

Patio Plus

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LTR20241002



Cal Spas[®]

 Made in USA

Cal Spas Home Resorts[™]

Owner's Manual



Congratulations! You are now the owner of the finest spa built. Now you will experience true comfort and relaxation as you never had before. We at Cal Spas® focus on quality, design and comfort in order to create a truly luxurious experience like no other.

Welcome to the Cal Spas® family.

It is important that you register your Cal Spas product as soon as possible. By taking just a few quick minutes to register, you can enjoy product alerts, more efficient support, and quicker service. Go to <https://calspas.com/register-your-spa.php>. Fill in your information and click “SEND WARRANTY INFO”

Locating the product serial number

The serial number of your spa is located on a metal plate attached to the right side of the spa panel. You will need this number to properly register your spa and activate coverage. Write this information in the space provided below.

Spa Model: _____

Spa Serial Number: _____

Date Purchased: _____

Date Installed: _____

Dealer’s Phone Number: _____

Dealer’s Address: _____

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

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<p>CONTACT INFORMATION For customer service, please contact your authorized dealer immediately. If you need additional information and/or assistance, contact:</p> <p>Lloyd’s Copyright Lloyd’s Material Supply Inc. Customer Service Department 1462 East Ninth Street Pomona, CA 91766.</p> <p>Toll Free: 1-800-CAL-SPAS Fax: 1-909-629-3890</p>

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1.IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY!

When using installing and using this spa, basic safety precautions should always be followed, including:

1. DANGER: RISK OF SEVERE INJURY OR DROWNING!

- DO NOT allow children to be in or around a spa unless a responsible adult supervises them.
- Keep the spa cover on and locked when not in use.
- See instructions enclosed with your cover for locking procedures.

2. DANGER: RISK OF SEVERE INJURY OR DROWNING!

- The suction fittings in this spa are sized to match the specific water flow created by the pump. Should the need arise to replace the suction fittings, or the pump be sure the flow rates are compatible.
- Never operate the spa if the suction fitting or filter baskets are broken or missing. Never replace a suction fitting with one that is rated less than the flow rate marked on the original suction fitting.

3. DANGER: RISK OF SEVERE INJURY FROM ELECTRIC SHOCK OR DEATH FROM ELECTROCUTION!

- Install the spa at least 5 feet (1.5 meters) from all metal surfaces. As an alternative, a spa may be installed within 5 feet (1.5 meters) of metal surfaces if each metal surface is permanently bonded by a minimum #8 AWG solid copper conductor to the outside of the spa's control box.
- DO NOT permit any external electrical appliances, such as lights, telephones, radios, televisions, and etc., within 5 feet (1.5 meters) of the spa. Never attempt to operate any electrical device from inside the spa.
- Replace a damaged power cord immediately.
- DO NOT bury the power cord.
- Connect to a grounded, grounding-type receptacle only.

4. WARNING: RISK OF HYPERTHERMIA (OVER-HEATING) CAUSING SEVERE INJURY, BURNS, WELTS OR DEATH!

- Water temperature in excess of 104°F (40°C) may be injurious to your health.
- The spa water should never exceed 104°F (40°C). Water temperatures between 100°F (38°C) and 104° F (40°C) are considered safe for a healthy adult.
- Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.
- Before using the spa, the user should measure the water temperature since the tolerance of water temperature-regulating devices varies.

5. WARNING: To reduce risk of injury







- Prolonged exposure to hot air or water can induce hyperthermia. Hyperthermia occurs when the internal temperature of the body reaches a level between 3°F (2°C) to 6°F (4°C) above the normal body temperature of 98.6°F (37°C). While hyperthermia has many health benefits, it is important not to allow you body's core temperature to rise above 103°F(39.5°C).
- High water temperatures have a high potential for causing fetal damage during pregnancy. Women who are pregnant, or think they are pregnant should always check with their physician prior to spa usage.
- The use of alcohol, drugs or medication before or during spa use may lead to unconsciousness, with the possibility of drowning.

- Persons suffering from obesity, a medical history of heart disease, low or high blood pressure, circulatory system problems or diabetes should consult a physician before using the spa.
- Persons using medications should consult a physician before using the spa since some medications may induce drowsiness while others may affect heart rate, blood pressure and circulation.

6. Hyperthermia

- Symptoms of excessive hyperthermia include dizziness, lethargy, drowsiness and fainting. The effects of excessive hyperthermia may include:
 - Failure to perceive heat
 - Failure to recognize the need to exit spa or hot tub
 - Unawareness of impending hazard
 - Fetal damage in pregnant women
 - Physical inability to exit spa
 - Unconsciousness

 **WARNING:** The use of alcohol drugs or medication can greatly increase the risk of fatal hyperthermia.

7.  **DANGER: RISK OF ELECTRIC SHOCK**
Do not permit any electric appliance, such as a light, telephone, radio, or television within 5 feet (1.5 m) of a spa.
8.  **WARNING:** people with infectious diseases should not use a spa or hot tub.
9.  **WARNING:** to avoid injury exercise care when entering or exiting the spa or hot tub.
10.  **WARNING:** Do not use spa or hot tub immediately following strenuous exercise.
11.  **WARNING:** Prolonged immersion in a spa or hot tub may be injurious to your health.
12.  **CAUTION:** Maintain water chemistry in accordance with manufacturer's instructions.

SAVE THESE INSTRUCTIONS.

Filling and Powering Up your Portable Spa

Pre-Delivery Checklist

Most cities and counties require permits for exterior construction and electrical circuits. In addition, some communities have codes requiring residential barriers such as fencing and/or self-closing gates on property to prevent unsupervised access to the property by children. Your dealer can provide information on which permits may be required and how to obtain them prior to the delivery of the spa.

Before Delivery

- Plan your delivery route
- Choose a suitable location for the spa
- Lay a 5-8 cm concrete slab
- Install dedicated electric supply

After Delivery

- Place spa on Slab
- Connect electrical components

Planning the Best Location

Safety First

Do not place your spa within 10 feet (3m) of overhead power lines.

Consider How You Will Use Your Spa

How you intend to use your spa will help you determine where you should position it. For Example, will you use your spa for recreational or therapeutic purposes? If your spa is mainly used for family recreation be sure to leave plenty of room around it for activity. If you will use it for relaxation and therapy, you will probably want to create a specific mood around it.

Plan for Your Environment

If you live in a region where it snows in the winter or rains frequently, place the spa near a house entry. By doing this, you will have a place to change clothes and not be uncomfortable.

Consider Your Privacy

In a cold-weather climate, bare trees won't provide much privacy. Think of your spa's surroundings during all seasons to determine your best privacy options. Consider the view of your neighbors as well when you plan the location of your spa.

Provide a View with Your Spa

Think about the direction you will be facing when sitting in your spa. Do you have a special landscaped area in your yard that you find enjoyable? Perhaps there is an area that catches a soothing breeze during the day or a lovely sunset in the evening.

Keep Your Spa Clean

In planning your spa's location, consider a location where the path to and from the house can be kept clean and free of debris.

Prevent dirt and contaminants from being tracked into your spa by placing a foot mat at the spa's entrance where the bathers can clean their feet before entering your spa.

Allow for Service Access

Make sure the spa is positioned so that access to the equipment compartment and all side panels will not be blocked.

Many people choose to install a decorative structure around their spa. If you are installing your spa with any type of structure on the outside, such as a gazebo, remember to allow access for service. It is always best to design special installations so that the spa can still be moved, or lifted off the ground.

Clearance for Service Access

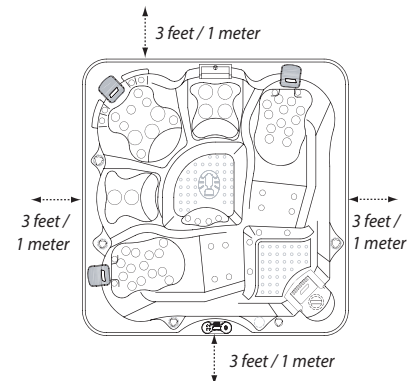
While you are planning where to locate your spa, you need to determine how much access you will need for service.

All spa models require a minimum of three feet / one meter access to all sides of the spa for potential service. For this reason, the spa should never be placed in a manner where any side is permanently blocked. Examples include placing the spa against a building, structural posts or columns, or a fence.

Spa models require access to all sides in case they need service or repair. See the figure to the right.

If you are planning to enclose or surround your spa with a deck, make sure there is easy access for service or repair.

NOTE: Spas require clearance on all sides of the spa.



Preparing a Good Foundation

NOTE: We strongly recommend that a qualified, licensed contractor prepare the foundation for your spa. Damage caused by inadequate or improper foundation support is not covered by the warranty. It is the responsibility of the spa owner to provide a proper foundation for the spa.

Your spa needs a solid and level foundation. The area that it sits on must be able to support the weight of the spa, with water and occupants who use it. If the foundation is inadequate, it may shift or settle after the spa is in place, causing stress that could DAMAGE YOUR SPA SHELL AND FINISH. Place the spa on an elevated 3 to 4" / 30 cm concrete slab. Pavers, gravel, brick, sand, timbers or dirt foundations are **not** adequate to support the spa. If you are installing the spa indoors, pay close attention to the flooring beneath it. Choose flooring that will not be damaged or stained. If you are installing your spa on an elevated wood deck or other structure, it is highly recommended that you consult a structural engineer or contractor to ensure the structure will support the weight of 150 lbs per square foot (732 Kg/m²).



NOTE: The following electrical connections must be performed by a licensed electrical contractor.



Unscrew and remove the two corner panels on each side of the spa's front door.

Carefully unscrew the black outer drain knob and then unscrew and remove the front door **panel**.



Pictured above is the inside of the spa behind the front door. The electrician now has access to connect the spa for power.

Opening the Front Door Panel (V-Elite Panel)



Some Cal Spa models have an add on option of unique V Elite panels. Each side panel is made of removable segments, and require different steps to open. When removing the front panel, or any of your side panels, its necessary to remove the corners of the spa as well. Failure to do so may result in damage to the panel or wooden frame.



When removing the front panel of your spa (Underneath the main control panel), begin by removing the right corner, and the right segment of the panel. The black T-bracket is in the middle of the two segments, it is fused with the right panel being removed. Use a drill to remove the screws supporting the right panel first. If needed you may remove the left segment of the front panel for better access.

Note: When a spa is designed with the V-Elite panels, each side panel is made of two segments and a black T-bracket. The front panel is the only panel where the black T-bracket is a part of the right segment.

When reinstalling the front panels, the left segment without the center black T-bracket is installed first.

Removing Shipping Materials



Your Cal Spa is wrapped with a white shrink wrap designed to protect the acrylic shell from scratches and damage. Thoroughly inspect the plastic wrapping for any tears and or damage that may have occurred during shipping. It is expected to see some scuffs or small tears at the base and corners of the spa, as the spa is pushed and shifted around in transport.

Note: Do not use a box cutter or knife to remove this plastic wrapping, if a blade is used you may cut the plastic wrapping at the bottom base of the spa, avoid slicing near the corners or the top of the spa.



Depending on the type of spa, a piece of wood is placed on the side panels of the spa to protect it in shipping. The wooden supports are installed with several $7/16$ " (11mm) bolts, once the spa is in its final resting place, remove these with an 11mm socket.

2.5 240 Volt Electrical Installation

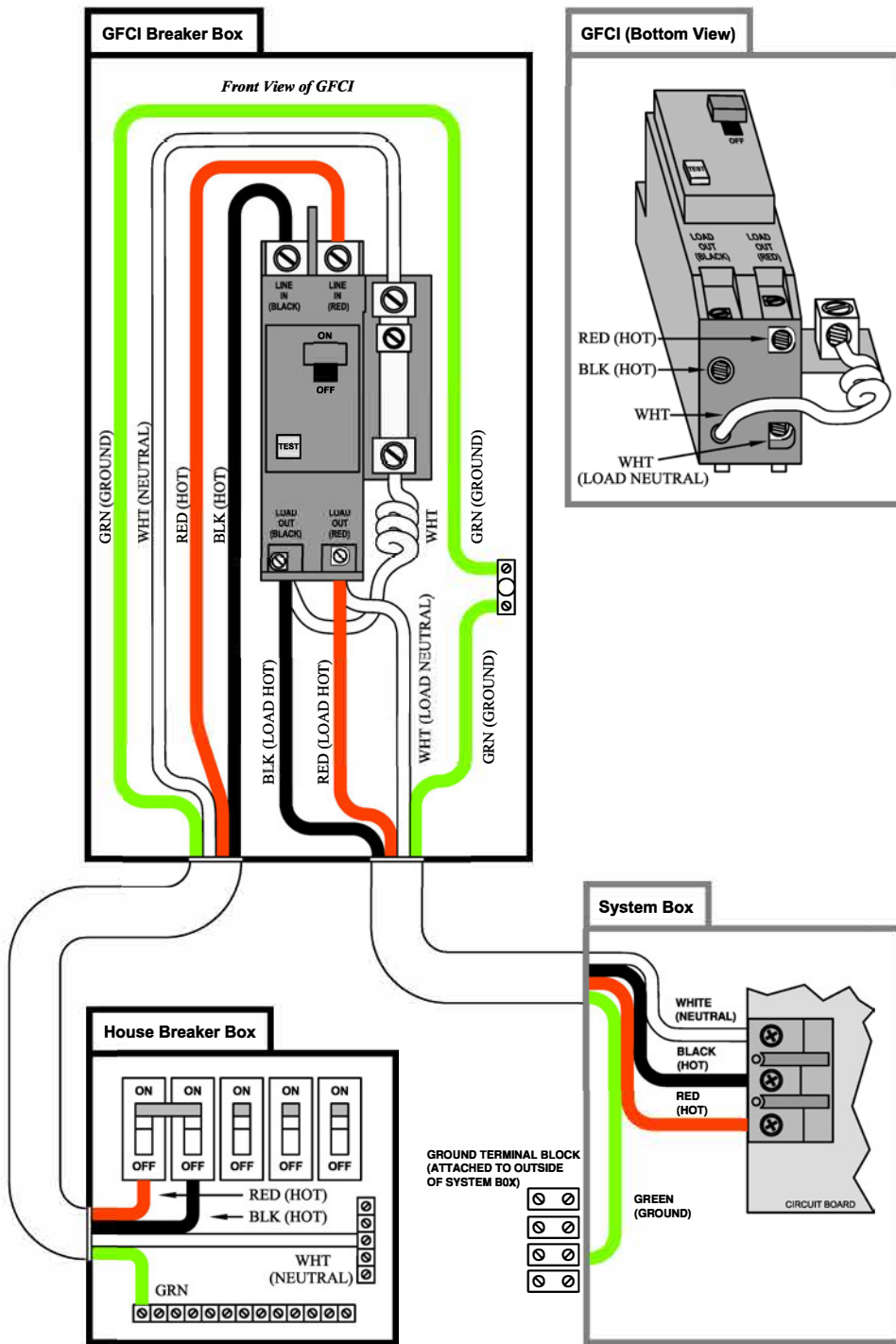
NOTE: These instructions describe the only acceptable electrical wiring procedure. Spas wired in any other way will void your warranty and may result in serious injury. The electrical circuit must be installed by an electrical contractor and approved by a local building or electrical inspector. Failure to comply with state and local codes may result in a fire or personal injury and will be the sole responsibility of the spa owner.

All 240V spas must be permanently connected (hard wired) to the power supply. When installed in the United States, the electrical wiring of this spa must meet the requirements of the NEC 70 and any applicable local, state, and federal codes. The power supplied to the spa must be on a dedicated GFCI protected circuit as required by NEC 70 with no other appliances or lights sharing the power. Use copper wire with THHN insulation. DO not use aluminum wire. Use the table below to determine your GFCI and wiring requirements. Wires that run over 100 feet must increase wire gauge to the next lower number. For example: A normal 50 amp GFCI with four #6 AWG copper wires that run over 100 feet would require you to go to four #4 AWG copper wires.

2.6 GFCI Wiring Requirement

Control System	GFCI Breaker	Wires required	Wiring Diagram
BP-501G1	110 Volts / 15 Amps	Cord with 15 Amp GFCI provided	See page 11 for reference only
BP-501G1	One 40 Amp GFCI Breaker	Four #6 AWG Copper Wires	See page 11 for reference only
BP-501G1	One 50 Amp GFCI Breaker	Four #6 AWG Copper Wires	See page 11 for reference only
BP-501X	One 50 Amp GFCI Breaker	Four #6 AWG Copper Wires	See page 11 for reference only

GFCI Wiring Diagram (Balboa)



2.9 120 Volt Electrical Installation

Always follow applicable local, state and federal codes and guidelines.

Use only a dedicated electrical line with a 15 amp breaker.

Cord-and-plug connections may not use a cord longer than 15 feet (4.6 m) and must be plugged into a dedicated 15 amp GFCI connection (NEC 680.42(A)(2)). Do not use extension cords!

Always use a weatherproof-covered receptacle.

Receptacle shall be located not less than 5 feet (1.5 m) from and not exceeding 10 feet (3.0 m) from the inside wall of the spa. (NEC 680.43(A))

Do not bury the power cord. If your cord becomes damaged, replace it before next usage.

All 120V spas must have a GFCI. This can be either a 15 amp GFCI receptacle or a 15 amp GFCI cord and plug kit as shown (CKIT110 - P/N ELE09700086).

Testing the GFCI plug

Test the GFCI plug prior to first use and periodically when the spa is powered.

1. Plug in the GFCI into the power outlet. The indicator should turn on.
2. Press the TEST button. The GFCI will trip, the indicator will turn off, and the spa will stop operating.
3. Press the RESET button. The GFCI will reset, the indicator will turn on again, and the spa will turn back on. The spa is now safe to use.

If the GFCI trips while the spa is in use, press the RESET button. If the GFCI does not reset, unplug the spa and call your local Cal Spas dealer for service. DO NOT USE THE SPA!



2.10 Testing the 240 Volt GFCI Breaker

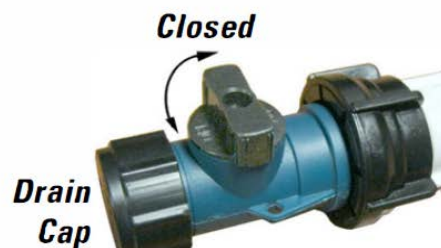
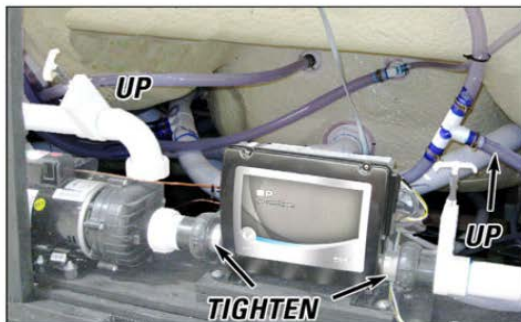
Test the GFCI breaker prior to first use and periodically when the spa is powered. To test the GFCI breaker.

1. Press the TEST button on the GFCI. The GFCI will trip and the spa will shut off
2. Reset the GFCI breaker by switching the breaker to the full OFF position, wait a moment, then turn the breaker on. The spa should have power again.

Step 1. Inspect the Spa Equipment.

Inspect all plumbing connections in the equipment area of your spa.

- Make sure unions connected to the equipment pack are tight (do not over-tighten)
- If your spa has gate valves, make sure they are in the upright position.
- Make sure the drain valve is closed and capped.



Note: Never run the spa with the gate valve closed or without circulating water for long periods of time.

Step 2. Remove the Filter Cartridge.

If you have a skimmer like this:



Teleweir filter skimmer

- 50 square feet filtration
- Spoked cap

Rotate and remove the locking ring (Color may vary). Remove the skimmer cap and barrel, grip the filter by the handle and unscrew it from the canister. Replace and lock the locking ring and slid the skimmer cap and barrel back into the canister. Once the spa is filled you can remove the skimmer cap and barrel again to reinstall the filter.



The skimmer and barrel are locked in place during shipping with a retainer ring. The retainer ring must be unlocked and removed in order to slide the skimmer upward to remove the filter cartridge.



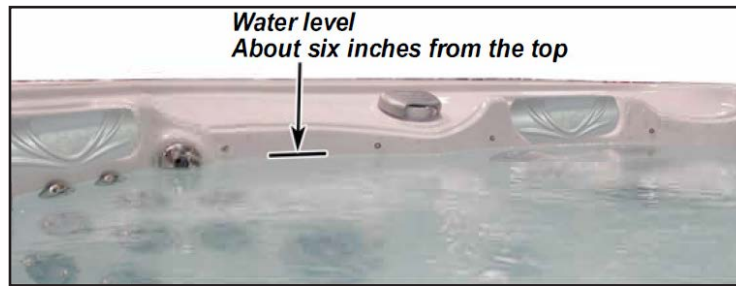
When removing the filter cartridge, you may remove the filter by turning it counter clockwise. The filter must be removed gently to not damage the threaded fitting inside of the filter canister.



After removing the filter, reinstall the retainer ring to the canister, then reinstall the skimmer, this skimmer must be able to move up and down with your water level. In the following step you will fill your spa with water through the filter canister.

Step 3. Fill the Spa

Place the water hose inside the filter canister. Fill your spa with regular tap water about six inches from the top. If the water level is too low or too high, your spa will not operate correctly.

**NOTE: Never fill with soft water.**

Soft water made through some home filtration systems make it impossible to maintain proper water chemistry, and may cause water foaming. This can damage the finish of the spa and void your warranty.

You may fill your spa with well water, but only if the following preconditions are followed.

1. Purchase and use a pre-filter that can attach to the end of a hose. This pre-filter is absolutely necessary in order to remove reactive metals and other dissolved solids that are found in well water.
2. Perform a Total Dissolved Solids (TDS) and metals test, this can be performed by a qualified person after filling up the spa, before initial use. Most Dealers and pool supply stores can perform this test.

Step 4. Power Your Spa

When the spa is filled to the correct level, turn on the power at the GFCI breaker (ensure that the 120V spas are connected to their dedicated proper electrical outlet.)

**Step 5. Prime the Main Pump**

The system will enter priming mode when powered up for the first time. **Priming Mode** will scroll through the display on the control panel. In this mode all devices including pumps and lights are operable, you may press the jet buttons on and off to help prime the pumps. After a few minutes the system will exit priming mode.

Step 6. Install filter into the filter canister

Note: Make sure you have removed and soaked the spa filter cartridge in a bucket of water for at least 30 minutes. This will remove air pockets inside of the filter.

When re installing the filter cartridge, do not over tighten the filter, the threaded bit inside of the filter housing is made of a corrosion resistant ABS plastic. Excessive torque will break the internal threads within the filter housing.

Step 7. Test and Adjust Water Chemistry

Test and adjust the water chemistry.

Step 8. Let the Spa Heat Up

After a period of 5-15 minutes the priming mode will finish. The heater will then activate, put the spa cover on and let the spa heat to the desired set temperature.

During the initial power up the spa, it will consume a large amount of energy to raise the water in the tub to your desired hot tub temperature. Cal Spas are designed for high efficiency, once the temperature within the spa is reached, the spa will use lower amounts of energy to maintain the temperature.

Note: Cal Spas are designed to retain heat, if it is desired to lower the water temperature the spa does not contain a cooling feature. To lower internal temperature of the spa, lower the set temperature on the control panel and open the tub during the evening or night to help release the heat captured within. You may also drain 1/4 of the water within and refill with new water to lower temperatures rapidly.

Priming the Pump

New owners often have difficulty the first time they start their spa and the pumps fail to prime. This can be frustrating but these instructions should help you resolve any issues with air pockets inside of the primary pump or other priming issues.

Sometimes air can become trapped in the primary pump while filling up the spa, although this should be preventable by filling your spa through the filter basket, there is a chance that an air pocket can still form even when following the proper steps. Initially it may seem that the pump is not working, with some sound coming from the pump but no water movement.

Note: When a pump has an airlock, continuing to operate the pump experiencing an air pocket issue can damage the pump. Do not operate the pump until this airlock issue is fixed.

Start Up: Priming Mode

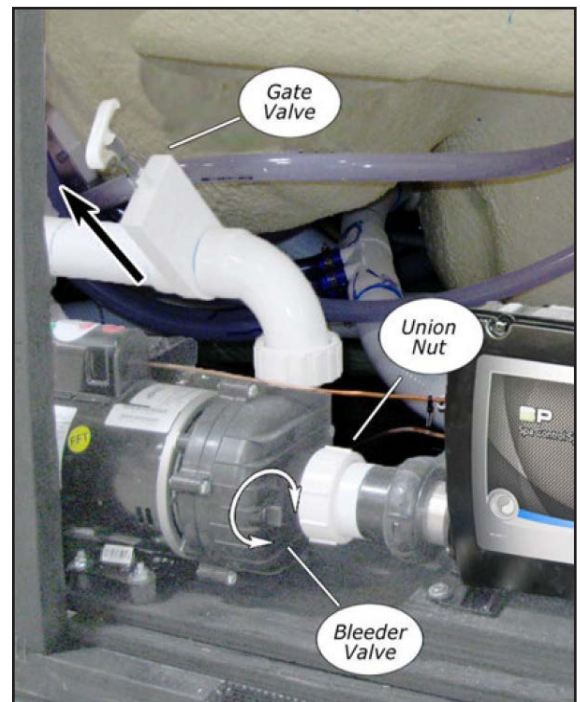
When the spa is powered up for the first time, the spa will enter priming mode. During this mode all devices within the spa is operational. You may wait for 10-15 minutes for the heater to engage, this period of time resets when a secondary pump is activated or if the primary pump is activated for high speed.

The spa will automatically exit priming mode.

Bleeding Air from the Pump

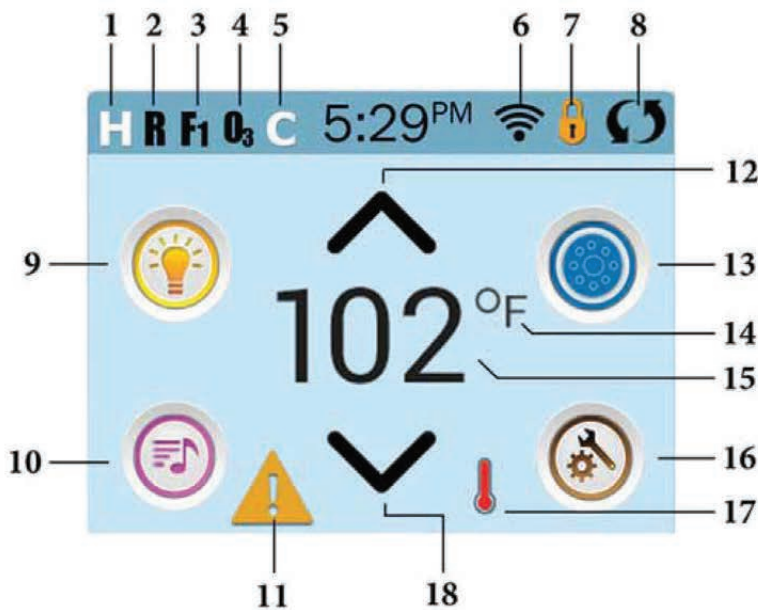
IF you have tried priming the pump by pressing the jet or jet 1 button on and off again with no results, you will need to bleed the pump manually.

1. Shut off power to the spa.
2. Using a philips head screwdriver, remove the front panel from the spa directly underneath the control panel, and locate the main pump.
3. Ensure that the gate valves are open
4. Place rags or towels under the plastic wet end of the pump where the spa plumbing connects into the pump
5. On the plastic wet end there will be a plastic hex headed bleeder valve that can be opened to bleed air trapped inside of the pump
6. Do not fully remove the nut, there are grooves within the nut that allows air to escape. Water will begin to trickle once the air pocket has been removed, tighten down the screw again with light torque.
7. If bleeding the pump is unsuccessful, loosen the pump unions with plumbing channel locks to remove any trapped air between the pump and the heater.
8. Turn the spa power back on and press the Jet button to prime the pump again.





SpaTouch Icons and Navigation



Note: After 30 minutes* the display will automatically go into sleep mode, which turns the display off. This is normal operation. Touch anywhere on the screen to wake the panel up.

Navigation

Navigating the entire menu structure is done by touching the screen.

The three screen selections indicated below can be selected. Touch one of these to enter a different screen with additional controls.

Most menu screens time out and revert to the main screen after 30 seconds of no activity.

ICON Specifications

1. H = High Temperature Range
2. R = Ready Mode
3. F1 = Filter Cycle 1 Running
4. O₃ = Ozone Running
5. C = Cleanup Cycle
6. Wi-Fi Signal Indicator
7. Lock Indicator Icon
8. Invert Screen
9. Light Icon = Turns On/Off
10. Music Icon = Press To Enter Music Screen
11. Message Waiting Indicator
12. Set Temperature Up
13. Spa Equipment Control Icon
14. Temperature Scale (F/C)
15. Current Water Temperature
16. Settings Icon
17. Heat Indicator
18. Set Temperature Down



Changing Languages

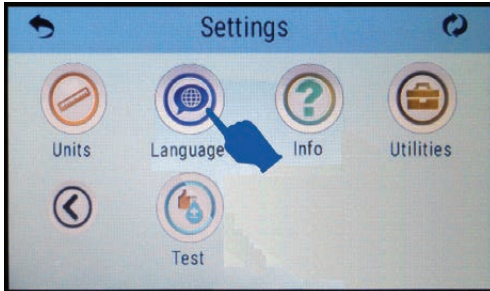
Step 1. Touch the Settings Icon at the lower right portion of the screen.



Step 2. Touch the Right Arrow Icon at the lower right portion of the screen. It takes you to the next screen.



Step 3. Touch the Language Icon.

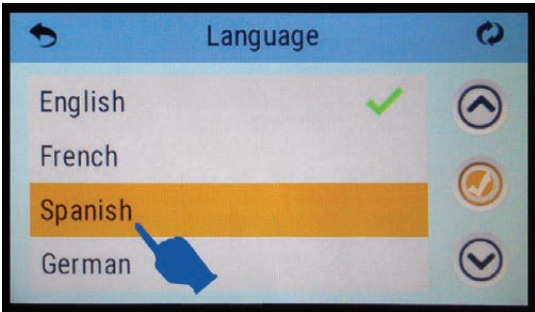


Language

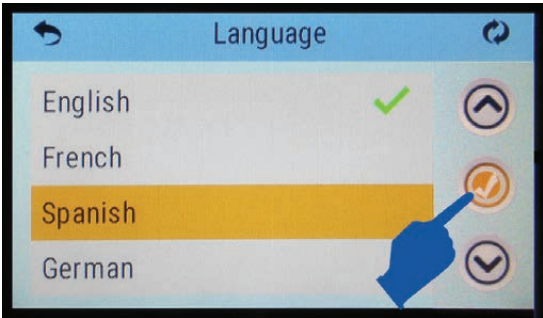
The language icon on the setting screen takes you to the language screen. Change the language displayed on the panel.



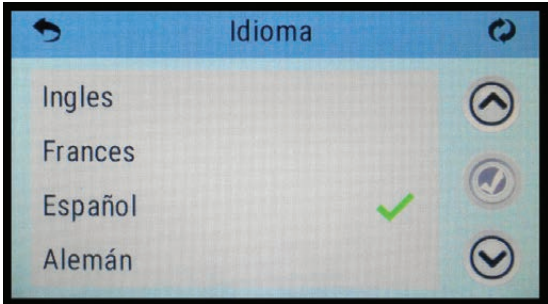
Step 4. As an example touch the Spanish option as shown below.



Step 5. Next, touch the Save Icon on the right to confirm this selection.



Step 6. ... and now (as an example), the spaTouch screen will be reset to Spanish.



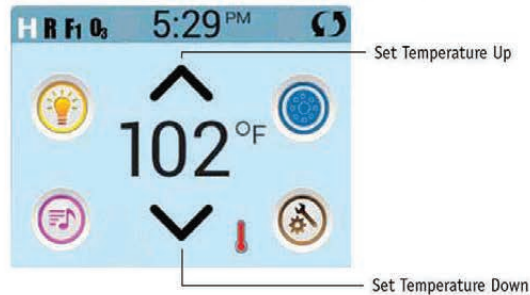
Set Temperature

Press Up or Down once to display the Set Temperature (indicated by a flashing °F or °C, plus a change in color of the temperature). Press Up or Down again to modify the Set Temperature. The Set Temperature changes immediately.

If you need to switch between High Temperature Range and Low Temperature Range you need to go to the Settings Screen.

Press-and-Hold

If Up or Down is pressed and held, the temperature will continue to change until you stop pressing, or until the Temperature Range limits are reached.

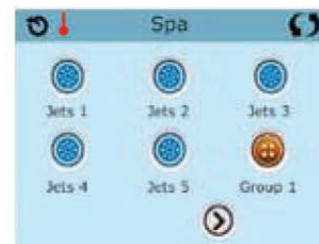


All Equipment Access

The Spa Screen shows all available equipment* to control. The display shows icons that are related to the equipment installed on a particular spa model, so this screen may change depending on the installation.

The icon buttons are used to select and control individual devices.

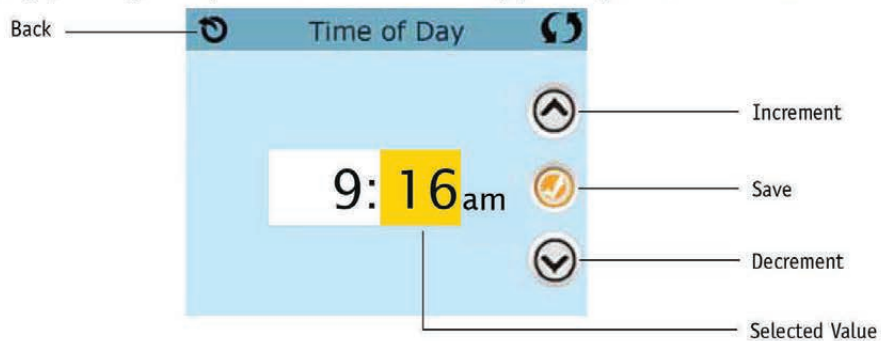
Some devices, like pumps, may have more than one ON state, so the icon will change to reflect the state of the equipment. Below are some examples of 2-speed Pump indicators.



If the Spa has a Circ Pump, a Circ Pump Icon will appear to indicate its activity, but outside of Priming Mode, the Circ Pump cannot be controlled directly.

Values Increment/Decrement

If an Up or Down button is shown and pressed when on an editing page, and a value has been selected (highlighted), the value can be incremented by pressing the up arrow or decremented by pressing the down arrow.



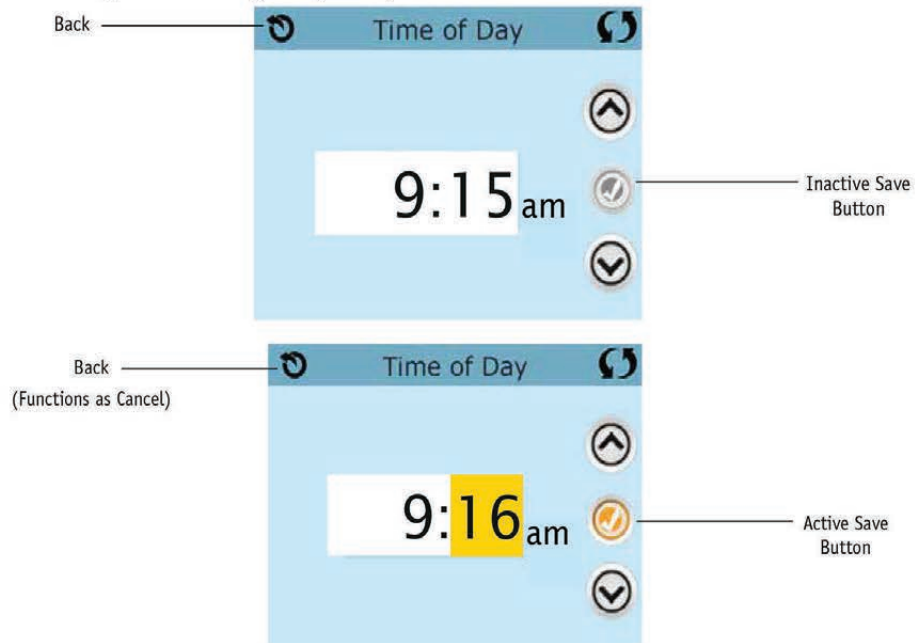
Invert

Will appear on upper right on all screens.



Exiting Screens

The Back button is on every screen except the Main Screen, the Priming Mode Screen and a Message Display Screen. When you see only this button, or this button plus an Inactive Save Button, it means Back or Exit. It appears on editing screens before you have changed any value, as well as on all other screens.



When you see both the Back button and an Active Save button, the Save button will Save, while the Back button will Cancel. If the screen times out due to no activity it will act like Cancel.

Page Right/Left

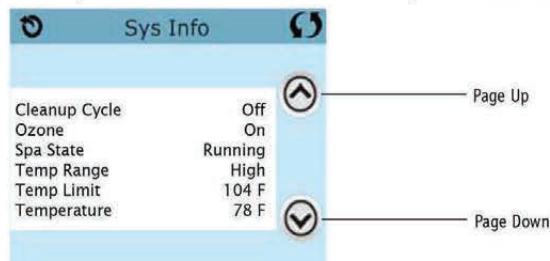
If there is a right arrow at the bottom of the screen, it takes you to the next page.

If there is a left arrow at the bottom of the screen, it takes you to the previous page.



Page Up/Down

If an Up or Down button is shown and pressed when on a page with a text list, the list can be scrolled a page at a time.




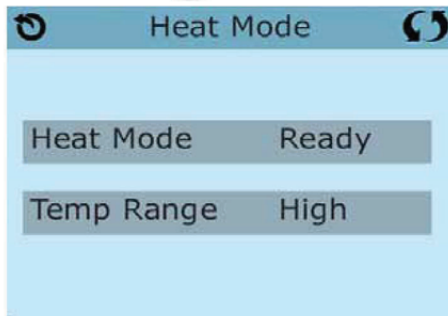
Programming, Etc.

The Settings Screen is where all programming and other spa behaviors are controlled.

Each icon on the Settings screen takes you to a different screen, where one or more setting may be viewed and/or edited.



The Heat Icon  takes you to a screen where you control the Heat Mode and the Temperature Range.



Dual Temperature Ranges (High vs. Low)

This system incorporates two temperature range settings with independent set temperatures. The specific range can be selected on the Settings screen and is visible on the Main Screen in the upper left corner of the display.

These ranges can be used for various reasons, with a common use being a “ready to use” setting vs. a “vacation” setting. Each range maintains its own set temperature as programmed by the user. This way, when a range is chosen, the spa will heat to the set temperature associated with that range.

High Range can be set between 80°F and 104°F.


More specific Temp Ranges may be determined by the Manufacturer.

Low Range can be set between 50°F and 99°F.

Freeze Protection is active in either range.

Be sure to set the Time-of-Day

Setting the time-of-day is important for determining filtration times and other background features.

The Heat Icon  on the Settings Screen takes you to a screen where you control the Time-of-Day.

On the Time-of-Day screen, simply select the Hours and Minutes. Use the Up and Down Buttons to make changes, then Save.



If no time-of-day is set in the memory an Information Screen will appear. If you exit it and Information Icon will appear at the bottom of the Main Screen, until the time-of-day has been set.




Note:

This only applies to some systems:
If power is interrupted to the system,
Time-of-Day will be maintained for several days.

Main Filtration

Using the same adjustment as Setting the Time, Filter Cycles are set using a start time and a duration. Each setting can be adjusted in 15-minute increments. The panel calculates the end time and displays it automatically.

The Filter Icon  on the Settings Screen takes you to a screen where you control the Filter Cycles.



Filter Cycle 2 - Optional Filtration

Filter Cycle 2 is OFF by default.

Viewing Filter 1 while Filter 2 is OFF:



Viewing Filter 1 while Filter 2 is ON:




Press "1" to view Filter 1. Press "2" once to view Filter 2. Press "2" again to turn Filter 2 ON or OFF.

When Filter Cycle 2 is ON, it can be adjusted in the same manner as Filter Cycle 1.

It is possible to overlap Filter Cycle 1 and Filter Cycle 2, which will shorten overall filtration by the overlap amount.

Light Cycle Option

If Light Cycle does not appear on the Settings Screen, the Light Timer feature is not enabled by the manufacturer.

The Light Cycle Icon  on the Settings Screen takes you to a screen where you control the Light Cycle.

When available, the Light Timer is ("Disabled") by default. Press "Disabled" to change it to "Enabled" (ON).

The settings can be edited the same way that Filter Cycles are edited.



Restricting Operation



Panel Locked and Settings Unlocked



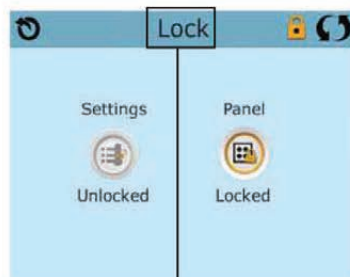
The control can be restricted to prevent unwanted use or temperature adjustments.

Locking the Panel prevents the controller from being used, but all automatic functions are still active.

Locking the Settings allows Jets and other features to be used, but the Set Temperature and other programmed settings cannot be adjusted.

Settings Lock allows access to a reduced selection of menu items. These include Filter Cycles, Invert, Information and Fault Log. They can be seen, but not changed or edited.

Locking and Unlocking



Press here for 5 seconds to lock or unlock.


The same steps are used to Lock and Unlock.

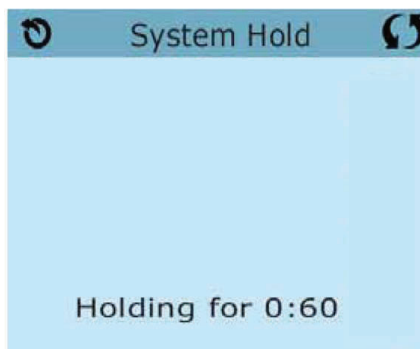
To lock either Settings or Panel first select Settings (if it says "Unlocked") or Panel (if it says "Unlocked"), then press the word "Lock" for at least 5 seconds.

To unlock either Settings or Panel first select Settings (if it says "Locked") or Panel (if it says "Locked"), then press the word "Lock" for at least 5 seconds.

Hold - M037

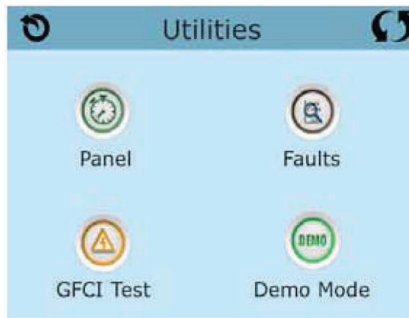
Hold Mode is used to disable the pumps during service functions like cleaning or replacing the filter. Hold Mode will last for 1 hour unless the mode is exited manually. If spa service will require more than an hour, it may be best to simply shut down power to the spa.

The Hold Icon  on the Settings Screen places the spa in Hold Mode and displays the System Hold screen. Touch Back to exit Hold Mode.




Utilities

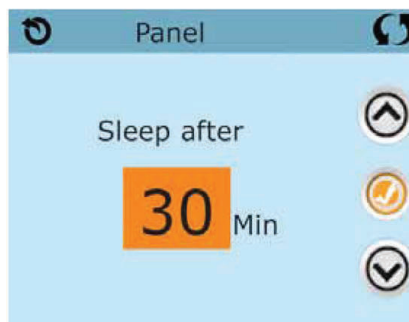
The Utilities Icon  on the Settings Screen takes you to the Utilities Screen.



The Utilities Screen contains the following:

Panel

Touching the Panel Icon  on the Utilities Screen takes you to the Panel Screen, where you can set how long it takes the panel to go to sleep after the last activity. The Sleep Timer can be set from 1 minute to 60 minutes. The default is 30 minutes.



Demo Mode

Demo Mode is not always enabled, so it may not appear. This is designed to operate several devices in a sequence in order to demonstrate the various features of a particular hot tub.

Fault Log

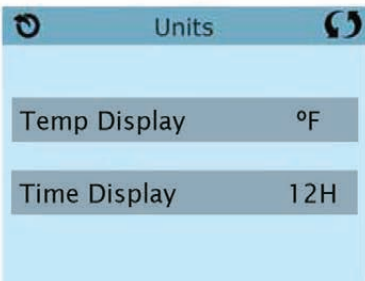
The Fault Log is a record of the last 24 faults that can be reviewed by a service tech.

Use the Up and Down buttons to view each of the Faults.

When Priming Mode shows in the Fault Log, it is not a fault. Rather, it is used to keep track of spa restarts.

Units Screen

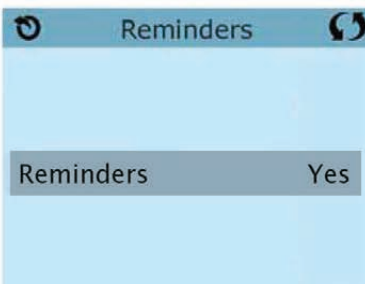
The Units Icon  on the Settings Screen takes you to the Units Screen.



Press "Temp Display" to change the temperature between Fahrenheit and Celsius.
Press "Time Display" to change the clock between 12 hr and 24 hr display.

Reminders

The Reminder Icon  on the Settings Screen takes you to the Reminders screen.



Press "Reminders" to turn the reminder messages (like "Clean Filter") ON (Yes) or OFF (No).



Cleanup Cycle

Cleanup Cycle Duration is not always enabled, so it may not appear. When it is available, set the length of time Pump 1 will run after each use. 0-4 hours are available. Settings it to 0.0 Hr keeps the Cleanup Cycles from running.

The Cleanup Icon  on the Settings Screen takes you to the Cleanup Cycle screen.



Language

The Language Icon  on the Settings Screen takes you to the Language screen.

Change the language displayed on the panel.



Most messages and alerts will appear at the bottom of the normally used screens. Several alerts and messages may be displayed in a sequence.

___ °F ___ °C

Water Temperature is Unknown

After the pump has been running for 1 minute, the temperature will be displayed.



Possible freezing condition

A potential freeze condition has been detected, or the Aux Freeze Switch has closed. All water devices are activated.

In some cases, pumps may turn on and off and the heater may operate during Freeze Protection.

This is an operational message, not an error indication.

The water is too hot – M029

The system has detected a spa water temp of 110°F (43.3°C) or more, and spa functions are disabled. System will auto reset when the spa water temp is below 108°F (42.2°C). Check for extended pump operation or high ambient temp.

Heat Mode – Ready vs. Rest

In order for the spa to heat, a pump needs to circulate water through the heater. The pump that performs this function is known as the “heater pump.”

The heater pump can be either a 2-speed pump (Pump 1) or a circulation pump.

If the heater pump is a 2-Speed Pump 1, Ready Mode will circulate water every 1/2 hour, using Pump 1 Low, in order to maintain a constant water temperature, heat as needed, and refresh the temperature display. This is known as “polling.”

Rest Mode will only allow heating during programmed filter cycles. Since polling does not occur, the temperature display may not show a current temperature until the heater pump has been running for a minute or two.

When the heater pump has come on automatically (for example for heating) you can switch between low speed and high speed but you cannot turn the heater pump off.

Circulation Mode (See Page 13, under Pumps, for other circulation modes)

If the spa is configured for 24HR circulation, the heater pump generally runs continuously. Since the heater pump is always running, the spa will maintain set temperature and heat as needed in Ready Mode, without polling.

In Rest Mode, the spa will only heat to set temperature during programmed filter times, even though the water is being filtered constantly when in 24HR circulation mode.

Ready-in-Rest Mode

Ready in Rest Mode appears in the display if the spa is in Rest Mode and the Jets 1 Button is pressed. When the heater pump has come on automatically (for example for heating) you can switch between low speed and high speed but you cannot turn the heater pump off. After 1 hour, the System will revert to Rest Mode. This mode can also be reset by selecting the Heat Mode line on the Screen shown here.

Priming Mode – M019

After the initial start-up sequence, the control will enter Priming Mode and display a Priming Mode screen. Only pump icons appear on the priming mode screen. During the priming mode, the heater is disabled to allow the priming process to be completed without the possibility of energizing the heater under low-flow or no-flow conditions. Nothing comes on automatically, but the pump(s) can be energized by selecting the “Jet” buttons. If the spa has a Circ Pump, it can be turned on and off by pressing the “Circ” button during Priming Mode.

Exiting Priming Mode

The system will automatically enter the normal heating and filtering at the end of the priming mode, which lasts 4-5 minutes.

— — — — °F — — — — °C

Filtration and Ozone

On non-circ systems, Pump 1 low and the ozone generator will run during filtration. On circ systems, the ozone will generally run with the circ pump, but can be limited to filtration cycles. (On some circs systems, Pump 1 low will run along with the circ Pump during filtration.)

The system is factory-programmed with one filter cycle that will run in the evening (assuming the time-of-day is properly set) when energy rates are often lower. The filter time and duration are programmable.

A second filter cycle can be enabled as needed.

At the start of each filter cycle, the water devices like blower, mister device (if these exist) and other pumps will run briefly to purge the plumbing to maintain good water quality.

Freeze Protection

If the temperature sensors within the heater detect a low enough temperature, then the water devices automatically activate to provide freeze protection. The water devices will run either continuously or periodically depending on conditions.

In colder climates, an optional freeze sensor may be added to protect against freeze conditions that may not be sensed by the standard sensors. Auxiliary freeze sensor protection acts similarly except with the temperature thresholds determined by the switch. See your dealer for details.

Clean-up Cycle (optional)

When a pump or blower is turned on by a button press, a clean-up cycle begins 30 minutes after the pump or blower is turned off or times out. The pump and the ozone generator will run for 30 minutes or more, depending on the system.

On some systems, you can change this setting.

Heater-Related Messages

The water flow is low – M016

There may not be enough water flow through the heater to carry the heat away from the heating element. Heater start up will begin again after about 1 min. See “Flow Related Checks” below.

The water flow has failed* – M017

There is not enough water flow through the heater to carry the heat away from the heating element and the heater has been disabled. See “Flow Related Checks” below. After the problem has been resolved, reset the message*.

The heater may be dry* – M028

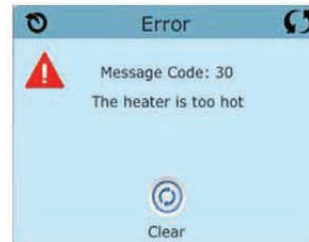
Possible dry heater, or not enough water in the heater to start it. The spa is shut down for 15 min. Reset this message* to reset the heater start-up. See “Flow Related Checks” below.

The heater is dry* – M027

There is not enough water in the heater to start it. The spa is shut down. After the problem has been resolved, you must reset the message* to restart heater start up. See “Flow Related Checks” below.

The heater is too hot* – M030

One of the water temp sensors has detected 118°F (47.8°C) in the heater and the spa is shut down. You must reset the message* when water is below 108°F (42.2°C). See “Flow Related Checks” below.



Flow-Related Checks

Check for low water level, suction flow restrictions, closed valves, trapped air, too many closed jets and pump prime.

On some systems, even when spa is shut down by an error condition, some equipment may occasionally turn on to continue monitoring temperature or if freeze protection is needed.

* **Some messages can be reset from the panel.** Messages that can be reset will appear with a Clear Icon at the bottom of the Message Screen. Press the Clear Icon text to reset the message.



Sensor-Related Messages

Sensors are out of sync – M015**

The temperature sensors MAY be out of sync by 3°F. Call for Service if this message does not disappear within a few minutes.

Sensors are out of sync -- Call for service* – M026**

The temperature sensors ARE out of sync. The fault above has been established for at least 1 hour. Call for Service.



Sensor A Fault, Sensor B Fault – Sensor A: M031**, Sensor B: M032**

A temperature sensor or sensor circuit has failed. Call for Service.

Miscellaneous Messages

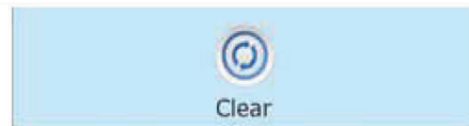
Communications error

The control panel is not receiving communication from the System. Call for Service.

Test software installed

The Control System is operating with test software. Call for Service.

* *Some messages can be reset from the panel.* Messages that can be reset will appear with a Clear Icon at the bottom of the Message Screen. Press the Clear Icon text to reset the message.



**MOXX is a Message Code. Codes like this will be seen in the Fault Log

System-Related Messages

Program memory failure* – M022**

At Power-Up, the system has failed the Program Checksum Test. This indicates a problem with the firmware (operation program) and requires a service call.

The settings have been reset (Persistent Memory Error)* – M021**

Contact your dealer or service organization if this message appears on more than one power-up.

The clock has failed* – M020**

Contact your dealer or service organization.

Configuration error (Spa will not Start Up)

Contact your dealer or service organization.

The GFCI test failed (System Could Not Test the GFCI) – M036**

(North America Only) May indicate an unsafe installation. Contact your dealer or service organization.

A pump may be stuck on – M034**

Water may be overheated. POWER DOWN THE SPA. DO NOT ENTER THE WATER. Contact your dealer or service organization.

Hot fault – M035**

A Pump Appears to have been Stuck ON when spa was last powered
POWER DOWN THE SPA. DO NOT ENTER THE WATER. Contact your dealer or service organization.

* ***Some messages can be reset from the panel.*** Messages that can be reset will appear with a Clear Icon at the bottom of the Message Screen. Press the Clear Icon text to reset the message.



**MOXX is a Message Code. Codes like this will be seen in the Fault Log



Jets

Almost all of the jets in your spa are adjustable. Rotating the jet face clockwise will increase water pressure, and counter clockwise to reduce pressure on that specific jet. Neck jets are the opposite, with clockwise movement to decrease force, counter clockwise to increase.



3.5 LED Lighting

Press the LIGHT button on the topside control panel to turn the spa light on. If your spa has perimeter LED lights, they will also light on. If your spa has perimeter LED lights, they will also light up at the same time as the spa light.

The LEDs operate in three modes:

1. Cycle: When you continually press the LIGHT button, the LEDs will cycle through the three main LED colors (Red, Green, and Blue) or combinations of the three that produce the following colors: light green, purple, light blue, yellow, etc.

Each time you press the button, you immediately advance to the next color in sequence or eventually a different light pattern.

2. Flashing: Once you have cycled through all of the colors, another press of the LIGHT button will produce a flashing pattern.

- 3. Fading cycle:** The next phase of operation when you push the LIGHT button is a slow and/or fast fade random transition from one color to the next.
- If a spa is equipped with more than 100 points of light the slow fading cycle will flicker during a color change.
 - Every air valve is equipped with 2 LED points.
 - Perimeter LEDs take 9 points of light.
 - The waterfall takes 4 points of light.

Spas with exterior corner LED lighting generally work in the same mode as described above. The variations in color and patterns provide you with multiple options to suit almost any lighting preference.

3.6 Diverter Knobs

Diverter knobs are 1" and 2" knobs located around the top of your spa. They allow you to divert water through jets from one side of the spa to the other, or in most cases from floor jets to all jets. This is accomplished by rotating the diverter knob to the left (counter-clockwise), decreasing the amount of water flow through a sections of jets. To increase the amount of water flow through the other section of jets, rotate the handle to the right (clockwise).



3.8 Air Venturis

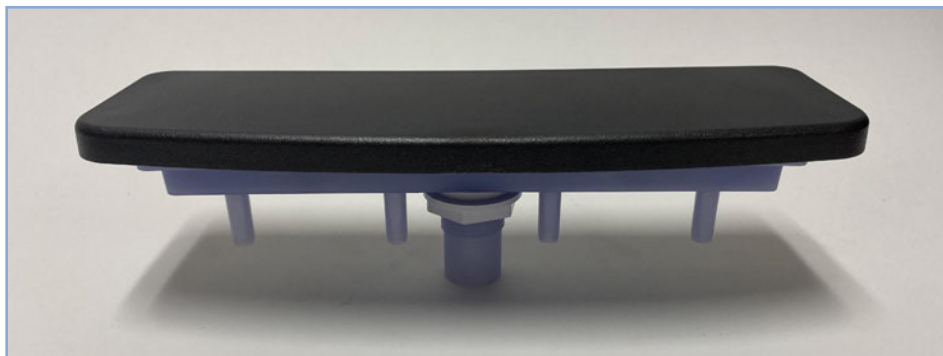
Air venturis are the 1” knobs located around the top of your spa. Each one will let you add a mixture of air with the jet pressure. This is accomplished by rotating the air venturi knob to the left (counter-clockwise) to increase the amount of airflow through the jets. To decrease the amount of airflow through the jets, rotate the handle to the right (clockwise).



3.9 Waterfalls

Optional Feature

Some spa series include optional waterfalls. When the booster pump is on, rotate the dial on top (for the cascade waterfall).



Cool Off Seat

The cool off seat is designed in some Cal Spa models. The seat is designed to help cool down spa users that are using their spa in higher therapeutic water temperatures. This helps in avoiding the negative effects of hyperthermia (Overheating of the body).

The seat is positioned higher than all other seats in the spa, with water jets pointed towards the person sitting in the seat. The higher position helps cool down any person using the cool off seat by positioning the core of the body away from the hot water.



4. Water Clarity

This section is intended for new spa owners with no experience with water chemistry. Everyone's knowledge with maintaining water quality is different, but there are some general concepts you need to know.

Water maintenance is not difficult, however, it does require regular attention. The most important thing to understand about taking care of your spa water is that preventative action is much easier than correcting water quality issues.

Before you begin, we recommend you become familiar with some water quality terms and their definitions (see the section below).

Whether you're filling your spa for the first time (see page 13) or refilling it after draining it for regular maintenance

1. Chemical Balance

learn how to balance your spa water.

You will need to test and adjust the chemical balance of your spa water. Although this is not difficult, it needs to be done regularly.

You need to test the level of calcium hardness, total alkalinity, and pH.

Spa owners with a bromine generator also need to check total dissolved solids and phosphates.

3. Filtration

learn how to balance your spa water.

Cleaning your filter regularly is the easiest and most effective single thing you can do to keep your water clear.

A clogged or dirty filter will cause the heater and pump to work harder than they need to, possibly causing them to fail.

The spa's heating system will only function with the proper amount of water flow through the system.

2. Sanitation and Shock

learn how to use sanitizer and shock.

Sanitizers kill bacteria and viruses and keep the water clean. A low sanitizer level will allow microbes to grow quickly in the spa water. We recommend using either chlorine or bromine as your sanitizer.

You also need to add shock to the water to stimulate the chemical sanitizer. How much you use and how often depend on frequency and intensity of use.

4. Regularity

learn how to use sanitizer and shock.

Clear water requires regular maintenance. Establish a routine based on a regular schedule for your spa water maintenance.

Maintaining your water quality helps the enjoyment of your spa and extends your spa's life by preventing damage from neglect and chemical abuse.

4.1 Water Quality Terms and Definitions

The following chemical terms are used in this section. Understanding their meaning will help you to better understand clear water maintenance. Words in bold type are defined in this table.

Bromine / Bromamines	<p><u>Bromine</u> is an efficient sanitizer chemical for spas. When used as a sanitizer, bromine forms compounds called bromamines. Bromine can be added to the spa or automatically generated.</p> <p><u>Bromamines</u> are compounds formed when bromine combines with nitrogen from body oils, perspiration, etc. Unlike chloramines, bromamines have no pungent odor and are effective sanitizers.</p>
Chlorine / Chloramines	<p><u>Chlorine</u> is an efficient sanitizing chemical for spas. We recommend using sodium dichlor-type granulated chlorine because it is totally soluble and nearly pH neutral. When used as a sanitizer, chlorine forms compounds called chloramines.</p> <p><u>Chloramines</u> are compounds formed when chlorine combines with nitrogen from body oils, perspiration, etc. Chloramines can cause eye irritation as well as having a strong odor. Unlike bromamines, chloramines are weaker, slower sanitizers. To remove chloramines, see the description of shock below.</p>
Calcium Hardness	Abbreviated as CH. Calcium hardness is a measure of the total amount of dissolved calcium in the water. Calcium helps control the corrosive nature of the spa's water and is why soft water is not recommended. The low CH level can cause corrosion to the equipment and can cause staining of the spa shell.
Corrosion	The gradual wearing away of metal spa parts, usually caused by chemical action. Generally, corrosion is caused by low pH or by water with levels of TA , CH , pH or sanitizer which are outside the recommended ranges.
Dichlor	Also called sodium dichlor. It is a type of chlorine and is frequently used when shocking the water . An effective chlorine -based powdered oxidizer and sanitizer . Dichlor works by oxidizing waste product in the water such as bromamines and chloramines and causing them to burn off.
Monopersulphate or MPS	Frequently used when shocking the water . An effective non-chlorine-based powdered oxidizer that works well with both chlorine and bromine . It works by oxidizing waste product in the water such as bromamines and chloramines and causing them to burn off.
Oxidizer	Shocking the water with an oxidizing chemical prevents the buildup of contaminants, maximizes sanitizer efficiency, minimizes combined chlorine and improves water clarity.
Ozone	Ozone is a powerful oxidizing agent which is produced in nature and artificially. Ozone forms no by-products of chloramines (ozone actually oxidizes chloramines) and will not alter the water's pH .
pH	The pH level is the measure of the balance between acidity and alkalinity. Low pH causes the water to be too acid, which will cause corrosion , whereas high pH causes the water to be too alkaline, which will cause scaling . See page for testing for and balancing pH.
ppm	The abbreviation of "parts per million", the standard measurement of chemical concentration in water. Identical to mg/l (milligrams per liter).
Sanitizer	Sanitizer is a chemical added to the water to kill bacteria and viruses and keep the water clean. The two sanitizers we recommend are chlorine and bromine

Scale

Rough calcium-bearing deposits that can coat spa surfaces, heaters, plumbing lines and clog filters. Generally, scaling is caused by mineral content combined with high **pH**. Additionally, scale forms more readily at higher water temperatures.

Shock

Also called shocking the water, shock treatment, or superchlorination. Shocking the water is adding significant doses of **dichlor** or **MPS** to **oxidize** non-filterable organic waste and to remove **chloramines** and **bromamines**. Shock treatment breaks down organic waste contaminants which cause odor and cloudy water.

Total Alkalinity

Abbreviated as TA. Total alkalinity is the measure of the total levels of carbonates, bicarbonates, hydroxides, and other alkaline substances in the water. TA is important for **pH** control. If the TA is too low, the **pH** will fluctuate out of control, and if it is too high, the **pH** becomes difficult to stabilize.

Trichlor

Used as a pool **sanitizer**. NEVER use trichlor in a spa. Trichlor is extremely acidic and will lower the **pH**, causing corrosion to equipment. Using trichlor will void your warranty.

4.2 Water Testing Methods

There are two testing methods to choose from:

Test strips are a convenient testing method commonly used by spa owners.



The reagent test kit is a method which provides a high level of accuracy but is more expensive and more difficult to use.



4.3 Adding Chemicals to the Spa Water

IMPORTANT: All spa water chemicals, including MPS (shock), chlorine, granulated pH increaser or decreaser, granulated total alkalinity increaser, calcium hardness increaser, liquid stain and scale inhibitor, and liquid de-foamer must always be added directly into or in front of the filter compartment while a jet pump is running, and it must run for a minimum of ten minutes.

1. Fold back the cover.
2. Press the Jets or Jets 1 button.
3. Carefully measure the recommended amount of chemical and slowly pour it into the filter area. Use care not to splash chemicals on your hands, in your eyes, on the spa surface, or on the siding.
4. Close the spa cover.

Warning: High sanitizer levels can cause discomfort to the user's eyes, lungs and skin. Always allow the sanitizer level to fall to the recommended range before using the spa.

IMPORTANT NOTE REGARDING SHOCK TREATMENT: After administering shock to your spa, leave the cover open for a minimum of 20 minutes to allow the oxidizer gas to vent. A high concentration of trapped oxidizer gas which may exist as a result of the shock treatment (not daily sanitation) may eventually cause discoloration or vinyl degradation to the bottom of the cover. This type of damage is considered chemical abuse and is not covered under the terms of the limited warranty.

4.4 Balancing the Water Chemistry Levels

Maintaining spa water chemistry can be tricky, especially since there are many methods of keeping your water clear and clean.

NOTE: We do not recommend any brand of chemical.

See a spa dealer for guidance and recommendations on spa chemicals and supplies. Various chemicals often sold under brand names, but a spa dealer can advise you on generic chemicals that are often much less costly than proprietary brands.

Balancing the Total Alkalinity (TA) >>

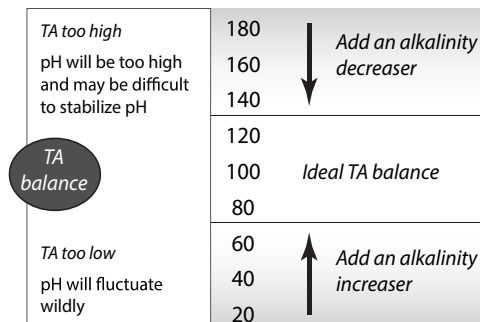
Total Alkalinity is a measure of the total levels of carbonates, bicarbonates, hydroxides, and other alkaline substances in the water. TA is referred to as the water’s “pH buffer”. In other words, it’s a measure of the ability of the water to resist changes in pH level.

If the TA is too low, the pH level will fluctuate widely from high to low. Fluctuations in pH can cause corrosion or scaling of the spa components. Low TA can be corrected by adding sodium carbonate (pH/Alkalinity Up).

If the Total Alkalinity is too high, the pH level will tend to be high and may be difficult to bring down. It can be lowered by using sodium bi-sulfate (pH/Alkalinity Down).

Once the TA is balanced, it normally remains stable, although the addition of more water with a high or low alkalinity will raise or lower the TA reading of the water.

When the Total Alkalinity is within the recommended range, proceed to the next step.



Balancing the Calcium Hardness (CH) >>

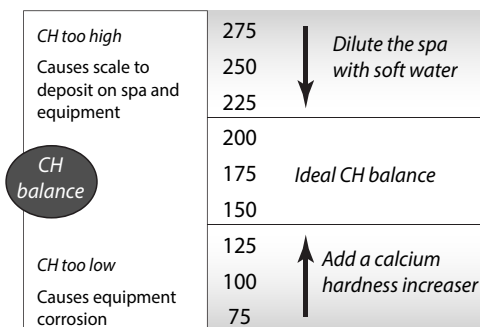
Calcium Hardness is a measure of the total amount of dissolved calcium in the water. Calcium helps control the corrosive nature of the spa’s water. That’s why calcium-low water (commonly known as “soft” water) is not recommended. It is very corrosive to the equipment, and can cause staining of the spa shell.

If the CH is too high (commonly known as “hard water”), formation of scale on the spa’s shell surface and equipment can result. You can use a generic calcium remover to remove hardness from water. CH can also be decreased by dilution – a mixture of 75% hard and 25% soft water will usually yield a reading within the correct range. If soft water is not available or practical for you, a stain and scale inhibitor should be added to the spa water, according to label instructions.

If the CH is too low add CH Increaser.

Once the CH is balanced, it normally remains stable, although the addition of more water with a high or low calcium content will raise or lower the CH reading of the water.

When the CH is within the recommended range, proceed to the next step.



Balancing the pH

The pH level is the measure of acidity and alkalinity. Values above 7.8 are alkaline; those below 7.2 are acidic. Maintaining the proper pH level is extremely important for optimizing the effectiveness of the sanitizer, maintaining water that is comfortable for the user, and preventing equipment deterioration.

If the spa water's pH level is too low, the following may result:

- The sanitizer will dissipate rapidly.
- The water may become irritating to spa users.
- The spa's equipment may corrode.

If the pH is too low, it can be increased by adding sodium hydrogen carbonate (pH/Alkalinity Up) to the spa water.

If the pH level is too high, the following may result:

- The sanitizer is less effective.
- Scale will form on the spa shell surface and the equipment.
- The water may become cloudy.
- The filter cartridge pores may become obstructed.

If the pH is too high, it can be decreased by adding sodium bi-sulfate (pH/Alkalinity Down) to the spa water.

NOTE: After adding sodium hydrogen carbonate or sodium bi-sulfate, wait two hours before testing the water for pH. Measurements taken too soon may not be accurate.

It is important to check the pH on a regular (weekly) basis. The pH will be affected by the bather load, the addition of new water, the addition of various chemicals, and the type of sanitizer used.

When the pH is within the recommended range, proceed to sanitation.

pH too high Too alkaline, causes scaling	8.2	↓ Add a pH decreaser
	8.0	
	7.8	
pH balance	7.6	Ideal pH balance
	7.4	
	7.2	
	7.0	
pH too low Too acidic, causes corrosion	6.8	↑ Add a pH increaser
	6.8	
	6.6	

4.5 Sanitation and Shock

Sanitizers kill bacteria and other organic waste by breaking them down to non-harmful levels which are filtered out. Before you fill your spa, you need to decide which chemical sanitizer you wish to use. Consult your Cal Spas dealer for the right decision with regards to your lifestyle and spa usage.

We recommend either **bromine** or **chlorine** as your sanitizer. Both work well when maintained regularly

NOTE: DO NOT use Trichlor. Trichlor is very acidic and the hot temperature of the spa causes it to dissolve too quickly. It will cause damage to your spa and will void your warranty.

Whichever plan you decide on, follow it completely and don't take shortcuts. It will provide you with clean, safe, clear spa water with a minimum of effort. Spa owners with an ozonator still need to use a chemical sanitizer. See page 38 for a description of how the ozonator works.

Whenever you test your chemical levels, your test strip will likely have a test for chlorine or bromine. Make sure your sanitizer falls within the range shown on the next page.

Testing For:	Ideal Range (ppm)	
	Minimum	Maximum
Chlorine Level		
Without ozonator	3.0	5.0
With ozonator	2.0	4.0
Bromine Level		
Without ozonator	6.7	11.0
With ozonator	5.7	10.0

Starting and Maintaining Sanitizer levels >

Sanitizing your spa with chlorine or bromine is very similar. Each sanitizer has its advantages and disadvantages.

Bromine: Whereas chlorine can sometimes cause offensive odors and skin irritation, bromine is less likely to do so. Additionally, unlike chlorine, when bromine combines with bather waste and other contaminants in the water, it remains a very effective sanitizer. Bromine is also far less pH-dependent than chlorine. **Always remember that bromine by itself is not a sanitizer, and it needs to be activated by shock in order to be effective.**

Chlorine: The most commonly recognized sanitizer is chlorine. However, the effectiveness of chlorine depends heavily on the pH level of the spa water. In order to get the most effective and economical benefit of chlorine, you must maintain a consistent pH level of between 7.2 to 7.6. A disadvantage of using chlorine is that when chlorine combines with bather waste and other contaminants in the water, not only does it lose its sanitizing ability, it can cause odors and irritate eyes and skin.

After you choose a sanitizer, you will need to establish a baseline and maintain it regularly.

Starting with fresh water:

1. Establish a baseline by adding either granulated chlorine or bromine.
 - Use half an ounce of chlorine for every 500 gallons of water.
 - Use half an ounce of bromine for every 100 gallons of water.
2. Run the jets for 10 minutes.
3. Test the water. Make sure the pH, TA, and CH levels all fall within the ranges shown on the previous page. Make adjustments where they are needed.
4. At this point, if you use bromine, it is not yet activated and it will not sanitize the water. You need to shock-oxidize the spa water. Depending on the size of your spa, add one to two ounces of shock. You can use any kind of shock you want.
5. Test the water again. When the water is balanced, your spa is ready to use.

Note: If you choose to use bromine, we do not recommend using a floater. You have more control over the bromine level by adding bromine as needed.



Shocking the Water

In addition to using a chemical sanitizer, you will periodically need to shock the water. Shocking the water helps remove burned-out chemicals, bacteria, and other organic material from your spa's water and improves your sanitizer's effectiveness.

Do not use chlorinating shock, which will damage your spa's jets and pump seals. Only use an oxidizer shock. It can be used with either chlorine or bromine sanitizers.

Add two ounces of oxidizer shock per 500 gallons once a week, after heavy bather loads, or if water has a strong odor.

Spa must be running with all of the jets on high for 30 minutes with the cover open. If necessary, repeat oxidizer shock in 30 minute intervals.

4.6 Filtration

The filter is the part of your spa that removes the debris from the water and needs to be cleaned on a regular basis to maximize your spa's filtering performance and heating efficiency.

It is extremely important that you never run the spa without a filter. There is a possibility that debris may be sucked into the plumbing through the filter well.

Cleaning the Filter

In addition to spraying off the filter weekly to remove surface debris, your filter should be deep cleaned periodically to dissolve scale and particles that get lodged deep within the filter fibers and impede the filtration process. Even if the filter looks clean, scale and particles 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.

We recommend you clean your filter at least once a month, possibly every two weeks depending on how frequently you use your spa, and replace it once a year or as necessary.

Cleaning the filter

1. Remove the filter by unscrewing it and pulling it up and out.
2. Place the dirty filter into a bucket of water deep enough to cover the filter. Add 8oz. of liquid filter cleaner to the bucket of water.

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

3. Soak the filter for a minimum of 24 hours.
4. Spray the filter with a water hose. Spray each pleat carefully.
5. Reinstall the filter. Do not over-tighten.

4.7 Balancing the Water Chemistry Levels

Prior to each use	Test the spa water. Adjust chemical levels as necessary. Shock the water by adding ½ teaspoon of sodium dichlor per 250 gallons or 1 teaspoon of MPS per 250 gallons.
After each use	Add an ounce of oxidizer after heavy bather loads
Once a week	Check the filter well and inside the filter pipe for leaves and foreign matter. Test the spa water. Adjust chemical levels as necessary. Shock the water by adding ½ teaspoon of sodium per 250 gallons or 3 teaspoons of MPS per 250 gallons. If your water source is high in calcium, add stain and scale preventer.
Every two to four weeks	Deep clean your spa's filter. How often you clean your filter depends on how much you use your spa. There is no harm in frequently cleaning your filter and will only help your spa's efficiency.
Every two to four months	Change the spa water. How often you change the water depends on how much you use the spa. When you change the water, you will need to: <ul style="list-style-type: none"> • Clean and polish the acrylic surface • Clean and treat the spa cover and pillows • Deep clean the filter • Refill your spa
Each time you refill the spa	Follow the section "Filling and Powering Up Your Portable Spa"

4.8 Generic Names for Chemicals

Water Chemistry		
Common name	Usual chemical name	Common brand names
pH Up	sodium hydroxide	pH Increaser, pH Up, pH Plus, pH Booster
pH Down	sodium bisulfate sodium bicarbonate (baking soda) sodium carbonate	pH Decreaser, pH Down, pH Minus, pH Subtractor, Dry Acid
Alkalinity increaser	sodium carbonate sodium bicarbonate (baking soda)	Alkalinity Increaser, Alkaline Up
Alkalinity decreaser	sodium bisulfate	Alkalinity Decreaser, Alkaline Down
Calcium increaser	calcium chloride	Calcium Increaser, Calcium Up, Calcium Plus, Hardness Increaser
Calcium decreaser	N/A To decrease calcium hardness, drain several gallons of water from the spa and refill using a mixture of 75% hard water and 25% soft water, or use a stain and scale inhibitor.	

Sanitizers

Common name	Usual chemical name	Common brand names
Chlorine	sodium dichlor	Both chlorine and bromine are available under numerous brand names
Bromine	sodium bromide	

Shock

Common name	Usual chemical name	Common brand names
MPS	monopersulphate	MPS Shock, Oxy-Spa, SeaKlear
Dichlor	sodium dichlor	Dichlor Shock

Note: Dichlor (chlorine) is both a sanitizer and a shock. Monopersulphate (MPS), when used as a shock, can be purchased alone as non-chlorinated shock or combined with dichlor, which makes it significantly more effective than MPS alone.

Other chemical additives

Common name	Usual chemical name	Common brand names
Stain and scale inhibitor	These are usually proprietary chemical formulations and cannot be purchased as a single generic chemical.	Metal Stain Gone, Scale Inhibitor, Stain and Scale Preventer, Stain and Scale Defense
Foam inhibitor		Foam Gone, Foam Down, Defoamer
Clarifier		Water Brite, Spa Bright, Water Clarifier, Clear Water, Natural Clarifier, Brite & Clear

Do NOT use these in your spa:

- Sodium hypochlorite (household bleach)
- Trichlor

4.9 Common Water Chemistry Questions

Question: Why is the use a floater not recommended to sanitize my spa water?

Answer: We do not recommend the use of a floater for three reasons:

- The floater is unable to control the rate at which the sanitizer is dissolved into the water. When a floater is first placed in a spa, the sanitizer level can be extremely high. High sanitizer levels can chemically burn or discolor the spa's shell or the underside of the cover. Then, after a period of time, the sanitizer level dispensed by the floater will fall to near zero. A low sanitizer level will allow viruses, bacteria or algae to grow.
- Floaters tend to stay in one area of the spa most of the time, causing this area to be exposed to extreme sanitizer levels.
- The floater may allow pieces of the highly concentrated sanitizer to fall out and settle on the floor or seat of the spa shell. These pieces of sanitizer will chemically burn (blister) the spa shell. Although your spa shell is specifically designed to resist the effects of spa chemicals, no spa surface can withstand this type of highly concentrated chemical. Remember, chemical abuse is specifically not covered under the terms of the warranty.

Question: When I open my spa, I smell chlorine. How do I get rid of this smell?

Answer: There are two types of chlorine in your spa. The first is the Free Available Chlorine, which is the chlorine available to sanitize your spa. This free Available Chlorine does not have an odor. The second is Chloramine, which is residue from chlorine already expended. Chloramines have a strong chlorine odor. The smell from Chloramines can be eliminated by shocking the water. If you smell chlorine in the water, your spa is reminding you to add a shock treatment.

Question: Why can't I fill my spa with soft water?

Answer: Soft water is essentially the same as regular water, except that most or all of the calcium has been replaced by sodium. Soft water may be corrosive to the heater and other components. Replacement of spa components damaged by soft water is extremely expensive.

Question: I am trying to reduce the number of chemicals to which my family is exposed. Do I really need to use so many chemicals and in such large amounts?

Answer: While over-exposure to any chemical can be unhealthy, many low levels of chemicals are effective and beneficial. In the case of spa water, the chemicals we recommend are needed to protect the user from water-borne pathogens (disease-causing microbes) and to prevent corrosion of spa components.

Question: Why isn't water chemistry damage covered by the warranty?

Answer: The chemical levels and water quality of the water in the spa are under your direct control. With proper basic care, the spa will provide many years of hot water relaxation. If you are unsure about any chemical or its usage in the spa, contact your spa dealer.

4.10 Do's and Dont's

- DO add all chemicals slowly into or in front of the filter compartment with the jet pump operating for ten minutes.
 - DO use special care if using baking soda to clean either the interior or exterior plastic surfaces.
 - DO use only a granular form of bromine sanitizer.
 - DON'T use swimming pool (muriatic) acid to lower pH.
 - DON'T splash pH increaser additives on the siding.
 - DON'T use compressed sanitizers.
- The use of bromine sticks or tablets in floaters, which may become trapped in a lounge or cooling seat (or sink to the spa floor), have been shown to cause discoloration of or surface distress to a spa's shell.
- DON'T use a floater type sanitation system as a low or no maintenance solution to your spa maintenance program.
- Floating dispensers can become trapped in one area and cause an over-sanitation (or chemical burn) of that particular area.
- If the dispenser setting is too high, the high concentration can discolor the spa shell and damage the underside of the cover.
- Automatic floating dispensers have a tendency to either over-brominate or under-brominate as the rate of erosion varies greatly. Damage to the spa and cover can occur very quickly.
- DON'T use a sanitizer which is not designed for spas.
 - DON'T use household bleach (liquid sodium hypochlorite).
 - DON'T broadcast or sprinkle the chemicals onto the water surface. This method may cause chemically-induced spa surface blistering (chemical abuse).

4.11 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.

Recommendations are designed for spas with average bather load (3 to 4 people, 15 minutes of usage, three 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 advice of your Cal Spas dealer for additional chemical or system recommendations. Be sure to give them your bather load information.

4.12 Ozonator

The ozone generator releases ozone into the spa water. You will still need to test for chlorine or bromine and occasionally replenish it to return the sanitizer level to the baseline.

For spas without a circulation pump, pump 1 will run at low speed and the ozonator will run during filtration.

The spa’s control system is factory-programmed with one filter cycle that will run in the evening when energy rates are often lower. The time and duration of the filter cycle can be set according to your needs. In addition, a second filter cycle can be enabled. Filtration time may need to be increased with heavy bather load.

Always make sure water diverter valves are turned all the way to the left or right and never left in the center position during filtration cycles. When the diverter valve is in the center position, there is not enough suction from the pump in order to inject ozone into the spa. The ozonator will generate ozone, but it will not be injected into the water.

4.13 Troubleshooting Water Clarity Problems

Problem	Probable Causes	Possible Solutions
Cloudy Water	<ul style="list-style-type: none"> • Dirty Filter • Excessive oils/ Organic matter • Improper sanitation • Suspended particles/organic matter • Overused or old water 	<ul style="list-style-type: none"> • Clean filter • Shock spa with sanitizer • Add sanitizer • Adjust pH and/or alkalinity to recommended range • Run jet pump and clean filter • Drain and refill spa
Water Odor	<ul style="list-style-type: none"> • Excessive organics in water • Improper sanitation • Low pH 	<ul style="list-style-type: none"> • Shock spa with sanitizer • Add sanitizer • Adjust pH to recommended range
Musty Odor	<ul style="list-style-type: none"> • Bacteria or algae growth 	<ul style="list-style-type: none"> • Shock spa with sanitizer • Adjust pH to recommended range

Problem	Probable Causes	Possible Solutions
Organic Buildup/ Scum Ring Around Spa	<ul style="list-style-type: none"> • Buildup of oils and dirt 	<ul style="list-style-type: none"> • Wipe off scum with clean rag - if severe, drain the spa, use a spa surface and tile cleaner to remove the scum and refill the spa
Algae Growth	<ul style="list-style-type: none"> • High pH • Low sanitizer level 	<ul style="list-style-type: none"> • Shock spa with sanitizer if problem is visible or persistent, drain, clean and refill the spa
Eye Irritation	<ul style="list-style-type: none"> • Low pH • Low sanitizer level 	<ul style="list-style-type: none"> • Adjust pH • Shock spa with sanitizer and maintain sanitizer level
Skin Irritation/ Rash	<ul style="list-style-type: none"> • Unsanitary water • Free chlorine level above 5ppm 	<ul style="list-style-type: none"> • Shock spa with sanitizer and maintain sanitizer level • Allow free chlorine level to drop below 5 ppm before spa use
Stains	<ul style="list-style-type: none"> • Total alkalinity and/or pH is too low • High iron or copper in source water 	<ul style="list-style-type: none"> • Adjust total alkalinity and/or pH • Use a stain and scale inhibitor
Scale	<ul style="list-style-type: none"> • High calcium content in water - total alkalinity and pH too high 	<ul style="list-style-type: none"> • Adjust total alkalinity and pH - If scale requires removal, drain the spa, scrub off the scale, refill the spa and balance water • Use a stain and scale inhibitor



5. Cleaning and Maintenance

5.1 Removing and Re-seating the Pillows

You can remove the pillows for cleaning and maintenance quickly and easily. This method works for all types of pillows.

Grab the lower edge of the pillow with both hands firmly and pull up. As you do this, the pillow inserts will pop out of the holes.

Re-seat the pillows by aligning the pillow inserts with the holes and striking the pillow hard enough to insert the pegs back into the holes.



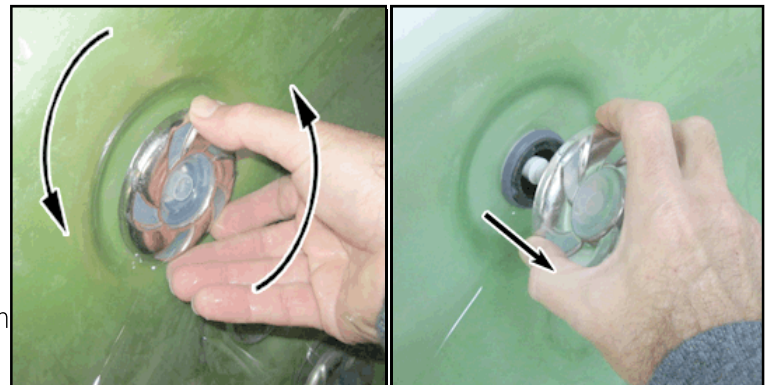
5.2 Jet Removal and Replacement

Jets can be easily removed for cleaning.

Screw-in jet removal

Grasp the outer rim of the jet and turn it counter-clockwise. The jet will unscrew from the fitting until it is free.

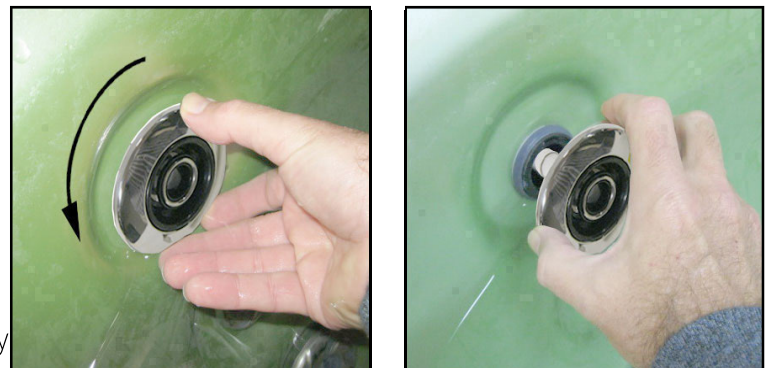
To replace the jet, place it in the fitting and turn it clockwise until it is snug in place and it can be rotated freely about half a turn. Do not over-tighten the jet.



Snap-in SQR jet removal

Grasp the outer rim of the jet and turn it counter-clockwise until it completely stops. You may feel it slightly loosen pop out a bit from the fixture. Pull the jet out from the jet fixture. The jet will be very snug and may require some force to remove it. **DO NOT PRY OUT JETS.**

To replace any jet, place it in the fitting and turn it clockwise until it snaps in and can be rotated freely about half a turn. Do not over-tighten the jet.



5.4 Draining Your Portable Spa

Your spa should be drained every four to six months for cleaning and maintenance and refilled with fresh tap water. Before you begin turn off power to the spa at the breaker and remove all filters.

Step 1. Locate your drain.

For spas with drain inside the spa

Using a Phillips screwdriver, remove the screws to the access panel and open it. Locate hose ending with the 3/4 inch hose-bib fixture as shown below.



For spas with cabinet-mounted drain/ Optional Feature

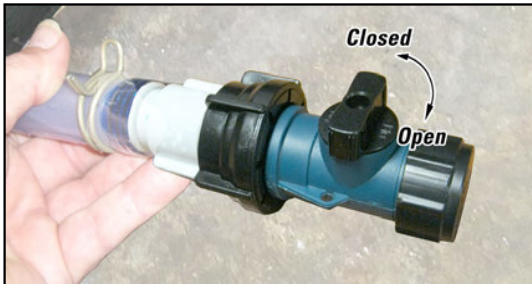
Pull the knob out of the cabinet. The cabinet drain is screwed into the drain pull knob.



Step 2. Remove the cap.

Make sure the valve is in the closed position, then unscrew and remove the cap. Unscrew the cap.

For spas with drain inside the spa



For spas with cabinet-mounted drain



(Optional Feature)

Step 3. Connect valve to a garden hose.

Attach a garden hose to the hose-bib fixture. Place the other end of the garden hose where you would like the water to drain.

For all spas



Step 4. Drain the spa.

Turn the valve on the hose-bib fixture to open the drain. When the spa has drained completely, turn the valve on the hose-bib fixture, remove garden hose and replace the cap.

5.5 Winterizing (Cold Climate Draining)

Depending on your region in your country, the temperature could drop below 32°F (0°C). If you are in one of those regions, we recommend that you always have your spa full of water and running at normal spa temperatures (80°F to 100°F, 26.7°C to 37.8°C). This will help reduce the risk of freezing water in your spa and in your spa's equipment.

WARNING: If you find the need to drain your spa, be aware of the potential of freezing in your spas equipment and plumbing. Even if the directions below are followed perfectly, there is no guarantee that your spa will not suffer freeze damage. Freeze damage is not covered by your warranty.

1. Open all filter covers.
2. Remove the filter baskets and filters.
3. Drain your spa completely
4. Vacuum water from the spa's main drain fitting with a wet/dry vacuum.
5. Open the bleeder valves on the pumps.
6. For spas with the UV lamp chamber mounted flat on the equipment floor: Loosen the quartz tube nut to let the water drain from the UV lamp chamber.
7. Disconnect the unions from both sides of the pump.
8. Blow any remaining water out of the jets and equipment area with the wet/dry vacuum.
9. When it has completely finished draining, replace the quartz tube in the UV lamp chamber and re-tighten the nut. Close the bleeder valves and re-connect the unions on the pumps. Replace the filter baskets and filters.
10. Cover your spa with a good spa cover and an all-weather tarp to ensure that neither rain nor snow enters the spa.

5.6 Cleaning and Replacing the Filter

Filtration is one of the most important steps you can take to ensure clean, clear water. It is far less expensive to fix water clarity problems by properly filtering your spa than by using excessive amounts of chemicals, excessive filtration times, or by water replacement.

5.7 Vacation Care

You can leave your spa unattended for up to two weeks if you follow these instructions.

ALWAYS lock your cover using the cover locks if you plan to be away from home and the spa is filled with water.

1. Select the Low Range temp choice used for vacation mode.
2. adjust the pH.
3. Shock the water (add either chlorine or bromine sanitizer).
4. When you return, check and adjust the pH and shock the water.

If you will not be using your spa for longer than 14 days and a spa maintenance service is not available, we strongly recommend you drain or winterize your spa.

5.8 Spa Cover and Locking System Installation

Important! Keep the spa covered when not in use!

- Covered spas will use less electricity in maintaining your set temperature .
- Covering your spa will protect you spa’s finish from the sun’s ultraviolet rays.
- You are required to keep the spa covered to maintain warranty coverage.
- Covering your spa helps prevent children from drowning in your spa.

In addition, while the spa cover is rigid, it is not designed to support any weight. Therefore, as a safety precaution and to preserve the life of your cover, you must not sit, stand, or lie on it, nor should you place objects of any kind on top of it.

Step 1. Place cover on spa. Make sure it is correctly positioned.



Step 2. Position the tie-down hardware (attached to the straps of your cover) on the side of the spa so they are easily reached by the cover tie-down straps.



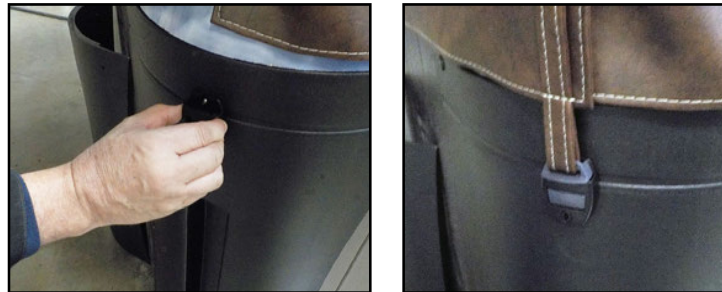
Step 3. With the straps pulled taut (but not overly tight), lightly drill the location for screw placement. Gently drill 3 holes - one for each screw slot in the lock. (If you do not have a low torque drill, use the lowest torque setting on the drill you have.) DO NOT drill all the way in but instead just make a guide for starters.



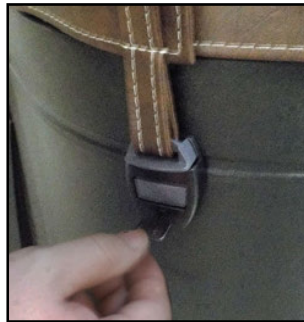
Step 4. Use a screwdriver to finish screwing in the 3 screws. (Repeat this process for the other 3 corners.)



Step 5. Keep the cover fastened down at all times when not in use. Locking hardware may be locked with a key (which is provided).



Step 6. The provided key will allow you to lock down spa access.



WARNING
AVOID
DROWNING
RISK

**FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN INJURY OR DROWNING
NON-SECURED OR IMPROPERLY SECURED COVERS ARE A HAZARD.
REMOVE COVER COMPLETELY BEFORE ENTRY OF BATHERS.
ENTRAPMENT POSSIBLE.
KEEP COVER ON SPA AND LOCKED WHEN NOT IN USE**

5.8 Cleaning Your Spa

Spa Cover and Pillows

Due to constant punishment your spa cover and pillows receive, you should protect them by applying a vinyl and leather cleaner as part of your monthly maintenance plan. Use a product that is specifically designed to protect spa covers and pillows from chemical and ultraviolet light damage without leaving an oily residue behind that is normally associated with common automotive vinyl protectants.

Warning: DO NOT use automotive vinyl protectants on spa covers or pillows. These products are generally oil-based and will cause severe water clarity issues that are difficult to correct.

Spa Shell

Each time you drain your spa, before you refill it you should clean your spa shell with an all purpose-cleaner and apply a coat of surface protectant.

Use a low detergent, non-abrasive cleaner specifically formulated to clean the spa without damaging its acrylic finish.

Use a non-oil based surface protectant that is specifically formulated to protect the spa’s finish from the chemicals and minerals associated with normal spa use.

5.9 Using the Freedom Sound System

The Freedom Sound System™ entertainment option contains a Bluetooth-enabled speaker system that is available for certain Cal Spa models. Any Bluetooth-enabled device can be used to play audio through your spa. Before you can use the sound system, you need to pair the Bluetooth module with your device. The Bluetooth module is installed within the spa cabinet. Everything can be performed with your Bluetooth device. The example shown below is from an iPhone device. Your device may appear differently. Before you begin, make sure Bluetooth is enabled on your device.

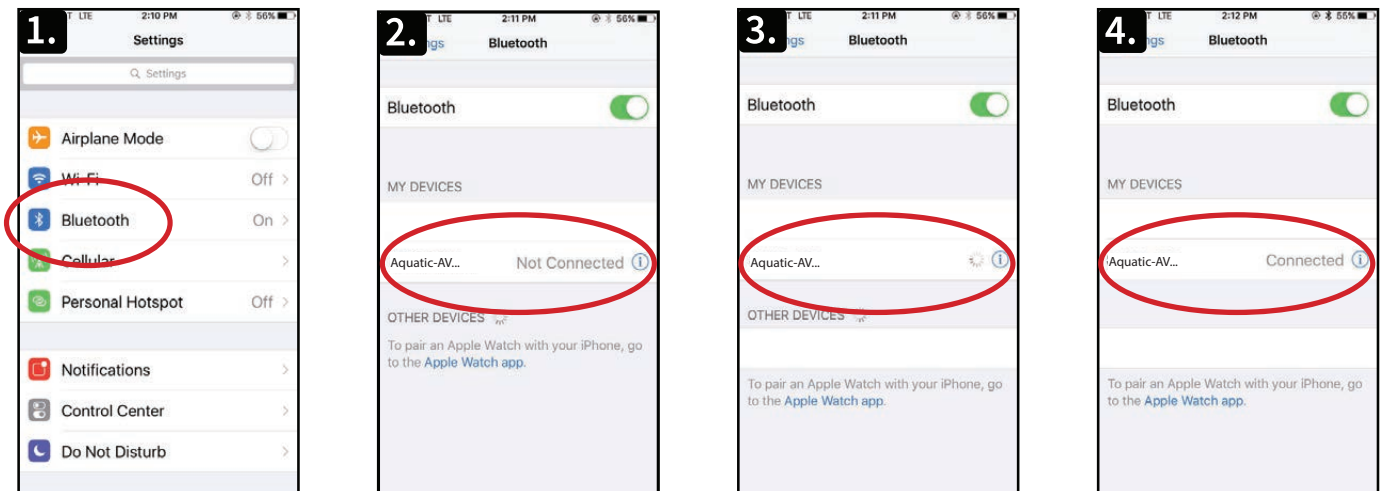
1. Select Bluetooth from your device’s option list.
2. Select **Aquatic-AV...** from the list of available devices to pair.
3. Your iPhone device will ask for a code: the code is 0000.
4. Allow your device to pair with the spa’s Bluetooth module.
5. When the devices have been connected, the device **Aquatic-AV...** will be highlighted.

Note: *A combination of letters and numbers will follow after the “AquaticAV” name*

Only one Bluetooth device can be paired with the Freedom Sound System™ at any time.

(For Android users, the systems will pair automatically - no code is needed.)

Once your device is paired and connected, all sounds from your device will be played through the sound system, including system sounds and telephone.



Basic Troubleshooting

The troubleshooting guidance provided here is intended to cover the most common problems a spa owner may encounter. For more in-depth troubleshooting, go to www.calspas.com/troubleshooting.

Symptom	Possible Solutions
Problems starting up	
Pump won't prime	See priming instructions
Breaker keeps shutting off	Reset the GFCI breaker. If this continues, contact your dealer or a qualified spa technician.
Power and system problems	
System won't start up or breaker keeps shutting off	Power may be shut off. Turn on GFCI circuit breaker. If this continues, contact your dealer or a qualified spa technician.
Control panel doesn't respond	Turn on or reset the GFCI circuit breaker. If this does not solve the problem, contact your dealer or a qualified spa technician. If you hear the pump running but the control panel doesn't respond, contact your dealer
Spa does not turn off	Spa may be trying to heat up. Check if spa is in Ready or Rest mode In cold climates, if spa is not equipped with full foam or any kind of insulation, it will try to maintain the set temperature. Set the spa to low temperature range and set the temperature to 80°F. Spa may be in filter cycle. If it is, this is normal and no adjustment is necessary.
Message on the control panel	There may be a problem. See Diagnostic Messages
Heat problems	
Spa water does not get hot	Spa may be in low temperature range. Set the spa to high temperature range. The filter may be dirty or may need to be replaced. Clean or replace the filter. The water level may be too low. Fill the spa with water level at 4 to 6 inches from the top. The temperature is not turned up high enough. Raise temperature on topside control. Cover the spa. The cover will keep heat in the spa and help keep heat from escaping. Make sure cover is on at all times when spa is not in use. The heater element may be old, deteriorated, coated with scale, or defective. Contact your dealer for more assistance. The gate valves may be partially or completely closed. NEVER OPERATE YOUR SPA WITH THE GATE VALVES CLOSED!

Symptom	Possible Solutions
Spa overheats - temperature greater than 110°F / 43°C	<p>Overheating can occur during summer months and may not necessarily indicate a malfunction. When it occurs, a message code may also appear on the control panel.</p> <p>Temperature may be set too high. Turn the set temperature down to a lower temperature.</p> <p>Filtration time may be too long. Turn the filtration cycles down during the warm months.</p> <p>The spa may not be properly ventilated. Make sure the front of the spa is not blocked to allow air flow.</p> <p>High speed pumps may have been running too long. Limit pump running time to no more than 15 to 30 minutes.</p>

Water pressure problems

Low water pressure	<p>Jet valves may be partially or fully closed. Open the jet valves.</p> <p>Filter cartridge may be dirty. Clean or replace the filter.</p> <p>Pump may have airlock. Remove airlock by priming spa</p> <p>The suction fittings may be blocked. Remove any debris that may be blocking them.</p> <p>The filter skimmer may be blocked. Remove the blockage.</p> <p>Gate valves may be closed. Open gate valves. Note: Never operate your spa with the gate valves closed!</p> <p>Spa may be running in filtration mode. Press JETS or JETS 1 button to turn on high speed pump.</p>
No water pressure (no water stream from any jets)	<p>Power may be switched off. Turn the power back on.</p> <p>The pump may be defective. After you have tried all other troubleshooting, contact your dealer for assistance.</p>
Jets surge on and off	Water level may be too low. Add water to normal level.

Pump problems

Pump runs constantly – will not shut off	There may be a problem with circuit board. Contact your dealer.
Noisy pump	<p>The water level may be too low. Fill the spa with water level at 4 to 6 inches from the top.</p> <p>Filter cartridge may be dirty. Clean or replace the filter.</p> <p>Pump may have airlock. Remove airlock by priming spa</p> <p>The suction fittings may be blocked. Remove any debris that may be blocking the suction fittings.</p> <p>Gate valves may be closed. Open gate valves. Note: Never operate your spa with the gate valves closed!</p> <p>Air may be leaking into the suction line. Contact your dealer for assistance.</p> <p>Debris may be inside the pump. Contact your dealer for assistance.</p> <p>Noise may be a sign of damage. Contact your dealer for service.</p>

Symptom	Possible Solutions
Pump turns off during operation	Automatic timer may have completed its cycle. Press JETS or JETS 1 button to start the cycle again. Pump may have overheated due to the vents on the equipment door being blocked. Make sure the front of the spa is not blocked to allow air flow. The pump motor may be defective. Contact your dealer for assistance.
Pump has a burning smell while running	A burning smell may be a sign of damage. Contact your dealer for service.
Pump does not run	Pump may have over heated. Let it cool for an hour and try operating the spa for a shorter time. Power to the spa may be shut off. Turn on or reset the GFCI circuit breaker. If this does not solve the problem, contact your dealer or a qualified spa technician.

“Thermal Creep”

Cal Spas are designed with energy-efficient components and systems that are meant to sustain heat generated by the equipment, which is then cycled back into the spa water. In hot weather or in situations where the spa is set to extended run times, Thermal Creep may occur. Thermal Creep is a condition where the measured water temperature can be higher than the set temperature. To manage Thermal Creep you may:

Vent your cover. This means placing a folded cloth about $\frac{3}{4}$ " (2cm) thick under all four corners of the cover before you lock the cover down.

Open your cover. Opening the cover at night will also quickly cool the water down if desired.

Open all air controls. Set your filtration cycles to run during the cooler times of the day or night.

Reduce the length of your filter cycles.

Visit your local dealer for additional guidance.

Since Thermal Creep only occurs in well-insulated hot tubs, it is not indicative of something that is wrong with your spa or its equipment.

Access Your spa through a direct connection, local wifi, or through the cloud to monitor you spa when you are away. This guide will show you how to.

1. A direct connection anywhere in the local proximity of your tub.
2. Anywhere in your house that you can connect to your local WiFi network = (Local Connect)
3. With your smartphone, anywhere in the world with an Internet connection

bwa™ for Android™



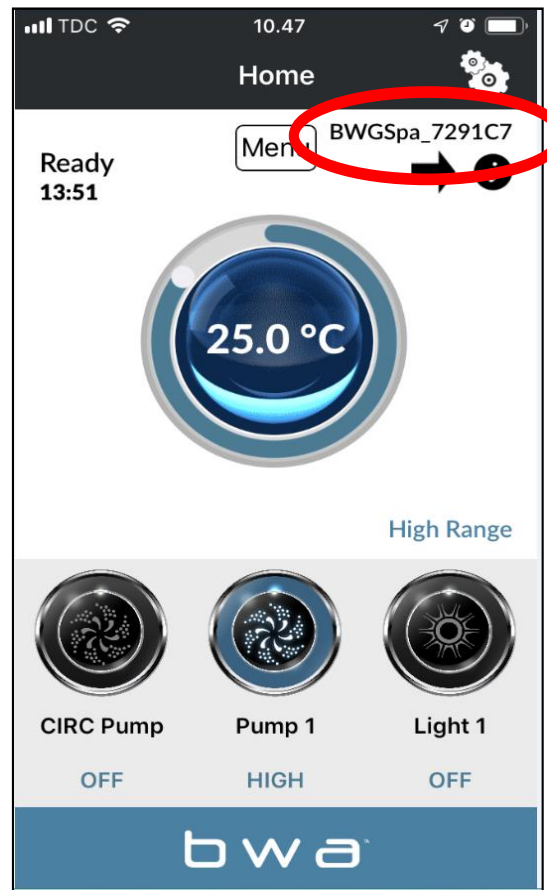
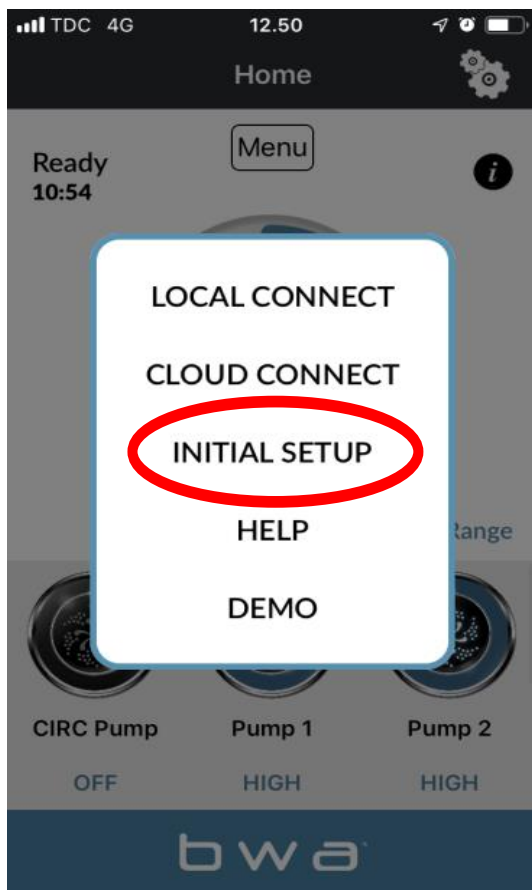
bwa™ for iOS®



1. Before starting, ensure the wifi module is connected to the BP control pack. Also flip your spa breaker off then back on again to send the wifi module into discovery mode.
2. On your iPhone or Android device ensure that the wifi option is toggled active to detect networks nearby. stay on this discovery screen.
3. Select the network with the name BWGSpa_xxxxxx (it will be a combination of numbers and letters)
4. Once connected to the network you can proceed to the BWA App.

Note: Ensure that both Bluetooth and Wifi are activated on your phone. Failure to do so will cause pairing issues.

INITIAL SETUP



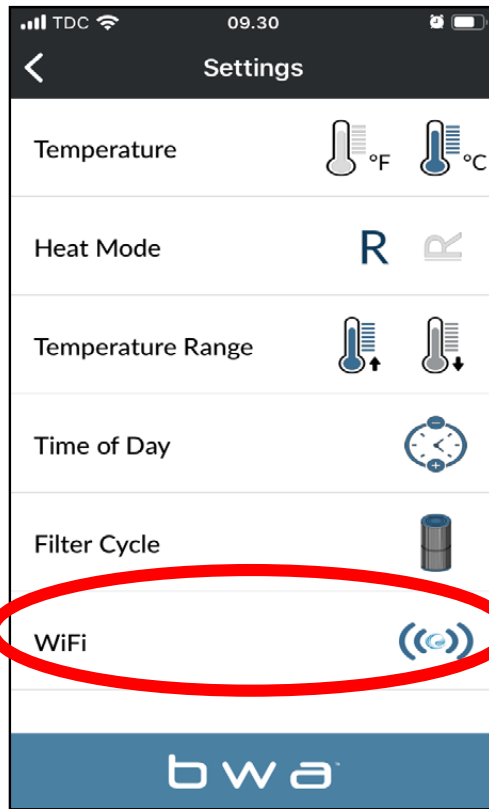
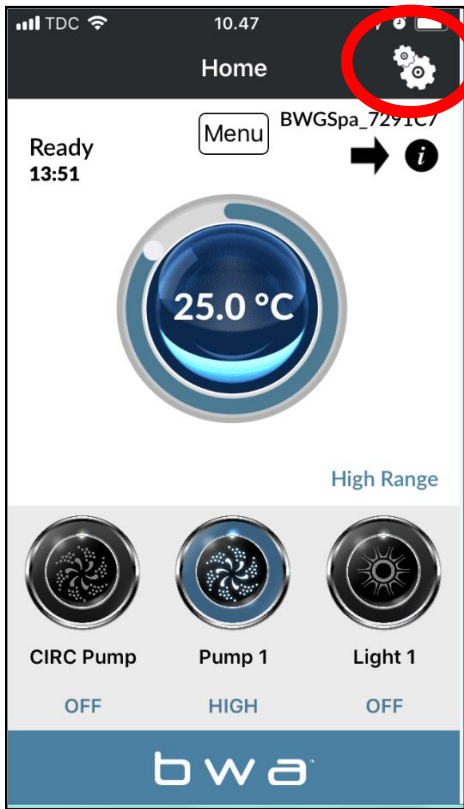
5- Launch the BWA app and select initial set up.

6- Once selected follow the steps presented to you within the app, it will attempt to communicate with the module to establish its first initial connection.

7- After following the steps presented in the app you will be greeted with the screen above, you will now be able to control the spa using the modules local wifi network.

8- Test the communication of the module with the app by turning on your pump or light option.

LOCAL CONNECT

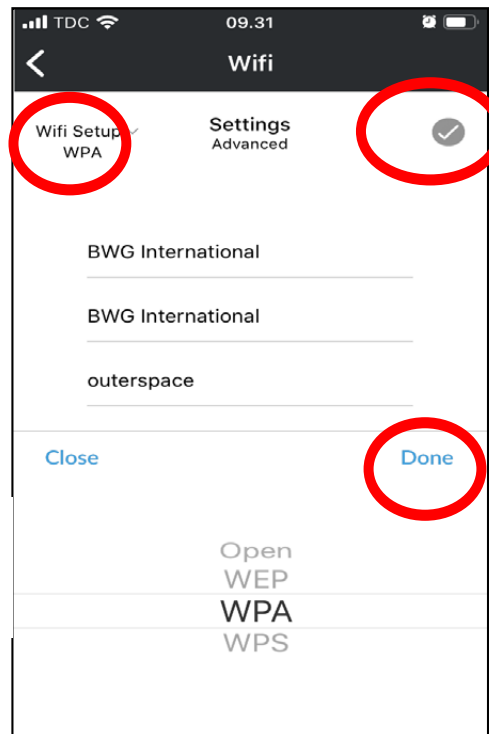
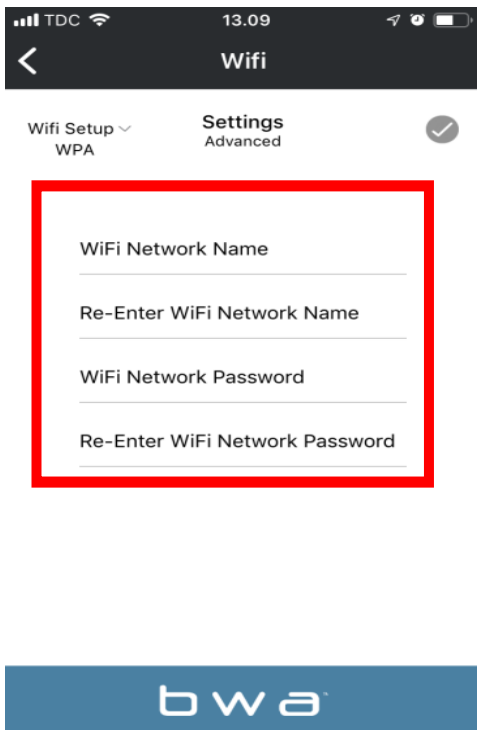


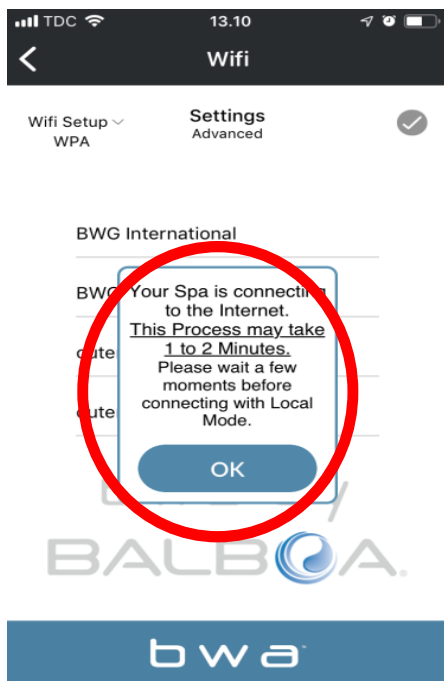
9- Once there is confirmation that the app communicates to the spa select the setting icon in the top right corner.

10- Select under settings the "Wifi" option.

11- Enter your home wifi's network information to begin pairing the spa to the home network.

12- Confirm the type of network security used by your home network and press the gray check mark to proceed.

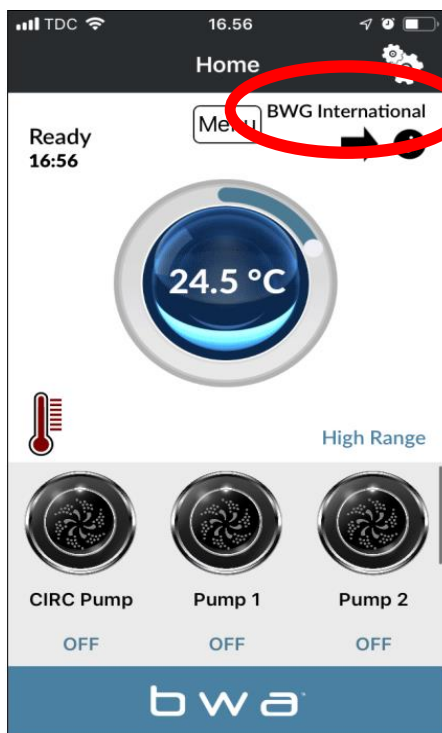
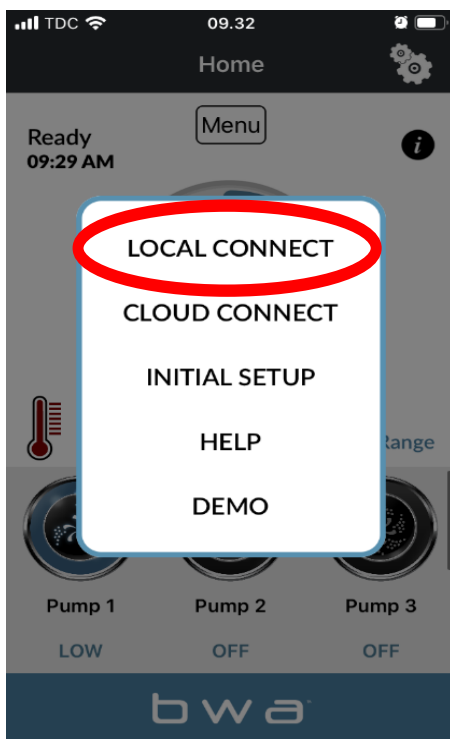




13- If you have successfully entered your home wifi network information, you will get a prompt to leave the device running for a few minutes. The spas wifi module is now attempting to pair with your home wifi.

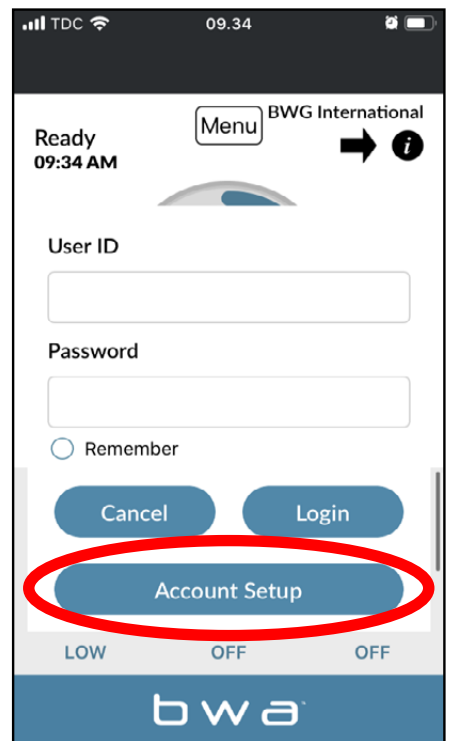
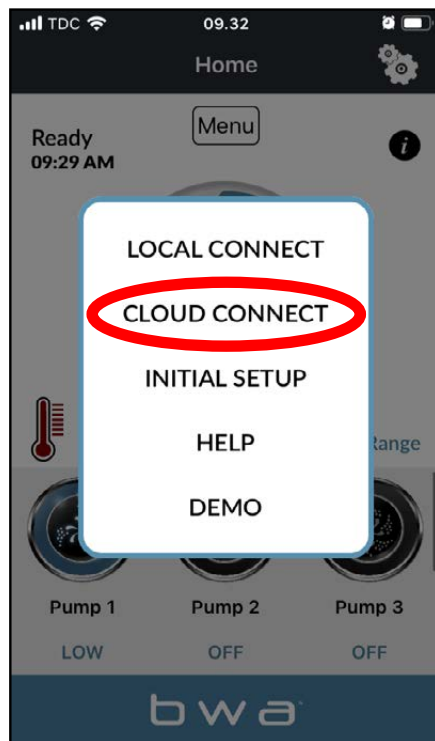
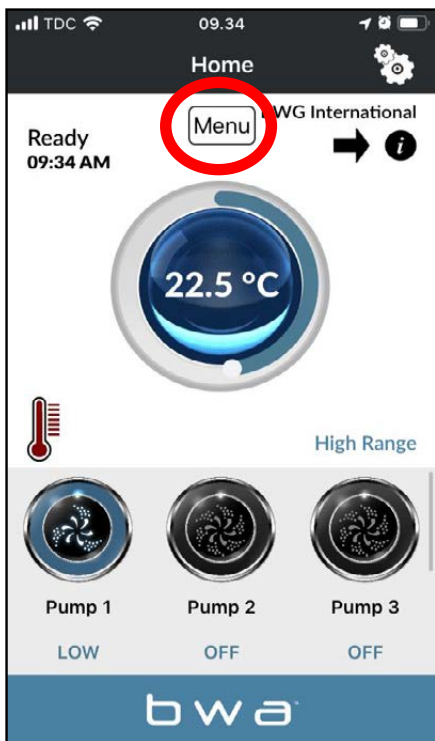
14- Check your mobile device network settings again, and confirm that your mobile device has now paired back to your home wifi network, and it is no longer connected to the temporary wifi network.

15- Switch back to the app and select local connect. It will now show your home wifi network name in the top corner.



You are now able to connect to your spa via your home network. As long as you are within range of your wifi network you will be able to control the spa.

CLOUD CONNECT



1- Select the Menu option on the top center of the app.

2- Select Cloud Connect, the app will prompt you to a log in screen.

3- You will need to create an account to access your spa via cloud connection. Follow the steps presented, which will include the creation of a username, password, and security questions. We would suggest to write this log in on your manual for reference.

4- Once your account is created log in with your credentials, you have now unlocked the ability to control your spa through your cellphone network or other wifi networks when not at home or near the spa.

Appendix

Replacement Parts

Screw-in Jet Inserts

ELE 2" Euro No Eyeball

PLUCS2295021S

Used by: Patio, Patio+, Inground Spas



Screw-in Jet Inserts

MFD 3.5" Maxi Flow Directional

PLUCS2295091S

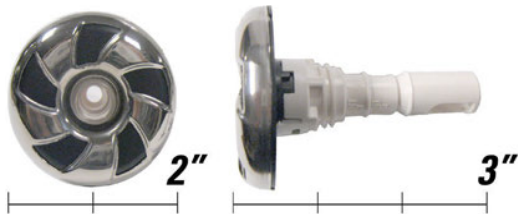
Used by: Patio, Patio+, Inground Spas



ED 2" Euro Directional

PLUCS2295051S

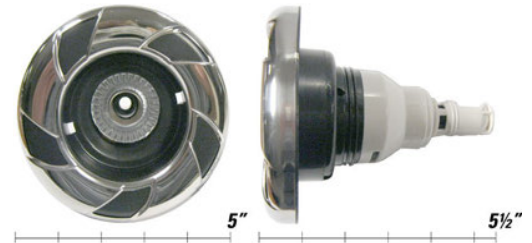
Used by: Patio, Patio+, Inground Spas



PSD 5" Power Storm

PLUCS2295131S

Used by: Patio, Patio+, Inground Spas



MED 3" XL Cluster Storm Directional

PLUCS2295031S

Used by: Patio, Patio+, Inground Spas



ET 2" Cluster Storm Twin

PLUCS2295161S

Used by: Patio, Patio+, Inground Spas



mfd 3" Micro Flow Directional

PLUCS2295061S

Used by: Patio, Patio+, Inground Spas



MMP 3" Mini Multi-Massage

PLUCS2295171S

Used by: Patio, Patio+, Inground Spas



Screw-in Jet Inserts

PSTR 5" Power Storm Twin Roto

PLUCS2295181S

Used by: Patio, Patio+, Inground Spas

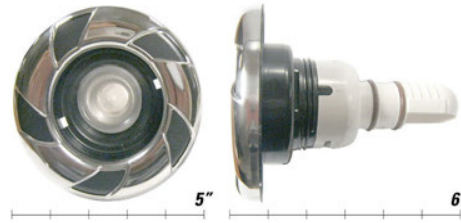


Screw-in Jet Inserts

T 5" Tornado Adjustable

PLUCS2295201S

Used by: Patio, Patio+, Inground Spas



MMP 5" Power Storm Riffed

PLUCS2295141S

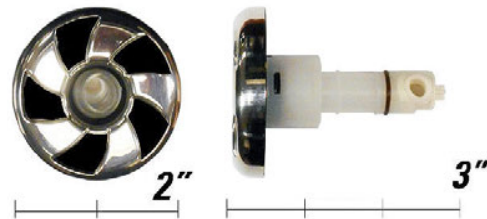
Used by: Patio, Patio+, Inground Spas



2" Neck Jet Directional

PLU29923-014-000

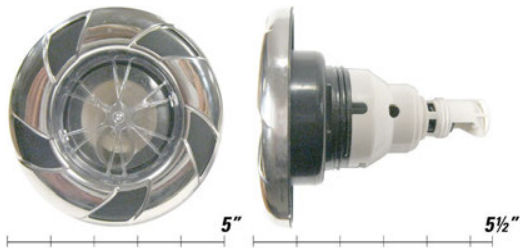
Used by: Patio, Patio+, Inground Spas



PST 5" Power Storm Wagon Wheel

PLUCS2295191S

Used by: Patio, Patio+, Inground Spas



Water Diverter Valves

Diverter Valve 2" Titanium Black (CS600303T1-TT)

PLU21300465



Diverter Valve 1" Titanium Black (CS600426T1-TT)

PLU21300453



Air Control Valve

Air Control with Titanium Black CS660350T1-TT

PLU21300504



Drains

Drain Super Hi Flo Suction 2½" Black (640-3581LGV)

PLU21400146



Low Profile Drain ¾" Black (640-0511)

PLU21400401



Pillows

Black "Y" Pillow Carbon Fiber Design S-01-4324

ACC01401102



Black Cascade Pillow Carbon Fiber Design S-01-4325

ACC01401103



Filters

50 sq ft

FIL50-5D13H15FCT-3



Teleweir Skimmer

50 square foot teleweir skimmer:

Filter attaching cap assembly

FIL11700013



Filter skimmer inner pipe

FIL11700012



Waterfalls

ALXWATERFALL CASCADE SUB ASSY (Rectanagle)
GRAY No logo
Part #: PLU21801050



Graphite Gray Cap, SilverHandle, 3/4" DW-17 ST HPD
Part #: PLU25056-101-000



LED Lights

1-LED light string
Part #: LIT16100330



2-LED light string
Part #: LIT16100331



4-LED light string
Part #: LIT16100332



Cover Lock and Keys

Part #: ACC01800026, ACC01800020



LED Lights

1 to 3 ext. cord
LIT16100335



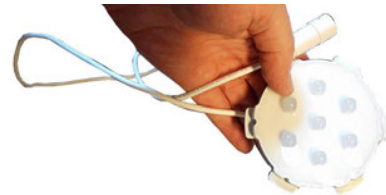
1 to 1 port ext. cord
LIT16100338



Interior light with logic (7 LED)
LIT16100333



Interior light without logic (7 LED)
LIT16100337



Main light housing, LED lens, fitting nut
LIT630-7048



Replacement of Cabinet Panels

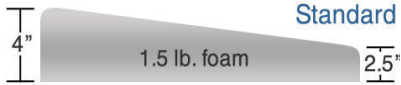
The complete selection of replacement cabinets for all models is very extensive and too lengthy for this owner's manual. To order replacement panels for your spa, visit www.quickspaparts.com

Covers

All spa covers are designed with a tapered height, angling downward from the center to the sides to drive off rain and prevent water from pooling. The covers listed below are filled with either 1 lb., 15. lbs., or 2.0 lbs. foam.

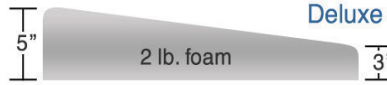
Basic

4" - 2.5"
1.5 lbs. foam



Deluxe

5" - 3"
2.0 lbs. foam



	Taper Dark Brown Basic	Taper Black Basic	Taper Gray Basic	Taper Dark Brown Standard	Taper Black Standard	Taper Gray Standard
64" x 84" Fits spa model: PPZ-537L	COV6484BDB-3	COV6484BBK-3	COV6484BG-3	COV6484SDB-3	COV6484SBK-3	COV6484SG-3

	Black Deluxe	Taper Black Deluxe	Taper Dark Brown Deluxe	Taper Gray Deluxe
84" x 84" (7 foot spas)	N/A	COV8484SBK-3 (Standard)	COV8484SDB-3 (Standard)	COV8484SG-3 (Standard)

Additional Parts

50 Sq Ft Filter Housing
Part#: FIL11700007LC

(Spas built after 6/2024)



50 Sq Ft Filter Housing Grey
Part#: FIL517-4609-CDHL

(Spas built after 6/2024)



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LIMITED WARRANTY

This Limited Warranty is extended to the original purchaser of the spa produced by Lloyd's Material Supply company, Inc. Which Manufactures the Cal Spas brand portable spa manufactured after August 5th, 2024 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.

Patio Plus: 752L & 752B

Shell Structural

Warrantied against water loss due to defects in the spa shell.

5 Years

Shell Finish

Warrantied against blistering, cracking, or delaminating of the interior spa shell.

5 Years

Equipment and Controls

Electrical Equipment components- specifically limited to the pumps, standard titanium heater, and control system, are warrantied against malfunction due to defects in workmanship or materials.

3 Years

Plumbing

Warrantied against leaks due to defects in workmanship or materials

3 Years

Cabinet - synthetic or fiberglass

Warrantied against defects in workmanship or materials. Normal wear and weathering of the finish will occur naturally over time and are not defects.

1 Years

Warranties for Other Components

The fuses, headrests, cabinet finish, cal grip, labels, and filters are warrantied to be free of defects in workmanship and material at the time of delivery. The factory installed water purification system & salt system is warrantied against malfunction due to defects in workmanship or material for one year from the original date of the spa delivery. All stereo-related components (receiver, speakers, sub-woofer, power supply, Bluetooth antenna, etc) are warrantied against malfunction due to defects in workmanship and material for one year from the original date of delivery. All other factory-installed components not mentioned specifically, including, but not limited to the wood frame, jets, diverter valves, LED lighting systems, filter lids, and mechanical components, are warrantied against malfunction due to defects in workmanship and material for two years from the original date of delivery.

The insulating spa cover delivered with the spa is warrantied to be free of defects in workmanship and materials for 90 days .

Genuine Cal Spas Parts & Accessories

This Limited Warranty is void if Lloyd's Material Supply Company, Inc., manufacturer of the Cal Spas brand or its designated representative determines that the spa has been subjected to damage or failure due to installation of aftermarket parts that are not genuine Cal Spas branded parts and accessories. This disclaimer includes, but is not limited to filters, UV bulbs, ozone systems, salt systems, repair parts and other accessories. Genuine Cal Spas brand parts and accessories are built to our highest standards of quality, durability and performance, and they are designed to work with your spa to ensure optimal performance and function.

Performance

This warranty begins on the date of delivery of the spa, but in no event later than one year from the date of manufacture. To obtain service in the event of a defect covered by this Limited Warranty, notify your Cal Spas dealer or Cal spas as soon as possible and use all reasonable means to protect the spa from further damage. Upon proof of purchase, a designated service representative will correct the defect subject to the terms and conditions contained in this Limited Warranty. There will be no charge for parts or Labor to repair the defect, although providing access to affect the repair is your responsibility as the spa owner. Freight charges for replacement parts is the responsibility of the spa owner. The servicing dealer may charge the owner a travel/service fee as well as a diagnose fee if the cause of the issue is unknown, these charges are not covered under warranty.

In the event that the spa is removed to a repair facility for repair and reinstalled, the cost of removal and re-installation will be your responsibility as the spa owner. If Lloyd's Material Supply Company Inc., The manufacture of the Cal Spa brand determines that repair of the covered defect is not feasible, it reserves the right to provide a replacement spa of equal or lesser value to the original purchase price. In such an event reasonable costs for removal of the original spa, shipping costs from the factory for the replacement spa and delivery and installation of the replacement spa will be the responsibility of the spa owner. The replacement spa will carry the balance of the original spa's warranty. Spa covers are not included. This warranty ends either by specified time frame, owner-transfer of the spa, relocation, or installation of any component other than by the manufacture.

Warranty Limitations

This Limited Warranty is void if Cal Spas or its designated representative determines that the spa has been subjected to alteration, neglect, misuse or abuse, or freight damage caused by the common carrier; any repairs have been attempted by anyone other than a designated representative; the failure is caused by accident, acts of God or other causes beyond the control of the Manufacturer including acts of nature (damage caused by animals, rodents, or other pests) are not covered by this warranty, additionally; neglect, misuse and abuse include any installation, operation or maintenance of the spa other than in accordance with the instructions contained in the owner's manual provided with the spa, including but not limited to the failure to maintain proper water chemistry and chemical balance and the use of abrasive or improper cleaners or non-genuine parts and accessories. This Limited Warranty does not provide coverage for any item attached to or installed on the spa after the date of manufacture or for gaining access to any component for repair or replacement. Spa units in commercial use are excluded from any coverage whatsoever. The spa owner accepts liability for repair work performed by anyone other than Lloyd's Material Supply Company Inc, or a designated Cal Spas representative. This Limited Warranty is void if damage occurs to the spa shell because of excessive heat buildup due to failure to cover a spa that is empty of water while exposed to direct sunlight.

Proration of Warranty

Units determined by the manufacture to be non-repairable will be replaced on a prorated basis with the same or a comparable unit. The owner will be charged 1% of the current retail cost for each full month of ownership from the date of purchase through the date failure is determined to be non-repairable. This charge will be waived during the first 6 months of ownership. **[example]:** Product failure is determined during seven months of ownership. Owner will be responsible to pay for 7% of the products current cost.

Limitations

The manufacture disclaims all warranties, expressed or implies, in fact or in law, to the extent allowed by your State's law, including the warranty of merchantability and fitness for use, except as stated specifically herein. All warranty service must be performed by the manufacture or its designated representative using authorized Cal Spas parts. No agent, dealer, distributor, service company, or other party is authorized to change, modify, or extend the terms of this limited warranty in any manner whatsoever. The manufacture will not be responsible for any statements or representations made in any form that go beyond, are broader than, or are inconsistent with any authorized literature or specifications furnished by Cal Spas.

Disclaimers

Lloyd's Material Supply Company, Inc., Manufacture of Cal Spas brand and its representatives shall not be liable for any injury, loss, cost, or other damage whether incidental or consequential, arising out of any defect covered by this limited warranty, including without limitation, loss of use of the spa and cost for removal of defective produce even if the manufacture was advised of the possibility of damage. The liability of the manufacture under this limited warranty, if any shall not exceed the original amount paid for the defective product. Coverage under this limited warranty shall commence as of the original date of delivery and the duration of such coverage shall not extend for any reason whatsoever beyond the states time periods. These disclaimers shall be equally applicable to any service provided by the manufacture and its designated representatives.

Legal Rights

This limited warranty give you specific legal rights. You may also have other rights that vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.



CONTACT INFORMATION

For customer service, 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

LTR.2024.1002
8/5/2024 Rev A