

# SPA OWNER'S MANUAL

FOR **BALBOA**  
water group



*Spa*  
CARE UK

Partners and distribution centre for Sunbeach spas UK™



# QUICK REFERENCE GUIDE

## Balboa TP400 / TP600 Guide

User Interface and Programming Reference - Simplified Menus\*

### CONTROL PANELS



\* The "Menu Style" Configuration Setting must be set as 1 or 2 for Simplified Menus to be used.

### 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.

### MAIN MENU



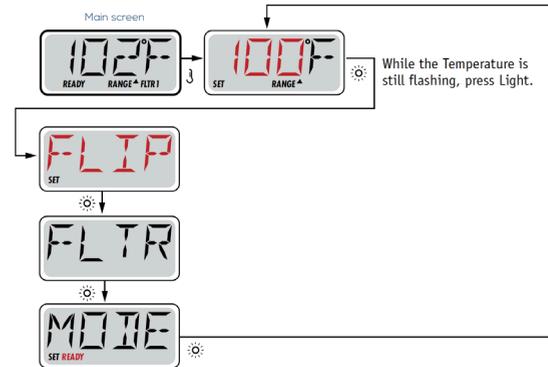
#### NAVIGATION

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.



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.

#### SERVICE TECHNICIAN MENU:

When Test Mode is activated by setting DIP switch 1 ON, the "TEST" menu item will appear before FLIP and the "UTIL" menu item will appear after MODE. See Service and Installation Guide for more information.

## 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.

## SPA BEHAVIOUR

### 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, 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 two filter cycles that will run 10 minutes after power-up. The filter duration is programmable.

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.

## 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).

The temperature can be set between 60°F and 104°F.

### 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.

## 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.

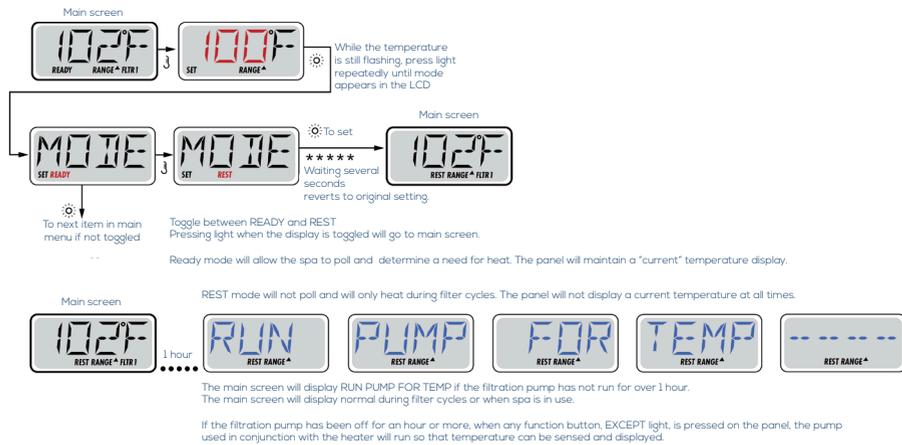
If the heater pump is a 2-Speed Pump 1, READY Mode will circulate water every 1/2 hour, using Pump 1 Low, in order to maintain a constant water temperature, heat as needed, and refresh the temperature display. This is known as "polling."

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

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.

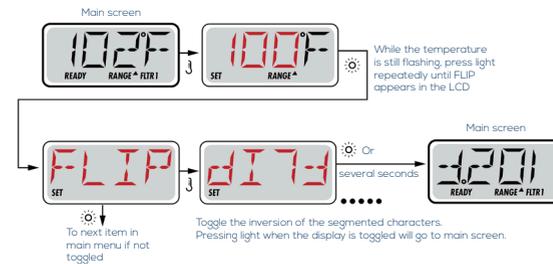


### READY-IN-REST MODE

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.



## FLIP (INVERT DISPLAY)



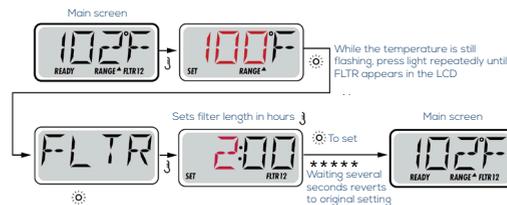
### NOTE:

Some panels may have a dedicated FLIP button, which allows the user to flip the display with a single button-press. The FLIP menu/functionality depends on Manufacturer configuration and may not be available. (Menu Style 1)

## ADJUSTING FILTRATION

### MAIN FILTRATION

Filter cycles are set using a duration. Each setting can be adjusted in 1-hour increments. Filter Cycle 1 and Filter Cycle 2 (if enabled) are set to the same duration.



If Filter Cycle 2 is enabled, Filter 12 will appear in the LCD. If Filter is disabled, Filter 1 will appear.

### 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.

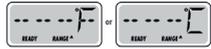
## GENERAL MESSAGES



### 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.)

M0XX numbers are Message Codes.

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

## HEATER-RELATED MESSAGES



### 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.



### 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.



### 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.



### 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.



### 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.



### 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.

## 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

### °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 FALT ----- 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 37). 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.

**CHEK PH** 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.

**CHEK CHEM** 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.

**CLN FLTR** 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 page 35).

**TEST GFCI** 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 be trained to test and reset the GFCI or RCD on a regular basis.

## REMINDER MESSAGES CONTINUED

**CHNG WATR** 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 COVR** 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 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.

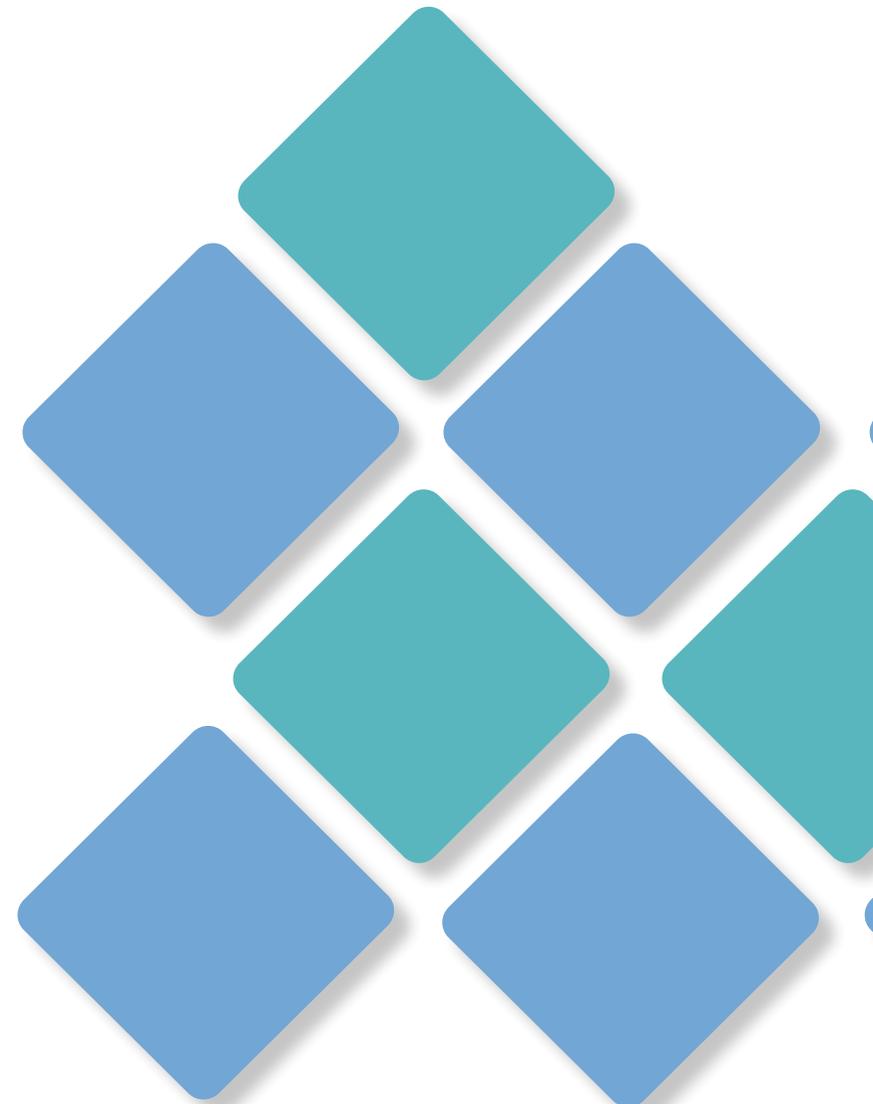
#### CSA COMPLIANCE

##### 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.



# QUICK REFERENCE GUIDE

## Balboa TP500 Guide User Guide for Standard Menu

### CONTROL PANELS



TP500S



TP500

### CONTROL PANELS



- |                |                    |                                     |
|----------------|--------------------|-------------------------------------|
| A - Heat       | F - Light          | K - Auxiliary (Jets 3 or MICROSILK) |
| B - Ready Mode | G - Clean Up Cycle | L - Temperature Range (High/Low)    |
| C - Rest Mode  | H - Jets 1         | M - Set (Programming)               |
| D - bba™2 On   | I - Jets 2         | N - Filter Cycle (1 or 2 or Both)   |
| E - WiFi       | J - Blower         | O - AM or PM (Time)                 |

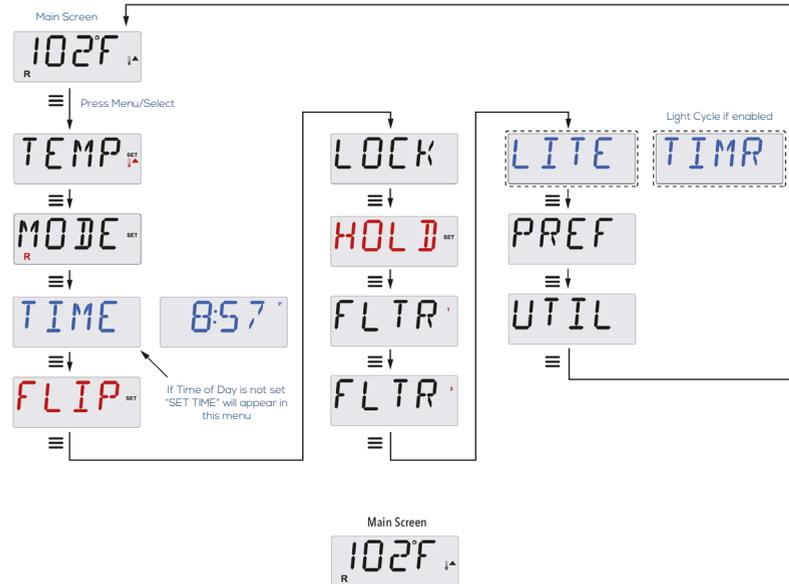
### MAIN MENUS

#### NAVIGATION

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

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The **MENU/SELECT** Button is 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. The menu can be exited with certain button presses. Simply waiting for a few seconds will return the panel operation to normal.



Waiting a few seconds in the Main Menu will allow the display to revert to the Main Screen.  
Most Changes are not saved unless Menu/Select is pressed.  
Refer to key above.

#### 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.

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- Indicates Flashing or Changing Segment
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- Menu/Select button
- 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.

## 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.

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Regardless of whether the priming mode ends automatically or you manually exit the priming mode, the system will automatically start 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 "Jets" or "Aux" 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 "Jets" button once to start Pump 1 in low-speed and then again to switch to high-speed. Also, push the "Jets 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 the "Warm" or "Cool" button. 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 water 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.

\*MO19 is a message code:

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 "Light" in Priming Mode. The Circ Pump will run by itself when Priming Mode is exited.

## SPA BEHAVIOUR

### PUMPS

Press the "Jets" 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.

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 42), Pump 1 low may also activate once in a while for at least 1 minute 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 or blower 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 44).

A second filter cycle can be enabled as needed.

At the start of each filter cycle, all water devices (other than the primary pump) will run briefly to purge the plumbing to maintain good water quality. The term "water devices" includes the Blower.

### 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 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 45).

## TEMPERATURE

### 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.

## TEMPERATURE

### DUAL TEMPERATURE RANGES

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



#### KEY

Indicates Flashing or Changing Segment

Indicates Alternating or Progressive Message - every 1/2 second

A temperature button, used for "Action"

Menu/Select button

..... 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.

### READY-IN-REST MODE

appears in the display if the spa is in Rest Mode and "Jets" is pressed. It is assumed that the spa is being used and will heat to set temperature. The primary pump 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.

## 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 "primary pump."

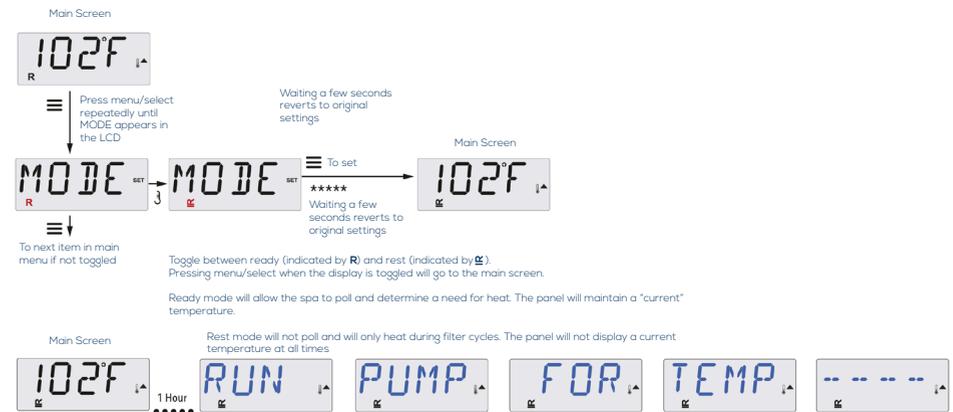
The primary pump can be either a 2-Speed Pump 1 or a circulation pump.

If the primary pump is a 2-Speed Pump 1, Ready Mode (indicated **R** by ) will circulate water periodically, 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 (indicated **R** by ) will only allow heating during programmed filter cycles. Since polling does not occur, the temperature display may not show a current temperature until the primary pump has been running for a minute or two. Circulation Mode (See Page 41, under Pumps, for other circulation modes)

If the spa is configured for 24HR circulation, the primary pump generally runs continuously. Since the primary 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.



#### KEY

Indicates Flashing or Changing Segment

Indicates Alternating or Progressive Message - every 1/2 second

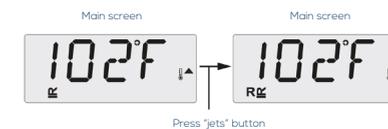
A temperature button, used for "Action"

Menu/Select button

..... Waiting time that keeps the last change to a menu item

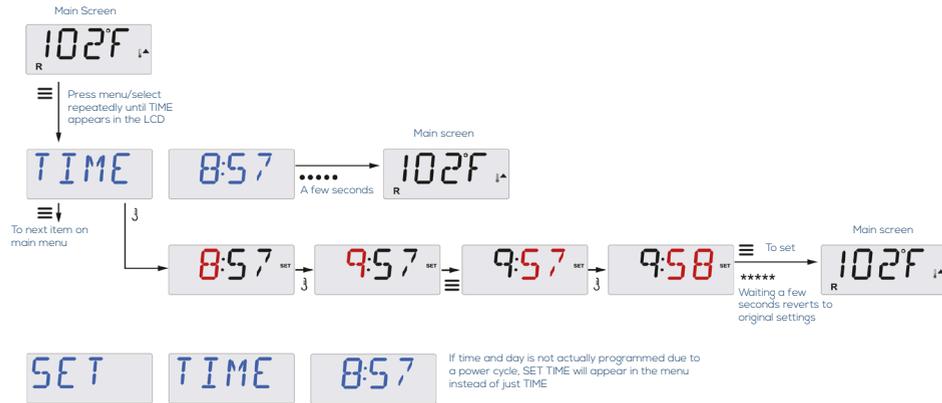
\* \* \* \* \* Waiting time (depends on menu item) that reverts to original setting and ignores any change to that menu item.

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



## SHOW & 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.



### KEY

- █ Indicates Flashing or Changing Segment
- █ Indicates Alternating or Progressive Message - every 1/2 second
- A temperature button, used for "Action"
- Menu/Select button

- ..... 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.

### NOTE:

This note refers to systems that do not keep track of Time-of-Day when powered down.

If power is interrupted to such a 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 such a 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.

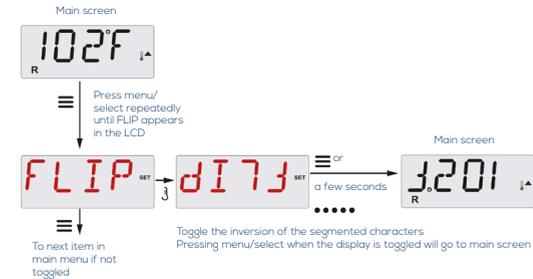
## UNLOCKING

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

### NOTE:

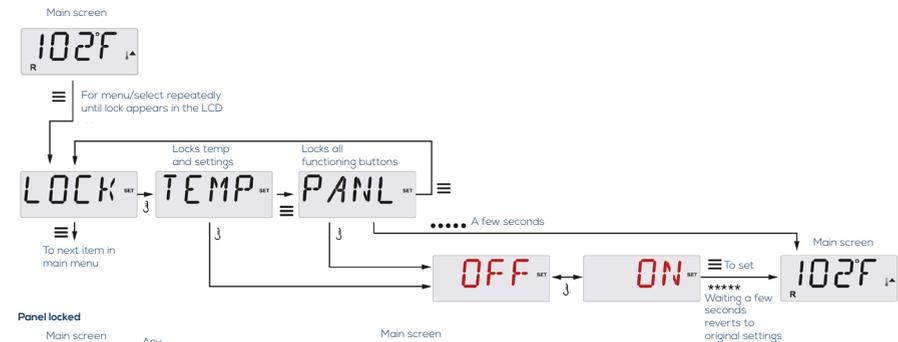
If the panel has both an UP and a Down button, the ONLY button that will work in the Unlock Sequence is the UP button.  
The temperature will not Unlock if the Unlock sequence is done while the panel is displaying "LOCK".

## FLIP (INVERT DISPLAY)



## RESTRICTING OPENING

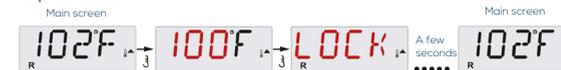
The control can be restricted to prevent unwanted use or temperature adjustments.  
Locking the panel prevents the controller from being used, but all automatic functions are still active.  
Locking the Temperature allows Jets and other features to be used, but the Set Temperature and other programmed 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.



### Panel locked



### Temperature locked



When the Temperature is locked, the panel will display the Set Temperature by pressing a Temperature Button, as usual.  
LOCK will appear if an attempt to reset the temperature is made with a subsequent button press.  
Adjustable settings in the menus are also locked.  
Other function buttons will operate normally.



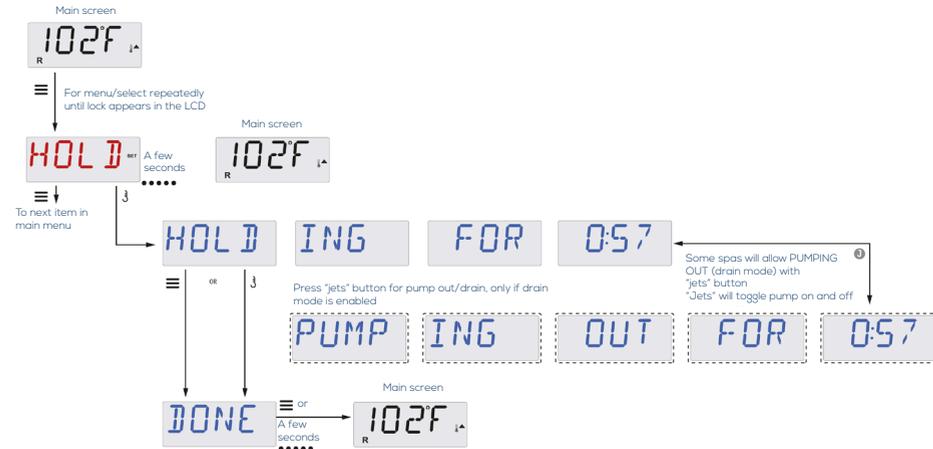
## HOLD (STANDBY)

### HOLD MODE -MO37\*

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

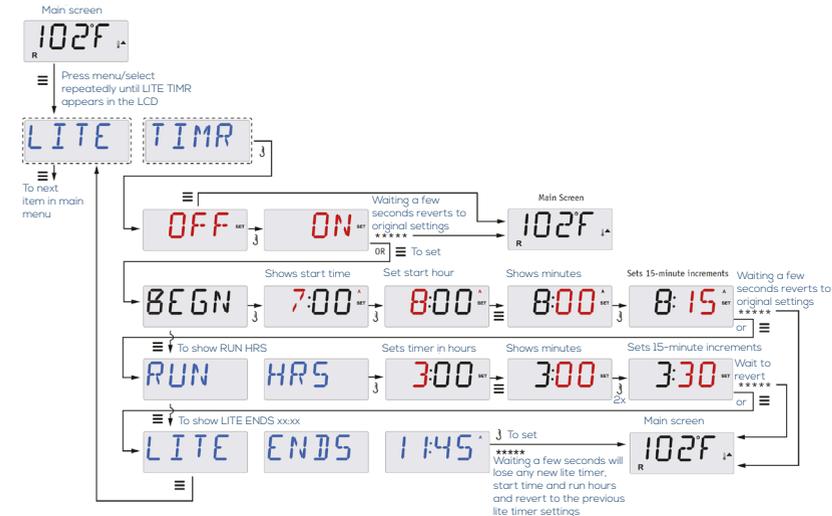
Some spas have a special feature that allows a pump to be employed when draining the water. When available, this feature is a component of Hold Mode. Drain Mode will time out with Hold Mode.



## LIGHT TIMER PROGRAMMING

### LIGHT TIMER OPTION

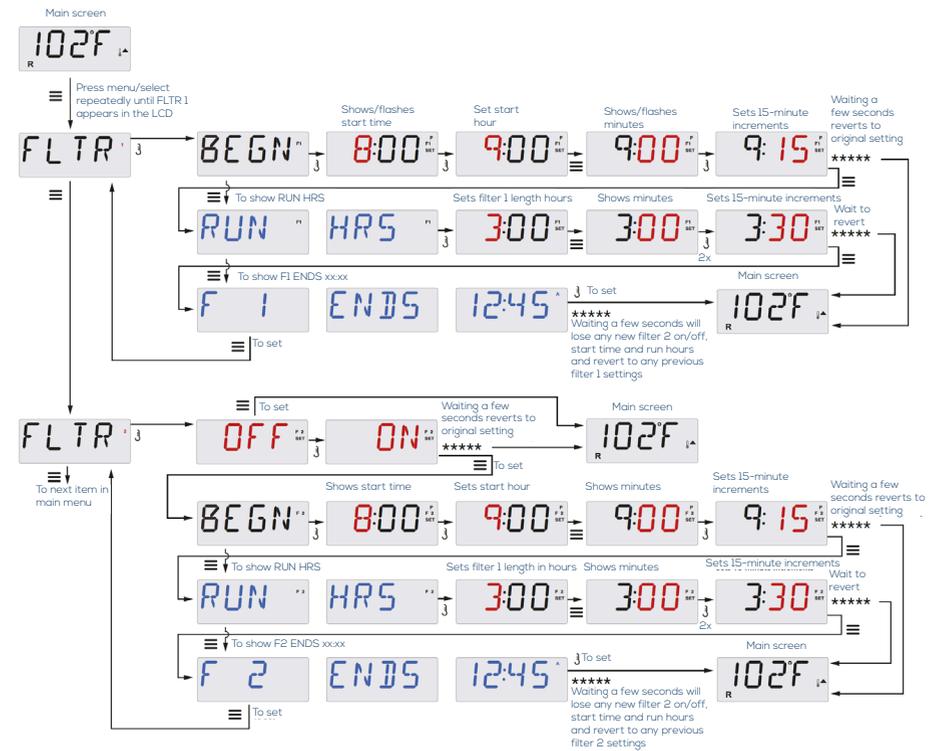
If LITE TIMR does not appear in the Main Menu, the Light Timer feature is not enabled by the manufacturer. When available, the Light Timer is OFF by default.



## 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.

## 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 display of reminder messages (like "Clean Filter") On or Off.

Note: Reminders continue to run in the background even when not displayed. So turning the display of Reminders On or Off does not reset any Reminder counts.

### 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.

### M8

(This message may not appear on all systems.) On systems that have M8, it is enabled by default. It can be disabled (or re-enabled) here. M8 reduces polling intervals when the water temperature in the spa is steady.

### 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.)

## UTILITIES AND INFORMATION

### INFO (System Information sub-menu)

The System Information Menu displays various settings and identification of the particular system.

### 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.

### 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.

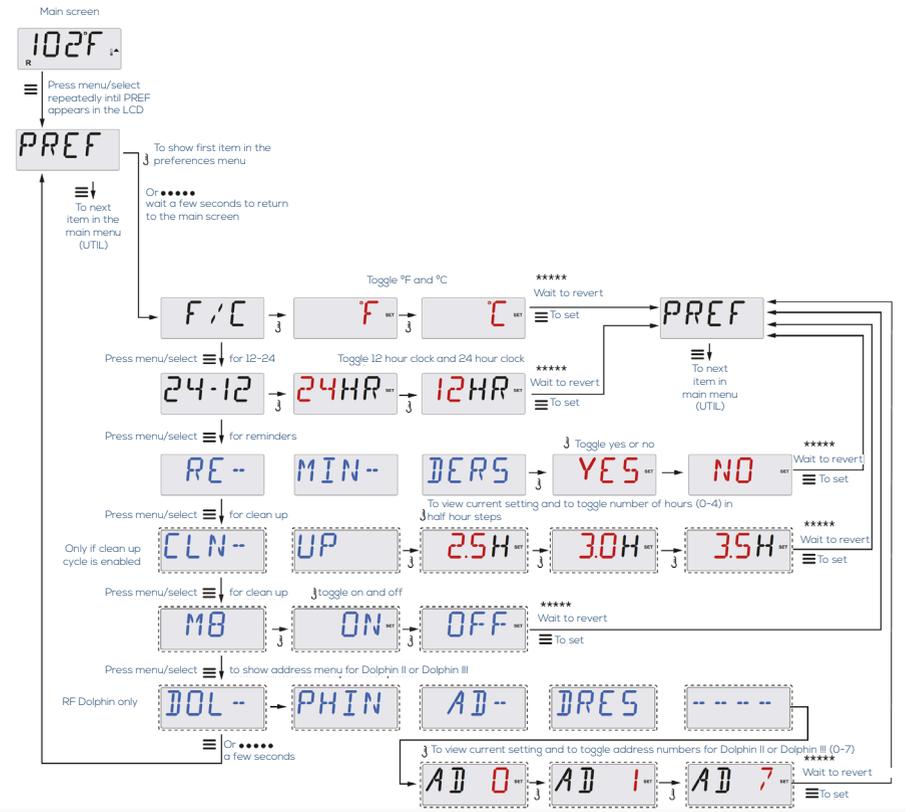
### SW \_ (Dip Switch Settings)

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.

## PREFERENCES



## KEY

Indicates Flashing or Changing Segment

Indicates Alternating or Progressive Message - every 1/2 second

A temperature button, used for "Action"

Menu/Select button

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.

## 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.

#### 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.

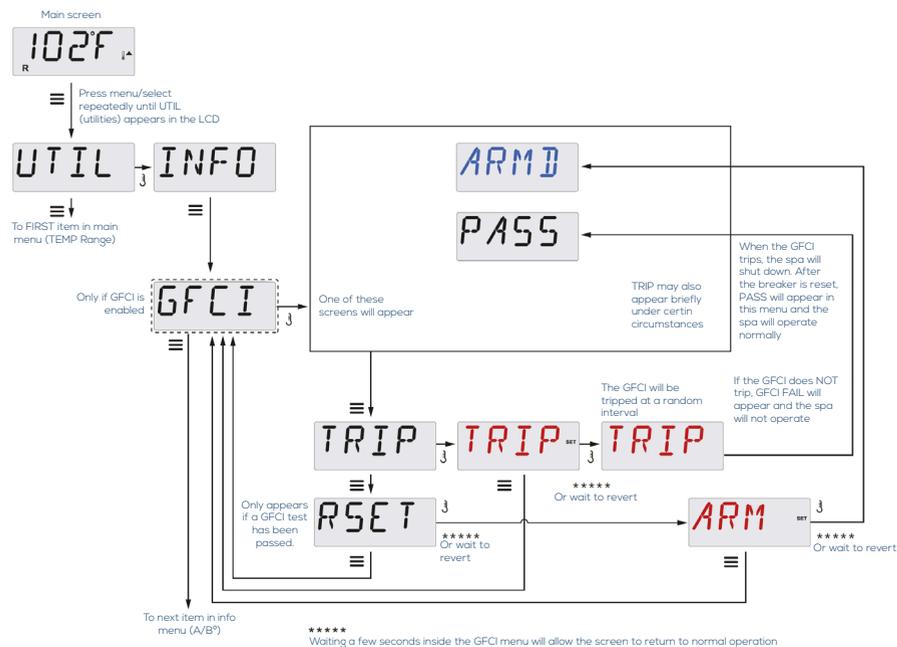
## UTILITIES – GFCI TEST FEATURE

### NOT AVAILABLE ON CE RATED SYSTEMS.

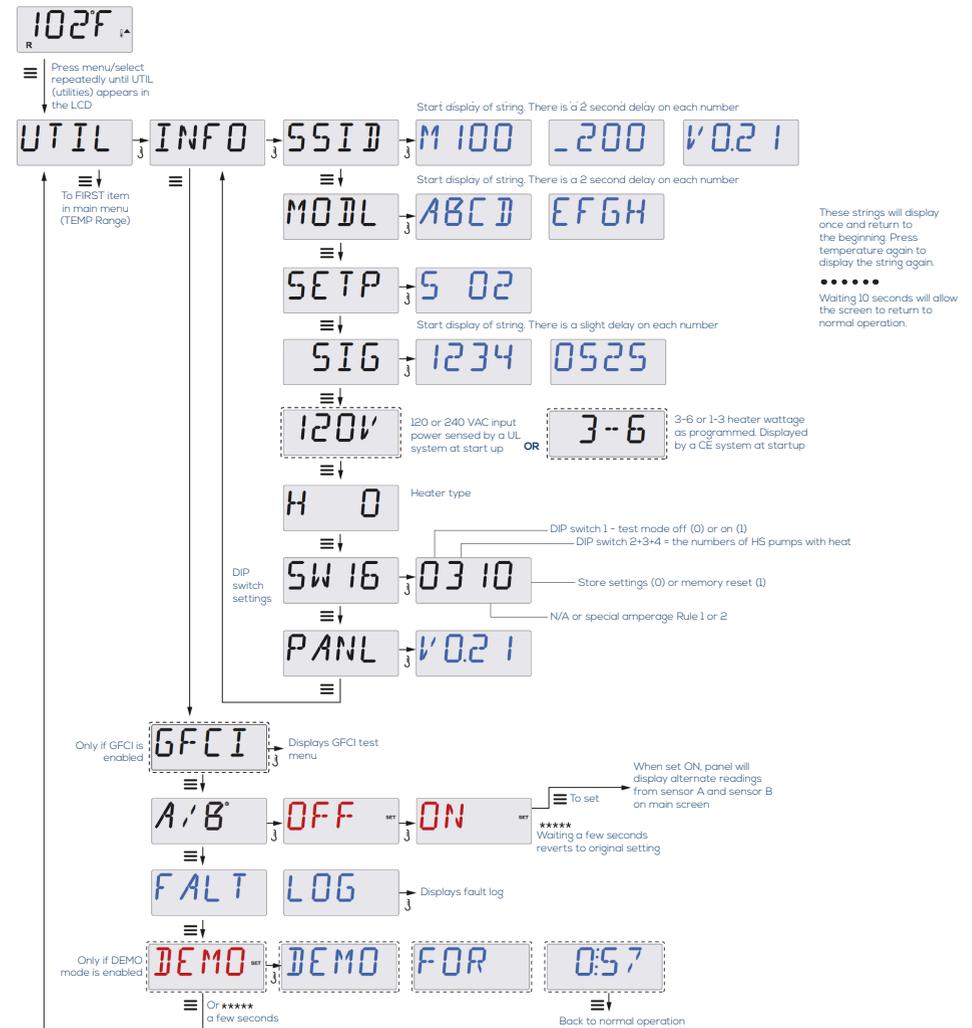
A GFCI is an important safety device and is required equipment on a hot tub installation.

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.



## UTILITIES



### 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 a few 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.

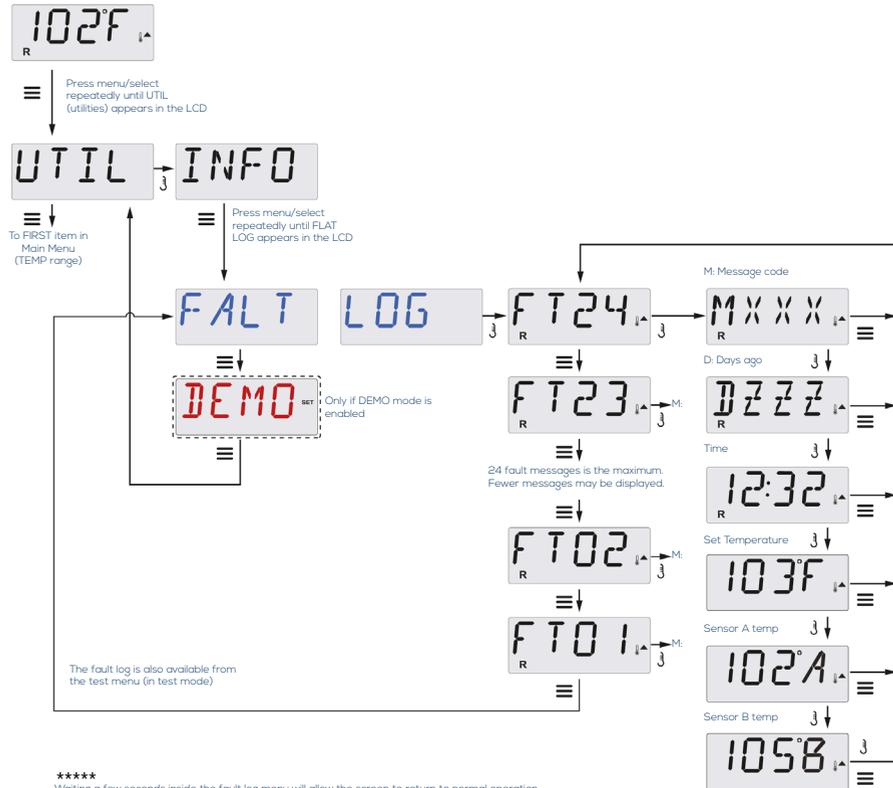
### WARNING:

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.



## GENERAL MESSAGES



### PRIMING MODE – MO19

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 "Light" 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.



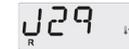
### TOO COLD - FREEZE PROTECTION

A potential freeze condition has been detected, or the Aux Freeze Switch has closed, and all pumps and blower are activated, either one at a time, or all at once, depending on how your system was built. 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) – MO29

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.



### J29 WARNING – MO44

J29 is typically used as a Heater Disable input. As such, it should not typically be shorted at power-up. This message appears if J29 is shorted at power-up.

## HEATER-RELATED MESSAGES



### HEATER FLOW IS REDUCED (HFL) – MO16

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.



### HEATER FLOW IS REDUCED (LF)\* – MO17

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.



### HEATER MAY BE DRY (DR)\* – MO28

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.



### HEATER IS DRY\* – MO27

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.



### HEATER IS TOO HOT (OHH)\* – MO30

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.



### 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.

## SENSOR-RELATED MESSAGES



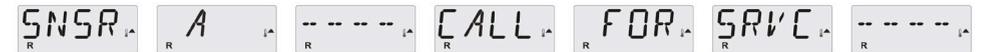
### SENSOR BALANCE IS POOR – MO15

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



### SENSOR BALANCE IS POOR\* – MO26

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



### SENSOR FAILURE – SENSOR A: MO31, SENSOR B: MO32

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

## MISCELLANEOUS MESSAGES



### NO COMMUNICATIONS

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



### PRE-PRODUCTION SOFTWARE

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

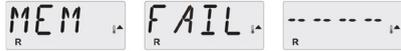


### °F OR °C IS REPLACED BY °T

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

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

## SYSTEM-RELATED MESSAGES



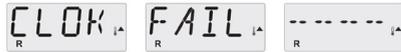
### MEMORY FAILURE - CHECKSUM ERROR\* - MO22

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.



### MEMORY WARNING - PERSISTENT MEMORY RESET\* - MO21

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.



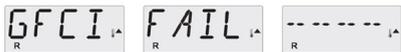
### MEMORY FAILURE - CLOCK ERROR\* - MO20 - NOT APPLICABLE ON THE BP1500

Contact your dealer or service organization.



### CONFIGURATION ERROR - SPA WILL NOT START UP

Contact your dealer or service organization.



### GFCI FAILURE - SYSTEM COULD NOT TEST/TRIP THE GFCI - MO36

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

## SYSTEM-RELATED MESSAGES



### A PUMP APPEARS TO BE STUCK ON - MO34

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



### A PUMP APPEARS TO HAVE BEEN STUCK ON WHEN SPA WAS LAST POWERED - MO35

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



### THE WATER LEVEL IS TOO LOW

Some systems have a water level detect, and this message appears if it detects that the water level is too low.

## REMINDER MESSAGES

### GENERAL MAINTENANCE HELPS.

The display of Reminder Messages can be suppressed by using the PREF Menu.

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 (e.g. 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.



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 be trained to test and reset the GFCI or RCD on a regular basis.



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.



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.

## REMINDER MESSAGES CONTINUED



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.



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.



Alternates with temperature or normal display.

### AS NEEDED.

Install new mineral cartridge.



Alternates with temperature or normal display.

### APPEARS ON A REGULAR SCHEDULE, E.G. EVERY 365 DAYS.

Check your ozone and/or UV generator per your spa manufacturer's instructions.



Alternates with temperature or normal display.

### APPEARS ON A REGULAR SCHEDULE, E.G. EVERY 365 DAYS.

Have a service technician do a check-up on your spa per your spa manufacturer's instructions.

## 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 Manufacturers instructions.  
**WARNING:** The equipment and controls shall be located not less than 1.5 meters horizontally from the spa or hot tub.

**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

##### 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.

# QUICK REFERENCE GUIDE

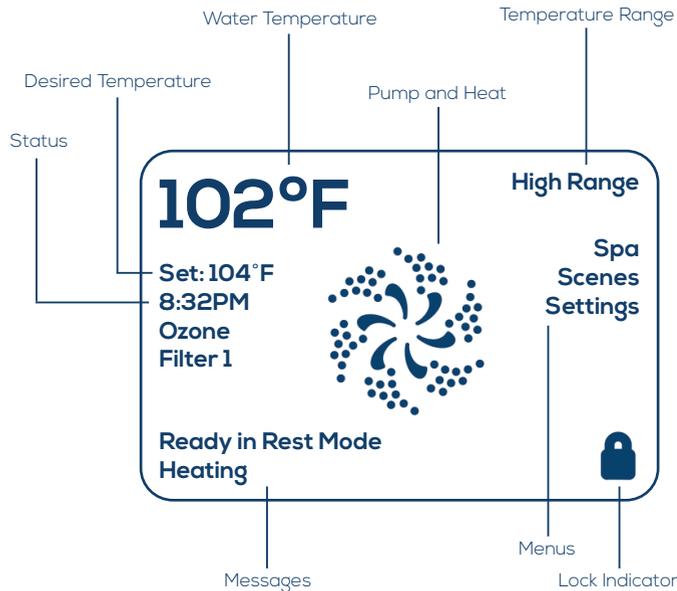
The spaTouch™ menued panel is compatible with all BP systems that already support the TP800 and/or the TP900. If this panel is used with a system that supports only the TP400 and/or TP600, many screens will work correctly, but the spa screen will not display correctly and may not control all of your equipment.

## THE MAIN SCREEN

### SPA STATUS

Important information about spa operation can be seen on the Main Screen. Most features, including Set Temperature adjustment, can be accessed from this screen. The actual water temperature and Set Temperature can be seen, and the Set Temperature can be adjusted. Time-of-Day, Ozone and Filter status is available, along with other messages and alerts. The selected Temperature Range is indicated in the upper right corner. The Jets Icon in the center will spin if any pump is running and changes colour when the heater is on. 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 30 minutes the display will automatically go into sleep mode, which turns the display off. This is normal operation. Touch anywhere on the screen to wake the panel up.

## Balboa Spatouch Guide

### Balboa Water Group BP Series Systems User Interface and Programming Reference

## THE MAIN SCREEN

### NAVIGATION

Navigating the entire menu structure is done by touching the screen. When a text item is shown in white on the main screen, it is selectable. The menu selections on the right side of the screen can be selected. Select one of these to enter a different screen with additional controls. Most menu screens time out and revert to the main screen after 30 seconds of no activity.

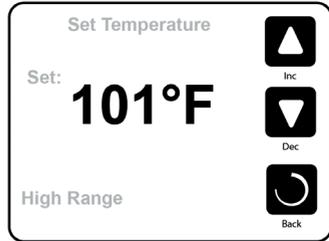


The only item that can be changed on the left side of the Main Screen is the Set Temperature. Touch either the set temperature line or the water temperature to go to the Set Temperature screen. See next page.

### MESSAGES

At the bottom of the screen, messages may appear at various times. Some of these messages must be dismissed by the user (see pages 60-62).

## THE SET TEMPERATURE SCREEN



### SET TEMPERATURE

Press Inc or Dec to modify the Set Temperature. The Set Temperature changes immediately. Press Back to return to the Main Screen.

If you need to switch between high range and low range you need to go to the Settings Screen.

### PRESS-AND-HOLD

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

## THE SPA SCREEN

### ALL EQUIPMENT ACCESS

The Spa Screen shows all available equipment to control, as well as other features, like Invert. 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.

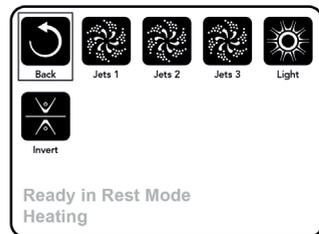
The icon buttons are used to select and control individual devices.

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.

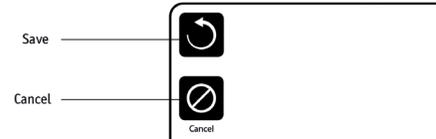
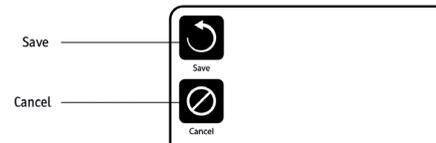
NOTE: The icon for the pump that is associated with the heater (Circ or P1 Low) will have a red glow in the center when the heater is running.



## COMMON BUTTONS

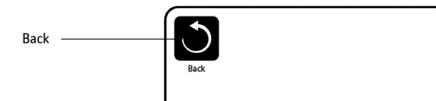
### EXITING SCREENS

When you see both of these buttons, whether they are labelled or not, they always mean Save and Cancel. They appear on most editing screens once you have changed the value on that screen.



If the screen times out due to no activity it will act like Cancel.

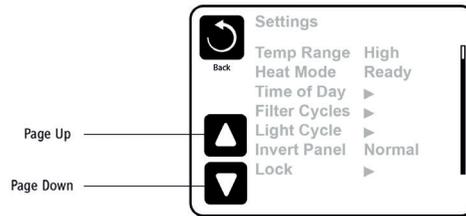
When you see only this button, whether it is labelled or not, it means Back or Exit. It appears on editing screens before you have changed any value, as well as on all other screens.



## COMMON BUTTONS - CONTINUED

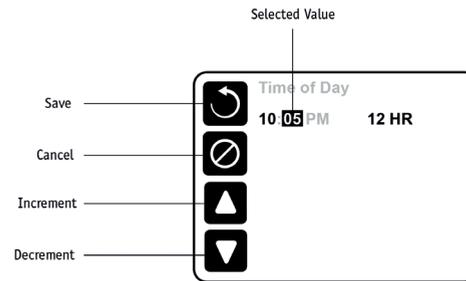
### PAGE UP/DOWN

If an Up or Down button is shown and pressed when in a Menu List, the list can be scrolled a page at a time. The scroll bar on the right side of the screen indicates the relative position of the page.



### VALUES INCREMENT/DECREMENT

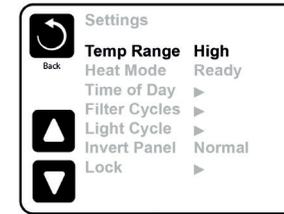
If an Up or Down button is shown and pressed when on an editing page, and a value has been selected (highlighted), the value can be incremented by pressing the up arrow or decremented by pressing the down arrow.



## THE SETTINGS SCREEN

### PROGRAMMING, ETC

The Settings Screen is where all programming and other spa behaviours are controlled. This screen has several features that can be acted on directly. These features may include Temp Range, Heat Mode, Hold, and Invert Panel. When one of these items is selected, it will toggle between two settings. All other menu items (with an arrow pointing to the right) go to another level in the menu.



### 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.

## THE SETTINGS SCREEN - CONTINUED

### HEAT MODE – READY VS. REST

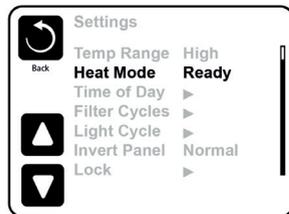
In order for the spa to heat, a pump needs to circulate water through the heater. The pump that performs this function is known as the "heater pump."

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. When the heater pump has come on automatically (for example for heating) you can switch between low speed and high speed but you cannot turn the heater pump off.

**CIRCULATION MODE** (See page 55, 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 24HR circulation mode.



### READY-IN-REST MODE

Ready in Rest Mode appears in the display if the spa is in Rest Mode and the Jets 1 Button is pressed. When the heater pump has come on automatically (for example for heating) you can switch between low speed and high speed but you cannot turn the heater pump off. After 1 hour, the System will revert to Rest Mode. This mode can also be reset by entering the Settings Menu and selecting the Heat Mode line.

## FILL IT UP!

### PREPARATION AND FILLING

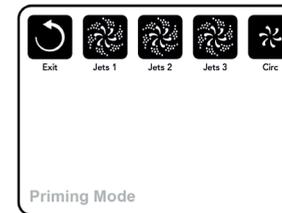
Fill the spa to its correct operating level. Be sure to open all valves and jets in the plumbing system before filling to allow as much air as possible to escape from the plumbing and the control system during the filling process. After turning the power on at the main power panel, the top-side panel will display a splash screen 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. 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.

### PRIMING THE PUMPS

As soon as the Priming Mode screen 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 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

The system will automatically enter the normal heating and filtering at the end of the priming mode, which lasts 4-5 minutes.

You can manually exit Priming Mode by pressing the "Exit" 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

\*M0XX is a Message Code. See Fault Log on page 58.

## SPA BEHAVIOUR

### 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.

#### 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 54), 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, Mister, 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. (On some circ systems, Pump 1 low will run along with the circ Pump during filtration.)

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 56). A second filter cycle can be enabled as needed.

At the start of each filter cycle, the water devices like blower, mister 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 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)

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.

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 58).

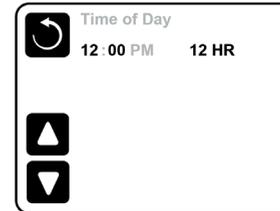
## TIME-OF-DAY

### 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 select the Hour, Minutes, and 12/24 Hour segments. Use the Up and Down Buttons to make changes.



### NOTE

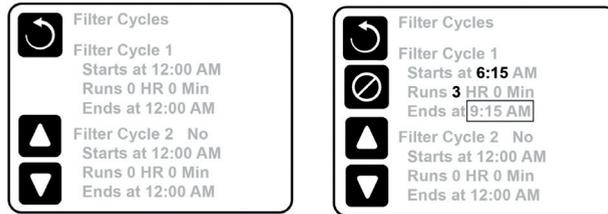
This only applies to some systems:

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

## ADJUSTING FILTRATION

### MAIN FILTRATION

Using the same 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. This displays as "No". When Filter Cycle 2 is ON it displays as "Yes".

Press "Yes" or "No" to toggle Filter Cycle 2 ON or OFF. When Filter Cycle 2 is ON, it can be adjusted in the same manner as Filter Cycle 1.

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. (Some systems will run a certain number of purge cycles per day, independent of the number of filter cycles per day. In this case, the purge cycles may not coincide with the start of the 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.

### THE MEANING OF FILTER CYCLES

1. The heating pump always runs during the filter cycle\*
2. In Rest Mode, heating only occurs during the filter cycle
3. Purges happen at the start of each filter cycle

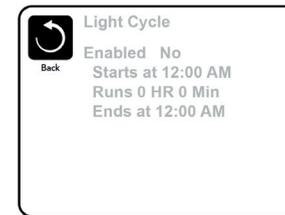
\* For example, if your spa is set up for 24/hour circulation except for shutting off when the water temperature is 3°F/1.3°C above the set temperature, that shutoff does not occur during filter cycles.

## 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 adjusting filtration section previously).



### 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.

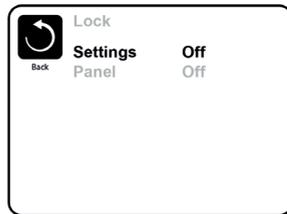
## AUXILIARY PANEL(S)

### SPECIFIC BUTTONS FOR SPECIFIC DEVICES

If the spa has an Auxiliary Panel(s) installed, pressing buttons on that panel will activate the device indicated for that button.

These dedicated buttons will operate just like the Spa Screen buttons (see page 52) 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 Filter Cycles, Invert, Information and Fault Log. They can be seen, but not changed or edited.

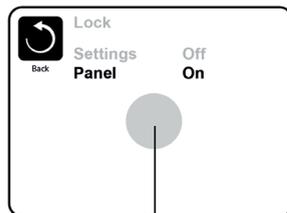
Settings locked



Panel locked



## UNLOCKING



To unlock either Settings or Panel first select Settings (if it says "On") or Panel (if it says "On"), then press in the middle of the screen for at least 5 seconds.

Press here for 5 seconds to unlock

## SCENES

### WHAT ARE SCENES?

Scenes are stored combinations of equipment states. For example if you want to have Pump 1 at high speed and Pump 2 at low speed and the Light ON, you could store that in a Scene and recall this combination at any time.

### STORING A SCENE

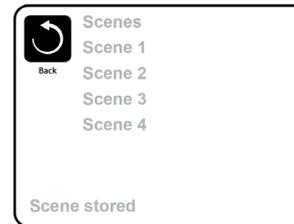
Press a Scene number and hold until "Scene stored" appears at the bottom of the screen to save the current equipment combination.



This appears once the Scene has been stored

### RECALLING A SCENE

To recall a Scene simply press a Scene number. Pressing any Scene line which has not yet been stored will simply turn off all spa devices.



## 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 main screen will display sensor A and sensor B temperatures simultaneously. Sensor A is at the opposite end of the heater from sensor B.

#### 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.

Use the Up and Down buttons to view each of the Faults. When Priming Mode shows in the Fault Log, it is not a fault. Rather, it is used to keep track of spa restarts.

#### GFCI TEST

**(FEATURE NOT AVAILABLE ON CE RATED SYSTEMS)**

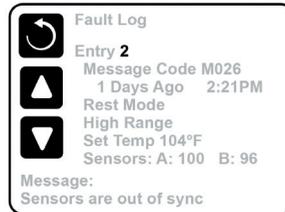
Your systems may have GFCI configured in one of three ways:

1. GFCI TEST IS NOT ENABLED

2. Manual GFCI test is enabled but automatic GFCI test is not enabled

3. Both manual and automatic GFCI tests are enabled. The automatic test will happen within 7 days of the spa being installed and if successful will not repeat. (If the automatic test fails it will repeat after the spa is restarted.) GFCI Test will not appear on the screen if it is not enabled. This screen allows the GFCI to be tested manually from the panel and can be used to reset the automatic test feature (see page 59).

\*M0XX 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 ADDRESS (APPLIES TO RF DOLPHIN ONLY)

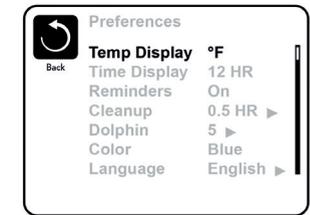
When set to 0, no addressing is used. Use this setting for a Dolphin II or Dolphin III which is factory set for no address by default. When set between 1 and 7, the number is the address. **(See the Dolphin manual for details.)**

### COLOUR

Selecting Colour will cycle through 5 background colours 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 selected, 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 TYPE

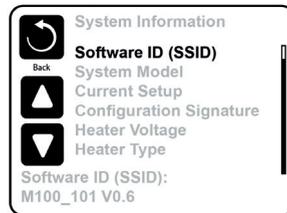
Displays a heater type ID number.

### 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.

On some systems:

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. "Passed" should appear after the Reset line is selected on the GFCI screen.

### WARNING:

On those systems that automatically test the GFCI within 1 to 7 days after startup: The end-user must be trained to expect this one-time test to occur. The end-user must be trained 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.

---°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.

### THE WATER LEVEL IS TOO LOW

This message can only appear on a system that uses a water level sensor. It appears whenever the water level get too low (or the water level sensor is disconnected), and automatically disappears when the water level is adequate. Pumps and the heater turn OFF when this message appears.

\*M0XX is a Message Code. Codes like this will be seen in the Fault Log

## 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, reset the message\*.

### 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. Reset this message\* 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 reset 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 reset 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.

\* 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. Press the message text to reset the message.

\*M0XX is a Message Code. Codes like this will be seen in the Fault Log

Clean the filter 

## SENSOR-RELATED MESSAGES

### SENSORS ARE OUT OF SYNC – M015\*\*

The temperature sensors MAY be out of sync by 3°F. Call for Service if this message does not disappear within a few minutes.

### 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, SENSOR 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.

\* 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. Press the message text to reset the message.

\*M0XX is a Message Code. Codes like this will be seen in the Fault Log

Clean the filter 

## 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.

\* 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. Press the message text to reset the message.

\*M0XX is a Message Code. Codes like this will be seen in the Fault Log

Clean the filter 

## REMINDER MESSAGES

### GENERAL MAINTENANCE HELP

Reminder Messages can be suppressed by using the Preferences Menu (see page 58). 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 58).

### 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.

Additional messages may appear on a specific system.

*\* 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. Press the message text to reset the message.*

Clean the filter ►

## REMINDER MESSAGES

### 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.

### CHANGE THE UV

May appear on a regular schedule.  
Change the UV as instructed by the manufacturer.

### CHECK OZONE

May appear on a regular schedule.  
Check the ozone generator as instructed by the manufacturer.

### SERVICE CHECK-UP

May appear on a regular schedule.  
Do a service check-up as instructed by the manufacturer.

Additional messages may appear on a specific system.

*\* 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. Press the message text to reset the message.*

Clean the filter ►

## 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 Manufacturers instructions.

**WARNING:** The equipment and controls shall be located not less than 15 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.

#### **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**

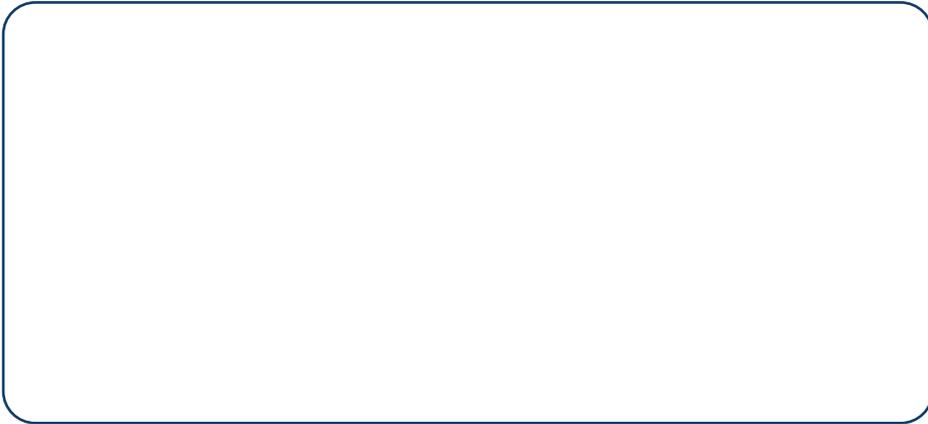
**CAUTION:**  
• Test the ground fault circuit interrupter or residual current device before each use of the spa.  
• Read the instruction manual.  
• Adequate drainage must be provided if the equipment is to be installed in a pit.  
• For use only within an enclosure rated CSA Enclosure 3.

- 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.

YOUR LOCAL DEALER



WHAT SWIM SPA & WHAT SPA 2021 LOGOS NEEDED

4 ICONS NEEDED ACROSS THE BOTTOM