USER MANUAL

SPAtec

PLEASE, READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLING AND USING THE HOTTUB

REMEMBER TO REMOVE ALL SEALS BEFORE CONNECTING THE SPA, ESPECIALLY THE PLASTIC SEAL ON THE FILTER.

REMEMBER THAT THE ELECTRICAL INSTALLATION MUST BE CARRIED OUT BY A PROFESSIONAL.

KEEP IN MIND THAT THE SPA MUST BE DISCONNECTED FROM ALL ELECTRICAL WIRING WHEN EMPTY.

REMEMBER THAT FILTERS MUST BE RINSED WITH WATER AT PRESSURE WEEKLY. THEY ALSO MUST BE REPLACED WITH NEW ONES AFTER 6 MONTHS APPROXIMATELY OF WHEN THE SPA HAS BEEN EMPTY FOR MORE THAN 20 DAYS.

FAILURE TO FOLLOW THESE INSTRUCTIONS WILL RESULT IN THE INVALIDATION OF YOUR SPA'S WARRANTY.

INDEX

I. Installation of your SPATEC outdoor SPA

1. Choosing a location

Outdoor SPAs are large, heavy appliances and do not have height-adjustable legs so they need a firm, level and smooth base. The dimensions of the base should be at least equal to the size of the SPA, although it would be recommended to have a base that's a few cms wider.

We'd advice to make the concrete base with a thickness of 10cm or more. It could also be made with wooden blocks as long as it is hard enough and made to withstand a high level of humidity..

It is the user who assumes full responsability for a correct installation, use and mainenance of the SPA. If the SPA is placed in an unsuitable location, over time the device could start to sink or tilt to one side and suffer significant damage which would in no case be covered by guarantee.

If the user decided to make an in-ground installation, access to all sides of the SPA from below or above (so that the equipment can be reachable for necessary maintenance in the future) must be taken into account. In extreme cases, access may only be allowed from two sides, although we do not recommend this option in any case.

The place where you install the SPA must have a drainage system to prevent the accumulation of water under or around the device.

2. Electrical Installation (Wiring)

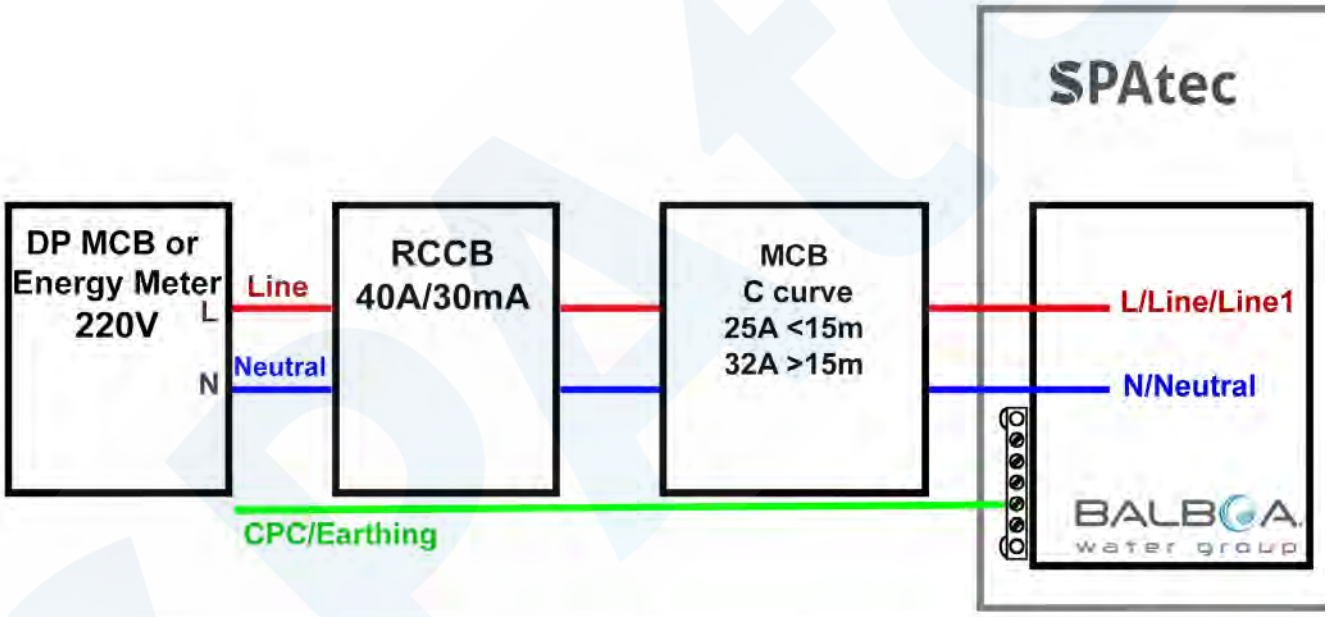
Spatec outdoor spas are designed to operate on the European electricity network (220V-230V 50/60Hz). Please, remember:

- Do not connect the SPA to the electricity network before filling it with water.
- Do not connect the SPA to the electricity network using an extension cord.
- Use copper cables.
- The installation must be carried out in such a way that within a radius of 1.5m of the SPA there are no connections, plugs or similar unless they have proper protection against water.
- The installation must be carried out by an electrician or professional
- A bad electrical installation can cause serious damage to both the SPA and its users, which in no case would be covered by the guarantee of the device.

The Spatec SPA requires an independent line (i.e. a line from the general box to the SPA) with a Differential Switch (RCCB) and Miniature Circuit Breaker (MCB) only for this line (installed in the general box).

The electrical line must be made of cables between 6mm and 10mm depending on the model of the SPA and the distance between the SPA and the general box of the house (if the distance exceeds 15m you will have to use thicker cable).

3. Electrical Installation Diagram



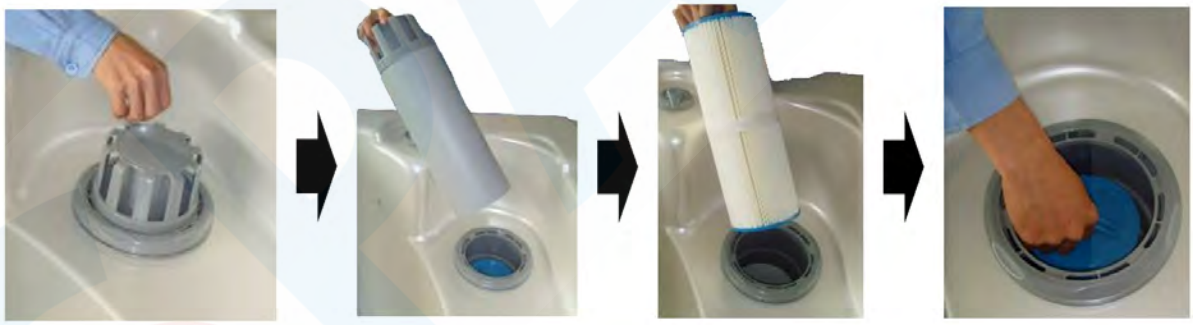
* **Diameter of the line, neutral and ground cables: 6mm^2** if the distance between the DP MCB and the Spatec SPA is less than 15 meters or **10mm^2** if it is greater.

4. Filter and Aromatherapy Installation

4.1. Filter Installation in skimmer Type 1

1. Loosen the screw and remove the skimmer cover by sliding it up, do not pull it out.
2. Remove the internal skimmer tray (if there is one).
3. **Remove the protective plastic from the filter** and screw it into the skimmer.
4. Put the tray and the skimmer cover back in place.

4.2. Filter Installation in skimmer Type 2



1. Remove the tube from the skimmer.
2. **Remove the protective plastic from the filter** and screw it into the skimmer.
3. Put the skimmer tube back in its place (this element floats, to adapt to the water level).

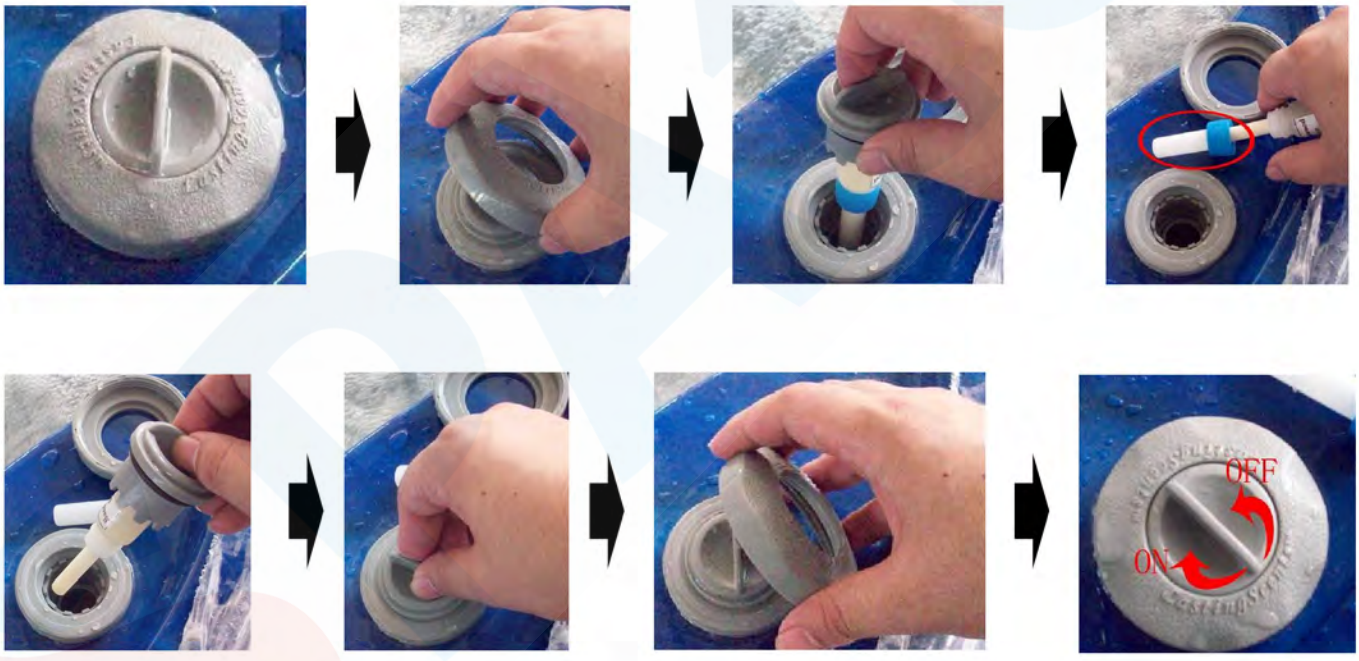
Note: (First installation)

If you receive the Spa with the skimmer trim (washer) removed, simply place it in position and screw it on. This element must be placed first (before the tube and filter are installed) and does not have to be removed again, either for filter changes or maintenance.

4.3. Filter Installation in skimmer Type 3

1. **<u>Remove the protective plastic</u> from the filter**
2. Screw it into the skimmer.

5. Aromatherapy Installation



1. Unscrew the trim ring.
2. Remove the dispenser.
3. Install the aromatherapy cartridge.
4. **Remember to remove the plastic protector** from the tip of the cartridge before installing it.
5. Put the dispenser and trim ring back into place.
6. Turn the dispenser on or off to activate or deactivate the aromatherapy.

II. Filling and emptying your SPATEC outdoor SPA

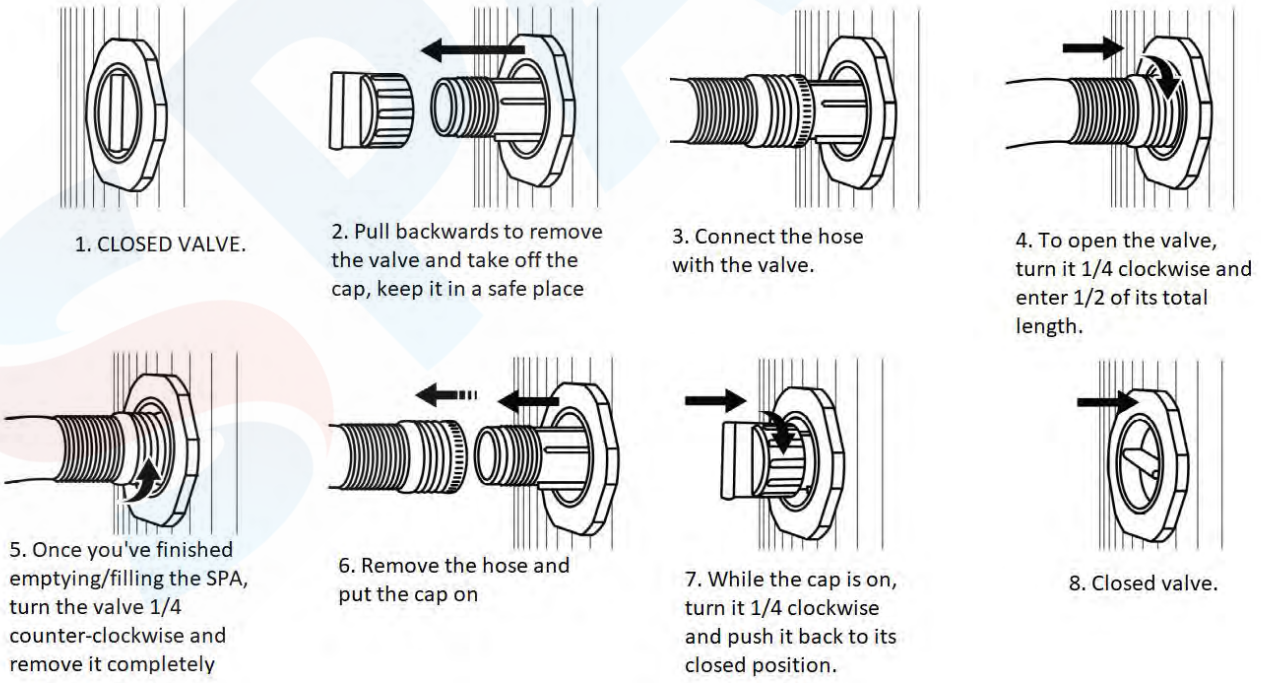
Once the wiring has been carried out, the SPA can be filled. Make sure that no electrical equipment is located near or inside the SPA and that all electrical connections are well protected against water.

Before filling the SPA, clean any kind of residues that may remain inside. For security reasons, make sure that the differential switch in the electrical line that feeds the SPA is lowered so that no electricity is applied. Do not fill the SPA with water from a water softener. Use normal water plus an anti-scale product.

In some models, you can fill the SPA from the water inlet on one of the sides, but it is recommended that you fill it using a hose, from the top. Fill the SPA until it covers a few centimeters above the jets. Keep in mind that once people enter the SPA the water level will rise.

When the water has reached the desired level, stop the water. Now you can turn on the differential switch in the electric line so that the SPA gets electricity. You can also add the water maintenance and PH adjustment products in the water.

FILLING AND EMPTYING YOUR SPA (INSTRUCTIONS)



III. Maintenance

Spatec spas are equipped with a filtration system for solid waste and an ozone cleaning system that disinfects the water by eliminating most bacteria. However, for a longer duration of the water in good conditions we recommend the use of several maintenance chemicals specific to SPAs.

Although they are cheaper, chlorine-based products are harmful to your skin, eyes as well as to the spa in the long run. We recommend bromine-based products.

Always use products designed for SPAs; products designed for swimming pools can leave residues, stain the acrylic or produce foam.

To ensure good maintenance, cleaning of the spa and guarantee its conservation, it is advisable to follow the following steps:

1. Daily monitoring of the water's pH level and residual bromine levels, both of which can be easily measured with a water test kit.
2. The pH must be between 7.2 and 7.8, and must be regulated with the appropriate dose of pH booster or reducer, as appropriate.
3. Bromine levels must be between 3 and 6 parts per million (ppm).

It is recommended to clean the inside of the spa with liquid detergent, soap and a soft sponge. Do not use abrasive detergents, alcohol, acetone or other solvents.

Remember that the filter has to be cleaned with water at pressure weekly and has to be replaced with a new one after 6 months or when SPA remains empty for more than 20 days, to avoid damaging the SPA's machinery and invalidating the guarantee.

1. Preparing your SPA for winter

If you are not going to use the spa in severe cold weather, you should empty it completely to avoid accidental freezing and **disconnect it from the electrical mains.**

IV. Problems and Solutions

PROBLEM	CAUSE	SOLUTION
SPA won't turn on.	1. RCCB went off. 2. Bad connection between the control panel and the main electrical box. 3. Check if the transformer or fuses are burnt.	1. Switch on all switches again. 2. Check the connection and reconnect the control panel cable. 3. Replace the transformer or fuse.
Abnormal temperature and water pump does not work.	1. The water level in the spa is too low. 2. The temperature setting is too low.	1. Add water. 2. Raise the water temperature from the control panel.
The LED spotlight does not work.	1. Poor connection of the cable from the electrical box to the bulb.	1. Check and reconnect the cable.
Water or air pump does not work.	1. The water level in the spa is too low. 2. Poor connection of the cable from the electrical box to the pump.	1. Add water. 2. Check and reconnect the cable.
The buttons on the control panel do not respond.	1. Control panel might be blocked. 2. Control panel might be broken.	1. Unblock control panel. 2. Change control panel.
Cloudy water.	1. The filter is dirty. 2. Excess oil or organic matter. 3. Suspended particles or organic matter. 4. Old or overused water.	1. Clean the filter. 2. Apply a shock treatment with disinfectant. 3. Adjust the pH and alkalinity to the recommended level. 4. Empty, refill the spa and adjust the pH.

Smelly water.	1. Excessive organic substances in the water. 2. Low pH level.	1. Apply a shock treatment with disinfectant. 2. Adjust the pH to the recommended level.
Very strong chlorine smell.	1. Very high chlorine/bromine level. 2. Low pH level.	1. Apply a shock treatment with disinfectant. 2. Adjust the pH to the recommended level.
Mouldy smell.	1. Growth of bacteria or algae.	1. Apply a shock treatment with disinfectant. If the problem persists, empty, clean and refill the spa.
Accumulation of organic substances / kerb of dirt around the glass.	1. Oil and dirt accumulation.	1. Wipe off the dirt with a clean cloth. If the problem persists, empty, clean and refill the spa.
Growth of algae.	1. High pH level. 2. Low level of chlorine/bromine 3. Low level of algicide.	1. Apply a shock treatment with disinfectant and adjust the pH. 2. Apply a shock treatment with disinfectant and keep the disinfectant at the recommended level. 3. Apply an algaecide treatment.
Excess foam.	1. Use of non-specific chemicals for SPAs. 2. Use of standard algicide.	1. Do not use chemicals for swimming pools, use specific products for SPA. 2. Always use non-foaming algaecides.

V. NOTICE

Do not let children use the SPA without adult supervision.

If you connect a hot water inlet to the SPA, make sure that the water that reaches it never exceeds 41ºC as this could cause significant damage to your SPA and to the users.

Although the temperature of the water can be adjusted according to personal preference, temperatures around 38-39ºC are considered the maximum that a healthy adult could tolerate for a maximum of 10 minutes. For longer sessions, adjust the water temperature to 37ºC or less.

If you are pregnant, you should consult your doctor before using the SPA.

Never use the SPA after taking medication, alcohol or drugs as their consumption could cause you to faint in the tub.

If you suffer from respiratory insufficiency, diabetes, high or low blood pressure and/or other health problems, consult your doctor before using the SPA.

Always take a shower before and after using the SPA to prevent infections caused by possible bacteria in the water.

Before entering the SPA check the water temperature by hand as the temperature displayed on the control panel and the actual water temperature may differ by up to 2ºC.

Do not use electrical devices near or from inside the SPA.

Enter and exit the spa slowly, keeping in mind that wet surfaces can lead to slipping.

Exposure for long periods of time to temperatures above 37ºC can cause Hyperthermia.

VI. Annex 1: Balboa Control Panel Type 1

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 Menus

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.

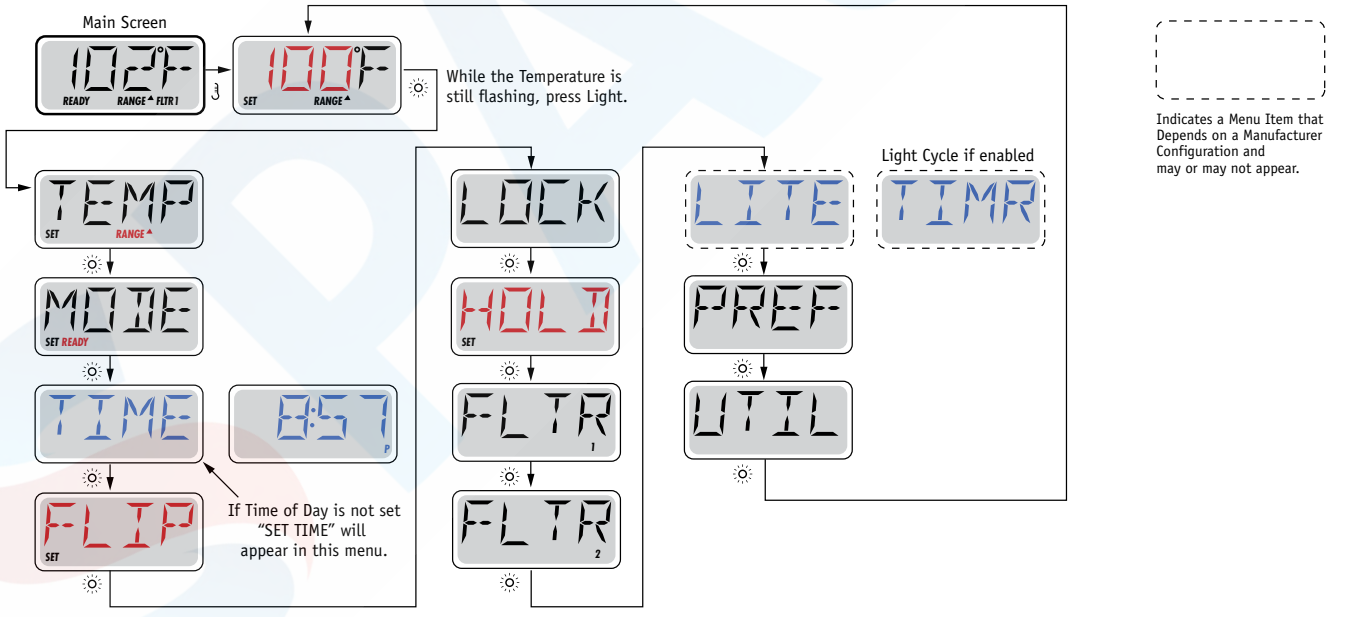
The menus can be exited with certain button presses. Simply waiting for several seconds will return the panel operation to normal.

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

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.

BALBOA water group

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

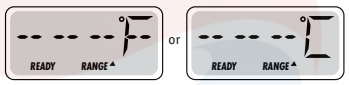
As soon as the above display appears on the panel, push the "Jet" button once to start Pump 1 in low-speed and then again to switch to high-speed. Also, push the Pump 2 or "Aux" button, if you have a 2nd pump, to turn it on. The pumps will now be running in high-speed to facilitate priming. If the pumps 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.

*M019 is a Message Code. See Page 15.

BALBOA water group

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)

BALBOA water group

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.
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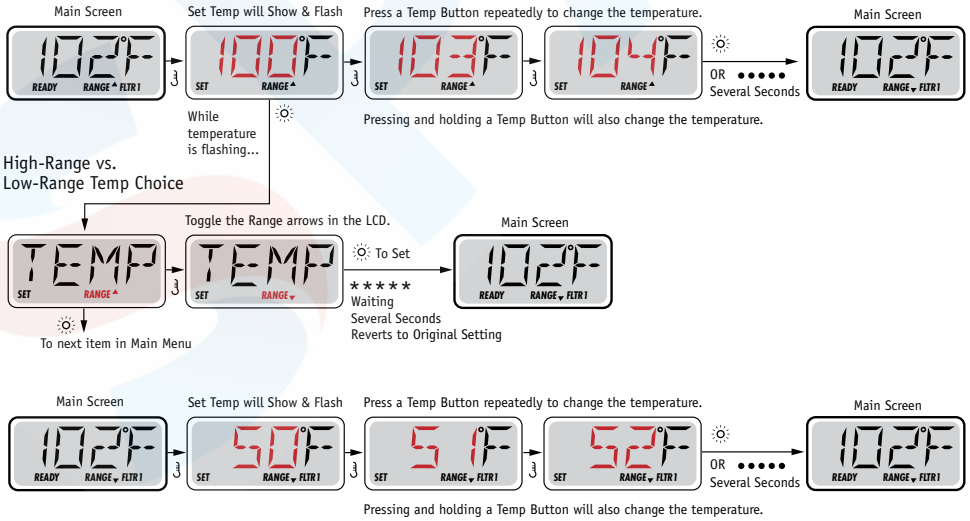


Mode – Ready and Rest

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.

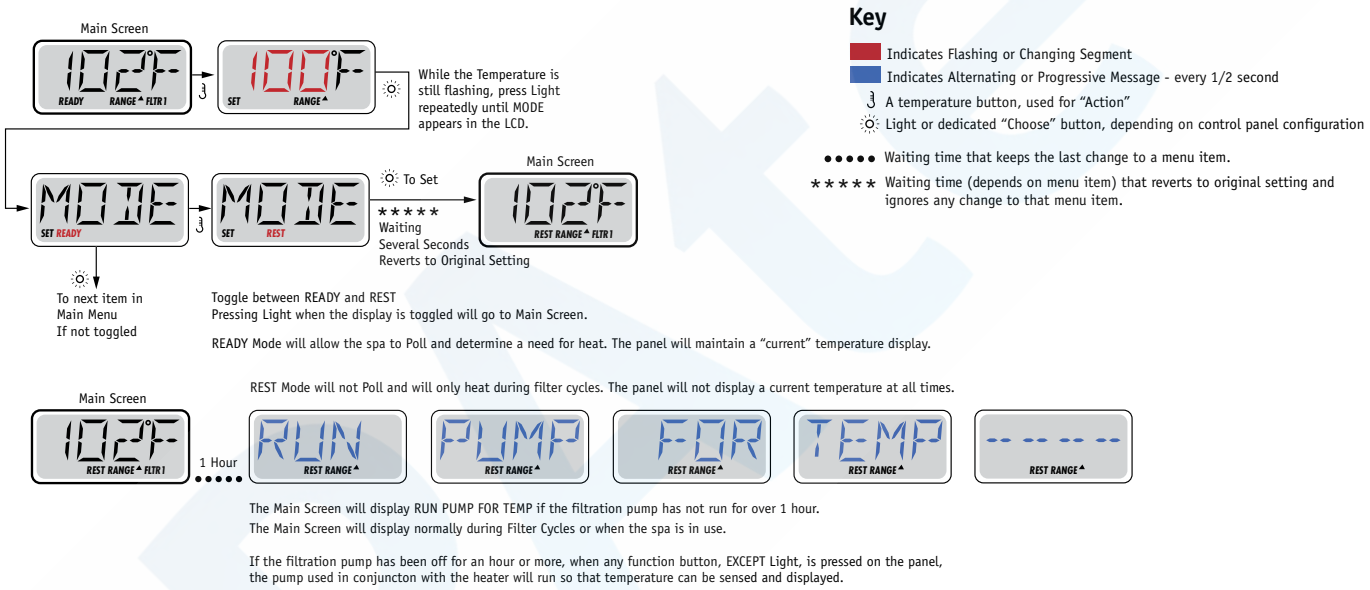
If the heater pump is a 2-Speed Pump 1, READY Mode will circulate water every 1/2 hour, using Pump 1 Low, in order to maintain a constant water temperature, heat as needed, and refresh the temperature display. This is known as “polling.”

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)

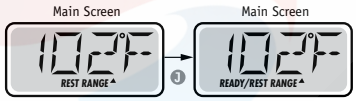
If the spa is configured for 24HR circulation, the heater pump generally runs continuously. Since the heater pump is always running, the spa will maintain set temperature and heat as needed in Ready Mode, without polling.

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.



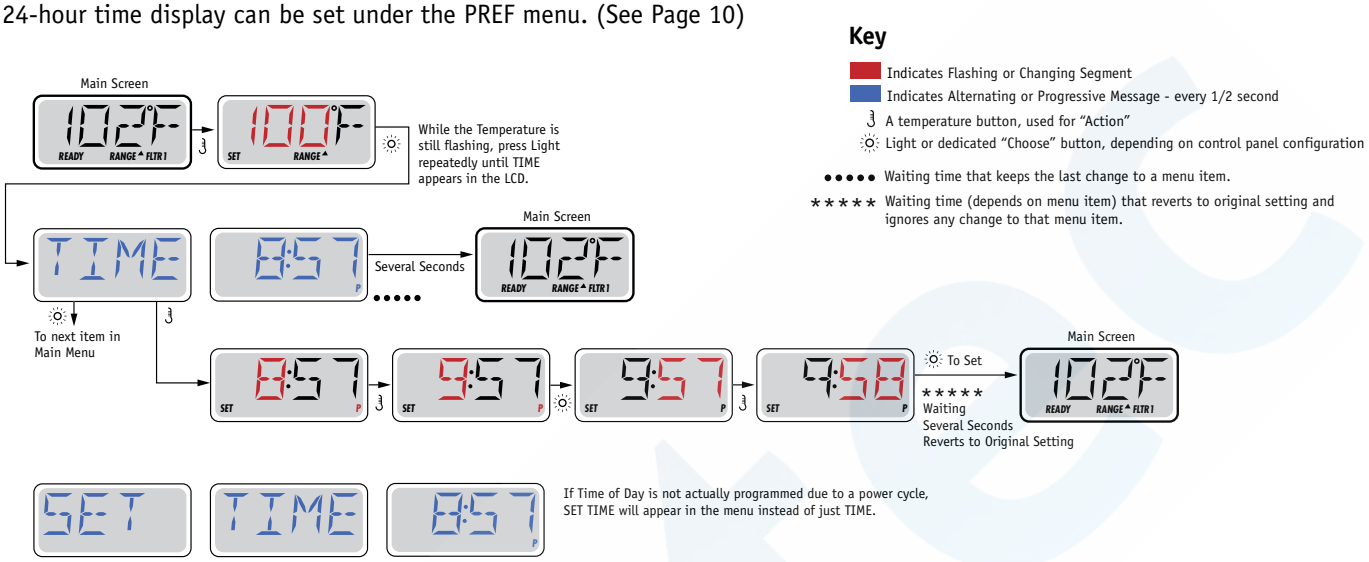
Show and Set Time-of-Day

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)

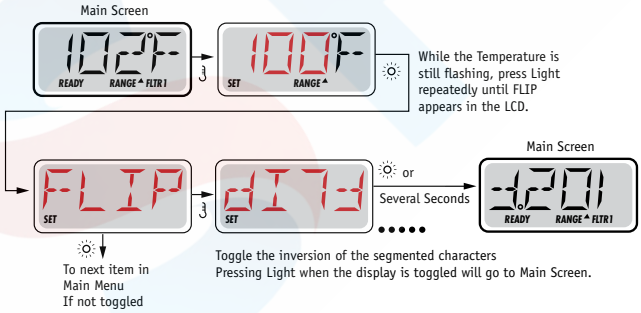


Note:

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.

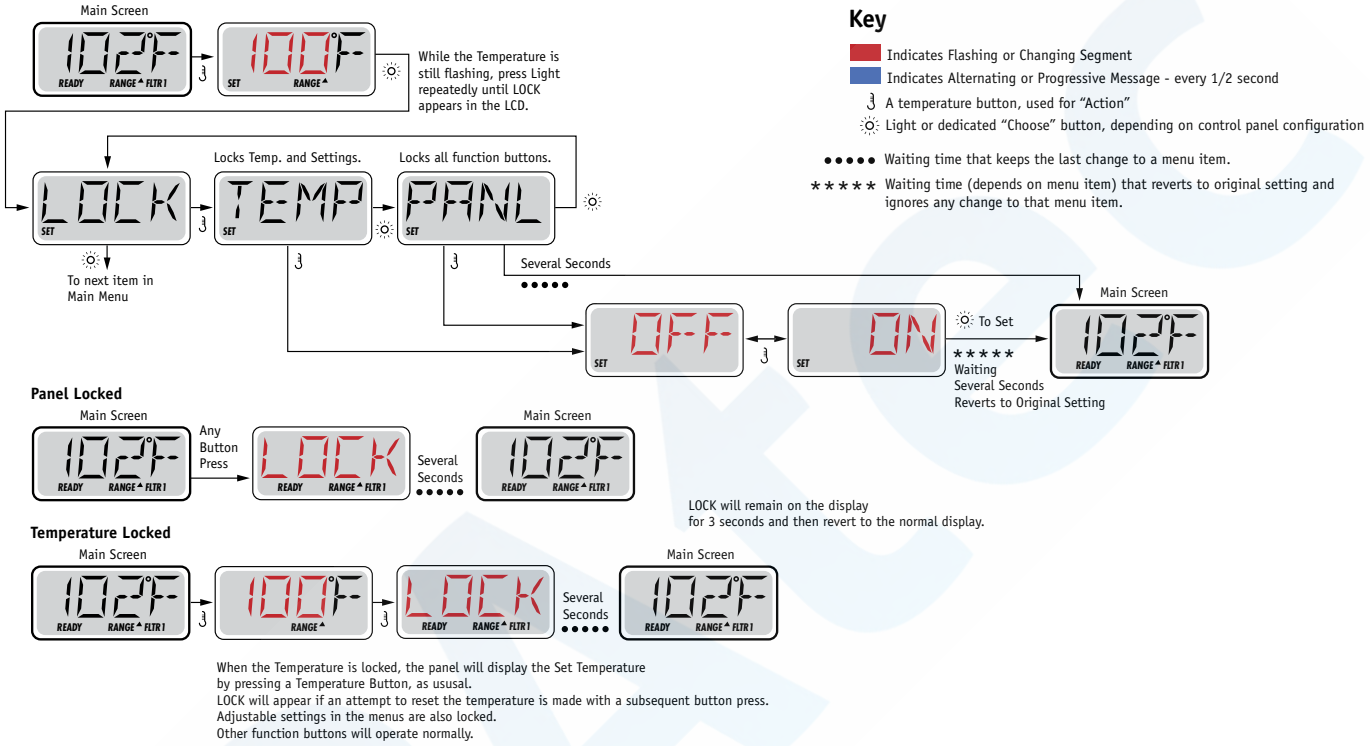
Restricting Operation

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.

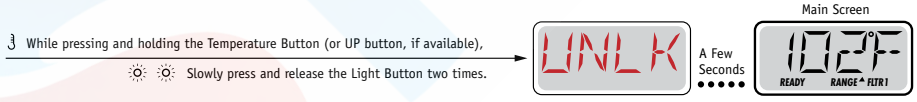
Locking the Temperature allows Jets and other features to be used, but the Set Temperature and other programmed settings cannot be adjusted.

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.

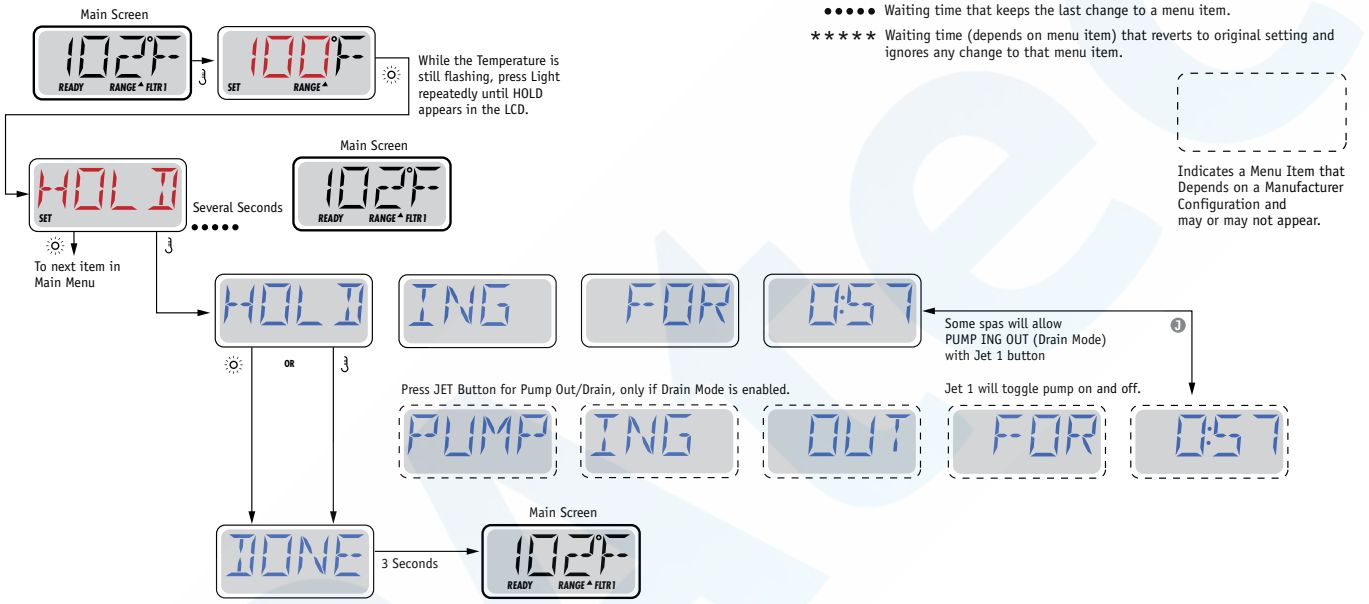
Hold (Standby)

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.

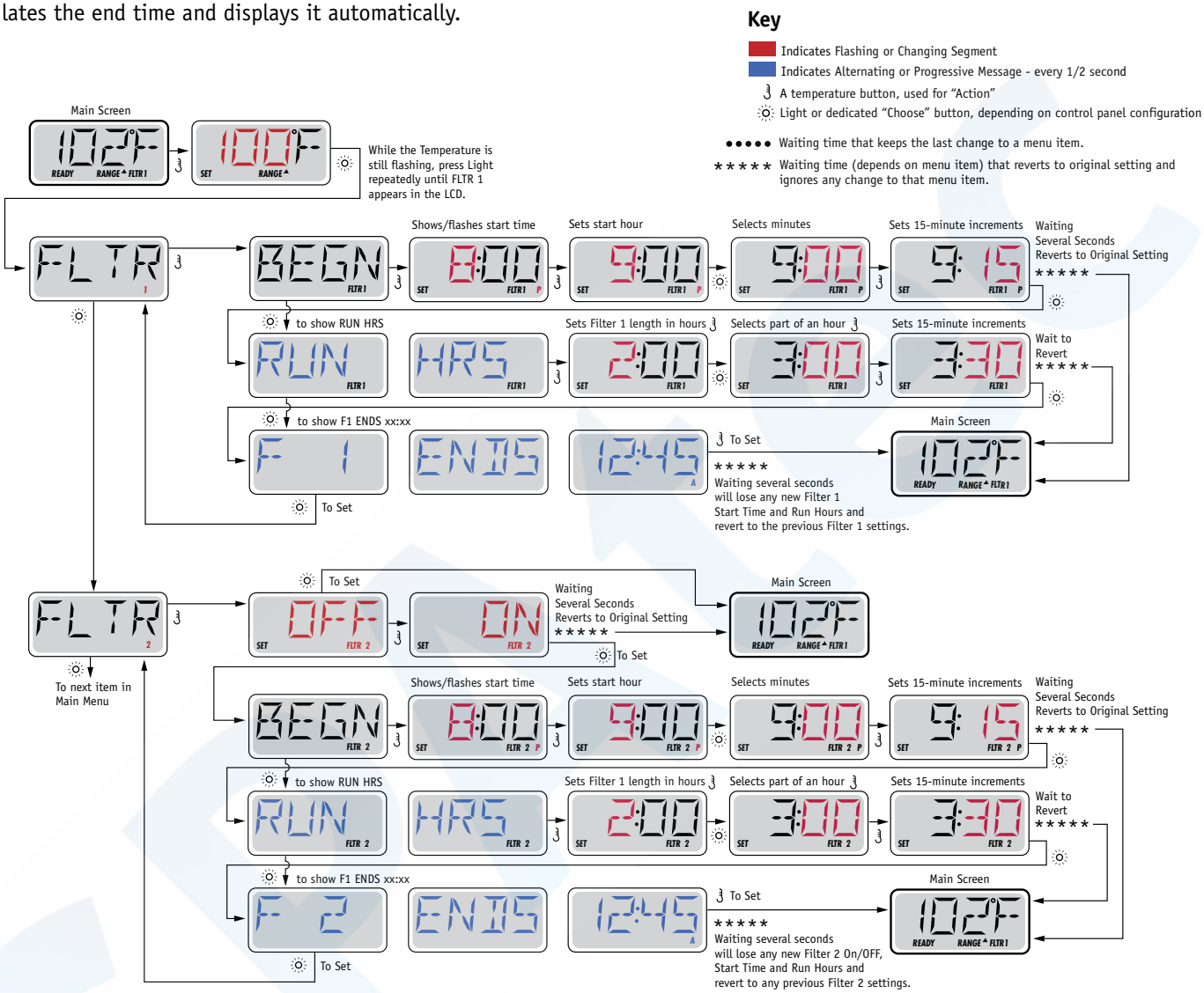


M037 is a Message Code. See Page 15.

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.



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

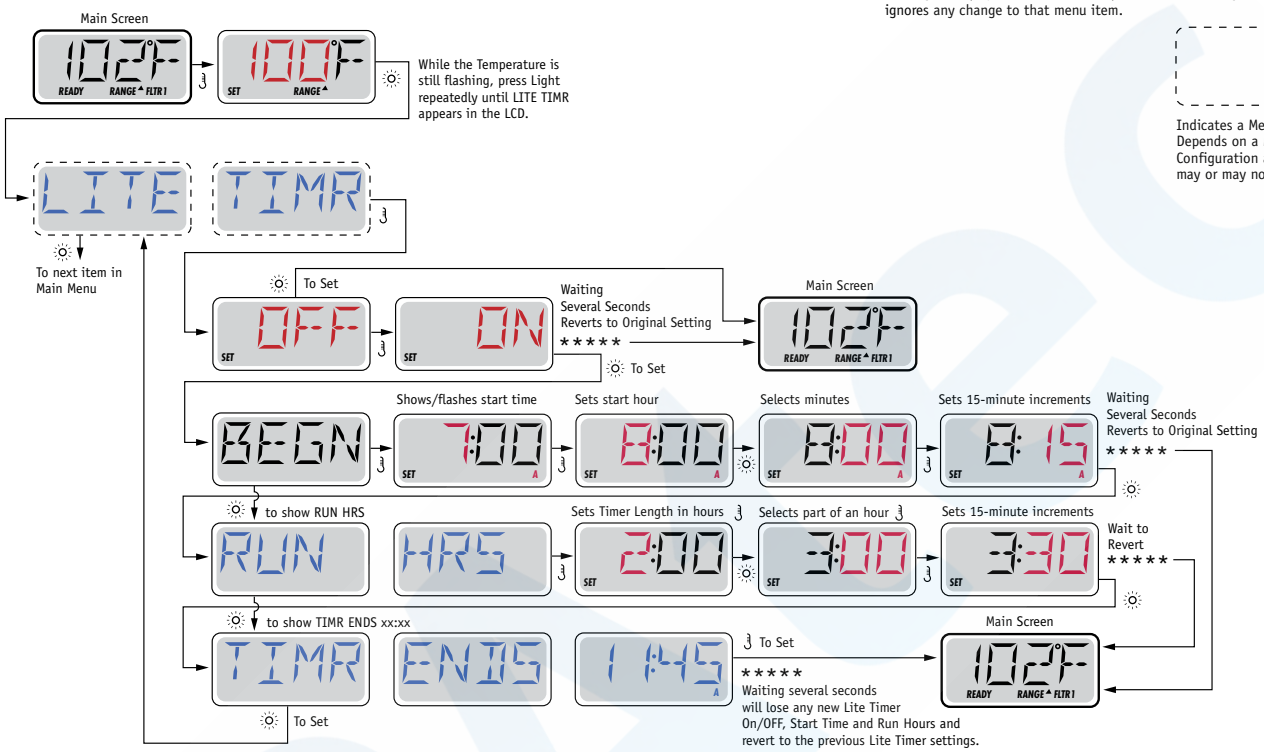
If LITE TIMR does not appear in the Main Menu, the Light Timer feature is not enabled by the manufacturer.

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.

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



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.

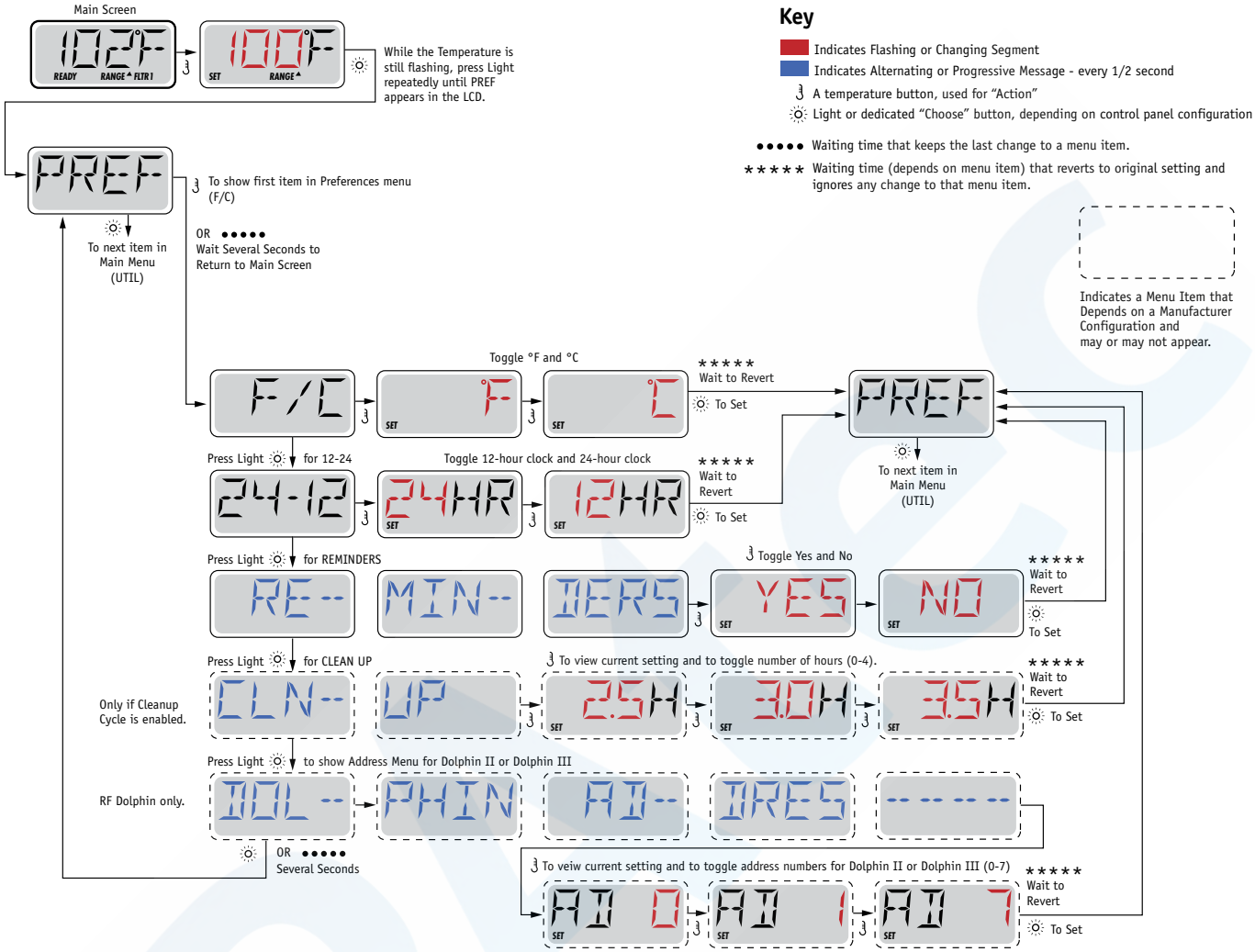
CLN-UP (Cleanup)

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

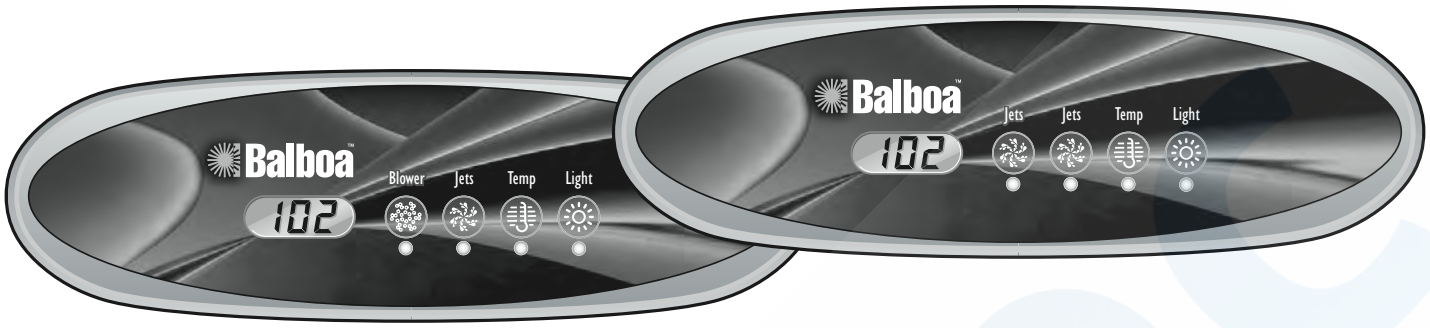


VII. Annex 2: Balboa Control Panel Type 2

Non-Circ Operation

Initial Start-up

When your spa is first actuated, it will go into Priming mode, indicated by "Pr." **Please see the M-7 Installation Instruction Manual for complete instructions on Power-up and Pump Priming.** The Priming mode will last for less than 5 minutes (press "Temp" or "Set" to skip Priming Mode) and then the spa will begin to heat the spa and maintain the water temperature in the Standard mode.



Temp/Set (80°F - 104°F / 26°C - 40°C)

The start-up temperature is set at 100F°/37°C. The last measured temperature is constantly displayed on the LCD.

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

To display the set temperature, press the "Temp" or "Set" pad once.

To change the set temperature, press the pad a second time before the LCD stops flashing. Each press of the "Temp" or "Set" pad will continue to either raise or lower the set temperature.

If the opposite direction is desired, release the pad and let the display revert to the current water temperature. Press the pad to display the set temperature, and again to make the temperature change in the desired direction.

After three seconds, the LCD will stop flashing and display the current spa temperature.

Note: If there is not a blower on the system, an alternate panel with separate "Up" and "Down" buttons in place of a "Set" or "Temp" button may be used. Simply press "Up" or "Down" where a "Temp" or "Set" button press is indicated. (Ignore the "direction reversal paragraph.")

Jets

Touch the "Jets" button once to activate the low speed of the pump and again for the high speed. Press the "Jets" button again to turn off the pump. If left running, the low speed of the pump will automatically turn off after 4 hours, and the high speed will automatically turn off after 15 minutes. The low speed of the pump runs when when the blower is on. It may also activate for at least 2 minutes every 30 minutes to detect the spa temperature and then to heat to the set temperature if needed, depending upon mode. When the low speed turns on automatically, it cannot be deactivated from the panel; however, the high speed may be started.

Blower (optional)

This button is used to turn the blower on and off. If left on, the blower automatically turns off after 15 minutes.

Jets 2 (optional)

If your system has a pump 2 installed instead of a blower, it behaves exactly like a blower would.

Light

Press the "Light" button to turn the light on and off. If left on, the light automatically turns off after 4 hours.

Mode

Mode is changed by pressing the "Temp" or "Set" button, then pressing the "Light" button.

Standard Mode is programmed to maintain the desired temperature. Note that the last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes. "St" will be displayed momentarily when you switch into Standard Mode.

Economy Mode heats the spa to the set temperature only during filter cycles. "Ec" will display solid when temperature is not current, and will alternate with temperature when temperature is current.

Sleep Mode heats the spa to within 20°F/10°C of the set temperature only during filter cycles. "SL" will display solid when temperature is not current, and will alternate with temperature when temperature is current.

Preset Filter Cycles

The first filter cycle begins 6 minutes after the spa is energized. The second filter cycle begins 12 hours later. Filter duration is programmable for 2, 4, 6, 8 hours or for continuous filtration (indicated by "FC"). The default filter time is 2 hours.
To program, press "Temp" or "Set," then "Jets." Press "Temp" or "Set" to adjust. Press "Jets" to exit programming.

The blower purges for 30 seconds at the beginning of each filter cycle. The low speed of the pump runs during filtration and the ozone generator (if installed) will be enabled.

Freeze Protection

If the temperature sensors detect a drop to below 44°F/6.7°C within the heater, the pump and blower will automatically activate to provide freeze protection. The equipment stays on until 4 minutes after the sensors detect that the spa temperature has risen to 45°F/7.2°C or higher. In colder climates, an optional additional freeze sensor may be added to protect against freeze conditions that may not be sensed by the standard sensors. Aux freeze sensor protection acts similarly except with the temperature thresholds determined by the switch and without a 4-minute delay in turnoff. See your dealer for details.

(over)

Diagnostic Messages

Message	Meaning	Action Required
	No message on display. Power has been cut off to the spa.	The control panel will be disabled until power returns. Spa settings will be preserved until next power up.
--	Temperature unknown.	After the pump has been running for 2 minutes, the temperature will be displayed.
HH	"Overheat" - The spa has shut down. One of the sensors has detected 118°F/48°C at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
OH	"Overheat" - The spa has shut down. One of the sensors has detected that the spa water is 110°F/43°C.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F/42°C, the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
IC	"Ice" - Potential freeze condition detected.	No action required. The pump and blower will automatically activate regardless of spa status.
SA	Spa is shut down. The sensor that is plugged into the Sensor "A" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
Sb	Spa is shut down. The sensor that is plugged into the Sensor "B" jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
Sn	Sensors are out of balance. If alternating with spa temperature, it may just be a temporary condition. If flashing by itself, spa is shut down.	If the problem persists, contact your dealer or service organization.
HL	A significant difference between temperature sensors has been detected. This could indicate a flow problem.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the pumps have been primed. If problem persists, contact your dealer or service organization.
LF	Persistent low flow problems. (Displays on the fifth occurrence of "HL" message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for "HL" message. Heating capability of the spa will not reset automatically; you may press any button to reset.
dr	Possible inadequate water, poor flow, or air bubbles in detected in the heater. Spa is shut down for 15 minutes.	Check water level in spa. Refill if necessary. If water level is okay, make sure the pumps have been primed. Press any button to reset, or this message will automatically reset within 15 minutes. If problem persists, contact your dealer or service organization.
dY	Inadequate water detected in heater. (Displays on third occurrence of "dr" message.) Spa is shut down.	Follow action required for "dr" message. Spa will not automatically reset. Press any button to reset.

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.

Balboa Instruments *Incorporated*

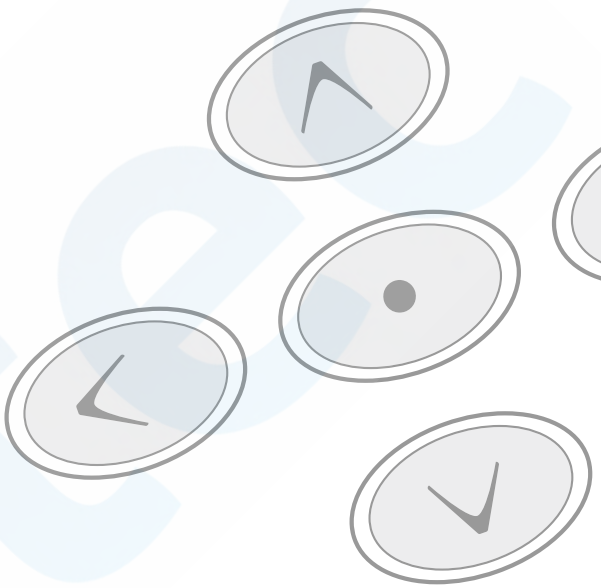
P/N 40407 Rev. C 04/19/2006

VIII. Annex 3: Balboa Control Panel Type 3

Balboa Water Group BP2XXXX Series

User Interface and Programming Reference

System Model:	BP2XXXX	
Software Version:	5.0 and later	
Panel Model:	TP900 Series	TP800 Series
Software Version:	2.0 or later	1.9 or later



BALBOA water group

The Main Screen

Spa Status

Important information about spa operation can be seen quickly from the Main Screen.

The most important features, including Set Temperature adjustment, can be accessed from this screen.

The actual water temperature can be seen in large text and the desired, or Set Temperature, can be selected and adjusted.

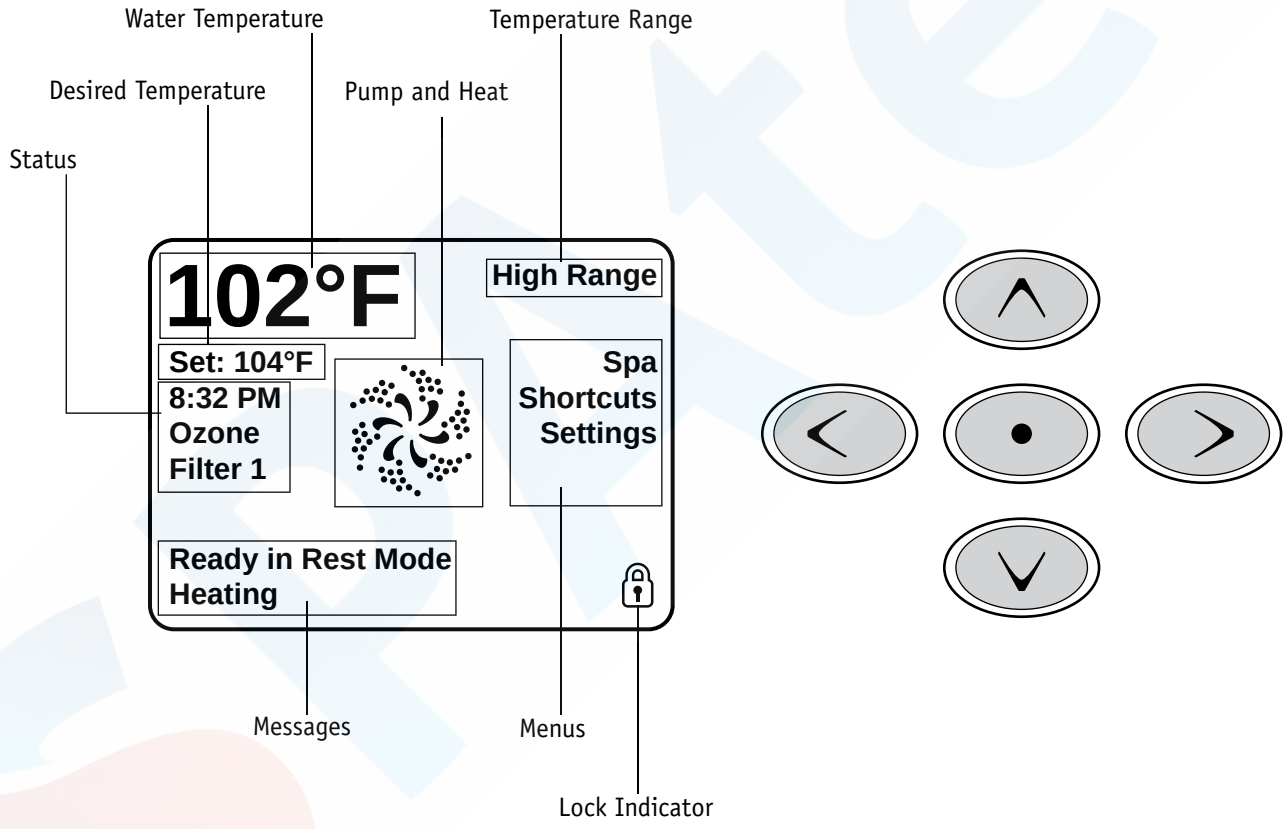
Time-of-day, Ozone operation and Filter Operation status is available, along with other messages and alerts.

High Temperature Range vs. Low Temperature Range is indicated in the upper right corner.

The Jets Icon in the center will spin on a TP900 if any pump is running and changes color when the heater is on. (The icon does not spin on a TP800, but still indicates pump and heater function)

A Lock icon is visible if the panel or settings are locked.

The Menu choices on the right can be selected and the screen will change to show more detailed controls or programming functions.



Note: After 3-5 minutes the display will automatically go into sleep mode, which turns the display off. This is normal operation. Press any button on the screen to wake the panel up.

The Main Screen

Navigation

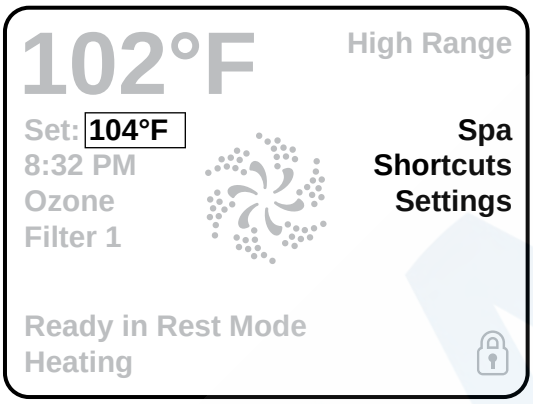
Navigating the entire menu structure is done with the 5 buttons on the control panel.

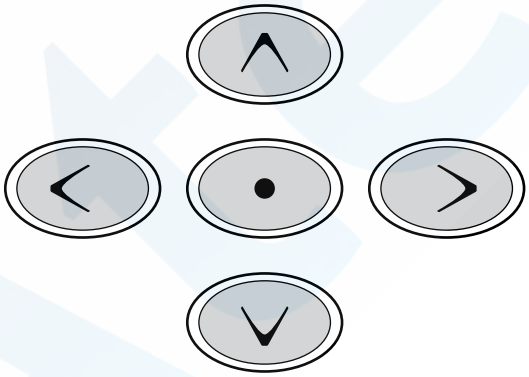
When a text item changes to white during navigation, that indicates the item is selected for action.

Operating or changing a selected item is generally done with the center or “Select” button.

The only item that can be changed on the left side of the Main Screen is the Set Temperature. Press the Left Arrow button to change the Set Temperature number to white. The Set Temperature can then be adjusted with the up and down buttons. Pressing the Select button or the Right Arrow button will save the new set temperature.

On the right side of the screen, the menu selections can be selected with the Up and Down Buttons. Use the Select Button to choose an item. Selecting one of these items will change to a different screen with additional controls.





Messages

At the bottom of the screen, messages may appear at various times. Some of these messages must be dismissed by the user (see page 17).

Press-and-Hold

If an Up or Down button is pressed and held when the Set Temperature is selected, the temperature will continue to change until the button is released, or the Temperature Range limits are reached.

The Spa Screen and Shortcut Screen

All Equipment Access

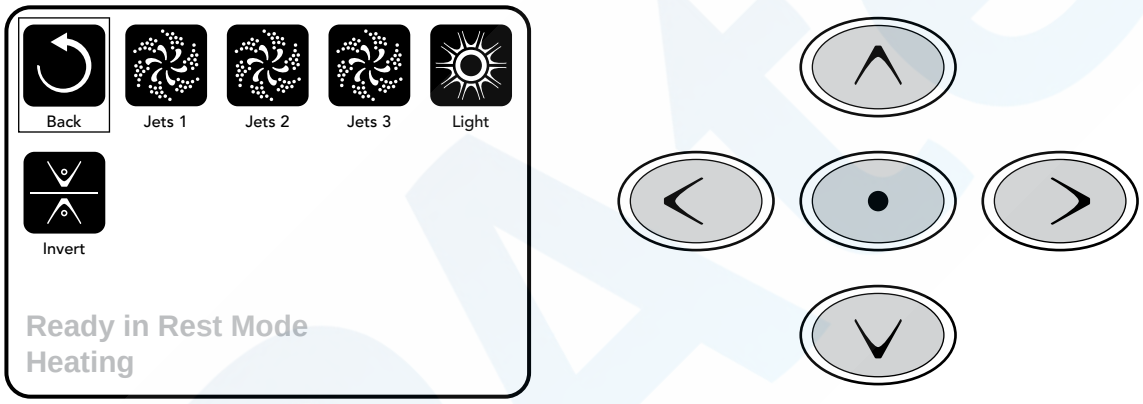
The Spa Screen shows all available equipment to control, as well as other features, like Invert, in one easy-to-navigate screen. The display shows icons that are related to the equipment installed on a particular spa model, so this screen may change depending on the installation.

The navigation buttons are used to select an individual device. The device that is chosen is highlighted with a white outline and the text under the icon changes to white. Once a device is selected, it can be controlled using the center Select Button.

Some devices, like pumps, may have more than one ON state, so the icon will change to reflect the state that the equipment is in. Below are some examples of 2-speed Pump indicators.

If the Spa has a Circ Pump, a Circ Pump Icon will appear to indicate its activity, but outside of Priming Mode, the Circ Pump cannot be controlled directly.

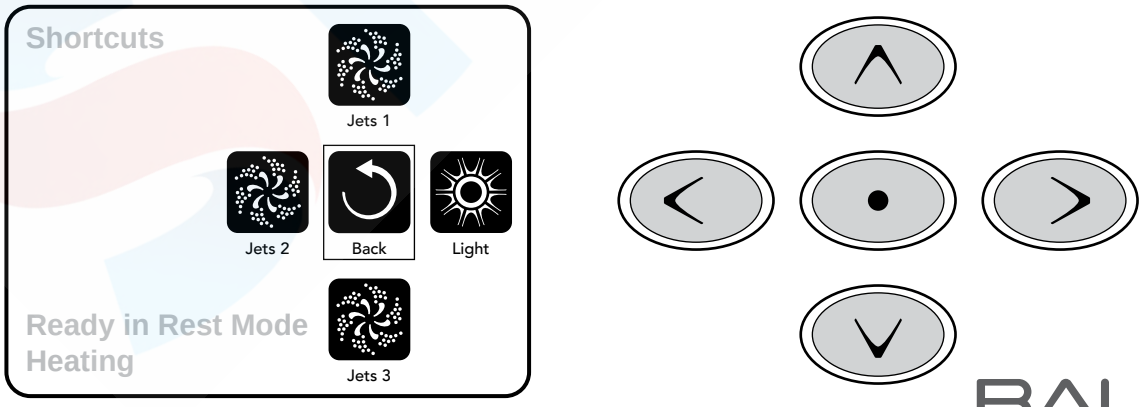
NOTE: The icon for the pump that is associated with the heater (Circ or P1 Low) will have a red glow in the center when the heater is running.



One-Press Activation

The Shortcut Screen requires no navigation. Each button is fixed on a specific fuction and can be used as a very simple user interface for the spa.

Each button function is illustrated in the display and mapped according to the manufacturer's instructions.



The Settings Screen

Pressing a "Button"

When instructions are given to "press a button" any of the following can be done:

- Navigate to the desired item on any Screen. When the desired item is highlighted, press the Select Button.
- Press the button for that device while on the Shortcuts Screen, if the device is one of the 4 functions available.

Programming, Etc.

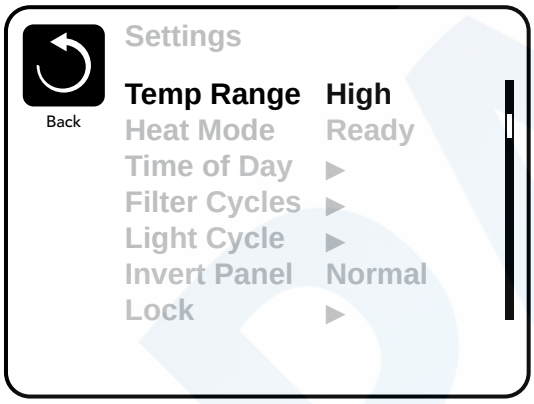
The Settings Screen is where all programming and other spa behaviors are controlled.

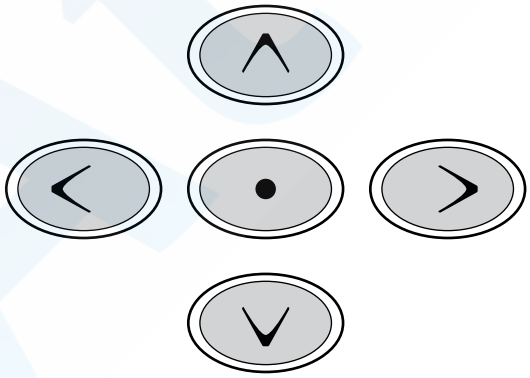
This screen has several features that can be acted on directly. These features include Temp Range, Heat Mode, and Invert Panel. When one of these items is highlighted, the Select Button is used to toggle between two settings.

All other menu items (with an arrow pointing to the right) go to another level in the menu.

Press-and-Hold

If an Up or Down button is pressed and held when an item in a Menu List is highlighted, the list can be scrolled quickly from top to bottom. The scroll bar on the right side of the screen indicates the relative position of the highlighted item in the list.





Dual Temperature Ranges (High vs. Low)

This system incorporates two temperature range settings with independent set temperatures. The specific range can be selected on the Settings screen and is visible on the Main Screen in the upper right corner of the display.

These ranges can be used for various reasons, with a common use being a "ready to use" setting vs. a "vacation" setting. 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.

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

Low Range can 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.

BALBOA water group

The Settings Screen – Continued

Heat Mode – Ready vs. 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 (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."

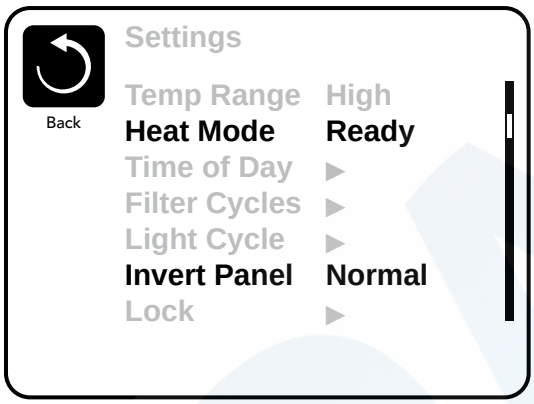
REST Mode will only allow heating during programmed filter cycles. Since polling does not occur, the temperature display may not show a current temperature until the heater pump has been running for a minute or two.

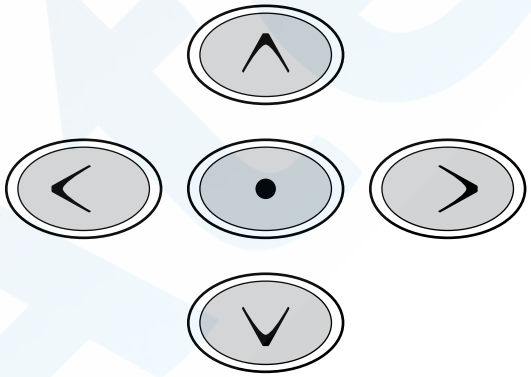
While Pump 1 High can be turned on and off, Pump 1 Low will run until set temperature is reached, or 1 hour has passed.

Circulation Mode (See Page 8, 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 the Jets 1 Button 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 Settings Menu and changing the Heat Mode.

Fill it up!

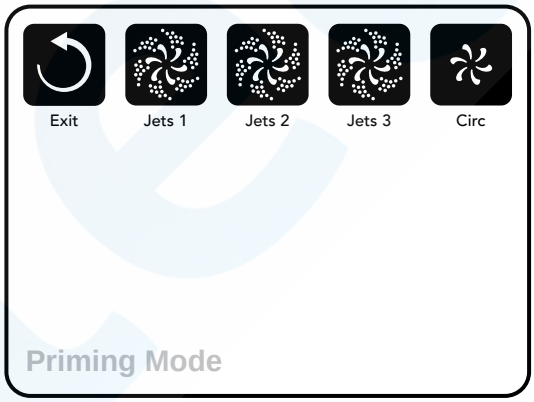
Preparation and Filling

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 will display a splash, or startup screen.

Priming Mode – M019*

After the initial start-up sequence, the control will enter Priming Mode and display a Priming Mode screen. Only pump icons appear on the priming mode screen. The system will automatically return to normal heating and filtering at the end of the priming mode, which lasts 4-5 minutes. 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 selecting the "Jet" buttons. If the spa has a Circ Pump, it can be turned on and off by pressing the "Circ Pump" button during Priming Mode. In addition, if the spa has a Circ Pump, it can be activated by pressing the dedicated "Light" button during Priming Mode when using a TP800.



Manually exit Priming Mode by pressing the "Exit" Button.

Priming the Pumps

As soon as the Priming Mode screeen appears on the panel, select the "Jets 1" button once to start Pump 1 in low-speed and then again to switch to high-speed. Also, select the other pumps, to turn them on. The pumps should 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 navigating to the "Back" button on the Priming Mode Screen. 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 display the Main Screen, 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.

– – –°F – – –°C

*M019 is a Message Code. See Fault Log on Page 13.

Spa Behavior

Pumps

On the Spa Screen, select a "Jets" button once to turn the pump 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.

Other device options may be available, like Blower, Light, Mist, etc.

Filtration and Ozone

On non-circ systems, Pump 1 low and the ozone generator will run during filtration. On circ systems, the ozone will generally run with the circ pump, but can be limited to filtration cycles.

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 water devices like blower, mist device (if these exist) and other pumps will run briefly to purge the plumbing to maintain good water quality.

Freeze Protection

If the temperature sensors within the heater detect a low enough temperature, then the water devices automatically activate to provide freeze protection. The water devices 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 14)

BALBOA water group

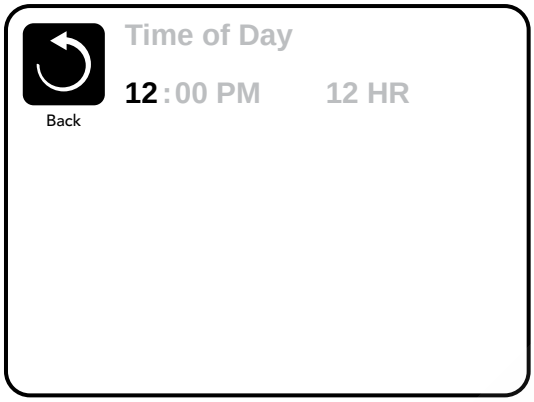
Time-of-Day

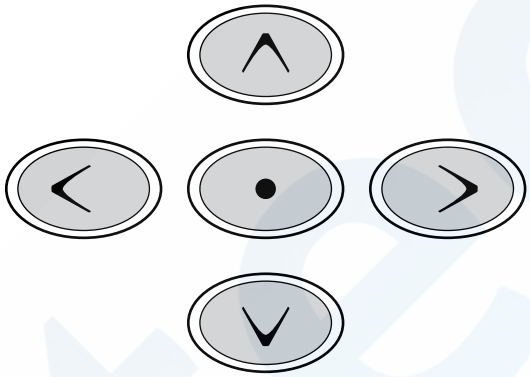
Be sure to set the Time-of-Day

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

“Set Time” will appear on the display if no time-of-day is set in the memory.

On the Settings Screen, select the Time-of-Day line. On the Time-of-Day screen, simply navigate right and left to select the Hour, Minutes, AM/PM and 12/24 Hour segments. Use the Up and Down Buttons to make changes.

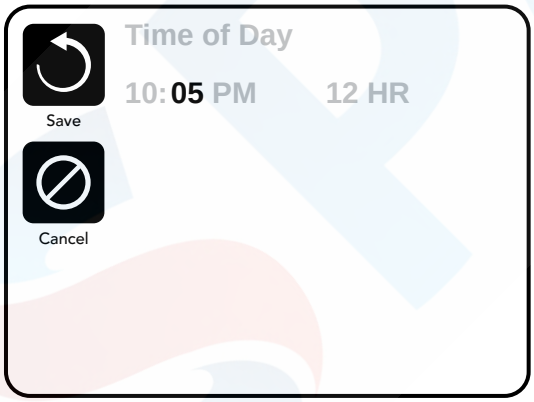


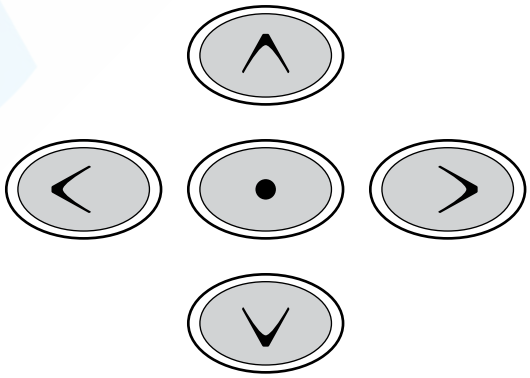


Saving Settings

The Time-of-Day screen is a simple, editable screen that illustrates a feature of the control that applies to all other editable screens as well.

When changes are made, the icon to go “Back” changes to “Save” and a new icon for “Cancel” appears under the Save icon. Navigating to the left will highlight the Save icon, and navigating down from there will allow the user to cancel the pending change. Pressing the “Select” button will save or cancel the changes and go back to the previous screen.





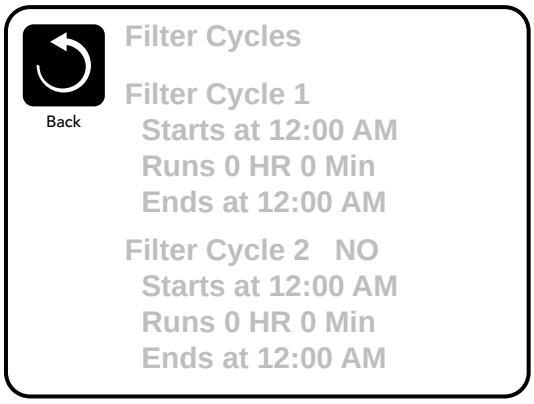
Note:

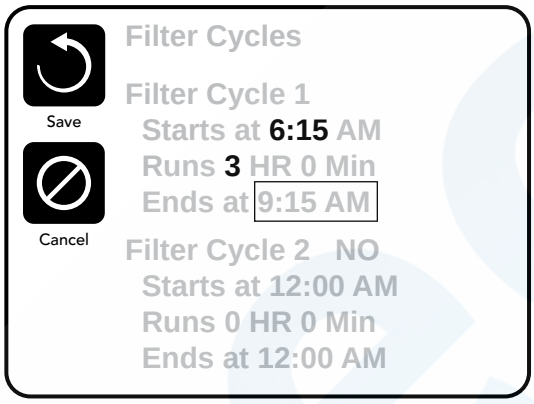
If power is interrupted to the system, Time-of-Day will be maintained for several days.

Adjusting Filtration

Main Filtration

Using the same navigation and adjustment as Setting the Time, Filter Cycles are set using a start time and a duration. Each setting can be adjusted in 15-minute increments. The panel calculates the end time and displays it automatically.





Filter Cycle 2 - Optional Filtration

Filter Cycle 2 is OFF by default.

Simply navigate to the Filter Cycle 2 line by pressing the Right Navigation Button, and when "NO" is highlighted, press Up or Down to toggle Filter Cycle 2 on and off. When Filter Cycle 2 is ON, it can be adjusted in the same manner as Filter Cycle 1 by navigating to the right.

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

Circulation Pump Modes

Some spas may be manufactured with Circ Pump settings that allow programming filtration cycle duration. Some circ Modes are pre-programmed to operate 24 hours a day and are not programmable. Refer to the spa manufacturer's documentation for any Circ Mode details.

Purge Cycles

In order to maintain sanitary conditions, as well as protect against freezing, secondary water devices will purge water from their respective plumbing by running briefly at the beginning of each filter cycle.

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

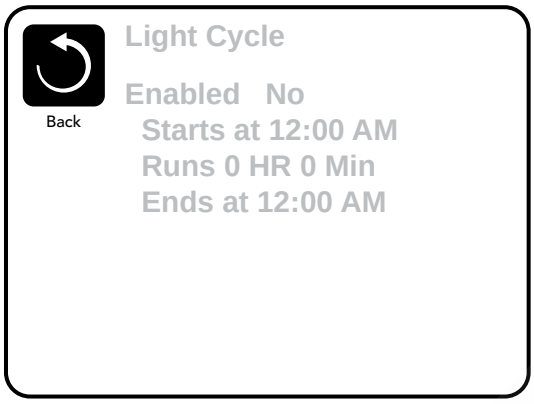
Additional Settings

Light Cycle Option

If Light Cycle does not appear in the Settings Menu, the Light Timer feature is not enabled by the manufacturer.

When available, the Light Timer is OFF by default.

The settings can be edited the same way that Filter Cycles are edited (see page 10).



Invert Panel

Selecting Invert Panel will flip the display and the buttons so the panel can be easily operated from inside or outside the hot tub.

Dedicated Buttons

Specific Buttons for Specific Devices

If the panel has dedicated function buttons (TP800) or the spa has an Auxiliary Panel(s) installed, pressing those buttons will activate the device indicated for that button.

These dedicated buttons will operate just like the Spa Screen buttons (see page 4) and the equipment will behave in the same manner with each button press.

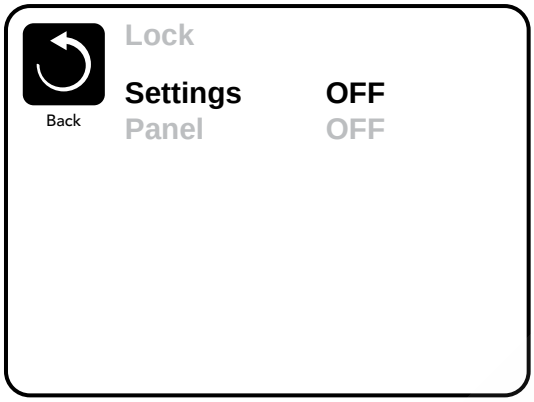
Restricting Operation

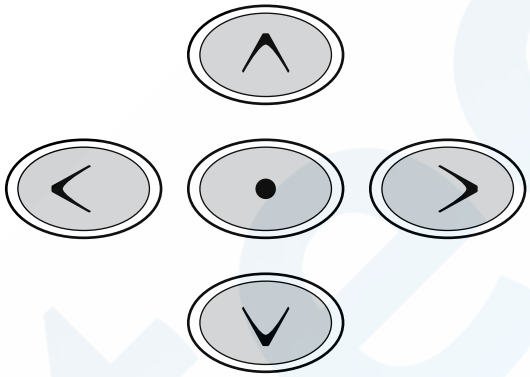
The control can be restricted to prevent unwanted use or temperature adjustments.

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

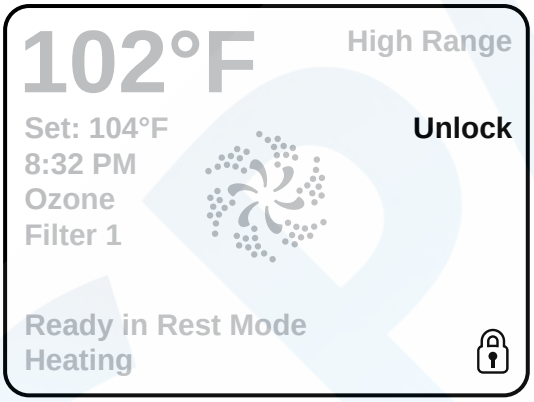
Locking the Settings allows Jets and other features to be used, but the Set Temperature and other programmed settings cannot be adjusted.

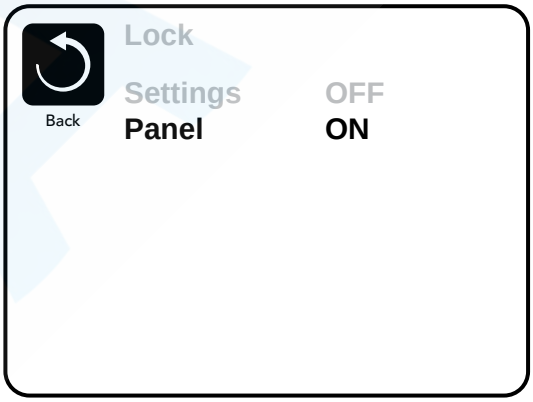
Settings Lock allows access to a reduced selection of menu items. These include Set Temperature, Invert, Lock, Utilities, Information and Fault Log. They can be seen, but not changed or edited.



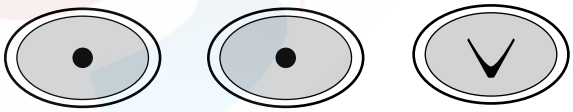


Unlocking





An Unlock Sequence using the navigation buttons can be used from the Lock Screen. The Unlock Sequence is the same for both Panel Lock and Settings Lock.



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Additional Settings

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. If spa service will require more than an hour, it may be best to simply shut down power to the spa.

Drain Mode

Some spas have a special feature that allows Pump 1 to be employed when draining the water. When available, this feature is a component of Hold Mode.

Utilities

The Utilities Menu contains the following:

A/B Temps

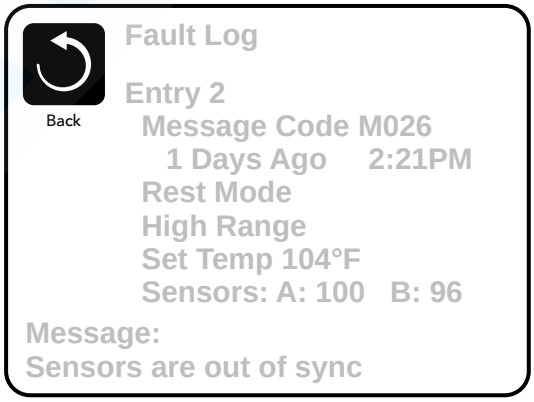
When this is set to On, the temperature display will alternate to display temperature from Sensor A and Sensor B in the heater.

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.

Fault Log

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



GFCI Test
(Feature not available on CE rated systems.)

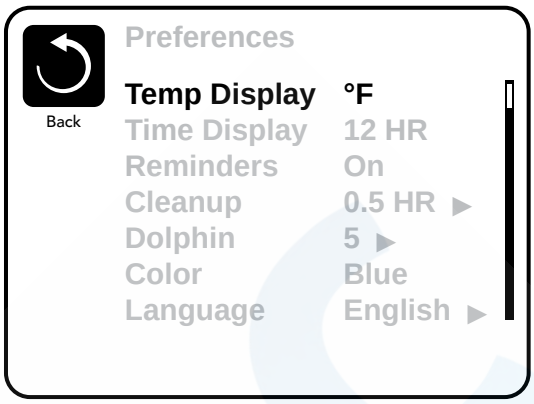
GFCI Test is not always enabled, so it may not appear. This screen allows the GFCI to be tested manually from the panel and can be used to reset the automatic test feature. If the GFCI Test Feature is reset, the device will trip within 7 days. (See Page 16)

*M036 is a Message Code. Codes like this will be seen in the Fault Log

Additional Settings

Preferences

The Preferences Menu allows the user to change certain parameters based on personal preference.



Temp Display

Change the temperature between Fahrenheit and Celsius.

Time Display

Change the clock between 12 hr and 24 hr display.

Reminders

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

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.

Dolphin II and Dolphin III (Applies to RF Dolphin only)

When set to 0, no addressing is used. Use this setting for a Dolphin II or Dolphin III 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.)

Color

Pressing the Select Button when Color is highlighted will cycle through 5 background colors available in the control.

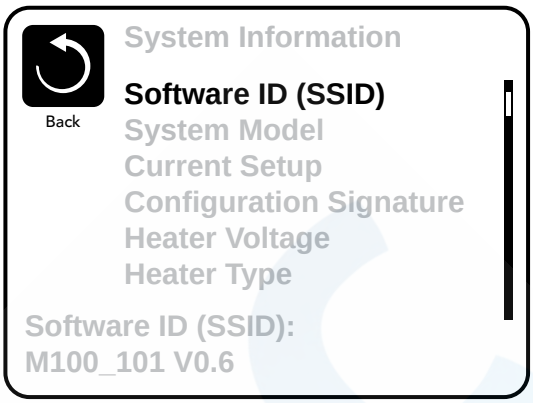
Language

Change the language displayed on the panel.

Information

System Information

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.



Software ID (SSID)

Displays the software ID number for the System.

System Model

Displays the Model Number of the System.

Current Setup

Displays the currently selected Configuration Setup Number.

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).

Heater Type

Displays a heater type ID number.

Dip Switch Settings

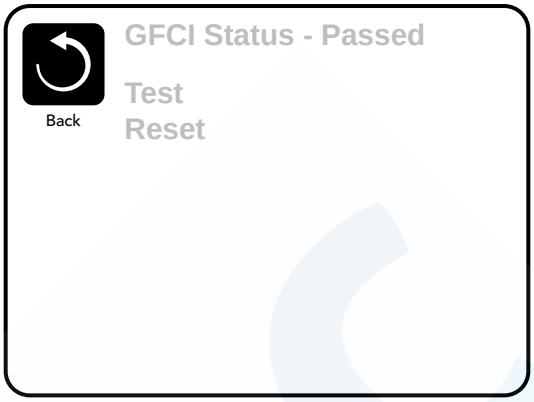
Displays a number that represents the DIP switch positions of S1 on the main circuit board.

Panel Version

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

Utilities – GFCI Test Feature

The Ground Fault Circuit Interrupter (GFCI) or Residual Current Detector (RCD) is an important safety device and is required equipment on a hot tub installation.



(The GFCI Test Feature is not available on CE rated systems.)

Used for verifying a proper installation

Your spa may be equipped with a GFCI Protection feature. 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 (North America Only)

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.

Warning:

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

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

CE Product:

CE registered systems do not have an RCD Test Feature due to the nature of the electrical service.

Some UL registered systems do not have the GFCI Test Feature activated.

The end-user must be trained how to properly test and reset the RCD.

General Messages

Most messages and alerts will appear at the bottom of the normally used screens. Several alerts and messages may be displayed in a sequence.

Some messages can be reset from the panel. Messages that can be reset will appear with a "right arrow" at the end of the message. This message can be selected by navigating to it at pressing the Select button.

– – –°F – – –°C

Water Temperature is Unknown

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

Possible freezing condition

A potential freeze condition has been detected, or the Aux Freeze Switch has closed. All water devices are activated.

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.

The water is too hot – M029

The system has detected a spa water temp of 110°F (43.3°C) or more, 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.

MOXX numbers are Message Codes. See Page 13.

* This message can be reset from the topside panel.

Heater-Related Messages

The water flow is low – 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.

The water flow has failed* – 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.

The heater may be dry* – 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.

The 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 clear the message to restart heater start up. See "Flow Related Checks" below.

The heater is too hot* – 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 clear the message when water is below 108°f (42.2°C). See "Flow Related Checks" below.

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 by an error condition, some equipment may occasionally turn on to continue monitoring temperature or if freeze protection is needed.

M0XX numbers are Message Codes. See Page 13.

* This message can be reset from the topside panel.

Sensor-Related Messages

Sensors are out of sync – M015

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

Sensors are out of sync -- Call for service* – M026

The temperature sensors ARE out of sync. The fault above has been established for at least 1 hour. Call for Service.

Sensor A Fault, Senor B Fault – Sensor A: M031, Sensor B: M032

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

Miscellaneous Messages

Communications error

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

Test software installed

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

°F or °C is replaced by °T

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

MOXX numbers are Message Codes. See Page 13.

* This message can be reset from the topside panel.

System-Related Messages

Program memory failure* – 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.

The settings have been reset (Persistent Memory Error)* – M021

Contact your dealer or service organization if this message appears on more than one power-up.

The clock has failed* – M020

Contact your dealer or service organization.

Configuration error (Spa will not Start Up)

Contact your dealer or service organization.

The GFCI test failed (System Could Not Test the GFCI) – M036

(North America Only) May indicate an unsafe installation. Contact your dealer or service organization.

A pump may 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 – M035

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

POWER DOWN THE SPA. DO NOT ENTER THE WATER. Contact your dealer or service organization.

MOXX numbers are Message Codes. See Page 13.

* This message can be reset from the topside panel.

Reminder Messages

General maintenance helps.

Reminder Messages can be suppressed by using the Preferences Menu. See Page 14.

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.

Check the pH

May appear on a regular schedule, i.e. every 7 days.

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

Check the sanitizer

May appear on a regular schedule, i.e. every 7 days.

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

Clean the filter

May appear on a regular schedule, i.e. every 30 days.

Clean the filter media as instructed by the manufacturer. See HOLD on page 13.

Test the GFCI (or RCD)

May appear on a regular schedule, i.e. every 30 days.

The GFCI or 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.

Change the water

May appear on a regular schedule, i.e. every 90 days.

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

Clean the cover

May appear on a regular schedule, i.e. every 180 days.

Vinyl covers should be cleaned and conditioned for maximum life.

Treat the wood

May appear on a regular schedule, i.e. every 180 days.

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

Change the filter

May appear on a regular schedule, i.e. every 365 days.

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

Reminder messages can be reset from the topside panel.

Additional messages may appear on specific systems.

BALBOA water group

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 power supply.

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 Manufacturers 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 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 verifier l'efficacite du disjoncteur differentiel avant d'utiliser differentiel avant d'utiliser le bain.
- Lire la notice technique.
- Lorsque l'appareillage est installe dans une fosse, on doit assurer un drainage adequat.
- Employer uniquement a l'interieur d'une cloture CSA Enclosure 3.
- Connecter uniquement a un circuit protege par un disjoncteur differentiel de Class A.
- Afin d'assurer une protection permanente contre le danger de shock electrique, lors de l'entretien employer seulement des pieces de rechange identiques.
- Les prises d'aspiration doivent etre equipees de grilles convenant au debit maximal indique.

Avertissement:

- Des temperatures de l'eau superieures a 38°C peuvent presenter un danger pour la sante.
- Deconnecter du circuit d'alimentation electrique avante l'entretien.

Warning/Advertissement:

- Disconnect the electric power before servicing. Keep access door closed.
- Deconnecter du circuit d'alimentation electrique avant l'entretien. Garder la porte fermer.

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