

TropicSpa[®]
MAJESTICS BUSINESS
UNITED STATES / ANDORRA / SPAIN

Owner's manual



TropicSpa®

MAJESTICS BUSINESS

Your choice of a **Tropic Spa®** spa reflects your loyalty to excellence.

At **Tropic Spa®** we believe that design is the basis for manufacturing a superior product.

Your new spa will bring you many years of enjoyment and relaxation.

Please take the time to familiarize yourself with safety and operating procedures, as well as water maintenance and cleaning routines so that your spa can provide a healthy environment for all its users.

Enjoy!!


If you need further information, please contact us at **(305) 224 6245**.


Your well-being team


Tropic Spa


IMPORTANT - Restrictions on the use of the Spa


PLEASE READ AND FOLLOW ALL SAFETY INSTRUCTIONS


 **WARNING:** Children should not use the spa without adult supervision. Risk of accidental drowning. Extreme caution must be exercised in preventing unauthorized access to children. To avoid accidents, ensure that children cannot use or approach the spa without supervision.


 **WARNING:** Use the spa straps and fasteners to secure the cover tarpaulin when not in use. This will help discourage unsupervised children from entering the spa and keep the spa cover tarpaulin secure in case of strong wind. There is no guarantee that the tarpaulin, fasteners and locks will prevent access to the spa.


 **WARNING:** Do not use the spa unless all suction guards are installed to prevent limbs and hair from being sucked.

 **WARNING:** People who use medications or have an unfavorable medical history should consult a physician before using a spa since some drugs may cause drowsiness, while other medications may affect heart rate, blood pressure and circulation.


 **WARNING:** Pregnant women, the elderly, infants or people with obesity or a history of heart disease, or suffering from hypotension, high blood pressure, circulatory system problems or diabetes should consult a physician before using a spa. People with infectious diseases should not use a spa.

 **WARNING:** To avoid injury, be cautious when getting in and out the spa. Get in and out the spa slowly. Wet surfaces can be very slippery.


 **WARNING:** Alcohol, drug or medication use before or during spa use may result in loss of awareness with the possibility of drowning and may significantly increase the risk of hyperthermia in a spa.


 **WARNING:** To reduce the risk of injury: Water in a spa should never exceed 40 °C (104 °F). Temperatures between 37 (98.6° F) and 40 °C (104 °F) are considered as tolerable for a healthy adult. Lower temperatures are recommended for young children and when the use of the spa exceeds 10 minutes.


 **CAUTION:** Prolonged immersion in a spa can be hazardous to your health.


 **HYPERTHERMIA:** Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 37 °C (98.6 °F). Symptoms of hypothermia include:

- 1) Unconsciousness of imminent danger;
- 2) Inability to perceive heat;
- 3) Inability to recognize the need to get out of the spa;
- 4) Physical inability to get out of the spa;
- 5) High potential to cause damage to the fetus during the first months of pregnancy;
- 6) Unconsciousness entailing the risk of drowning..


 **WARNING:** Before getting in the spa, measure the water temperature with an accurate thermometer as the tolerance of the temperature control devices can vary up to +/- 2 °C (35 °F).

 **WARNING:** Do not use a spa immediately after intense exercise. Do not use electrical appliances (lighting, telephone, radio, television, or any other electrical appliance) within 1.5 meters (4.9 feet) of a spa. Never operate an appliance from the inside of the spa or when you are wet.

 **DANGER:** Risk of electric shock. Install the spa at least 1.5 m (4.9 ft.) away from all metal surfaces. As an alternative, a spa may be installed within 1.5 m (4.9 ft.) of metal surfaces if each metal surface is permanently connected by a solid copper conductor not smaller than No. 8 AWG (8.4 mm²-0.13 in²) to the wire connector on the earthing strap, inside the equipment compartment. The power supply to this spa must include a properly sized switch or circuit breaker to open all grounded power supply conductors. The device must be accessible and visible by the occupant of the spa but installed at least 1.5 m (4.9 ft.) from the spa water.

 **WARNING:** Maintain the chemical composition of the water in accordance with the manufacturer's instructions. Proper spa water maintenance is required to keep the water clean and to avoid damage to spa components.

To avoid a risk due to inadvertent resetting of the thermal cutting, this device must not be supplied via an external switching device such as a timer or connected to a circuit which is regularly turned on and off by the utility.

 **WARNING:** The device should not be used by persons (including children) with reduced physical, sensory or mental capabilities, or with a lack of experience and knowledge, unless supervised..

 **DANGER:** **Risk of serious injury or death.** The suction connections of this spa are sized according to the water flow created by the pump.

If you need to replace the suction fittings or the pump, make sure that the flow rates are compatible. **Never** use the spa if the suction fittings are broken or missing. Never replace a suction fitting with a rating lower than the flow rate indicated on the original suction fitting.

USEFUL TIPS ON SAFETY

- READ all operating instructions
- READ, UNDERSTAND and FOLLOW all warning instructions before use.
- Test the water temperature with your hand before entering to make sure it is comfortable.
- Keep the spa cover tarpaulin closed when the spa is not in use. This is important for safety and for a more energy efficient / economical use.
- DO NOT block the air vents on the equipment compartment. The clogging may damage the spa equipment and void the warranty.
- DO NOT block or sit on the filter area.
- DO NOT allow jostling or unattended use of your spa.
- DO NOT allow anyone to degrade or play with any of the safety or aspiration accessories of your spa.

INSTALLATION

The installation consists in placing your new spa in a suitable location, connecting it to an electrical outlet with the equivalent rating and filling it with water. Place your spa in an area with a flat, solid surface entirely in contact with the bottom of the spa base.

If you choose to install your spa on an elevated deck or indoors, we advise to contact an authorized contractor to confirm that the surface will support the spa when filled with water, and that the surrounding area is suitable for the installation.

Movements of the deck or slab may cause damage that is not covered by the warranty.

Water must always be able to evacuate from the unit. Make sure the location chosen to place your spa is not subject to flooding. If you place your spa next to an obstacle, such as a fence or wall, make sure that you place the unit with the equipment compartment forward for an easy access to the equipment.

PLEASE KEEP THESE INSTRUCTIONS

Pre-purchase considerations

1. Get ready to receive your new Spa

Most cities and countries require permits for outdoor construction and electrical circuits. A local authority officer can provide information about any permits required and how to obtain them before the delivery of your spa.

2. Prepare a good foundation

Damage caused by an inadequate or inappropriate basis is not covered by the warranty. The spa owner must provide a stable and suitable foundation.

Place the spa on a solid, level foundation. If you are installing the spa indoors, pay close attention to the floor below. Choose a floor that will not be damaged or stained. If you install your spa on a wooden deck or another raised structure, please consult an engineer or contractor to ensure that the structure can withstand the weight of 732 kgf / cm² (1613.78 lbf/ 0,155 in²). An adequate drainage system must be provided to treat the overflow of water.

3. Plan the best location - SECURITY COMES FIRST

Do not place your spa within 3 m (9,84 ft.) of overhead power lines.

IMPORTANT: The warranty is void if the spa is moved to a location other than the original shipping address.

4. Consider spa use

How you intend to use your spa will help you determine where you need to place it. For example, will you use your spa for recreational or therapeutic purposes? If your spa is primarily used for family recreation, make sure to leave enough room around it for activity. If you are going to use it for relaxation and therapy, you will probably want to create a special atmosphere around your spa.

5. Climate, privacy and view

If you live in a snowy or rainy environment, place the spa near an entrance of the house in order to have a comfortable place to change clothes. Consider the seasonal changes as well.

Bare trees do not provide much privacy. Besides, do not forget to think about the view that your neighbor has of you, and your own vision of your neighbors.

6. Keep your spa clean

When planning the location of your spa, think of a place where there is a clean path to and from the house. Use a mat at the entrance to the spa to encourage bathers to clean their feet before getting in your spa.

7. Allocate access for maintenance

Your Tropic spa is equipped with access doors on all 4 sides. It is the responsibility of the customer to provide access and ensure that there is a minimum of 45 to 60 cm (17,71 to 23,62 in) of space on all 4 sides to allow access to the service.

Notes

Electrical safety

Tropic Spa® hydro-massage devices are safe, manufactured in accordance with **EN 60335.2.60**, **EN 61000** et **EN 55014** standards and approved by the **SIQ Certification Institute**. These devices have been tested during manufacture to ensure the safety of the end user.

The installation must be carried out by qualified personnel, authorized for this type of installation and able to guarantee compliance with the national directives in force.



It is the responsibility of the installer to select the materials, to ensure that the works are carried out correctly, to check the condition of the installation to which the appliance is connected, and to ensure conformity regarding the necessary safety during use and maintenance operations.

Tropic Spa® Hydro Massage Spas are class "I" appliances and must therefore be permanently and stably fixed and connected to the electrical network and to the earthing conductor without intermediate connections.



The power supply circuit and the earthing system of the house must be in perfect condition and comply with existing legal requirements and applicable national standards. An appropriate device, part of the fixed installation and installed according to the existing standards, which disconnects the appliance from the network must be provided.

To connect to the power supply, the use of an omnipolar isolating switch is compulsory. This switch needs be installed in such a location as to comply with the safety standards for bathrooms.



In accordance with existing standards, the switch and electrical devices must be installed in a place which is not accessible by the person using the device.

The installation of electrical devices and other appliances (outlets, switches, etc.) in bathrooms must comply with the existing national provisions and standards. In particular, no electrical installation is allowed around the bath within a distance of 60 cm (22.62 in) and a height of 225 (88.58 in).

For the connection to the electrical installation of the house, a cable with sheath with characteristics not lower than type H 05 VV · F 3x6 mm² (0,0046x0,0093 in²) must be used.

The electrical installation of the house must be equipped with a differential switch of 0.03 A. The parts containing electrical components, except remote control devices, must be positioned or fixed in such a way that they cannot fall into the tub.

Tropic Spa® is not responsible for any of the following:

- Installation carried out by unqualified and/or unauthorized personnel and not approved for the purposes of this installation.
- Failure to comply with the existing norms and legal provisions relating to the electrical installations of the houses in the country where the installation is carried out
- Failure to follow installation and maintenance instructions as described in this manual.
- Use of unsuitable and/or non-certified materials for this installation.
- Installation of the spa that does not meet the above standards.
- Execution of incorrect operations lowering the degree of protection against splashing water or modifying the protection against the risks of electrocution by direct and indirect contact, and, in the case of operations involving unusual conditions of insulation, current leakage and overheating.
- Replacement or modification of the components or parts of the appliance in relation to the original delivery, leading to the foreclosure of the manufacturer's liability.
- Repair of the appliance entrusted to unauthorized personnel and use of spare parts other than genuine **Tropic Spa®** parts. The installer or the owner is responsible for ensuring that the installation location complies with the existing local regulations before proceeding with the installation. **Tropic Spa®** provides no warranty in this respect and assumes no responsibility for the suitability of the installation.

Electrical installation

ELECTRICAL INSTALLATION 220/240 VOLT



WARNING: The electrical system must be installed by a licensed electrician. Failure to do so may result in fire or personal injury and will be the sole responsibility of the spa owner.

Your Tropic spa has been carefully designed to provide maximum safety against electric shock. Connecting the spa to a poorly wired circuit will invalidate many of its safety features. Improper installation may result in hazards that could lead to personal injury or physical damage and void the warranty.

All 240V spas must be permanently wired to the power supply. Any spa must be wired using this procedure. Failure to follow these instructions will void your warranty and may result in serious personal injury.

GFCI AND WIRING REQUIRED

The electrical wiring of this spa must meet the requirements of the National Electrical Code, of the ANSI/NFPA 70-2008 standard and of any other applicable code. The spa shall be powered by a circuit protected by a ground fault circuit interrupter as required by the ANSI/NFPA 70 standard, to which no other appliance or lighting device is connected.

Use copper wire with THHN insulation. **Do not use aluminum wire.**

Use the table on the next page to determine your GFCI and wiring needs.

When NEC requires the use of wires larger than No. 6 AWG, install a junction box near the spa and use # 6 AWG between the junction box and the spa.

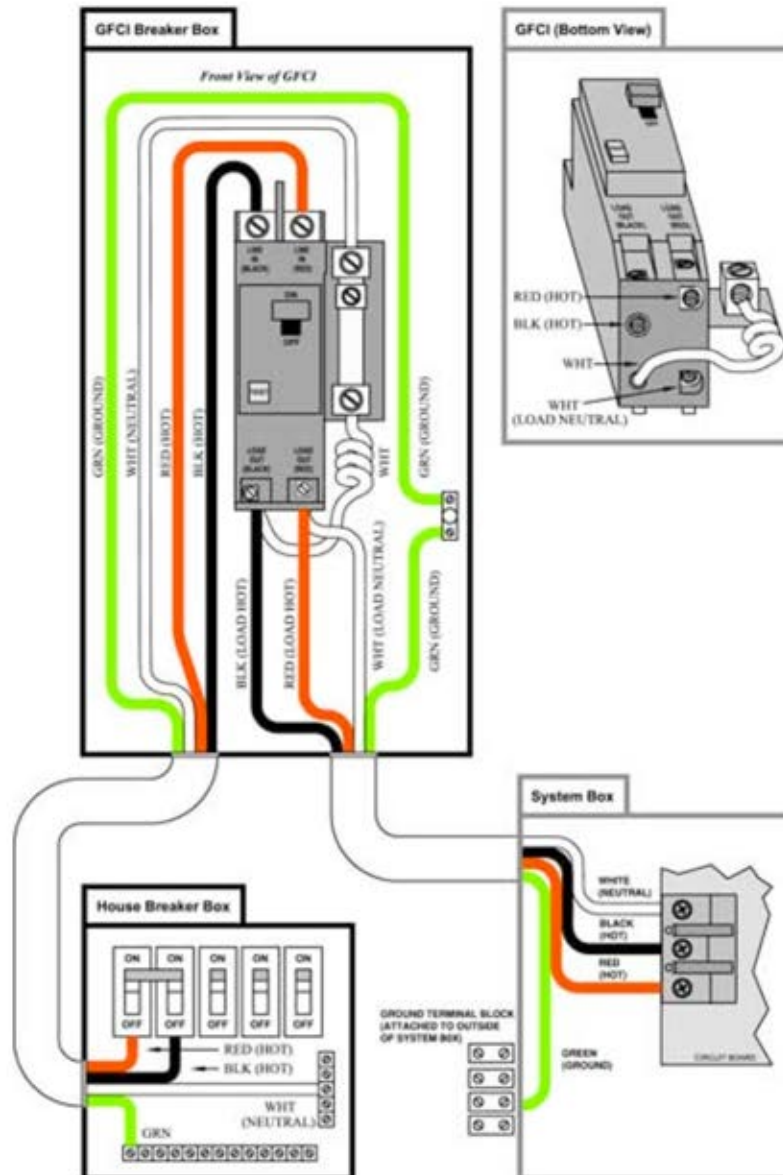
The disconnecting means must be incorporated into the fixed wiring according to the wiring rules.



WARNING: Removing or ignoring any GFCI circuit breaker will result in a hazardous spa and will void the spa warranty.

GFCI CIRCUIT BREAKER CONNECTION

GFCI Wiring Diagram



For certified staff reference ONLY!

Note: A residual current device with a nominal tripping current not exceeding 30 mA must be installed in addition to local requirements. The customer must provide an offset in the fixed wiring. The protective device for power connection must be on all phase conductors according to local requirements.

GFCI CIRCUIT BREAKER TESTING

Test the differential circuit breaker before first use and periodically when the spa is turned on. To test the GFCI circuit breaker, please follow these instructions:

With the spa running, press the GFCI TEST button. The GFCI is triggered and the spa turns off.

Reset the residual current circuit breaker by switching the circuit breaker to the OFF position, wait a moment, then turn on the circuit breaker. The spa should turn on again.

Filling and starting

Use your spa

Important: Your Tropic spa has been fully tested during the manufacturing process to ensure reliability and long-term customer satisfaction. Before filling the spa, wipe the shell with a soft cloth. Be sure to **fill the spa using the filter compartment.**

Follow these instructions to ensure a successful start or filling:

1. Place the spa on the intended surface and let an electrician approved by **Tropic Spa®** take care of the connection.
2. Unscrew the exterior panels of the spa with a screwdriver and lifting the resin panel.
3. Make sure the plumbing connections have not loosened during shipping.
4. There will be 4 fittings on a spa of 1 pump, 6 fittings on a spa of 2 pumps. Tighten loose fittings by hand.
5. Open all equipment valves before use. Never operate the spa with closed valves or without water circulation for a period of time.
6. Ensure that the drain valve is closed and place a garden hose in the filter input - fill your spa with **tap water** to the water level in the skimmer - ***If the water level is too low or too high, your spa will not operate properly.***
7. When the spa is filled to the appropriate level and the air is purged, turn the spa power ON, on the GFCI circuit breaker.
8. The jet pump, heating system and internal plumbing will start as soon as the spa is full.
9. To check the operation of the jet system and remove the remaining air in the plumbing system, proceed to pump priming (*see page 14/15*).
10. Make sure the filter is in water for at least 30 minutes before installing it.
11. Adjust the balance of water with **Tropic Spa®** approved products.

12. Adjust to the desired temperature (between 35-38 ° C, 95-100.4 °F), place the isothermal cover on the spa and allow the water temperature to stabilize. Be sure to secure the cover using the locks. Regularly check the water temperature.
13. When the water temperature rises above 29 ° C (84.2 °F), test and adjust the level of disinfectant (ideal chlorine 1-3 ppm or bromine between 3-5 ppm).
14. Let circulation and filtration cycles work to disperse the chemicals.



WARNING: Do not fill your spa with fresh water. It is difficult to maintain the appropriate water chemistry with fresh water. In addition, the water may lather, which may end up impairing the proper functioning of the spa and voiding the warranty.

PUMP PRIMING

Air can sometimes be trapped in the pump during spa filling. You will notice that this happened when, after filling and turning on the spa, the pump is not working. You will hear the pump running but the water will stay still.

The pump will not operate properly while the air is trapped in it. Stop operating the pump since it might get damaged.

New spa owners often struggle the first time they turn on their spa if the pump fails to prime. These simple step-by-step instructions can help.

To remove tiny air bubbles trapped in the pump.

1. Turn on the spa and wait for the priming mode (PR) to appear on the control unit display.
2. Press the JETS 1 button to turn on the pump and let it run for 10 seconds. The pump should run at low speed.
3. Press the JETS 1 button again and let the pump run at high speed for 10 seconds.
4. Press the JETS 1 button again to turn off the pump. The pump must remain in the off position for 10 to 15 seconds.
5. Repeat steps 1 to 4 until water flows through all jets and all air is removed from the piping.



OPERATIONS OF YOUR SPA

To remove a large air plug in the pump:

1. Turn off the power supply at the circuit breaker.
2. Remove the spa panel closer to the pump.
3. Loosen the white fitting on the top of the pump by hand or with a strap wrench.
4. When the air is bled, tighten the fitting, turn on the circuit breaker and adjust the pump at high speed.



Note: If you press the "Temp" button at any time during the priming mode, the "Temp" mode will stop and the standard mode will start.

Notes

Control panel Balboa®

TP600 and TP400 Control Panels

User Interface and Programming Reference – Standard Menus

System Model:	BP-Series Systems are BP5XX, BP6XX, BP1XXX, BP2XXX.	
Software Version:	7.0 and later	
Panel Model:	TP600 Series	TP400 Series
Software Version:	2.3 or later	2.4 or later



BALBOA
water group

Main Menu

Navigation

Navigating the entire menu structure is done with 2 or 3 buttons on the control panel.



Some panels have separate **WARM** (Up) and **COOL** (Down) buttons, while others have a single **Temperature** button. In the navigation diagrams Temperature buttons are indicated by a single button icon.

Panels that have two Temperature buttons (Warm and Cool) can use both of them to simplify navigation and programming where a single Temperature icon is shown.

The **LIGHT** Button is also used to choose the various menus and navigate each section.

Typical use of the Temperature button(s) allows changing the Set Temperature while the numbers are flashing in the LCD.

Pressing the **LIGHT** button while the numbers are flashing will enter the menus.

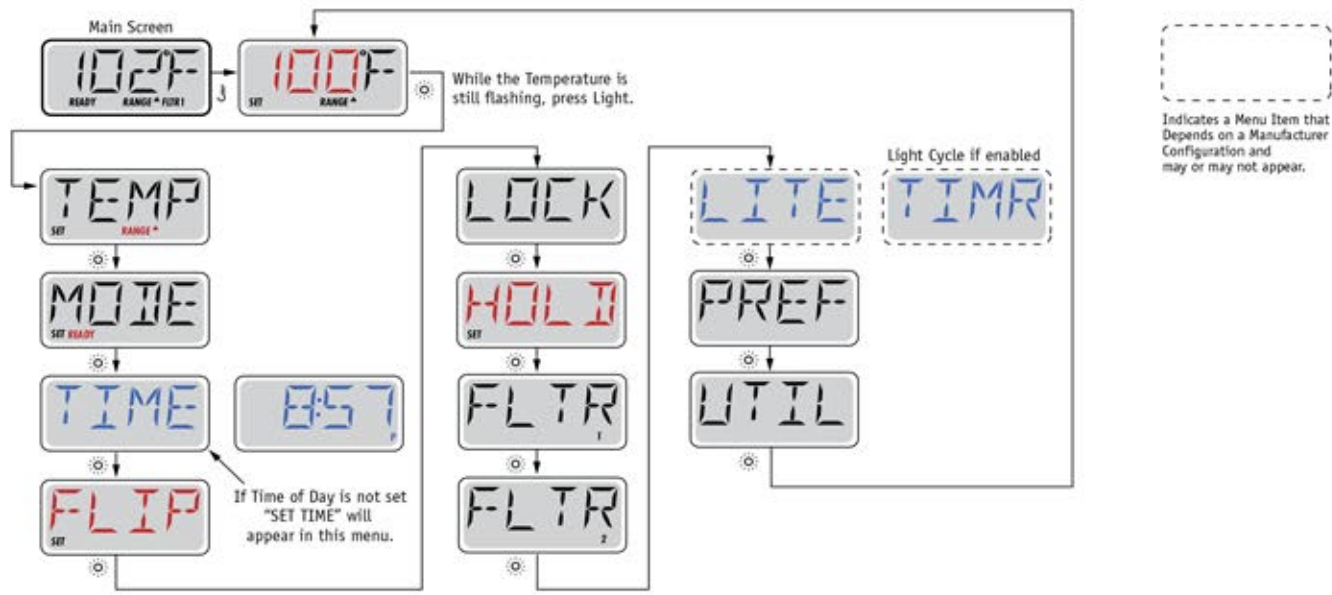
The menus can be exited with certain button presses. Simply waiting for several seconds will return the panel operation to normal.

Power-up Screens

Each time the System powers up, a series of numbers is displayed. After the startup sequence of numbers, the system will enter Priming Mode (See Page 3).

Key

- Indicates Flashing or Changing Segment
- Indicates Alternating or Progressive Message - every 1/2 second
- ⏴ A temperature button, used for "Action"
- ☉ Light or dedicated "Choose" button, depending on control panel configuration
- Waiting time that keeps the last change to a menu item.
- ***** Waiting time (depends on menu item) that reverts to original setting and ignores any change to that menu item.



Main Screen
102°F
READY RANGE * FLTR 1

Waiting Several Seconds in the Main Menu will allow the display to revert to the Main Screen. Most changes are not saved unless Light ☉ is pressed. Refer to Key above.



Fill it up!

Preparation and Filling

Fill the spa to its correct operating level. Be sure to open all valves and jets in the plumbing system before filling to allow as much air as possible to escape from the plumbing and the control system during the filling process.

After turning the power on at the main power panel, the top-side panel display will go through specific sequences. These sequences are normal and display a variety of information regarding the configuration of the hot tub control.

Priming Mode – M019*

This mode will last for 4-5 minutes or you can manually exit the priming mode after the pump(s) have primed.



Regardless of whether the priming mode ends automatically or you manually exit the priming mode, the system will automatically return to normal heating and filtering at the end of the priming mode. During the priming mode, the heater is disabled to allow the priming process to be completed without the possibility of energizing the heater under low-flow or no-flow conditions. Nothing comes on automatically, but the pump(s) can be energized by pushing the “Jet” buttons. If the spa has a Circ Pump, it can be activated by pressing the “Light” button during Priming Mode.

Priming the Pumps

As soon as the above display appears on the panel, push the “Jet” button once to start Pump 1 in low-speed and then again to switch to high-speed. Also, push the Pump 2 or “Aux” button, if you have a 2nd pump, to turn it on. The pumps will now be running in high-speed to facilitate priming. If the pumps have not primed after 2 minutes, and water is not flowing from the jets in the spa, do not allow the pumps to continue to run. Turn off the pumps and repeat the process. Note: Turning the power off and back on again will initiate a new pump priming session. Sometimes momentarily turning the pump off and on will help it to prime. Do not do this more than 5 times. If the pump(s) will not prime, shut off the power to the spa and call for service.

Important: A pump should not be allowed to run without priming for more than 2 minutes. Under NO circumstances should a pump be allowed to run without priming beyond the end of the 4-5 minute priming mode. Doing so may cause damage to the pump and cause the system to energize the heater and go into an overheat condition.

Exiting Priming Mode

You can manually exit Priming Mode by pressing a “Temp” button (Up or Down). Note that if you do not manually exit the priming mode as described above, the priming mode will be automatically terminated after 4-5 minutes. Be sure that the pump(s) have been primed by this time.

Once the system has exited Priming Mode, the top-side panel will momentarily display the set temperature but the display will not show the temperature yet, as shown below. This is because the system requires approximately 1 minute of water



flowing through the heater to determine the water temperature and display it.

Spa Behavior

Pumps

Press the “Jets 1” button once to turn pump 1 on or off, and to shift between low- and high-speeds if equipped. If left running, the pump will turn off after a time-out period. The pump 1 low-speed will time out after 30 minutes. The high-speed will time out after 15 minutes.

On non-circ systems, the low-speed of pump 1 runs when the blower or any other pump is on. If the spa is in Ready Mode (See page 6), Pump 1 low may also activate for at least 1 minute every 30 minutes to detect the spa temperature (polling) and then to heat to the set temperature if needed. When the low-speed turns on automatically, it cannot be deactivated from the panel, however the high speed may be started.

Circulation Pump Modes

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

1. The circ pump operates continuously (24 hours) with the exception of turning off for 30 minutes at a time when the water temperature reaches 3°F (1.5°C) above the set temperature (most likely to happen in very hot climates).
2. The circ pump stays on continuously, regardless of water temperature.
3. A programmable circ pump will come on when the system is checking temperature (polling), during filter cycles, during freeze conditions, or when another pump is on.

The specific Circulation Mode that is used has been determined by the Manufacturer and cannot be changed in the field.

Filtration and Ozone

On non-circ systems, Pump 1 low and the ozone generator will run during filtration. On circ systems, the ozone will run with the circ pump.

The system is factory-programmed with one filter cycle that will run in the evening (assuming the time-of-day is properly set) when energy rates are often lower. The filter time and duration are programmable. (See page 10)

A second filter cycle can be enabled as needed.

At the start of each filter cycle, the blower (if there is one) or Pump 2 (if there is one) will run briefly to purge its plumbing to maintain good water quality.

Freeze Protection

If the temperature sensors within the heater detect a low enough temperature, then the pump(s) and the blower automatically activate to provide freeze protection. The pump(s) and blower will run either continuously or periodically depending on conditions.

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. Auxiliary freeze sensor protection acts similarly except with the temperature thresholds determined by the switch. See your dealer for details.

Clean-up Cycle (optional)

When a pump or blower is turned on by a button press, a clean-up cycle begins 30 minutes after the pump or blower is turned off or times out. The pump and the ozone generator will run for 30 minutes or more, depending on the system. On some systems, you can change this setting. (See the Preferences section on page 12)



Temperature and Temp Range

Adjusting the Set Temperature

When using a panel with Up and Down buttons (Temperature buttons), pressing Up or Down will cause the temperature to flash. Pressing a temperature button again will adjust the set temperature in the direction indicated on the button. When the LCD stops flashing, the spa will heat to the new set temperature when required.

If the panel has a single temperature button, pressing the button will cause the temperature to flash. Pressing the button again will cause the temperature to change in one direction (e.g. UP). After allowing the display to stop flashing, pressing the Temperature Button will cause the temperature to flash and the next press will change the temperature in the opposite direction (e.g. DOWN).

Press-and-Hold

If a Temperature button is pressed and held when the temperature is flashing, the temperature will continue to change until the button is released. If only one temperature button is available and the limit of the Temperature Range is reached when the button is being held, the progression will reverse direction.

Dual Temperature Ranges

This system incorporates two temperature range settings with independent set temperatures. The High Range designated in the display by an “up” arrow, and the Low Range designated in the display by a “down” arrow.

These ranges can be used for various reasons, with a common use being a “ready to use” setting vs. a “vacation” setting. The Ranges are chosen using the menu structure below. Each range maintains its own set temperature as programmed by the user. This way, when a range is chosen, the spa will heat to the set temperature associated with that range.

For example:

High Range might be set between 80°F and 104°F.

Low Range might be set between 50°F and 99°F.

More specific Temp Ranges may be determined by the Manufacturer.

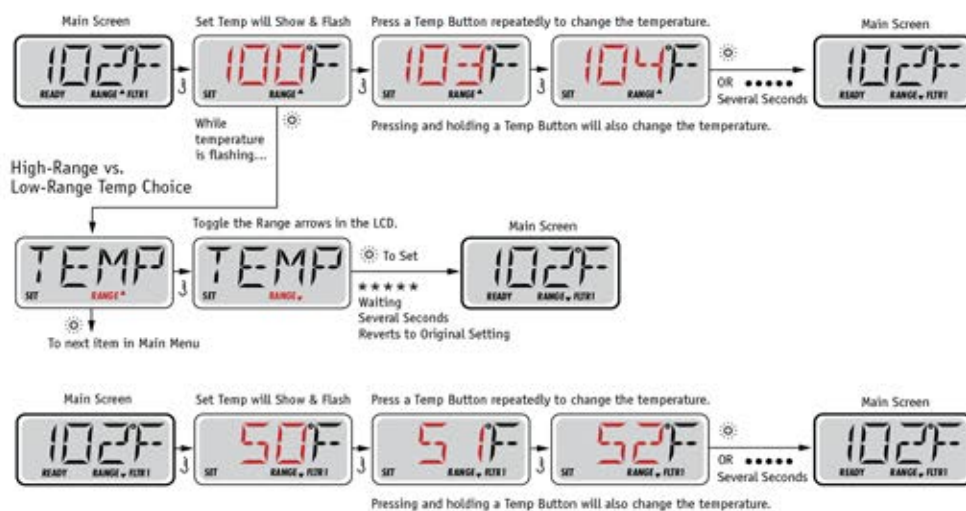
Freeze Protection is active in either range.

See Ready and Rest on Page 6

for additional heating control information.

Key

- Indicates Flashing or Changing Segment
- Indicates Alternating or Progressive Message - every 1/2 second
- ↓ A temperature button, used for “Action”
- ☉ Light or dedicated “Choose” button, depending on control panel configuration
- Waiting time that keeps the last change to a menu item.
- ***** Waiting time (depends on menu item) that reverts to original setting and ignores any change to that menu item.



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Mode – Ready and Rest

In order for the spa to heat, a pump needs to circulate water through the heater. The pump that performs this function is known as the “heater pump.”

The heater pump can be either a 2-Speed Pump 1 or a circulation pump.

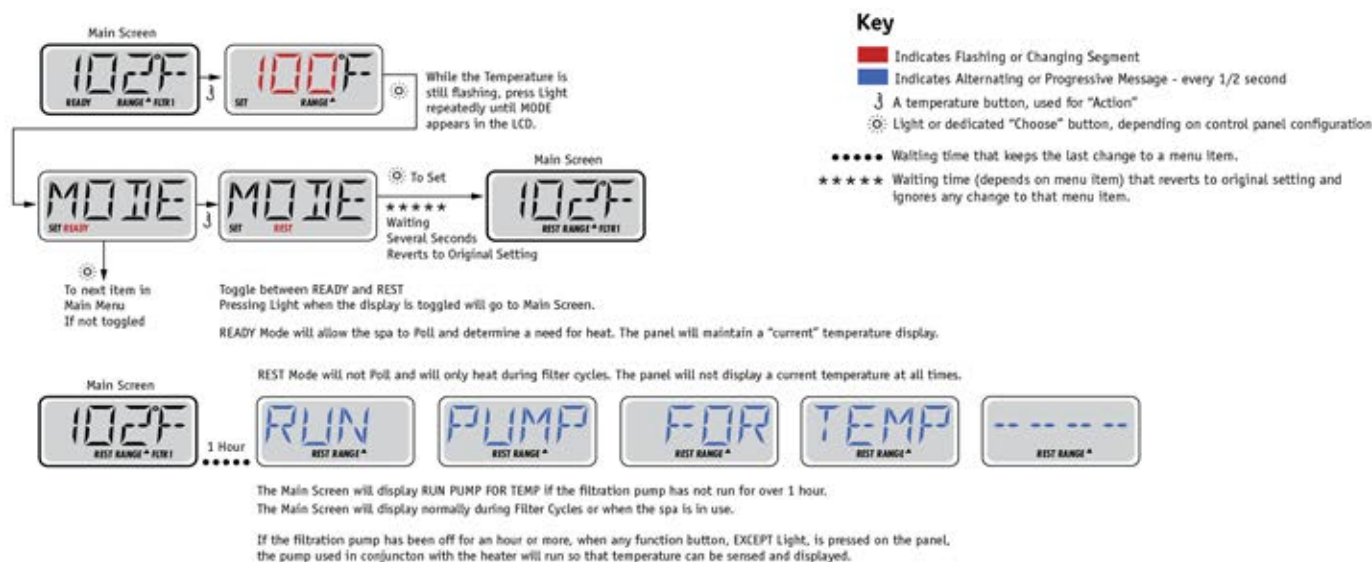
If the heater pump is a 2-Speed Pump 1, READY Mode will circulate water every 1/2 hour, using Pump 1 Low, in order to maintain a constant water temperature, heat as needed, and refresh the temperature display. This is known as “polling.”

REST Mode will only allow heating during programmed filter cycles. Since polling does not occur, the temperature display may not show a current temperature until the heater pump has been running for a minute or two.

Circulation Mode (See Page 4, under Pumps, for other circulation modes)

If the spa is configured for 24HR circulation, the heater pump generally runs continuously. Since the heater pump is always running, the spa will maintain set temperature and heat as needed in Ready Mode, without polling.

In Rest Mode, the spa will only heat to set temperature during programmed filter times, even though the water is being filtered constantly when in Circulation Mode.



Ready-in-Rest Mode

READY/REST appears in the display if the spa is in Rest Mode and Jet 1 is pressed. It is assumed that the spa is being used and will heat to set temperature. While Pump 1 High can be turned on and off, Pump 1 Low will run until set temperature is reached, or 1 hour has passed. After 1 hour, the System will revert to Rest Mode. This mode can also be reset by entering the Mode Menu and changing the Mode.



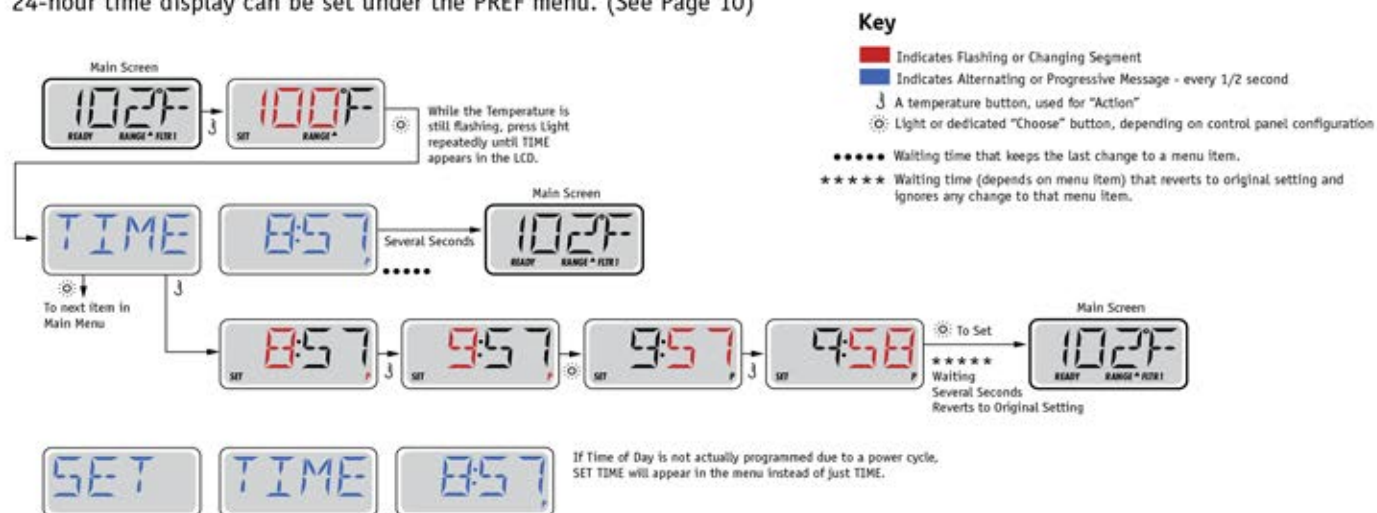
Show and Set Time-of-Day

Be sure to set the Time-of-Day

Setting the time-of-day can be important for determining filtration times and other background features.

When in the TIME menu, SET TIME will flash on the display if no time-of-day is set in the memory.

24-hour time display can be set under the PREF menu. (See Page 10)

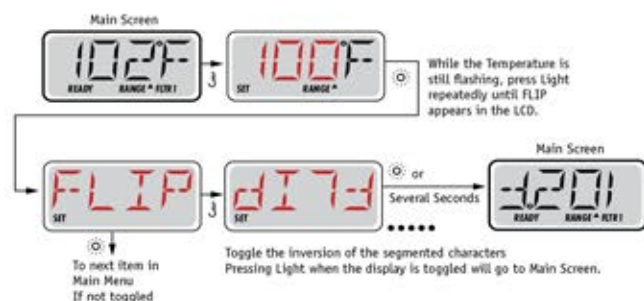


Note:

If power is interrupted to the system, Time-of-Day is not stored. The system will still operate and all other user settings will be stored. If filter cycles are required to run at a particular time of day, resetting the clock will return the filter times to the actual programmed periods.

When the system starts up, it defaults to 12:00 Noon, so another way to get filter times back to normal is to start up the spa at noon on any given day. SET TIME will still flash in the TIME Menu until the time is actually set, but since the spa started at noon, the filter cycles will run as programmed.

Flip (Invert Display)



Note:

Some panels may have a dedicated FLIP button, which allows the user to flip the display with a single button-press.

Restricting Operation

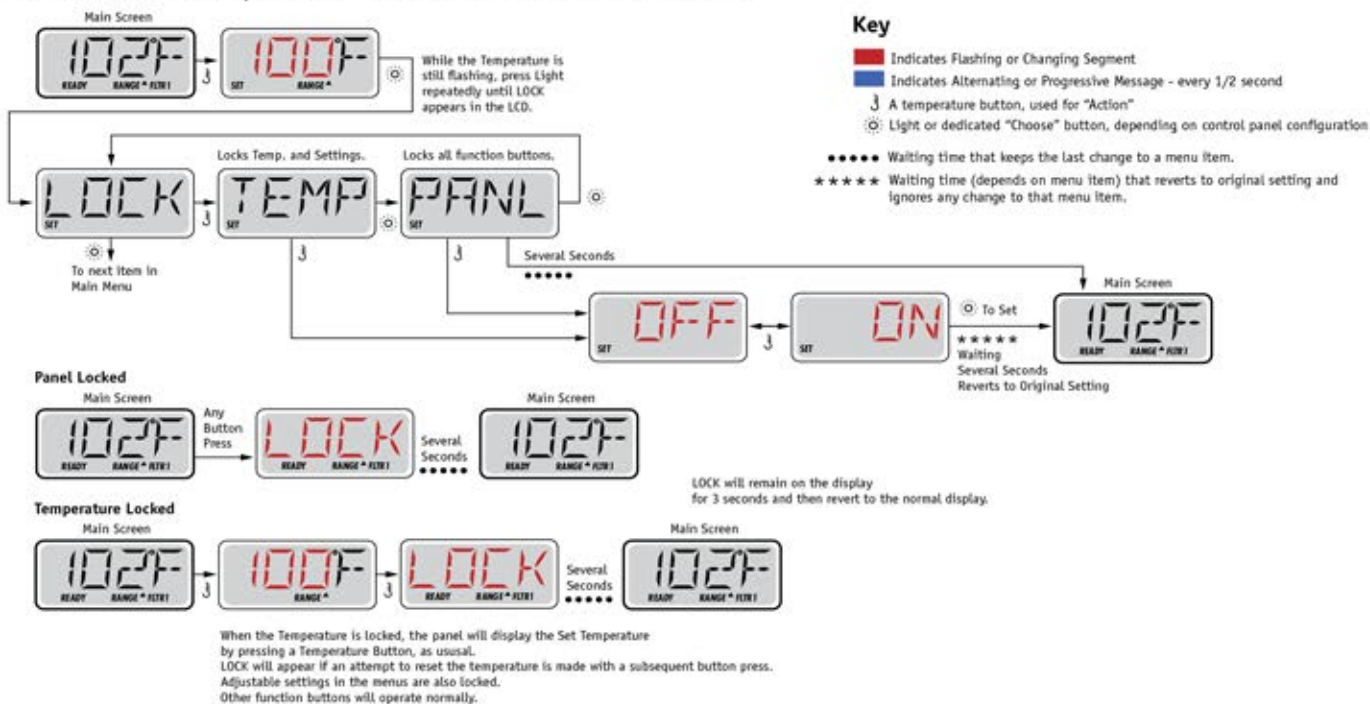
The control can be restricted to prevent unwanted use or temperature adjustments.

Locking the panel prevents the controller from being used, but all automatic functions are still active.

Locking the Temperature allows Jets and other features to be used, but the Set Temperature and other programmed settings cannot be adjusted.

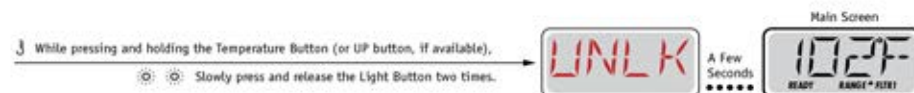
Temperature Lock allows access to a reduced selection of menu items.

These include Set Temperature, FLIP, LOCK, UTIL, INFO and FALT LOG.



Unlocking

This Unlock sequence may be used from any screen that may be displayed on a restricted panel.



NOTE: If the panel has both an UP and a Down button, the ONLY button that will work in the Unlock Sequence is the UP button.

Hold (Standby)

Hold Mode – M037*

Hold Mode is used to disable the pumps during service functions like cleaning or replacing the filter. Hold Mode will last for 1 hour unless the mode is exited manually.

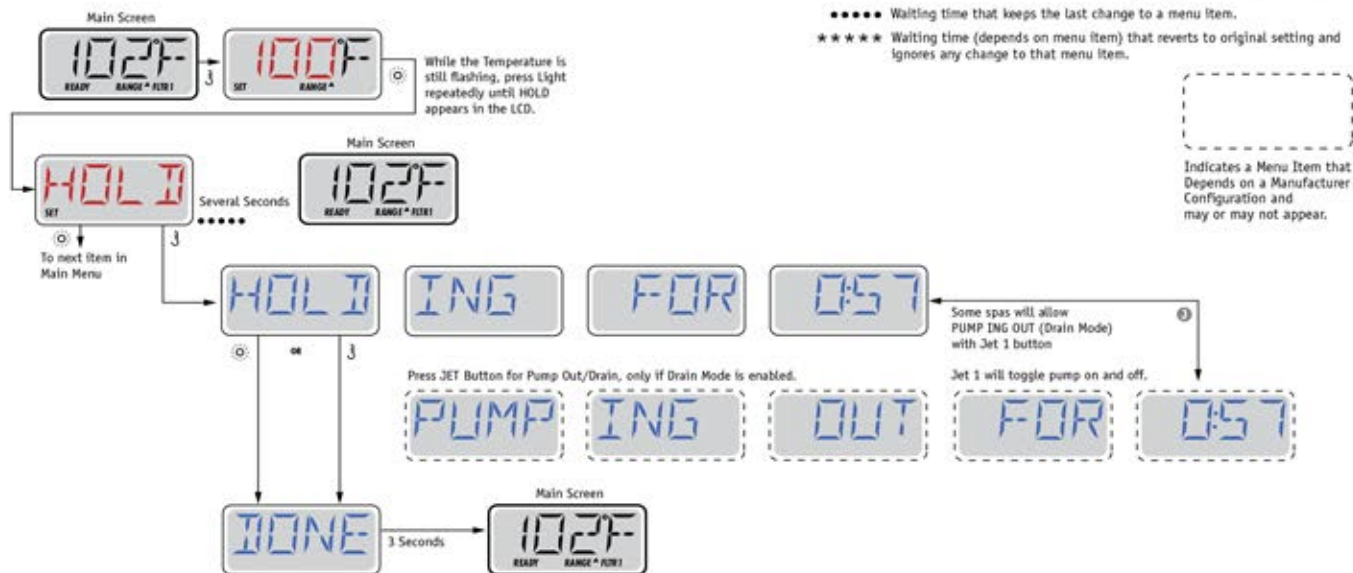
Drain Mode

Some spas have a special feature that allows a pump to be employed when draining the water.

When available, this feature is a component of Hold Mode.

Key

- Indicates Flashing or Changing Segment
- Indicates Alternating or Progressive Message - every 1/2 second
- ⌄ A temperature button, used for "Action"
- ⊙ Light or dedicated "Choose" button, depending on control panel configuration
- Waiting time that keeps the last change to a menu item.
- ★★★★ Waiting time (depends on menu item) that reverts to original setting and ignores any change to that menu item.



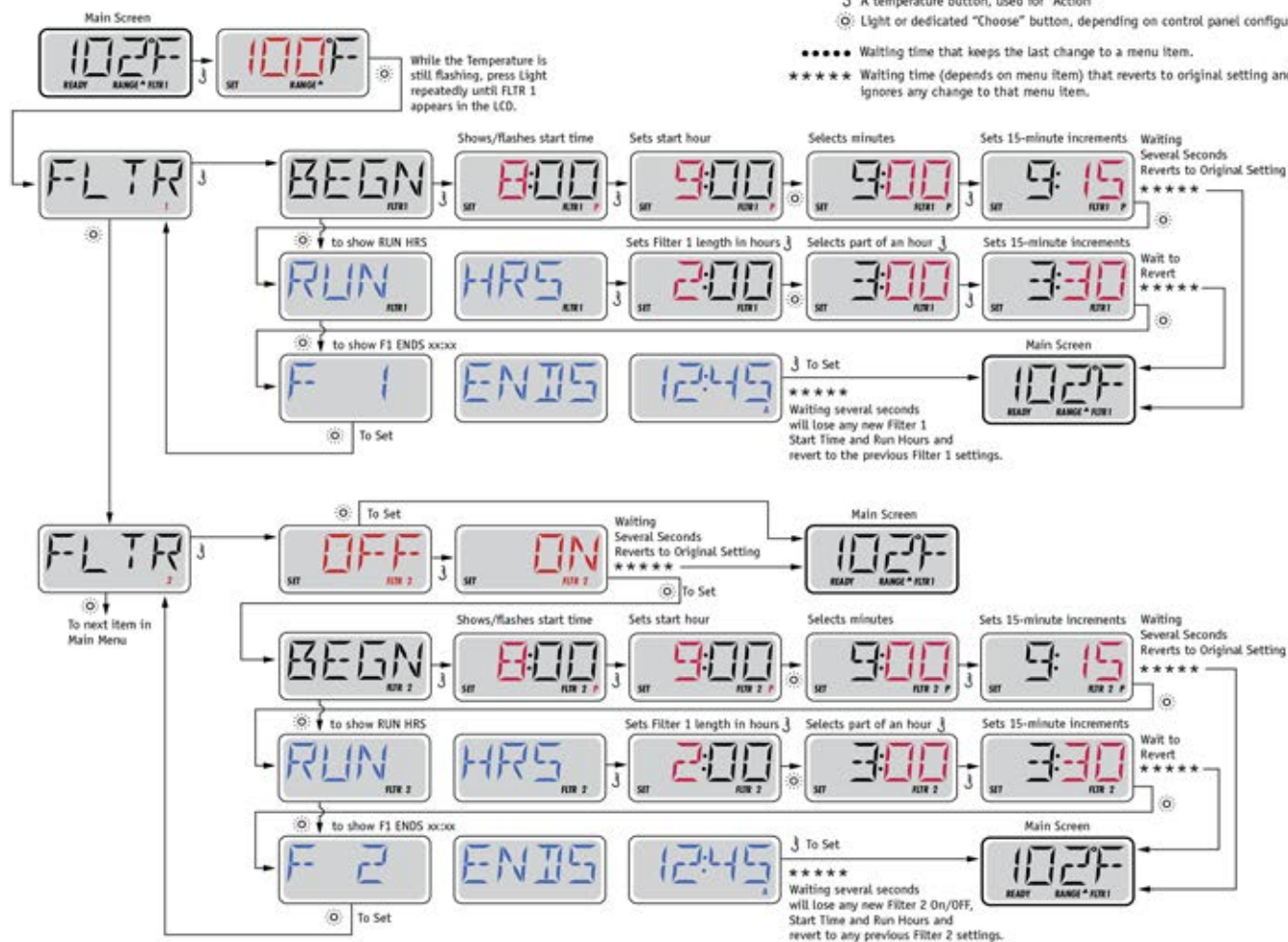
Adjusting Filtration

Main Filtration

Filter cycles are set using a start time and a duration. Start time is indicated by an "A" or "P" in the bottom right corner of the display. Duration has no "A" or "P" indication. Each setting can be adjusted in 15-minute increments. The panel calculates the end time and displays it automatically.

Key

- Indicates Flashing or Changing Segment
- Indicates Alternating or Progressive Message - every 1/2 second
- ↓ A temperature button, used for "Action"
- Light or dedicated "Choose" button, depending on control panel configuration
- Waiting time that keeps the last change to a menu item.
- ***** Waiting time (depends on menu item) that reverts to original setting and ignores any change to that menu item.



Filter Cycle 2 - Optional Filtration

Filter Cycle 2 is OFF by default.

It is possible to overlap Filter Cycle 1 and Filter Cycle 2, which will shorten overall filtration by the overlap amount.

Purge Cycles

In order to maintain sanitary conditions, secondary Pumps and/or a Blower will purge water from their respective plumbing by running briefly at the beginning of each filter cycle.

If Filter Cycle 1 is set for 24 hours, enabling Filter Cycle 2 will initiate a purge when Filter Cycle 2 is programmed to begin.

Light Timer Programming

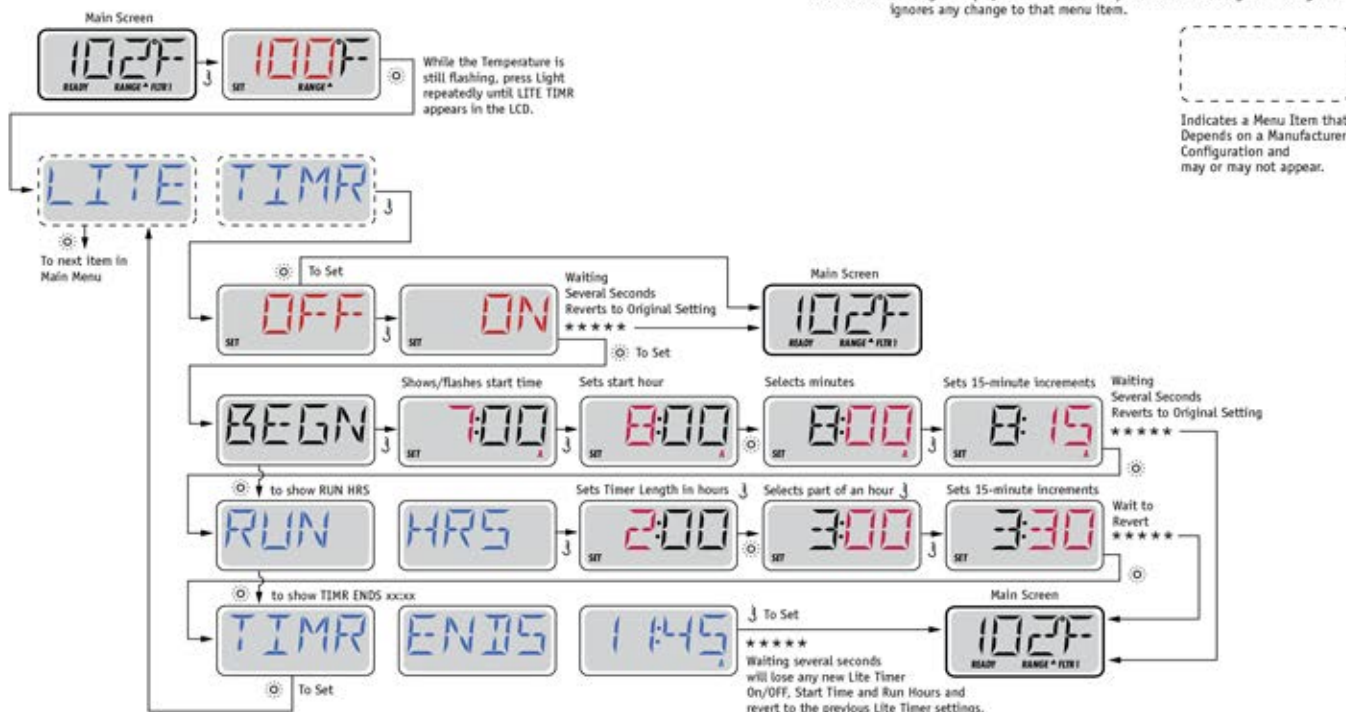
Light Timer Option

If LITE TIMR does not appear in the Main Menu, the Light Timer feature is not enabled by the manufacturer.

When available, the Light Timer is OFF by default.

Key

- Indicates Flashing or Changing Segment
- Indicates Alternating or Progressive Message - every 1/2 second
- ↓ A temperature button, used for "Action"
- ⊙ Light or dedicated "Choose" button, depending on control panel configuration
- Waiting time that keeps the last change to a menu item.
- ***** Waiting time (depends on menu item) that reverts to original setting and ignores any change to that menu item.



Preferences

F / C (Temp Display)

Change the temperature between Fahrenheit and Celsius.

12 / 24 (Time Display)

Change the clock between 12 hr and 24 hr display.

RE-MIN-DERS (Reminders)

Turn the reminder messages (like "Clean Filter") On or Off.

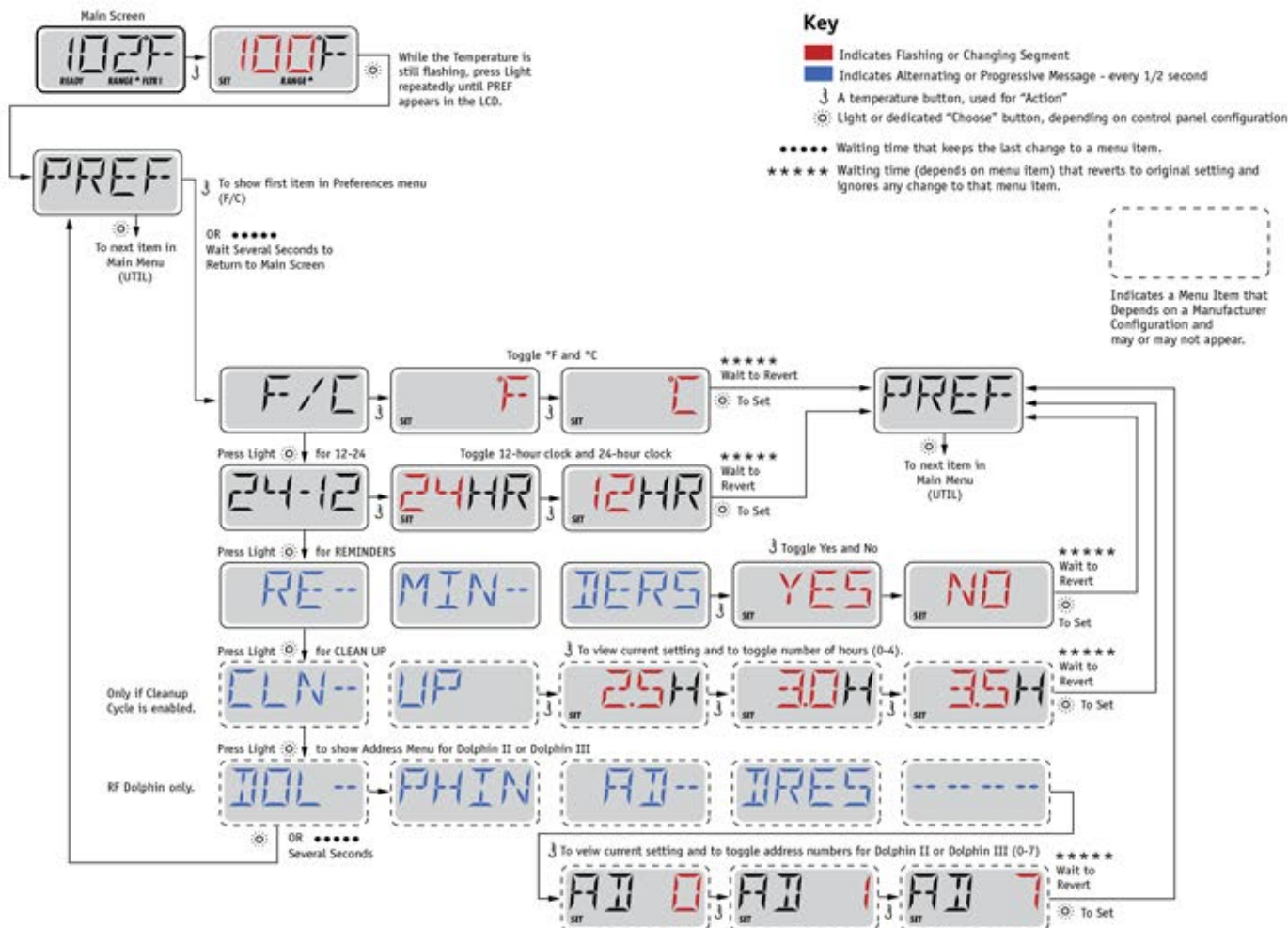
CLN-UP (Cleanup)

Cleanup Cycle Duration is not always enabled, so it may not appear. When it is available, set the length of time Pump 1 will run after each use. 0-4 hours are available.

DOL-PHIN AD-DRES (Dolphin II and Dolphin III) Applies to RF Dolphin only. (This message may not appear depending on the configuration)

When set to 0, no addressing is used. Use this setting for a Dolphin Remote which is factory set for no address by default. When set between 1 and 7, the number is the address. (See the Dolphin manual for details.)

Preferences



Utilities and Information

INFO (System Information sub-menu)

The System Information Menu displays various settings and identification of the particular system. As each item in the menu is highlighted, the detail for that item is displayed at the bottom of the screen.

SSID (Software ID)

Displays the software ID number for the System.

MODL (System Model)

Displays the Model Number of the System.

SETP (Current Setup)

Displays the currently selected Configuration Setup Number.

SIG (Configuration Signature)

Displays the checksum for the system configuration file.

Heater Voltage (Feature not used on CE rated systems.)

Displays the operating voltage configured for the heater.

Heater Wattage as Configured in Software (CE Systems Only.)

Displays a heater kilowatt rating as programmed into the control system software (1-3 or 3-6).

H _ (Heater Type)

Displays a heater type ID number.

SW _ (Dip Switch Settings)

Displays a number that represents the DIP switch positions of S1 on the main circuit board.

PANL (Panel Version)

Displays a number of the software in the topside control panel.

Additional Utilities

Utilities

In addition to INFO, The Utilities Menu contains the following:

GFCI (GFCI Test)

(Feature not available on CE rated systems.)

GFCI Test is not always enabled, so it may not appear. This screen allows the GFCI to be tested manually from the panel and can be used to reset the automatic test feature. If the GFCI Test Feature is reset, the device will trip within 7 days. (See Page 17)

A / B (A/B Sensor Temperatures)

When this is set to On, the temperature display will alternate to display temperature from Sensor A and Sensor B in the heater.

FALT LOG (Fault Log)

The Fault Log is a record of the last 24 faults that can be reviewed by a service tech.

DEMO (Demo Mode)

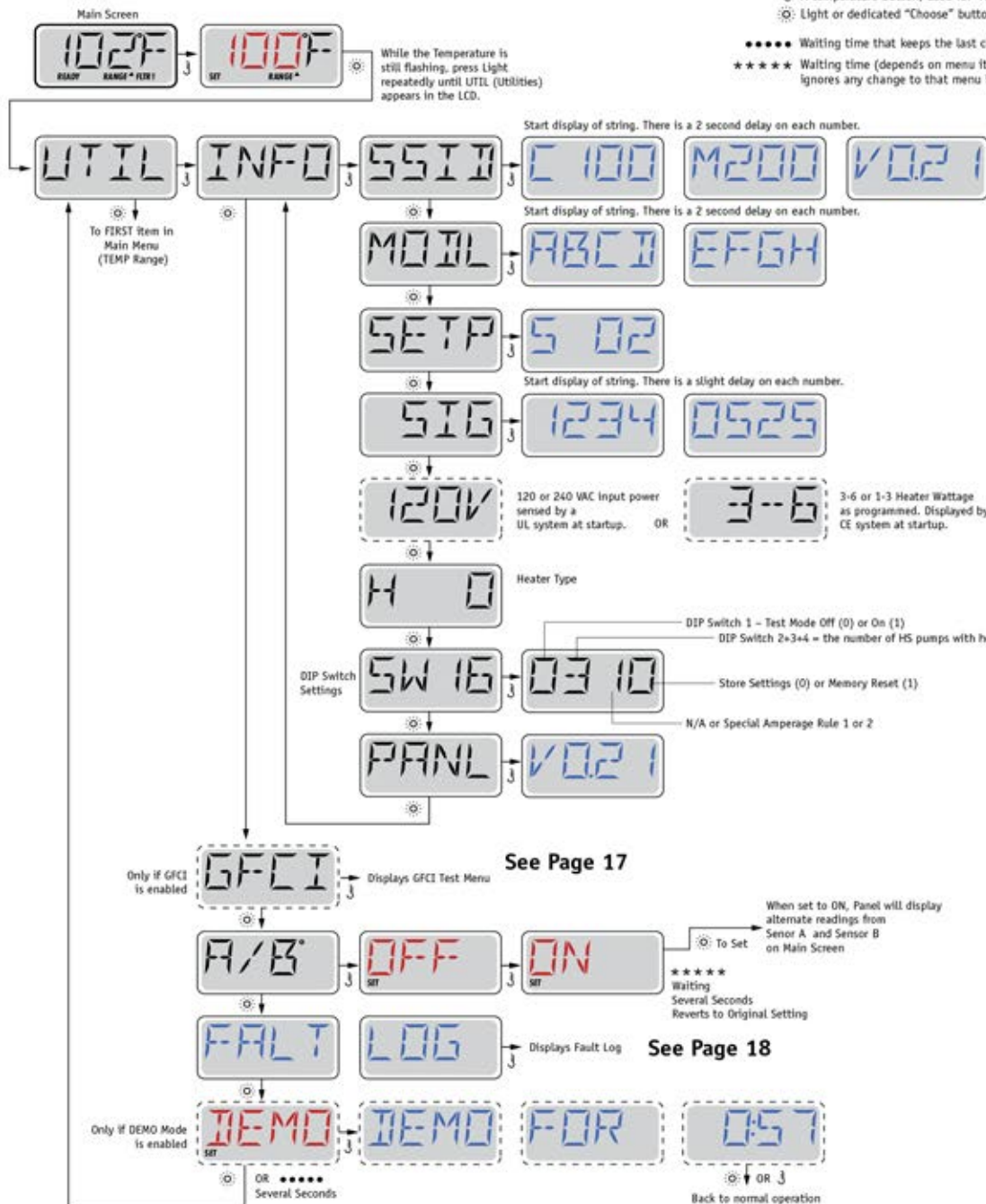
Demo Mode is not always enabled, so it may not appear. This is designed to operate several devices in a sequence in order to demonstrate the various features of a particular hot tub.



Utilities

Key

- Indicates Flashing or Changing Segment
- Indicates Alternating or Progressive Message - every 1/2 second
- ⌋ A temperature button, used for "Action"
- ⊙ Light or dedicated "Choose" button, depending on control panel configuration
- ***** Waiting time that keeps the last change to a menu item.
- ***** Waiting time (depends on menu item) that reverts to original setting and ignores any change to that menu item.



These strings will display once and return to the beginning. Press Temperature again to display the string again.

***** Waiting 10 seconds will allow the screen to return to normal operation.

Indicates a Menu Item that Depends on a Manufacturer Configuration and may or may not appear.

See Page 17

See Page 18

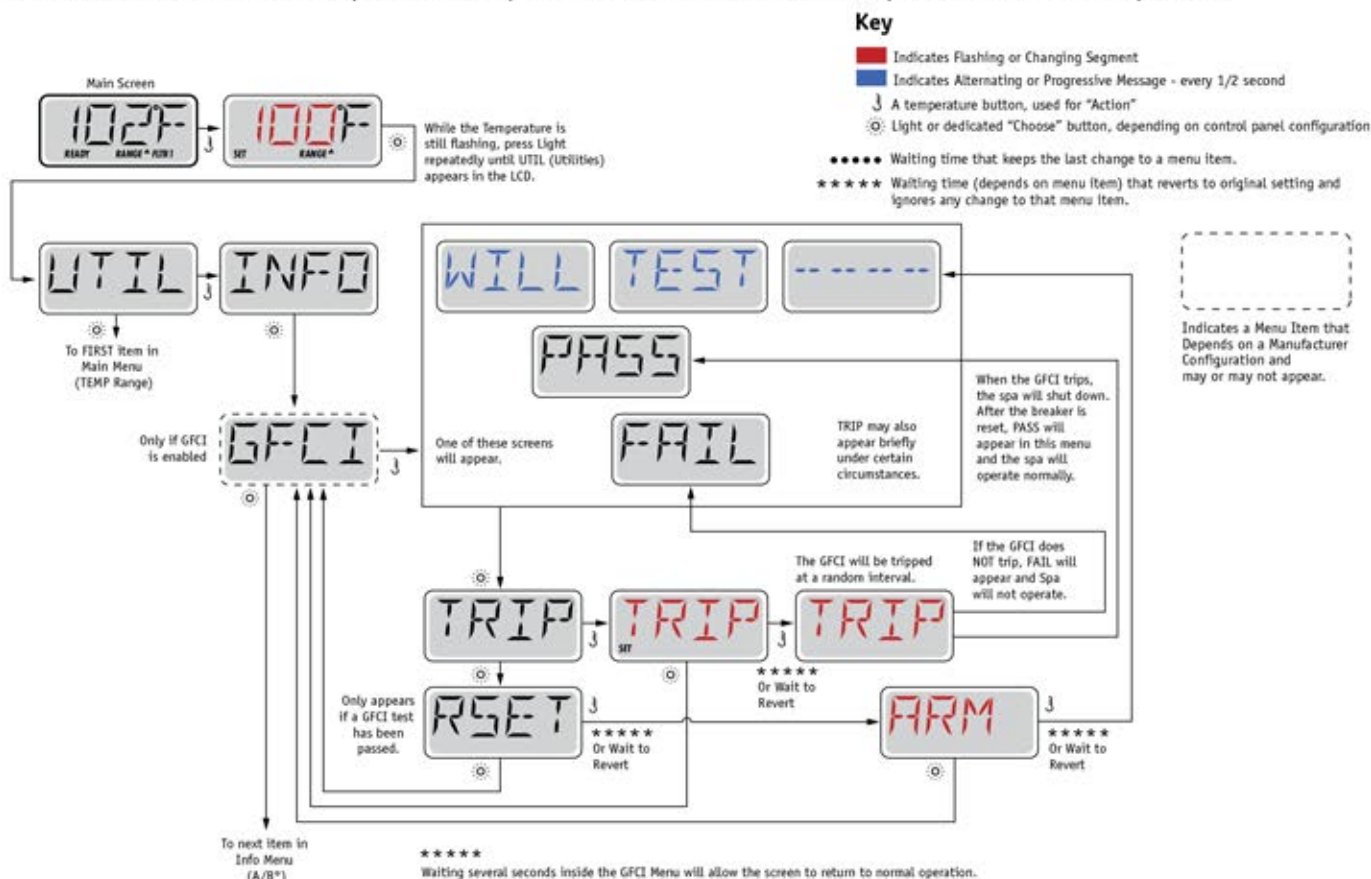
Utilities – GFCI Test Feature

Not Available on CE Rated Systems.

A GFCI is an important safety device and is required equipment on a hot tub installation.

Your spa may be equipped with a GFCI Protection feature. (UL rated systems only.) If your spa has this feature enabled by the manufacturer, the GFCI Trip Test must occur to allow proper spa function.

Within 1 to 7 days after startup, the spa will trip the GFCI to test it. (The number of days is factory programmed.) The GFCI must be reset once it has tripped. After passing the GFCI Trip Test, any subsequent GFCI trips will indicate a ground fault or other unsafe condition and the power to the spa must be shut off until a service person can correct the problem.



Forcing the GFCI Trip Test

The installer can cause the GFCI Trip Test to occur sooner by initiating it using the above menu.

The GFCI should trip within several seconds and the spa should shut down. If it does not, shut down the power and manually verify that a GFCI breaker is installed and that the circuit and spa are wired correctly. Verify the function of the GFCI with its own test button. Restore power to the spa and repeat the GFCI Trip Test.

Once the GFCI is tripped by the test, reset the GFCI and the spa will operate normally from that point. You can verify a successful test by navigating to the above menu. PASS should appear after a temp button is pressed from the GFCI screen.

The end-user must be trained to expect this one-time test to occur and how to properly reset the GFCI.

Warning:

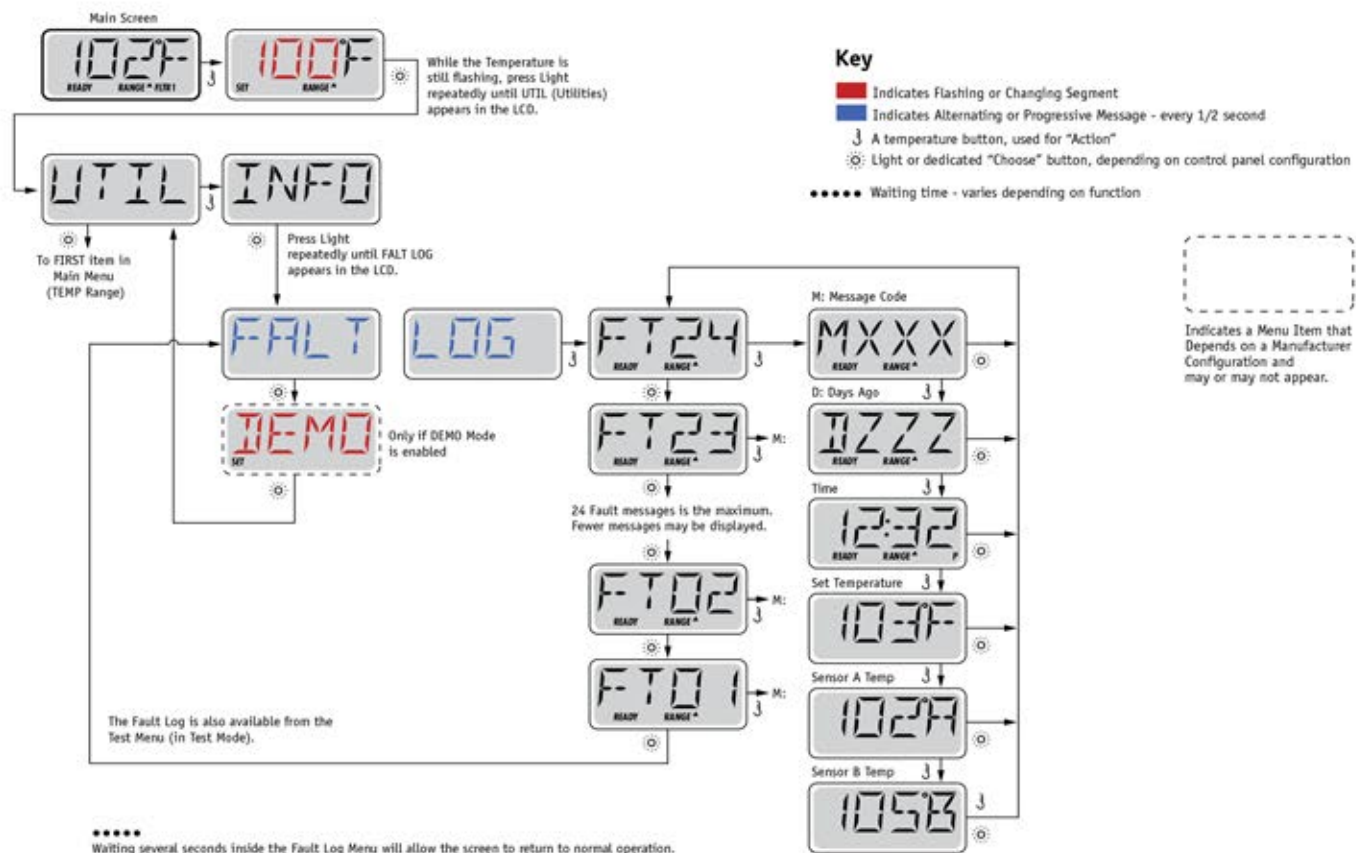
If freezing conditions exist, a GFCI should be reset immediately or spa damage could result. The end user should always be trained to test and reset the GFCI on a regular basis.

Utilities – Fault Log

A Little History can tell a lot

The Fault Log stores up to 24 events in memory and they can be reviewed under the Fault Log Menu.

Each event captures a Fault Message Code, how many days have passed since the fault, Time of the fault, Set Temperature during the fault, and Sensor A and B temperatures during the fault.



See following pages for various Message Codes and definitions.



General Messages



Priming Mode – M019

Each time the spa is powered up, it will enter Priming Mode. The purpose of Priming Mode is to allow the user to run each pump and manually verify that the pumps are primed (air is purged) and water is flowing. This typically requires observing the output of each pump separately, and is generally not possible in normal operation. Priming Mode lasts 4 minutes, but you can exit it earlier by pressing any Temp button. The heater is not allowed to run during Priming Mode.

NOTE: If your spa has a Circ Pump, it will turn on with Jets 1 in Priming Mode. The Circ Pump will run by itself when Priming Mode is exited.



Water Temperature is Unknown

After the pump has been running for 1 minute, the temperature will be displayed.



Too Cold - Freeze Protection

A potential freeze condition has been detected, or the Aux Freeze Switch has closed, and all pumps and blower are activated. All pumps and blower are ON for at least 4 minutes after the potential freeze condition has ended, or when the aux freeze switch opens.

In some cases, pumps may turn on and off and the heater may operate during Freeze Protection.

This is an operational message, not an error indication.



Water is too Hot (OHS) – M029

One of the water temp sensors has detected spa water temp 110°F (43.3°C) and spa functions are disabled. System will auto reset when the spa water temp is below 108°F (42.2°C). Check for extended pump operation or high ambient temp.



Safety Trip - Pump Suction Blockage* – M033

The Safety Trip error message indicates that the vacuum switch has closed. This occurs when there has been a suction problem or a possible entrapment situation avoided. (Note: not all spas have this feature.)

* This message can be reset from the topside panel with any button press.

Heater-Related Messages

HTR FLOW LOSS -----

Heater Flow is Reduced (HFL) – M016

There may not be enough water flow through the heater to carry the heat away from the heating element. Heater start up will begin again after about 1 min. See “Flow Related Checks” below.

HTR FLOW FAIL -----

Heater Flow is Reduced (LF)* – M017

There is not enough water flow through the heater to carry the heat away from the heating element and the heater has been disabled. See “Flow Related Checks” below. After the problem has been resolved, you must press any button to reset and begin heater start up.

HTR MAY BE DRY ----- WAIT -----

Heater may be Dry (dr)* – M028

Possible dry heater, or not enough water in the heater to start it. The spa is shut down for 15 min. Press any button to reset the heater start-up. See “Flow Related Checks” below.

HTR DRY -----

Heater is Dry* – M027

There is not enough water in the heater to start it. The spa is shut down. After the problem has been resolved, you must press any button to reset and restart heater start up. See “Flow Related Checks” below.

HTR TOO HOT -----

Heater is too Hot (OHH)* – M030

One of the water temp sensors has detected 118°F (47.8°C) in the heater and the spa is shut down. You must press any button to reset when water is below 108°F (42.2°C). See “Flow Related Checks” below.

PRES BTTN TO RSET -----

A Reset Message may Appear with other Messages.

Some errors may require power to be removed and restored.

Flow-Related Checks

Check for low water level, suction flow restrictions, closed valves, trapped air, too many closed jets and pump prime.

On some systems even when spa is shut down, some equipment may occasionally turn on to continue monitoring temperature or if freeze protection is needed.

* This message can be reset from the topside panel with any button press.


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Sensor-Related Messages

102F SNSR BAL-- ANCE

Sensor Balance is Poor – M015

The temperature sensors MAY be out of sync by 2°F or 3°F. Call for Service.

SNSR SYNC ----- CALL FOR SRVC -----

Sensor Balance is Poor* – M026

The temperature sensors ARE out of sync. The Sensor Balance is Poor fault has been established for at least 1 hour. Call for Service.

SNSR A ----- CALL FOR SRVC -----
B

Sensor Failure – Sensor A: M031, Sensor B: M032

A temperature sensor or sensor circuit has failed. Call for Service.

Miscellaneous Messages

NO COMM

No Communications

The control panel is not receiving communication from the System. Call for Service.

BETA VER-- SION -----

Pre-Production Software

The Control System is operating with test software. Call for Service.

102T
READY RANGE °F/°C

°F or °C is replaced by °T

The Control System is in Test Mode. Call for Service.

* This message can be reset from the topside panel with any button press.



System-Related Messages

MEM FAIL -----

Memory Failure - Checksum Error* – M022

At Power-Up, the system has failed the Program Checksum Test. This indicates a problem with the firmware (operation program) and requires a service call.

MEM RSET -----

Memory Warning - Persistent Memory Reset* – M021

Appears after any system setup change. Contact your dealer or service organization if this message appears on more than one power-up, or if it appears after the system has been running normally for a period of time.

CLOK FAIL -----

Memory Failure - Clock Error* – M020 - Not Applicable on the BP1500

Contact your dealer or service organization.

CNFG FAIL -----

Configuration Error – Spa will not Start Up

Contact your dealer or service organization.

GFCI FAIL -----

GFCI Failure - System Could Not Test/Trip the GFCI – M036

NORTH AMERICA ONLY. May indicate an unsafe installation. Contact your dealer or service organization.

STUK PUMP -----

A Pump Appears to be Stuck ON – M034

Water may be overheated. POWER DOWN THE SPA. DO NOT ENTER THE WATER. Contact your dealer or service organization.

HOT FAULT ----- CALL FOR SRVC -----

A Pump Appears to have been Stuck ON when spa was last powered – M035

POWER DOWN THE SPA. DO NOT ENTER THE WATER.

Contact your dealer or service organization.

* This message can be reset from the topside panel with any button press.



Reminder Messages

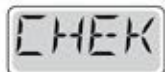
General maintenance helps.

Reminder Messages can be suppressed by using the PREF Menu. See Page 11.

Reminder Messages can be chosen individually by the Manufacturer. They may be disabled entirely, or there may be a limited number of reminders on a specific model.

The frequency of each reminder (i.e. 7 days) can be specified by the Manufacturer.

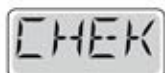
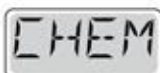
Press a Temperature button to reset a displayed reminder message.




Alternates with temperature or normal display.

Appears on a regular schedule, e.g. every 7 days.

Check pH with a test kit and adjust pH with the appropriate chemicals.

Alternates with temperature or normal display.

Appears on a regular schedule, e.g. every 7 days.

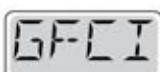
Check sanitizer level and other water chemistry with a test kit and adjust with the appropriate chemicals.




Alternates with temperature or normal display.

Appears on a regular schedule, e.g. every 30 days.

Clean the filter media as instructed by the manufacturer. See HOLD on page 6.

Alternates with temperature or normal display.

Appears on a regular schedule, e.g. every 30 days.

The Ground Fault Circuit Interrupter (GFCI) or Residual Current Device (RCD) is an important safety device and must be tested on a regular basis to verify its reliability.

Every user should be trained to safely test the GFCI or RCD associated with the hot tub installation.

A GFCI or RCD will have a TEST and RESET button on it that allows a user to verify proper function.

Warning:

If freezing conditions exist, a GFCI or RCD should be reset immediately or spa damage could result.

The end user should always trained to test and reset the GFCI or RCD on a regular basis.

Reminder Messages Continued

CHNG WATER

Alternates with temperature or normal display.

Appears on a regular schedule, e.g. every 90 days.

Change the water in the spa on regular basis to maintain proper chemical balance and sanitary conditions.

CLN COVER

Alternates with temperature or normal display.

Appears on a regular schedule, e.g. every 180 days.

Vinyl covers should be cleaned and conditioned for maximum life.

TRT WOOD

Alternates with temperature or normal display.

Appears on a regular schedule, e.g. every 180 days.

Wood skirting and furniture should be cleaned and conditioned per the manufacturers instructions for maximum life.

CHNG FLTR

Alternates with temperature or normal display.

Appears on a regular schedule, e.g. every 365 days.

Filters should be replaced occasionally to maintain proper spa function and sanitary conditions.

CHNG CART

Alternates with temperature or normal display.

As needed.

Install new mineral cartridge

Warning! Qualified Technician Required for Service and Installation

Basic Installation and Configuration Guidelines

Use minimum 6AWG copper conductors only.

Torque field connections between 21 and 23 in lbs.

Readily accessible disconnecting means to be provided at time of installation.

Permanently connected.

Connect only to a circuit protected by a Class A Ground Fault Circuit Interrupter (GFCI) or Residual Current Device (RCD) mounted at least 5' (1.52M) from the inside walls of the spa/hot tub and in line of sight from the equipment compartment.

CSA enclosure: Type 2

Refer to Wiring Diagram inside the cover of the control enclosure.

Refer to Installation and Safety Instructions provided by the spa manufacturer.

Warning: People with infectious diseases should not use a spa or hot tub.

Warning: To avoid injury, exercise care when entering or exiting the spa or hot tub.

Warning: Do not use a spa or hot tub immediately following strenuous exercise

Warning: Prolonged immersion in a spa or hot tub may be injurious to your health

Warning: Maintain water chemistry in accordance with the Manufacturer's instructions.

Warning: The equipment and controls shall be located not less than 1.5 meters horizontally from the spa or hot tub.

Warning! GFCI or RCD Protection.

The Owner should test and reset the GFCI or RCD on a regular basis to verify its function.

Warning! Shock Hazard! No User Serviceable Parts.

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

CSA Compliance/Conformité

Caution:

- Test the ground fault circuit interrupter or residual current device before each use of the spa.
- Read the instruction manual.
- Adequate drainage must be provided if the equipment is to be installed in a pit.
- For use only within an enclosure rated CSA Enclosure 3.
- Connect only to a circuit protected by a Class A ground fault circuit interrupter or residual current device.
- To ensure continued protection against shock hazard, use only identical replacement parts when servicing.
- Install a suitably rated suction guard to match the maximum flow rate marked.

Warning:

- Water temperature in excess of 38°C may be injurious to your health.
- Disconnect the electrical power before servicing.

Attention:

- Toujours vérifier l'efficacité du disjoncteur différentiel avant d'utiliser différentiel avant d'utiliser le bain.
- Lire la notice technique.
- Lorsque l'appareillage est installé dans une fosse, on doit assurer un drainage adéquat.
- Employer uniquement à l'intérieur d'une clôture CSA Enclosure 3.
- Connecter uniquement à un circuit protégé par un disjoncteur différentiel de Class A.
- Afin d'assurer une protection permanente contre le danger de choc électrique, lors de l'entretien employer seulement des pièces de rechange identiques.
- Les prises d'aspiration doivent être équipées de grilles convenant au débit maximal indiqué.

Avertissement:

- Des températures de l'eau supérieures à 38°C peuvent présenter un danger pour la santé.
- Déconnecter du circuit d'alimentation électrique avant l'entretien.

Warning/Advertissement:

- Disconnect the electric power before servicing. Keep access door closed.
- Déconnecter du circuit d'alimentation électrique avant l'entretien. Garder la porte fermée.


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WARNING! A QUALIFIED TECHNICIAN IS REQUIRED FOR ANY SERVICE AND INSTALLATION

installation and configuration guide

- Use only 6AWG copper wires..
- Screw the wire connectors between 10 and 11 kg
- A power switch must be accessible near the spa.
- The power supply must be permanent.
- Connect only to a circuit protected by a GFCI Class A installed at least 5 feet (1.52 m) from the inside panel of the spa, within range of the equipment compartment.
- Box CSA Type 2
- Refer to the wiring diagram inside the cover of the controller box.
- Refer to the installation and safety instructions supplied by the manufacturer

Warning: People with infectious diseases should not use the spa.

Warning: Be careful when getting in and out of the spa to avoid injury.

Warning: Do not use the spa immediately after practicing an intense exercise.

Warning: A prolonged Immersion in a spa can be a risk to your health

Warning: Maintain the water according to the manufacturer's standards.

Warning: Equipment and controls should be located at least 1.5 meters (4.9 feet) from the spa, horizontally.

Caution! GFCI or RCD protection.

The user must check the correct operation of the GFCI or RCD on a regular basis.

Compliance with CSA standards

Warning: Danger of electric shock! No internal parts can be exchanged by the user.

Do not attempt to repair this controller. Contact your dealer or technician for assistance. Follow all installation instructions in the user's manual. Electrical installation should be performed by a certified electrician and all grounding connections should be properly installed.

- Check the GDCI before each use;
- Read the installation manual;

- When the equipment is installed in a pit, ensure adequate drainage;
- Use only in a CSA class 3 chassis cabinet;
- Connect the circuit to a circuit protected by an approved GFCI circuit breaker;
- Use only genuine parts to repair equipment to ensure maximum safety;
- Install a suction nozzle corresponding to the flow of the pumps;

Warning:

- Water above 38 ° C/100°F may be hazardous to health;
- Disconnect the power supply before repairing anything.

Notes

Energy saving tips

1. Air and water control valves on top of the spa

Mild to cold climate

When not in the spa, make sure the valves are closed. All these valves will inject a certain amount of air into the water which causes a cooling effect. Thus, your spa will heat more often and use more energy.

Warm climate

Spas are only designed to heat and maintain the temperature, so a warm climate can result in an overheated spa. In these areas, the control valves can be left open at all time to help cool the spa.

2. Filtration settings – Time and duration

Filtration settings

Please check owner's manual for further information.

Filtration hours – Savings

If your electric provider offers different rates per KWH (peak/off peak), you can save if you set your filtering time out of peak hours.

Cooling a spa

In case of overheating problems with your spa, adjust the filtration of your spa during the cooler periods of the day and leave the control valves open as mentioned before.

We advise you 1 hour of filtering every 12 hours - 2 hours a day in total. Since we use a large primary pump for filtration, which moves a lot of water quickly, increasing filtration times will only consume electricity and in warm climates, can cause your spa to overheat.

3. Heating modes - (Balboa Systems) Standard, Economy and Sleep

Standard is the default setting, and you are in standard mode if none of the other adjustment codes are present.

- The water temperature will always be at or near the desired temperature.
- To be used at spa start-up, it will heat up until the desired temperature is reached.
- Recommended mode in cold climates.

Economy

The economical alternative for regular power heating, you will know that you are in economy mode by the displayed code.

- The spa only heats during the filtration period
- Temperature will remain close to the desired value, but it will fall between filtration periods
- Recommended mode in mild to warm climates
- The tests show a 20% decrease in energy consumption compared to the standard mode

Sleep - SI, SLP (veille)

This mode is considered a holiday heating parameter, and will keep the water of your spa at the most affordable price.

- The spa only heats during the filtration period
- The water temperature can drop down to 20 degrees below the desired temperature
- Suitable for all climates - will not allow the spa to freeze
- The tests show a 50% decrease in energy consumption compared to the standard mode.

4. Steam loss/drip around the isothermal cover

It is normal to occasionally see water steam through the cover tarpaulin due to the pressure release. If the folding seam passes over the control area, more steam will be able to escape. Try to place the cover tarpaulin so that the folding seam passes over the wider top surface of the areas on the adjacent sides.

However, the heat level can be greatly affected using the spa - which is why we strongly recommend the systematical use of the isothermal cover tarpaulin when the spa is not in use. This will avoid possible other material damage caused by excessive exposure to the elements (sun, storms, etc.), often not covered by the warranty.

The steam will lower the water level. *We advise you to regularly check the water level.*

Knowing your Spa

JETS

Hydrojets are more than just a feature, they have a direct impact on the quality of the relaxation and massages that you will get every day. Most jets in your spa are adjustable. Turning a jet adjustable to the left (counterclockwise) will increase the water flow through the jet, while turning it to the right will decrease flow.

Rotating hydro jets XL (LED backlit)

The current of this rotating jet expands and contracts the water flow. These jets oscillate the water in a whirlwind mode, providing a rotating action and providing a deep massage of the entire back area.

These jets can be adjusted by turning the nozzle clockwise for a stronger flow and in reverse for a weaker flow, and eventually completely closed.



Directional hydro jets XL (LED backlit)

These large hydro-massage jets maximize the massage action on a specific area of the body. This jet provides a deep massage to relieve muscle tension and pain.

The nozzle can be adjusted manually to position the water jet in the chosen direction. These jets are in the lower part of the seats, to easily massage the hips and lower back.



Directional hydro jets L (LED backlit)

Focus on pressure points in the shoulders, neck, back, calves and feet. The nozzle can be manually adjusted to provide a direct and strong massage.



Turbo Jet

This large round jet offers a huge amount of pressure in a concentrated area. The Turbo jet is designed to create a significant effect of water precipitation around the spa perimeter. It is located at the bottom of the spa so you can move your body and massage a specific area. This hydrotherapeutic form of action offers the same type of results that can be found in a therapist's practice.



Air jets therapy

When the Therapy air system is turned on, the gentle air bubbles around you provide an invigorating massage and a sensation of lightness.

Venturi air injection system

Each air control valve will allow you to add a mixture of air with the pressure of the jet. This is accomplished by turning the air control valve to the left (counterclockwise) to increase the amount of air introduced by the jets, or to the right (clockwise) to decrease it.



Bypass valves

These valves are located around the upper part of your spa. They allow you to divert the water from the jets from one side of the spa to the other. This is accomplished by turning the bypass valve to the left (counterclockwise), decreasing the amount of water flow through a section of jets. To increase the amount of water flow in the other jet section, turn the valve clockwise (clockwise)..

FOUNTAINS AND WATERFALLS

These options have a similar control to the air control valves, which allow you to turn them on or off and control the intensity. Both can explode to the middle of your spa or gently flow from their source, in tranquility mode or with the jets of your spa activated. The color can be customized through the Led lighting system.

IMPORTANT:

When the spa session is over and before the tarpaulin cover is closed, the fountains and waterfalls must be switched off. Push them down manually as the weight of the tarpaulin will not stop them and the water will continue to flow, potentially causing your spa to drain, for the time they remain switched on.

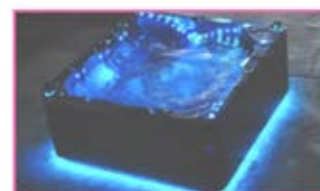


LED LIGHTS

The LED lights all work together in two modes.

Color Declination: The first time you press the light button, all colors will scroll.

One color: This cycle offers a change of color at the same time without declination between colors



Chromotherapy

It has long been known that color plays a major role in the establishment of a particular mood or state of mind. Colored light has an impact on feelings, moods, emotions and our sense of well-being.

AROMATHERAPY

Aromatherapy uses the evaporation of essential oils (extracts concentrated from roots, leaves, seeds or plant flowers) to promote healing and well-being.

The oils used in your aromatherapy system travel through the air bubbles of your spa, to be inhaled upon being released into the air.

Some oils are used to treat inflammation or infections; Others are used to promote relaxation. Studies claim that aromatherapy can reduce pain, depression and anxiety.



Troubleshooting

Symptoms	Potential causes	Potential solutions
<i>System issues / energy</i>		
<i>The system does not work</i>	Power is switched off	Reset the spa
<i>The control unit and spa equipment do not work</i>	The spa is not powered	Switch on or reset the ground fault protection. If this does not resolve the problem, have the service checked
	According to the system, the 20 or 30 ampere fuse is blown	Contact your dealer
<i>The spa does not stop</i>	The spa is trying to heat	Make sure that the temperature setting is in standard mode
	The spa is in a filtering cycle	Normal. No settings needed
	The spa is in standard mode	Check the settings
<i>The control panel displays a message</i>	An error might have occurred. Filter problem	Check the meaning of the diagnostic messages codes
<i>The ground fault protection keeps going off</i>	Incorrect wiring to the spa or flawed ground fault protection	Check with a qualified technician
	A spa component is flawed	Contact your dealer
<i>Heating issues</i>		
<i>The spa does not heat</i>	Heating mode not selected	Check the control panel instructions
	Water level is too low	Add water to rectify the level
	Spa is not powered	Turn on or reset the ground fault protection. If it does not solve the issue, refer to a qualified technician to check the electrical service
<i>The spa heats but does not heat up</i>	Thermostat has been turned down	Set the control panel to a higher temperature
	Insufficient filtering duration	Increase the filtering duration
	Water level is too low	Add water to rectify the level
	Spa is not powered	Turn on or reset the ground fault protection. If it does not solve the issue, refer to a qualified technician to check the electrical service

Symptoms	Potential causes	Potential solutions
	Dirty filter cartridge	Clean filter
	Closed valves	Open valves
	Incorrectly positioned spa cover	Adjust the spa cover
The spa overheats	The filtering duration is too long Temperature sensor	Reduce filtering cycles, especially during the summer months

Water issues

Water is not clean	For all water clarity related issues, see page 42	
High water consumption	Very strong evaporation or strong projections	Use the cover and fill in if needed
Low jet water flow	Working in FILTER mode – low speed	Use high-speed jets
	Blocked wall suction or skimmer	Clean the wall suction/skimmer. Remove clogging
	Dirty filter	Clean and replace filter
	Closed jets	Open jets
	Closed valves	Open valves
No jet water flow	The pump has an air plug	Clear the air plug by starting the spa (page 13-15)
	Jets are closed	Open jets
	Power cut, system switched off	Switch on power
	Faulty pump	Contact your dealer
	Pump fluctuations	Lower water. Check level on the skimmer section
Water leak on top of the spa	Check connections and purge pipes	Close or stop the empty cycle if needed

Water pressure issues

Jet pressure increases and stops	Water level is too low	Water level is too low Add water up to the normal level
Jets are weaker than usual or do not work at all	Jets valves are partially or completely closed	Open valves
	Filter is dirty	See filter cleaning (page 39)

Symptoms	Potential causes	Potential solutions
	Air is trapped in the pump	Open the air vent valve on each pump housing and allow air to drain from the system. Be sure to tighten each air vent valve as soon as water begins to flow
	Suction fittings are blocked	Remove all debris that could clog the suction fittings
	The valve taps are closed	Open the valve tap. <i>Note:</i> Do not operate your spa with the valve taps open!

Air and jets issues

No jets airflow	Air control not open	Open the air control
	Opening of the jet nozzles not fixed properly	Check the jet nozzles opening
	Missing jet nozzles opening	Check jets and replace if necessary

Lightening issues

The standard lightening of the spa does not work	Bulb has burnt out	Replace bulb
	Lightening system is faulty	Contact your dealer

Pump issues

Pump works continuously - cannot stop	Issues with the printed circuit	Contact your dealer
Noisy pump	Water level is too low	Add water up to normal level
	Blocked skimmer	Clean skimmer
	Engine block damaged or used	Contact your dealer
	Aspiration on the floor or blocked skimmer	Clean the aspiration on the floor or the skimmer
	Air leak in the suction line	Contact your dealer
	Debris in the pump	Contact your dealer
	Valve taps are closed	Open the valve taps. <i>Note:</i> Do NOT operate your spa with the valve taps open!

Symptoms	Potential causes	Potential solutions
	Damaged or worn-out motor bearings	Contact your dealer
	Incorrect or faulty wiring	Contact your dealer
<i>The pump stops while working</i>	The automatic timer has completed its cycle	Restart cycle
	The pump has overheated due to a blockage of the vents on the equipment door	Remove objects from the vents
	The pump engine is faulty	Contact your dealer
<i>The pump emits a burning smell when working</i>	Damaged or worn-out motor bearings	Contact your dealer
<i>The pump does not work</i>	Power may be cut	Reset power
	The pump has overheated	Let it cool down during an hour
	Incorrect or faulty wiring of power supply	Contact your dealer
	Switch is off	Automatic restart after engine has cooled down
	House's general circuit breaker set off or in OFF position	Reset circuit breaker
	Engine in overload condition	Contact your dealer
	Damaged electrical cable	Contact your dealer
	The pump cable is not connected	Connect the pump cable to the red plug
	Circuit breaker set off or OFF	Reset circuit breaker

Testing and adjusting water

It is important that you keep your water and equipment in perfect condition.

To do this, you must first balance the water in your spa. If your spa is equipped with an ozone generator, it will automatically produce ozone but it cannot be used as the sole means of maintaining a safe water.

You must choose and use a chemical system in addition to our ozone generator and filtering system.

Water maintenance

A clean spa water requires regular maintenance. Establish a regular schedule for maintaining the water in your spa.

Maintaining water quality helps your spa run smoothly and prolongs its life.

Sanitation

You will need a disinfectant chemical that destroys bacteria, viruses and keeps the water clean - to use regardless of the presence of an ozone generator.

A low level of disinfectant will allow microbes to develop quickly in the spa water.

All disinfectants work well when they are maintained regularly. Consult your spa dealer to find out the right decision according to your lifestyle and use of the spa.

Ozone

Ozone is a natural purifier. Chemically known as O₃, it is made from simple molecules of oxygen in the atmosphere. Ozone is naturally produced by lightning during electrical storms and ultraviolet sun rays. It forms our protective ozone layer.

Your ozone generator is designed to reproduce this natural disinfectant. Ozone breaks and oxidizes the molecules of oils, sunscreen lotions, sweat, urea, etc.

Ozone works with the chlorine or bromine systems in your spa to destroy bacteria and viruses and do it more efficiently. Ozone only leaves oxygen in the water as a by-product.

Filtering

Regular cleaning of your filter will always keep your water clear.

A dirty or clogged filter overheats the pump as it is forced to work harder than necessary and will also cause your spa's heating system to malfunction, which can cause them to fail and void your warranty on those components.

The heating system only operates properly if the right amount of water flows through the system.

The filtration cycle of your spa should be used at least two hours per day or (whether the heater is on or not) to remove impurities and prevent the deposition of contaminants in your spa. The filtering system works automatically. Leave the spa covered when not in use to reduce heat loss and prevent debris from being deposited in the water.

Chemical balance

You will need to test and adjust the chemical balance of your spa water. Although this is not difficult, it needs to be done regularly. Depending on your choice of disinfectant, you need to test the level of calcium hardness, total alkalinity and pH.

Testing methods

There are 2 types of testing methods: The *reagent test kit* is a method that provides a high level of accuracy. It is available in liquid or tablet form. And *test strips* are another convenient testing method commonly used by spa owners.

Notes

Start-up procedure

Filling the spa

Before filling a spa for the first time, or after draining, follow this start-up procedure.

Adjust the chemical dosing, taking into account the capacity of your spa and the recommendations on the label.

1. Clean the surface of the spa with a non-abrasive product
2. Fill the spa to the appropriate water level with regular tap water. (Do not use fresh water.)
3. Heat your spa
4. Use the test strip to balance the spa water
5. Add preventive product to prevent scale
6. Add the disinfectant of your choice (chlorine, bromine)
7. Activate the jets for 15 minutes. Let the spa uncovered during this time.
8. Place the tarpaulin cover over the spa and allow it to warm to the desired temperature.

The water level is very important.

If the water level is too low or too high, your spa will not operate properly. The water level should be about two inches above the highest jet when the spa is not in use.

When you fill the spa for the first time, you will need to operate it during at least 72 hours before draining it. This step will allow you to clean the complete system of installation and bonding residues.

Notes

Cleaning and maintaining SPA

Each time you empty your spa, before filling it, you must clean the shell with a mild, non-abrasive detergent specially formulated to clean the spa without damaging its acrylic finish.

1. Spray the cleaner directly onto the spa's acrylic finish
2. Wipe with a soft cloth
3. Repeat the operation on heavily calcified areas
4. Wipe the spa completely with a damp sponge, rinsing frequently in a bucket of clean water
5. Allow the spa to dry completely

Important:

Do not use these products on the spa filled with water. Apply only to clean dry surfaces. Incorrect use of the product can cause water problems. Never use abrasive cleaners.

Do not allow the surface of your spa to come into contact with nail polish, acetone, wintergreen oil (methyl salicylate), dry cleaning solution, lacquer thinners, gasoline, pine oil, etc.

Avoid placing razor blades or other sharp instruments on this surface as they may scratch it.

ISOTHERMAL COVER AND CUSHIONS

Protect the spa cover and cushions by applying a vinyl spa cleaner as part of your monthly maintenance plan. This product is specially designed to protect spa and cushions from chemical damage or caused by ultraviolet light without leaving any oily residue.

Important:

Do not use automotive vinyl protector on the spa cover or cushions. These products are generally oil-based and will cause severe water clarity problems that are difficult to fix.

Leave the spa covered when not in use!

- Covered spas consume less electricity to maintain the set temperature.
- Covering your spa will protect your spa's finish from the sun's ultraviolet rays.
- Covering your spa helps prevent children from drowning.
- A flexible spa cover is rigid, but it has not been designed to withstand any weight. Therefore, for safety and to preserve the life of your tarpaulin cover, you should not sit, stand or lie on it and you should not place any object on top of it.

You must keep the spa covered to maintain warranty coverage.

FILTER CLEANING

The filter is the part of your spa that eliminates debris from the water, and it should be cleaned regularly to improve the filtering performance and heating efficiency of your spa.

In addition to weekly filter rinsing to remove surface debris, your filter must be thoroughly cleaned periodically to dissolve scale and particles that get deeply in the filter fibers and impede the filtration process.

Even if the filter seems clean, scale and particles can clog the fibers and prevent water from flowing through the filter, resulting in the most common problem: no heat (heater) caused by a dirty filter.

We recommend cleaning your filter every week and replacing it once every 3 months

1. Remove the filter by turning it counterclockwise, unscrewing the base wires and pulling it upwards.
2. Place the clogged filter in a bucket of water deep enough to cover it, adding liquid filter cleaner to the bucket.
3. Soak the filter for a minimum of 24 hours..
4. Spray the filter pleats with a water jet
5. Reinstall the filter



Tip:

Keep a spare filter to use in the spa while the dirty filter is thoroughly cleaned.

DRAINING YOUR SPA

Your spa should be drained every four to six months, and filled with fresh tap water. The following is the recommended method by Tropic Spa for draining your spa.

1. Shut off power at the circuit breaker
2. Remove all filter
3. Your drain valve is located under the spa cabinet.
4. Locate the hose tip with the 3/4-inch stop valve
5. Connect the female end of a garden hose to the drainage device
6. Place the other end of the garden hose where you wish to drain the water



- 7. Turn the stop valve on the hose clockwise to open the drain
- 8. Allow the spa to drain completely, then remove the garden hose
- 9. Turn the stop valve of the hose clockwise to close it and replace the cap
- 10. The evacuated water from your spa can be used in your garden, yard, septic system or in a drain. Follow all local/city codes and regulations for disposal.



PREPARING FOR HOLIDAYS

You can leave your spa unattended for up to two weeks if you follow these instructions. ALWAYS lock the cover using the cover locks if you are planning to be away from home and leave the spa filled with water.

- 1. Set the spa in sleep mode
- 2. By following the water quality instructions, adjust the pH
- 3. Add chlorine or bromine disinfectant
- 4. Upon your return, check and adjust the pH and disinfectant

If you do not intend to use your spa for more than 14 days and spa maintenance service is not available, we strongly recommend that you drain or winterize your spa

Notes

Wintering procedure

Important: Damage caused by inadequate wintering is not covered by the manufacturer's warranty..

1. Disconnect power at the GFCI circuit breaker before draining or maintaining your spa
2. Remove the exterior panels by unscrewing the screws on the panels, insert a flat screwdriver on the bottom edge of the panel
3. Attach a garden hose to the drain and open the valve. The water will begin to empty. You might find a little water in the shell that does not drain. Remove it with a wet vacuum cleaner or by hand with a small container



The evacuated water from your spa can be used in your garden, yard, septic system or in a drain. Follow all local/city codes and regulations for disposal.

4. Loosen the large white fittings of the heater and the pump(s) to drain the excess water from the casings. Your spa may have more than one pump. Be sure to follow wintering procedures for each pump and all fittings. A one-pump spa has 4 fittings; A two-pump spa has 6.
5. Remove the lowest drain plug on the front of each pump. Drain all the water from the pump(s).
6. Once the spa has been emptied, you must also use a wet vacuum cleaner to remove water from the lines by suction. The water left in the lines and jets will freeze and damage them. To clean the lines, place the wet vacuum cleaner on: each drain; each fitting; each jet nozzle; each aspiration; and the filter cavity.
7. When all water is removed from the spa, jets and plumbing, reinsert the drain plug into each pump. Tighten all fittings and make sure all valves are open with installed clips.
8. Pour one liter (33,8 oz.) of spa antifreeze into the upper part of each pump and one liter (33,8 oz.) into the filter cavity.
9. Replace all exterior panels.
10. Close the cover of your spa.

For any questions, please call **Tropic Spa® Technical Support** at **+1 (855) 400 2477**. You can also contact a licensed professional to perform these services for you.

RESTART YOUR SPA AFTER WINTERING

11. Fill the bottom of the spa with water
12. Empty the spa water to remove existing antifreeze
13. Start the filling process (*see page 37*)

Water issues

Symptoms	Potential causes	Potential solutions
<i>Cloudy Water</i>	<ul style="list-style-type: none"> • Dirty filter • Inadequate disinfection • Oils, lotions, organic matter • Used water 	<ul style="list-style-type: none"> • Clean the filter and run the pumps with the clean filter • Apply shock treatment with disinfectant • Adjust the pH and alkalinity balance • Drain and refill the spa
<i>Algae</i>	<ul style="list-style-type: none"> • pH too high • Disinfectant level too low 	<ul style="list-style-type: none"> • Adjust pH • Maintain an appropriate disinfectant level
<i>Organic ring-shaped accumulation around the spa</i>	<ul style="list-style-type: none"> • Oils and dirt in water 	<ul style="list-style-type: none"> • Wipe the foam ring with a clean cloth. • In extreme cases, it may be necessary to empty, clean and refill your spa.
<i>Water smell</i>	<ul style="list-style-type: none"> • Organic matter • pH too low • Inadequate disinfection 	<ul style="list-style-type: none"> • Apply a shock treatment before the disinfectant • Adjust pH by adding pH +
<i>Strong chlorine smell</i>	<ul style="list-style-type: none"> • pH too low • Chloramine level too high 	<ul style="list-style-type: none"> • Empty a quarter of the water and refill. • Adjust pH
<i>Musty smell</i>	<ul style="list-style-type: none"> • Algae or bacteria 	<ul style="list-style-type: none"> • Wipe away dirt with a soft, clean cloth. • If the problem persists, completely empty, clean and refill the spa.
<i>Eye irritation</i>	<ul style="list-style-type: none"> • Disinfectant level too low • pH too low 	<ul style="list-style-type: none"> • Balance pH • Apply shock treatment with disinfectant.
<i>Irritation or skin rash</i>	<ul style="list-style-type: none"> • Unsafe water quality • Chlorine level too high (greater than 5 ppm) 	<ul style="list-style-type: none"> • Apply shock treatment with disinfectant • Allow the level to drop naturally to less than 5 ppm before using the spa
<i>Stains</i>	<ul style="list-style-type: none"> • Alkalinity and/or total pH are too low • High amounts of copper or iron in water 	<ul style="list-style-type: none"> • Adjust the total alkalinity and/or pH • Use an anti-stain and anti-scale product
<i>Scale</i>	<ul style="list-style-type: none"> • The calcium content of the water is too high • Total alkalinity and pH are too high 	<ul style="list-style-type: none"> • Adjust total alkalinity and pH. • If necessary, drain the spa, rub the scale, then fill and balance the water. • Use an anti-stain and anti-scale product

Maintenance contract for your SPA

To ensure good quality water, you must follow the maintenance instructions described below.

Our spas are equipped with a powerful and innovative automatic sterilization system combined with a permanent high flow filtration pump.

However, this system alone is not enough to guarantee complete disinfection of the spa and complementary chemicals are required.

In order to avoid any risk of injury or poisoning, we advise you to follow the dosage instructions provided by the manufacturers.

Failure to follow the instructions for use of chemicals could result in serious physical injury, disease or even the death of the user.

In order for you to fully enjoy your spa, Tropic Spa has developed a line of specific chemicals for a simplified use.

This line is available at most of our retailers and in our online store.

Good to know :

The maintenance instructions described below are provided for information purposes only. The dosage of the products and the periodic renewal of the water depend on the following criteria:

- Spa use frequency.
- Number of bathers.
- Water temperature.
- Outside temperature.
- Location of the spa (indoor or outdoor)

Adjust the dosage according to these criteria.

USE OF PRODUCTS

Before handling the chemicals and in the case of indoor installation, ensure that the room is well ventilated.

Always activate the pumps at high speed when refilling with chemicals.

Pour the products into the central section of the spa

Always add chemicals after turning all pumps on at high speed.

Never mix chemicals.

Chemicals should be kept out of the reach of children in a dry, ventilated area.

Chemical safety

Read and follow all instructions on bottles and packaging. Failure to follow the chemical instructions can result in serious injury, illness or even death.

Add chemicals into the central section of the spa, always with the pumps activated in high speed. Make sure the water is heated. Never add chemicals to cold water as this would affect the chemical action. Also, never add chemicals directly into the skimmer.



WARNING: Never add chemicals to the water while others are in the spa



WARNING: Do not exceed the dosage of chemicals as recommended on bottles and chemical packaging.



WARNING: Never change brand or type of chemicals without completely drain, rinse and clean the spa and cover.



WARNING: Never mix chemicals.



WARNING: Do not allow chemicals to come into contact with skin, eyes or clothing. Remove and wash clothing that may have been exposed to chemical contact before wearing it.



WARNING: Inhaling or ingesting chemicals can cause serious injury, illness or even death.



WARNING: Chemicals should be stored completely out of the reach of children in a ventilated, cool and dry place. Failure to provide an appropriate area for storage of chemicals can result in serious injury, fire/explosion, disease or even death. Do not store your chemicals inside the spa equipment area.

What you need to know about water

Water is a living environment in perpetual evolution.

Water is composed of two hydrogen atoms and one oxygen atom, i.e. H₂O. This water is not an inert matter, it has a personality in permanent evolution.

External influences such as light, heat, cold, intakes of various mineral salts, various sediments, organic waste, seaweed spores or pathogenic germs will make it evolve considerably.

If the water which evaporates is of great purity, by passing through the atmosphere, it is transformed into rain and modified by the gases contained in the air (carbon dioxide, oxygen, nitrogen). It becomes acid and has a high solvent power towards the mineral and organic elements that it will encounter during its runoff in the soil and the subsoil. Indeed, when running off, the water fills with sand, clay, plants, organic products, surface rock debris and after infiltration into the soil, it is enriched with materials of mineral or organic origin (calcium, magnesium, sodium, potassium, bicarbonate, etc.)

As you can see, we are far from the starting H₂O...

The water balance depends on 3 elements:

pH: hydrogen potential

Alkalinity: carbonates and bicarbonates content

Hardness: calcium and magnesium salts content

PH

pH (or hydrogen potential) varies between 0 and 14.

pH of pure water at a temperature of 20 °C (68 °F) is 7.

Water is acidic at a pH value below 7.3

Water is basic for a pH value greater than 7.

The so-called ideal comfort pH for humans should be closest to the tear fluid which is 7.4.

It is also in this zone of 7.2 to 7.6 that the chlorine is active at the rate of 60%/70%. Unfortunately, this balance is fragile since it depends on the presence or absence in the water of bicarbonates and carbonates (TAC), calcium and magnesium salts (TH) salts and a sufficient carbon dioxide (CO₂) content.

WATER ALKALINITY

(BICARBONATES ET CARBONATES)

The richness of the bicarbonates and carbonates is measured by the TAC (full alkalimetric title) which is expressed in French degree (°f).

The value of the TAC should be between 10 °F and 30 °F in order to provide the water with the sufficient buffering capacity needed for pH stability.

A "buffering capacity" is the ability to prevent a sudden shock. It is the "shock absorber" role... Thus, "badly buffered water" will cause an unstable pH.

To prevent this, we can take measures:

Enriching water with bicarbonates

The bicarbonate value must be greater than 10 °f. To increase by 1 °f, add 17 grams (0,60 oz.) per m³ (35 ft³) of water.

CONCLUSION

PH, bicarbonates (TAC), limestone (TH) and carbon dioxide present in water are the key points for water balance.

PH, TAC and TH can easily be analyzed using colorimetric test kits (liquid, tablets or tags).

Proper use of chemicals available on the market will help preserve water quality.

WATER-DISRUPTING ELEMENTS

ORGANIC WASTE

From users :

Sweat, grease, hair, hairs, dandruff, saliva, mucus secretion, tears, sunscreen oils, cosmetics, etc.

From nature:

Dust, pollen, leaves, insects, small animals, seaweed spores, soil, feces, etc.

From the environment:

Soot, fertilizers and pesticides, acid rain, etc.

From the water:

Dissolved organic wastes, seaweed spores. All these organic wastes represent the main food for micro-organisms.

MICRO-ORGANISMS

From bathers and nature:

Bacteria, viruses, fungi. Algae, mosses/molds.

Limestone:

The nature of the water, the high temperature, the sudden change in pH, the suppression of the carbon dioxide present in water (by stirring) promotes the formation of limestone (scale) in the spa.

Apart from water moving, a high water temperature will also have an impact on this imbalance. The higher the water temperature, the higher the pH variation.

Protect water from carbonic gas

Apart from water moving, a high water temperature will also have an impact on this imbalance. The higher the water temperature, the higher the pH variation.

Yet, the water must contain a certain amount of carbonic gas said as balancing to preserve the essential bicarbonates of calcium.

Otherwise, these bicarbonates will turn into carbonates which will cause the formation of scale on which all the waste, algae and pathogenic germs will be attached.

Each time the water moves, an extraction of the gases it contains occurs, provoking a variation of the pH.

It is then compulsory to treat permanently to lower or increase the pH.

HARDNESS OF THE WATER

TH (HYDROTIMETRIC TITLE)

Or the role of calcium and magnesium salts.

This hardness of the water varies depending on its slowness in salts of calcium and magnesium. It is measured by the TH (hydrotimetric title), also in French degree (°f) as the TAC.

The ideal TH value should be between 10 ° and 20 ° f to avoid scaling (above 20 °f) or corrosion (below 10 °f).

Some values:

0 ° to 4 °f: very soft water

4 ° to 8 °f: soft water

18 ° to 30 °f: hard water

Above 30 °f: very hard water

When the water reaches a TH of 22-25 °f, therefore scaling, it is highly advisable to use a sequestering product (EDTA) which will avoid the formation of limestone on the basin and pipes'walls.

The limestone thus treated will remain suspended in water.

DISINFECTION

AVAILABLE PRODUCTS

Chlorine

Very complete chemical since it is at the same time disinfectant, algacide and oxidizing. Its effectiveness is higher if the pH of the water is close to neutrality, i.e. 7.2-7.4 (active chlorine at about 60%, whereas at 7.8, the disinfection efficiency of Chlorine is only 30%). *Chlorine can never be 100% active since it would require a very acid pH (5.5), which is impossible for the user and the equipment.*

Chlorine comes in various forms :

- Sodium hypochlorite or bleach
- Calcium hypochlorite
- Lithium hypochlorite

Bromine

This disinfectant is particularly suitable for the treatment of spas. Chemically very close to chlorine (both halogenated), bromine remarkably fights bacteria, viruses, fungi and organic waste in water.

Bromine is a natural component extracted from seawater. It is sold as tablets, and its formulation generally uses 70% bromine and 30% chlorine. This proportion may vary among manufacturers.

Main benefits of bromine

In contact with impurities, bromine combines as chlorine to form bromamines.

Unlike chloramines (combination of chlorine in contact with impurities) which are smelly and irritating, bromamines do not have these drawbacks. The bromine guarantees a virtually smell-free water that does not irritate the eyes and mucous membranes.

Moreover, unlike chloramines, *bromamines retain some of their disinfecting activity.*

The pH of the water barely influences the effectiveness of the disinfection unlike chlorine.

The absence of smell and irritation, as well as its high disinfection capacity independent of pH, make it an ideal product for the treatment of spa water.

Active oxygen

This treatment is relatively new. It uses oxygen-rich products such as hydrogen peroxide and potassium mono-persulfate.

It comes in three forms :

SOLID (tablets), LIQUID et GRANULES.

This new method of treatment provides a very pleasant and smell-free water.

Please note that this product always allows a complementary chlorine treatment, for example shock chlorination..

pH Minus (acid)

The pH minus is the product required for pH reduction

Ph Plus (basic)

The pH plus is the product needed to increase the pH

Anti-limestone (EDTA)

Anti-limestone is a sequestering product that suspends limestone.

This prevents deposition on the walls and vital components of the spa.

Its dosage is compulsory at each filling and a supplement is only necessary if there was a significant water supply compared to the previous filling.

CONSEQUENCES OF A POOR WATER BALANCE

Ideal pH of spa water: between 7.2 and 7.8

High pH (basic pH)

Consequences: Scaling, milky water, filter clogging, decreased effectiveness of chemicals (bromine, chlorine)

Low pH (acid pH)

Consequences: Corrosion of the water heater, deterioration of the seals, deterioration of the acrylic surface, discoloration of plastics (head restraints, nozzles etc. ...)

Good to know :

The pH varies greatly depending on the frequency and type of use of the spa.

pH control (hydrogen potential)

Using a test kit or multicolored strips.

High pH (hard water)

Consequences: Scaling of spa surface, nozzles, check valves (blower and venturi system), deterioration of the ball bearings of the whirlpool jets, deterioration of the heating body and of the pumps. Chemical equilibrium of water difficult to maintain.

Low pH (fresh water)

Consequences: Water tends to lather. Chemical balance of water difficult to maintain

Good to know :

Limestone does not dissolve in hot water. In fact, hot water accelerates the formation of limestone in solid form. It then becomes granular and chalky, adhering to the shell, the heating body and all the vital components of the spa.

High pH will worsen this problem.

In addition, a water free of limescale will be extremely difficult to stabilize.

To obtain a good balance of water, we recommend a degree of water hardness between 15 °f and 18 °f.

If limestone is not neutralized, repair of the damage caused will not be covered by the contractual warranty.

Descaling

Limestone may be dissolved with hydrochloric acid. Contact your dealer for further information.

RESTRICTIONS ON SPA USE

- Before getting in the spa, we recommend controlling the water temperature using a thermometer.
- The temperature on the spa display is a value measured by two probes located on either side of the heater. This value is given as an indication and is not necessarily the actual temperature of the water due to the tolerance of the electronic components.
- Water should never exceed 40 °C (104 °F).
- A temperature between 37 °C (98.6° F) and 39 °C (102.2° F) is considered as tolerable for a healthy adult.
- We advise pregnant women, people with cardiovascular problems, diabetes and any other health concerns to seek the opinion of a doctor before using the spa.
- Use of drugs, alcohol and medication is strongly discouraged before using the spa.

Warning:

There is a risk of hyperthermia when the body temperature rises from 3 °C (37.4° F) to 6 °C (42.8° F). Hyperthermia occurs if you are bathing in a spa at a temperature above 40°C (104°F). Symptoms include dizziness, lethargy, fainting and drowsiness. Immediately get out of the water if you notice any of these effects.

We are concerned about your safety. Please let us inform you about SPA safety practices before you start using your spa. Serious injury and even death can result from incorrect use of the SPA. Please, read carefully the following to make sure your family and friends have a safe and enjoyable experience in your hot tub.

- Limit immersion to 15/30 minutes at a time
- Avoid using your SPA alone
- Do not let children use the spa unattended and limit immersion time from 10 minutes to one hour and/or reduce SPA temperature
- Never let anyone who has consumed alcohol or any type of medication (prescribed or not) get in the spa
- Never go under the water in a hot tub because of the risk of entangling the hair in aspiration and the risk of drowning
- People with heart disease, diabetes, high or low blood pressure or serious illness and pregnant women should not use a spa without prior consultation with a doctor
- People with infections of the skin, ears, genitals, or other body parts should not get in the hot tub to avoid spreading the infection
- Do not operate any appliance within 10 meters (32.8 feet) of the spa. Electrical shock or electrocution can occur in a hot tub if an electrical current (including current from a telephone) comes in contact with water.
- Use a differential circuit breaker (GFCI) on any device located near the spa
- You or your guests will probably be barefoot close to the spa. Use only unbreakable dishes, beverage containers and utensils in your hot tub and never use glass near or in

the spa. Broken glass is invisible in water and extremely difficult to remove from the water circulation system

- To avoid injury and slipping, be sure to have a towel nearby to dry your feet before walking in or out of the hot tub. Whenever possible, the spa should be placed on a non-slip surface
- Never use a hot tub during a thunderstorm or when lightning occurs in your area
- When not using the spa, lock it to prevent unattended access by children and a potential risk of drowning
- Never allow water to exceed 40 °C (104° F)

Your spa will provide you with lots of enjoyment if used with great care and respect. Remember to treat your water. Please use your good judgment and have fun.

WARRANTIES

RESTRICTIONS

Warranty will be void in the event of negligence, improper use, such as professional use of the spa, modifications without the written authorization of Majestics Business, performance of repairs by unauthorized personnel, incorrect electrical fittings or phenomena beyond the control of Majestics Business such as earthquakes, floods, lightning, fire, etc.

Majestics Business spas are designed for home use only. Majestics business declines any responsibility for professional use.

CANCELLATION POLICY OF THE CONTRACTUAL WARRANTY

- Shell scratches and wear resulting from normal use.
- Spa water temperatures out of range, i.e., not between 0 °C (32° F) and 48 °C (118.4 °F).
- Deterioration caused by incorrect water level (too low, overflow, etc.).
- Deterioration caused by extreme temperature differences (frost, heat, etc.).
- Deterioration caused by accumulation of dirt, limestone and calcium.
- Damage caused by filter clogging.
- Deterioration caused by the use of chemical cleaning products not authorized by Majestics Business.
- Damage to shell, head restraints, control buttons, keypad, yellowing and discoloration of nozzles caused by incorrect chemical water balance. (Excessive chlorine, bromine, pH minus or pH plus, acids and use of flocculants).
- Deterioration caused by sun exposure.
- Damage caused by failure to follow the operating instructions detailed in the user's guide.
- Damage caused by improper electrical connection, tension drops or spikes, or by use of the spa at a voltage lower or higher than 10% at the prescribed voltage range.
- Deterioration caused by installing the spa on an unapproved surface.

Spas should always be covered when not in use.

COMPONENTS NOT COVERED BY THE CONTRACTUAL WARRANTY

- Filters.
- Skimmer and other wear parts. (Except if they have a fault upon commissioning).
- Pump and heating seals.
- Light bulbs, LED light.

- Jets (except if they have a fault upon commissioning).
- Isothermal cover. (Except if it has a fault upon commissioning).
- Head rests.
- Spa joinery (skirt)

PRECAUTIONS BEFORE FILLING

Eliminate water residues and clean the spa with bleach.
 Close the external gravity drain (clockwise)
 Retighten the tangent screws located on the massage pumps.
 Retighten the tangent screws located on the filter pump.
 Tighten the tangent screws located on both sides of the ultraviolet system.
 Retighten the tangent screws located on either side of the heater.
 Open the bayonet type valves (pull tab on the outside).
 Open all nozzles inside the spa.

Spa filling

Check the degree of hardness of the drinking water in your area with your county or city beforehand. Fill the spa with cold water until the filters are completely immersed..

Warning :

To avoid damaging the spa, we advise you to let some water flow from the hose until it is completely clear before filling the spa. For proper functioning of the spa, it is advised to use only water from the drinking water system.

The water must be free of limestone. If the house is equipped with a water softener, fill the spa from it, making sure to do a regeneration cycle beforehand. If you do not have a limestone removal system, you must treat the spa water with an anti-limestone product (sequestering product).

Please note that the magnetic systems do not neutralize the limestone and that the filling of the spa by these systems is useless. Well and drilling water is strongly advised against!

A noter que les systèmes magnétiques ne neutralisent pas le calcaire et que le remplissage du spa par ces systèmes n'est pas utile. L'eau de puits et de forage est fortement déconseillée.

Damage caused by non-compliance with these instructions automatically excludes the right to contractual warranty.

Note :

The spa water must be replaced after one week. This procedure is needed to remove manufacturing residues and antifreeze from the pipes.

Your spa has been designed to minimize maintenance time. It is a simple task, but it should not be neglected and deserves special attention.

The first task of maintenance is to ensure the correct chemical balance of the water (pH) and to ensure that the water level is optimum. Indeed, the evaporation of the water is quicker when the spa is not covered with its isothermal cover. We recommend that you only use TropicSpa approved cleaning products

Moreover, the water must be periodically renewed depending on the more or less intensive use of the spa, and the more or less important number of users. Also, make sure to regularly clean the filter cartridges and to change the lamps of the ozonator approximately every 2 years.

Complete dumping of the spa is only recommended for dry storage for a long period of time (e.g. during winter). In this case, make sure that the pumps are drained to facilitate future re-starting.

Here are the mandatory maintenance tasks of your spa, recommended by Tropic Spa to guarantee the optimal functioning of your product and avoid repeated damage.

<i>To do weekly</i>	<i>Monthly treatment</i>	<i>Quarterly treatment</i>
<ul style="list-style-type: none"> - Clean the filters by soaking them in a chlorine solution or bleach, <i>if the filters are obstructed by limestone, clean them with hydrochloric acid.</i> - Rinse thoroughly with clear water. - Check pH and add it when using chlorine. - Add 20 grams of active oxygen (recommended every 3 days) - Or 1 tablet of brome (around 7 days' duration) - Or 1 tablet of chlorine (around 7 days' duration) 	<p>To avoid unpleasant smells under the layers of the cover :</p> <ul style="list-style-type: none"> - Clean the isothermal cover (inside and outside). - Do not forget the inside of the zippers. 	<ul style="list-style-type: none"> - Replace spa water <i>See filling chapter (page 55)</i> - Remplace filters.

Warning : *Never clean the filters without switching off the power supply. Failure to observe these points could cause damage to the skimmer basket fixation and blockage of the filter pump by the suction of the waste in suspension.*

IMPORTANT INFORMATION

Before filling the spa:

Make sure the spa is level.

Open all nozzles.

Make sure the gravity drain valve is closed.

Ensure electrical compliance.

Open the valves located on the components located in the machine room..

Make sure the microswitches are configured correctly.

Tighten all pump tangent screws, heating.

Purge the air from the circulating and massage pumps.

Clean the surface of the spa with bleach.

WARNING : *The spa should be turned on only after filling and purging of the pumps. Failure to observe the above may result in damage to the mechanical seals of the pumps and the heating system.*

For spas equipped with cascade jets; To avoid dead areas of filtration, it is important to leave the cascade valves open at the end of spa use. This will prevent contamination of the basin by stagnant water remaining in the pipes of the cascade circuits. The spa electronics automatically manage several cycles of daily purges to prevent stagnation of water in the hydraulic circuits.

In the event of non-observance of the above, Majestics Business reserves the right to exclude all warranty replacement claims of potentially damaged components such as pump mechanical seals, versa-flow valve, skimmer baskets, filtration pump, heating system etc.

Setup delivery protocol

CUSTOMER:

DEALER :

Name :

Address:.....

.....

Zip Code : City :.....

Phone number :

PRESENT PERSON FOR RECEPTION AND INSTRUCTIONS

.....

ID Number :

DELIVERED EQUIPMENT

Model : Serial Number :.....

Color :..... Commissioning :.....

EQUIPMENT'S CONDITION UPON DELIVERY

Nothing to report Notes :

Missing equipment :

Customer's concerns :

ACCEPTANCE OF THE SAFETY REGULATIONS

The customer, by his signature, certifies that he has received from the technical personnel all operating instructions as well as the terms of the guarantees and certifies that he has read the owner's manual in order to comply with it. In the event of an incorrect electrical installation, Majestics Business declines all responsibility in the event of accident and damage. For the safety of the users, it is forbidden to use the spa if the electrical installation does not comply. TropicSpa spas sold by Majestics Business are developed according to the specifications and features described in this manual. Any other operating mode is excluded from the standard parameters.

Customer : Read & Approved.....

Date : Signature :.....

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