

MODELS 630, U630, 530, U530, 418, U418, 315, U315



PUMP PRIMING (Pr)

Pump priming feature begins at start-up. When your spa is energized, the LCD window displays a "Pr" message. This mode lasts approximately four to five minutes, if not exited manually by pressing the TEMP pad.

UNDERWATER AND ENTRYWAY LIGHTS

Press the LIGHT pad to turn the underwater and entryway (option) lights on and off. The low-voltage system produces a night light for evening use and makes entering and exiting the spa safer. After being on for 60 minutes, the lights automatically turn off.



WATERFALL FEATURE (U630, U530, U418, U315)

The Waterfall feature and Convenience Center attaches securely to the dual Vortex skimmer tops. The water flow is controlled by an independent valve. **NOTE:** Don't remove the waterfall top while the pumps are running.

JETS

Use the JETS pad on the bather panel or remote control. First press of the JETS pad activates pump on low-speed (and starts soak timer). Second press of the JETS pad activates pump on high-speed. Third press of the JETS pad turns jets off for all-quiet mode. Fourth press of the JETS pad turns pump back to low-speed. If the pump is already on low (heating, filter cycle) then the first press starts the soak timer. After running on low- or high-speed for 15 minutes, the pump automatically turns off (unless in heating or filtering cycle).



SOAK TIMER

The soak timer starts the first time you press a JETS pad. The LCD window displays the elapsed time (1-30) for 55 seconds then switches to the current water temperature for five seconds then back to the timer. It continues to alternate for the entire 30 minutes. The timer runs for 30 minutes





regardless of other functions in use (jets, temperature, or light). You can manually cancel the timer by pressing the TEMP+/- pad and then the LIGHT pad.

CONSTANTCLEAN™ WATER MANAGEMENT with Spa Frog® built-in sanitation (see page 51).

SOLID-STATE OZONATOR

The ozonator greatly reduces the amount of chemical sanitizer you need in the water to keep your water clean. The ozonator functions whenever the system is operating on filter or clean up cycles. You should occasionally inspect your ozonator to ensure it continues to light (see MAINTENANCE, Every Three to Four Months). A good time to do this is when you drain and fill your spa.

SMARTCLEAN™ FILTRATION

Your spa is preset at the factory with a default setting to filter itself using the jet pump on low-speed for two hours twice in a 24-hour period. These settings represent the filter settings necessary for average use. The timing of the first filter cycle is determined by when the spa was initially energized. The first cycle begins six minutes after this initial power-up. The second filter cycle begins 12 hours after the first cycle.

Factory Default Settings:

- Filter Cycle Duration: F2 (2 hours)
- Filter Cycles: 2C (twice per day)
- SmartClean: 1H (1 hour)

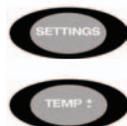
These settings represent the most commonly used settings, but your use may be different, depending upon many variables – frequency, number of bathers, duration, water capacity, etc. These variables affect the quality of water and the way it should be managed to achieve the most effective cleansing. Selectable choices for the settings of the operation systems allow flexibility and ensure your Everyday Hot Tub remains easy to maintain for your particular set of circumstances.

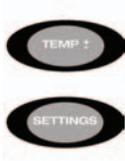
To adjust the filter settings

First press of the SETTINGS pad displays the filter time settings (F1, F2, F4, F6). Use the TEMP+/- pad to scroll through the options. When desired selection has been reached, press SETTINGS pad again to enter selection and advance to the filter cycle settings (2C, 1d, 1n). For example, if you select 2C and F2, your spa will filter two hours twice a day for a total of four hours of filtration daily.



Marquis Ozonator reduces the need for chemical sanitizers.





Use the TEMP+/- pad to scroll through filter cycle options. When desired selection has been reached, press the SETTINGS pad to enter selection and advance to the SmartClean™ settings.

Selectable filter cycles and cycle duration

- 2C: twice per day (once every 12 hours)
- 1d: once during the day
- 1n: once during the night
- F1: 45 minutes
- F2: 2 hours
- F4: 4 hours
- F6: 6 hours

SMARTCLEAN™

Since a spa is always covered when not in use, it stays fairly free of debris or outside contamination. Contamination to a spa's water occurs during usage, so filtering immediately after usage is the most effective time to clean the spa water. Your spa is preset at the factory with a default setting to filter for one hour (1H) every time your spa is used. This filtration cycle begins 30 minutes after the spa light or jet pump has been deactivated. The pump runs on low-speed to filter the water for the cycle's duration.

Selectable SmartClean Settings

- 1H: 1 hour
- 2H: 2 hours
- 3H: 3 hours
- 4H: 4 hours
- OH: Off



To adjust the SmartClean settings:

Use the TEMP+/- pad to scroll through options. When desired selection has been reached. Press SETTINGS pad to enter selection and exit settings mode.

TEMPERATURE DISPLAY AND ADJUSTMENT Factory Default Settings:

- Temperature: 102°F (39°C)

The LCD window displays the actual water temperature. Pressing the TEMP+/- pad makes the numbers flash, then pressing the pad again (repeatedly) increases the set temperature one degree at a time, up to 104°F (40°C). After a short



pause, the actual temperature displays. Press TEMP+/- pad repeatedly to decrease the set temperature to 80°F (27°C).

***NOTE:** In event of a power outage, all settings revert to the preset, default settings.

HEAT MODE

Your spa comes preset in the standard heat mode. For most applications, the standard mode should be used. If you are in a warm weather climate and the spa does not require as much heat, the economy mode may work best. For a vacation home or for very infrequent use, the sleep mode provides filtration and circulation with lower energy demand. In economy mode your spa heats only during the filter cycle. In sleep mode your spa will maintain a water temperature that is 20°F (7°C) below the set temperature. This ensures your spa will be ready to use more quickly (allow about one hour per one degree F for heating your spa's water) when increasing the temperature to the desired level.

The spa's heat mode can be adjusted to one of three different settings:

Standard Mode

The spa water heats to the temperature as set at the bather's panel. In this mode the filtration pump turns on for two minutes every half-hour to "poll" or check the water. If heat is needed the unit heats to the set temperature. The LCD window steadily displays the actual temperature in this mode.

Economy Mode

In this mode the spa only heats to the set temperature during a filter cycle. The LCD window displays "Ec" alternately flashing with the actual temperature when the spa is up to temperature and "Ec" steadily when the spa's water temperature is below the set temperature.

Sleep Mode

Your spa will maintain a water temperature that is 20°F (7°C) below the set temperature. Heater functions only during a filter cycle. The LCD window displays "SL" flashing alternately with the actual temperature when the spa is up to set temperature and displays "SL" steadily when below set temperature.



To Adjust the Heat Mode:

First press the SETTINGS pad to display the heat mode settings (St, Ec, SL). Use the TEMP+/- pad to scroll through the options. When desired selection has been reached, press SETTING pad again to enter selection and advance to the filter cycle settings (F1, F2, F4, F6).

HEAT LIGHT

The HEAT light illuminates when the heater is on. The pump circulates on low-speed whenever the thermostat calls for heat.

SYSTEM LOCK

Once you find and establish the settings that work best for your individual needs, use system lock to keep from inadvertently changing the settings.



Press the TEMP+/- pad and then immediately press the SETTINGS pad. Unlock by repeating sequence. While the system is locked, you may still operate the jets and light. The LCD window displays LC to indicate the system is locked when you try to change the temperature or settings.

REMOTE CONTROLS

Floating Remote (optional)

Underwater light

Press the LIGHT pad to turn the underwater light on and off. The low-voltage system produces a night light for evening use and makes entering and exiting the spa safer. After being on for 60 minutes, the light automatically turns off. For best results point the remote at the IR sensor in the spa.



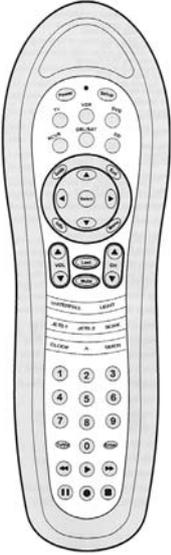
Jets

First press of the JETS pad activates pump on low-speed (and starts soak timer). Second press of the JETS pad activates pump(s) on high-speed. Third press of the JETS pad turns jets off for all-quiet mode. Fourth press of the JETS pad turns pump back to low-speed. If the pump is already on low (heating, filter cycle) then the first press starts the soak timer. After running on low- or high-speed for 15 minutes, the pump automatically turns off (unless in heating or filtering cycle).

Dolphin Remote (optional)

Spa functions

Use the pads to control light and jets. See OPERATING YOUR SPA.



Dolphin Remote Soundsations™ operation

It is designed with sophisticated technology that will allow you to consolidate many of your existing remote controls along with the Soundsations audio-ready system in your spa. It's packed with easy-to-use features such as:

- Preprogrammed to operate the cable converter supplied by your cable system provider.
- Preprogrammed technology for easy setup.
- Color-coded keys to quickly locate popular functions
- Code library for video and audio components
- Code Search to help program control of older components
- Learning function to allow programming with another infrared (IR) remote
- Combination IR and RF (radio frequency) capability that can send commands through the optional RF base station to devices in your house.

Before you can use your Dolphin remote, you will need to program it to operate the specific home entertainment components you wish to control. Follow the instructions detailed in Dolphin Remote manual to set up your remote and enjoy our new remote control.



SOUNDSATIONS™ AUDIO-READY SYSTEM Spa location and speaker cord routing

The factory-installed speaker cord located inside the spa's equipment compartment is 100 ft. long. You must locate the spa close enough to the audio source to allow the cord to be run so it is not exposed to damage and does not create a trip hazard.

NOTE: A 200 ft. long speaker cord is available as an optional replacement for the supplied 100 ft. cord. Ask your authorized dealer for details.

Do not replace the supplied speaker cord with any other type of cord.

WARNING! Risk of electric shock: Audio source must be placed in a protected location at least five feet from the spa. Do not use a portable stereo. Do not use home audio equipment outside.

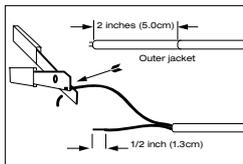
Decide on the best path for the speaker cord and then route the speaker cord out of the equipment compartment in the most appropriate manner for the installation.

The speaker cord must be installed by a licensed electrician in accordance with the National Electric Code and all local building codes. Additional installation advice from an A/V technician may be helpful or necessary if there are any special circumstances, such as connecting to unique or complicated home theater systems.

Connections

CAUTION! Risk of electric shock: The stereo cord-connection within the equipment compartment and the supplied 100 ft. cord which is used to conduct the audio signal to the spa are intended to carry a low voltage (12V) audio signal supplied by a conventional household-type audio system. The cord-connection and cord are not to be used for any other purpose.

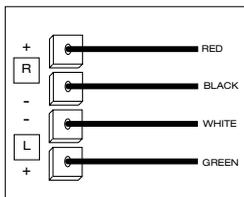
CAUTION! Before making any connections, turn off the stereo receiver and unplug it from the power source. Failure to do so may result in damage to the system.



Strip approximately 2" off the outer jacket of the speaker cord.

1. To prepare the end of the speaker cord, strip approximately 2" off the outer jacket.
2. To prepare the ends of the wires, strip approximately 1/2" of insulation from each wire. Then, twist the bare ends of each wire so there are no loose strands of wire.

WARNING! Never use broken or frayed wire, as damage or electrical shock may result.



Wire connections.

CAUTION! Exposing too much wire or having wires with frayed ends could cause wires to touch each other, which could damage the equipment.

3. Wire connections

- A. Red = Right (+)
- B. Black = Right (-)
- C. White = Left (-)
- D. Green = Left (+)

NOTE: Do not connect speaker cord to any speaker terminals already in use.

4. Check all connections to the stereo receiver. Make sure all wires are connected in phase (+ to + and - to -). Correct any wiring problems before reconnecting the stereo receiver to the power source.

You should perform a routine inspection (every three months) of the Soundsations Audio System to ensure that the system is operating properly.

If the cord or cord-connection is damaged; if the door to the equipment compartment shows signs of deterioration; if excessive water is entering the equipment compartment; or if there are other signs of damage to related components, turn off the spa and have the damaged component repaired by a qualified service person.

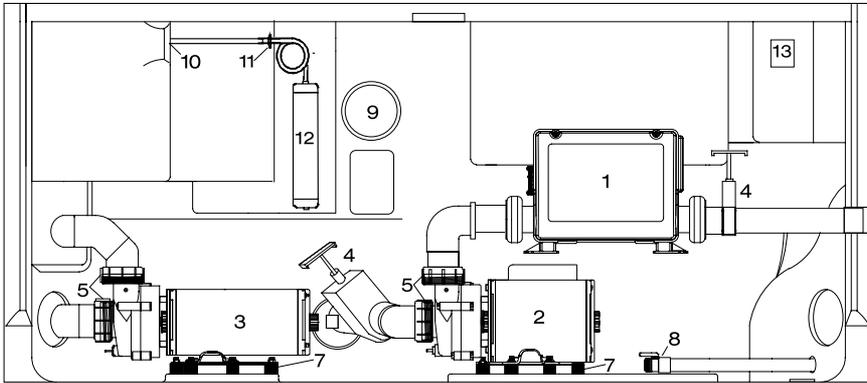
Recommended components

Use stereo receivers rated from 60 to 120 peak watts per channel and rated from 8 to 16 ohms.

The Soundsations Audio System has automatic protection circuits to protect against overload. This circuit activates at high volume levels to reduce output, causing a decrease in volume. This is normal operation and indicates that the power input may be exceeding safe levels. If this protection circuit has been activated, turn down the volume to allow the system to reset itself and resume normal operation. Sustained listening at high volume settings is not recommended.

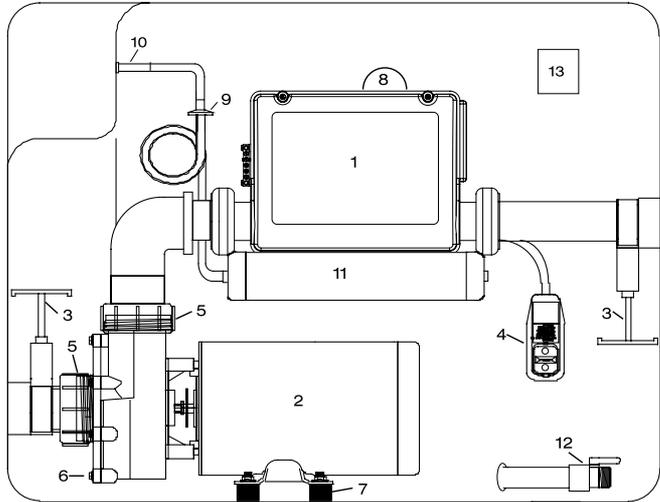
CAUTION! Please read this installation guide completely before the installation. Failure to follow the instructions in this guide voids all warranties on the Soundsations Audio System.

MODELS 630, U630, 530, U530



#	Component	Qty.
1	Control box and heater	1
2	MP160 pump	1
3	HP130 pump	1
4	Slice valves	2
5	Pump unions	4
7	Motor mounts	8
8	Hose bib drain	1
9	Light bulb	1
10	Ozone fitting	1
11	Check valve	1
12	Ozonator	1
13	Soundsations™ plug (option)	1

MODELS 418, U418, 315, U315



#	Component	Qty.
1	Control box and heater	1
2	HP120 pump (315, U315) or MP160 pump (315 upgrade, 418, U418)	1
3	Slice valves	2
4	GFCI (315, U315 only)	1
5	Pump unions	2
6	Pump plug	1
7	Motor mounts	4
8	Light bulb	1
9	Check valve	1
10	Ozonator fitting	1
11	Ozonator	1
12	Hose bib drain	1
13	Soundsations™ plug (option)	1

PLEASE NOTE: The following corrective actions may be performed by the spa owner. If the trouble cannot be corrected in the steps below, please contact your Hideaway Hot Tubs™ dealer for service. (Improper servicing by an unauthorized service provider or spa owner could result in damage not covered by the warranty and could cause serious injury.)

EQUIPMENT WILL NOT OPERATE

- Check the control panel LCD window for diagnostic code.
- 240V Spas: Check the circuit breaker on the main circuit panel.
- 120V Spas: Check the GFCI power cord and reset if necessary (see IMPORTANT SAFETY INSTRUCTIONS at beginning of manual).
- Check the condition of the power cord.

INADEQUATE JET ACTION

- Be sure the shut-off valves are completely open.
- Open the jets by turning the jet face to allow for maximum water flow.
- Check for obstruction or restrictions at suction guard(s) or filters, such as leaves, etc.
- Check to ensure water is at proper level and add water if needed.

NO HEAT

- Check temperature displayed in the LCD window for desired temperature setting.
- Inspect the filter cartridge for dirt and debris.
- Check that the water is at proper level, 2/3 up the Vortex skimmer opening.
- Check HEAT MODE to be certain spa is not in SLEEP MODE.
- Lower ambient temperatures may result in heat loss.

NOTE: Do not expect instant hot water from the jets. It will take the heater 12-24 hours to heat the water to the temperature you desire.

LIGHT DOES NOT WORK

- Press the LIGHT pad on the control panel.
- Reposition the light bulb in the socket. (See REPLACING LIGHT BULB.)
- Replace the light bulb with a **6 WATT BULB (GE 918 ONLY)**.

LCD DIAGNOSTIC MESSAGES

The advanced technology built into the spa allows it to perform a number of self-diagnostic system checks and it can display a variety of messages in the LCD window on the control panel.

HH: Overheat. The spa has shut down. **DO NOT ENTER THE WATER.** Contact your dealer for service.

OH: Overheat protection. If a malfunction occurs and the spa water reaches 110°F (43°C), the system completely shuts down. In such a condition, **DO NOT ENTER THE WATER.** Turn off all power to the spa and contact your dealer for service. Several conditions could lead to overheating, for example, low water level, shut-off valves closed while heater is on, dirty filter, and restriction in the plumbing lines. After the power is turned back on, the spa will not restart itself until the water temperature within the spa drops to a lower, predetermined temperature. As a double safety feature, a secondary high-limit sensor shuts the system off if the water temperature in the heater housing reaches 118°F (48°C). In this case, the spa may be restarted by pressing any panel pad after the water has cooled to 110°F (42°C). If the switch trips repeatedly, do not use the spa and contact your dealer for service.

IC: Ice. Potential freeze condition detected.

SA: Spa is shut down. Sensor plugged into sensor "A" jack is not working.

Sb: Spa is shut down. Sensor plugged into sensor "B" jack is not working.

Sn: A sensor has malfunctioned. If alternating with spa temperature, it may just be a temporary condition. If flashing by itself, spa is shut down. Contact your dealer for service.

HL: A significant difference between temperature sensors has been detected. This could indicate a flow problem. Check water level in spa and refill if necessary. If water level is okay, make sure the pumps have been primed.

LF: Persistent low flow problems. Heater is shut down, but other spa functions continue to run normally. Check water level and refill if necessary. Contact your dealer for service.

dr: Possible inadequate water, poor flow, or air bubbles detected in the heater. Spa is shut down for 15 minutes. Check water level and refill if necessary. If okay, check that pumps have been primed. Press any button to reset.

dY: Inadequate water detected in heater. Spa is shut down. Follow directions for "dr" message.

WEEKLY MAINTENANCE**1. Removing Debris**

Remove any debris from the Vortex skimmer and suction guard(s) on the inside of the spa. Blocked intakes can impede the flow of water through the jetting system.

2. Water Level

Replenish the water level if necessary so that it is approximately two-thirds up the Vortex skimmer opening. (See STARTING YOUR SPA.)



Water level should be two-thirds up the Vortex skimmer opening.

MONTHLY MAINTENANCE**1. Filter Care**

We cannot stress enough the importance of a clean filter for proper water filtration. Dirty filters can restrict water flow, cause hazy water, and prevent your chemicals from working properly. Many water treatment products clear or clarify the water by clumping microscopic particles and minerals together so that these larger particles can be effectively trapped in the filter. A filter clogged with debris and calcium deposits does not trap particles properly.

The Maintenance Reminder on the control panel indicates a CL every 30 days to remind you to clean your filter.

Removing the Filter

Grasp the edge of the dome-shaped Vortex filter top, pull up firmly, but gently, to remove it.



Grasp edge of Vortex filter top, pull gently.

Turn the filter cartridge counterclockwise to unscrew it from its base. Lift out the filter cartridge.

Use a hose to clean the filter cartridge or use a bucket and *Filter Cleaner* to soak the filters (you will need to flip the filter after the designated time to completely clean the entire length).



Turn filter cartridge counterclockwise to unscrew.

NOTE: Keep an extra set of filters on hand so you always have a clean set ready for immediate spa enjoyment. Remember to replace the filter cartridge at least once a year. Replacement filters are available from your authorized dealer.

Reinstalling the Filter

Repeat the steps above in reverse. Do not overtighten the filter as it may cause the threads on the bottom to strip and fail to hold the filter in place. When replacing the Vortex filter top, center the top over the raised filter ring and press down firmly until the top snaps into place. (See INSTALLATION INSTRUCTIONS, Filter Cartridge.)

EVERY THREE TO FOUR MONTHS

Draining and Filling the Spa

The average spa needs to be drained every three to four months. After months of continually adding chemicals to the water and introducing body oils and lotions, the water can be difficult to manage and chemicals are not as effective as usual. You may also notice excessive foaming. A maintenance reminder appears on the control panel as “CH” to remind you to change water. More frequent draining may be required depending on use.

1. Leakage Detection

Open the equipment door and check for signs of water leakage around the pump. Pump seals wear out over time, especially with improper water chemistry. Early detection of pump seal failure can significantly reduce repair costs.

2. Ozonator Operation

Check to see if the bulb is lighted. The ozonator functions whenever the system is running on filter or clean up cycles. The end cap of the ozonator should glow if functioning properly. If not, the bulb has burned out. Contact your dealer for service.

3. Draining the Spa

- A. Turn off the power to the spa.
- B. Remove the hose bib plug from the external drain and fill connection and attach a hose.
- C. Open the drain valve in the equipment compartment.
- D. When the spa is empty, close the drain valve and remove the hose. Reinstall hose bib plug.

NOTE: Keep the drain valve closed at all times except when draining the spa (do not rely on the cap to stop the flow of water). Not doing so could result in damage to the drain valve due to freezing water.

Replacing Spa Frog® Mineral Cartridge

This cartridge should be replaced every four months. You may still feel the “spent” minerals inside, but they are no longer effective and need to be replaced.



Check the end cap of the optional ozonator for a purple glow.



AS NEEDED MAINTENANCE

1. Cover Care

It is recommended that you use *Cover Cleaner* to keep the spa cover clean and conditioned. Proper care of the cover increases the life and keeps it looking great in even the harshest conditions. **NOTE:** Do not use regular household products or products that contain silicone, alcohol, steel wool, or bleach.

2. DuraWood Exterior

Clean the exterior of the spa with a mild soap and water solution. Cleaners containing alcohol, Acetone, Nitrobenzene, and Cyclohexanol can dissolve and discolor the DuraWood exterior.

3. Wood Exterior

The wood exterior has been treated with a water-based wood preservative at the factory. We suggest the exterior be treated every six months with an additional coat of preservative for maximum weather protection. Your dealer can suggest the best preservative for your environment.

4. Clean the DuraShell® Interior

Once the spa is drained, clean the DuraShell interior – especially at the water line. We suggest the *Glove Sponge* to clean without scratching.

Clorox bleach (diluted) is the only approved cleaning agent for DuraShell – any other products should be avoided.

NOTE: Due to the high-gloss, fine finish of the acrylics, imperfections in the surface texture may occur. These in no way compromise the integrity of the spa shell.

NOTE: Do not leave an empty spa uncovered. Direct sunlight on the spa surface can cause severe damage or blemishing and can result in the voiding of any surface warranties.



Remove lamp socket from back of light assembly.

5. Excess Debris

Grit and debris tracked into the spa should be removed with a spa vacuum.

6. Water Line

To avoid buildup of oils and lotions at the water line, clean the interior when needed. We suggest the *Glove Sponge* to clean without scratching.

NOTE: Do not use the same brush or sponge to clean the exterior of the spa and the interior of the spa. Soap and other product residue used on the outside of the spa can cause foaming of the spa water and scratches to the spa surface.

6. Light Bulb Replacement

- A. Turn off the power to the spa.
- B. Remove the equipment area door to find the light access. (See EQUIPMENT DIAGRAM.)
- C. Remove the lamp socket from the back of the light assembly by turning counterclockwise and pulling at the same time.
- D. Gently pull the bulb out of the lamp socket and replace it with a **6 watt bulb only (GE #918)** available from your spa dealer.
- E. Install the lamp socket back into the light assembly and replace door.

SUSPENDED USE OR WINTERIZING THE SPA

Your spa was designed for year-round use and many people find the combination of hot water, therapy jets, and cool winter temperatures to be especially soothing. However, if you decide to discontinue the use of your spa for any extended period of time, we suggest you follow the steps below.

NOTE: During long periods of inactivity, damage can occur to equipment from condensation within the equipment compartment.

1. Turn off the power to the spa.
2. Drain the spa. (See DRAINING AND REFILLING THE SPA.)
3. Remove all residual water from the seating and footwell. If necessary, bail out the remaining water then dry the spa with towels. A wet/dry vacuum is recommended for best results.
4. Using the wet/dry vacuum, place vacuum nozzle over each jet nozzle to remove water from plumbing lines, starting with the highest jet and finishing with the lowest jet.
5. Unscrew the pump plug from the pump. (See STARTING YOUR SPA.)
6. Again, using the wet/dry vacuum, place nozzle over the exposed pump opening to remove excess water. The pump should be removed from the spa and stored in a climate-controlled room.
7. Clean the spa interior.
8. Clean the filter cartridge.
9. Reinstall the spa cover and lock in place.

NOTE: Direct sunlight on the spa surface can cause severe damage or blemishing and can result in the voiding of any surface warranties.

IMPORTANT CHEMICAL SAFETY PROCEDURES

1. Always keep chemicals out of reach of children.
2. Read product labels carefully prior to use.
3. When dissolving, always add chemicals to water, do not add water to chemicals. Some dry chemicals should be dissolved prior to adding them to the spa. Using a clean container, dip some water from the spa. Mix until dissolved, then add to circulating water.
4. **CAUTION:** Do not mix chemicals together. Add them separately to the spa water.
5. All chemical products should be stored in a cool, dry, well-ventilated area where the average temperature does not exceed 90°F (32°C). Keep storage area clean of debris such as rags, newspaper, and combustible materials.
6. Keep chemicals away from open flame or other heat source. Do not smoke near chemicals. If a dry chlorine chemical fire should occur, use water only. Do not use a dry chemical fire extinguisher to attempt to put out the fire.
7. When adding chemicals, always keep the water circulating in the spa with jets in a downward circular pattern for better chemical distribution. Add chemicals to the spa water one at a time. Allow several minutes between any new chemical additions using the jet action to evenly distribute throughout the spa.
8. After adding chemicals, wait the amount of time recommended on the chemical container before retesting your water for an accurate reading. Retest your spa water before using.
9. If you have any questions or concerns about the correct procedures for handling chemicals, please contact your spa dealer or Marquis Corp.

WATER CARE

There are three things necessary for clean safe water:

1. **CIRCULATE:** Water has to be circulated regularly; it can not be stagnant.
2. **FILTER:** Water has to be filtered to remove particulate and debris.
3. **SANITIZE:** Water has to be sanitized to kill organisms like algae, bacteria and virus.

The control system in your spa will automatically circulate and filter. (See SPA CONTROL OPERATION, ConstantClean™ and SmartClean™ sections.) The sanitation requires minimal effort if done consistently and properly.

To sanitize spa water, three things are required:

1. **BALANCE:** The water must be balanced so the sanitizer can work and spa equipment is protected.
2. **SHOCK:** Shock to oxidize organics and maximize sanitizer efficiency.
3. **SANITIZE:** Maintain a proper level of sanitizer at all times.

UNDERSTANDING WATER BALANCE

Water balance is the interrelation of factors that determine the quality of the spa water. The effectiveness of chemicals and other additives are dependent on all these factors working together or “in balance”. The primary elements to water balance are the calcium hardness, total alkalinity and pH.

It's important to understand a spa is not just a “small swimming pool” and the care of a spa should be handled differently. Spa water is kept at a temperature of up to 104°F (40°C) but pool chemicals are designed for cool water. Plus the ratio of people per gallon in a spa is much higher than in a pool – four people in a spa is the equivalent of having 200 people in a typical backyard pool. This increased “bather load” increases the residue from soaps, perfumes, body oils, cosmetics, and other contaminants. Always use water treatment products recommended for use in your spa.

pH Balance

Keeping the pH balanced is the most critical component of water balance. Calcium hardness

and total alkalinity act as buffers to stabilize the pH. When they are properly adjusted, the pH will be stable and easy to maintain. The pH is a measure of the relative acidity and basicity of the water. The ideal pH range is 7.2 - 7.8. When the pH falls below 7.2 the water can become corrosive. Low pH can cause damage to metal in the control system and heater, excessive sanitizer consumption, and skin irritation. A pH above 7.8 can be scale-forming and allow metals or minerals in the water to form deposits and stain spa surfaces.

Alkalinity

Alkalinity acts as a buffer to prevent the pH from changing as other substances are added to the water. Stability of the pH is directly related to the alkalinity. The alkalinity should be between 80 - 140 ppm. Alkalinity below 80 ppm makes it difficult to stabilize the pH. Alkalinity above 140 ppm may increase the pH and cause cloudy water, scaling, and decreased efficiency of the sanitizer.

Note: *Alkalinity & pH Increaser* and *Alkalinity & pH Decreaser* will affect both the pH and alkalinity. Generally, smaller additions will change the pH and have a very minor effect on the alkalinity. Larger additions will also affect the pH, but will have a much greater effect on the alkalinity. (Example: If the pH is very high and the alkalinity is within range, adding a few smaller doses of *pH and alkalinity Decreaser* instead of one large dose will reduce the pH with little effect on the alkalinity.)

Calcium Hardness

Do not use soft water in your spa. It is critical to have calcium in your water and in most cases tap water is fine. The ideal range of calcium is between 200 - 300 ppm. The calcium hardness is normally adjusted when filling or refilling after draining the spa. High calcium levels can cause scale buildup on spa surfaces and equipment. Your spa can be protected against high calcium by using *Metal & Stain Remover* per the directions on the container. Low calcium levels can cause spa water to become highly corrosive and damaging to the equipment components and plumbing. To raise calcium levels, use *Calcium Hardness Increaser*. Most authorized dealers can test the calcium hardness of your water.

BALANCE

When initially filling or refilling your spa follow these steps to achieve proper water balance.

IMPORTANT! Always follow instructions on the chemical container when adding chemicals.

1. Test the spa water using a test strip or test kit. Determine the pH and alkalinity of the water.
2. If adjustments are needed for the pH and/or alkalinity, always balance the alkalinity before balancing the pH. The product(s) you should use to adjust pH and/ or alkalinity are *pH & Alkalinity Up* or *pH & Alkalinity Down*. Make any additions per the directions on the bottle and then test and repeat if necessary until all readings are in the desired range.
3. Increase the calcium hardness if necessary.

SHOCK**Initial Treatment**

Shock the spa using granular *Chlorine Sanitizer* or non-chlorine *Spa Shock*. Add directly to the spa per the instructions on the container. For the initial treatment, *Chlorine Sanitizer* is preferred as it will also establish a residual of sanitizer.

Maintenance Treatment

Once bacteria and other wastes are neutralized by the sanitizer, they stay in the water unless oxidized or shocked. Often called chloramines or bromamines, they create dull, cloudy water and can cause odor and eye or skin irritation. Shock treatment rids your spa of these wastes for clear, sparkling water. Shocking with non-chlorine *Spa Shock* or granular *Chlorine Sanitizer* is recommended once a week or whenever the water appears dull or cloudy or has a strong odor. Non-chlorine *Spa Shock* allows use of the spa 15 minutes after shock treatment.

NOTE: A strong bromine or chlorine odor typically indicates the spa needs to be shocked – not that there is too much bromine or chlorine in the water. A properly balanced spa that is shocked regularly will not have an odor.

SANITIZE**ConstantClean™ System**

The ConstantClean system utilizes a combination of sanitizers to increase water quality and significantly decrease maintenance. The combination of a *Spa Frog® Mineral Cartridge** and the factory installed ozonator greatly reduce the amount of sanitizer required. Instead of the normal 3 - 5 ppm of bromine, you now only need to maintain 1 - 2 ppm of bromine.

* The Spa Frog® sanitation system is not available in some international markets. However, the ozone system is standard on all spa models in all countries. Please see your dealer for recommended alternate treatment method if Spa Frog® is not available.

Setting Window >



SPA FROG® SANITATION SYSTEM*

After shocking the spa water with *Chlorine Sanitizer* granuals or non-chlorine *Spa Shock*, bring the spa water to operating temperature. Then install the Spa Frog® cartridges.

ADJUST THE SPA FROG® MINERAL CARTRIDGE*

Remove the protective cellophane wrap from the cartridge. While holding the bottom of the cartridge, turn the top until the number six appears in the setting window.

NOTE: This cartridge should be replaced every three to four months. You will still feel the “spent” minerals inside, but they are no longer effective and the cartridge needs to be replaced. It is recommended to drain and refill the spa at the same time you replace the mineral cartridge.



Spa Frog cap

ADJUST THE SPA FROG® BROMINE CARTRIDGE*

Remove the protective cellophane wrap from the cartridge. Finding the right setting for the bromine cartridge will require monitoring your usage for the first few weeks. Begin with an initial setting based on the chart below and monitor bromine levels daily for the first week or so, adjusting the cartridge by one setting per day until a 1 - 2 ppm level has been achieved. To adjust cartridge, remove from system and turn to the next highest setting if the bromine level is low, or the next lower setting if the bromine level is high. The bromine cartridge needs to be replaced when empty between two and four weeks. Always maintain 1 - 2 ppm of bromine.

Suggested *Initial Spa Frog®* Bromine Cartridge Settings

Filter cycle duration	Spa Gallons		
	150-250	250-300	300-400
One hour	1	2	3
Two hours	1	2	2
Four hours	1	1	2



Install cartridges in the holder.

INSTALL THE CARTRIDGES

Locate and remove the Spa Frog® cap on the top lip of the spa. Push down and turn the holder counter-clockwise to unlock. Lift holder out. Snap the *Spa Frog® mineral cartridge* into the area of the holder marked "MINERALS" (top portion), making sure to line up the indentation near the top of the cartridge with the raised line on the holder. Then snap the *Spa Frog® bromine cartridge* into the area of the holder marked "BROMINE". Be sure to line up the indentation on the cartridge with the raised line on the holder. After cartridges are snapped in, return the holder, push down, and then turn clockwise to lock into place. Replace the cap.

CAUTION: Hand tighten only; avoid over tightening; avoid bending the holder to help prevent damage to the holder.

REMOVE THE CARTRIDGES

Reverse above procedures to remove cartridges.

*The Spa Frog® sanitation system is not available in some international markets. See your dealer for recommended alternate water treatment method.

WATER CARE REGIMEN

SpaCare™ products are classified by easy to follow usage guidelines. The information below indicates whether the product should be used daily, weekly, monthly, when filling, or as needed – if special water conditions arise.

DAILY

Sanitizer

Maintain 1 - 2 ppm of bromine at all times.

WEEKLY

Shock Treatment

Sanitizer combines with bacteria and neutralizes it on contact. However, the used sanitizer/bacteria particle is still present in the spa water. Used sanitizer in the water emits an odor and causes cloudy water. To oxidize, or rid the spa of this used sanitizer, you must shock the spa once a week.

AS NEEDED PRODUCTS

pH & Alkalinity Up

pH & Alkalinity Down

These two products work to raise or lower the pH and alkalinity in the spa. They are only needed if the test strip indicates the levels are not in the ideal ranges.

Water Clarifier

Microscopic particles can pass through the spa filter and create cloudy water. *Water Clarifier* combines these microscopic particles into larger particles that can be trapped in the filter to clear cloudy water.

Spa Defoamer

If foam appears in your spa, the action of the jets will keep it from dissipating. The use of Spa Defoamer instantly rids your spa water of foam.

Metal and Stain Remover

Metal and Stain Remover will remove metals such as iron and copper from spa water. Used on a weekly basis, it will protect the spa from possible scaling caused by high levels of calcium.

TROUBLESHOOTING GUIDE

P: Problem

S: Solution

Cloudy Water

P: Inadequate filtration or dirty filter.

S: Ensure that the filter is securely installed.
Clean or replace filter. Increase the length of clean up and/or filter cycles.

P: Water is not balanced.

S: Test water and adjust pH, alkalinity, and sanitizer as needed. Shock to oxidize and destroy organics in the water.

P: Unfiltered particles or chemically saturated.

S: Use *Water Clarifier* to combine particles.

P: High total dissolved solids

S: Drain, clean, and refill the spa.

Chemical Odor

P: Too many chloramines/bromamines in the water.

S: Treat water with *Spa Shock* then adjust sanitizer level as necessary.

P: Dull looking water, difficult to manage. High total dissolved solids (TDS) may be the cause.

S: Drain and refill with fresh water.

Musty Odor

P: Not enough sanitizer in water – bacteria or algae in water.

S: Add sanitizer as necessary and shock. Re-adjust sanitizer level if necessary.

Yellow Water

P: Low pH and/or low alkalinity.

S: Test and adjust pH with *pH and Alkalinity Up*.
Adjust alkalinity if necessary.

Foaming

P: High concentration of body oils, lotions or soaps, as well as excessive organics.

S: Use *Spa Defoamer* and adjust pH and sanitizer as needed.

Scum Line in Spa

P: Body oils and dirt.

S: Use *Glove Sponge* to clean the spa. Test and adjust the sanitizer and pH if necessary.
Increase the clean up cycle.

No Sanitizer Reading

P: Sanitizer level is too low.

S: Shock and/or adjust Spa Frog® bromine cartridge until the sanitizer registers in the recommended range.

P: Test strip remains “white” even after sanitizer has been added.

S: Sanitizer level could be extremely high. It can bleach the reagents on the test strip and give a false reading.

Remove spa cover and activate jets and air control. Allow jets to run for 30 minutes. Test water to see if desired level has been reached. Adjust *Spa Frog® bromine cartridge* to reduce bromine level.

High Sanitizer Reading

P: Too much chlorine or bromine added or dispensed into the spa.

S: Remove spa cover and activate jets and air control. Allow jets to run for 30 minutes. Test water to see if desired level has been reached.

Adjust *Spa Frog® bromine cartridge* to reduce bromine level.

Eye or Skin Irritation

P: Contaminants or excessive amount of chloramines/bromamines in water.

S: Treat water with *Spa Shock*. Adjust sanitizer level.

P: pH is low.

S: Adjust as needed.

Corrosion of Metal

P: Low pH.

S: Adjust pH with *pH and Alkalinity Up*.

Green Water/Algae

P: Low sanitizer level or high pH.

S: Adjust pH, shock and/or adjust *Spa Frog® bromine cartridge* as necessary.

Erratic pH

P: Alkalinity and/or calcium hardness are too low causing pH “bounce”.

S: Test and adjust alkalinity and/or calcium hardness to bring them into the ideal range.



SPABOUTIQUE™

A collection of unique items to delight your senses, free your time, and make your life easier.

SpaCare gives you maintenance products to ease spa care – inside, outside, and especially the water.

SpaTherapy surrounds your senses with aromas, visions, sounds and feel-good products to bring you and your environment to life.

SpaStyle brings convenience items to enhance your lifestyle, while soaking in the spa or relaxing on the deck.

SpaBoutique offers a full range of spa and backyard accessories, including SpaCare™ products, Spa Frog® products, replacement filter cartridges, cover lifters, steps, and more. See your authorized dealer for a complete catalog of items.