AQUA LIVING
FACTORY OUTLETS

Owner's Manual

Important safety information, manufacturer's recommendations, and detailed installation, use, & care instructions for your spa.

INDEX

Customer Service & Technical Support

To submit a request for customer service, technical support or to file a warranty claim at any time:

LPIinc.com/service-request

To speak with a member of our factory trained technical support team, please call:

423-349-2900, option 6, Monday - Friday from 9 am to 5 pm EST.

Because the components vary by spa model, providing our technicians with photographs of the area of your are calling about during your call increases accuracy and expedites resolution.

- If you are calling for assistance with your installation, please be prepared to provide pictures of your topside controls, GFCI and main breaker panel during your call.
- If you are calling about freight damage, please be prepared to provide pictures of the damaged area during your call.

You will be asked to provide the following information, most of which can be found your purchase receipt.

Spa Model _____

Spa Serial Number _____ Date of Purchase _____

Dealer Name _____

Approximate Date of Spa Installation _____

READ, SAVE AND FOLLOW ALL INSTRUCTIONS !

!¡ ATTENTION INSTALLER ¡!
SAVE THESE INSTRUCTIONS
GIVE THIS MANUAL TO THE SPA OWNER.
IT CONTAINS IMPORTANT SAFETY INSTRUCTIONS PERTAINING TO THE RISK OF FIRE, ELECTRIC SHOCK, AND / OR INJURY TO USERS
!¡ READ AND FOLLOW ALL INSTRUCTIONS ¡!

SAFETY INFORMATION

DANGER!

Risk of Electrocution

THE SPA MUST BE FILLED WITH WATER BEFORE IT IS CONNECTED TO THE ELECTRICAL SUPPLY.
ALL ELECTRICAL CONNECTIONS MUST BE MADE BY A LICENSED ELECTRICIAN.

A Ground Fault Circuit Interrupter installed in compliance with section 680-42 of the National Electrical Code, ANSI/NFPA 70-1993 is required for user safety and equipment protection. You should inspect the Ground Fault Circuit Interrupter before each use to be sure it is functioning properly, in good condition and that the wiring is connected properly. To ensure the spa functions properly and that your warranty is not compromised by improper installation, a licensed electrician must install all electrical components and make electrical connections. Connect only to a grounded source a minimum of five feet (1.5m) from any metal surface. Solid copper bonding conductors must be in compliance with local ordinances and located between the ground terminal inside the spa control box and any metal equipment, including pipes, electrical equipment enclosures, and conduit within five feet (1.5m) of the spa. To prevent death or serious injury from electrocution that can occur if an appliance falls into the spa, do not permit any electrical appliances, such as lights, telephones, mP3 players, radios or televisions to be within five feet (1.5m) of the spa unless they were installed by the manufacturer.

- Disconnect the spa from the power supply before draining and servicing components.
- Test the Ground Fault Interrupter(s) before each use.
- Replace damaged wires and cords immediately to reduce the risk of electric shock. Failure to do so may result in death or serious permanent injury by electrocution.
- Do not bury wire without electrical conduit approved for underground use.
- Equipment compartment doors must be properly installed before using the spa.
- Replace components with identical components supplied by the manufacturer.
- Do not operate the audio or television equipment while you are inside the spa.
- Unless it was installed and provided by the manufacturer, audio and video equipment and other electrical appliances should not be used within 5 feet (1.5m) of the spa. Do not connect auxiliary components (i.e. headphones) to the system.
- Do not open the spa control box unless instructed to do so by your dealer.

DANGER!

Risk of Children Drowning

Extreme caution must be used to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use the spa unless they are supervised at all times. To reduce risk of injury, do not allow children to use this product unless they are closely supervised at all times. To reduce the risk of injury, lower water temperature when spa is used by children. Lower water temperatures are recommended since children are especially sensitive to hot water.

- Make sure child resistant locks on the spa cover are engaged after use. The spa cover that comes with your spa meets the ATSM F1346-91 Standard for Safety Covers. However, use of the cover, locking clips or actual locks will not prevent access to the spa, so children should not be left unattended.
- Children are especially sensitive to hot water. Lower water temperatures are recommended for children. Test the water temperature with a thermometer or your hands to be sure it's comfortable before allowing children to enter the spa.
- Remind children that wet surfaces are slippery. Make sure that children are careful when entering and exiting the spa.
- Check with local authorities regarding fencing requirements for spas in your area.
- Keep children and pets off the spa cover. Most spa covers have a maximum weight load of 20 lbs. They will not support the weight of people or pets. Sitting on the cover may cause the foam inserts to break.
- Children should always be in the company of a responsible adult and should not have unattended access to the spa.

DANGER!

Risk of Drowning or Serious Injury from Suction Fittings, Filters and Skimmers

Keep clothing, hair or hanging jewelry away from suction fittings, rotating jets or other moving components. Never use the spa if the filter(s), filter lid(s), or basket(s) are missing. Do not remove basket(s) or filter(s) while the pumps are on. The suction fittings have a specific water flow rating. Replacement suctions fitting must be compatible with the flow rate marked on the original suction fitting. If suction fittings are damaged, call 423-349-2900 option 6, Mon-Fri from 9am to 5 pm EST for replacements and discontinue use until they have been installed.

DANGER!

Risk of Hyperthermia

Prolonged immersion in hot water can result in hyperthermia, a dangerous condition occurring when the internal temperature of the body reaches a level above normal (98.6°F/37°C). The symptoms of hyperthermia include unawareness of impending hazard, failure to perceive heat, failure to recognize the need to exit the spa, physical inability to exit the spa, fetal damage in pregnant women, and unconsciousness resulting in a danger of drowning. The use of alcohol, drugs or medication can greatly increase the risk of fatal hyperthermia.

- The Consumer Products Safety Commission has stated that 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 extended use (exceeding 10 minutes) and for young children. Extended use at higher temperatures can cause hyperthermia.
- Pregnant or possibly pregnant women should consult a physician before using a spa.
- Pregnant women should reduce the water temperatures to no more than 100°F (38°C). Failure to do so may result in permanent injury to your baby.

SAFETY INFORMATION

WARNING!

Adverse Affects with Certain Medical Conditions

You should consult your physician if you are pregnant or possibly pregnant, obese, have a medical history of heart disease, low or high blood pressure, circulatory problems, infectious diseases, immune deficiencies, infectious diseases, infections skin irritations, or diabetes.

WARNING!

Increased Side Effects of Medication

The use of drugs, alcohol, or medication before or during spa use may lead to unconsciousness with the possibility of drowning. Anyone using medication should consult a physician before using a spa; some medication may cause a user to become drowsy, while other medication may affect the heart rate, blood pressure or circulation. Anyone taking medications which induce drowsiness, such as tranquilizers, antihistamines or anticoagulants should not use a spa.

WARNING!

Maintaining Water Chemistry

To reduce the possibility of contracting a waterborne illness, always maintain water chemistry within the parameters in this manual. Keeping the water clean and sanitized with correct chemical balance helps maintain safe water for bathers and prevents possible damage to the spa components. If other bathers are negatively affected, discontinue use and consult a physician. The recommended levels for your spa are:

Free Available Chlorine (FAC):	3.0 to 5.0 ppm
Free Available Bromine (FAB):	2.0 to 4.0 ppm
Total Alkalinity	80 to 120 ppm
Water pH	7.2 to 7.8
Calcium Hardness	150 to 250 ppm

- Cynuric acid levels should never exceed 100 ppm
- Always shower before and after using a spa.
- Refer to Water Chemistry & Maintenance section for water and spa care information and instructions.
- When adding chemicals, turn the primary pump on for at least 15-30 minutes after adding any spa chemicals.
- Replace or clean the filter cartridges regularly to remove debris and buildup which may affect the performance of jets, limit the water flow, or trip the high limit thermostat which will automatically turn off the spa to prevent further damage to the spa.
- Stay out of the spa if you have open wounds or an infectious disease.

IMPORTANT SAFETY REMINDERS

- Wet surfaces can be slippery. To reduce the risk of injury, exercise care when entering and exiting the spa. Give children instructions about how to safely enter and exit the spa.
- Remove all jewelry and put long hair in a bathing cap or hair tie before you enter the spa.
- Measure the water temperature with an accurate thermometer before entering the spa to verify the topside control displays the correct temperature. The tolerance of regulating devices may vary as much as +/- 5°F (2°C).
- Temperature should never exceed 104°F (40°C)
- Test the water with your hand to be sure it's comfortable before entering the spa.
- Keep sharp objects away from the spa area.
- Do not use alcohol or drugs before or during spa use. Drink plenty of water to stay well hydrated. If you have had diarrhea within the last 14 days you should not enter the spa.
- If you are going to be in the spa for more than 10 minutes, reduce the temperature of the spa to 100°F (40°C) or lower.
- Do not use the spa immediately after strenuous exercise.
- It is not recommended to use the spa for more than 30 minutes at any one time without getting out and allowing your body temperature to cool.
- Never use your spa when you are alone.
- Consult a physician if you are pregnant, have a medical condition or are taking medication before using a spa.
- After adding chemicals leave the cover partially open for 15-30 minutes to allow chemical vapor to escape. Never leave the spa unattended if the cover is not locked securely in place whether it is empty or filled with water. Exposure to sunlight, rain, snow and high temperatures may cause permanent damage to the spa.
- Brush heavy snow loads off the cover with a soft brush. Spa covers are not intended to hold weight loads in excess of 20 pounds.
- Reinforce your cover with wind straps during periods of high wind. The tie downs sewn on the cover will not hold your cover in place if wind speeds are excessive.
- Use only approved and recommended accessories, chemicals and cleaners.
- Never allow children or pets to sit or stand on the spa cover.
- Always lift or carry the cover by using the handles, not the skirt or tie downs.

SITE PREPARATION, DELIVERY & INSTALLATION RECOMMENDATIONS

CHOOSING A LOCATION

Choosing the right location for your spa requires careful consideration of aesthetics and convenience in addition to the care and maintenance required over the life of your spa. Planning and preparation are critical, but following a few basic guidelines will ensure a lifetime of enjoyment.

SITE SELECTION CONSIDERATIONS

- Make sure the installation meets your local codes, covenants and restrictions. Many communities require the same security precautions for spa installations as swimming pools, such as fences with locking gates.
- Make sure the location is free of obstacles that may interfere with delivery and installation. The overall dimensions are an important consideration when planning for delivery & installation. A clear pathway from the curb to the installation site makes delivery a breeze. The pathway should be free of obstruction from things like walls, fences, tree limbs, heat pumps, and power lines. Check to be sure gate openings are wide enough for the spa to pass through without damaging the spa.
- Normal use of your spa will mean lots of splashing. Choose a location where water will drain away from the base of the spa rather than pooling around the spa. Close proximity to a water hose will allow you to easily top off the spa after each use.
- Consider the proximity to the doors of the house, especially in cold weather. Be sure there is a pathway to the spa that can be easily maintained in inclement weather.
- Keep your spa away from landscaping sprinklers, roof overhangs, guttering, and power lines. Adequate drainage that prevents standing water near the foundation of the spa is critical.
- But you should also consider the negative effects of wind, exposure to the sun and the location of trees to minimize the effects of falling debris, excessive sunlight and shade.
- Choose a location that allows easy access for maintenance and repairs. You should leave 24” of clearance on the side of the spa with the electronics and 18” of clearance on all other sides to allow easy access for maintenance and repairs. Some periodic maintenance steps require access to the electrical equipment area.

MANUFACTURER’S RECOMMENDED GENERAL INSTALLATION INSTRUCTIONS

It’s very important to follow the manufacturer’s guidelines for site preparation, installation and leveling of your new spa. Failure to follow these instructions may result in structural damage to the spa that is not covered under your warranty.

SITE PREPARATION FOR OUTDOOR SPAS

- The manufacturer recommends that you hire a qualified, licensed professional to install a level, concrete pad reinforced with steel bars that will adequately support the weight of the spa when it’s filled with water and all of the bathers.
- Before you begin, contact your local gas, electric, water and cable companies to be sure there are no underground lines in the site you have chosen.
- For best results, your spa should be placed on a level concrete pad between 6” (15 cm) and 8” (20 cm) thick that’s at least 8” (20 cm) wider and longer than the overall dimension of the spa.
- Finish your concrete pad with a course broom to ensure it is slip resistant.
- If you live in a climate with freeze/thaw zones or prone to ground shift because of the kind of dirt or low/high water tables, we recommend installing poured concrete footings that extend below the freeze line or water table to prevent the possibility of shifting.
- Make sure the site is away from areas that are prone to flooding or standing water and there is adequate drainage away from the spa.
- Never backfill the sides of the spa with dirt. If necessary, you should incorporate a retaining wall into the site design that will help ensure the cabinet and electrical components remain dry at all times.
- If your site plan includes decking to give the appearance the spa is recessed, you should choose slip resistant materials for everyone’s safety. Deck design should include removable or locking, hinged panels to allow easy access on all four sides for maintenance and service. *Making the spa accessible for service is not covered under the warranty*.

SITE PREPARATION FOR INDOOR SPAS

- If you are placing your spa indoors you should plan well in advance to prevent the delivery and installation issues that may occur when attempting to get the spa indoors.
- A licensed contractor should confirm the load bearing capacity of the floor is adequate, make necessary modifications like widening the entry point if necessary, installing a floor drain to eliminate standing water, and adding a convenient water supply so the water level can be properly maintained.
- Floor coverings should be slip resistant with some ability to grip when the floor is wet.
- The location and floor covering must be able to handle draining all of the water which is part of routine maintenance.
- You should consider installing a ventilation system. If floor coverings trap water or the drainage is inadequate, wood, paper, and drywall may get damp creating mold and mildew. Some spa chemicals may have an adverse reaction to some household metals.
- Again, adequate load bearing capacity for the weight of the spa when filled with water and bathers is vital.

PREPARING FOR THE DELIVERY AND OFF LOADING YOUR SPA

- It is important to speak with your sales representative about what to expect at the time of delivery well in advance of delivery so you’re prepared on the day of delivery. Failing to adequately prepare in advance can delay delivery. Discuss potential delivery obstacles like steps, fences and small gate openings so the delivery agent is properly equipped to place your spa without delay.
- If your spa is being delivered and you’re moving it to the installation site, it will arrive in a 53’ common carrier closed box trailer. The carrier is responsible only for delivery to your curb along a public road to an address that is accessible not for removal or placement of your spa. You will need several people to help remove the spa from the truck on the day of delivery.

SITE PREPARATION, DELIVERY & INSTALLATION RECOMMENDATIONS

- If placing your spa requires a crane, choose a reputable crane service with spa experience. Spreaders are required with swim spas and should be used on portable spas. If the spa is not properly stabilized or the straps are too tight or improperly placed, the spa components and structure may be compromised or broken, even if there is no visible damage at the time. Crane services who are familiar with spa placement know how to properly place spreaders and straps, ensuring the frame is adequately supported.

NEVER FLIP THE SPA ON ITS TOP.
NEVER FLIP THE SPA END OVER END.

To prevent damage when moving your spa, the side where equipment is housed must face down at all times.

The manufacturer's warranty does not cover damage that is the result of improper removal or installation of the spa.

LEVELING YOUR SPA

- After your spa is positioned in place make sure it is completely level before filling with water.
- NEVER use shims. Shims create pressure points that can damage the spa.

ELECTRICAL REQUIREMENTS AND RECOMMENDATIONS FOR PLUG-IN SPAS INSTALLED IN THE UNITED STATES

Operating on 60 Hz, alternating current at 120V

All electrical connections must be performed by a qualified licensed electrician in accordance with the National Electric Code (NEC) following state and local electrical codes in effect at the time of the installation.

Electrical Requirements	
Voltage	120
Breaker	Dedicated 20 Amp
Poles	2
Wires	3

DANGER! Risk of Electric Shock

Connecting the spa to an improperly wired circuit will eliminate many of the spa's built in safety features which may result in fire, electrocution, or other risk of injury. Damage to the spa that is the result of improper electrical installation is not covered under the manufacturer's warranty and will terminate all listings from independent listing agencies.

- An appropriately rated GFCI cord is attached and shipped from the manufacturer inside the cabinet panel under the top side controls.
- Electrical appliances including audio and video equipment should not be used within 5 feet (1.5m) of the spa.
- Never touch or come into contact with the electrical cord or any electrical accessory when your body is wet.
- Do not operate the audio or television equipment while you are inside the spa.
- Test the GFCI on the cord before each use.
- Never alter the plug.
- Do not bury the cord.
- Replace damaged cords immediately to reduce the risk of electric shock. Failure to do so may result in serious permanent injury or death by electrocution.
- Keep the cord away from lawn mowers, weed eaters and other equipment that may damage the cord.

THE SPA MUST BE FILLED WITH WATER BEFORE IT IS PLUGGED IN.

Plugging in the spa automatically activates critical components such as the pumps, controls and the heating. Supplying power to the components before the spa is filled with water damages the components instantly. Damage that occurs to the spa because it was plugged in before it was filled with water is not covered by the manufacturer's warranty.

- The power supplied to your spa must be a dedicated circuit with no other appliances, lighting, or other electronic components shared by the circuit.
- This spa must be plugged directly into the outlet. Do not use an extension cord or surge protector. Low voltage may cause damage that is not covered under the manufacturer's warranty.
- Do not unplug this spa under normal conditions. Your spa is engineered for optimal energy efficiency and is equipped to automatically perform routine maintenance cycles that require a permanent connection to the power supply.

THE SPA MUST BE UNPLUGGED BEFORE DRAINING, PERFORMING MAINTENANCE OR SERVICING.

- Do not open the spa control box without the assistance of your dealer.
- To access the spa controls, remove the cabinet panel and store it safely. Do not replace the access panel until the spa is filled with water and you are sure it is operating properly.
- Never use the spa with the equipment compartment door removed. Equipment compartment doors and cabinet panels must be properly installed before using the spa.
- Replace components with components identical to those supplied by the manufacturer.

ELECTRICAL REQUIREMENTS AND RECOMMENDATIONS FOR SPAS INSTALLED IN THE UNITED STATES

Operating on 60 Hz, alternating current at 240V

NEVER TURN THE GFCI ON BEFORE FILLING YOUR SPA WITH WATER!
ALWAYS TURN THE GFCI OFF BEFORE SERVICING OR DRAINING YOUR SPA!

DANGER! Risk of Electrocution

All electrical connections must be performed by a qualified licensed electrician in accordance with the National Electric Code (NEC) following state and local electrical codes in effect at the time of the installation.

- Connecting the spa to an improperly wired circuit will eliminate many of the spa's built in safety features which may result in fire, electrocution, or other risk of injury. Damages to the spa which are the result of improper wiring are not covered under the manufacturer's warranty and will terminate all listings from independent listing agencies.
- The electrical supply for your spa must be housed in a weatherproof junction box and include a suitably rated switch and Ground Fault Circuit Interrupter between the main service entrance and the spa to open all ungrounded supply conductors in compliance with Section 422-20 of the National Electrical Code/USA, ANSI/NFPA/70 and in compliance with independent listing agencies. This might be used as a shut off switch, and must be installed so that it is accessible to the spa occupants, but not within 5 feet (1.5m) of the spa.
- The wiring specifications in this manual are for standard installations where the main power supply is within 40 feet (12m) of the spa. If the main power supply is more than 40 feet (12m) away, the electrician must make appropriate modifications.
- The electrical instructions and diagrams contained in this manual and inside the spa control box are included as a guideline for the licensed electrician installing the electrical connections and vary by model. Please refer to the wiring diagram inside the spa control box for model specific connection instructions. All wiring connections must be watertight.
- All connections must be made using copper conductors only. Do not use aluminum wire. Connection wires, circuit breakers, and/or fuses, must all be sized to accommodate the Total Ampere load.
- Never turn power on to the spa when it is not filled with water. DO NOT connect power to the empty spa. When power is supplied to the spa, it automatically activates critical components within the spa, such as the pumps, controls and the heating. If power is supplied to the components before it is filled with water, the components may be damaged instantly. Damage that occurs to the spa because power was supplied before it is filled with water is not covered by the manufacturer's warranty.
- Prior to performing any service, turn OFF all primary electrical equipment at the main circuit breaker or disconnect panel.
- Your spa must be permanently connected (hard wired) to a power supply that is protected by a Ground Fault Circuit Interrupter (GFCI). Power supplied to your spa must be a dedicated circuit with no other appliances, lighting, or other electronic components powered by the circuit.
- Do not permit any electrical appliances like lights, telephones, mP3 players, radios or televisions within five feet (1.5m) of the spa unless they were built in by the manufacturer. Failure to maintain a safe distance may result in death or serious injury from electrocution if the appliance should fall into the spa.
- Do not use head phones while using the spa
- All metal components or accessories that are permanently installed, like handrails, ladders, drains and hardware that are within 5 feet (1.5 m) of the spa must be bonded to the equipment grounding bus with copper conductors no smaller than No. 6 AWG.

WIRING REQUIREMENTS FOR 240V SPAS

- Correct wiring of the electrical service box, GFCI box and pack terminal block is required. Your spa requires a 4-wire, 40, 50 or 60 amp service (depending on the spa model), 240 volt sub feed in non-metallic pipe to the spa equipment compartment.
- The minimum wire size for 40, 50 and 60 amp systems is # 6/3 c/w ground (6 gauge/4 conductor) if the main power supply is within 40 feet (12m) of the spa. If the main power supply is not within 40 feet (12m), your electrician should make the appropriate modifications.
- The spa must have dedicated 240V service from the main power supply. Do not attempt to share service with other appliances. Use only a class 'A' double-pole Ground Fault Circuit Interrupter (GFCI).
- To access the spa controls, remove the cabinet panel and store it safely. Do not replace the access panel until the spa is filled with water and you are sure it is operating properly.

240V ELECTRICAL CONNECTIONS

Installation of the GFCI and circuit breaker, including ampere sizing and selection of conductor size and type must be performed by a qualified, licensed electrician in accordance with the National Electrical Code, all Federal, State and Local codes, and all regulations in effect at the time of installation. All wiring schematics are provided as a reference only and are intended for use only by qualified, licensed electricians.

MODEL SPECIFIC HARD WIRING INSTRUCTIONS ARE LOCATED INSIDE THE SPA CONTROL BOX.

Hard wire the spa controls following the model specific diagram inside spa control box lid. In most models, the spa controls are inside the access panel underneath the spa's top side control pad.

GFCI INSTALLATION ON 240V SPAS

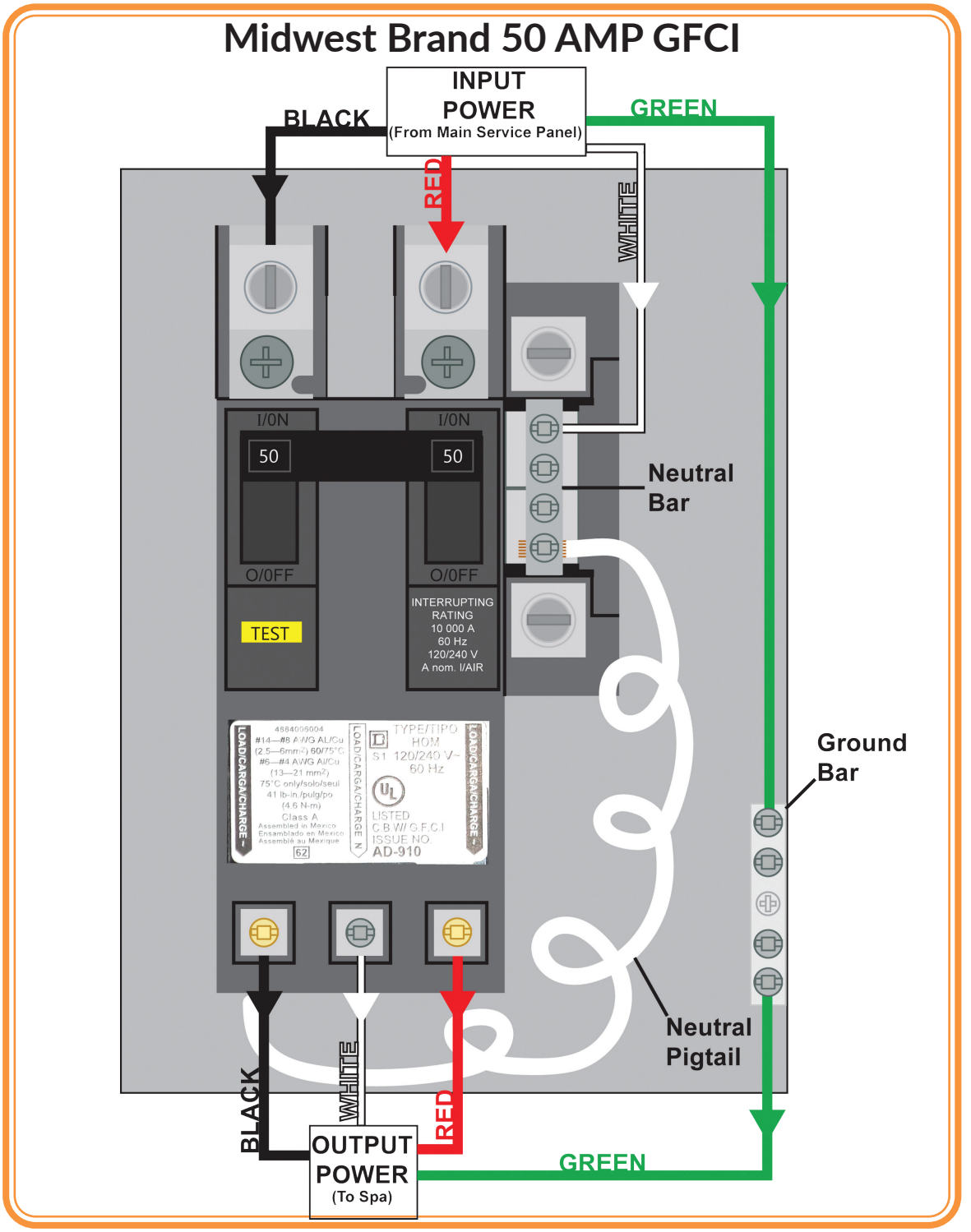
The primary cause of component failure in spas is an improperly installed Ground Fault Circuit Interrupter.

For the health and safety of your family and your spa, it is IMPERATIVE that all of your wiring and electrical connections be installed correctly by a qualified licensed electrician and that a properly rated Ground Fault Circuit Interrupter is installed between your main power supply and your spa. If your spa is not connected properly, the safety features built in to prevent the risk of death by electrocution or fire may be disabled and the electronic components in your spa may be damaged beyond repair. Damage to your spa that occurs because it wasn't connected properly is not covered under your warranty.

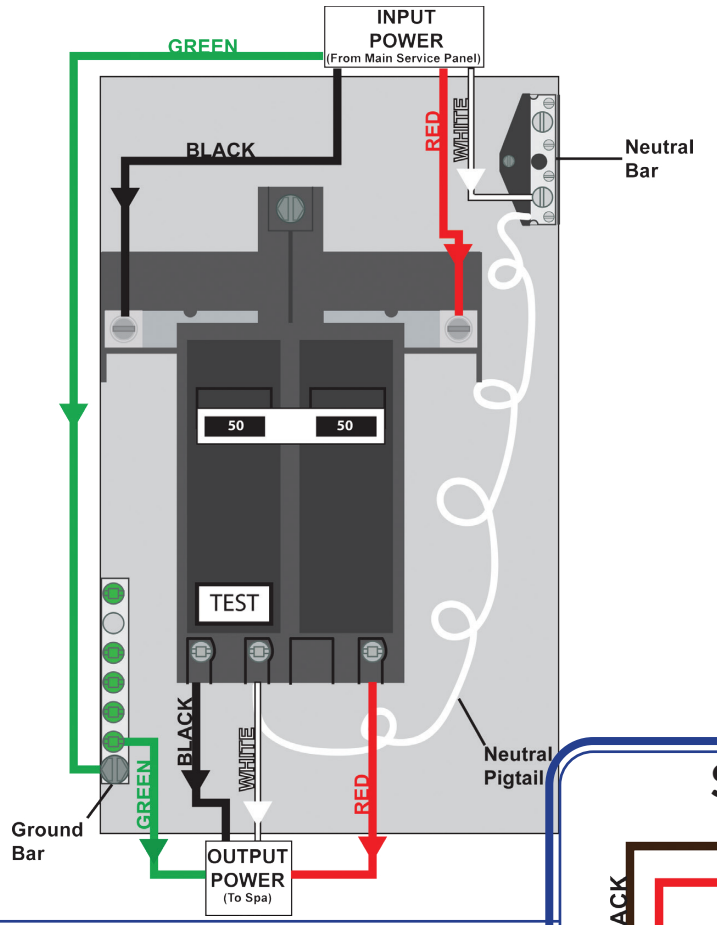
GFCIs are readily available at home improvement, hardware, and electrical supply stores nationwide and can also be purchased online. The wiring diagrams from some of the most commonly purchased brands illustrate that the input and output locations along with the locations of grounding lugs, neutral blocks and wiring connections vary by manufacturer.

ALWAYS FOLLOW THE INSTALLATION INSTRUCTIONS THAT ARE INCLUDED WITH THE GFCI YOU PURCHASE.

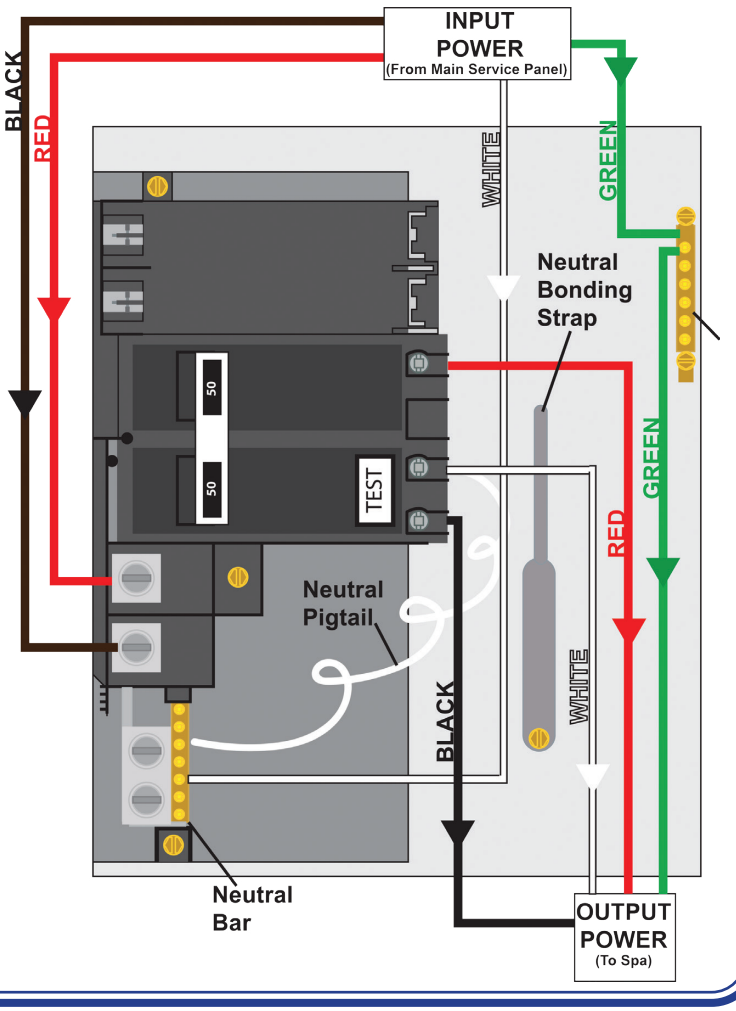
Midwest Brand 50 AMP GFCI



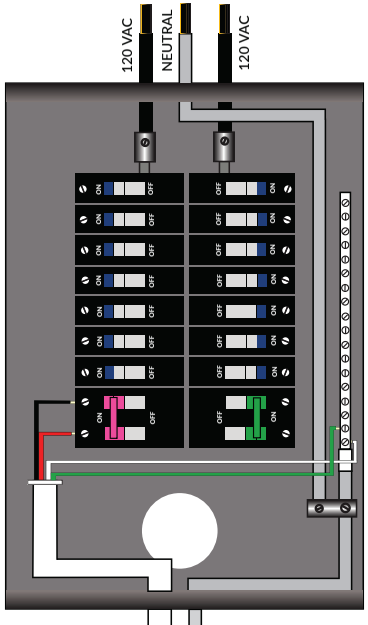
Eaton Brand 50 AMP GFCI



Square D 50 AMP GFCI

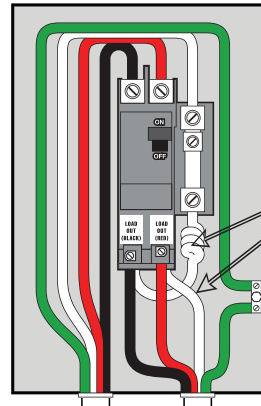


MAIN BREAKER BOX



GFCI BOX*

INSTALLED AT LEAST 5' BUT NO MORE THAN 15' FROM THE SPA.



* *The GFCI wiring in this diagram is for reference only.*
GFCI wiring instructions vary by manufacturer.
The wiring instructions for the GFCI you purchased may be different. Read and follow the wiring instructions provided by the manufacturer of the GFCI you purchased.

Make sure these 2 wires are installed correctly.
The white pigtail attached to the GFCI is connected to the neutral bar inside the GFCI box, not the ground lug.

Ground wire from main breaker box to ground lug inside GFCI box.

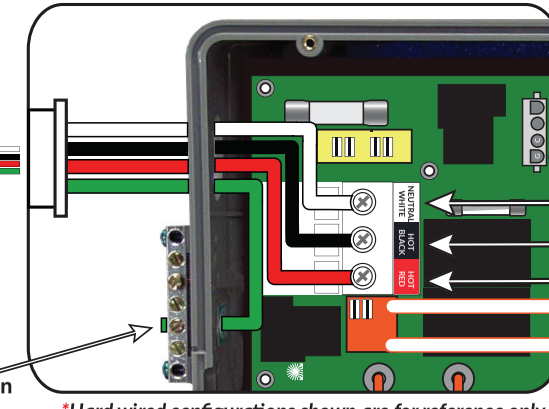
Ground wire from ground lug inside GFCI box to spa.

To outside grounding rod

Out from main breaker box to GFCI

Out from GFCI to Spa

HARD WIRED SPA CONTROL BOX*



White to White

Black to Black

Red to Red

Ground wire to grounding lug on spa control box

**Hard wired configurations shown are for reference only.*

Always refer to and follow the model specific supply line color coding on the terminal block or the wiring diagram located inside the cover.

The torque range for supply line connections to the terminal block is 27 to 30 in. lbs. Over tightening will damage the circuit board.

240 VOLT WIRING SCHEMATIC FOR HARD WIRED SPAS

GETTING TO KNOW YOUR SPA

THE ELECTRONIC COMPONENTS

The Spa Pack is the computer that coordinates the mechanical and electronic functions. In addition to responding to user commands when a button is pressed on the topside control, it also performs many of the maintenance and safety features automatically. For example, the pack automatically turns the pump on when it's time for the filtration cycle to begin and turns it off when the cycle is complete.

Diagnostic Testing

The spa pack is programmed to periodically run a series of diagnostic tests to ensure your spa is operating efficiently. If a problem is detected, an error message appears on the topside control to notify you the spa requires your attention. In many cases error messages can be resolved with a system reset, turning the GFCI "OFF" for 30 minutes and turning it back "ON." If an error message is still displayed after performing a system reset, refer to the troubleshooting guide in this manual or call 423-349-2900, option 6 for assistance. ALWAYS turn the GFCI "off" before performing service or repairs.

The Topside Control relays user commands to the spa pack, allowing you to customize your water temperature, jet operation, lighting features, and energy saving functions. In addition to relaying your commands, it also relays diagnostic messages if a problem is detected.

Primary and User Controlled Functions

Because the spa pack prioritizes your safety and maintenance functions, buttons on the topside controls that interrupt those functions are disabled until the cycles are complete. For example, when the water temperature falls, a heat cycle begins automatically circulating the water on low speed until the correct temperature is reached. While the water is heating, pressing the "pump" button will not change the circulation speed or turn the pump off. User functions are restored when the maintenance cycle ends.

The Therapy Pump(s) push water through the internal plumbing and jets. The number of pumps and their speed varies by spa model. In models that *are not equipped with a circulation pump*, pump one automatically turns on and runs on low speed during heating, filtration and maintenance cycles.

The Circulation Pump *(if equipped)* circulates the water continuously until the temperature is 1° above the programmed temperature setting. When the water is at the correct temperature, the circulation pump will automatically turn off and back on to every 30 minutes circulate the water for at least 1 minute to check the temperature and continue circulating until it reaches the set temperature if necessary. Your water temperature may not fall enough for your circulation pump to run in warm climates and on hot summer days. You can increase circulation by reducing your temperature setting and increasing filtration cycles.

Water Temperature Setting in Warm Weather

It's a good idea to reduce your water temperature setting in warm climates. When the ambient temperature soars to 95°F (35°C) and higher, the heat retained to maximize energy efficiency during cold weather can transfer to the water, making it warmer than the temperature you set. Reducing your temperature setting not only prevents overheating and nuisance error codes, but it also conserves energy and reduces operating costs. If you want to reduce the water temperature quickly, remove the cover for a short time or drain some of the warm water and replace it with cold water.

THE PLUMBING COMPONENTS

The "T Stems" (Slice or Gate Valves) are installed in the plumbing lines near the electronic components so service can be performed without draining the spa. Pushing the "T" stem down creates a seal in the plumbing line between the "T" stems. When service is complete, the "T" stems are raised and locked in the up position so water flow can resume. Slice valves must be locked in the "up" position before power is applied to prevent damage to your spa. Each time you change the water make sure the locks are in good condition; if the locks won't hold the "T" stem in "up," replace them immediately. Discontinue use of the spa until the replacement locks have been installed.

The Plumbing Unions connect the plumbing lines to the components. The primary cause of leaks inside the cabinet is plumbing unions that need to be tightened or seals that need to be reseated or replaced. Unions can become loose in transit and when the seasons change. During the initial installation and each time you drain your spa, you should hand tighten all plumbing unions. To prevent over tightening, never use tools to tighten plumbing unions.

Air in the Plumbing Lines and Pumps

If you hear a "humming" sound, if the pumps surge or if the jets don't work when you press the button, it's very likely you have an airlock in that pump. To release the airlock, slowly loosen the union connected to the pump and tighten when water begins trickling from the union. The pumps are designed to pump water, not air. Air trapped in the pump or the plumbing lines prevents circulation which can damage the pump(s) instantly. Following the manufacturer's instructions when you fill your spa and soaking new filters for 30 minutes before installing them will help prevent air locks. . Never allow a pump that is not primed to run for more than 2 minutes.

GETTING TO KNOW YOUR SPA

The Filter Assembly consists of the filter, the filter basket or grille, and the filter cover. The filter basket or grille catches large debris, the filter removes fine particulates. If any part of the filter assembly is obstructed or if the filters are dirty water flow is restricted, which can damage the spa. It's important to remove debris and clean or replace the filters regularly. Using the spa without the filter assembly in place is a drowning hazard. If any part of the filter assembly is damaged, please call 423-349-2900 option 6, Mon-Fri from 9am to 5 pm EST for replacement parts and discontinue use until they're installed. Before filling the spa or changing the filter, manually power the GFCI "OFF." The manufacturer recommends that you replace the filter every three months. Soak new filters in water for 30 minutes before installing to prevent air in the plumbing lines.

The Suction Drain Covers in the footwell cover the suction lines that prevent debris from entering the plumbing lines and reducing the risk of drowning. Keep hair, clothing, and children away from the suction drains when using the spa. Debris over the suction drain covers obstructs water flow, which can damage your spa. It is essential to check them on a regular basis to make sure they are in good condition. Please call 423-349-2900 option 6, Mon-Fri from 9am to 5 pm EST for replacements if they are damaged and do not use your spa until they have been installed.

THE AIR, DIVERTER & WATERFALL VALVES

The appearance of air, water, and diverter will vary depending upon the model purchased.

The Air Valve is the small dial on the acrylic surface that regulates air injection in the jets. Rotating it in one direction opens the air valve, increasing the airflow to maximize "bubble action." Rotate the air valve in the opposite direction to reduce airflow or stop it entirely. Closing the air valves when you exit the spa conserves energy and reduces heating costs. If they're left open, the water temperature drops when the colder air outside the spa is injected into the water.

The Diverter Valve is the large dial on top of the acrylic surface that regulates where the water flows in seating areas serviced by the same pump. Rotating the diverter valve in one direction restricts water flow in one section to increase flow in the other. Rotating it all the way in the opposite direction reverses the flow of water. When the diverter valve is positioned in the center, water flow is equally distributed throughout all the seating areas serviced by that pump.

The Waterfall Valve rotates to increase and decrease water flow through the waterfall. Rotating it all the way in one direction reduces the flow of water. Rotating it in the opposite direction increases the water flow. Positioning it in the center moderates the water flow.

Difficulty Turning Waterfall & Diverter Valves

When the pumps are turned on, the pressure in the lines can make rotating the air, waterfall and diverter valves difficult. Turning the pump off releases the pressure so they can be rotated easily. To prevent damage, never force them when pressure makes rotation challenging and never force them beyond their natural stopping point.

The Drain Valve is used to remove the water from the spa. The drain valve is in the base of the spa near one of the corners. When you fill your spa, make sure it's completely closed, and no water is draining from it. Detailed instructions to drain your spa are on the next page.

FILLING YOUR SPA

THE WATER LEVEL

There's a fine line between too much water and not enough. If the water level is too low, air sucked into the plumbing lines can damage the spa. If the water level is too high, lighting and audio components become submerged causing them to fail prematurely. So how do you know when enough is enough, instead of too much or too little?

It's important to pay attention to the water level as bathers enter and exit the spa. One person displaces less water than six people and six children who weigh 50 pounds displace less water than six adults who weigh 150 pounds, but six children may splash out more water than six adults displace. You should expect to add or remove water depending upon use. Every time you exit the spa check the water level and add water if necessary. The water level depends upon the height of the spa. As a general rule, when no one is in the spa there should be approximately 4 inches of water over the filter. If your spa has built-in lighting and audio features, the water should be at least 2 inches below them.

To ensure your comfort and safety, you should replace your water & filter every three to four months.

FILLING YOUR SPA

Step by Step Instructions for Filling Your Spa

1. Remove the screws on the access panel. Store the screws and access panel safely aside. In most models, the access panel is on the same side as the topside controls.
2. Check inside the cabinet for visible signs of damage including loose wires or broken pipes. If you see any damage, please call 423-349-2900 option 6, Mon-Fri from 9am to 5 pm EST for assistance.
3. Hand tighten the plumbing unions and check to be sure the "T Stems" are locked and in the "up" position. If they aren't, pull the "T" all the way up until you hear a "click" and reattach the lock.
4. Remove the filter cover and basket from the filter assembly and store safely aside.
5. Remove the filter(s) and place inside the footwell while the spa fills with water. Never install dry filters in your spa.
6. Place a garden hose inside the empty filter canister. Filling the spa through the filter canister fills the pumps and plumbing lines with water, reducing the risk of an airlock when power is applied.
7. Turn the water on. Check the drain valve to be sure it's properly sealed, and no water is draining from it.
8. When the lowest lines are full, water starts flowing through the jets into the seating area.
9. Remove the garden hose and turn the water off when the water level is approximately 4" above the filter canister.
10. Replace the filter, skimmer basket and filter cover.
11. Check for leaks inside the spa cabinet. If necessary, hand tighten the unions. If the unions are tight and there are leaks inside the cabinet, please call 423-349-2900 option 6, Mon-Fri from 9am to 5 pm EST for assistance before applying power to the spa.
12. If there are no visible leaks inside the cabinet, turn the GFCI "on."
13. Reinstall the cabinet panel.

When the GFCI is turned on, the spa immediately begins priming the pump(s) and performing a series of diagnostic tests, which can take up to 30 minutes.

Step by Step Instructions for Draining Your Spa

1. Locate the drain valve on the base frame of your spa.
2. Twist the valve left and right while pulling outward it's approximately ½ to ¾" from the cabinet.
3. Remove the drain cap exposing the threads..
4. Attach the water hose to the drain and push the valve in so it's flush with the cabinet. If water isn't draining from the hose, push or pull the valve slightly, opening the drain, .
5. When the spa is drained, remove the hose, replace the cap and push the valve in flush with the frame.

Water Disposal

Heavily treated water can be harmful to the environment. Follow State, Local and Community requirements for disposal of water in your spa. Typically, if the pH & chemical levels are correct, you can drain the water on your lawn provided you take adequate measures to keep the water out of public storm drains and there is no potential of erosion or flooding on surrounding properties.

WATER CHEMISTRY

Clean, clear, water is imperative for your health and essential for the health of your spa. Without chemical sanitizers, the warm water is a perfect environment for germs, bacteria and other living organisms. Poor water chemistry not only lets bacteria and viruses spin out of control, but it's also the leading preventable cause of spa malfunction. If you over sanitize, your spa will deteriorate prematurely, but if sanitation is inadequate impurities can accumulate, hindering your spa's performance. Your water chemistry changes continuously and maintaining it is different in every spa and for every spa user.

The following guidelines have been established for spas by the Association of Pool and Spa Professionals:

pH	7.2 to 7.8
Free Chlorine	3.0 to 5.0 ppm
Free Bromine	2.0 to 4.0 ppm
Total Alkalinity	80 to 120 ppm
Calcium Hardness	150 to 250 ppm

Never mix Bromine, Chlorine, or any other chemical sanitizers!

The primary considerations in maintaining your water chemistry are:

- *The base water quality.*
- *The number of gallons of water in the spa.*
- *The number of people using the spa.*
- *The number of hours the spa is in use.*

In short, more people, more often, for more time requires more sanitizer.

Test your water twice a week whether you've used your spa or not. Regular testing lets you make adjustments before your water chemistry is out of control. When it comes to chemicals, more isn't always better. Adding chemicals changes the pH and fluctuating pH levels change how chemicals react. Once the water reaches its chemical saturation point draining your spa and starting over may be your only option.

WATER CHEMISTRY

Ozone Generators

Ozone generators do not replace chemical sanitizers, but they do reduce your consumption. Ozone breaks down dissolved solids and increases the oxygen in the water, making chemical sanitizers more efficient and making it easier for you to maintain proper water chemistry.

UV Sanitizers

One of only four water sanitation methods approved by the FDA, UV-C light waves alter the DNA & RNA of water borne bacteria, viruses and micro-organisms while eliminating chlorine by products that lead to red eyes, skin irritation and respiratory issues. UV sanitation doesn't eliminate chemicals, but it can reduce chemical consumption for some users by as much as 90%.

Chlorine Generators

Spas equipped with an optional chlorine generator convert salt into chlorine instead of bromine or other chemicals to sanitize the water. Salt and water levels must be consistently monitored to prevent corrosion that occurs if the salt level is excessive or the spread of bacteria if the salt level is inadequate.

BREAKING DOWN THE BASICS

Each step of a water maintenance program is dependent upon properly adjusting levels in the previous steps to within the recommended ranges. The omission of any step or failure to adjust to recommended ranges can damage the spa and cause discomfort for bathers. Always follow the instructions on the label when adding chemicals or using test strips. Never touch the end of the test strip that's immersed in water, as it may alter your results.

Step 1.) Balancing Total Alkalinity (TA)

The recommended total alkalinity level is between 80 and 120 ppm. The Total Alkalinity (TA) is the measure of the water's resistance to changes in the pH. TA is like a tether that holds the pH in place. If the TA is low, the pH level fluctuates quickly, easily, and significantly. Low TA can be corrected with pH increaser. If the TA is high, the pH level is elevated. High Total Alkalinity levels can be adjusted with pH decreaser. When the Total Alkalinity is within the recommended range, proceed to the next step.

Step 2.) Balancing Calcium Hardness (CH)

The recommended calcium hardness level is between 150-250 ppm. Calcium Hardness is a measurement of the total dissolved calcium in the water. Calcium helps control the corrosive nature of the water. Calcium-low (CL) water, commonly called "soft" water, is highly corrosive and may stain the acrylic surface. If your water passes through a water softener, you should bypass it when filling your spa. Calcium-high (CH) water, commonly called "hard" water, causes scaling on the spa and the components. Calcium hardness can usually be corrected with a mixture of 75% "hard" water and 25% "soft" water. If "soft" water is not available, add a stain and scale inhibitor according to the label instructions. Once the CH is balanced, it usually remains stable and shouldn't change when small quantities of water are added. When the Calcium Hardness is within the recommended range, proceed to the next step.

Step 3.) Balancing the pH

While pH levels between 7.2 and 7.8 are acceptable, the ideal range for bather comfort is 7.4 to 7.6. Maintaining pH within the acceptable range is imperative for the efficiency of sanitizers, the comfort of bathers, and the prevention of equipment deterioration. Problems become proportionately more severe the further the pH moves outside the acceptable range. When the pH level falls below 7, sanitizer will dissipate rapidly, the water may become irritating to users, and the spa equipment may corrode. The pH can be increased with pH/Alkalinity Up. If the pH level is too high, the sanitizer is less effective, scale may form on the surface and components, the water may become cloudy and pores in the filter cartridge will become clogged, obstructing water flow. Decrease the pH with pH/Alkalinity Down. If pH up or down is added to the water, wait two hours before testing the pH levels again. Checking the pH level on a weekly basis is essential. When the pH is within the recommended range, proceed to the final step.

Step 4.) Maintaining the Sanitizer Levels

Sanitizer levels vary, depending upon the sanitizer you've chosen. Read and follow the instructions on the package. Sanitizers kill algae, bacteria, and viruses while preventing the growth of unwanted organisms in the spa. If sanitizer levels are too high, it may irritate the skin, lungs, and eyes. Always maintain the sanitizer level in your spa at the recommended levels specified for each type of sanitizer. You should check your sanitizer and pH levels before each use and at least twice each week even if the spa is not in use.

BASE WATER QUALITY

What's in your water? The answer is different for just about everyone. Water provided by public utility systems must meet strict standards and undergo chemical treatment before it flows through your faucets. Even though quality standards are similar regardless of where you live, the treatment required to meet that standard - and the residual chemicals that remain in your water after it's treated - can vary greatly. Water flowing from faucets in Washington State is different than the water flowing from faucets in Oregon, and Washington DC. Water delivered to a faucet directly from a well is untreated and water that passes through a softening system is treated, but the treatment makes it unsuitable for filling a spa. Whether your water is treated or unfiltered, all water delivers trace amounts of something that can affect the performance of your spa.

Never fill your spa with hot water.
Never fill your spa with water that has passed through a water softener.
Filling your spa with well water is not recommended. Well water often has higher mineral, metal and bacterial content that can damage the spa components and make it difficult to balance and maintain your water chemistry. Get professional assistance if you're filling your spa with well water.

WATER CHEMISTRY

WARNING!

Handle spa chemicals with care!

- Risk of chemical reaction and noxious fumes.
- Never mix chemicals.
- Read and follow the instructions on the label.
- Always wear safety goggles and gloves.
- Do not enter the spa if chemical levels exceed the recommended levels.

Do not use tri-chlor chlorine, bromo-chlor-dimethyl-hydantoin (BCDMH), compressed bromine or chlorine tablets, acid or any sanitizer not recommended by your dealer.

Step by Step Instructions to Add Chemicals to Your Spa

1. The water temperature must be at least 80°F (27°C) when adding chemicals to prevent damage to the acrylic surface.
2. Fill a large bucket (minimum 2-gallon capacity) with warm water from the spa. Use care not to splash chemicals onto the spa cabinet, or the acrylic surface of the spa.
3. Carefully measure the recommended amount of the first chemical following the instructions on the label. Replace the lid on the chemical container.
4. Thoroughly mix the chemical with warm water in the bucket.
5. Press the Primary Pump button to turn the pump on high speed.
6. With the pump running at high speed, slowly pour the bucket of warm water and chemicals into the spa near the filter assembly.
7. Repeat this procedure with each new chemical added to the water.
8. After adding all of the chemicals run the pumps at high speed for ten minutes with the cover off.
9. After 10 minutes, reduce the pump speed to low for one full cycle.
10. Replace and lock the cover.

FILTER CARE AND REPLACEMENT

Filters catch small particulates like hair, lotion, and body oil. Filters are made of compressed fibers that break down over time and become saturated with dirt and oil, contaminants remain in the water restricting flow, which causes unnecessary strain on the pumps. Your filters should cleaned when flow from the jets is reduced and the water is hazy or discolored. Cleaning dirty filters may not remove all of the dirt, body oil, and bacteria. Depending upon use and bather load, the manufacturer recommends replacing your filters every three months. Replacement filters can be purchased from your dealer.

Step by Step Instructions to Clean Your Filters

1. Turn the GFCI “off,” remove the filter cover, basket, and filter.
2. With a high-pressure spray nozzle on your garden hose, rinse between each pleat.
3. Allow the filter to dry completely .
4. Brush between each pleat with a fine brush. Never use a wire brush!
5. Place the filter in a bucket of water or inside the spa until it’s saturated.
6. Replace the filter and reassemble the filter assembly.

Never put your filter in the dishwasher. Never put a dry filter in the filter in your spa.

CHEMICAL SAFETY REMINDERS

- Wash your hands after handling chemicals.
- In case of accidental contact or ingestion, follow the emergency advice on the product label. If a doctor visit is needed, take chemical containers with you.
- Clean up spilled chemicals immediately with a water hose. Saturate the surrounding area thoroughly, especially areas used by children and pets to ensure safety.
- Never use a vacuum to clean up chemical spills.
- Keep chemicals in their original container with the lid tightly closed when not in use.
- Keep chemicals away from children and pets.
- Store chemicals in a cool, dry, well-ventilated place. Do not expose to extreme temperatures or bright light.
- Follow local laws when disposing of the water in your spa. Never allow the water drained from your spa to run into public water sources.
- Never smoke when handling chemicals.
- Do not store chemicals inside the spa cabinet
- Do not add chemicals when bathers are inside the spa. Inhaling fumes or contact with your eyes, nose or mouth is very dangerous.
- Never use swimming pool chemicals, muriatic acid, or household bleach in your spa.

TROUBLESHOOTING WATER CHEMISTRY

Problem	Could Be Caused By	Could Be Solved By
Water Will Not Balance	Well, untreated, softened, or old water	Seek Local Professional Assistance. The manufacturer does not recommend filling the spa with well, untreated or softened water.
Cloudy Water	Dirty filter	Replace filter
	Excessive/suspended organic matter	Clean/replace filter, add shock, run jets
	Bacteria inside cover dripping into water	Spray cover with medium pressure hose, allow to dry
	Improper sanitization	Add sanitizer
	Hard water	Add scale preventative or soft water until hardness is 80-150 ppm
	Alkalinity too high	Add pH reducer, adjust total alkalinity to 80-150 ppm
	pH too high	Add pH reducer, adjust pH to 7.2-7.6 ppm
	End of water life / calcium pH imbalance	Drain & refill spa, replace filter
Green or Brown Water	Excessive metal /algae	Add metal sequestering agent
Excessive Foam	Oil, cosmetics and/or detergent	Add defoamer Clean or replace filter Run extra rinse cycle when washing swim wear
	Soft water	Add Calcium increaser until hardness is 150-280 ppm
Water has Bad Smell	Excessive organic matter - bacteria growth	Add shock
	Improperly sanitized	Add sanitizer
	Low pH	Adjust pH
	Chloramines	Add oxidizing shock
Smells Musty	Bacteria growth	Add shock
Ring Around Spa	Build up of oil & dirt	Wipe surface with cloth, drain and refill spa
Algae	High pH / leaving cover off	Add pH reducer
	Low sanitizer level	Add shock & sanitizer
Eye, Skin Irritation and/or Rash	Improper sanitation	Test water. Add shock & sanitizer as needed
	Combined chlorine fell when adding water	Correct chlorine levels
	Too Much Chlorine	Drain several inches of water & replace with fresh water
	Dirty filter or pH imbalance	Adjust pH to 7.2-7.6 ppm, clean or replace filter
Stains on Acrylic Surface	High alkalinity or low pH	Adjust pH to7.2-7.2 ppm, adjust alkalinity to 80-150 ppm
	High mineral content	Use stain & scale reducer
	High metal content	Use metal sequestering agent
Scale Build Up	High calcium levels, high pH, high alkalinity	Drain partially, adjust pH to 7.2-7.6 ppm, adjust alkalinity to 80-150 ppm; Use stain and scale preventative

WATER CHEMISTRY TEST RESULTS LOG

Recording your results here helps you monitor changes and is a valuable diagnostic tool if you need assistance with your water chemistry.

Test	Recommended Range	Your Results
Free Chlorine ppm	1-3	
Total Chlorine ppm	1-3	
Alkalinity ppm	80-120	
pH	7.2-7.8	
Total Hardness ppm	150-250	
Normal Use	Heavy Use	**Light Use**

Test	Recommended Range	Your Results
Free Chlorine ppm	1-3	
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Normal Use	Heavy Use	**Light Use**

CARING FOR YOUR SPA

Caring for the Acrylic Surface

Your spa was cast from Lucite® Acrylic is durable and resilient. The surface is dirt and stain resistant, requiring very little care. When needed, wipe the surface with warm water and a soft cloth. Residue from household cleaners and soapy detergents will dull the shine. Never use abrasive, ammonia, chlorine or citrus based cleaners which can mar the finish and may react negatively with the chemicals used to maintain water chemistry.

Caring for the Cabinet Panels

Your spa cabinet is virtually maintenance free. You never need to wax, paint or seal the cabinet. When necessary, rinse the cabinet with a water hose with a moderate pressure nozzle. Remove stubborn dirt rub with a damp, soft cloth. Never use abrasive cleaners or a high-pressure hose which may scar the cabinet.

Caring for the Pillows

Comfort foam pillow cores are coated in water-resistant vinyl. Prolonged contact with chemical sanitizers will damage the vinyl coating. To prevent premature deterioration and discoloration, wipe chemical residue off periodically with clear water and a soft cloth. If desired, wipe the surface with vinyl protectant. Avoid oil or alcohol-based vinyl protectors which can damage the pillow and adversely affect water chemistry. If you're not using your spa for a while, dry your pillows with a soft towel and store them in a cool, dry place. Foam cores will retain water if the vinyl coating is damaged. Please call 423-349-2900 option 6, Mon-Fri from 9am to 5 pm EST for replacement pillows.

Caring for the Jets

Many of the larger jets in your spa can be rotated to adjust the flow of water. Turn the outer ring clockwise to increase flow, counterclockwise to decrease it or stop the flow entirely. Open all jets when you exit your spa to release pressure in the lines that can damage your spa. Removing mineral deposits that accumulate over time can restore the speed of spinning jets. With the GFCI "off", rotate the outside of the jet counterclockwise until it reaches its natural "stop". Continue turning and pull outward gently to remove the jet. Place jets in a bucket of equal parts water and white vinegar overnight. Rinse with warm water. Remove stubborn debris with a soft bristle brush. Do not use steel wool or a wire brush. When clean, place jet inside housing, tap gently to engage in place and rotate in a clockwise direction until it's securely in place. If you find heavy calcium deposits on your jets, have your water tested. If the back of a jet is damaged, call 423-349-2900 option 6, Mon-Fri from 9am to 5 pm EST for a replacement.

Caring for the Lights

Do not attempt to remove the lens cover on the underwater light, which is permanently installed. When the spa has been drained, wipe the light lens with a soft cloth. If the other side needs to be cleaned, remove the cabinet panel, remove the bulb from the lamp holder and wipe with a glass cleaner and soft, lint-free cloth. Replace the bulb and make sure light works before reinstalling the cabinet panel. Please call 423-349-2900 option 6, Mon-Fri from 9am to 5 pm EST if your bulb needs to be replaced. Never attempt to clean the back side of the perimeter lighting lens covers.

Caring for Audio/Video Systems

If your spa is equipped with built-in audio or video, always keep the water level below your speakers; they're water resistant but are not designed to be submerged. Wipe chemical residue off with a soft cloth to prevent discoloration. The sub-woofer is enclosed in the spa cabinet and does not require regular maintenance. Use your device to play your selection and control the volume through your speakers before entering your spa. For your safety and to protect your device, always store your device safely away from the spa.
Never place your MP3 player or any other electronic devices that are plugged into an electrical outlet within 5 ft (1.5m) of your spa. Never wear headphones or handle audio/video devices from inside the spa.

Caring for the Spa Cover

The foam cores in your spa cover are designed to protect your spa from the elements, reduce heat loss, keep unwanted debris out of the spa, and to prevent evaporation. You should clean the vinyl with a small amount of mild dish soap diluted in warm water and a soft sponge 3 or 4 times a year. Allow to dry and wipe with an oil-free, non-alcohol based vinyl protector. Many vinyl protectors are oil based and should be avoided. Using oil-based products will adversely affect water clarity and chemistry which can be difficult to correct. Using alcohol or chlorine-based cleaning products will cause the stitching to deteriorate and damage the UV inhibitors built into the vinyl. The locking tie downs are not designed to keep the cover in place in heavy winds. You should consider using wind straps to stabilize the cover and protect the spa. Use the handles to remove and replace the cover. The cover is sturdy but should never be dragged and is not designed to hold heavy weight loads. Heavy snow loads should be brushed off with a clean soft bristle broom. Never stand on or allow children or pets on the spa cover. When the spa is not in use, the cover should be locked in place with the tie downs.

Caring for the spa in cold weather

Your spa is well insulated to make it economical to operate even in the coldest climate. As long as its full of water and power is supplied, it will function in January just as it did in July. Keeping your spa fully operational at all times is the best way to protect it from damage that can occur during cold weather. The manufacturer does not recommend draining your spa and disconnecting the power supply in the winter. If you choose to shut your spa down for winter you are encouraged to hire a professional to winterize your spa safely. ALL of the water must be removed from the filter housing, pumps, heater, jets and plumbing lines. Simply draining the water as you would for normal maintenance will not provide adequate protection from freezing.

CARING FOR YOUR SPA

Step by Step Instructions to Safely Winterize your Spa

1. Disconnect the spa from the electrical supply. 115V SPA: Unplug from the electrical outlet. 240V SPAS: Turn the GFCI off.
2. Follow the instructions to drain your spa and properly dispose of the water.
3. When the spa is empty, drain the water from the heater, each pump by loosening the plumbing unions on both sides.
4. Remove the filter cover, basket, and filter from the spa. With a wet-dry vacuum set to blow, not vacuum, put the hose inside the filter canister and blow all of the water out of the filter canister. DO NOT REINSTALL WET FILTER!
5. Place the hose over each suction fitting for 30 seconds to blow out water in the suction lines.
6. Open all of the jets. Moving in a clockwise direction and starting at the top of each seat working down, blow each jet until all of the water is removed. Repeat this process at least twice, moving all the way around the spa from the top to the bottom of each seat until all of the water is removed.
7. Vacuum all standing water in the seats, footwell, and inside the spa cabinet.
8. Clean the surface thoroughly with a soft cloth and wipe down until completely dry.
9. Replace the drain cap, close the drain, and tighten the plumbing unions on both sides of each component.
10. Allow the cabinet to air dry before replacing the cabinet panel.
11. Replace and lock the cover, securing it in place. Cover the spa to protect it from harsh weather and debris.

* The manufacturer does not recommend using antifreeze which may damage your spa. Even with thorough flushing, residual antifreeze may irritate skin and eyes and make water chemistry difficult to balance when the spa is refilled.

** When the spa is empty, o-rings and seals dry out. After filling, inspect plumbing unions for leaks, reseat and/or replace damaged seals.

System Failure During Freezing Temperatures

If you experience system failure and the spa is exposed to freezing temperatures, your spa may function normally after you manually turn the GFCI "off" for 30 minutes before turning it back on again. If that fails, call your dealer. If the system failure occurs after normal business hours and your pumps will not circulate the water, you should place a low wattage space heater inside the cabinet near the spa equipment to help prevent freezing. To avoid the risk of fire or injury, do not leave the spa unattended when the heater is inside the cabinet. If you leave home, turn the heater off.

SPA TROUBLESHOOTING GUIDE

THE FIRST STEP IN THE TROUBLESHOOTING PROCESS IS TO CHECK THE TOPSIDE CONTROLS FOR DIAGNOSTIC MESSAGES.

If you do not see the solution to your problem, please call 423-349-2900 option 6 for assistance.

Always turn the GFCI "off" before servicing or draining your spa.

Problem	Might be caused by	Might be corrected by
LED Display is blank	Power is off or fuse is blown	Reset GFCI and Main Service. Replace blown fuses
Spa Will Not Power Off	Spa is heating or filtering	Normal function of spa. Lower temperature settings
	Spa is filtering	Normal function of spa
Spa Leaking	Loose unions	Hand tighten unions
GFCI Tripping	Improper wiring	Get Electrician to check neutral wiring connections at GFCI
Pump(s) Not Working	Air Lock	Bleed the pump(s)
	Pump Cycle has ended	Press button to turn pump on
	"T Stems" Closed	"T Stems" locked in up position
	Operating Mode	Check to be sure spa is in Standard or Ready Mode not Sleep or Economy Mode
	Fuse blown	Replace fuse
	Connection to pack	Confirm pump is securely connected inside pack
Pump(s) run hot	High ambient temperature	Remove cabinet panel temporarily to allow cooler air to circulate inside cabinet.
	Flow restricted	Remove debris from filter basket and suction valves; "T Stems" locked in up position.
Pump / Jets Surge	Water level too low	Add water
	Blockage or restriction	Empty filter basket and clean suction drain covers. Make sure "T Stems" are up.
No or Low Heat	Low temperature setting	Normal function of spa, increase temperature setting
	Operating Mode	Check to be sure the spa is not in Economy, Sleep, Rest Mode or Low Range
	Temperature Setting	Check LED display to see if Heater is illuminated
	Breaker(s) off	Reset GFCI and Main Breaker
	Dirty filter	Change filter
	Air lock or closed "T Stem"	Make sure "T Stems" are up and pumps are not air locked
	Improper line voltage	Have an electrician check voltage
Heats but not High Enough	Low temperature setting	Increase temperature setting
	Operating Mode	Check to be sure the spa is not in Economy, Sleep, Rest Mode or Low Range
	Dirty filter	Change filter
	Spa cover shifted	Reposition spa cover
Over Heat Message on LED	Filtration settings	Reduce number and duration of filtration cycles
	High ambient temperature	Temporarily remove cover and/or add cold water
		Remove cabinet panel temporarily to allow cooler air to circulate inside cabinet.
Lights Don't Work	Bulb or fuse burned out	Replace bulb or fuse
	Loose, dirty connection	Check light connections
Jets Don't Work	Air lock in pump(s)	Bleed pump(s)
	Slice valve(s) closed	Open slice valves
	Diverter valve closed	Rotate diverter until desired pressure is achieved
	Jet Closed	Rotate outer rim of jet clockwise to open
	Debris obstructing flow	Remove jet, clear debris
Rotating jets don't rotate	Debris or mineral build-up	Remove debris, soak in 50/50 water & vinegar solution to remove mineral deposits
Low Water Flow	Spa heating or filtering	Normal spa function
	Diverter valve position	Rotate diverter valve to increase flow
	Water level low	Add water to correct level above filter assembly.
	Dirty suction covers, filter or basket	Clean or replace filter, remove debris from filter basket & suction drains
	Slice valve(s) closed	Pull "T" stems up and lock in the up position.
	Improper Line Voltage	Have an electrician check voltage

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American Made

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