

Temperature and Temp Range

Adjusting the Set Temperature

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

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

Press-and-Hold

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

Dual Temperature Ranges

This system incorporates two temperature range settings with independent set temperatures. The High Range designated in the display by 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:

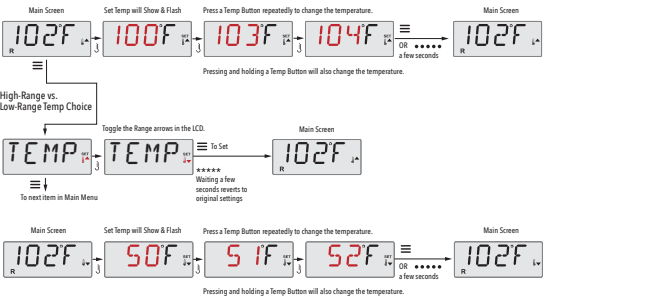
High Range might be set between 80°F and 104°F.

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.

See Ready and Rest on Page 6 for additional heating control information.



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.

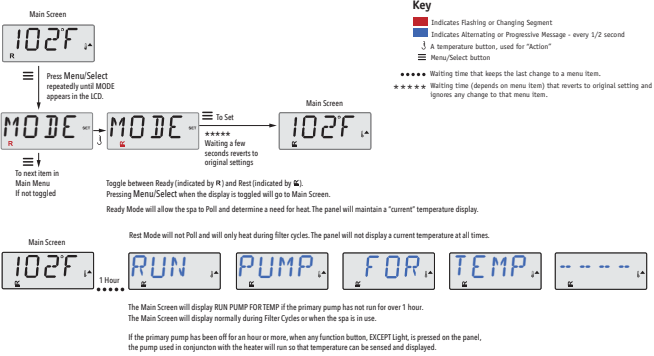
If the primary pump is a 2-Speed Pump 1, Ready Mode (indicated by R) will circulate water periodically, using Pump 1 Low, in order to maintain a constant water temperature, heat as needed, and refresh the temperature display. This is known as 'polling.'

Rest Mode (indicated by M) 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 4, under Pumps, for other circulation modes)

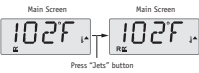
If the spa is configured for 24HR circulation, the primary pump generally runs continuously. Since the primary pump is always running, the spa will maintain set temperature and heat as needed in Ready Mode, without polling.

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.



Ready-in-Rest Mode

R 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.



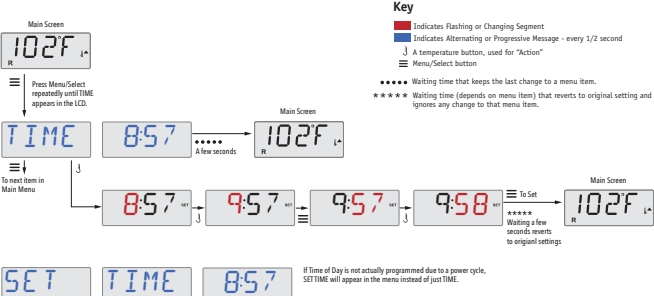
Show and Set Time-of-Day

Be sure to set the Time-of-Day

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

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

24-hour time display can be set under the PREF menu. (See Page 12)



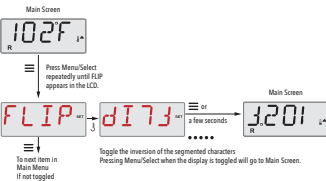
Note:

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.

Flip (Invert Display)



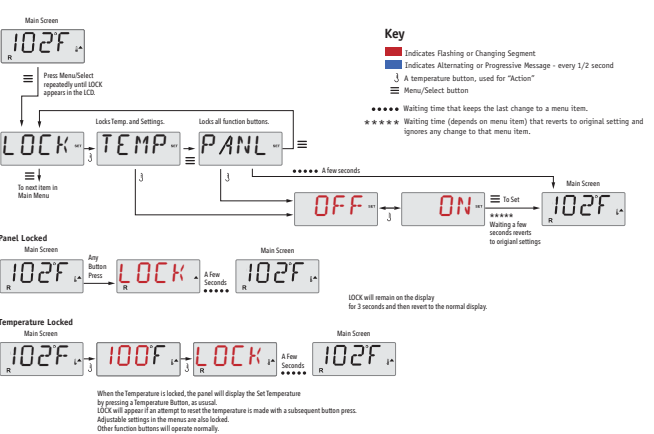
Restricting Operation

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

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

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

Temperature Lock allows access to a reduced selection of menu items. These include Set Temperature, FLIP, LOCK, UTIL, INFO and FALT LOG.



Unlocking

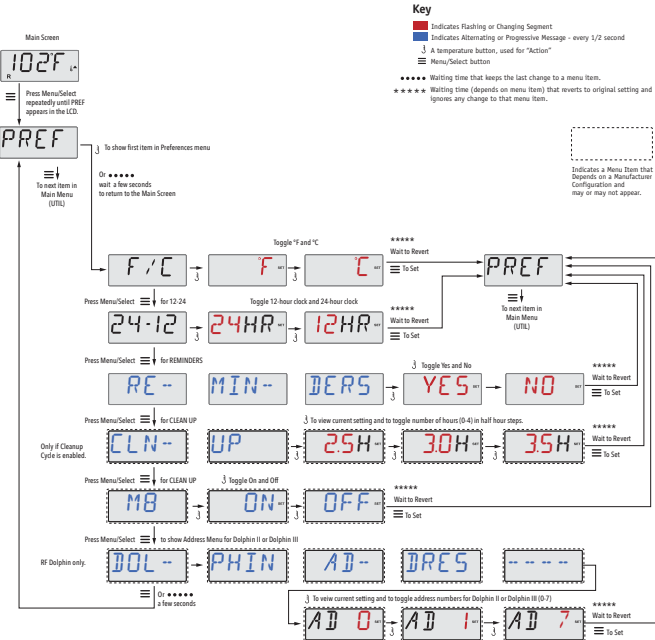
This Unlock sequence may be used from any screen that may be displayed on a restricted panel.



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

The temperature will not Unlock if the Unlock sequence is done while the panel is displaying 'LOCK'.

Preferences



Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5550720, 5,883,459, 6253227, 6282370, 6990188, 6970052, 6960815, 7030343, 7,417,834 b2, Canadian Patent: 2342614, Australian patent: 2373248 other patents both foreign and domestic applied for and pending. All material copyright of Balboa Water Group.



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.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5550720, 5,883,459, 6253227, 6282370, 6990188, 6970052, 6960815, 7030343, 7,417,834 b2, Canadian Patent: 2342614, Australian patent: 2373248 other patents both foreign and domestic applied for and pending. All material copyright of Balboa Water Group.



Additional Utilities

Utilities

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

GFCI (GFCI Test)

(Feature not available on CE rated systems.)

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

A/B (A/B Sensor Temperatures)

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

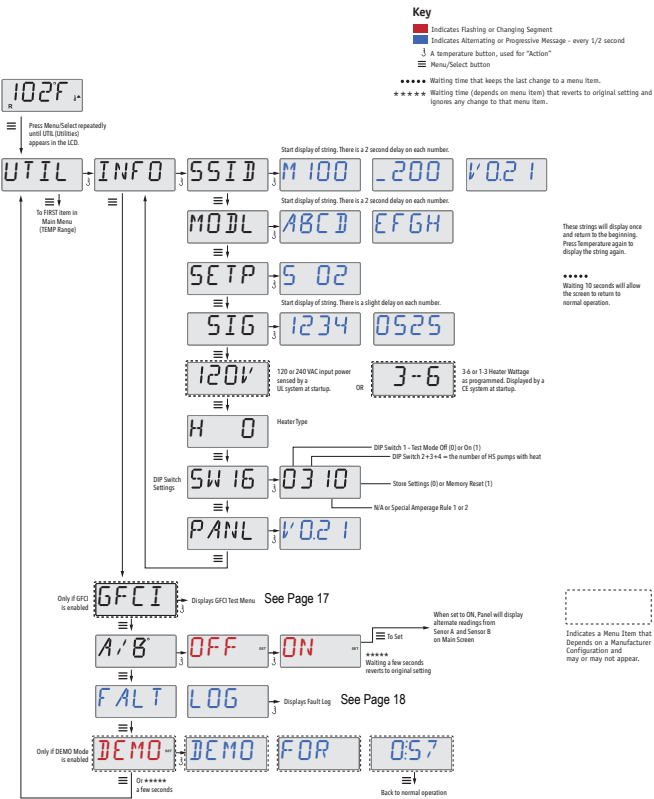
FAULT LOG (Fault Log)

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



Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5550720, 5,883,459, 6253227, 6282370, 6990188, 6970052, 6960815, 7030343, 7,417,834 b2, Canadian Patent: 2342614, Australian patent: 2373248 other patents both foreign and domestic applied for and pending. All material copyright of Balboa Water Group.



Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5550720, 5,883,459, 6253227, 6282370, 6990188, 6970052, 6960815, 7030343, 7,417,834 b2, Canadian Patent: 2342614, Australian patent: 2373248 other patents both foreign and domestic applied for and pending. All material copyright of Balboa Water Group.



13/06/20

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.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6990188, 6970052, 6960815, 7030343, 7,417,834 b2, Canadian Patent: 2342614, Australian patent: 2373248 other patents both foreign and domestic applied for and pending. All material copyright of Balboa Water Group.



03/06/20

42339 rev A1

21

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.



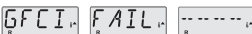
Memory Failure - Clock Error* – MO20 - Not Applicable on the BP1500

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.

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

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6990188, 6970052, 6960815, 7030343, 7,417,834 b2, Canadian Patent: 2342614, Australian patent: 2373248 other patents both foreign and domestic applied for and pending. All material copyright of Balboa Water Group.



03/06/20

42339 rev A1

22

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.

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

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6990188, 6970052, 6960815, 7030343, 7,417,834 b2, Canadian Patent: 2342614, Australian patent: 2373248 other patents both foreign and domestic applied for and pending. All material copyright of Balboa Water Group.



03/06/20

42339 rev A1

23

Reminder Messages

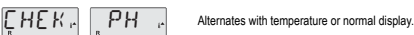
General maintenance helps.

The display of Reminder Messages can be suppressed by using the PREF Menu. See Page 12.

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.

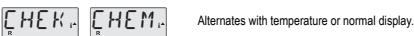
The frequency of each reminder (e.g. 7 days) can be specified by the Manufacturer.

Press a Temperature button to reset a displayed reminder message.



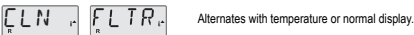
Appears on a regular schedule, e.g. every 7 days.

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



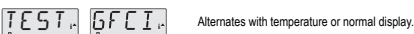
Appears on a regular schedule, e.g. every 7 days.

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



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

Clean the filter media as instructed by the manufacturer. See HOLD on page 9.



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.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6990188, 6970052, 6960815, 7030343, 7,417,834 b2, Canadian Patent: 2342614, Australian patent: 2373248 other patents both foreign and domestic applied for and pending. All material copyright of Balboa Water Group.



03/06/20

42339 rev A1

24

Reminder Messages Continued

CHNG WATER Alternates with temperature or normal display.

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

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

CLN COVER Alternates with temperature or normal display.

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

Vinyl covers should be cleaned and conditioned for maximum life.

TRT WOOD Alternates with temperature or normal display.

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

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

CHNG FLTR Alternates with temperature or normal display.

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

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

CHNG CART Alternates with temperature or normal display.

As needed.

Install new mineral cartridge.

CHEK OZ 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 manufacture's instructions.

SVC CHEK 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.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5550720, 5,883,459, 6253227, 6282370, 6990188, 6970052, 6960815, 7030343, 7,417,834 b2, Canadian Patent: 2342614, Australian patent: 2373248 other patents both foreign and domestic applied for and pending. All material copyright of Balboa Water Group.



Warning! Qualified Technician Required for Service and Installation

Basic Installation and Configuration Guidelines

Use minimum 6AWG copper conductors only.
Torque field connections between 21 and 23 in lbs.
Readily accessible disconnecting means to be provided at time of installation.
Permanently connected.
Connect only to a circuit protected by a Class A Ground Fault Circuit Interrupter (GFCI) or Residual Current Device (RCD) mounted at least 5' (1.52M) from the inside walls of the spa/hot tub and in line of sight from the equipment compartment.
CSA enclosure: Type 2
Refer to Wiring Diagram inside the cover of the control enclosure.
Refer to Installation and Safety Instructions provided by the spa manufacturer.

Warning: People with infectious diseases should not use a spa or hot tub.
Warning: To avoid injury, exercise care when entering or exiting the spa or hot tub.
Warning: Do not use a spa or hot tub immediately following strenuous exercise
Warning: Prolonged immersion in a spa or hot tub may be injurious to your health
Warning: Maintain water chemistry in accordance with the Manufacturers instructions.
Warning: The equipment and controls shall be located not less than 1.5 meters horizontally from the spa or hot tub.

Warning! GFCI or RCD Protection.

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

Warning! Shock Hazard!
No User Serviceable Parts.

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

CSA Compliance/Conformité

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

- Warning:**
- Water temperature in excess of 38°C may be injurious to your health.
 - Disconnect the electrical power before servicing.
- Attention:**
- Toujours vérifier l'efficacité du disjoncteur différentiel avant d'utiliser différentiel avant d'utiliser le bain.
 - Lire la notice technique.
 - Lorsque l'appareillage est installé dans une fosse, on doit assurer un drainage adéquat.
 - Employer uniquement a l'intérieur d'une doture CSA Enclosure 3.
 - Connecter uniquement a un circuit protege par un disjoncteur différentiel de Class A.
 - Afin d'assurer une protection permanente contre le danger de shock électrique, lors de l'entretien employer seulement des pieces de rechange identiques.
 - Les prises d'aspiration doivent être equipées de grilles convenant au débit maximal indiqué.

- Avertissement:**
- Des températures de l'eau supérieures a 38°C peuvent présenter un danger pour la santé.
 - Déconnecter du circuit d'alimentation électrique avant l'entretien.
- Warning/Advertissement:**
- Disconnect the electric power before servicing. Keep access door closed.
 - Déconnecter du circuit d'alimentation électrique avant l'entretien. Garder la porte fermée.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5550720, 5,883,459, 6253227, 6282370, 6990188, 6970052, 6960815, 7030343, 7,417,834 b2, Canadian Patent: 2342614, Australian patent: 2373248 other patents both foreign and domestic applied for and pending. All material copyright of Balboa Water Group.

