



**SONOMA SPAS**

# Owner's Manual

**Certified Quality ISO-9001**



**Sonoma Spas  
A Division of Amtech Corporation  
406 Railroad St.  
Yelm, Washington 98597  
1-888-998-1772  
[www.sonomaspas.com](http://www.sonomaspas.com)**

**Dear Valued Customer,**

The Sonoma Spa or Hot Tub that you have purchased is one of the best values you can buy. It is designed for long, enjoyable and healthful use if it is properly maintained.

This instruction manual will provide you with information, procedures and tips to aid you in the use and necessary care of your spa. You should pay particular attention to the safety instructions and tips in this manual to insure safe operations. We urge you to become thoroughly familiar with, and carry out the safety practices described in this manual.

Over the years we have gained a lot of input from our customers as well as developed procedures based on our research and development. Reading this manual, referring to it if you have a problem and following the routine maintenance procedures will save you time and expense. Service calls relating to routine maintenance and nontechnical problems can be avoided. (Those types of service calls are not covered by the manufacturer's warranty.) Injury or damage caused by failure to follow the instructions in this manual will not be recoverable from the manufacturer.

***Do Not Discard This Manual.***

If you lose your manual contact your dealer or write the factory for a replacement.  
If you lose any warning signs, contact the factory immediately for a replacement.

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### Owner Information

Date Purchased: \_\_\_\_\_

Dealer Name: \_\_\_\_\_

Installed By: \_\_\_\_\_

Spa Model Number: \_\_\_\_\_

Spa Serial Number: \_\_\_\_\_

System: \_\_\_\_\_

### Notes:

# General Operating Principles

## Understanding Your Spa

A spa emulates the soothing environment of a natural hot spring and there are several components involved in this task. Your Sonoma Spa is an acrylic/fiberglass vessel. The spa, unlike a whirlpool bathtub, is self-contained. The spa heats, filters and recirculates the water and does not need to be refilled between each use. However, the spa does require periodic draining, cleaning and refilling as the water clarity and balance gradually deteriorates.

As with a natural hot spring, the spa's therapeutic effect is derived from heated agitated water. Located inside the spa below the water line, are the hydrotherapy jets. Forcing a stream of aerated water through these jets creates a massage-like action. Your Sonoma Spa may be equipped with swirl massage jets. This type of jet provides a pulsating, massage-like flow of water that will also cover a larger body area than hydrotherapy jets.

At the heart of the spa is the spa support system. The support system performs the basic activities of heating, filtering and circulating the water. Water is drawn from the spa through drain(s) and a skimmer, then passes through the pump, heater and finally back into the spa through the therapy jets. This cycle is activated by the thermostat, either to heat the water or to maintain a minimum level of circulation. The spa pump operates on low speed to provide filtering and the heater will cycle as necessary to maintain a constant temperature. The high speed pump, activated by the user, increases flow through the jets and provides hydrotherapy action.

This unique vessel, the Sonoma Spa, provides the user with an experience hard to equal. A healthful soak in hot water will reduce stress and relax the body, improving your quality of life.

## Important Safety Instructions

The following information is presented as a condition of Underwriters Laboratories (UL) listing of Sonoma Spas and Sonoma Spa Support Systems. These instructions provide good, common sense practices for individuals to install and use spas safely. Please read and follow all instructions. When installing and using this electrical equipment, basic safety precautions should always be followed, including the following:

- 1. READ AND FOLLOW ALL INSTRUCTIONS.**
- 2. WARNING:** To reduce the risk of injury, do not permit children to use this product unless they are closely supervised by an adult at all times.
- 3.** A wire connector is provided on this unit to connect a minimum No. 6 AWG solid copper conductor between this unit and any metal equipment, metal water pipe or conduit within 5 feet (1.5 meters) of the unit.
- 4. WARNING:** This product must be protected with a ground fault circuit interrupter (see equipment.) The GFCI should be tested before each use. With the product in operation, push the test button on the GFCI, the product should not operate. Push the reset button on the GFCI, the product should now operate normally. If the product fails to operate in this manner, there is a ground current flowing indicating the possibility of an electric shock. Disconnect the power until the fault has been identified and corrected.

5. **DANGER: Risk of Accidental Drowning.** Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use this spa unless they are supervised by an adult **at all times**.
6. **DANGER: Risk of Injury:** The suction fittings in this spa are sized to match the specific water flow created by the pump. Should the need arise to replace the suction fittings or the pump, be sure that the flow rates are compatible. Never operate the spa if the suction fittings are broken or missing. Never replace a suction fitting with one rated less than the flow rate marked on the original fitting.
7. **DANGER: Risk of Electrical Shock.** Install a minimum of 5 feet (1.5 meters) from all metal surfaces. As an alternative, a spa may be installed within 5 feet of metal surfaces if each metal surface is permanently connected by a minimum No. 8 solid copper conductor to the wire on the terminal box that is provided for this purpose.
8. **DANGER: Risk of Electric Shock.** Do not permit any electric appliance, such as a light, telephone, radio or television within 5 feet (1.5m) of a spa.
9. **WARNING:** To reduce the risk of injury:
  - A) The water in the spa 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 younger children and when spa use exceeds 10 minutes.
  - B) Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit spa water temperatures to 100° F (38° C). **Consult your physician prior to use.**
  - C) Before entering a spa, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature-regulation devices varies.
  - D) The use of alcohol, drugs or medications before or during spa use may lead to unconsciousness with the possibility of drowning.
  - E) Persons suffering from obesity or with a medical history of heart disease, low or high blood pressure, circulatory system problems or diabetes should consult a physician before using a spa.
  - F) Persons using medications should consult a physician before using a spa since some medications may induce drowsiness while other medications may affect heart rate, blood pressure or circulation.
10. During installation provide drainage for the electrical components compartment.
11. **SAVE THESE INSTRUCTIONS.**

## **Hyperthermia Warning**

Prolonged immersion in hot water may result in Hyperthermia, which is a dangerous condition that occurs when the internal temperature of the body reaches a level above the normal 98.6 degrees F.

Sonoma Spas does not recommend spa water temperatures in excess of 104 degrees F or 40 degrees C. High body temperatures affect people differently; limit your use of the spa to 10-15 minutes or consult your physician about your health and safety before using your spa.

## **Spa Installation Considerations**

Sonoma Spas are designed as freestanding units with the equipment enclosed and protected within the skirt cavity. The spa may be installed on any solid, non-settling surface. We recommend a level concrete pad that is at least 4 inches thick. Always provide drainage of the base so the spa does not stand in water.

Sonoma Spas are also frequently installed on decks and indoors. In this type of installation it is important to be sure that the floor joists below the spa are adequate to accommodate the spa's weight filled with water. We recommend that you consult your building department, contractor or architect when planning this type of installation.

Whatever type of base used, the spa needs to be level in order to maintain the proper water line and to ensure the jets all function properly. The design of the spa is such that the entire bottom framework must be supported on a flat, level surface in order to reduce the possibility of stress cracks in the acrylic surface. **AN IMPROPERLY INSTALLED SPA WILL VOID THE SPA'S WARRANTY.** Do not shim corners. The entire bottom must be supported.

If you are installing the spa yourself, have on hand 5 or 6 strong helpers to assist you in moving the spa to its site. Be sure not to lift the spa by the equipment door nor place a dolly beneath that door. Be sure the weight bears evenly on the horizontal frame members, not the acrylic surface or the vertical skirting. If the spa must be tipped up, do so very carefully with the door side up and be sure the support is on the horizontal trim and lower rail only; never on the acrylic surface.

## **Spa Hookup Instructions**

Once your spa is in its designated place and properly supported, the final step will be to complete the electrical hookup. Water hookup is not required. Your spa can be filled with a garden hose.

### **Electrical Connections**

**WARNING:** We highly recommend a licensed electrical contractor be employed to provide wiring to your spa and to make electrical connections to the spa. Faulty wiring may result in electrical shock or fire. Follow all applicable codes. Follow each step exactly to prevent damage during startup. Read and understand all instructions before proceeding. Improper wiring will void all warranties.

The electrical power supply to your spa, if wired 110V service, must be a minimum of 20 amp service with a 20amp GFCI.

**NOTE:** Some models are equipped with a 110/220 volt convertible unit and may be hooked up by using either 110 or 220 volt electrical service.

**NOTE:** Some spas are 220 volt only equipment.

**NOTE:** After electrical power is connected to the spa, make sure all power is off to the spa before proceeding with the initial startup. This will prevent inadvertent operation which could cause damage to the support equipment.

**NOTE:** As of January 1, 1994, the National Electric Code requires a 50amp GFCI be wired in the electrical service for all 220 volt installations.

All spa equipment packs are labeled with electrical requirements. Please refer to these when installing electrical service for your spa.

## **220 Volt Electrical Hookup**

Again, we **highly recommend a licensed electrical contractor to perform the electrical hookup.** The electrical contractor will be well versed on the code requirements for your area and will be able to complete a safe and sure hookup.

### **SERVICE POWER SUPPLY:**

Systems connected for 220 volt operation require 6 AWG copper wire supply with 4 wires in a proper conduit or cable. This supply must have 2 hot wires, 1 neutral wire and 1 ground wire. Voltage drop should not exceed 3% at full load and grounding should be done in accordance with local electrical codes. The amperage rating for most units is 50 amps. Consult equipment nameplate for minimum supply circuit amperage. **DO NOT** use a circuit breaker larger or smaller than circuit amperage given on the name plate. System malfunctions are frequently a result of undersized wiring. The use of improper wiring will void your equipment warranty.

**POWER DISCONNECT SWITCH.** Provide a power disconnect switch which is within sight and accessible to someone working on the equipment. It should be closer than 25 feet, but not closer than 5 feet to the spa. It must be rated equal to or greater than the minimum supply circuit.

**HOOKUP.** The wiring connection from your Power Disconnect Switch to your spa should be completed by a certified electrician. Wiring information is located on the cover of the equipment control box.

**NOTE:** AS OF JANUARY 1, 1994 A REVISION OF N.E.C. REQUIRES 220V 50AMP GFCI INSTALLED IN ELECTRICAL SERVICE TO ANY 220V SPA EQUIPMENT.

## **Initial Start Up**

BEFORE PROCEEDING WITH THE INITIAL START UP PLEASE READ THE FOLLOWING TO BECOME FAMILIAR WITH THE FEATURES AND FUNCTIONS OF THE COMPONENTS OF YOUR SPA.

Visible on the edge and interior surface of your spa are several components with which you need to become familiar with in order to fully utilize the capabilities of your Sonoma Spa.

## Spa Controls

**DIGITAL TOPSIDE CONTROL:** Located on the edge of your spa or installed elsewhere, this control has keys to operate all functions and will display temperature.

**THERMOSTAT CONTROL:** The thermostat is controlled by the up and down arrows on the digital topside control.

**AIR VOLUME CONTROL:** Located on the top rim area of the spa or in a special recess, these dials when rotated increase the amount of air that is drawn into the hydrotherapy jets, increasing hydrotherapy action.

## Spa Components

**HYDROTHERAPY JETS:** These jets are adjustable both in volume and direction. The direction can be changed simply by pushing the jet nozzle to the position desired. The water volume can be controlled by turning the nozzle on the outer body of the jet. Counter clockwise decreases water flow and clockwise increases water flow. You can completely shut off the flow from these jets, but doing so would provide excessive back pressure to the pump and can cause damage.

**SKIMMER:** The skimmer's purpose is to skim the surface water of the spa during pump operation.

**BOTTOM SUCTION:** The bottom suction(s) is installed in the lower portion of the footwell to prevent hair entrapment. Ensure the cover is on this suction at all times.

**FILTER:** Located in the skimmer is the filter for your spa. Follow the directions contained in your packet for filter operation. Some models may have two or more elements.

## Equipment Compartment

Inside the equipment compartment located behind the equipment access panel, is the control box, pump and shutoff valves. The control box also contains the heater assembly.

**SHUTOFF VALVES** (Sometimes called slice valves or T-valves): these two valves, one before the pump and one after the heater vessel, are operated by pulling up or pushing down on the T-handle. When the handle is up the valve is open, when the handle is down the valve is closed. Closing the valves will isolate the equipment pack and pump from the spa. NOTE: Some models may have four to six valves, depending on the number of pumps.

## Startup and Operating Procedures

The electrical system should be off or unplugged to prevent inadvertent startup and possible damage or electrical shock.

**READ THROUGH ALL INSTRUCTIONS FIRST AND FOLLOW EACH STEP EXACTLY TO ENSURE A PROPERLY OPERATING SPA UNIT.**

Do not leave tub exposed to high temperature or direct sunlight while cleaning or empty. Do not spray directly with cold water. Cool the surface by sprinkling with water before filling. Treat your spa very carefully when empty to prevent damage. Never cover with plastic sheeting. Use only an



approved cover with edge flaps that completely cover the acrylic surface. Keep the spa covered at all times when not in use.

NOTE: Before proceeding with step 1, ensure electrical power is turned off to your spa. This is to prevent inadvertent operation and damage.

1. Open all shut off valves located inside the equipment compartment, by grasping the T-handle and pulling outward. (Some T-handles may require  $\frac{1}{4}$  rotation before pulling outward.)
2. Prior to filling the spa, ensure all jets are in the open position by turning the nozzle or outer body on each jet completely clockwise. Fill the spa through the filter housing by removing filters and installing a garden hose to the middle of the skimmer opening. Always maintain water level in the middle or higher, of the skimmer opening to prevent air being drawn into the support equipment.

NOTE: If you wish to fill your spa with hot water to speed up use time, DO NOT run straight hot water from your hot water faucet into the spa. Mix the hot water with cold water to a lukewarm temperature. Straight hot water from your water tank could damage your spa.

3. When the spa is at the proper water level, stop filling and replace the filters.
4. Thermostat Control: Up and down arrow keys or set buttons are used to set the temperature of the water.
5. Apply electrical power to the spa. Check the GFCI. The GFCI should be tested periodically using the “test” button on the GFCI. Pressing the “test” button will pop the “reset” button. Press in the “reset” button after the test to return to normal operation.
6. Press pump 1 key on your control panel. This should activate pump 1 to high speed. Water flow should start and water should begin flowing from the jets. You should have active circulation coming from all jets within two minutes. Open all of the Air Volume Controls to check for full operation of each jet. If jets do not operate you may have an air lock. To clear an air lock restart the pump, this should clear any air locks. If it doesn't, turn the pump off and on several times to see if stopping and starting the flow of water may break the lock.
7. Stop high speed pump action by pressing the Control Button. This will set the pump on the low speed side where it will be activated by the thermostat control. NOTE: If the temperature of the water used to fill your spa is below 55°F, the low speed side of the pump and the heater may come on when you stop high speed action. This is normal operation.
8. To begin heating your spa, press arrow up to desired temperature. This begins your heating cycle.
  - a) Press the up arrow or set button to the desired temperature.
  - b) Water temperature will be displayed on the control panel.
  - c) After two hours check the temperature rise. The degrees of rise divided by the number of hours will give you the rate per hour. Calculate the number of hours and thus the time that the spa will reach desired temperature.
  - d) Your spa is now ready to use. Be sure to test the chemical balance following heat up and always disinfect the water with chlorine or bromine before use. Follow the chemical manufacturer's instructions carefully and consult your dealer for proper water treatment in your area.

## Spa Operating Instructions

Basically the use of your spa is pretty simple. Just take off the cover and get in. There are some tips however, that will be covered here to make the use of your spa more enjoyable and safe. Maintenance of your spa will be covered in the next section.

To protect the water in your spa you should be clean when you enter the spa. This prevents excessive dirt, oil, etc. from causing damage to the equipment or clogging the filter.

Your spa is equipped with controls which are explained in the Initial Startup section. You may want to reread that part to refresh yourself with its operation. They will be covered briefly here for review.

**Digital Topside Control:** Located on the edge of your spa or installed elsewhere, this control has keys to operate all functions and will display temperature.

**Thermostat Control:** The thermostat is controlled by the up and down arrows on the digital topside control or a set button or program button.

**Air Volume Control:** Located on the top rim area of the spa or in a special recess, these dials when rotated, increase the amount of air that is drawn into the hydrotherapy jets, increasing hydrotherapy action.

**Hydrotherapy Jets:** Are adjustable both in direction and water flow.

- ◆ Always check water temperature prior to getting in the spa; this is to prevent getting into a spa that has overheated.
- ◆ Do not soak for an extended period of time with your whole body submersed. Your body must be able to breathe.
- ◆ If you begin to sweat, stand up or get out of the spa to cool off.
- ◆ Although the spa drain is equipped with an anti-hair entrapment grill; do not allow anyone, especially with long hair, to put their head underwater while the jets are in operation. It is best not to submerge your head at any time.
- ◆ Always insure that children are supervised when using the spa.

## Getting Familiar with Your Spa

Once you have filled your spa with water, take time to get acquainted with your spa.

Each spa has a topside control: some of our models have two and are located on the top of your spa. To activate your jets, you will need to push the pump #1 button once to activate the high speed and a second time to switch to the lower speed or to turn the pump off. The pumps have a built-in timer that will turn the pumps off if they have been running in high speed for 20 minutes unless the user does so manually. If your spa is equipped with two pumps, press the pump #2 button to activate the secondary pump. Once for high speed, twice for low speed and a third time for off.

To change the action of your jets, you may want to turn the air dials, which are located on the top of your spa. This will allow air to be mixed with the jets to give you more jet action, or by closing

the air dial it will soften the jet pattern to give you a more soothing action. On some of our spa models you will find a lever on the top of your spa called the diverter valve. This lever, when pump #2 is activated, will divert the water pattern from the upper jets in dedicated seats, to the large jets. You may change the flow any time you choose by simply turning the diverter handle.

We offer an air blower on some of our models. The air blower is connected to your captain seats and will intensify the jet action. To activate the air blower, push the air blower button located on your topside control. To program your spa please read and follow the directions in your manual or your quick-reference card. Please familiarize yourself with the error messages that may appear on your topside control. If you have any questions about your spa, please contact your dealer.

## **Spa Maintenance**

Proper maintenance of your spa will help to maintain its beauty and function for many years. Maintenance is not difficult nor time consuming and should be performed on a regular basis.

**THE ACRYLIC SURFACE:** Cast acrylic is a high performance surface that should, with a minimum amount of care, provide many years of beauty and performance. The spa should be kept clean and free of any abrasive sand or grit. The water should be changed every two or three months with average use, and we recommend at this time you wipe the surface down with a cleaner/sealer product such as Spa Fast Gloss by Leisure Time Chemical.

**DO NOT USE ANY CLEANER WITH AN ABRASIVE FILLER OR THE SURFACE WILL BECOME SCRATCHED AND DULL.**

**IT IS IMPERATIVE YOU NEVER ALLOW THE SPA TO SIT EMPTY IN HIGH HEAT OR DIRECT SUNLIGHT. THE SPA IS DESIGNED TO BE USED WITH AN APPROVED RIGID COVER AND IT SHOULD ALWAYS REMAIN IN PLACE WHEN THE SPA IS NOT IN USE. THE SPA SHOULD ALWAYS HAVE WATER IN IT.**

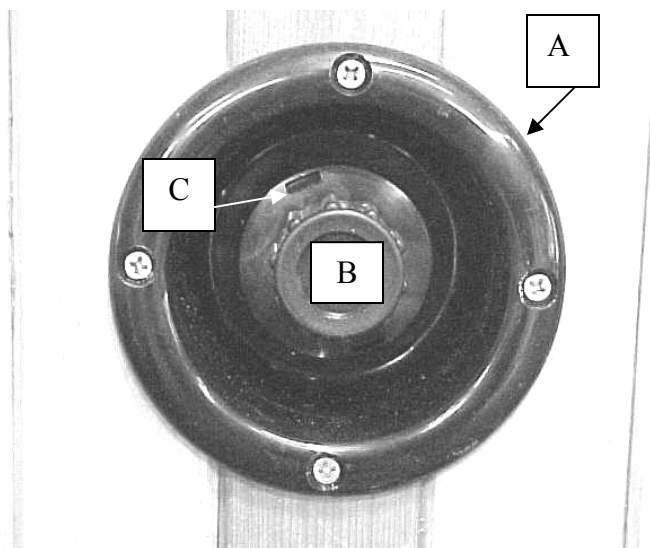
**CEDAR SIDING (if so equipped):** The siding material of your Sonoma Spa is constructed from cedar. The siding is stained at the factory. The only maintenance that should be required would be retreating with stain.

### **REMOVING AND CLEANING SPA FILTER:**

We recommend that you keep a spare filter cartridge on hand to use as a replacement when a filter change is required. This will give you time to properly clean your filter without having to interrupt operation of your spa. To change the filter cartridge:

**CLEANING FILTER CARTRIDGES:** Filter elements are generally easier to clean if allowed to dry. In order to accomplish this, we suggest that you keep a spare filter and rotate the filters. A filter can frequently be cleaned by the use of a pressure nozzle on a garden hose. With excessive buildup of calcium and body oils, a filter cleaning agent may be necessary. Be sure to dispose of cleaning solutions properly.

## Draining Your Spa



Before draining your spa, it is very important to turn OFF the power to your spa! On your spa locate the hose bib assembly on the outside skirt of the spa, see the above photo for reference, marked "A." While holding the ON and OFF valve marked "C" in photo above in the OFF position (clock-wise), unscrew the hose bib cap marked "B" counter clock-wise. After removing cap install your garden onto the ON and OFF valve "C" and turn the valve "C" ON, counter-clock-wise and begin emptying your spa. When you are finished turn the ON and OFF valve to the "OFF" position (clock-wise) and re-install the hose bib cap.

**NOTE:** Do not run pump without water. Do not use the pump to pump water out of the spa, as this may damage the pump seal.

**TO CLEAN THE SPA:** Use a nonabrasive acrylic cleaner or polish with a soft cloth. USE EXTREME CAUTION TO PROTECT THE EMPTY SPA FROM HIGH HEAT OR FROM SUNLIGHT. COOL THE SURFACE BY SPRINKLING WATER OR WIPING WITH A WET CLOTH BEFORE REFILLING.

**TO REFILL THE SPA:** Refill to the proper level. Reapply power at the source. Turn pump 1 to high speed. Check jets for proper operation. Turn high speed pump off. Now reset the thermostat. The spa should then reheat itself to the setting of the thermostat.

**CARING FOR A VINYL COVER:** Vinyl covers have care and maintenance instructions provided by the cover manufacturer. Please follow those instructions.

# Chemical Maintenance

## Water Chemistry

Water chemistry varies due to many external and internal conditions. Water chemistry is very important. Consult your dealer and chemical manufacturer for more details on the following information and procedures.

## Water Sanitation

There are several spa disinfectants available from your spa dealer. The purpose of using a water disinfectant is to sanitize the water (kill the bacteria and algae) and to break down (or oxidize) organic material in the water such as body oils and perspiration. Bromine is the most commonly used disinfectant for hot water sanitizing.

There are various bromine products available and you can obtain advice from your dealer as to what's best for your area. In general, we recommend slow dissolving bromine tablets dispensed from a floating brominator which is available from your dealer.

Inorganic chlorine products with a calcium base (i.e. Calcium Hypochlorite) can be combustible when mixed with organic substances and can cause a buildup of calcium carbonate in your equipment. NEVER USE THIS FORM OF DISINFECTANT.

Carefully read the labels on your chemical products to determine their components, their instructions for storage and proper methods for handling and use. Residential spas should be maintained at a bromine level of at least 3 to 5 ppm (parts per million) free bromine residual for non-ozonated systems and .5 to 1.5 ppm free bromine residual for ozonated systems.

It can be quite tricky to keep the proper amount of bromine in your spa. Sunlight, heat, bubbling water, perspiration, foreign bodies and body oils cause the release and use of bromine in the water. That is why the term "free bromine residual" is important. The free bromine residual is the amount of bromine that is still in the water after some has been released, used up or combined chemically with other substances in the water. You need to check the free bromine residual level regularly, especially prior to use, and when the spa is being used to make sure you are keeping free bromine residual at the proper level. Do not use the spa with the bromine level below .5 ppm or above 5 ppm or you risk the possibility of unsanitary conditions or skin irritations from chemical concentrations.

In addition to maintaining the proper free bromine residual level, another important maintenance step is a weekly addition of Renew (shock treatment), which removes chloramines and bromamines (substances which are chemically combined with the used chlorines and bromines in the spa). Chloramines and bromamines are undesirable because they prevent the bromine from disinfecting properly and they also cause burning of the eyes and foul odors. These symptoms are often taken as a sign of too much bromine, but they are actually signs of not enough bromamine residual. The smell is caused by chloramine and bromamine, not by the free residual bromine. After applying a shock treatment to the spa, allow the bromine level to drop to the proper level before using the spa.

There are a variety of chemicals and devices advertised as spa water disinfectants. Whichever you choose, it is very important to carefully follow the manufacturers' instructions and to check with your pool and spa dealer if you have any questions before using these chemicals.

## **Chemical Balance**

Maintaining a proper chemical balance will reward you with clear, clean, fresh smelling spa water. Chemically balanced water depends primarily upon the pH level of the water (explained below); the chemicals which help maintain the pH level and water hardness (primarily excessive calcium minerals).

The acidity or alkalinity of water is expressed as a pH value. The pH range is on a scale from 0 to 14. The most alkaline possible is 14 and 0 is the most acidic. Neutral is 7, which is considered being neither acidic nor alkaline. The optimum pH level for spa water is 7.4 with a range of 7.2 to 7.6.

Depending on the acidity or alkalinity of the water used to fill the spa, you may need to adjust your water's pH level by adding an acid or alkaline chemical. Your local dealer can sell you these chemicals for this purpose and can advise you on their proper usage.

Failure to maintain the proper pH level can cause user discomfort, unsanitary water, eye irritation, clogging of pipes, staining and heater damage due to calcification. Failure to maintain proper pH levels will also void your heater warranty.

**TOTAL ALKALINITY:** In addition to the acidity /alkalinity of the water, the total alkalinity of the water should be adjusted and maintained to proper levels. The total alkalinity of the water is the ability of the water to resist pH changes. The proper level for total alkalinity should be in the range of 80 to 180 ppm. This will insure that the pH will not fluctuate easily. Your pool and spa dealer can supply you with the proper chemicals and explain their proper uses.

## **Vacation and Winter Use**

Many spa owners find that using the spa in the winter gives them a whole new and enjoyable perspective on weather and the outdoors. We recommend this highly. If the winter climate in your area has prolonged periods below freezing (32° F):

1. Be sure power to the spa remains on at all times.
2. Set temperature to desired level (suggested 60° F). If temperature of the high limit probe drops below 40°F, the system will start a special process to circulate the water. The message FREE will be displayed (see Topside Control Section).
3. Be sure to maintain proper chemical levels, water level and keep the spa covered at all times.
4. If you must leave the spa unattended for a few days up to a couple of weeks, add a floating chemical feeder to the spa and set it at its lowest feed level. If freezing temperatures will be encountered, have the spa checked daily to insure power remains on, circulation is maintained and the water level is proper.
5. The spa may be left for extended periods if chemical balance, water level and filtration are maintained.

## Winterizing and Storage

If you decide not to use the spa in the winter or desire to drain and store the spa you must do the following:

1. Draining and storage of your spa is not recommended. The acrylic surface material may absorb moisture with use and leaving empty for any length of time may cause the spa to dry out which may cause cracking or surface fracturing.
2. Completely drain the spa and wipe out any water from inside the filter and tub.
3. Disconnect power and mark the circuit breaker "OFF".
4. Open union connections at pump inlet and heater outlet to drain heater and piping. Leave open.
5. Using compressed air or a wet/dry shop vac, blow out water from lines by plugging jets (fingers work good for this) and forcing any remaining water out of the lines alternating from jet to jet. Use air to blow water out of the pump face and heater cavity.
6. If spa will be in freezing temperatures while stored, use propylene glycol antifreeze (edible grade RV). Fill the face of the pump with propylene glycol if it does not have a drain.
7. Wipe out any water residue and cover the tub with the fiberglass or vinyl top. Cover the entire unit with a white canvas tarp and secure. DO NOT USE visquene or any transparent sheeting as this can cause a temperature rise on the surface that can damage the spa. Protect from heat and direct sunlight.
8. To restart the spa, follow the normal start-up instructions. It may be necessary to flush the spa depending on the amount of antifreeze required and then refill.

**WARNING: DO NOT USE ETHYLENE GLYCOL BASED ANTIFREEZE. THIS TYPE IS TOXIC AND CAN DAMAGE THE SPA SURFACE.**

## **Important**

### **Read these instructions before filling your spa.**

- ◆ Remove the door to access system area.
- ◆ Hand tighten all unions. There are two on each pump and two on the stainless steel heater assembly. (Some models have only one pump.)
- ◆ Check to see if all valves are in the open position. These are the T-shaped devices. Pulled out is on, pushed in is off.
- ◆ It is now safe to start filling the spa.
- ◆ Remove the filters from the filter basket.
- ◆ Insert garden hose into filter basket.
- ◆ Fill spa to the water level line, reinstall filters and turn on power to spa.
- ◆ Push pump 1 button to activate the jets.
- ◆ Let spa run 2-3 minutes then add start up chemicals.
- ◆ Program your spa and enjoy!

## **Tips about Your Spa**

- ◆ The pumps in your spa will only run on high speed for twenty minutes, and then they will shut down. This is normal.
- ◆ The equipment has a built-in protector to shut down the pumps.

### **The spa is equipped with a smart winter mode.**

This system monitors ambient air temperature in the plumbing area of the spa. It is activated when air is cold enough to freeze water. The system starts the pumps and the air blower for one minute to prevent freezing.

## **Filter Removal**

For the Super Round, Trio, Quartet, Prelude, Symphony, Harmony and Ensemble spas:

- ◆ To remove the filters in your spa, you must slide the faceplate on your skimmer straight up.
- ◆ Slide the strainer tray out of the skimmer housing.
- ◆ Reach into the skimmer housing and unscrew the filter elements counter clockwise. You may wash the filter elements with a garden hose or you may choose to soak the filters in a filter cleaner solution. We suggest having an extra set of filters on hand to alternate them while the others are being cleaned.
- ◆ To reinstall the filters, simply reverse the above steps.