



Hot Tub Owner's Manual

VS300 220V SYSTEM



7 Seating Position
80.5"W x 80.5" L x 34"W

CAUTION

DO NOT OPERATE SPA BEFORE READING THIS MANUAL

Failure to read this manual & follow its instructions may result in unsafe operation and or permanent damage to your portable spa.



THIS MANUAL COVERS

**GRANDMASTER/HYDROMASTER/OASIS/HAVEN/EL
SOL/EQUINOX AND ALL OTHER 240 VOLT SPAS**



TABLE OF CONTENTS

INTRODUCTION

TITLE	Page
1. Table of Contents	2
2. Owners Record	3
3. Planning a Location	4
4. A Good Foundation Placing the Hot Tub	5
5. Important Safety Instructions	6
6. Safety Precautions	7
7. Electrical Requirements	8
8. Configuring VS300 System	9
9. Controls Reference Guide	10
10. Preset Filter Cycles	11
11. Diagnostic	12
12. Feature Operations	13
13. Fill Up & Start	14
14. Adding Chemicals	15
15. Cleaning Winterizing	16
16. Spa Maintenance	17
17. Cover Care & Spa Light Replacement	18
18. Troubleshooting	19
19. Limited Warranty	20

* Most cities, counties, states, and countries require permits for exterior construction and electrical circuits. In addition, some communities have codes requiring residential barriers such as fencing and/or self-closing gates on the property to prevent unsupervised access to a pool or hot tub by children. Be sure to check with your local agencies for specific requirements.

Owners Record

Locating the Spa Serial Number:

Label is located on the lower right side of the equipment access panel. You will need the spa model and serial number to properly register your spa and activate coverage. Write your spa information in the space provided.

DATE PURCHASED:

PURCHASED FROM:	PHONE:
------------------------	---------------

TELEPHONE:

SPA MODEL / SERIAL NUMBER:

Please read this "Owners Manual" carefully, as it is designed to provide you with the information you will need to ensure the safe, secure use of your new Spa.

IMPORTANT: American Hydrotherapy Systems, LLC reserves the right to change specifications and/or design without notification and without any obligation.

SPA DIMENSIONS

<u>Hot Tub Seating</u>	<u>Width</u>	<u>Length</u>	<u>Height</u>	<u>Dry Weight</u>	<u>Water Capacity</u>
7 seating position	80.5 Inches	80.5 Inches	34 Inches	460 lbs	340 gallons

Manufactured By:
American Hydrotherapy Systems, LLC
1735 S Baker Avenue
Ontario, CA 91761

PLANNING A LOCATION FOR YOUR SPA

Consider these things when determining where to place your hot tub.

SAFETY FIRST:

Do not place the hot tub within 10 feet (3m) of overhead power lines. Make sure your hot tub is positioned so access to the equipment compartment and side panels will not be blocked. Be certain your installation will meet all city and local safety codes and requirements.

PLANNED USE OF HOT TUB:

How you intend to use your hot tub will help you determine where you should position the hot tub. For example, will you use it more for recreational or therapeutic purposes? If your hot tub is mainly for family recreation, leave plenty of room around it for activity and lawn furniture. If you will use it more for relaxation and therapy, you'll probably want to create a specific mood around the tub.

ENVIRONMENT:

If you live in a climate with a snowy winter and hot summer, a place to change clothes or a house entry near the hot tub is convenient. A warmer climate may require shade from the hot sun. Consider placement of trees, shrubs, patio cover or perhaps a gazebo structure to provide what you will need. Indoor installations require adequate ventilation. When the hot tub is in use, considerable amounts of moisture are produced. This moisture can damage walls and ceiling surfaces over time. Special paint is available to resist moisture damage. Remember that hot tubs periodically require drainage, so plan your environment accordingly.

PRIVACY:

Think of your surroundings during all seasons to determine your best privacy options. Consider the view of your neighbors when you plan the location of your hot tub.

VIEWS:

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

KEEP CLEAN:

Prevent dirt and foliage from being tracked into your hot tub by utilizing concrete for paths and access areas. Check the location of spill paths from gutters, trees, and shrubs.

SERVICE ACCESS:

Many people choose to install tile or custom wood around their hot tubs. If you are installing your tub with custom decorative trimming, remember to allow for access to it for service. Should you need service, a technician may need to remove the tub's side panels, or access it from beneath. It is always best to design special installations so the hot tub can still be moved, or lifted from the ground.

A Good Foundation

Your new hot tub needs a good solid foundation. The area your hot tub sits on must be able to support the tub, the water in it and those who use it. If the foundation is inadequate, it may shift or settle after the hot tub is in place, causing stress to the shell or components.

BE AWARE:

Damage caused by inadequate or improper foundation support is not covered by the hot tub warranty. It is the sole responsibility of the hot tub owner to provide a proper foundation for the hot tub.

Make sure the foundation where the hot tub is placed drains water away from the hot tub. Proper drainage will keep components dry from rain and wet weather.

If you choose to install your hot tub indoors, pay close attention to the flooring beneath it. Always remember a hot tub is filled with water. Choose flooring that will not be spoiled or ruined from water damage. Check with your contractor to verify your flooring can support the weight and water spills or splashing from your hot tub.

Your hot tub weight must always be considered when installing your hot tub. If you are installing it on an elevated wood deck or other structure, it is advisable to consult a structural engineer or contractor to ensure the structure will support the weight.

IT IS STRONGLY RECOMMENDED THAT A QUALIFIED, LICENSED CONTRACTOR PREPARE THE FOUNDATION FOR YOUR HOT TUB.

There is a 4" (10cm) minimum depth requirement for a concrete pad.

Placing the Hot Tub

CHECK THE DIMENSIONS OF YOUR HOT TUB

Compare the hot tub dimensions to the width of gates, sidewalks, and doorways along the delivery route used to bring the hot tub into your yard. It may be necessary for you to remove a gate or partially remove a fence in order to provide an unobstructed passageway to the installation location.

Also, keep in mind—if you are using special equipment to place your hot tub into an area it will be necessary to include those measurements and weights.

PLANNING A DELIVERY ROUTE:

Check the width of gates, doors and sidewalks to make sure your hot tub will pass through unobstructed. You may have to remove a gate or part of a fence to allow for adequate width clearance.

If the delivery route will require a 90-degree turn, check the measurements at the turn to ensure the hot tub will fit.

Check for protruding gas meters, water meters, A/C units, etc., on your home which will cause obstructions along the delivery path to your yard.

Check for low roof eaves, over hanging branches or rain gutters that could be an obstruction to overhead clearances.

SPECIAL CIRCUMSTANCES

The use of a crane for delivery and installation is primarily to avoid injury to your hot tub, your property or to delivery personnel. Our customer service may be able to assist you with the arrangements. Cranes are not considered “normal delivery”.



Important Safety Instructions

It is the hot tub owner's responsibility to read and follow all the instructions and precautions described in this manual. Failure to do so may result in personal injury. Liability rests with the hot tub owner. Please, make instructions available for reference by all hot tub users. Some warnings labels have been shipped with your new hot tub.

1. BEFORE OPERATING THE SPA: READ AND FOLLOW ALL INSTRUCTIONS. SAVE ALL INSTRUCTIONS.

2. WARNING: A wire connector is provided on this unit to connect a minimum No. 8 AWG (8.4mm²) solid copper conductor between this unit and any metal equipment, metal enclosures of electrical equipment, metal water pipe, or conduit within 5 feet (1.5m) of the hot tub.

3. 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 hot tub unless they are supervised at all times.

4. 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 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 suction fitting.

5. DANGER – Risk of Electric Shock. Install at least 5 feet (1.5m) 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 8 AWG (8.4mm) sold copper conductor to the wire connector on the terminal box that is provided for this purpose.

6. DANGER – Risk of Electrical Shock. Do not permit any electric appliance, such as a light, telephone, radio or television, within 5 feet (1.5m) of a spa.

7. 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) & 104°F (40°C) are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when spa use exceeds 10 minutes.

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).

c. Before entering a spa, the user should measure the water temperature since the tolerance of water temperature-regulating devices varies.

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

e. Obese persons and persons with a 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 medication should consult a physician before using a spa since some medication may induce drowsiness while other medication may affect heart rate, blood pressure and circulation.

g. Heat stroke is a dangerous condition brought about by excessive heat. It especially affects the very young, elderly, individuals under the influence of alcohol or drugs, and those using certain medications. The symptoms include: sweating, dizziness, nausea, light-headedness, convulsions, increased pulse rate, shallow breathing, and in the extreme, unconsciousness. If you suspect heat stroke, get medical help immediately. Lay the victim on his back, with the head slightly elevated for easier breathing, and apply ice packs to the head.

h. Emergency telephone numbers, such as: hospital, physician, ambulance, paramedics, and the police should be readily available and posted next to a close-by telephone.

SAFETY PRECAUTIONS

DANGER – RISK OF INJURY – READ AND FOLLOW ALL INSTRUCTIONS

1. *Read, keep, and make these instructions available!*
2. *Children should be CLOSELY supervised at all times.*
3.  **WARNING** – Risk of Accidental 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 closely supervised at all times
4. **DANGER:** *To reduce the risk of drowning from hair and body entrapment, install a suction fitting(s) with a marked flow rate that equals or exceeds the flow rate marked on the equipment assembly.*
5. **DANGER:** *To reduce the risk of injury, do not remove the suction fittings. NEVER operate the hot tub if the suction fittings are broken or missing, NEVER replace a suction fitting with one rated less than the flow rate marked on the equipment assembly.*
6. **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 or hot tub.*
7. **WARNING:** *Risk of Electric Shock. Install at least 5 feet (1.5m) from inside wall of hot tub using nonmetallic plumbing.*
8. **WARNING:** *To reduce the risk of injury:*
 - a *The water in a 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 young 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).*
 - c) *Before entering a spa, the user should measure the water temperature since the tolerance of water temperature-regulating devices varies.*
 - d) *The use of alcohol, drugs, or medication before or during spa or hot tub use may lead to unconsciousness with the possibility of drowning*
 - e) *Obese person and persons with a 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 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*
9. **A safety sign has been included with the owner's packet. This sign can be attached to the front access panel on all Spas or in close proximity to the spa (i.e.) fence near the spa or deck rail. It is important users of the spa are aware of the message on the sign. Call Customer service for replacement signs.**

Extreme Caution

Hyperthermia: Occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6°F (37°C). The symptoms of Hyperthermia include dizziness, fainting, drowsiness or lethargy.

The effects of Hyperthermia include:

1. ***Unawareness of impending hazard***
2. ***Failure to perceive heat***
3. ***Failure to recognize the need to exit spa***
4. ***Physical inability to exit spa***
5. ***Fetal damage in pregnant women***
6. ***Unconsciousness resulting in a danger of drowning***

VS300 SYSTEM ELECTRIC REQUIREMENTS

DANGER – RISK OF ELECTRIC SHOCK

Installations that do not conform to the following procedures and requirements may expose users to electric shock. Non-conforming installations will not be covered under warranty.

If installed in the United States, the electrical wiring of this hot tub must meet the requirements of the National Electric Code (NEC) and any applicable state or local codes. The electrical circuit must be installed by an electrical contractor and approved by a local building electrical inspection authority.

1. Installations within 5 feet (1.5m) of any metal surfaces must ground the metal surfaces to the hot tub. Use an 8 AWG (8.4mm²) solid copper wire and attach it to the grounding lug on the power pack, located in the equipment compartment.
2. Only a licensed electrician may install power to the hot tub.
3. Power supply installation must include a suitably rated ground fault interrupter (GFCI) as required by NEC Article 680-42. The circuit breaker must be dedicated and should not be shared with any other appliances. It must be labeled and easily accessible to users.
4. The electrical supply for the hot tub must include a suitable rated switch or circuit breaker to open all ungrounded supply conductors to comply with Section 422-20 of the National Electric Code, ANSI/NFPA 70. The disconnecting means must be readily accessible to the hot tub's occupant but installed at least 5 feet (1.5m) from the hot tub water.
5. Power supply lines must be hard wired into the power pack. DO NOT use extension or plug-type cords of any kind. The use of a shut-off box near the hot tub is also recommended. This box provides a quick and convenient method to shut off power to the hot tub for emergencies and maintenance.
6. Supply lines must be properly sized as per the NEC (National Electric Code). A ground line must be provided that is as large as the largest current carrying conductor, but no less than 8 AWG (8.4mm²). Use copper wiring only.
7. Please open the front cover of the power pack, and follow the instructions and wiring diagram printed on the backside.
8. CAUTION, 240 VAC POWERED HOT TUBS – These hot tubs must be hard wired to your household electrical service box only. Do not use an extension cord or any other disconnect-able power cord. The use of an extension cord or a disconnect-able power cord is highly dangerous and will void all warranties!
 - Wire size must be appropriate per NEC and/or local codes.
 - Wire size is determined by length of run from breaker box to spa and maximum current draw.
 - THHN copper core wire is recommended.
 - All wiring must be copper to ensure adequate connections. Do not use aluminum wire.
 - When using wire larger than #6, add a junction box near the hot tub and reduce to short lengths of #6 wire between the junction box and the hot tub.

CIRCUIT BREAKER REQUIREMENTS

A new GFCI circuit breaker must be used for your hot tub installation. Do not use an existing breaker, as its condition is unknown.

<u>BREAKER</u>	<u>240 VAC</u>
Capacity	32 amps
# of wires	4

On 240 VAC systems always use a 4 wire system. ON all systems, the hot tub must be connected to a dedicated GFCI circuit breaker that is not shared with any other equipment. Do not use extension or plug type cords of any kind.

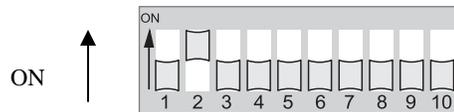
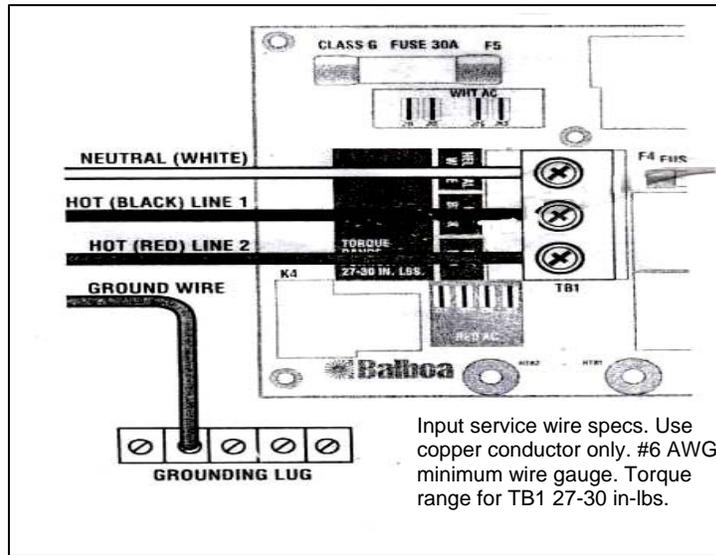
CONFIGURING VS300 SYSTEM

Input Voltage

This Power System is supplied to utilize a 240V power supply (2 hot wires, a neutral wire, and a ground wire). Dip switch # 2 must be set to the “On” position. When configured to operate at 240V, the heater is rated at 4.0kW and will heat whenever heat is required.

Printed Circuit Board Layout

240V Input Voltage



Dip Switches

When configuring the output voltages on the VS300 System, remember to also consider the amperage of each component. Be sure that the total amperage draw does not exceed the capability of the circuit supply and power to the system.

NOTE: Your spa has been configured with three operational modes. Your spa has been pre-programmed with a default of Standard Mode. To change your spas operational mode, we recommend you contact customer service and schedule service. Dip Switch #7 on the power supply board must be moved down into the “off” position. See additional instructions to change operational mode on Page 10.

CONTROLS REFERENCE GUIDE

240vac pack

Initial Start-up: When your spa is first actuated it will go into priming mode, indicated by “Pr”. The priming mode will last for less than 5 minutes and then the spa will begin to heat the spa and maintain the water temperature in the Standard mode.



Temperature Adjustment Can only function between 80°F - 104°F / 26°C - 40°C.

The start-up temperature is set at 100°F (37°C). The last measured temperature will constantly display on LCD

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

To display the set temperature, press firmly on the Temp Up or Down pad once. Each time either pad is pressed again, the set temperature will increase or decrease depending on which pad is pressed. After three seconds the LCD will automatically display the last measured spa temperature.

Jets: Firmly press the “Jets” button once to activate the low speed of the pump and again for the high speed. Firmly press the “Jets” button again to turn off the pump. If left running the low speed of the pump will automatically turn off after 4 hours. The high speed pump will automatically turn off after 15 minutes. The low speed of the pump may also activate for at least 2 minutes every 30 minutes to detect the spa temperature 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.

Light: Firmly press the “Light” button to turn the light on and off. If left on, the light will automatically turn off after 4 hours.

Operational Mode: The default operational mode is preset from the factory for Standard Mode. In order to be programmed into either alternative Economy or Sleep modes as described below dip switch #7 on the power supply board must be moved downward into the “off” position as described on page 9.

Mode: Mode is changed by pressing the Temp Up or Down button, then pressing the “light” button.

Standard Mode is programmed to maintain the desired temperature.

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

“St” will be display momentarily when you switch into Standard mode.

Economy Mode heats the spa to the set temperature only during filter cycles.

“Ec” will display solid when temperature is not current and will alternate with temperature when temperature is current.

Sleep Mode heats the spa within 20° F (6.6° C) of the set temperature only during filter cycles.

“SL” will display solid when temperature is not current and will alternate with temperature when temperature is current.

Preset Filter Cycles

The first filter cycle begins 6 minutes after the spa is energized. The second filter cycle begins 12 hours later. Filter duration is programmable for 1, 2, 3, 4, 5, 6, 7, 8 or 12 (FC”) hours. The default filter time is 1 hour. **To program, press Temp/Down or Up then press “Jets”.** Press Temp/Down or Up to adjust. Press “Jets” to exit programming. Pump low speed will run for the duration.

The low speed of the pump runs during filtration and the ozone generator (if installed) will be enabled.

Freeze Protection

If the temperature sensors detect a drop to below 44°F (7° C) within the heater, the pump will automatically activate to provide freeze protection. The equipment stays on until 4 minutes after the sensors detect that the spa temperature has risen to 44°F (7° 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. Contact customer service for details.



Warning! Shock Hazard! No User Serviceable Parts.

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

Diagnostic Messages

Overheat condition *OH*



WARNING! DO NOT ENTER HOT TUB

Water is too hot. Overheat protection heater is deactivated. Spa water temperature is above acceptable limits. When the actual water Temperature is approximately 2° F (1° C) above the set temperature, the circulation pump will stop operating to reduce (frictional) heating. If the spa water temperature continues to rise and gets above 110° F (44°C), the spa will go into an “*OH*” overheat condition.

To correct Condition:

1. Remove the spa’s cover and allow your spa to cool down.
2. Reduce the temperature setting.
3. When the water temperature drops below 106° F (41°C), the spa will resume normal operation.
4. If the water does not drop below 106°F (41°C), contact your authorized customer service.

* Note: Spas has designed the control panel, topside, to include:

- 1) Jets button
- 2) Light button
- 3) Down heat button
- 4) Up Heat button

Diagnostic Messages VS300 System

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 temperature will be displayed.
HH	“Overheat” – The spa has shut down. One of the sensors has detected 118°F 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.
OH	“Overheat” – the spa has shut down. One of the sensors has detected that the spa water is 110°F.	DO NOT ENTER THE SPA. Follow same instructions as “HH”
IC	“Ice” – Potential Freeze condition detected.	No action required. The pump will automatically activate regardless of spa status.
SA	Spa is shut down – The sensor that is plugged into the Sensor “A” jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear at cool)
Sb	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 situation and disappear at cool)
Sn	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 problem persists, contact your dealer or service organization.
HL	A significant difference between temperature sensors has been 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 dealer or service organization.
LF	Persistent low flow problem (Displays on the fifth occurrence of “HL” message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for “HL” message. Heating capability of the spa will not reset automatically; you may press any button to reset.
Dr	Possible inadequate water, poor flow, or air bubbles in detected in the heater. Spa is shut down for 15 minutes.	Check water level in spa. Refill if necessary. If water level is okay, make sure the pumps have been primed. Press any button to reset, or this message will automatically reset within 15 minutes. If problem persists, contact your dealer or service organization.
dY	Inadequate water detected in heater (Displays on third occurrence of “Dr” message.) Spa is shut down.	Follow actions required for “Dr” message. Spa will not automatically reset. Press any button to reset.

Note: Message indication on topside control will resemble “Message” in digital characters- inquire with dealer

Feature Operations

AIR CONTROL VALVE

The air control valve serves to regulate the amount of air mixed with the water when the jets are operational. Rotate the air control in one direction to achieve the maximum jet pressure and therapeutic action. Rotating the air control in the opposite direction to turn air off and allow the jets to work with water only. Turn the air controls off when the hot tub is not in use. This will prevent cold air from entering the hot tub and will keep heating cost to a minimum. The ozone generator infusion jet, if installed, will always produce air bubbles.

HYDROTHERAPY JETS

The Hydrotherapy jets are recessed and located in the wall of the hot tub. Rotate the jet face counterclockwise to turn the jets on, clockwise to turn the jets off. Not all jets have a rotational face to turn off and on the jets. Turning off or on a jet will increase or decrease the effects of any jets “not” in the closed position.

LED MULTI COLOR LIGHT

If your hot tub is installed with a LED Multi Color light at factory, pressing the light switch button on and off will cause the light color effect mode to change to your desired program.

OZONATORS/OZONE GENERATOR

If your hot tub is installed with an ozonator at the factory, your hot tub will automatically filter water at preset times. Please note that ozonator and chemicals work together to kill bacteria. An ozonator cannot totally eliminate the need for sanitizing chemicals. Ozone is a bactericide. A tube links the ozone compartment with the ozone jet. During the filter cycle, the water movement through the ozone jet & draws the ozone out of the compartment, mixes with and purifies the water in the process. Ozone technology does not work well with some hot tub water treatment chemicals & systems. Please follow the instructions for your selected chemicals or water treatment systems.

AROMA THERAPY

If you have purchased Aroma Therapy Crystals for your hot tub, please follow the instructions on the packaging.

WATER QUALITY OPTIONS

If you have purchased our recommended sanitizers, please follow the instructions included on their packaging. If you need replacement filters or other water quality management products please contact a Customer Service Representative @ 888-961-7727.

Fill Up and Start Instructions

The following procedures should be followed on initial startup and whenever the hot tub is drained for routine maintenance.

FILLING THE HOT TUB WITH WATER

1. Clear all the debris from your hot tub.
2. Use a garden hose to fill your hot tub with water. **NOTE: do not use home water heater or softened water.**
3. As the water level rises, check inside the equipment compartment for water leaks. It may be necessary to tighten unions and/or fittings that may have loosened during delivery. There is no need to call for service; this can easily be done by you. If assistance is required, contact a customer service representative @ (888) 961-7727.
4. Under normal circumstances keep the water level at or above the ring surrounding the inside of the tub, just above the jets. Keep in mind that every person who enters the spa will create a certain amount of water displacement, depending on their size and weight—as a result you may need to reduce the amount of water you normally have in the tub, so as to prevent the water from hitting your topside control or flowing over the top edge of the hot tub. Additionally, failure to keep enough water in your spa may result in damage to your system & invalidate your warranty. If your hot tub filter is sucking in air & causing the pump to cavitate, you don't have enough water!

APPLYING POWER

Please review the following procedures and power-up events before applying Power to the System:

STEP I

1. Check the voltage at the main power panel to be sure you have the correct voltage for the Power System being used.
2. Fill the hot tub to its correct operating level. Be sure to open all Jets before filling to allow as much air as possible to escape from the plumbing during the filling process.
3. Check the filter installation & make sure the filter is not loose.

STEP II

1. Press the Jets button on the topside control panel to activate the spa. Rotate the air control valve to “Max” and observe the increased jet action.
2. While the pump is running, leaks may have occurred during transit. Check again for water leaks at the drain spigot, unions, or fittings in the equipment compartment. If water is leaking from one of these areas, there is no need to call for service. Simply tighten the fitting. If assistance is required, call customer service.
3. After checking your spa for leaks it is now time to adjust your spa settings. Simply press the “Up” button on your topside control until the display indicates your desired temperature set.

Adding Start-Up Chemicals

You should have an adequate supply of chemicals on hand for your hot tub. You should familiarize yourself with the necessary types and amounts of chemicals to maintain your water & keep it at clean and healthy levels.

NOTE: The importance of the chemical balance in the hot tub cannot be over-emphasized.

WATER MAINTENANCE

It may be necessary to replace the hot tub's water every 3 to 6 months. The frequency depends on a number of variables including the frequency of use, number of users, attention paid to water quality maintenance, if equipped with an ozone unit, etc. You will know it is time for a change when you can no longer get the normal feel or sparkle to the water, even though the key water balance measurements are all within the proper parameters.



CAUTION: Never store spa chemicals inside the spa's equipment bay!

PH BALANCE

PH is a measure of water acidity. On a scale of 0 to 14, 7.6 is the ideal point of balance. A measurement below 7.2 indicates that your water is more acidic. This water condition results in corrosion of the equipment's metal components. A measurement above 7.8 indicates that your water is more alkaline. This water condition causes calcium deposits and scaling in the equipment and hot tub. Both conditions are detrimental and cause damage.

NOTE: Calcium deposits can also cause a restriction of air through your jets. Using a stain & scale remover regularly, will greatly reduce the chance of this occurring.

CHLORINE/BROMINE/SHOCK (mps)

Granulated or tabs of chlorine/bromine/shock must be used to remove bacteria and other organic matter from the water. Little or no sanitizer causes water to turn green and unhealthy. Too much chemical load causes water to smell pungent, irritates the eyes and skin, and can cause damage to the heater tube on the power pack. All "non-chlorine/bromine/shock" water treatment chemicals or systems must be complemented with EPA approved sanitizer such as spa shock, chlorine or bromine.

NOTE: Improper pH will destroy the pump seals and heater elements. Damage to components caused by improper pH balance or other improper chemistry will not be covered under warranty.

We strongly discourage the use of chemicals that contain Hydrogen Peroxide. Hydrogen peroxide will eventually cause the light body and lenses (used on all spas) to become brittle and crack.

***Read all labels on chemicals— Do not use any products that are not for use in hot tubs or with ozonators (unless spa is not equipped with an ozone generation unit or unit is disabled)**

Cleaning or Winterizing

Every three to six months, depending upon the water condition, you may need to renew your water.



CAUTION: READ THIS BEFORE DRAINING YOUR HOT TUB

To prevent damage to the hot tub's components, unplug the spa from the outlet before draining the hot tub. Do not plug your spa back in until your spa has been refilled with water.

There are certain precautions to keep in mind when draining your hot tub. If it is extremely cold, and the hot tub is outdoors, freezing could occur in the plumbing or the equipment. ALSO, do not leave the hot tub's surface exposed to direct sunlight for long periods.

DRAINING YOUR SPA

- **Before draining your spa, the spa must be completely off.**
- **Cut** the twist tie restraining the drain spigot if draining for the first time. (located in the recess under the hot tub, just right & below the equipment access door)
- **Pull** the drain spigot out a few inches from the hot tub.
- **Unscrew** and remove the drain cap.
- **Attach** drain hose to a garden hose and direct to an appropriate draining area, keeping the hose below the water line. Open gate at hose spigot to begin draining.
- **After** your hot tub is empty, clean the shell and filter cartridge. See **“Spa Maintenance” and Surface care.**
- **After** cleaning, remove garden hose, close gate at hose spigot, replace drain cap and push the hose back into the recess. There is no need to re-tie the drain spigot as it should stay in place.
- **Follow** the “Fill up & Start-up Instructions” to refill your spa on page 14.

If you plan to store your tub for the winter, you must also use a wet-vac to clean out the water lines to ensure they are free of any water. Water left in the lines might freeze and damage the lines and jets. To adequately clean out the lines, place the wet-vac over each jet face for 10-15 seconds. On the whirlpool jet, rotate it to the open position and vacuum for 10-15 seconds. Remove the filter cartridge and do the same. Also, let the water drain from the pump by loosening the pump unions on each side. Remember to re-tighten the unions when completed. Use the wet-vac to vacuum up any water that may have drained on to the hot tub floor.

Note: damage caused by improper winterizing will not be covered under warranty. You may want to contact a professional for proper winterizing.

Spa Maintenance

FILTER CARTRIDGE MAINTENANCE

Your Spa uses a screw in filter cartridge that is easily removed. When the filter cartridge is removed, make sure no objects fall into the filter cavity. They can cause obstructions to the water movement.

Every two weeks, the filter cartridge must be cleaned to remove the objects and particles that have lodged in the cartridge pleats. Using household water pressure and a garden hose with a pressurized nozzle, push water from inside to outside of the pleats, forcing all the trapped particles out.

NOTE: Never run your hot tub without a filter cartridge!!! This will invalidate your warranty.

NOTE: Filter cartridges should be replaced every six to eight months or earlier when needed.

Dirty filters can cause your hot tub pump to burn out and will invalidate your warranty.

FILTER CARTRIDGE REMOVAL AND CLEANING INSTRUCTIONS

Turn off the power to the spa, and then follow directions below:

- **Push** down slightly and turn filter basket counter clockwise to unlock, then pull the basket and weir out.
- **Unscrew** the filter cartridge counter clockwise and bring it out of the spa. (requires many turns)
- **Rinse** cartridge using a garden hose. Rotate and separate filter pleats while spraying water to remove all dirt and debris possible. Let filter dry and look for calcium deposits (scaling) or an oil film. If you find these, you will need to deep clean your filter cartridge with a “spa filter cleaner” solution to break down and remove unwanted deposits and oils. (For longer filter life you should soak filter regularly.)
-  **CAUTION!** *Always use proper eye protection when using chemicals, or high-pressure water. Read instructions on cleaning products and follow applicable safety and warning instructions listed on label.*
- **Replace** filter cartridge, then return basket and weir, insert and rotate clockwise to lock into position. **DO NOT OVERTIGHTEN!** Then, turn spa’s power back on.

 **CAUTION!** *Never scrub the filter cartridge with a brush, as this will cause the filter to wear out and come apart. Never let the spa pump run without a filter cartridge in the skimmer compartment. Running the spa without a filter cartridge may permit debris to enter the spa plumbing and void the warranty!*

SURFACE CARE

Do not use solvents or abrasive cleaners to clean the hot tub. Typically, a mild detergent and water will resolve cleaning issues.

 **CAUTION!** *Never spray cabinet with a garden hose for any reason since this action may induce an electrical short in the hot tubs electrical equipment.*

Troubleshooting Procedures

In the event your hot tub is not working the way it should, please first review all the installation and operating instructions in this manual and check the message on the panel display. If you are still not satisfied it is working properly, please follow the appropriate troubleshooting instructions.



CAUTION! WARNING! SHOCK HAZARD! No User Serviceable Parts. Do not attempt service of this control. Contact customer service for assistance. Follow all owners' manual power connection instructions. Installation must be performed by a licensed electrician and all grounding connections must be properly installed.

NO COMPONENT OPERATION

Check the following:

1. Is there power to the hot tub?
2. Is the household circuit breaker tripping?
3. If 1 & 2 are yes contact customer service for service

PUMP DOES NOT OPERATE, BUT THE LIGHT DOES

Press the JETS button:

The pump operates but no water flows to jets. Pump may not be properly primed. This can happen after the spa is drained and refilled. Press the JETS button several times, never leaving the motor on for more than 5-10 seconds at-a-time.

POOR JET ACTION

1. Press the JETS button to make certain the pump is on.
2. Rotate the air control to the "max" position.
3. Make sure the water level is at the texture line.
4. Check for dirty filter. Clean, if necessary.
5. Make sure all jets are in the open position

WATER IS TOO HOT

1. Check desired temperature on topside control
2. Check for a diagnostic Message (see Control System manual for details)
OH - Overheat (spa is deactivated) DO NOT ENTER THE WATER.

If the spa water has reached overheated you can remove the cover to promote heat reduction.

Overheating may occur if the filter cycle is set too long. The hot tub Control System should reset itself when the water temperature reduces below 107°F or 43°C. When the hot tub falls below the reset temperature you can push any button on the topside control to reset the Control System. If the hot tub will not reset, then shut off power to the spa and call customer service.

* Under extreme and/or prolong weather conditions it is possible for the ambient temperature to exceed 106F/40C, therefore; effecting the water temperature of the hot tub and causing the tub to overheat. These conditions could cause the tub sensors to produce an OH message and prevent the usage of your hot tub during these conditions. The location of your hot tub should be reconsidered to reduce the outside temperature around the tub. For example, you may need to prevent direct sunlight on any surface of your hot tub. Regardless, do not enter your hot tub if the temperature is above 104F.

Should checking the above steps fail to correct the problem, please call customer service at (888) 961-7727

Limited Warranty

Your Spa is manufactured by American Hydrotherapy Systems, LLC Ontario, CA.

Limited Lifetime Structure Warranty

AHS warrants the structure of the hot tub, which is defined as any rotationally molded, polyethylene internal support structures connecting the unibody shell, floor and the external coping to itself, for the effective lifetime of the product for a period of ten years from the date of purchase. This limited structural lifetime warranty specifically excludes any portion of the hot tub that is not rotationally molded as part of the unibody shell such as synthetic wood skirting, jets, doors, covers, etc.

Five-Year Shell/Surface Warranty

AHS offers a shell warranty on manufacturing defects resulting in water loss for a period of five years from the date original date of manufacturing. Any and all additional costs including, shipping, delivery, set-up, installation and/or disposal charges will be the sole responsibility of the spa owner.

One-Year Equipment - One-Year Labor Warranty

AHS warrants the electrical and mechanical components including the pump, heater and control system against malfunctions in materials or workmanship for a period of one year from the original purchase date. Refurbished parts may be used to satisfy warranty replacement of electrical and mechanical parts. Filter cartridges, light bulbs, spa cover lock's, fuses are not included in this warranty. Those items are, however, warranted to be free from defects in materials and workmanship at the time of delivery to the consumer.

One-Year Plumbing – One Year Labor Warranty

AHS warrants the factory installed plumbing components for materials and workmanship against leaks for a period of one year from the original purchase date. This warranty specifically covers jet fittings, internal plumbing, internal glue joints and hoses.

Extent of Warranty

This warranty is effective for spas manufactured after December 1, 2009 and sold by authorized dealers and/or distributors within North America. This warranty is given only to the original consumer purchaser and terminates upon any transfer of ownership. Spas installed in commercial applications (including rental spas or spas in rental premises) are excluded from any coverage whatsoever. This warranty does not provide coverage for the insulated cover or any item attached to or installed on the spa after the date of manufacture including non factory installed ozone systems. Travel, trip, or mileage costs are not covered under this warranty and service travel charges will be assessed to the purchaser.

Warranty performance

In the event of a defect covered under the terms of the warranty, notify customer service at (888) 961-7727 as soon as possible and use all reasonable means to protect the spa from further damage. Upon proof of purchase, AHS designated dealer and/or service representative will correct the defect subject to the terms and conditions contained in this warranty. If AHS determines that the repair of the covered defect is not feasible, we reserve the right to instead provide a replacement spa equal in value to the original purchase price. In such instances, reasonable upgrade or cost difference for the replacement spa (equal in value) may be required and will be the responsibility of the spa owner. Providing access to enable the repair is the responsibility of the spa owner. Removal of the defective spa, shipping cost for the replacement spa and delivery and installation of the replacement spa will be the responsibility of the spa owner. In the event there is not an authorized service representative in your area the hot tub can be returned pre-paid freight (you pay) to AHS for evaluation and, if necessary, repair of the defect. AHS will then ship the hot tub back to you pre-paid (AHS pays) upon completion of the repair. AHS must be contacted in advance for packaging and shipping instructions. AHS reserves the right to inspect or designate a person to inspect any part that is claimed to be defective and covered by this warranty.

Acts Invalidating Warranty

This warranty is void if the Spa has been subjected to alterations, neglect, misuse or abuse; if any repairs have been attempted by anyone other than AHS authorized service representative; or if failure is caused by accident, acts of nature or other causes beyond the control of AHS. The Spa owner accepts liability for repair work performed by anyone other than the manufacturer or its designated service representative. Alterations shall include: any component or plumbing change, electrical conversion or addition of alternate sanitation or heating systems which contribute to component failure. Neglect, misuse and abuse include any installation, operation or maintenance of the spa other than in accordance with the owner's manual or use for which the spas were not designed. Specifically damage caused by the operation of the spa with water temperatures outside the range of 33°F and 120° F; damage caused by dirty, clogged or calcified filter cartridges; damage to the spa surface caused by improper use of chemicals to lie on the surface; damage to your system caused by improper water level will invalidate your warranty; caused by improper Ph balance, improper calcium hardness level or other improper water chemistry; damage to the spa surface caused by leaving the spa uncovered and in direct sunlight; damage caused by allowing solar blankets to be stored in the folded position on the top lip of the spa; damage caused by failure to provide even and sufficient support for the spa are considered abuses and may invalidate this warranty. Jets, air adjustments and top side controls are not covered against discoloration and fading.

Disclaimers

AHS or any of its authorized agents shall not be held liable for injury or loss of use of your spa or other incidental and consequential cost, expense or damage, whether incidental or consequential, arising out of any defect covered by this Limited Warranty, including, without limitation, loss of use of the spa and cost of removal of defective product, even if AHS has been advised of the possibility of such damage. In no event shall AHS be liable for any damages in excess of the original purchase price. Coverage under this Limited Warranty shall commence as of the original date of purchase or as otherwise outlined above and the duration of such coverage shall not extend for any reason whatsoever beyond the stated time periods. No other warranties, written or implied, are valid. No agent, dealer, distributor, service company or other party is authorized to change modify or extend the terms of this warranty.

Legal Rights

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

In the event of warranty claim, please contact customer service to expedite processing.
American Hydrotherapy Systems, LLC 1735 South Baker Ave, Ontario CA 91761
Phone: (888) 961-7727

