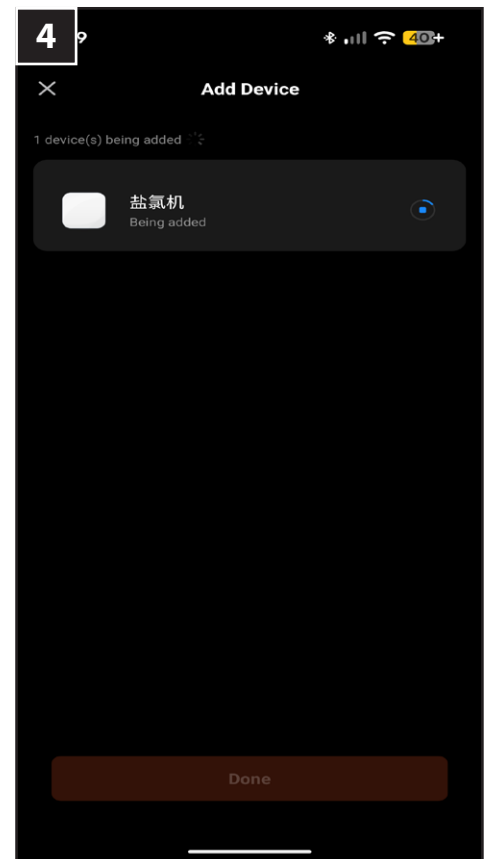
- 1 Open the Tuya app and select the (+) icon in the top right of the app screen to pair to a new device.
- Make sure the phone being used is connected to the home wifi network.
 - Bluetooth must also be on.

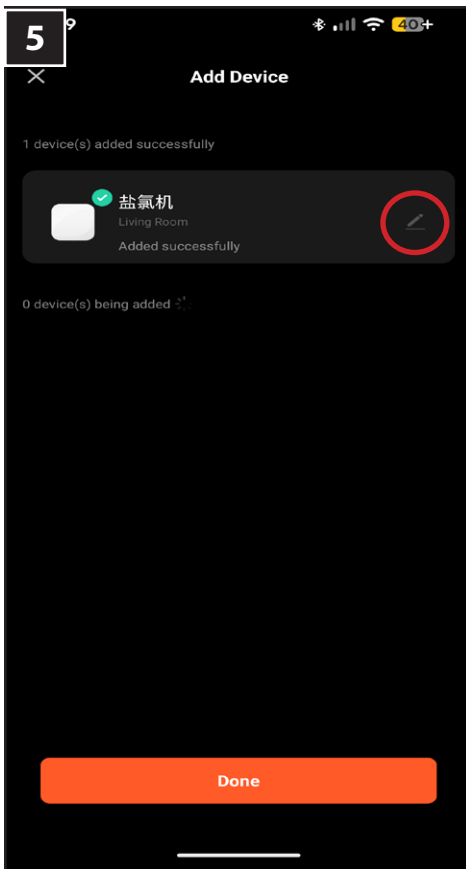
- 2 The app will begin to scan for any available modules near the wifi network your phone is connected too.
- Tap the icon that appears on the top area



- 3 The app will request for the password of the wifi network that your phone is connected too. Enter the password of the wifi network and proceed to the next screen.

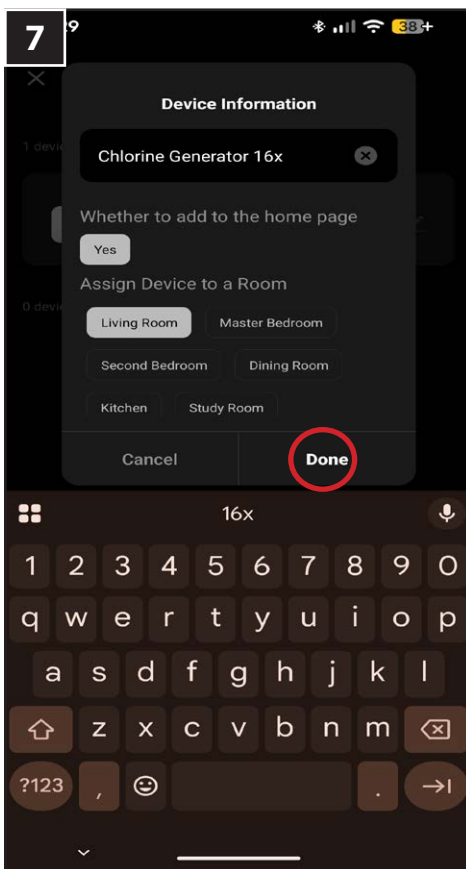
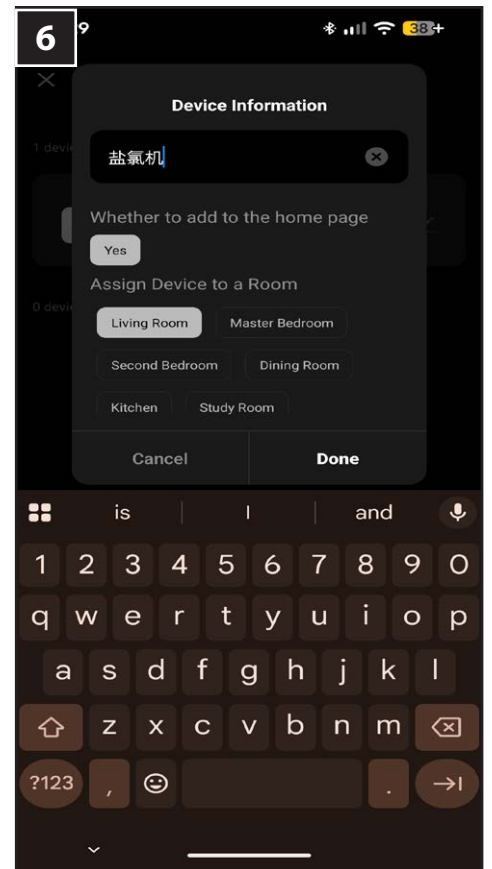
- 4 The device will be added to the network, a small loading circle will appear near the selected icon.





5 Once a green check mark appears on the icon representing the salt cell, press the small pencil icon next to it to rename the device.

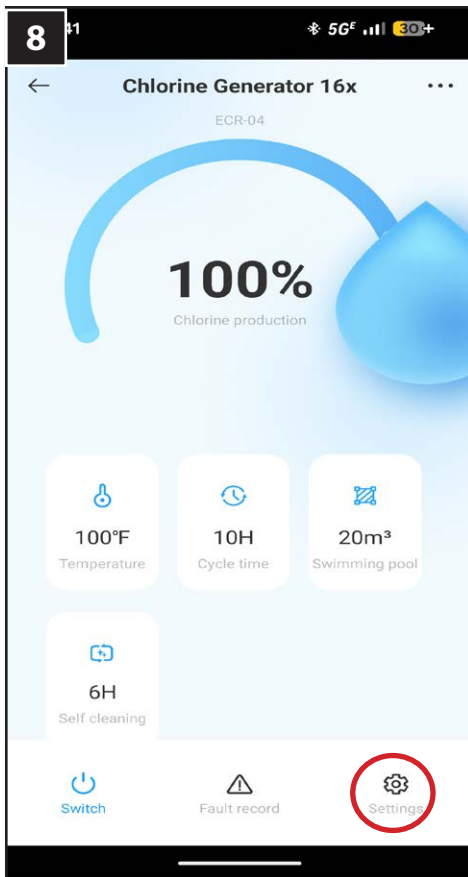
6 Erase the placeholder name (Test Characters), and rename the device to a name you as the spa owner would recognize.



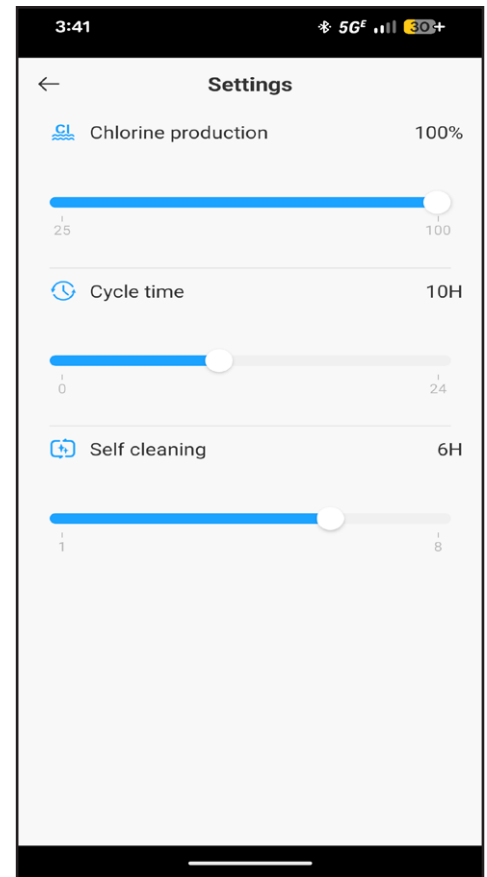
7 Assign a "Room" for the salt cell, this appears due to the smart homes software layout. The salt cell is integrated with a smart home module.

Additionally press "Yes" to add the salt cell to the home page.

Once done press "Done" The app will send you to the modules main screen or back to the Tuya app home page. Select the renamed icon if not taken to the salt cells main screen.



8 When in the main menu of the salt cell, it will provide an overview of the cells current settings. press the settings gear at the bottom of the screen to change settings such as chlorine production time, cycle time.



Start Up Settings

Once the chlorine generator is connected and paired to the Tuya smart home app, certain settings must be activated to ensure the proper start up of your spa. These settings can be explained by the following.

Chlorine Production: Total potential output of chlorine from the salt cell

Cycle Time: Duration of salt cell chlorine generation

Self Cleaning: Reverse polarity self cleaning (maintains the cell between cleanings)

Allow the spa to heat up, and operate within these settings for the next 1-2 days. Do not use the spa, until a background ppm of chlorine is in the 3-5ppm range. Using the spa without a baseline sanitizer level can create cloudy water and creates an ideal environment for bacteria growth.

Spa Size	Salt ppm Target	Initial Start-Up Salt Cell Strength	Initial Cell	Self Cleaning
7 Foot Spas (350-450Gal)	2000ppm	75%	6hrs	4hrs
8 Foot Spas (400-475Gal)	2000ppm	75%	6hrs	4hrs
Deck Spas & Swim 1148, 1166, F-1325	2000ppm	75%	8hrs	4hrs
Swim Spa F-1655	2000ppm	100%	10hrs	6hrs

This table should only be used when starting up a new spa or a refilled spa.

Daily Chlorine Settings

After the 1-2 day period has passed and/or the sanitizer levels within your spa has reached 3-5ppm of chlorine. The spa is now safe to use, now the settings of the salt cell must be adjusted to maintain that sanitizer level.

Note: Regular testing of the spa water will guarantee consistent sanitizer levels within the spa, it is the responsibility of the spa owner to monitor, maintain, and modify salt cell operations such as strength level and cycle time, based on the needs of the spa and frequency of use.

Use the table below as a general guide to adjust the chlorine output and operation time. This table should be used after the spa has reached a background chlorine ppm of 3-5ppm.

Spa Size	Salt ppm	General Chlorine Cell Strength**	Initial Cell Operation	Self Cleaning
7 Foot Spas (350-450Gal)	2000ppm	25-50%**	3-4hrs**	6hrs
8 Foot Spas (400-475Gal)	2000ppm	25-50%**	4-6hrs**	6hrs
Deck Spas & Swim 1146, 1166, F-1325	2000ppm	50%-75%**	6-8hrs**	6hrs
Swim Spa F-1655	2000ppm	50%-75%**	8-10hrs**	8hrs



**** General Chlorine Cell Strength & Operation Time recommendations are advised based on average observed usage of a spa (the spa is used 2-3 times a week). The strength needed for the chlorine generator/cell to maintain a 3-5ppm level of chlorine is based on individual usage and can vary case by case. Spas that are used very frequently may require the higher % strength than a spa used once or twice on a weekend.**



Caution: Test the spa water regularly to keep the spa water within acceptable ranges.

- The spa water should be tested 2-3 times a week, to monitor chlorine levels.
- Failure to monitor & control chlorine levels may lead to spa damages and/or bacteria growth.
- Damages from chemical damage (including salt generators) are not covered by the limited warranty.

Category	Target Value
Free Chlorine	3-5ppm
pH	7.2 - 7.8
Calcium Hardness	150-250 ppm
Total Alkalinity	100-120 ppm

Always keep spa water chemistry within these ranges.

Chlorine Control Guidance

The operating strength % and operating hours to maintain 3-5ppm of chlorine varies on a case by case basis. Frequent water testing will make sure that your spa water is within range. You may lower or raise either chlorine generation time or strength level to maintain 3-5ppm of sanitizer.

Changes to chlorine generation will not immediately appear, and may take about 24-48 hours for spa water to reflect

Water Care

General Water Care

Salt systems have the unique ability to maintain, and keep a minimum chlorine level to have the spa ready for use at a moments notice. There is some important information that will be necessary to know, when operating and using a spa equipped with a chlorine generator.

Chlorine generators work by charging the water that goes through the generator with a small electric current, to create chlorine to sanitize your spa. Because the generator has to make new chlorine, it takes time for the chlorine to build up from a fresh fill up, or after heavy use. This section will cover some general information on how to maintain and keep your spa at its best.

Sanitation

Salt systems require time to generate chlorine especially after repeated heavy usage or when a large volume of people have entered the spa. When operating a spa that has a chlorine generator, its important to know when to change settings on your spas chlorine generator to have the best water quality possible.

In cases where the spa will not be used for the next 24 hours, you may raise the chlorine generators strength by an increment of 25% or an additional 1-2hrs of chlorine production time, within the Tuya app.

If the spa is to be used within a 24hr window (*Example: Used the spa in the evening, then will used again in the following morning*), its advised to turn on all pumps, and sprinkle a small amount of chlorine granules, usually for a 450 gallon spa, we advise to sprinkle in 1 teaspoon of granules to help bring the chlorine bank back to a safe range. Unlike shocking the spa, in this case we are increasing the residual chlorine in the spa helping the salt cell to reach 3-5ppm for the next use. We advise only shocking the spa when its deemed necessary, and to allow the chlorine generator to create sanitizer with time.

Always test your spa water before entering the spa. If the settings were adjusted to generate chlorine, revert back to the previous settings on the Tuya app; refer to the table on page 12, to bring the spa back to its daily chlorine setting. If the spa was chemically treated, and the chlorine generators settings were not changed, then there is no changes needed to the chlorine generator on the Tuya app.

Chemical Adjustments

When testing the spa water, there may be instances that the chlorine generators setting may need to be adjusted due to lack of chlorine detected, or because of excessive chlorine production. Within the Tuya app, you will be able to easily adjust and modify settings for the chlorine generator.

Low Chlorine: Raise the chlorine generators strength % by an increment of 25% and allow the spa to operate for a period of 24hrs. Test the spa after this 24hr period, and verify that the spa is back in the 3-5ppm range. If the generator is operating at full strength, due to the increase of strength % from 75% -> 100%, then you can raise the generators operating time by an additional 1-2 hrs. Always test the spa water before use.

High Chlorine: In cases where the spas chlorine levels have risen past 3-5ppm into the 10ppm range, we do not recommend entering the spa. High chlorine levels for an extended period of time, may lead to damage to jets, components, and items such as pillows and your spa cover.

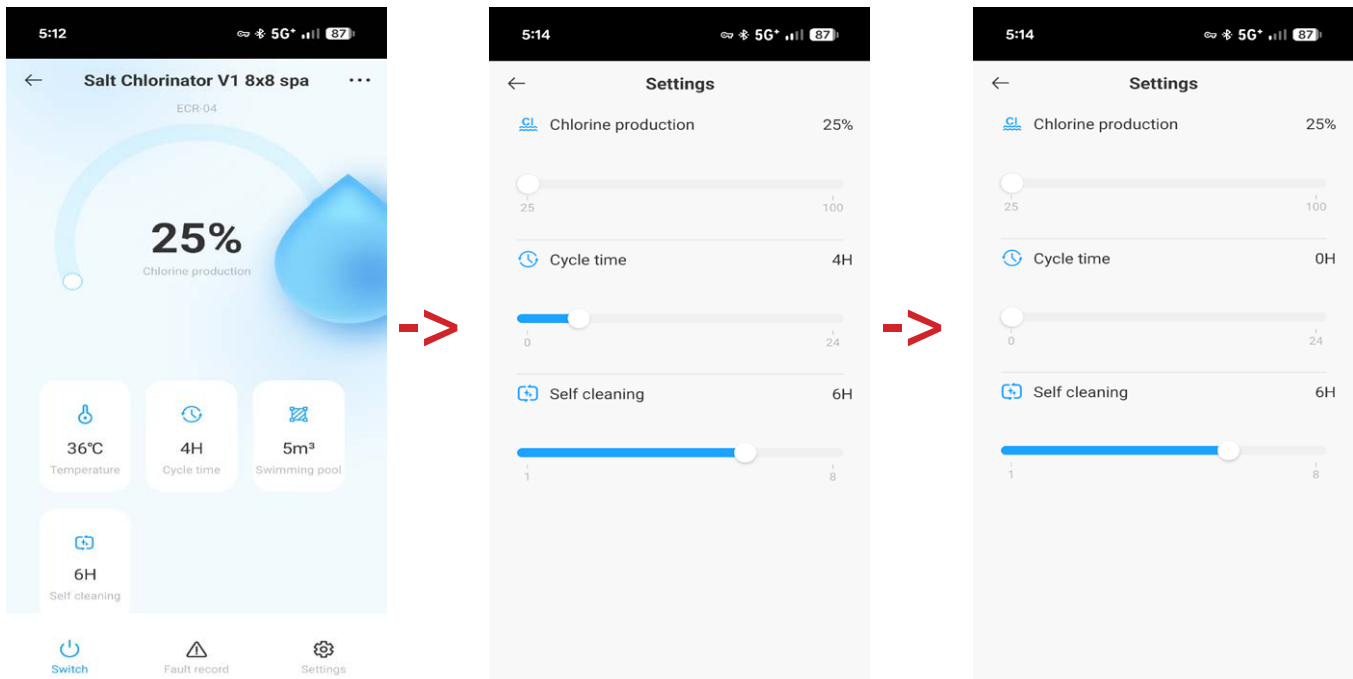
Sanitation Cont.

High Chlorine Cont.

If the spa chlorine level is high, enter the Tuya app and select the settings gear from the chlorine generators screen. In order to reduce chlorine levels inside of the spa, we must disable the chlorine generators cycle time, in order to stop the production of chlorine.

1. First enter the Tuya app and select the chlorine generator from the smart home menu.
2. After selecting the generator, select the settings cog from the bottom of the screen to enter the settings of the chlorine generator.
3. Decrease the cycle time from 4hrs in this example to 0hrs, this will tell the generator that it is not allowed to run at all during spa operation.
4. Once the chlorine generators settings have been adjusted and saved, allow for a period of 24-48hrs to pass, Do not use the spa until chlorine levels have fallen back to 3-5ppm.
5. After the spa has reached the 3-5ppm mark, use table 2 and revert your salt generator settings to the recommended strength and cycle time.

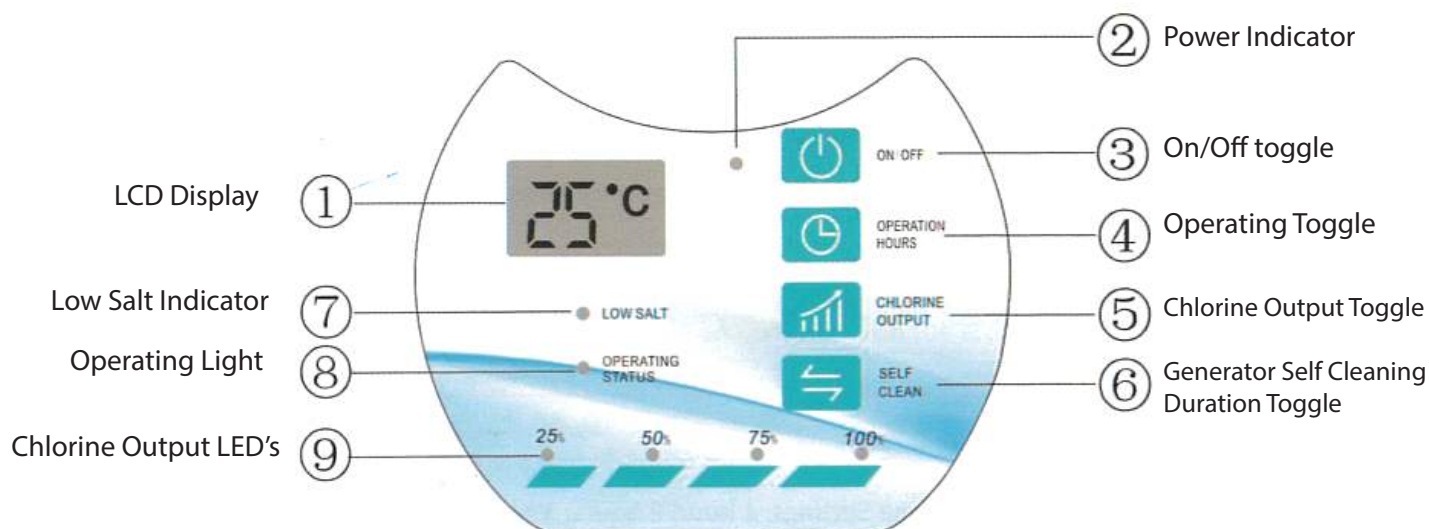
Note: The internal clock of the chlorine generator operates with 24hr time frame, When the power to the spa is interrupted the clock will reset.



Chlorine Generator - Controller

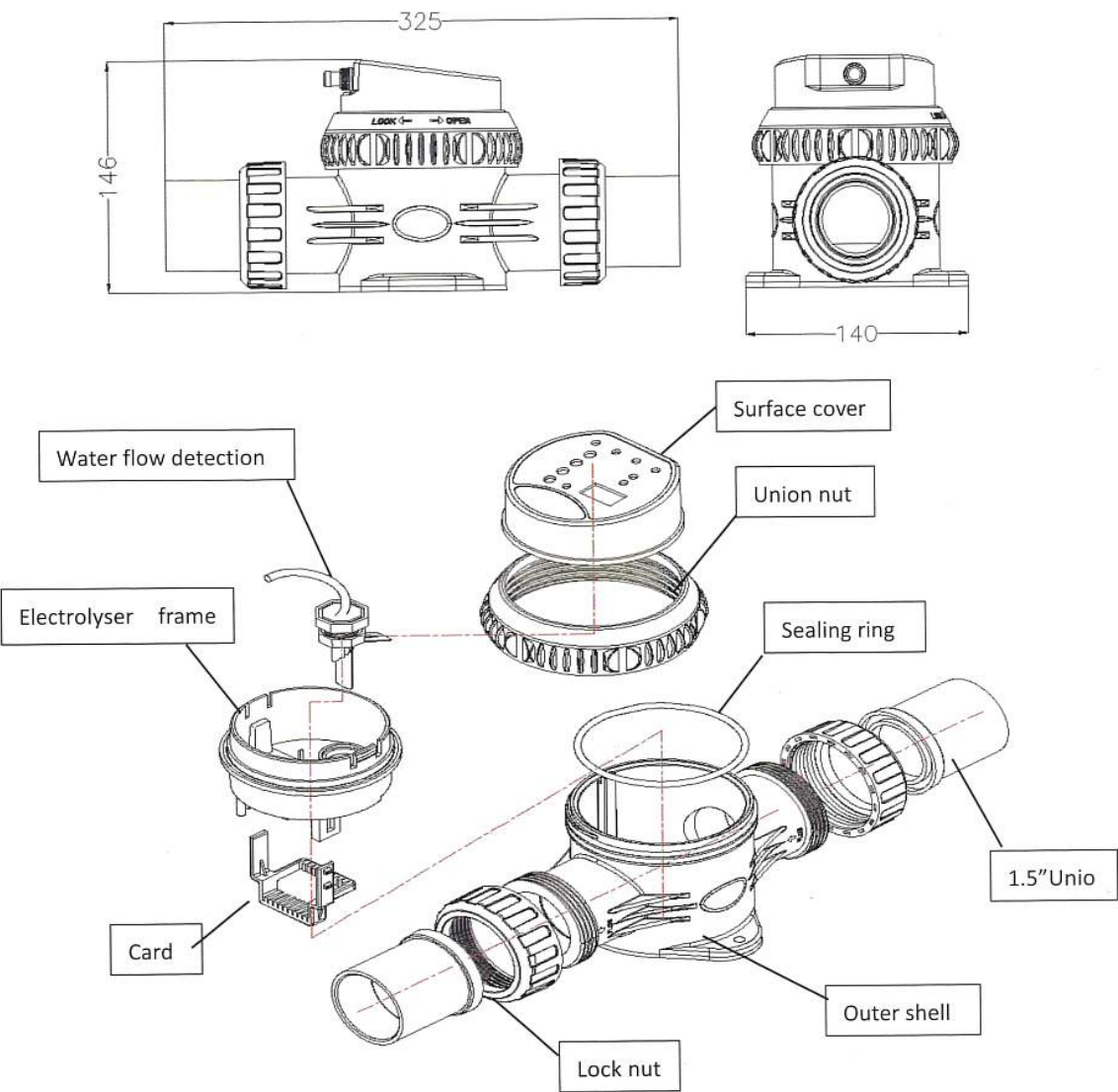
Physical Controls

The chlorine generator is built within the plumbing system of your spa. The chlorine generator is located near the front of the spa. If the spas chlorine generator encounters a connection issue during pairing, or if wifi coverage is spotty, the front cabinet can be removed and the generator can be adjusted using the physical buttons.



Icon Number	Purpose
1 - LCD Display	The display will show the current water temperature. Error codes appear on this display as well.
2 - Power Indicator	This light is a red color when the chlorine generator is powered up. The light turns green during when starting up.
3 - On/Off toggle	Start or Pause the operation of the device.
4 - Operating Toggle	Sets the total operating time of the chlorine generator. Each press will change the operating time from an interval of 1 - 24hrs.
5 - Chlorine Output Toggle	This toggle adjusts the strength level of the chlorine generator when it is in operation.
6 - Generator Self Cleaning Toggle	This toggle adjusts the total duration of the chlorine generators self cleaning time.
7- Low Salt Indicator LED	This is a warning LED that indicates when the ppm levels of salt are below the required threshold to operate safely at.
8 - Operating LED	Will flash red when an error has occurred. This LED Will normally light up based on the current operations of the chlorine generator.
9- Chlorine Output LED's	The LED that is lit in this area indicates the current set operating strength of the generator.

Chlorine Generator - Diagram



Descaling the Chlorine Generator



Never Service or Repair a Spa That has an Active Electrical Circuit.

Always turn the power off from the GFCI breaker supplying electricity to the spa. Servicing an active spa carries the risk of electrical shock, equipment damage, and risk of serious injury.

The generator within the spa will accumulate calcium and mineral build up over time. After a period of 1-3 months depending on usage, the chlorine generator within the spa must be deep soaked with a 2:1 vinegar solution to remove any calcium/mineral build up. Maintaining a long self cleaning duration helps extend this service interval, but the generator must be cleaned every 90 days. The following procedure will show how to service the salt cell at home, or to be a reference for a service technician.



1

Close the gate valves located on each side of the chlorine generator. Remove the gate valves fail safe clips and press the handles downward. Follow the grooves and twist the handle to its locked position. Disconnect the power cord connected to the chlorine generator directly under the physical control panel. Use the splash cap to cover the power port.

2

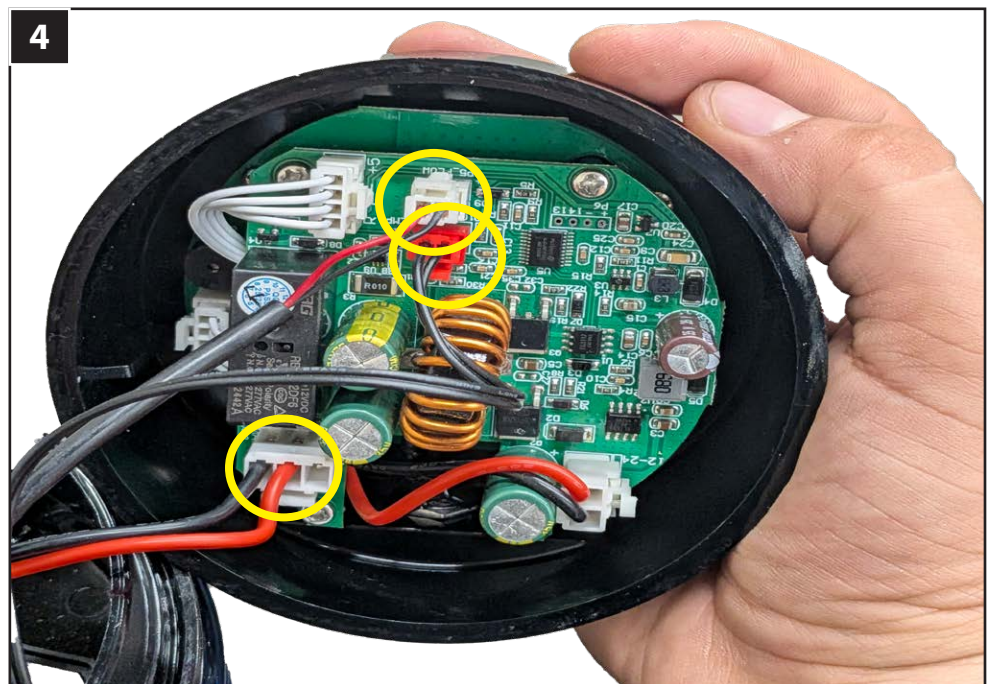
Turn the outer plastic ring counter-clockwise and place the ring aside. This ring provides pressure between the chlorine generator plates and its plastic housing.





3 Once the ring is removed, gently lift the controller from the plastic base. Do not shift or remove o-rings within the housing or the base.

4 Disconnect the three cords connecting the chlorine generator to the control panel. Each of these connections are unique and color coded for simple reassembly.



Scan the following QR code to watch a full video on how to perform this maintenance procedure.

With the three cables now disconnected, ensure that these connectors stay dry.

Gently lift the chlorine generator from the salt system housing. If necessary you may slightly shift the generator to the left or to the right to help separate the generator from the housing.



7 Obtain a medium sized bowl, and create a descaling solution of 2:1 parts 5% vinegar & water. Ensure that the connectors on top to not soak in the solution. 5% vinegar is commonly found in most grocery stores.

Do not use muriatic acid or any other acid cleaner on the chlorine generator.

8 Allow the chlorine generator to soak in the descaling solution for at least 2-3 hours depending on severity of calcium/mineral build up. Make sure that only the metal plates and mechanism are soaking in the solution.





- 9** Once the generator has soaked, you may rinse the cell with tap water from a faucet, do not use pressurized water or any abrasive tool such as a brush or sponge to remove debris within the plates of the chlorine generator. Align the generator to the chlorine generator housing and press down ensuring the large o-ring lines up securely to the housing.



- 10** Reconnect the three cords back to the control board. Gently align the control panel back to the top of the chlorine generator.

11**11**

Once the control panel and the chlorine generator are aligned, reinstall the locking ring to the housing of the chlorine generator and firmly hand tighten to seal the housing.

After this is done you may reconnect the power supply to the generator and power the spa back on. This maintenance may need to be performed once every few weeks or every few months, it depends on the water chemistry of the spa.

Vacation Care

The following section will explain the proper operation levels, care, and procedure on how to program your chlorine generator for when the spa it is intended to be left without use or regular water testing for an extended period of time.

When leaving on vacation or a business trip for an extended period of time, its important to modify the chlorine generators operating strength and/or the active cycle time period the generator operates for. The modifications to the chlorine generator are influenced mainly by the period of time the spa will be left unattended.

- If the spa is to be left unattended for a period of less than 3-6 days the spas settings do not require modification if it is maintaining 3-5ppm of chlorine beforehand.
- For periods of time up for 7-24 days it is recommended to lower the chlorine generators operating strength by an interval of 25%. If the spa is operating at the lowest setting of 25% and can not be lowered, lower the cycle time duration instead by 1-2 hours (*Do not allow the chlorine generator to operate for less than two hours*).
- If the spa is to be left unattended for more than 24+ days, power down the unit and drain the spa. ***Unintentional neglect of the spa, and allowing the salt cell to operate for an extended period of time without regular water testing, increases the odds that the spa water becomes over-chlorinated, leading to chemical damage of the spa.*** Follow the proper draining procedure from within your spa owners manual, then close and clock your spa cover onto the unit.

Never leave any spa unattended without its spa cover secured onto it. This applies for both spas filled with water and dry spas. When a spa is left uncovered with or without water, contaminants and sun damage can occur when exposed for an extended period of time. UV damage to the acrylic shell and jets are classified as neglect damage, which is not covered under the limited warranty.

General Troubleshooting

Problem: My spas chlorine level is rising, how can I avoid high chlorine generation.

Solution: Lower the salt cells strength by intervals of 25%, and lower the "cycle time" by a few hours. For example if an 8 foot spa is operating at 75% for 6 hours and is reaching 5+ ppm of chlorine, adjust the strength from 75% -> 50% then lower the cycle hours from 6 hours -> 4 hour. Test the water for the next two to three days.

If the chlorine level is too high, where simple operation changes will not be effective (10+ ppm chlorine) its advised to drain the spa about 6-8 inches and refill with water. Add about 1lb of salt if 6-8 inches of water was removed. Test the salt level to reach 2000ppm, and test the spa waters chlorine level. You may use the reduced settings to maintain the new lowered settings or adjust to higher settings based on your sanitizer level.

Problem: My spas chlorine level is low or 0ppm, how do I know my salt cell is operating.

Solution: Verify that the spas filtration is set for 24hrs, and that the salt cells settings are in appropriate ranges. Increase the strength level of the salt cell by 25% and/or increase the cycle time by increments of 2 hours. Monitor for the next 24-48hrs. If no chlorine is present or very low, maintenance of the cell must be done. Cut the power to the spa and fully close the gate valves connected to the salt cell, and remove the salt cell itself from its housing. soak the metal plates in a bowl or jar of vinegar and allow it to soak for 1-2 hours. Rinse the cells metal plates with water and reinstall to the housing. Open the gate valves once the cell is reinstalled.

Problem: Strong Chlorine Odor

Solution: This may be due to excessive chlorine, use a testing strip or kit to verify the chlorine levels inside of the spa. If the free chlorine is low, a spa shock may be necessary to kick start the sanitizer within the spa. Sprinkle about 1 teaspoon into the spa water per 200 gallons and re-test. Additionally, if chlorine levels are high, lower the operation time and the strength of the salt cell. Its recommended to lower the amount of salt cell time by 1-2 hours, based on how high chlorine levels are.

Problem: Organic Odors from Water

Solution: Chlorine levels could be low, test the spa water to confirm if sufficient sanitizer exists in the spa. If the levels are low, increase the output of the salt cell by 25% and allow for 24-48hrs to pass. Do not use the spa and allow the spa to increase its available chlorine. Additionally do not change the output strength by an increment larger than 25% within a 24hr period of time.

If the spa is to be used within the next 24hrs, you may shock the spa with 1 teaspoon of chlorine granules per 250 gallons.

Solution: Check the salt levels within the spa, and confirm if the salt concentration is within the range of 2000 ppm. When salt levels are below or above the recommended range, it can cause operation issues with the cell. levels lower than 1800ppm or above 2400ppm can cause chlorine Generation issues.

Note: If the performance of the chlorine generator begins to decline, or no chlorine is detected when the cell is properly set to the spas recommended operating time & strength. The chlorine generator may need to be soaked in vinegar to dissolve any calcium or corrosion built up on the plates of the chlorine generator.

Problem: Organic Odors from Water (Continued)

Solution: pH levels could be out of range, verify with a test strip or test kit to see if the pH is within the range of 7.2-7.8; when spa water is out of the range this can cause issues such as sanitizer stability issues on the lower range, and the formation of a calcium layer onto the spa in the upper range. Use a pH decreaser or increaser if necessary and shock the spa with 1 teaspoon of granules per 150gal. Since the spa is going through a shock procedure, the chlorine granule amount needed is slightly more than whats normally used to reach 3-5ppm

Problem: Algae Growth and/or Bacteria Growth (Green Water)

Solution: Assuming that the chlorine generator is operating, at the recommended levels within this manual, and the chlorine generator is clean and free of calcium build up, then the spa water may require a full shock or a drain and refill.

1. Turn on all pumps inside of the spa on high speed, and sprinkle in about 2-3 teaspoons into a 450 gallon tub (1 teaspoon per 150 gal) to shock the spa. Since the spa is going through a shock procedure, the chlorine granule amount needed is slightly more than whats normally used to reach 3-5ppm for example. You must perform a water test, and ensure that the free chlorine levels are between 5-10ppm. **DO NOT ENTER OR USE THE SPA until the chlorine levels have fallen back to 3-5ppm.** Thoroughly rinse the filter before using the spa.
2. In some cases where the spa water encountered heavy algae growth or bacterial growth, a full flush of the spa is necessary. Still perform the previous shock procedure, and then drain the spa water from the spa using the drain or an external pump. Once drained, fill the spa again using a carbon filter at the end of the hose through the spa filter canister. Perform the water testing and set up procedure for your salt water spa again, and allow the spa to readjust its chlorine bank for about 24-48hrs. Thoroughly rinse the filter before using the spa.

Problem: Cloudy Water

Solution: If Cloudy water is present in the spa, its most likely associated with suspended materials too small for the 24hr filtration system to absorb, this can be materials and waste such as biofilm, sulfates, or particulates that can't be absorbed due to a dirty filter.

First inspect the filter in your spa and thoroughly clean or replace the filter. Use a small amount of clarifying chemical to help clump up suspended materials to help the filtration system absorb the materials. If this does not help the clarity of the water after a 24hr period, it may be time to drain the water and replace it with new filtered water, following the first fill procedure mentioned in this guide.

Problem: Clear Green Water

Solution: This can occur when chlorine levels are low, or when there is a high iron or copper levels suspended in your water. First test the water in the spa and verify that the chlorine level is between 3-5ppm. If no chlorine is present, shock the spa with about 1 teaspoon of chlorine granules per 200gals the chlorine level is ≤ 1 -3ppm, sprinkle a small amount of metal out chemical and adjust the chlorine generators strength by at least one increment of 25%. Monitor the spa for the next 24-48 hours, do not enter the spa until the water is clear, the pH of the water is between 7.2-7.8, and that the chlorine level is back to its normal baseline of 3-5ppm.

Problem: Foaming of Spa Water

Solution: This can occur when there is a high amount of dissolved body oils, lotions, or soap residues. These chemicals introduce phosphates into the water and can cause some balancing issues within your salt water. In cases like this a small amount of defoaming chemical (Found in most spa/pool stores) or an enzyme chemical can be added to the spa to help control foaming.

Foaming of water can also be associated to low calcium levels & unbalanced water chemistry in general. Always test your water with a test strip or with a reagent kit to adjust and modify any water parameters that are not in range. In worse case scenarios where the water is unable to be balanced, draining the spa is advised. Never fill the spa with well water or with water that has been treated with a water softener.

If foaming water is a common occurrence, with little to no spa use; It is recommended to test a sample of your water supply for TDS levels, this can be done in most cases for free at a pool supply store or with your spa dealer if they provide comprehensive testing. Always use a prefilter attachment to fill up your spa.

Problem: Skin Irritation or Eye Irritation

Solution: There can be several issues that can cause this discomfort

1. Too high chlorine level, Test the spa water and confirm if the chlorine level is above 5ppm. If so, use an oxidizer/non-chlorine shock and allow time to pass for the chlorine level to fall below 5ppm.
2. Unsanitary water, when the spa water is either not properly sanitized or heavily contaminated due to use, draining the spa may be required. Follow the fill up procedure and verify that the water chemistry matches the specified values from the chart *fig 1.01*.
3. High pH, when the water has high pH levels, minerals and calcium can form on the acrylic. This build up feels like a rough surface growing on the acrylic. This can be avoided with regular water testing to monitor water hardness and pH levels. Depending on the severity, for small patches forming on the acrylic, you may bring the pH levels down to 7.3-7.8, and use a non scratching cleaning sponge/scrubber to remove the calcium/mineral build up. In scenarios where the build up has covered the entire spa, the spa must be drained. Use a spray bottle with white vinegar, and spray the surface of the spa acrylic. Allow about 10-15 minutes to pass, ensure that the surface remains moist with vinegar. Using a terry towel or a microfiber, begin wiping away the mineral build up from the spa. Rinse the towel in a bucket to remove the collected minerals outside of the tub. You may require more than one wipe down to remove accumulated minerals. Use a scale control chemical to help control build up.

Spa damage caused due to excessive mineral/calcium build up is not covered under warranty. This is referred to as damage due to neglect, as it takes an extended period of time for build up to accumulate.

Problem: Connection issues - Device Wont Pair

Solution: Verify that the smartphone being used is connected to the intended wifi network that the chlorine generator will operate on, Additionally verify that Bluetooth is also enabled on the smartphone.

If the device can not be located or paired, open the spas cabinet to gain access to the physical controls of the chlorine generator. Hold down the chlorine output button on the generators controls for about 3-5 seconds to reset the wifi antenna.

Problem: Pitting & Corrosion of Metals in the spa

Solution: Pitting and spots of corrosion on metal finish jets, steel handle bars, or other metal fixtures can be caused by several reasons.

1. Too Much Salt Dissolved in Water, too much salt (+2400ppm) concentration can cause discoloration and pitting on multiple parts/components of the spa. Partially drain the spa (6 inches from the current waterline), and refill the spa with pre-filtered water. Perform a salt test and verify that the salt level is back near 2000ppm. Damage due to excessive salt does not appear right way, but over a period of time. Damage done by excessive salt and the failure to not correct the spas salt level falls under neglect and chemical abuse, which is not covered under warranty.
2. Excessive Chlorine Production, Chlorine and other sanitizers, work by oxidizing and breaking down bacteria and other organic matter. Excessive amounts of chlorine (5+ppm), will cause damage to the finish of metal components over a period of time. Frequent water testing will allow you to adjust and modify chlorine generation to avoid excessive sanitizer. Damage related to excessive sanitizer falls under both chemical abuse and neglect, and is not covered under warranty.
3. Low pH or Alkalinity, low pH (7.2 or less) indicates that the water is leaning towards the acidic side, this can cause pitting and discoloration/corrosion due to the presence of both sanitizer and slightly acidic water. Damage caused by low pH does not appear right away, but over a period of time. Damage caused by low pH or Alkalinity falls under neglect, which would not be covered under warranty.

Problem: Waterline Scum

Solution: Scum lines can develop due to body oils, or phosphate sources such as lotions or hair products. This is a normal and natural occurrence, you can use a sponge to remove excess build up on the waterline. It is also advised to use an enzyme product to help breakdown the body oils & phosphates.

Problem: Chalky Scaling - White Deposits on the Acrylic.

Solution: Minerals and calcium can form on the acrylic. This build up feels like a rough surface growing on the acrylic. This can be avoided with regular water testing to monitor water hardness and pH levels, and by adding a scale control chemical to regulate the build up. Depending on the severity, in scenarios where the build up has covered the entire spa, the spa must be drained. Use a spray bottle with white vinegar, and spray the surface of the spa acrylic. Allow about 10-15 minutes to pass, ensure that the surface remains moist with vinegar. Using a terry towel or a microfiber, begin wiping away the mineral build up from the spa. Rinse the towel in a bucket of warm water to remove the collected minerals outside of the tub. You may require more than one wipe down to remove accumulated minerals. Fill the spa up following the fill up procedure in this guide, and include a scale control chemical to help control build up, as a part of your spa care regiment.



Scan the following QR code to access our troubleshooting video, with additional information about our Cal Clear system.

LIMITED WARRANTY

This Limited Warranty is extended to the original purchaser of the chlorine generator Cal Clear Salt Filtration option, installed by Lloyd's Material Supply company, Inc. Which Manufactures the Cal Spas brand portable spas manufactured after January 1st, 2026 and installed for residential use in the United States of America and Canada. This Warranty begins on the date of delivery of the spa, but in no event later than one year from the date of manufacture.

This limited warranty does not supersede, or modify the limited warranty that originally came with your spa. Always refer to your spa owners manual for details about warranty regarding other components. This warranty is not to be modified, or extended by any dealer or representative of Cal Spas.

Generator & Power Supply

Cal Spas warrants the original purchaser of the Cal Clear Salt Filtration chlorine generator and power supply will not malfunction due to defects of material or workmanship for a period of one year, from the date of manufacture. If the Cal Clear Salt Filtration salt system were to malfunction due to a defect, Cal Spas will offer a replacement chlorine generator (Parts & Labor), that can be shipped to the homeowner or to the servicing spa dealer. Cal Spas will cover the cost of parts and labor, shipping charges are the responsibility of the spa owner.

Limitations

This limited warranty is voidable if the chlorine generator or other components that make up the Cal Clear Salt Filtration system has been subject to misuse, alteration or attempted alteration, repairs or attempted repairs not approved by CalSpas, or if a failure or malfunction is due to improper installation, improper water chemistry, improper salt levels, improper maintenance or lack of normal maintenance as prescribed in this Owner's manual & the spas Owners manual, an act of God, weather conditions, animals, rodents, pests or any damage from causes beyond the control of CalSpas. Misuse or abuse shall mean operation of the spa other than in conformity with the CalSpas Owner's Manual. Such misuse and abuse shall include but not be limited to the following:

- Damage caused by operation of water temperatures outside the range of 50°F–108°F.
- Freeze Damage caused by improper draining and/or failure to operate and heat the spa when filled with water during the colder seasons of the year.
- Damage to the components caused by contact with unapproved cleaners or solvents.
- Damage caused to the salt system, chlorine generator and/or the spa and its components due to use of unapproved sanitizers such as calcium hypochlorite, sodium hydroxide, "tri-chlor" type chlorines, these types of sanitizers are found in pool supply stores, and are not designed for CalSpas Portable Spas.
- Damage caused to the salt system and/or the spa and its components due to frequent repeated treatment of the spa with products containing cyanuric acid (found in most forms of tablet chlorine products).
- Damages or malfunctions caused to the Cal Salt Filtration Plus System and/or the spa and its components due to high salt concentrations in the spa water (such as, but not limited to, corrosion of components). Damages caused by neglect of the spa and/or chemical abuse are not covered by the spas warranty.
- Damages or malfunctions caused by calcium and mineral scaling on the spa shell, chlorine generator, or other components due to hardness of the source water, or scaling due to neglect of salt cell maintenance.
- Damage to Pillows, Jets, and other components due to excessive sanitizer. Damages relating to excessive sanitizer fall under chemical abuse, which is not damage covered by the warranty.

This warranty coverage is void if the electrical installation of the spa does not follow the outlined diagrams and specifications, mentioned in the spas owners manual. Failure to properly follow the specified GFCI requirements, wire type, wire thickness, compliance with NEC guidelines and local codes will void your warranty. This warranty does not cover acts of god or nature that can damage spa equipment, such examples are flooding, lighting strikes, wildfires, or other scenarios out of the control of the manufacturer.

It is the responsibility of the spa owner to monitor, test, and adjust the spa water on a regular basis to maintain a baseline sanitizer level of 3-5 parts per million of chlorine within the spa water. Operating the spa without monitoring the water quality or adjusting the chlorine generator for an extended period of time falls under neglect and chemical abuse of the spa, which is not covered by the spas limited warranty.

Additional Limitations

The limited warranty of the Cal Clear system warrants the Cal Clears hardware from malfunction associated with a factory defect, and are warranted to be free of defects in workmanship and materials at the time of delivery. The Cal Clear system uses metal plates to conduct an electrical charge inside of the Cal Clear housing, to release chlorine from the salt water within your spa. The electrical plates must be cleaned every 1-3 months, by submerging with a descaling solution for 1-2 hours, as a manufacture it is advised to use a light acid such as vinegar 1:1 with water, do not use muriatic acid, as this may cause damage to the call clear system and is a health risk. A higher ratio of vinegar may be required for Cal Clear systems with excessive build up. Avoiding this descaling maintenance will lead to performance issues within the Cal Clear system, and would fall under neglect of the system, voiding the warranty. Neglect of the Cal Clear system may result in high or low chlorine values, causing corrosion of metals and plastics, bacterial growth in the water, and pillow/jet damage. Additionally Cal Clear Salt cells that have accumulated large amounts of calcium/mineral build up due to irregular maintenance of the cell, are considered systems that have been neglected, in such cases this limited warranty is no longer valid.

Performance

The limited warranty of the Cal Clear system warrants the Cal Clears hardware from malfunction associated with a factory defects. Such defects include but are not limited too, leaks originating from the housing, electrical issues with the chlorine generator, or repeated communication issues from the device. Cal Spas will cover the cost of parts and labor related to a warranty repair, deemed necessary by the spa owners spa dealer, or by a Cal Spas representative. Additional variable costs such as distance fees, diagnose fees, are not covered by this warranty. Additional labor fees or equipment rental fees accumulated due to poor service access of the spa, are also not covered by Cal Spas. It is the responsibility of the spa owner to provide proper service access to the spa, following the foundation and perimeter guidelines within the spas owners manual. If service by the original spa dealer is not possible, the spa owner must get in contact with Cal Spas Customer support at customerservice@calspas.com to review and process a warranty claim. Cal Spas must approve all third party technicians that may offer to service a warranty claim, failure to get approval for a 3rd party repair may lead to the voiding of the Cal Clear and/or Cal Spas warranty.



Visit us at on our website
www.calspas.com