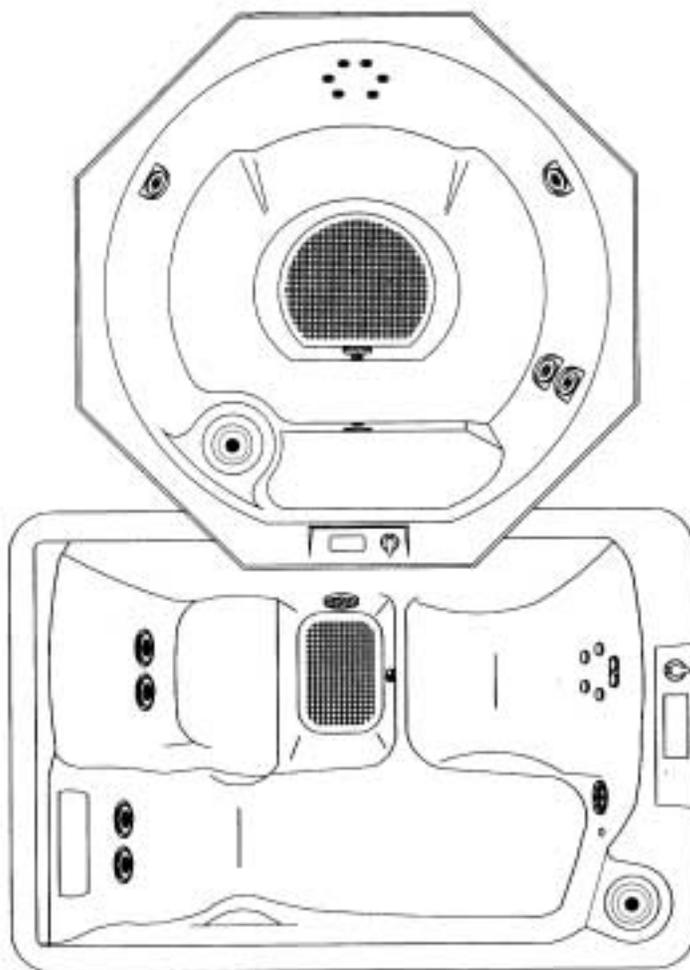


**OWNERS
MANUAL**

HIGHLAND SERIES PORTABLE SPA

OLYMPIA • CASCADE • TETON • SIERRA



Caldera™ Spas

**QUALITY SPAS
AND GAZEBOS SINCE 1976.**

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IMPORTANT SERVICE INFORMATION

Congratulations on your new ownership of a quality Caldera portable spa.

This manual will help you with every aspect of operation as well as provide helpful information on how to care for your spa. With proper maintenance, your Caldera spa will provide you with many years of relaxation and dependable service.

If you have any questions not addressed in this manual, call your Caldera dealer and he or she will be happy to assist you.

Pictured below are the Caldera data labels that are located in the spa equipment compartment. Locate and read these labels, then fill out the blanks below with the corresponding information.

If replacement parts are needed, it is important that you have the complete data label information for your dealer or service organization.

Retain this manual for future reference. Please have the information below readily available if you need to contact your Caldera dealer for service or repair.

Dealer: _____

Address: _____

Phone: _____

Date of purchase: _____

Electrician: _____

Installation date: _____

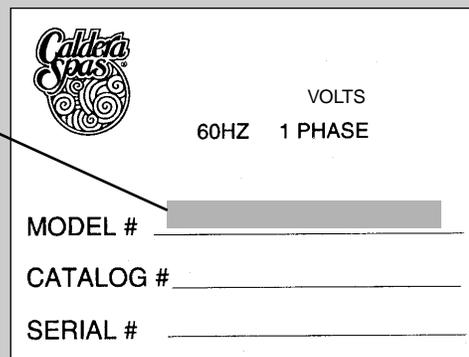
Spa serial #: _____

Model #: _____

Optional equipment:



NOTE: A duplicate of the above label is included inside the back cover of this manual.



IMPORTANT SAFETY INSTRUCTIONS

READ AND FOLLOW ALL INSTRUCTIONS

1. DANGER - RISK OF ACCIDENTAL DROWNING.

Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use this spa unless they are under adult supervision at all times.

2. A bonding lug has been provided on the outside of the Control Module electrical control box. This lug permits the connection of No. 6 AWG solid copper bonding conductor between the Control Module and all other electrical equipment and exposed metal in the vicinity, as may be needed to comply with local regulations.

3. **DANGER - RISK OF INJURY.** 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 drain-suction fittings or the pump, be sure that the flow rates are compatible. Never replace a suction fitting with one rated less than the flow rate marked on the original suction fitting. Never remove, or alter in any way, the covers on the drain-suction fittings in the spa. Never operate the spa if the covers on the drain-suction fitting are broken or missing.

4. **DANGER - RISK OF ELECTRICAL SHOCK.** Install the spa at least 5 feet (1.5m) from all metal surfaces. (A spa may be installed within 5 feet of metal surfaces if each metal surface is permanently connected by a minimum No. 6 AWG solid copper conductor attached to the wire connector on the terminal box that is provided for this purpose.

5. **DANGER - RISK OF ELECTRICAL SHOCK.** Do not permit any electrical appliances such as a light, telephone, radio or television within 5 feet (1.5m) of the spa.

6. WARNING - To reduce the risk of injury:

A. The water in a spa should never exceed 104°F.

Water temperatures between 100°F and 104°F are considered safe for a healthy adult. Lower water temperatures are recommended for extended use (exceeding 10-15 minutes) and for young children.

B. Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa temperatures to 100°F.

C. Before entering the spa, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature regulating devices may vary as much as ± 5 degrees.

D. The use of alcohol, drugs, or medication before or during spa use may lead to unconsciousness with the possibility of drowning.

E. Persons suffering from obesity or with a medical history of heart disease, low or high blood pressure, cir-

culatory system problems or diabetes should consult a physician before using a spa.

F. Persons using medication should consult a physician before using a spa since some medications may induce drowsiness while other medications may affect heart rate, blood pressure and circulation.

G. Because occasional users of the spa may not be aware of all the potential risks associated with spa usage, they should be made aware of these important safety instructions.

7. The electrical supply for permanently connected spas must include a suitably rated switch or circuit breaker to open all ungrounded supply conductors to comply with the National Electrical Codes. The disconnection means must be within sight and readily accessible to the spa occupants but installed at least 5 feet (1.5m) from the spa water.

8. **WARNING** - Permanently connected units must be hardwired only to a supply circuit that is protected by a ground fault circuit interrupter (GFCI). Such a GFCI is required by most building codes, should be provided by the installer and must be tested before each use. Consult GFCI manufacturers instructions for correct testing and operation.

9. For Cord-and-Plug Connected Spas:

DANGER - Risk of injury.

- Replace damaged cord immediately.
- Do not bury cord.
- Connect to a grounded, grounding type receptacle only.

10. For Cord-and-Plug Connected spas: WARNING -

This spa is provided with a ground fault circuit interrupter (GFCI) at the end of the cord. This GFCI must be tested before each use as follows.

- Press the "test" button. The spa should not operate.
- Press the "reset" button. The spa should operate normally.

11. **DANGER** - Prolonged immersion in hot water may induce **hyperthermia**.

Symptoms: Symptoms of hyperthermia include an increase in the internal temperature of the body, dizziness, lethargy, drowsiness and fainting.

Effects: The effects of hyperthermia include:

- Failure to perceive heat.
- Failure to recognize the need to exit the spa.
- Unawareness of impending hazard.
- Fetal damage in pregnant women.
- Physical inability to exit the spa.
- Unconsciousness resulting in the danger of drowning.

Treatment: Place the victim on his back, head slightly elevated. Apply wet cloths or ice packs to the head, wrap the body in a sheet, pouring on a small amount of water. Follow with a cool shower or bath. Get medical attention as soon as possible.

SAVE THESE INSTRUCTIONS

INSTALLATION

SITE SELECTION

Because of the combined weight of the spa, water and users, it is extremely important that the base upon which the spa rests is capable of uniformly supporting this weight, without shifting or settling, for the entire time the spa is in place. If the spa is placed on a base which does not meet this requirement, damage to the cabinet and/or the spa shell may result. Damage caused by improper support is not covered under warranty. It is the spa owner's responsibility to ensure the integrity of the spa's support over time.

We recommend a poured, reinforced concrete slab for the spa's base. Wood decking, pre-cast concrete slabs, concrete blocks or other materials may also be suitable if they meet the requirements outlined above. Wood decking must be constructed to support at least eighty pounds per square foot. Consult with a qualified contractor or engineer if you are in doubt.

Your spa must be installed so as to provide drainage away from the spa. Placing the spa in a depression without provisions for proper drainage could allow rain, overflow and other casual water to flood the equipment and/or create a wet condition in which the spa would sit.

When considering an installation site, allow a minimum of thirty inches for access to the spa's equipment compartment for future service if necessary. If accessory items will be installed on or around the spa (Spa CoverGlide, gazebo, steps or planters), allow for additional space around the spa's perimeter.

Please note that some cities and counties may require a permit for installation of electrical circuits or the construction of exterior structures (decks and gazebos). In addition, some counties may require permits for the installation of a portable spa. Check your local codes for compliance.

To ensure you can use your spa soon after delivery, it is important that you select the voltage prior to setting your spa in place and have a licensed electrician install the wiring, if necessary.

SELECTING THE VOLTAGE FOR YOUR SPA

Your spa is designed to operate at either 120 or 220 volts, 60 Hz unless it is the Olympia model which requires 220 volt power supply. When the spa is connected to 120 volts, the heater will provide approximately 1000 watts of heat only when the pump is operating in LOW speed and the thermostat is calling for heat. When the spa is connected to 220 volts, the heater will provide approximately 4000 watts of heat when the pump is operating in LOW or HIGH speed and the thermostat is calling for heat.

All electrical connections must be made in accordance with the wiring information contained in this manual, in the electrical control box or on the back of the field wiring access panel of the equipment module.

120 VOLT INSTALLATION

Spas provided with a factory-installed power supply cord are to be plugged into a grounded, grounding type, 120 volt, 15 ampere receptacle (Sierra, Teton models) or 20 ampere receptacle (Cascade model). No other electrical appliance or fixture can be used on this circuit.

IMPORTANT: Under NO circumstances should an extension cord be used. Use of an extension cord will seriously degrade the performance of the equipment module and can create an electrical hazard.

220 VOLT INSTALLATION

When using 220 volt power supply, installation of a 40 amp dedicated circuit is required. Your spa must be hard-wired direct to a GFCI-protected power source by a licensed electrician. A wiring diagram is provided inside the equipment module showing where the connections are to be made.

START-UP INSTRUCTIONS

Once the spa is placed on a proper foundation and connected to the appropriate electrical service, the spa may be filled and made ready for use. For best results, read each step in its entirety before proceeding with that step.

IMPORTANT - Do not activate power until the spa is filled. To avoid damage to the spa's equipment, the pumps must never be operated unless the spa is filled with water.

1. PREPARE SPA FOR FILLING

- Clear all debris from the spa.
- Although the spa shell has been polished at the factory, you may want to treat it with a specially formulated spa cleaner and wax available from your dealer prior to filling it for the first time.
- Before filling your spa for the first time, remove the equipment compartment door and check to ensure that the unions on either side of the pump and heater are hand-tight. Also, install the pump's drain plug, if necessary. (During winter months, the pump's drain plug is removed to prevent possible freeze damage during shipping and storage. If this is the case with your spa, a notice to this effect will be attached to the front of the spa's control box and the drain plug will be in the plastic bag that includes this owner's manual. Screw this plug into the the threaded hole in the face of the pump.)

2. FILL THE SPA

NOTE: Never fill your spa with water from a water softener. Its corrosive effects will damage your spa's components.

- Remove the skimmer basket and weir. (See page 10).
- Insert the end of a garden hose into the filter canister and begin filling the spa.
- Stop filling when the water level is approximately one inch above the highest jet.
- Reinstall the skimmer basket and weir.

3. TURN ON POWER

Turn on power to the spa at the home's circuit breaker, Ground Fault Circuit Interrupter (GFCI) and any other switching devices installed by your electrician. When power is on, the spa's LCD screen will display information.

4. ACTIVATE JETS

- Set all air controls to the "Max" position. (See illustration on page 5.)
- Press the  touch pad on the control panel twice to turn on the high speed of the dual-speed pump - see "SPA SIDE CONTROLS" illustration on page 6.
- You should be able to feel a steady stream of water from the jets. If not, refer to the instructions for priming the pump in the SPA TROUBLESHOOTING section in the back of this manual.

5. ADD START-UP CHEMICALS

Add the spa water chemicals as directed by your Caldera dealer, by the instructions contained in your spa chemical kit or in the section titled "BALANCING THE SPA WATER" on page 7.

6. SET TEMPERATURE

Your spa has been pre-set to automatically achieve a water temperature of 100°F, which is the temperature typically preferred for comfortable spa enjoyment. To view the set temperature, press the  touch pad once. The set temperature will be displayed for four seconds.

To adjust the set temperature, press the  touch pad again while the set temperature is displayed. This will increase or decrease the set temperature, depending on which direction was last chosen. Each successive press will change the set temperature by one degree in the same direction.

If you want to adjust the temperature in the opposite direction, wait four seconds to allow the display to revert to the actual water temperature. Press the touch pad to display the set temperature again, then again to adjust in the desired direction.

- Minimum temperature setting is 80°F, maximum is 104°F.
- The time required for initial heat-up will vary depending on the voltage of the spa's power supply, the temperature of the fill water and the size of the spa. If your spa is connected to 220V, you may expect a temperature rise of approximately 7 to 10 degrees per hour. If your spa is connected to 110V, you may expect a temperature rise of 2 to 3 degrees per hour.

DANGER. RISK OF INJURY. Always check the water temperature carefully before entering the spa.

7. INSTALL THE SPA COVER

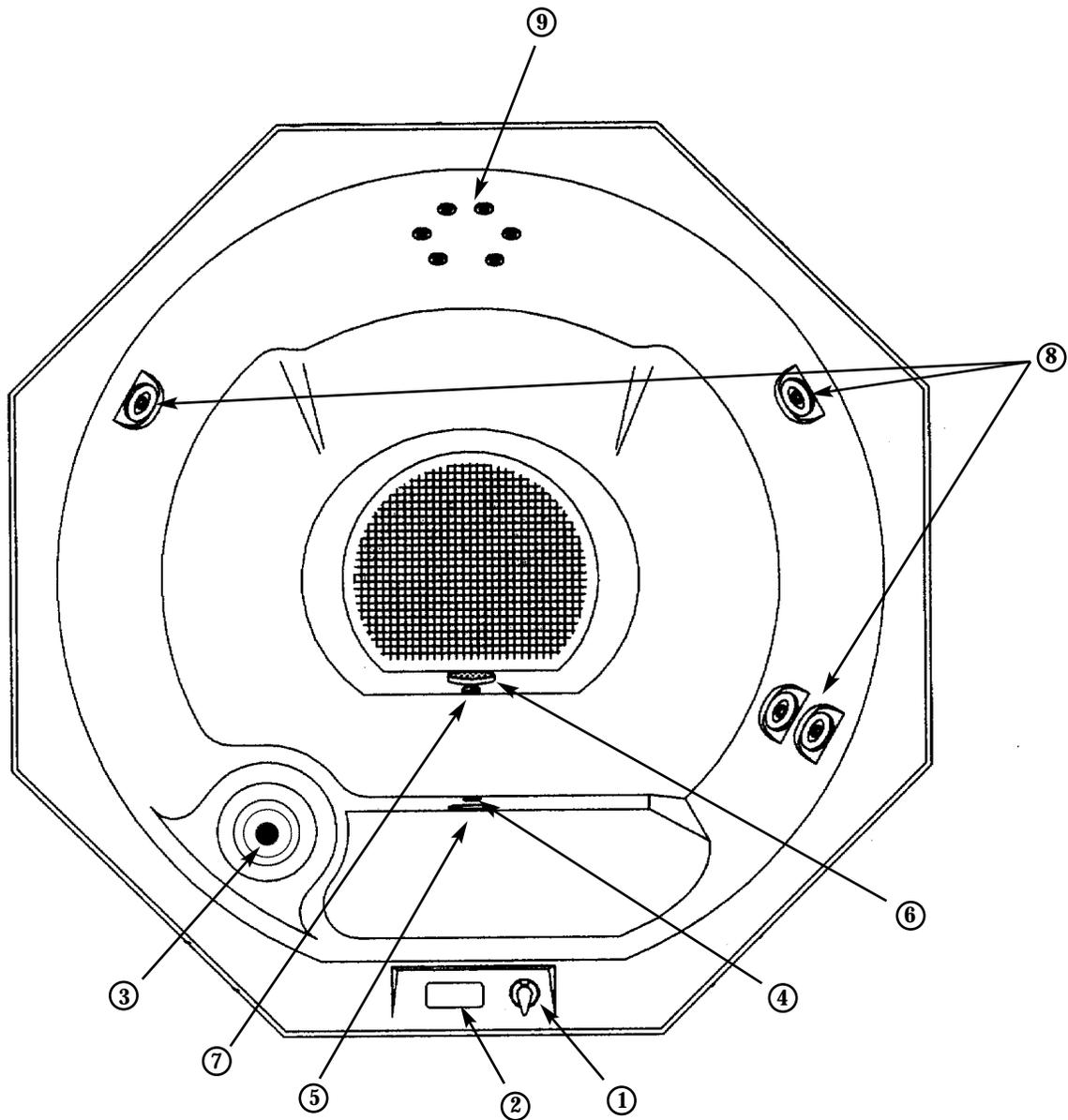
- Place the cover squarely on the spa.
- Position the tie-down locks included with your cover on the side of the spa so that they are easily reached by the cover tie-down straps. Allow for about 1/2" to 3/4" slack in the straps to make it easy to insert straps into locks and to compensate for vinyl shrinkage in cold weather.
- Attach the locks with the screws provided and insert the cover tie-down straps into the locks.

Keeping the cover in place any time the spa is not in use will reduce the amount of time the heater operates, thereby minimizing operating costs.

DANGER. RISK OF INJURY.

- **Never leave a spa uncovered or unattended.**
- **Never leave a spa cover unlocked.**
- **Do not stand, sit or lie on the cover.**

SPA FEATURES

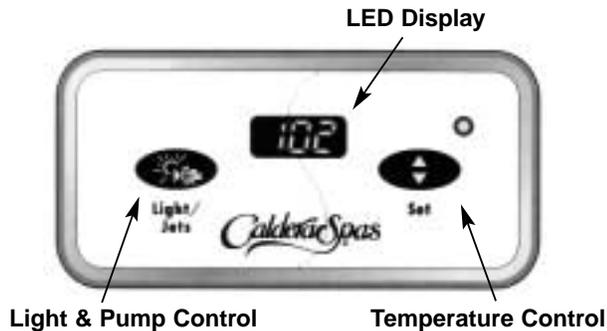


- | | |
|---------------------------|-----------------------------|
| 1. Air control | 6. Drain/suction fitting |
| 2. Spa-side control panel | 7. Inlet for optional ozone |
| 3. Filter compartment | 8. Magna Jets |
| 4. Temperature sensor | 9. Euro Jets |
| 5. Spa light | |

**TETON MODEL SHOWN.
FEATURES AND LOCATIONS MAY VARY IN OTHER MODELS.**

OPERATING INSTRUCTIONS

SPA-SIDE CONTROLS



SPA-SIDE CONTROL OPERATION

Your spa-side control system consists of an LED Display and convenient touch pads that allow you to set the water temperature and adjust the skim/filter cycle settings, as well as control the hydrotherapy jets and mood light from spa side.

LED DISPLAY

The LED display on your spa's control panel continually shows the spa's actual water temperature. In certain situations, it will also display other messages - see LED MESSAGES on page 12.

TEMPERATURE CONTROL

When initially powered, your spa is automatically set to achieve a water temperature of 100°F. To view the set temperature, press the touch pad once. The set temperature will be displayed for four seconds. To adjust the set temperature, press the touch pad again while the set temperature is displayed. This will increase or decrease the set temperature, depending on which direction was last chosen. Each successive press will change the set temperature by one degree in the same direction.

If you want to adjust the temperature in the opposite direction, wait four seconds to allow the display to revert to the actual water temperature. Press the touch pad to display the set temperature again, then again to adjust in the desired direction.

Minimum temperature setting is 80°F, maximum is 104°F.

LIGHT AND PUMP CONTROL

Pressing the touch pad sequences the light and pump through various combinations as follows:

	<u>Pump</u>	<u>Light</u>
1st Press:	On
2nd Press:	Low Speed	On
3rd Press:	High Speed	On
4th Press:	High Speed	Off
5th Press:	Off*	Off

*During filter cycles or when the thermostat is calling for heat, the pump's low speed operates automatically and cannot be turned off by pressing the touch pad.

* The pump automatically turns off after operating for 15 minutes.

* The light automatically turns off after 4 hours.

FILTER CYCLES

Your spa will automatically turn on to filter the water twice each day. The first filter cycle begins immediately after the power is initially supplied to the spa. The second filter cycle begins twelve hours after the start of the first cycle. Each filter cycle is two hours in duration. During filtration, the pump's low speed runs continuously.

If you want to change the filter cycles' start times, turn the power to the spa off and back on at the time of day you want the first cycle to begin.

ECONOMY/STANDARD OPERATING MODE

When you turn on electrical power to your spa, it will automatically run in the "STANDARD" operating mode. This means that the heater and the pump's low speed will turn on as needed to reach and maintain the set temperature--the same way your refrigerator does.

If you prefer, you may set your spa for the "ECONOMY" operating mode. In this mode, the spa will heat only during filter cycles and, if connected to 240V, when you manually turn the pump on--it will not turn on to maintain heat between filter cycles.

To change to "ECONOMY" mode, simply press the "SET" button then, while the set temperature is displayed, press the "LIGHT/JETS" button. "EC" will flash alternately with the temperature to let you know your spa is now set for the "ECONOMY" operating mode. Repeat this process to return to "STANDARD" mode.

AIR CONTROL

The Air Control on the rim of your spa allows you to change the power of the jets by regulating the amount of air that is mixed with the water coming out of the jets.

HYDRO JETS

Magna Jets - The larger jets in your spa allow you to re-direct the jet stream by changing the position of the nozzle.

You can also regulate the force of the massage by rotating the fascia ring clockwise to reduce the force or counter-clockwise to increase the force. Notice that turning off the flow to some jets increases the flow to the other jets. To avoid damage to your spa's plumbing and components, **do not turn off more than half of these jets at the same time.**

MagnaSage rotating nozzles and dual-port nozzles are available from your Caldera dealer, to replace the directionally adjustable nozzles in the Magna Jets.

Euro Jets - The small euro jets deliver a direct, precision massage. You may purchase "Euro-Pulse" assemblies from your Caldera dealer that twist onto the Euro jets to provide a pulsating, rotary massage.

BALANCING THE SPA WATER

Note: Many of the additives mentioned here are referred to by brand name. If your chemicals are a different brand, ask your Caldera dealer which additives are comparable, if necessary.

The instructions below will assist you with balancing the spa water for the first time. You will need the following items:

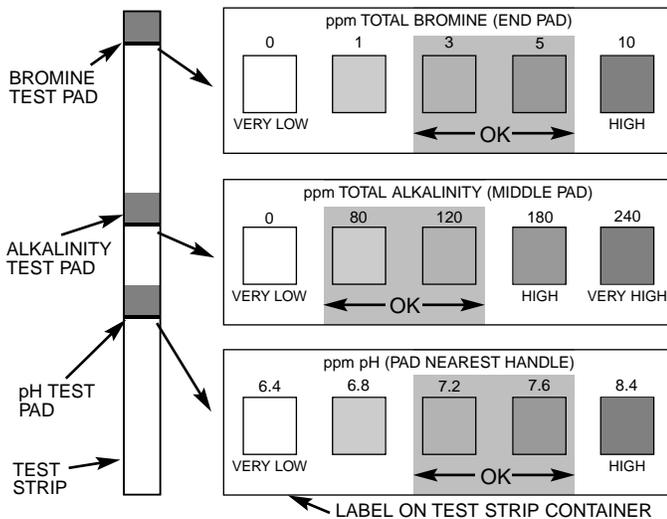
- “3-Way Test Strips” or Test Kit.
- “Spa Up” and “Spa Down” for pH control.
- “Spa Defender” for calcium and scale control.
- “Metal Gone” for breakdown of mineral deposits.
- “Renew” for shock treatment.
- “Bromine” or “Chlorine” for sanitizing the spa water.

Follow these easy steps:

1. Fill your spa until the water level is one inch above the highest jet. It is **NOT** advisable to use softened water in your spa, as it may be corrosive.

2. Add 1/2 pint of Spa Metal Inhibitor (Metal Gone) to prevent iron or copper deposits from staining the finish of your spa. If your water is known to contain high concentrations of these metals it may be necessary to add an additional quantity of Spa Metal Inhibitor.

3. Use a 3-way spa water test strip or test kit to measure the pH and Alkalinity of your water. The following instructions utilize test strips for testing. Immerse the test strip in the spa water, following the instructions on the test strip container label. Compare the test strip to the label to determine the condition of the spa water.



4. If the Alkalinity is not within the acceptable range (80 to 120 ppm) it should be adjusted first. If it is low, raise the Alkalinity by adding Spa Up (1 oz. at a time), retesting until the Alkalinity

reaches 120 ppm. If the Alkalinity is high, it should be lowered by using Spa Down (1 oz. at a time).

5. After the Alkalinity is properly adjusted, the pH is next. If the pH is above 7.8, use Spa Down (1 oz. at a time) to lower it to the acceptable range. If the pH is below 7.2, add Spa Up to bring it into the acceptable range. It is extremely important to NEVER allow the pH of your spa water to be under 7.0, as this can severely damage your equipment and will void the warranty.

6. Add sanitizer, either chlorine or bromine. For chlorine: Follow the directions on the bottle. Chlorine dissolves rapidly; you should get a reading on the test strip or test kit within minutes of application. For bromine: Follow the directions on your floating brominator. It is necessary to add sodium bromide only when the spa is being filled. Bromine tablets erode slowly, and it may take several hours before you will get a reading on the test strip. It may be necessary to adjust the floating brominator and/or your skim/filter time.

7. To properly maintain the chemical balance of your spa, follow the 3-day-a-week program outlined below:

3-DAY-A-WEEK SPA CARE PROGRAM

MONDAY

1. Test the water using 3-WAY TEST STRIPS or a TEST KIT.
2. Adjust pH and total alkalinity - Refer to pH and total alkalinity on label of SPA UP and SPA DOWN.
3. Maintain 1.0 to 3.0 ppm bromine or free chlorine.
4. Add 1 ounce of SPA DEFENDER per 400 gallons of water to prevent calcium build up.
5. Shock treat with 2 ounces of RENEW, a non-chlorine shock, every week as needed.

WEDNESDAY

1. Nothing required if bromine is used as sanitizer. Check and adjust chlorine level if chlorine is used.

FRIDAY

1. Nothing required if bromine is used as sanitizer. Check and adjust chlorine level if chlorine is used.

Note: The above table is an example only. Actual spa usage will determine the amount of chemicals required to maintain proper chemical balance.

SPA WATER TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	SOLUTIONS
Cloudy Water	<ul style="list-style-type: none"> • Inadequate filtration/dirty filter. • Excessive oils/organic matter. • Improper sanitation. • High pH and/or high alkalinity. • Suspended particles/organic matter. • Overused or old water. • Ozone malfunction. 	<ul style="list-style-type: none"> • Clean filter with a filter cleaner or degreaser. • Shock the spa with "RENEW". • Increase sanitizer to recommended level. • Adjust pH; add "SPA DOWN". • Use clarifier. • Drain the spa, clean and refill. • Contact your Caldera dealer.
Water Odor	<ul style="list-style-type: none"> • Excessive organics/too many chloramines/bromamines - insufficient free available chlorine. • Improper sanitation. • Low pH. 	<ul style="list-style-type: none"> • Shock the spa with "RENEW". • Increase sanitizer level to recommended level. • Raise pH with "SPA UP".
Chlorine Odor	<ul style="list-style-type: none"> • Too many chloramines-insufficient free available chlorine. • Low pH. 	<ul style="list-style-type: none"> • Shock the spa with "RENEW". • Adjust pH; raise pH with "SPA UP".
Musty Odor	<ul style="list-style-type: none"> • Bacterial or algae growth. 	<ul style="list-style-type: none"> • Shock the spa . If problem is visible, draining and cleaning may be required.
Foaming	<ul style="list-style-type: none"> • Buildup of body oils, lotion and chemicals resulting in soap or detergent. • Overused or old water. • Excessive organics. 	<ul style="list-style-type: none"> • Add defoamer or drain and refill. • Drain and refill. • Shock with "RENEW".
Organic Buildup/Scum Ring Around The Tub	<ul style="list-style-type: none"> • Body oils and dirt. • Inadequate filtration. 	<ul style="list-style-type: none"> • Wipe off scum with a clean rag. Depending on severity - drain spa, use a spa surface and tile cleaner to remove the scum, refill spa and adjust water. • Clean filter with a filter cleaner or degreaser.
Algae	<ul style="list-style-type: none"> • High pH. • Low free chlorine/bromine. 	<ul style="list-style-type: none"> • Shock with "RENEW"; adjust pH. • Shock with "RENEW"; maintain sanitizer at recommended level.
Eye Irritation	<ul style="list-style-type: none"> • Low pH. • Insufficient free available chlorine/bromine. 	<ul style="list-style-type: none"> • Raise pH with "SPA UP". • Shock with "RENEW".
Skin Irritation/Rash	<ul style="list-style-type: none"> • Unsanitary/polluted water. • Chlorine/bromine level too high (above 5 ppm FAC). 	<ul style="list-style-type: none"> • Maintain recommended sanitizer residual at all times; super-chlorinate. • Allow chlorine/bromine level to drop below 5ppm before using spa.
Stains	<ul style="list-style-type: none"> • pH or total alkalinity too low. • High iron or copper in water source. 	<ul style="list-style-type: none"> • Adjust pH and total alkalinity; use sequestering agent; drain and clean with appropriate product. • Use sequestering agent for metals; adjust water.
Scale	<ul style="list-style-type: none"> • Too much calcium dissolved in water-pH. 	<ul style="list-style-type: none"> • Adjust total alkalinity and pH levels by adding the appropriate sodium bisulfate product; with concentrated scale deposits - drain the spa, scrub the scale off, refill the spa and balance the water.

MAINTENANCE

IMPORTANT MAINTENANCE PROCEDURES

3 days a week

Check water level. Make certain water level is 1 inch above the highest jet.

Check and adjust Chlorine level to 1.0 to 3.0 ppm if Chlorine is used as sanitizer. If Bromine is used, check weekly.

Once a week

Test the spa water using test strips or test kit.

Adjust pH and total alkalinity - refer to pH and total alkalinity on label of SPA UP and SPA DOWN.

Check and adjust Bromine level to 1.0 to 3.0 ppm if Bromine is used as sanitizer. If Chlorine is used, check three times a week.

Add 1 ounce of SPA DEFENDER per 400 gallons of water to prevent calcium build up.

Shock treat with 2 ounces of RENEW, a non-chlorine shock.

Check and clean the skimmer basket and weir to insure proper filter flow, remove leaves, foreign matter and debris.

Check spa cover. Make certain cover is positioned properly and tie-down straps are fastened/locked. Be sure water and snow are swept off or kept from accumulating or puddling on the cover.

**IMPORTANT:
KEEP SAND AND GRIT OUT OF SPA**

Sand and grit will damage or impair the performance of your spa's components. Use caution to avoid tracking debris into the spa. Remove sand or grit from the spa as soon as you notice it is present. A spa vacuum designed for this purpose is available from your Caldera dealer.

Four to six weeks

Inspect and clean the spa filter cartridge. It is very important to maintain your spa filter cartridge and keep it clean and free of particles which can restrict water flow. If the filter is not cleaned on a regular basis, the filter may clog and restrict water flow, which causes improper filtration and poor jet performance. See "FILTER CARTRIDGE REMOVAL AND CLEANING INSTRUCTIONS" on page 10.

Two months (heavy usage) Five months (light usage)

Drain your spa. Follow the procedures outlined in "DRAINING YOUR SPA" on page 10. Clean the spa with "Spa Multi-Purpose Cleaner" and then polish with a silicone sealant polish. When refilling your spa be sure to follow the "START-UP" instructions on page 4.

Six months

Clean and seal your spa skirt. The spa skirt is coated with a tinted stain for protection and to enhance the beauty of the natural redwood. Like all wood products, prolonged exposure to the weather and climate conditions will cause the redwood to discolor or fade. To maintain the rich finish, apply a good quality tinted or clear stain every six months.

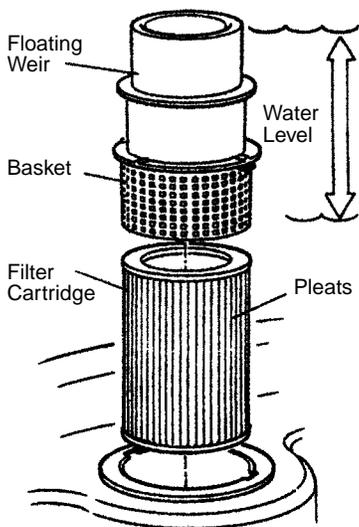
Note: The stain used by Caldera is available from your Caldera dealer.

MAINTENANCE

FILTER MAINTENANCE

At least once a week, check and clean the skimmer basket and weir to ensure proper filter flow. Remove leaves, foreign matter and debris. It is very important to keep your spa filter cartridge clean and free of particles to ensure proper water flow. A clean filter permits the hydrotherapy system to function properly and also allows more efficient filter cycles. Depending on how frequently your spa is used, we recommend cleaning the spa filter cartridge every four to six weeks. If this is not done, the filter may clog and restrict water flow, which causes improper filtration and poor jet performance.

FILTER CARTRIDGE REMOVAL AND CLEANING



Turn the spa OFF or turn the power to the spa OFF, then proceed as follows:

1. Push down slightly and turn filter basket counterclockwise to unlock, then pull the basket and weir out.
2. Carefully pull up the filter cartridge and bring it out of the spa.
3. Rinse cartridge using a garden hose. Rotate and separate filter pleats while spraying water to remove all debris possible. Let the filter dry and

then look for calcium deposits (scaling) or an oil film. If you find these, you will need to deep clean your filter cartridge with a "spa filter cleaning" solution to break down and remove mineral deposits and oils. The filter cartridge should be replaced with a new cartridge every 12 months.

4. To return basket and weir, insert and rotate clockwise to lock into position.

FILTER CARTRIDGE REPLACEMENT

The 50 sq. ft. filter cartridge should be replaced approximately every 12 months. Replacement cartridges are available from your Caldera dealer.

SPA LIGHT LENS INSTALLATION

Colored lenses are included for the spa light. To install or remove lenses, simply push ON or pull OFF of the spa light.

SPA LIGHT BULB REPLACEMENT

To replace the spa light bulb turn all power to the equipment module OFF. Locate the rear of the spa light and remove the bulb socket by turning it counterclockwise 1/4 turn. Pull the bulb from the socket and replace by reversing the above steps.

CAUTION: The replacement bulb must be the same rating as the factory-installed bulb or standard automotive type #912.

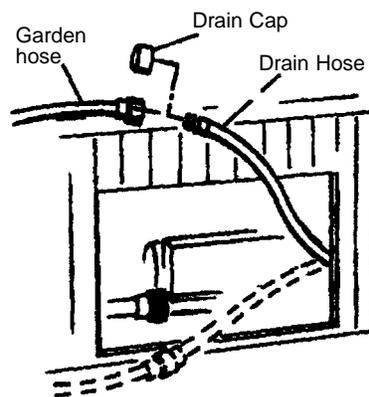
SPA COVER CARE

CLEANING AND VINYL CARE Keep the cover clean. As often as is necessary wash with mild soap and rinse with clean water. **DO NOT USE SOLVENTS, PETROLEUM PRODUCTS, ABRASIVE CLEANERS OR STRONG DETERGENTS.** All vinyls contain plasticizers which migrate out and escape naturally over time. Sun and cold speed up this process. Applications of vinyl cleaner and conditioner, when used according to the manufacturers instructions, can retard this type of deterioration. **DO NOT USE PRODUCTS THAT CONTAIN SILICONE OR ALCOHOL.**

CARE OF SEWING HOLDS AND THREAD The sewing holds and thread are the greatest potential weakness in a cover. Vinyl is a soft, leather-like material which the thread can cut if the cover is roughly handled. This is especially true when the vinyl has been exposed to hot sun. The handles, tie-downs and hinge are double reinforced with thick, vinyl-coated, rip-stop, polyester webbing. However, mistreatment by sudden jerking motions can damage them. Stretching or pulling one half against the other may rip the cover at the thread holes. To prevent damage, any handling of the cover should be done in a gentle manner.

Note: Fading and discoloration will occur naturally with extended exposure to the sun.

DRAINING YOUR SPA



1. Turn off or disconnect power from the spa.
2. Remove the equipment compartment access door.
3. Locate the drain cap. Lift drain hose above the water level. (requires cutting plastic tie the first time.)
4. Unscrew and remove the drain cap.

5. Attach drain hose to garden hose and direct to an appropriate draining area. Maintain hose below water line.
6. After your spa is empty, clean the shell and filter cartridge (see instruction on page 10).
7. After cleaning, remove garden hose and put drain cap back in place.
8. Replace the equipment compartment access door.

NON-OPERATION IN COLD CLIMATE

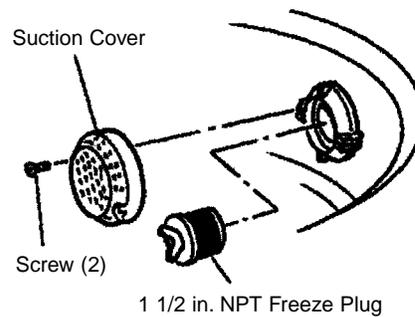
If the spa is to be left unused for an extended period of time in areas where **FREEZING TEMPERATURES DO NOT OCCUR**, it may be desirable to turn the heater to the lowest temperature. The automatic filter cycles will keep the spa water clean and sparkling. When preparing the spa for use, check the water chemistry to assure correct chlorine or bromine and pH levels. Consult your Chemical Handbook.

You can keep the water in the spa during the time of year when freezing at the spa location may occur. If a freeze condition is detected, the pump and heater will be activated automatically to circulate the water in low speed. However, **CAUTION** must be used with this approach. In the event of electrical power interruption, regardless of the cause, the heater and pump will stop operating and freeze protection will be lost, possibly resulting in freeze damage to the spa, spa plumbing and/or components. Such damage is not covered by warranty.

WINTERIZING YOUR SPA

If the spa is located where freezing temperatures occur, and you do not intend to use your spa for an extended period, follow steps 1 through 7 outlined in "DRAINING YOUR SPA" on page 10 then complete the following steps:

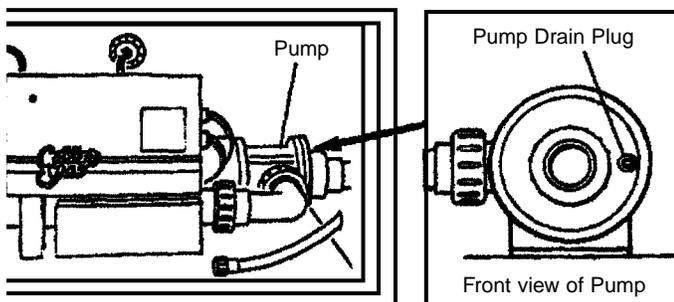
NOTE: Make certain all power to the spa is OFF and all water has been drained from the spa before you continue.



2. It is necessary to remove all water from interior plumbing. Remove the two screws securing the suction cover, then remove the suction cover.

3. Close the suction with a 1 1/2" NPT "freeze plug" (*available at your local hardware store*). Then use a shop vacuum to blowout the water by inserting the hose in the bottom of the filter canister forcing water back through the jets.

WARNING: When not in use, the spa must be covered with an insulating spa cover. Damage caused by either sun exposure or freezing is not covered under warranty.



1. Use a wrench to remove the Pump Drain Plug located on the front of the pump housing. Allow all water to drain out, then replace the Pump Drain Plug.

SPA TROUBLESHOOTING

If your spa doesn't seem to be working the way you believe it should, please review the "START-UP" and "OPERATION" instructions in this manual. If this doesn't help you correct the problem, follow the appropriate instructions below. If the problem still is not resolved, call your Caldera dealer.

SYMPTOM	PROBABLE CAUSE	SOLUTIONS
Nothing works, Blank LED Display	<ul style="list-style-type: none"> • Circuit breaker or GFCI tripped or OFF. 	<ul style="list-style-type: none"> • Reset circuit breaker. • Reset GFCI.
Pump motor will not function	<ul style="list-style-type: none"> • Motor overload condition. • Control switch failure. 	<ul style="list-style-type: none"> • Let cool for 1 hour. Motor overload will reset automatically. If problem persists, contact your Caldera dealer. • Disconnect spa and contact your Caldera dealer.
Noisy pump or Motor	<ul style="list-style-type: none"> • Low water level. 	<ul style="list-style-type: none"> • Add water to normal level (1 inch above highest jet).
Pump motor runs, but low or no jet pressure	<ul style="list-style-type: none"> • Air control closed. • Low water level. • Dirty filter cartridge. • Jet blocked. • Clogged suction or skimmer basket. 	<ul style="list-style-type: none"> • Open or clean air valve. • Add water to normal level (1 inch above highest jet). • Clean filter cartridge. • Remove jet face eyeball and clear orifice. • Clean suction cover or skimmer basket.
<div style="border: 1px solid black; padding: 10px;"> <p>Priming the pump</p> <p>Upon filling or refilling the spa, if the pump is operating and water is not flowing from any of the jets, the pump may not be properly primed. To correct, perform the following procedures:</p> <ul style="list-style-type: none"> • Turn off power to the spa at the breaker and remove the equipment compartment door. • Loosen the union on the top of the pump to allow the air to escape. When water is present, hand-tighten the union. • Turn power back on, activate the pump and check to make sure union is tight enough to keep it from leaking. Re-install equipment door. </div>		
Spa not heating properly	<ul style="list-style-type: none"> • Temperature set too low. • Spa cover improperly positioned. • Dirty filter cartridge. 	<ul style="list-style-type: none"> • Set control panel to a higher temperature. • Align spa cover. • Clean filter cartridge.

LED MESSAGES

LED MESSAGES

OH Water has overheated. DO NOT ENTER THE WATER. Turn off all power to the spa and contact your dealer or service organization.

FL Flow Switch error detection (stuck Flow Switch) - contact your dealer or service organization.

Sn The high-limit or water temperature sensor has malfunctioned. Contact your dealer or service organization.

OPTION

CALDERA PURE WATER OZONE SYSTEM

The optional Ozone Generator operates during filter cycles to disburse ozone into the spa through an ozone jet located in the footwell of the spa. Water flow from the ozone system should be checked periodically; small bubbles should be seen rising from the ozone jet.

Caldera Spas . . . Quality Spas and Gazebos Since 1976.