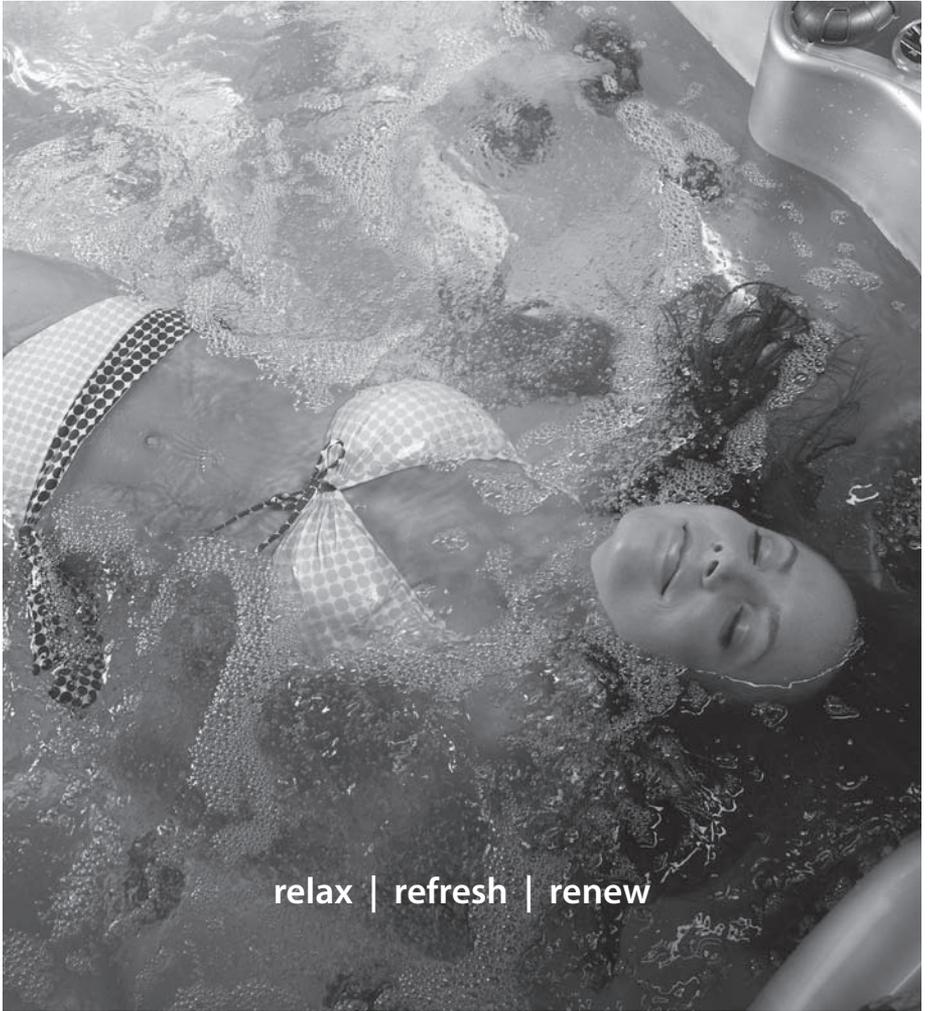


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Clearwater Spas  
**SPA MANUAL**

Resort Series | Beachcraft Series | XS Series



relax | refresh | renew

*Clearwater Spas*

P.O. Box 2140 | Woodville, WA 98072 | [www.clearwaterspas.com](http://www.clearwaterspas.com)

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relax | refresh | renew

**"We reserve the right to improve our product without notice"**

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## INTRODUCTION

Congratulations on your purchase of a new Clearwater Spa! Your Clearwater Spa is designed and manufactured with the finest components available and is engineered with comfort, low maintenance, and durability in mind.

You will enjoy your spa for several years to come if you are diligent with the care and maintenance of your spa. This manual will help you to determine the best way to take care of your spa based on the amount of use and the type of environment your spa is installed.

It is very important for you to read the entire manual before attempting to use your spa. Contained in this manual are important maintenance and start-up procedures as well as safety precautions that must be followed to ensure the prolonged life of your spa and the safety of the people using the spa. Failure to follow start-up procedures may damage your unit and void your warranty.

Please feel free to call your local Clearwater Spa dealer if you have any further questions after reading this manual. We hope you enjoy many years of fun and relaxation in your new Clearwater Spa.

### ICON Key

The Icon key on the left defines the type of information boxes that will appear throughout the manual. The boxes highlight helpful information that contains useful tips or warnings that apply to the use and care of your spa.

### ICON KEY



Safety Tip



Key Point



Warning!

# SAFETY FIRST

## IMPORTANT SAFETY INSTRUCTIONS!

### READ AND FOLLOW ALL INSTRUCTIONS.

### SAVE THESE INSTRUCTIONS.



Electrical  
Warning!

When installing and using this electrical equipment it is recommended that a licensed and bonded electrician perform the work. Basic safety precautions should always be followed, including the following:

- A pressure wire connector is provided on the outside of the control box to permit the connection of a solid copper bonding wire between the spa and any metal equipment, metal enclosures of electrical equipment, metal water pipe or conduit within 5 feet of the spa as needed to comply with local requirements.
- A green colored terminal (or a wire connector marked "G", "GR", "Ground", or "Grounding") is provided. To reduce the risk of electric shock, connect this terminal to the grounding terminal of your electric service or supply panel with a continuous green insulated copper wire equivalent to the circuit conductor supplying this equipment.
- The electrical supply must include a suitably rated Ground Fault Interrupter Circuit to open all underground supply conductors to comply with section 422-20 of the National Electrical Code. ANSI/NFPA 70-1987. The power supply cut off must be readily accessible to the spa occupant, but installed at least 5 feet from spa water.
- Test the performance of the GFCI according to manufacturer recommendations. If the GFCI does not perform correctly, there may be a ground current flowing indicating the possibility of electric shock. Disconnect the power until the fault has been identified and corrected.



Electrical  
Warning!

- **DANGER – RISK OF ELECTRIC SHOCK.** Install at least 5 feet from all metal surfaces.
- **DANGER – RISK OF ELECTRIC SHOCK.** Do not permit any electric appliance such as a light, telephone, radio or television within 5 feet of a spa or hot tub.



Safety  
Warning!

- **WARNING – RISK OF CHILD DROWNING.** Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use a spa or hot tub unless they are supervised at all times.

# WARNING

## PREVENT DROWNING

1. SUPERVISE CHILDREN AT ALL TIMES.
2. ATTACH SPA COVER AFTER EACH USE.
3. SPA HEAT CAN CAUSE HYPERTHERMIA AND UNCONSCIOUSNESS.
4. SPA HEAT IN CONJUNCTION WITH ALCOHOL, DRUGS, OR MEDICATION CAN CAUSE UNCONSCIOUSNESS.

## PREVENT ELECTROCUTION

1. NEVER PLACE ANY ELECTRIC APPLIANCE WITHIN 5 FEET OF SPA.

NOTE: THIS MARKING IS TO BE REMOVED ONLY BY THE CUSTOMER.

- **DANGER** – To reduce risk of injury, do not remove suction fittings.
- Installation should provide drainage of the electrical equipment area to prevent electrical shortage.
- Store all chemicals in a cool dry area and keep out of children's reach.
- To reduce the risk of injury:
  - A. Spa heat can cause hyperthermia and unconsciousness! The water in a spa or hot tub 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 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 water temperatures to 100° F (38° C).
- The use of alcohol, drugs, or medication before or during spa or hot tub use may lead to unconsciousness with the possibility of drowning.
- Persons suffering from obesity or with a medical history of heart disease, low or high blood pressure, circulatory system problems or diabetes should consult a physician before using a spa or hot tub.
- Persons using medication should consult a physician before using a spa or hot tub since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.
- Before entering a spa, the user should measure the water temperature since the tolerance of water temperature-regulating devices varies.



Safety  
Warning!

# INSTALLATION

## Before Your Spa Arrives

Prior to having your new spa delivered to your house you will need to prepare an area to install the spa. We have listed some key points to installing your spa that will help eliminate some of the unforeseeable situations that could occur.



Important  
installation  
highlights!

- Do not install too close to a building or structure.
- Leave enough room around all sides to allow access to service panels.
- Install on a load bearing, level platform.
- Do not install less than 5 feet from ground conductors.
- Use non-conductive conduit for all wiring.
- If installing below a deck surface, leave enough room to access and remove service panels.

We recommend a level 4" thick concrete pad if you are installing on land (versus deck or platform). The dimensions of the pad should be at least 3" wider than the spa dimension on all sides. (e.g.: If the spa is 8' x 8', then the pad should be 8'6" x 8'6"). Allow a few days for curing the cement when calculating your scheduled delivery date.

Balconies and upper decks are not recommended for spa installations, but if you choose to do so, keep in mind that a large filled spa with 6 people can weigh as much as three tons. Balconies and decks must be constructed to current state and local building codes and must support at least 100 pounds per square foot.

If you are building a deck around the spa, be sure that the deck does not cover any of the service panels to the spa. If you are building stairs for getting up to the spa, it is recommended that they be installed in such a way that they can be moved out of the way if entrance to the service panels is required.

The most obvious thing to remember is to plan your installation in a location where it will be easy to move from the delivery truck to the location site. Spas are typically transported on a mover's dolly lying on their side. Check for adequate gate clearance and remove any fence panels if necessary to allow access to the installation site.

If you don't know the dimensions of your spa, contact your local Clearwater Spa dealer for information.

## Electrical

A 50 amp, 240 volt, 60 Hz service branch coming from the main service entrance is required. The spa supply should not be shared with any other devices or appliances. All wiring must comply with the current National Electrical Code, ANSI/NFPA 70.

There are a few models that can be (special) ordered with a 120V Ground Fault Circuit Interrupter (GFCI) cord attached. If this is what you (special) ordered, the power service requirement is 120 Volt 60 Hz. This service branch is to be a dedicated 20 amp circuit, within 15 feet and not closer than 5 feet from the positioning of our spa equipment. Consult with your Clearwater Spa Dealer if this option was purchased.

- The electrical supply must include a suitably rated Ground Fault Circuit Interrupter (GFCI) breaker to open all ungrounded supply conductors.
- A weatherproof service box with a shut-off switch must be located between the main service entrance and the spa for a 240 volt system. The box should be within sight of the spa and accessible but at least 5 feet away.
- All wiring must be watertight.
- Wire should be minimum #6 stranded copper for 240 volt.

Figure 1-1 shows the 240 volt wiring configuration from the house to the spa. If the G.F.C.I. is tripping continuously, check to see if the wiring is done according to the illustration (Figure 1-1). Also note the wiring diagrams that are attached to the inside of the equipment panel lid for any further wiring information.

**Do not turn on power to the spa when the tub is not filled.**

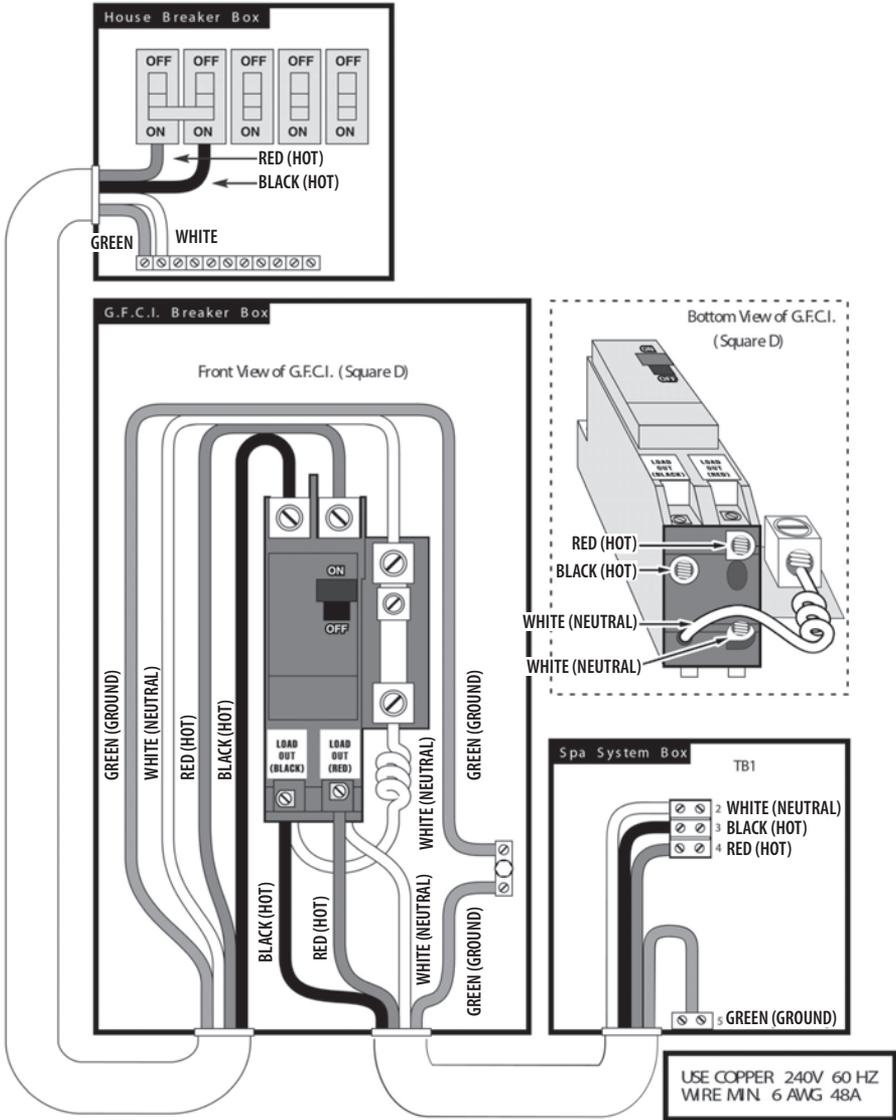


The closer you locate the spa to the main service panel, the less money you will have to spend on wire. Wire can become expensive if you run long lengths.



Always shut off power at the source when working with any electrical power!! Failure to do this could result in serious injury or even death!





**Figure 1-1**  
240 volt wiring configuration from the house to the spa

## Fill The Spa

Before you begin to fill your spa, it is advisable to have your water tested for hardness (water rich in calcium and mineral content). Wells usually contain harder water than urban water supplies. Mineral and metal imbalances in your water can shorten the life of the equipment in your spa. Contact your local Clearwater Spa dealer for proper water analysis.

We recommend that you purchase a high quality "Water Test Kit" for checking pH and sanitizer levels. Test the water daily until your "user load" is determined.

Make sure there is no dirt or sediment at the bottom of the tub and that there is nothing inside the filter compartment before filling with water. **Filling the spa through the filter housing will help to prevent air locks** (trapped pockets of air) **in pumps on start up.**

## Topside Controllers

Identify your topside control as either:

- **XS Series**, *Gold and Signature Package* and **Beachcraft Series**, *Gold Package* (See figure 1).
- **Resort Series**, *Signature Package* (8-button) and **Beachcraft Series**, *Signature Package* (7-button) (See figure 2).

After you identified your control system, and the spa is filled, turn your power on and go to your controller spa operations.

## Power On

It's time to turn on the power. Set the breaker at the main service panel to the on position. Now set the breaker at the service panel or spa disconnect outside the spa to the on position. Then proceed to Initial Start-up referencing your specific control system.



**IMPORTANT!**  
Improperly balanced water may damage your spa and void your warranty!



**IMPORTANT!**  
Do not fill your tub with water from your hot water heater!



**IMPORTANT!**  
Do not turn power on until tub is full of water and all valves are open!



**Figure 1**  
XS Series topside control panel.



**Figure 1**  
Beachcraft Series 'Gold Package' topside control panel.

## CONTROL REFERENCE

### XS Series

### Beachcraft 'Gold' Series

#### Initial Start-up

Your spa will enter Priming Mode ('PR') when it is energized. During Priming Mode, press "Jets" button(s) repeatedly and be sure all pumps are free of air. Priming Mode lasts less than 5 minutes. Press "Temp" to exit. After Priming Mode, the spa will run in Standard Mode (see Mode section). Some panels may not have a "Temp" button. On these panels the "Set," "Warm," or "Cool" buttons are used.

#### **Temp Control** (80°F-104°F/26°C-40°C)

The last measured water temperature is constantly displayed. The water temperature displayed is current only when the pump has been running for at least 2 minutes.

On panels with a single "Temp" or "Set" button, to display the set temperature, press the button once. To change the set temperature, press the button a second time before the display stops flashing. Each press of the button will continue to either raise or lower the set temperature. If the opposite direction is desired, allow the display to revert to the current water temperature. Press the button to display the set temperature, and again to make the temperature change in the desired direction.

On panels with "Warm" and "Cool" buttons, to display the set temperature, press "Warm" or "Cool" once. To change the set temperature, press a temperature button again before the display stops flashing. Each press of "Warm" or "Cool" will adjust the set temperature. After three seconds, the display will stop flashing and begin to display the current spa temperature.

## Jets 1

Press “Jets 1” to turn pump 1 on or off, and to shift between low and high speeds (if equipped). The low-speed will turn off after 4 hours. High-speed will turn off after 15 minutes. Low-speed may run automatically at times, during which it cannot be deactivated from the panel, but high-speed may be operated.

## Jets 2/Jets 3/Blower (If equipped)

Press the corresponding button once to turn the device on or off. The device will turn off after 15 minutes. Pump 2 may be two-speed on some systems. Some systems use this one button to control two devices. The first button press will activate one device. Press again to have both devices active. Press again to turn off the first device only. Press one more time to turn both devices off. The pump responsible for heating and filtration (pump 1 low-speed on non-circ system, or the circ pump on circ systems) will be referred to simply as the pump. In multi-button sequences, if the buttons are pressed too quickly in sequence, they may not register.

## Light

Press “Light” to operate the spa light. Turns off after 4 hours.

### Mode

Depending on system configuration, mode changing may not be available and will be locked in Standard Mode. Mode is changed by pressing “Temp,” then “Light”.

**Standard Mode** maintains set temperature. ‘SE’ will be displayed momentarily when you switch into Standard Mode.

**Economy Mode** heats the spa to the set temperature only during filter cycles. ‘EC’ will display when water temp is not current, and will alternate with water temp when the pump is running.

**Sleep Mode** heats the spa to within 20°F/10°C of the set temperature only during filter cycles. ‘SL’ will display when water temp is not current, and will alternate with water temp when the pump is running.

### Preset Filter Cycles

The first preset filter cycle begins 6 minutes after the spa is energized. The second preset filter cycle begins 12 hours later. Filter duration is programmable for 2, 4, 6, or 8 hours or for continuous filtration (indicated by ‘FC’). The default filter time is 2 hours for non-circ systems and 4 hours for circ systems. To program, press “Temp,” then “Jets 1.” Press “Temp” to adjust. Press “Jets 1” to exit programming.

For non-circ systems, low-speed pump 1 and the ozone generator (if installed) run during filtration.

For circulation systems, the circ pump and the ozone generator (if installed) run 24 hours. In hot environments, the circ pump may turn off for 30 minute periods, except during filter cycles. At the beginning of each filter cycle all other equipment will run briefly to purge the plumbing.

## Diagnostic Messages

Message	Meaning	Action Required
	No message on display. Power has been cut off to the spa.	The control panel will be disabled until power returns. Spa settings will be preserved until next power up.
---	Temperature unknown.	After the pump has been running for 2 minutes, the current water temperature will be displayed.
<b>HH</b>	"Overheat" - The spa has shut down.* One of the sensors has detected 118°F/47.8°C at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
<b>OH</b>	"Overheat" - The spa has shut down.* One of the sensors has detected that the spa water is 110°F/43.5°C.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F/41.7°C, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
<b>SA</b>	Spa is shut down.* The sensor that is plugged into the Sensor "B" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat condition.)
<b>Sb</b>	Spa is shut down.* The sensor that is plugged into the Sensor "B" jack is not working.	If the problem persists, contact your dealer or service organization.
<b>Sn</b>	Sensors are out of balance. If alternating with spa temperature, it may just be a temporary condition. If flashing by itself, spa is shut down.*	If the problem persists, contact your dealer or service organization.
<b>HL</b>	A significant difference between temperature sensors has been detected. This could indicate a flow problem.	If the water level is normal, make sure all pumps have been primed. If problem persists, contact your dealer or service organization.

Message	Meaning	Action Required
<b>LF</b>	Persistent low flow problems. (Displays on the fifth occurrence of <b>HL</b> message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for <b>HL</b> message. Heating capability of the spa will not reset automatically; you may press any button to reset.
<b>dr</b>	Possible inadequate water, poor flow, or air bubbles in detected in the heater. Spa is shut down for 15 minutes.	If water level is normal, make sure all pumps have been primed. Press any button to reset. This message will reset within 15 minutes. If problem persists, contact your dealer or service organization.
<b>dy</b>	Inadequate water detected in heater. (Displays on third occurrence of <b>dr</b> message.) Spa is shut down.*	Follow action required for <b>dr</b> message. Spa will not automatically reset. Press any button to reset manually.
<b>IC</b>	"Ice" - Potential freeze condition detected.	No action required. All equipment will automatically activate regardless of spa status. The equipment stays on 4 minutes after the sensors detect that the spa temperature has risen to 45°F/7.2°C or higher. An optional freeze sensor may be added to protect against extraordinary freeze conditions. Auxiliary freeze sensor protection is advisable in colder climates. See your dealer for details.

\* - Even when spa is shut down, some equipment will turn on if freeze protection is needed.

**Warning! Shock Hazard! No User Serviceable Parts.**

Do not attempt service of this control system. Contact your dealer or service organization for assistance. Follow all owner's manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

P/N 40789\_D 12/19/2007  
xs topside control 08



**Figure 2**  
Resort Series, 8-button (as shown) & Beachcraft Signature Series, 7-button (not shown).

## CONTROL REFERENCE

### Resort Series, Beachcraft 'Signature' Series and Ultra-Sage

#### Initial Start-up

When your spa is first actuated, it will go into Priming mode (after displaying some configuration information). Press Jet 1 Button once to start low speed on pump one. The Priming mode will last for up to 4 minutes and then the spa will begin to heat and maintain the water temperature in the Standard mode. You can exit Priming mode early by pressing "Temp".

#### Temp Set (80°F - 104°F / 26.0°C - 40.0°C)

The start-up temperature is set at 100°F/37.5°C. The last measured temperature is constantly displayed on the LCD.

Note that the last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes.

#### Up/Down

Press the "Down" or "Up" button once to display the set temperature. Each time either button is pressed again, the set temperature will increase or decrease depending on which button is pressed. After three seconds, the LCD will automatically display the last measured spa temperature.

#### Mode

This button is used to switch between standard, economy, and sleep modes. Press "Mode" to enter mode programming, press "Down" to cycle through to desired mode (LCD flashes until confirmed), then press "Mode" to confirm selection.

**Standard mode** maintains the desired temperature. Note that the last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes. The "Std" will appear on the display momentarily when you switch into Standard Mode.

**Economy mode** heats the spa to the set temperature only during filter cycles. The "Ecn" will appear solid when the temperature is not current and will alternate with the temperature when the temperature is current. Pressing "Jets 1" while in Economy mode puts the spa in Standard-In-Economy mode, ("SE") which operates the same as Standard Mode, then reverts to Economy Mode automatically after 1 hour. During this time, a press of the "Down" or "Up" followed by "Light" will revert the mode to Economy immediately. Sleep mode heats the spa to within 20°F

(11°C) of the set temperature only during filter cycles. The “Slp” will appear on the display until mode is changed.

### **Standby Mode**

Pressing “Down” or “Up” followed by “Blower” or “Jets 2” or “Aux” will turn off all spa functions temporarily. This is helpful when changing a filter. Pressing any button exits Standby mode.

### **Jets 1**

Press the “Jets 1” button once to turn pump 1 on or off, and to shift between low and high speeds (if equipped). If left running, the low speed turns off after 2 hours and the high speed turns off after 15 minutes.

On non-circ systems, the low speed of pump 1 runs when the blower or any other pump is on. It may also activate for at least 2 minutes every 30 minutes to detect the spa temperature (polling) and then to heat to the set temperature if needed, depending upon mode. When the low speed turns on automatically, it cannot be deactivated from the panel; however, the high speed may be started.

### **Jets 2**

Press the “Jets 2” button once to turn pump 2 on or off, and to shift between low and high speeds if it is a two-speed pump. If left running, the pump will turn off after 15 minutes.

### **Jets 3**

Press the “Jets 3” button once to turn pump 3 on or off. If left running, the pump will turn off after 15 minutes. If applicable.

### **Aroma**

Press the “Aroma” button once to turn on. Again to turn off. If left on, the blower will automatically turn off after 15 minutes. If applicable.

### **Light**

Press the “Light” button to turn the spa light on and off, and to shift between dim and bright settings if your light is dimmable. On dim, the LCD will show center circle plus one quarter of the light beams. Half of the light beams will show on medium brightness, and all of the light beams will show on bright. If a fiber-optic light without a separate wheel stop is installed, press the “Light” button to turn it on and off. If any light is left on, it will automatically turn off after 4 hours.

### **Circ Pump (Optional)**

If your system is equipped with a circ pump, it may be configured to work in one of three different ways:

1) The circ pump operates continuously (24 hours) with the exception of turning off for 30 minutes at a time when the water temperature reaches 3°F (1.5°C) above the set temperature (most likely to happen in very hot climates).

2) The circ pump stays on continuously, regardless of water temperature.

3) The circ pump will come on when the system is checking temperature (polling), during filter cycles, during freeze conditions, or when the blower or another pump is on.

### **Preset Filter Cycles**

On all systems, the pump and the ozone generator\*\* will run during filtration. At the start of each filter cycle, the blower will run on highest speed for 30 seconds to clean out the air channels. The lowest speed of pump 2 will run for 5 minutes.

The first filter cycle ("day") begins 6 minutes after the spa is powered up. The second filter cycle ("night") begins 12 hours later. Filter duration is programmable for 1-12 hours (F1-F12). The default filter time is 2 hours. To program, press "Down" or "Up" then "Jets 1". Press "Down" or "Up" to select the filter duration. Press "Jets 1" to select the number of filter cycles. The display will show "dn" (day cycle only) or "n" ("night" cycle only). Press "Down" or "Up" to adjust, then press "Jets 1" to exit the programming mode. For continuous filtration, use F12 and "dn".

### **Clean-up Cycle**

When the 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 one hour.

### **\*\*Ozone (optional)**

The ozone generator (if installed) runs during filter cycles (except when pump 1 is operating at high speed on a non-circ system) and during clean-up cycles.

### **Freeze Protection**

If the temperature sensors detect a drop to 44°F (approximately 6.7°C) within the heater, then the pump automatically activates to provide freeze protection. The equipment stays on until 4 minutes after the sensors detect that the spa temperature has risen to 45°F (approximately 7.2°C) or higher. In colder climates, an optional additional freeze sensor may be added to protect against freeze conditions that may not be sensed by the standard sensors. Aux freeze sensor protection acts similarly except with the temperature thresholds determined by the switch and without a 4-minute delay in turnoff. See your Clearwater Spa dealer for details.

## Diagnostic Messages

Message	Meaning	Action Required
	No message on display. Power has been cut off to the spa.	The control panel will be disabled until power returns. Settings are preserved until the next power-up.
OHH	“Overheat” - The spa has shut down. One of the sensors has detected 118°F (approximately 47.8°C) at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, shut off the power to the spa and call your Clearwater Spa dealer or service organization.
OHS	“Overheat” - The spa has shut down. One of the sensors has detected that the spa water is 110°F (approximately 43.3°C).	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F (approximately 41.7°C), the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your Clearwater Spa dealer or service organization.
ICE	“Ice” - Potential freeze condition detected.	No action required. The pumps and the blower will automatically activate regardless of spa status.
SnA	Spa is shut down. The sensor that is plugged into the Sensor “A” jack is not working.	If the problem persists, contact your Clearwater Spa dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
SnB	Spa is shut down. The sensor that is plugged into the Sensor “B” jack is not working.	If the problem persists, contact your Clearwater Spa dealer or service organization. (May appear temporarily in an

		overheat situation and disappear when the heater cools.)
SnS	Sensors are out of balance. If this is alternating with the temperature, it may just be a temporary condition. If the display shows only this message (periodically blinking), the spa is shut down.	If the problem persists, contact your Clearwater Spa dealer or service organization.
HFL	A substantial difference between the temperature sensors was detected. This could indicate a flow problem.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the pumps have been primed. If problem persists, contact your Clearwater Spa dealer or service organization.
LF	Persistent low flow problems. (Displays on the fifth occurrence of the "HFL" message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for "HFL" message. Heating capacity of the spa will not reset automatically; you may press any button to reset.
dr	Inadequate water detected in heater.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the pumps have been primed. Press any button to reset.
dr4	Inadequate water detected in heater. (Displays on third occurrence of "dr" message.) Spa is shut down.	Follow action required for "dr" message. Spa will not automatically reset; you may press any button to reset.
Pr	When your spa is first actuated, it will go into Priming mode.	See the M-7 Installation Instruction Manual for complete instructions on Power-up and Pump Priming. The Priming mode will last for up to 4 minutes and then the spa will begin to heat and maintain the water temperature in the Standard mode.

--	Temperature not yet known.	This is normal within the first few minutes of the spa power-up.
Std	The spa is operating in Standard Mode.	Temperature display is current after pump has been running for at least 2 minutes.
Ecn	The spa is operating in Economy Mode.	“Ecn” will appear solid on the display when the temperature is not current. “Ecn” will alternate with the temperature when the temperature is current.
SE	The spa is operating Standard-in-Economy Mode.	Operates the same as Standard mode, after 1 hour. Press “Mode” to switch directly to Economy mode.
Slp	Sleep Mode has been activated by pressing a button combination on the user panel.	“SLP” will appear solid on the display when the temperature is not current. “SLP” will alternate with the temperature when the temperature is current.
SbY	Standby Mode has been activated by pressing a button combination on the user panel.	Press any button to leave Standby Mode and return to normal operation.
PHL	pH is low.	Add pH increaser according to manufacturer’s instructions.
Phh	pH is high.	Add pH decreaser according to manufacturer’s instructions.
Sal	Sanitizer is low.	Add sanitizer according to manufacturer’s instructions.
Sah	Sanitizer is high.	Remove spa cover and allow sanitizer to dissipate.

**Periodic Reminder Messages (Press the “Mode” button to reset a display reminder)**

<b>Message</b>	<b>Frequency</b>	<b>Action Required</b>
rPH	Every 7 days	Test and adjust chemical levels per manufacturer’s instructions.
rSA	Every 7 days	Test and adjust chemical levels per manufacturer’s instructions.
rCL	Every 30 days	Remove, clean, and reinstall filter per manufacturer’s instructions.
rt9	Every 30 days	Test & reset GFCI per manufacturer’s instructions.
rdr	Every 90 days	Drain and refill spa per manufacturer’s instructions.
rCO	Every 180 days	Clean and condition cover per manufacturer’s instructions.
rtr	Every 180 days	Clean and condition wood per manufacturer’s instructions.
rCH	Every 365 days	Install new filter.

# CHEMICALS

## Keeping The Water Clean

One of the bigger reasons that people require service on their spa is because they haven't followed a strict chemical application routine. Water can accumulate impurities that can worsen the performance or even the damage the filtration system if chemicals are not applied on a regular basis. The water can even become unhealthy if chemicals are not used to sanitize the water. Improper pH levels or calcium levels can cause either corrosion of parts or scale build-up.

We recommend that you begin a routine of applying chemicals that you can get comfortable with and follow all the time. If you get into a scheduled routine, it will be easier to remember when to apply the chemicals.

Your spa may come with an optional ozonator that will do a very good job at killing bacteria and oxygenating the water, but chlorine, bromine or Nature II are used to compliment the job of the ozonator.

Finally, the best way to keep the water clean over long periods of time is to change the water four times a year. Connect a hose to the drain valve and open it all the way to allow the tub to drain all the way. Use a shop-vac to remove any standing water and debris at the bottom of the tub. Refer to the maintenance section for instructions on cleaning the tub before refilling it.



**IMPORTANT!**

Always read directions on chemical container thoroughly before using spa chemicals.



## Spa Chemistry 101

The pH scale goes from 0 to 14, with zero being extremely acidic and 14 being extremely base (alkaline). Seven is considered neutral pH.

At first, trying to understand spa chemistry can seem like a daunting task to say the least. We intend on helping you understand spa chemicals so that you can maintain the health of your spa at the best level possible.

There are three basic principals to spa water chemistry.

1. Sanitize/Disinfect (kill viruses, germs, etc.)
2. Oxidize (break down organic compounds like oils and sweat)
3. Maintain slightly base (alkaline) water (pH of 7.4 - 7.6). This controls the corrosiveness of the water, prevents excessive scaling (mineral formation on surfaces exposed to water, and insures that the water is comfortable to the skin.

Once you have a good understanding of the chemicals that are used in your spa, you will be able to maintain proper water balance. Water balance is reached when all elements (pH, total alkalinity, calcium hardness and total dissolved solids) are within their proper ranges.

The following definitions for chemicals will help you understand what the chemical is and what it is used for:

### **Sanitizers**

**CHLORINE** - Chlorine is widely used as a sanitizer or disinfectant in pool and spa water to kill bacteria, viruses and algae, and oxidizes ammonia and nitrogen compounds such as swimmer waste. Its formal name is Sodium Dichlor and is referred to as a chlorinated concentrate. Sodium Dichlor is a fast-dissolving, granular, stabilized organic chlorine compound providing either 56% or 63% available chlorine. Cyanuric acid and/or stabilizers are added to prevent U.V. light destruction of the chlorine by the sun.

Chlorinated concentrate produces chlorides and chloramines, which are formed when chlorine has combined with ammonia and nitrogen in pool and spa water. Chloramines exude a foul, "chlorine" odor and causes skin and eye irritation.

**BROMINE** – Bromine is the other commonly used sanitizer or disinfectant in pool and spa water to kill bacteria and algae, and oxidizes ammonia and nitrogen compounds such as swimmer waste. This chemical does not eliminate swimmer waste unless it is combined with an oxidizer (non-chlorine shock). It is very susceptible to direct sunlight, therefore is not efficient in outdoor pools. Bromine is sometimes used as an alternative for people whom are allergic or sensitive to chlorine products.

Bromine products are available as sodium bromide and bromine tablets. The bromide ion has no effective disinfectant or sanitizing capabilities without the use of nonchlorine shock (potassium monopersulfate). Potassium monopersulfate is added to oxidize, or activate, bromide ion to

bromine, which rapidly forms the active sanitizer - hypobromous acid - in spa water. Upon reaction with bacteria and other spa contaminants, hypobromous acid is reduced back to bromide ion, ready to be activated again by the next dose of potassium monopersulfate. Potassium monopersulfate begins to produce bromine immediately and continues to do so for several hours, providing sufficient time for oxidation of bather waste and other organic contamination such as ammonia and nitrogen.

**NON-CHLORINE SHOCK (Potassium Monopersulfate)** – Also known as “Oxy-Shock”, is an important chemical used in the process of disinfecting and sanitizing the spa water. Non-chlorine shock is used as an oxidation agent to oxidize and eliminate organic contaminants, dead algae and debris, and will also convert the chlorine by-products (chlorides and chloramines) back into free available chlorine.

When used with bromine products, non-chlorine shock is used with sodium bromide in a two-part disinfection system. Potassium monopersulfate (non-chlorine shock) is added to oxidize, or activate, bromide ion to bromine which rapidly forms the active sanitizer - hypobromous acid - in spa water. Upon reaction with bacteria and other spa contaminants, hypobromous acid is reduced back to bromide ion, ready to be activated again by the next dose of potassium monopersulfate. Most non-chlorine shock products have buffers that reduce pH instability, and corrosion inhibitors that help protect the heater and other metal surfaces.

**OZONE** – Ozone is a powerful gas that is used as a sanitizer and an oxidant to keep the spa water clean and disinfected. Although ozone is about 3000 times more powerful than chlorine, it has a tendency to dissipate quickly and does not create any sanitizer residual. By using an ozonator for your spa, you can cut maintenance time and chemical costs by as much as 60%. Ozone is manufactured by an ozonator (ozone generator) and is dispensed during the filtration mode.

**Nature2®** – Comes in a cartridge form that is easily installed inside your filter. Spa water is percolated through minerals and then trace amounts of minerals are released back into the water to help control bacteria. This does not altogether eliminate the need for chlorine but greatly reduces it. (Do not use bromine with Nature II).

Be sure to ask your Clearwater Spas Dealer for the complete Nature2® Spa Recipe.

### ***pH Controllers***

**SODIUM BICARBONATE** - Commonly used to increase pH and total alkalinity of spa water. Sodium bicarbonate is also known as natural baking soda.

**SODIUM CARBONATE** – Also known as soda ash, is a substance used to raise pH and total alkalinity.

**SODIUM BISULFATE** – Also known as dry acid, the chemical used to lower pH and total alkalinity of spa water.

**MURIATIC ACID** – A liquid acid that is most commonly used to reduce pH and total alkalinity levels. It tends to be very strong and is not recommended for use in spas.

### ***Water Conditioners***

**FLOCCULENT** – A compound which clarifies spa water by gathering oils, dirt, scum, metal deposits and small contaminant particles into larger globules, which then can be easily trapped in the filtering system allowing the filtering system to work more effectively.

**CLARIFIER** – A compound used to remove dissolved solids, metals, dirt, oils, or other contaminants from spa and pool water.

**SCUM BALL™** – A softball sized ball that is kept in the water. The ball is chemically treated so that it attracts contaminants that would normally be trapped in the filter.

**SEQUESTERING AGENT** – Stain & scale preventing compounds that sequester dissolved metals to prevent water discoloration.

**CALCIUM CHLORIDE** – A soluble white compound used to raise the calcium hardness of spa & pool water, to protect equipment from corrosion.

**ALGAEICIDE** – A chemical used to kill algae and prevent it from growing back.

**DEFOAMER** – A compound used to reduce or eliminate foaming in spa water. Products containing Chitin do this naturally.

**CHITIN** – A naturally occurring polymer (pronounced KY-tin) found in crab and lobster shells. As a spa clarifier, it is the best flocculating agent available. Removes oils, dirt, scum, and metal deposits and allows the filtering system to work more effectively.

## **How To Use The Chemicals**

Now that you have some knowledge about spa chemicals, you will learn how to use those chemicals to maintain balanced water in your spa. This section will explain how to apply chemicals, how much to use, and when to use them.

### **Usage Definitions**

Before getting into how much and when, it is important to understand some of the terminology that is used to describe how the chemicals are applied:

**P.P.M.** – Parts Per Million. Expressed as a ratio of number out of 1 million.

**SHOCK** – Addition of an oxidizer (OXY SHOCK) or superchlorinator to the water to break-down the organic contaminants on which bacteria feed and to de-

stroy ammonia and nitrogen compounds (oxidize only).

**SUPERCHLORINATION** – Means the addition of enough chlorine in the water to kill all living things (sanitize) and destroy any organic wastes present in the water (oxidize). Usually this means about double your normal dose of chlorine. Superchlorination can be done once a day for heavy bather loads or as infrequent as once a week for a moderately used spa.

**CHLORINATION** – To add chlorine to your spa on a regular basis to disinfect and oxidize your spa water.

**BREAK POINT CHLORINATION** – The process of shocking the water with significant quantities of chlorine to oxidize all contaminants and organic wastes and leave all remaining chlorine as free chlorine.

**CALCIUM HARDNESS** – A measure of the amount of calcium dissolved in water. Water with low hardness can lead to corrosion of metal parts. Water with high level of hardness can cause scale (calcium crust) build up on spa surfaces and clog filters, heaters and pumps.

**WATER BALANCE** – Water balance is reached when all elements (pH, total alkalinity, calcium hardness and total dissolved solids) are within their proper ranges.

**ENZYMES** – Biodegradable proteins which breakdown oils, films and digest scum in spa water.

**FREE CHLORINE** – The amount of chlorine available to kill bacteria or algae. Also known as “Available Chlorine”.

**COMBINED CHLORINE** – The portion of the total chlorine in water in chemical combination with ammonia, organics, and nitrogen, most of which are chloramines.

**TOTAL ALKALINITY (TA)** – The measure in PPM of all the dissolved base/alkaline material in the water. The acid-neutralizing capacity of water which indicates its buffering ability, or resistance to fluctuations in pH.

**TOTAL DISSOLVED SOLIDS (TDS)** – The total amount of dissolved materials in pool or spa water. The ideal range is from 1,000 to 2,000 ppm in pools and 1,500 ppm above the start-up TDS in spas.



**WATER BALANCE** is reached when all elements (free chlorine, pH, total alkalinity, calcium hardness and total dissolved solids) are within their proper ranges.

## Starting A Chemical Maintenance Program

Ultimately, in a chemical maintenance program, the goal is to maintain water balance. If you apply chemicals and test your water on a regular basis, water balance is easy to maintain and your spa water will stay clear and healthy. Discuss with your Clearwater Spa dealer proper water maintenance. You will want to purchase more chemicals from your local Clearwater Spa dealer after you have a better idea of what your chemical

needs will be. Although test strips are fairly accurate, test kits are also available that are very accurate and will test everything that you will need to monitor your water chemistry.

Three main parameters should be tracked closely:

1. pH
2. Free chlorine
3. Alkalinity

T.D.S. (Total Dissolved Solids) and calcium hardness should be checked after the first three are in the correct range. Test strips and test kits come with instructions on how to diagnose readings to determine whether the chemicals are in the right range. Table 2-1 shows how to dispense chemicals and how often to do it.

**Figure 2-1:** Spa water care

PARAMETER	INDICATION	SCHEDULE	ACTION
pH	< 7.2 pH	Check bi-weekly or more for heavy use	Add Spa Up™
pH	> 7.8 pH	Check bi-weekly or more for heavy use	Add Spa Down™
Chlorine/Bromine	3 – 5 ppm	Check bi-weekly or more for heavy use	Add Chlorine or Bromine
Alkalinity	80 – 120 ppm	Check bi-weekly or more for heavy use	Add Alkalinity Increaser
TDS	< 3000 ppm	Check monthly	Drain and refill if > 3000 ppm
Oxy-Shock		Add bi-weekly or more for heavy use	Add Oxy-Shock
Hardness	150 – 400 ppm	Check monthly or with new water	Add calcium increaser if < 200 ppm. Drain and refill if >400 ppm
Ozone		Ozonator runs on FILTER CYCLES	



**ALWAYS**

read the entire label on a chemical container before using. Read all safety precautions on the container.

In the beginning, it is a good idea to test your water daily to learn how the water changes with the addition of chemicals. By keeping a log, you will be able to keep better track of your water condition.

When adding water to your spa for the first time or changing the water, you should superchlorinate the water by doubling (1 tbsp. Per 100 gallons) the regular dose of chlorine. It is a good idea to wait for 8 hours before entering your spa after superchlorinating the water.

Remember that keeping your spa water healthy keeps you, your family, and your guests healthy too. Most service calls for spa repairs are related to problems caused by not maintaining balanced spa water.

# GENESIS SALT FILTRATION, Instruction Manual

## Easy Start up directions:

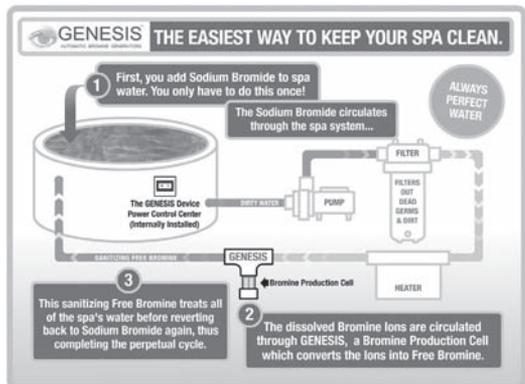
**NOTE:** Any time you add a chemical, turn the jets on to help dissolve it appropriately.

- Step 1)** Fill your spa using the “Pre-filter” provided in your start up kit (helps start with pure water).
- Step 2)** Flip breaker on and wait until temperature of water reaches at least 80 degrees.
- Step 3)** Make sure the Genesis dial is OFF.
- Step 4)** Balance alkalinity first. Once the alkalinity is balanced adjust PH up or down as needed.
- Step 5)** Shock the water with 2 ounces of shock (also provided in the start up kit).
- Step 6)** Put 1 bottle/ 175 gallons of Tru-Blu (sodium bromide/ salt) in the water (\*see letter “A” below).
- Step 7)** After 15 minutes, when the sodium has had a chance to dissolve, turn the Genesis control dial up to #5 for larger spas and #3 for smaller spas.
- Step 8)** Once the standard test strip begins to show a very light green color (0-1) for Bromine (sanitizer), turn the dial down to #3 or #2 (depending on the size of your spa) and adjust the dial according to how much usage your spa receives and what your test strips indicate. With higher usage, turn the dial up. With less usage- turn the dial down.

It may take a few hours up to a day to reach the desired level of Bromine (sanitizer). The correct level of Bromine with the Genesis System should be between 0-1 on the generic bromine test strip. The strips that test for the active bromine (sanitizer) level are designed for generic bromine systems. Specifically for Genesis, if the bromine level reads 2 or more (which reads ok on the test strip) then there is actually too much pure bromine in your spa. For the Genesis system that produces a more “pure” sanitizer (without any “fillers” or extra chemicals), the “OK” range for the bromine will read between 0-1 (light green) on a common bromine test strip.

Between 0-1 on the test strip is where you want your Bromine (sanitizer) level to remain. For continued water care, adjust the Genesis control dial as needed to remain in the “true” ok range (0-1) and “balance” your water regularly. Continue to test the water at least once weekly to monitor the water quality. If you do not use your spa for an extended period of time, set the Genesis control dial back down to a setting of #3 or #2 (depending on the size of your spa) to have the spa continue sanitizing when you are not home. For higher spa usage, occasional shocking may be required. Any time shock is used, the lid must remain open and people should wait to use the spa for 1 hour.

\*A: Periodically (every few months) check the Sodium Bromide (Tru-Blu/salt) level by using the Genesis (or equivalent) test strip. The reading on the test should be 1200-1800 parts per



million. If the salt level is too high, two dots in the window of the Genesis control panel will flash and the system will not operate properly. If the salt level is too low it will not be able to produce bromine properly. Keeping the sodium bromide in the correct level will ensure the Genesis system has the proper level to operate at its optimum efficiency.

Suggestions: You may wish to use a high quality natural enzyme clarifier (SeaKlear or GLB is recommended) or a similar product to help keep the filters clean and assist in controlling water line build up.

If you have a pump that filters twice a day, or have any further questions, please contact your salesperson for further instructions.

# JETS

## Types of Jets

Your Clearwater Spa comes with different types of jets and jet configurations. Each type of jet has a specific purpose and operates differently than the others. All jets with the exception of the fixed jets in the foot well by the light are adjustable and can be turned on or off. They all combine to create a luxurious and invigorating hydrotherapy environment that can't be beat.

Most of the jets are removable for easy cleaning. It is not uncommon for particulates to get caught in the jets causing them to stop rotating, especially in environments where there are trees overhead or nearby. Refer to the next section for jet cleaning instructions. Most of the jets are easiest to adjust or remove when the pumps are off.

### VERSA-GRIP GRAPHITE/STAINLESS JETS – Resort and Beachcraft Series



#### **2" Micro Power Flo Jet**

This jet allows Clearwater Spas to group multiple jets together in a small area. These jet groupings allow the hydrotherapy to be maximized in leg, arm and shoulder areas for your ultimate comfort.



#### **3" Mini Power Flo Jet**

This jet provides massaging relief to the areas affected by discomfort from carpal tunnel syndrome and arthritis. This jet can be directed to maximize your ultimate comfort, as it is fully adjustable.



#### **3" Galaxy Neck Massage Jet**

Enjoy a gentle massage on the neck and shoulders which increases circulation and promotes healing to muscle pain and pinched nerves.



#### **3.5" Power Flo Spinner Jet**

Designed to concentrate a soft jet massage to the smaller muscle groups particularly in the spine and shoulder areas. Adjustable for water flow and water pattern. (Also available in: Dual (Twin) Nozzles.)



#### **3.5" & 5" Maxim Power Flo Jet**

This jet propels an extravagant swirl of water and air bubbles. With just a touch, you can change this directional jet to a rotating jet. Its dual massage action creates a luxurious hydrotherapy experience. (Also available in: Single (Roto) Nozzles.)



#### **3.5" & 5" Versa-Sage Jet**

This unique jet emulates a 'kneading' deep tissue massage. Warm water spins through the multi-ports in a circular pattern and provides an exceptional massage for large muscles.



### **5" Power Flo Foot Jet**

This adjustable jet provides the ultimate foot massage after a long day on your feet. This jet produces a high volume of water flow to hit all of the foot reflexology points.



### **7" Master Massage Jet**

This jet delivers water at up to 200 GPM of extreme massage action through fourteen concentrated jets. These jets provide unbelievable therapy to the feet, legs and even upper torso bringing hydro therapeutic relief to your body at the end of a hard day.

## **STAINLESS JETS – XS Series**



### **2" Micro Power Flo Jet**

Similar to our Micro Jet with our graphite 'Versa-Grip', this jet is all stainless steel styling and provides hydrotherapy to be maximized in areas like legs, arms and shoulders for your ultimate comfort.



### **3" Mini Power Flo Jet**

This all stainless jet provides massaging relief to the areas affected by discomfort from carpal tunnel syndrome or arthritis. This jet can be directed to maximize your ultimate comfort, as it is fully adjustable.



### **3.5" & 5" Versa-Swirl Jet**

This jet action swirls water through the multi-ports in a circular pattern and provides an exceptional massage for large muscles.

## **JET & WATER CONTROLS**



### **Diverter Valves**

This valve, which is located at water line, is used to divert the power from the pump to one of the "Hot Seats" or the other. The valve has a 180° range from one side to the other. By moving the valve to one side, the pump will deliver all of its power to one seat. Moving the valve to the other side will shift the power to the other seat. If the valve is moved to a position anywhere between both sides, the power will be shared between both sides. The other diverter valve controls the power going to "Extreme Power Flo Jet" (foot well jet).



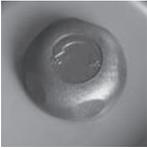
### Waterfall Control and Waterfall Jet

Soothing dual waterfalls are featured on selected models. Handy turn knob controls allows for complete adjustability of flow to match your every mood.



### Soothing Scents

Aromatherapy scent packets load through the topside screw top inductor to the air system. Apple, Kiwi, Floral and Ocean scents are all available through your Clearwater Spas Dealer.



### Air Controls

These valves, which are located on the top-side, are used to control the air that flows through the jets. By introducing air into the jets, they effectively double their power. Because there are so many tub models, it would

be impractical to describe which air controls correspond with what jets. Experiment by opening all the jets and turn on one motor at a time. Turn the air controls one at a time and take note as to what jets are affected. Air controls will only affect the jets that are operating.

## Cleaning The Rotating Jets

Occasionally debris will get caught in the housing of the rotating jets causing the jet to either slow down the rotation or stop rotating altogether. This can easily be fixed by removing the jet and cleaning it. Always turn pumps off before removing jets. After removing the jet, they can easily be cleaned by vigorously shaking the jet while in the water. If the jet nozzle does not spin freely after doing this, move the nozzle to the outside rotating position and turn the nozzle in the rotating pattern until it starts to bind. Move the nozzle back and forth over the binding spot until it starts to free up. Shake the jet in the water again and check for free rotation.

## Jet Removal

**Jets** – To remove jets simply turn the outside ring of the jet counterclockwise approximately one quarter turn and pull jet out (Figure 3-1). To replace the jet, simply place the jet in the shell and turn the jet until the slots line up, then turn jet one quarter turn clockwise until secured. The jet will easily push into place and “snap” when it is locked.





## FILTRATION

**CAUTION!**  
Turn off the power to the spa before removing the filter!

Your spa is pre-programmed to run a 2-hour filter cycle twice a day. For the system to work properly, the filters must be hosed off at least once a week and thoroughly cleaned once a month with a filter degreaser. We recommend that you buy an extra filter cartridge from your Clearwater Spas dealer to alternate with the filters included with your spa. A dirty filter will restrict water flow and will prohibit the filtering system from keeping your spa clean. If the filters are not cleaned for extended periods, it could possibly damage the pumps.



For the best performance possible, clean the filter weekly.

If you have a problem with floating contaminants, you may want to purchase a skimmer net to easily remove bugs, leaves, etc...

Details on cleaning the filters are included in the maintenance section, but as a reminder, it is important to first turn off the power to the spa. Leaving the power on while changing the filters could allow objects to be drawn into the heater and/or pump and may damage your equipment.

### To remove filter on Resort or Beachcraft Series (75 sq/ft per filter):



Remove cap from weir.



Locate filter basket clips.



Remove filter basket clips.



Remove filter basket.



Locate top of filter.



Insert two or three fingers into filter and pull out.

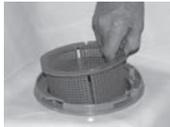


Clean or replace filter.

### To remove filter on XS Series (50 sq/ft filter):



Turn filter housing counter-clockwise to remove.



Lift and remove filter basket.



Insert two or three fingers into filter and pull out.



Clean or replace filter.

Ask your Clearwater Spa Dealer for more information on the new Micro-ban Filters, a new technology with antimicrobial protection that will inhibit the growth of bacteria and mold.

## Ozone Generator

Clearwater Spas offers an optional Ozonator made to our specifications. Ozonators supply the spa water with ozone, which is an extremely effective oxidant that will kill bacteria and microorganisms. The Ozonator will distribute ozone into your spa automatically during the filter cycles and will keep your spa and water sparkling clean. Even though ozone is effective at keeping your water clean, it cannot replace the use of chlorine or bromine. Refer to the chemical section for more information.

No maintenance is necessary on the ozonator. The ozonator works during the filter cycles set by the controller only. If your spa did not include an optional ozonator and you would like to have one installed, contact your Clearwater Spas sales representative.

## MAINTENANCE & MISCELLANEOUS

### Spa Light

Colored lenses are provided with your spa. Simply snap the colored cover over the light lens in the bottom of the tub. Use a flat blade screwdriver to lightly pry the cover off when changing light covers.

If the light bulb burns out, a replacement bulb can be obtained from your Clearwater Spa dealer. To replace the bulb, shut off power to the spa and remove the service panel closest to the light. Turn the bulb receptacle a quarter of a turn counter clockwise and pull out the bulb receptacle.



**WARNING!**  
Use 6 watt  
replacement  
bulbs only!

### Pillows

Your spa is equipped with high quality polyurethane foam pillows. These pillows can be removed by simply pulling them off. To replace them, line the receptacle holes up with the buttons on the spa.

### Spa Skirt

Clearwater Spas uses select clear cedar for manufacturing the exterior cabinet. High quality wood is used for beauty and functionality. A generous coat of water base sealer has been applied at the factory. To maintain the beautiful appearance and extend the life of the cabinet, apply a coat of water base clear sealer once a year.

If access to the plumbing, motors or the controller is required, remove the screws on the service panels using the square bit supplied with the spa. Panels can then be easily removed by pulling the panel away from the spa.

### The Shell

Your Spa is constructed with a high quality, impact resistant, thermoplastic shell that requires very little maintenance. Make sure that when you drain and clean your spa that you use a mild, nonabrasive cleaner and cleaning pads. We recommend that you use a cleaner made specifically for cleaning spas. They tend to be non-abrasive and easy to rinse off completely. Contact your Clearwater Spa dealer for information on waxes and sealers.



**WARNING!**  
Do not sand  
quarite  
finishes.

## Spa Cover

If you purchased a cover with your spa, you will want to be sure to keep it clean and protected. Spa covers exposed to the outdoors take a beating from the elements. Use a vinyl protectant to discourage deterioration caused by the UV rays from the sun. This will also minimize rain penetration. See your Clearwater Spa dealer for a vinyl protectant.

Once a month, take the cover off the spa and use a sponge and dish soap to scrub the cover clean. Keeping the cover free of dirt and debris is the most important maintenance task for the cover. Be sure to clean the seams extra well.

Your cover comes with screws that are used to fasten the receiving end of the strap locks. Simply align the cover on the spa and stretch out the straps until they are tight. Mark the location of the strap receptacles, then fasten them to the spa skirt with the screws supplied.

## Winterizing

If you live in a climate where winter temperatures are below freezing and power to the spa will be disconnected, follow these procedures for draining:



### WARNING!

Damage caused by freezing is not covered under warranty.

1. Add an algacide to the water and run pumps for half an hour to evenly disperse algacide.
2. Turn off power to the unit at the circuit breaker.
3. Drain the spa by attaching a garden hose to the open the drain valve. After the spa is empty, remove the hose and leave the drain valve open.
4. For freeze protection – Access motor area by removing the outer front panels to the right and left of the controller panel and unscrew the plumbing collars from the pumps. Leave union couplings disconnected. Vacuum out lines with a wet/dry shop vacuum.
5. Soak up any excess water that drains from motors and associated plumbing with a towel. Keep water and debris out by covering with a rigid spa cover.
6. Before using the spa again, reattach pump couplings, close drain valve, and review startup instructions.

If the spa is to be used during the winter, save energy by turning the temperature down and keeping the spa covered. If the spa reaches freezing temperatures, the main pumps will automatically turn on to circulate the water.



## Draining The Spa

We recommend that you drain and clean your spa no more than 3 or 4 times per year, depending on how frequently you use it and how well you maintain your water. In most cases this simple process will only take about an hour to accomplish.



Innermost closed position



Middle open position

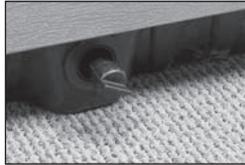


Outermost closed position



### Drain Location:

The drain is located in the center of the Dura Floor directly under the topside control panel. This is the innermost closed position.



### Step 1:

Using your hand, pull and slide out the drain plug to the outermost extended closed position.



### Step 2:

Unscrew the cap. In this extended closed position, water should not drain out.



### Step 3:

Screw on a garden hose. Place the other end of the hose in the area you want the water to drain to.



### Step 4:

Once the hose is in place, push in the hose/drain valve half way to the middle 'open drain position' and drain your spa.



### Step 5:

When you are done draining your spa, reverse these steps to close the drain (step 3), screw on the cap (step 2) and push in the drain valve to the innermost closed position.

\*Note: if you push it in all the way to the innermost closed position, the water will not drain.

## Quality, Energy Efficient Spas



### **Providing a greener spa.**

Clearwater Spas is strongly committed to protecting the health of our environment and manufacturing energy efficient hot tubs that help to conserve our natural resources.

### **E-Smart Technology.**

The 'e' in our e-smart technology symbol stands for energy efficiencies, engineering and environment. These three main areas are where we pay special attention and focus our manufacturing mission on being responsible to our environment.

Clearwater Spas are made with 'e-smart technology' built into every hot tub to provide a complete energy efficient system. From the initial engineering design stage through our manufacturing, recycling and product usage, we have set a high standard to keep our hot tubs environmentally sound.

### **Recycling.**

Clearwater Spas takes pride in using 100% recycled ABS to fabricate our Dura Floors on all of our spas. We also recycle 100% of our wood, plastic and cardboard waste.

# APPENDIX A

## Troubleshooting

For error messages on your topside control, see your control reference from the Initial Start-up.

### System Trouble

PROBLEM	PROBABLE CAUSE	REMEDY
GFCI trips (on startup)	Improper or defective wiring.	Electrician should inspect for wiring mistakes.
GFCI trips	A) Ozone generator defective.	Unplug from controller and reset breaker to verify problem.
	B) Unknown cause.	Unplug all components, then plug in one at a time until problem is identified.
	C) Heater element burned out.	Contact Clearwater Spa dealer.

### Controls

PROBLEM	PROBABLE CAUSE	REMEDY
System overheating/shutdown	A) Restricted filter.	Clean filter overnight with filter degreaser.
	B) Water too low.	Fill water to fill line on filter door.
Control response poor	A) Low water level.	Fill water to fill line on filter door.
	B) Dirty filter.	Clean filter overnight with filter degreaser.
	C) Closed slice valves.	Remove service panels and open slice valves.
Water won't heat	A) Same suggestions as system overheating and poor control response.	If problem persists, contact Clearwater Spa dealer.
	B) Improper or defective wiring.	Electrician should inspect for wiring mistakes.

## Pumps

PROBLEM	PROBABLE CAUSE	REMEDY
Noisy pump or motor	A) Clogged filter or pump inlets.	Clean filter, filter basket, and pump inlets.
	B) Low water level.	Fill water to fill line on filter door.
	C) Slice valves not open.	Remove service panels and open slice valves.
	D) Debris in pump(s).	Contact Clearwater Spa dealer.
	E) Damaged or worn motor bearings.	Contact Clearwater Spa dealer.
Motor not functioning	A) Cord unplugged or damaged.	Check wiring to controller. Contact Clearwater Spa dealer if damaged.
	B) Motor overloaded.	Let motor cool for one hour, open all jets. Motor will reset automatically.
	C) Defective start switch.	Contact Clearwater Spa dealer.
Insufficient flow from motor	A) Jets closed.	Open jets.
	B) Air controls closed.	Open air controls.
	C) Clogged filter or pump inlets.	Clean filter, filter basket, and pump inlets.
	D) Blockage in line.	Contact Clearwater Spa dealer.
	E) Kink in hose.	Remove service panels and check for a kinked hose.
	F) Slice valves not open.	Remove service panels and open slice valves.

## Jets

PROBLEM	PROBABLE CAUSE	REMEDY
Cyclone jet won't rotate	Debris in jet housing.	See "Cleaning The Rotating Jets" section of the JETS chapter.
Vari-swirl jets won't rotate	Debris in jet housing.	See "Cleaning The Rotating Jets" section of the JETS chapter.

## Water

PROBLEM	PROBABLE CAUSE	REMEDY
Water leak	A) Compression fittings (unions) have loosened.	Tighten fittings.
	B) Leak at barbed fitting.	Remove compression clip and reseal hose. Replace clip. If leak persists, contact Clearwater Spa dealer.
Cloudy water	A) Clogged or blocked filter fitting.	Remove filter and clean fitting.
	B) Dirty filter.	Clean filter.
	C) Poor water chemistry.	Balance water.
	D) Insufficient filter time.	Increase filter time to a minimum 4 hours per filter cycle.
	E) Particles too small for filter.	Add flocculent and clarifier.
	F) High pH and /or alkalinity.	Adjust pH with pH Down.
	G) Trace metals in water.	Use metal remover.
	H) Too much clarifier used.	Wait to be filtered out.
Green water	A) Algae.	Add algaecide, superchlorinate and add Oxy Shock. Check ozonator.
	B) Metal corrosion in equipment.	pH too low, adjust to 7.2 to 7.6 with pH Up.
Brown water	Iron present in water.	Superchlorinate and add Oxy Shock. Add metal remover.
Blue-green water	Copper present in water. Usually only found in spas with gas heaters.	pH too low, adjust to 7.2 to 7.6 with pH Up.
Bleached hair/bathing suits. Eye irritation.	Too much chlorine.	Allow to dissipate. Add Oxy Shock.
Bad smell, eye & skin irritation, complaints of too much chlorine.	Too much chloramines, not enough free chlorine in water.	Superchlorinate and maintain 3 - 5 PPM. Add Oxy Shock.
Scale formation on walls and equipment.	A) High pH	Reduce to 7.2 to 7.6 pH.
	B) Calcium too high	Drain 20% to 40% of tub and refill with "soft" water. Maintain at 150 to 400 PPM
pH fluctuates radically	Total alkalinity out of balance	Balance alkalinity

## Limited Warranty

Every Clearwater Spa is manufactured to our exacting standards and requirements, and your long-term enjoyment of your spa is our ultimate goal. Therefore, we are proud to provide these comprehensive warranties with our products.

### SIGNATURE PACKAGE

Resort Series | Beachcraft Series | XS Series



#### 20-YEAR SPA SHELL

Clearwater Spa shells are warranted against water loss occurring from defects in material or workmanship for 20 years from the original purchase date. Clearwater Spas also warrants their spa shell interior surface against blistering, cracking and delamination for 20 years from the original purchase date.



#### 5-YEAR EQUIPMENT

Clearwater Spas warrants the operating equipment and plumbing against defects in workmanship for five years from the original purchase date.

### GOLD PACKAGE

Beachcraft Series | XS Series



#### 10-YEAR SPA SHELL

Clearwater Spa shells are warranted against water loss occurring from defects in material or workmanship for 10 years from the original purchase date. Clearwater Spas also warrants their spa shell interior surface against blistering, cracking and delamination for 10 years from the original purchase date.



#### 3-YEAR EQUIPMENT

Clearwater Spas warrants the operating equipment and plumbing against defects in workmanship for three years from the original purchase date.

### HOW THE WARRANTY WORKS

In the event of a covered defect under this Limited Warranty, Clearwater Spas or its agent will make repair in accordance with conditions contained in this Limited Warranty. There will be no charge for parts or labor to repair the spa. There may be repair person travel costs if the spa is located outside the normal service area. If the covered defect cannot be repaired, as determined by Clearwater Spas, we reserve the right to provide a replacement exchange spa of equal value. In such an event, the spa owner will be responsible for the cost associated with the removal of the defective spa and the installation of the replacement spa. The liability of Clearwater Spas under this Limited Warranty, if any, shall not exceed the original amount paid for the defective product. It is the responsibility of the spa owner to notify the factory in writing immediately upon discovery of a warranty claim. Neglecting this notification may void your claim.

### LIABILITY LIMITATIONS

This warranty does not cover any defects, malfunctions or damages that result from improper installation, commercial use or improper maintenance. The spa shell is made of high quality impact resistant thermoplastic. The spa surface cannot be subjected to periods of direct sunlight without being filled with water. Exposure to direct sun can cause deformation of the spa surface. Such exposure will void the warranty. This Limited Warranty is limited to the original owner, installed at the original site. Any requests for change of site location must first be approved in writing by Clearwater Spas. This Limited Warranty is void if the spa has been altered, neglected, abused or misused or if any repairs have been made by an unauthorized agent. Misuse and abuse include any installation, maintenance or operation not in accordance with the owner's operations manual. Clearwater Spas is not responsible for incidental or consequential damages of any nature, acts of God or other causes beyond the control of Clearwater Spas. All warranties, implied or otherwise, including implied warranties for merchantability and fitness for a particular purpose, are limited to the terms set forth in this warranty. This Limited Warranty only covers those items manufactured by Clearwater Spas, excluding pillows, CD stereo players, filter cartridges and ozonators which are covered under their separate manufacturer's warranty. Exterior surround skirting is warranted to be free of defects at time of delivery and for one year thereafter. No representative of Clearwater Spas, not its agents, distributors or dealers, has any authority to alter in any manner the terms of this Limited Warranty and Clearwater Spas is not responsible for any undertaking, representation of warranty made by any other person beyond those expressly set forth in this warranty.



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TECHNOLOGY



Providing Environmentally  
Friendly Solutions

