ML550, 551, 554 Panel Operation

Please refer to the following User Guides for more detailed information:
ML551/ML554 User Guide: P/N 40632-99
ML 550 User Guide: P/N 40569-99

ML551

ML554

ML550

Cool/Warm *ML500, 551, 554*

Press the "Cool" or "Warm" button once to display the set temperature. Each time either button is pressed again, the set temperature will increase or decrease depending on which button is pressed. After three seconds, the LCD will automatically display the last measured spa temperature.

Mode *ML500, 551, 554*

This button is used to switch between Standard, Economy, and Sleep modes. Press "Mode" to enter mode programming, press "Cool" to cycle through to desired mode (LCD flashes until confirmed), then press "Mode" to confirm selection.

Sleep mode heats the spa to within 11°C (20°F) of the set temperature only during filter cycles. "SLP" will appear on the display until mode is changed.

Standby Mode

Pressing "Cool" or "Warm" followed by "Blower" or "Jets 2" or "Aux" will turn off all spa functions temporarily. This is helpful when changing a filter. Pressing any button exits Standby mode. On some systems the "Jets 1" button will control the pump in Standby Mode ("Drain Mode"). In this case, press any other button to exit. System will revert to previous mode after 1 hour.

Jets 1

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 time-out on some systems may be as long as 4 hours.

On non-circ systems, the low speed of pump 1 runs when the blower or any other pump is on. It 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, depending upon mode. When the low speed turns on automatically, it cannot be deactivated from the panel; however, the high speed may be started.

Jets 2 *(optional on some systems)*

Press the "Jets 2" button once to turn pump 2 on or off, and to shift between low and high speeds if it is a two-speed pump. If left running, the pump will turn off after a time-out period.

ML550, 551, 554 Panel Operation (cont.)

Blower

1-speed operation: on/off;
2-speed operation: med/hi/off; or
3-speed operation: lo/med/hi/off.
If left on, the blower will automatically turn off after a time-out period.
NOTE: If your system does not have a "Blower" button, and is labeled as "Jets 3" instead, please refer to the respective User Guide listed above.

Light

Some systems are equipped with both a spa light and a fiber optic light; however, only one can be accessed by this panel. (Larger panels may be purchased so that both the spa light and fiber optic light can be utilized.) Depending upon how your spa is equipped and configured, the "Light" button will operate in one of three ways:

1) Press the "Light" button to turn the spa light on and off, and to shift between dim and bright settings if your light is dimmable.
2) If a fiber-optic light with wheel is installed, press the "Light" button once to start the light and wheel; press it again to stop the wheel, and then again to turn the light off.
3) If a fiber-optic light without a separate wheel stop is installed, press the "Light" button to turn it on and off.

Both a spa light and a fiber optic light may be used simultaneously on the EL8000 and EL5000 systems with a different panel.

If any light is left on, it will automatically turn off after a factory programmed time period.

Preset Filter Cycles

On all systems, the pump and the ozone generator will run during filtration. At the start of each filter cycle, the blower will run briefly on its highest speed to purge the air channels. The lowest speed of any other pumps and the mister will also run briefly. On some circ systems, pump 1 may also run for the duration of the filter.

(Note: This panel cannot be used to program filter cycles for systems that are programmed by time rather than by duration. For these systems, a larger panel is needed and the following description does not apply.)

The first filter cycle ("day") begins 6 minutes after the spa is powered up. The second filter cycle ("night") begins 12 hours later. Filter duration is programmable for 1-12 hours ("F 1 "-"F 12"). The default filter duration can vary from system to system. To program, press "Cool" or "Warm", then "Jets 1". Press "Cool" or "Warm" to select the filter duration. Press "Jets 1" to select the number of filter cycles. The display will show "dn" (both "day" and "night" cycles); "d" (day cycle only); or "n" ("night" cycle only). Press "Cool" or "Warm" to adjust, then press "Jets 1" to exit the programming mode. For continuous filtration, use "F 12" and "dn".

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.

Locking Features

If this panel is used as the main panel, locking features will not be available.
If this panel is used as a remote or additional panel, it will lock when the main panel is locked. To unlock this panel, unlock the main panel.
In the same way, the set temperature can be locked and unlocked by a main panel. When the set temperature is locked, it cannot be changed from either panel.

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 one to four hours, depending on the system (on some systems, you can change this setting.)

Circ Pump (optional)

If your system is equipped with a circ pump, it may 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 1.5°C (3°F) above the set temperature (most likely to happen in very hot climates).
2) The circ pump stays on continuously, regardless of water temperature.
3) The circ pump will come on when the system is checking temperature (polling), during filter cycles, during freeze conditions, or when another pump is on.

Ozone (optional)

On most systems, the ozone generator (if installed) runs during filter cycles (except when pump 1 is operating at high speed on a non-circ system) and during clean-up cycles. On some systems, the ozone generator operates whenever the pump runs.
If your system is configured with the optional ozone suppress feature, the ozone generator will turn off for 1 hour any time a function button (Jets 1, Jets 2, Blower, etc.) is pressed.

Displaying Info About Your Spa

There are several pieces of information about your spa that can be called up from the panel, but are only needed in special cases.

To access this information, press "Cool" or "Warm" then "Jets 1", then "Light". (Each press must be within 3 seconds of the previous press.) Then press "Cool" until you see "S Id " on the display. Press "Jets 1" to see the SSID (a series of 3 numbers, such as 100 133 10, which indicates the precise revision of the software in your spa), followed by the Mach software version number (such as 2.1), followed by "CSn " and then your spa's network ID number (consisting of both letters and digits displayed in 5 steps).
If you need to see this series of numbers again, and "S Id" is once again on the display, just press "Jets 1" again.
When done, press the "Light" button (more than once if necessary) until you see the normal temperature display.

User Preferences

There are several aspects of spa operation that you can customize using the User Preferences submenu.

Press "Cool" or "Warm" then "Jets 1", then "Light". (Each press must be within 3 seconds of the previous press.) At this point, if "USr " is not showing on the display, press "Cool" until you see "USr " on the display. Then press "Jets 1" to enter the User Preferences submenu.
Once in the User Preferences submenu, press "Cool" or "Warm" to cycle between these settings:

Sr – Suppress Reminders
When set to "Sr.Y", reminders are never displayed on the panel. When set to "Sr.n", reminders are displayed on the panel periodically.

tc – Temperature in Celsius
When set to "tc.Y", temperatures are displayed on the panel in degrees Celsius. When set to "tc.n", temperatures are displayed in Fahrenheit.

24 – 24-hour Time Display
When set to "24.Y", time is displayed in 24-hour (military) format (00:00 is midnight, 23:00 is one hour before midnight). When set to "24.n", time is displayed in 12-hour (am/pm) format (12:00 is midnight, 11:00 pm is one hour before midnight).

cc – Clean-up Cycle Duration (some systems only)
When set to "cc.0", Clean-up Cycles are disabled. When set to "cc. 1" through "cc.4", the number indicates how many hours each Clean-up Cycle will run.

ML550, 551, 554 Panel Operation (cont.)

Ad – Dolphin II Address
When set to "Ad.0", no addressing is used. Use this setting for a Dolphin I, or for a Dolphin II which is set for no address (which is the Dolphin II factory default). When set to "Ad. 1" through "Ad.7", the number is the address (see your Dolphin II manual for details).

Editing User Preferences
View the setting.
The left two characters (before the decimal point) tell you what setting you're viewing or editing, the right most character (after the decimal point) tells you the value of that setting (for example, ".y " for Yes or ".n " for No).
If the value is flashing, you're editing it. If the value is not flashing, you're just viewing it.

Press "Jets 1" to switch editing of the value on (flashing) or off (not flashing). Once you're editing the value (it's flashing), use the "Cool" or "Warm" buttons to change the value to the one you want.

After you change the value, you must press "Jets 1" again to stop the flashing before the change will register, and before you can view or edit another setting.
If you don't interact with the menu for more than 30 seconds, it may time out.

If you press "Light" to back out of the menu, or pause long enough for it to time out, while a value was flashing, the changes you were making to that setting are not remembered. But changes you previously made to other settings will be in effect.

Any User Preferences that you change will stay in effect "forever" or until you change them again (unless the spa's "persistent memory" is reset by a service technician), and will override the factory defaults for those settings.

ML200, 240, 260, 400 Panel Operation

Please refer to the following User Guides for more detailed information:
ML400 User Guide: P/N 40570-99; ML260 User Guide: P/N 40633-99
ML240 User Guide: P/N 40634-99; ML200 User Guide: P/N 40571-99

ML400

ML260, ML240, ML200

ML 400 INTRODUCTION

The pump responsible for heating and filtration (pump 1 low on non-circ systems, or the circ pump on circ systems) will be referred to simply as the pump.
Timeouts refer to a preset length of time that a function is programmed to operate before shutting off automatically. Certain conditions (filters or freeze) can cause a function to operate longer, while faults can cause a function to operate for a shorter length of time. The system keeps track of timeouts regardless of other conditions occurring.
In multi-button sequences, if buttons are pressed too quickly in sequence, they may not register

Initial Start-up

When your spa is first actuated, it will go into Priming mode (after displaying some configuration information).

The Priming mode will last for up to 4 minutes and then the spa will begin to heat and maintain the water temperature in the Standard mode. You can exit Priming mode early by pressing "Temp".

Temp Set (26.0°C - 40.0°C / 80°F - 104°F)

The last measured temperature is constantly displayed on the LCD. Your spa's set temperature range may vary from range shown above depending on your manufacturer's settings.
Note that the last measured spa temperature displayed is current only when the pump has been running for at least 1 minute.

Temp ML400

Press the "Temp" button once to display the set temperature. To change the set temperature, press the pad a second time before the LCD stops flashing. Each press of the "Temp" button will continue to either raise or lower the set temperature.
If the opposite direction is desired, release the pad and let the display revert to the current water temperature. Press the pad to display the set temperature, and again to make the temperature change in the desired direction.
After three seconds, the LCD will automatically display the last measured spa temperature.

Mode ML400

A button combination is used to switch between standard, economy, and sleep modes. Press "Temp" followed by "Light" to enter mode programming, press "Temp" to cycle through to desired mode (LCD flashes until confirmed), then press "Light" to confirm selection.
Standard mode maintains the desired temperature. Note that the last measured spa temperature displayed is current only when the pump has been running for at least 1 minute. "Std" will appear on the display momentarily when you switch into Standard Mode.
Economy mode heats the spa to the set temperature only during filter cycles. "Ecn" will appear solid when the temperature is not current and will alternate with the temperature when the temperature is current.

ML200, 240, 260, 400 Panel Operation (cont.)

Pressing "Jets" while in Economy mode puts the spa in ***Standard-In-Economy mode,*** ("SE") which operates the same as Standard Mode, then reverts to Economy Mode automatically after 1 hour. During this time, pressing "Temp" followed by "Light" will revert the mode to Economy immediately.

Sleep mode heats the spa to within 11°C (20°F) of the set temperature only during filter cycles. "SLP" will appear on the display until mode is changed.

Standby Mode ML400

Pressing "Temp" followed by "Aux" or "Jets 2" or "Blower" will turn off all spa functions temporarily. This is helpful when changing a filter. Pressing any button exits Standby mode. On some systems the "Jets" button will control the pump in Standby Mode ("Drain Mode"). In this case, press any other button to exit. System will revert to previous mode after 1 hour.

Jets ML400

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. The pump 1 low speed time-out on some systems may be as long as 4 hours.

On non-circ systems, the low speed of pump 1 runs when the blower or any other pump is on. It 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, depending upon mode. When the low speed turns on automatically, it cannot be deactivated from the panel; however, the high speed may be started.

Jets 2 (optional on some systems) ML400

If your system has a second pump but your panel does not have a "Jets 2" button, use the "Aux" button to control pump 2. Press the "Jets 2" button once to turn pump 2 on or off, and to shift between low and high speeds if it is a two-speed pump. If left running, the pump will turn off after a time-out period.

Blower (optional on some systems) ML400

If your system has a blower (and only one pump), but your panel does not have a "Blower" button, use the "Aux" button to control the blower.

1-speed operation: on/off;
2-speed operation: med/hi/off; or
3-speed operation: lo/med/hi/off.

If left on, the blower will automatically turn off after a time-out period.

Circ Pump (optional) ML400

If your system is equipped with a circ pump, it may 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 1.5 C (3°F) above the set temperature (most likely to happen in very hot climates).
2) The circ pump stays on continuously, regardless of water temperature.
3) The circ pump will come on when the system is checking temperature (polling), during filter cycles, during freeze conditions, or when another pump is on.

Light ML400

Some systems are equipped with both a spa light and a fiber optic light; however, only one can be accessed by this panel. (Larger panels may be purchased so that both the spa light and fiber optic light can be utilized.) Depending upon how your spa is equipped and configured, the "Light" button will operate in one of three ways:

1) Press the "Light" button to turn the spa light on and off, and to shift between dim and bright settings if your light is dimmable.
2) If a fiber-optic light with wheel is installed, press the "Light" button once to start the light and wheel, press it again to stop the wheel, and then again to turn the light off.
3) If a fiber-optic light without a separate wheel stop is installed, press the "Light" button to turn it on and off.

Again, both a spa light and a fiber optic light may be used simultaneously on the EL8000 and EL5000 systems with a different panel.

If any light is left on, it will automatically turn off after a factory programmed time period.

Ozone (optional) ML400

On most systems, the ozone generator (if installed) runs during filter cycles (except when pump 1 is operating at high speed on a non-circ system) and during clean-up cycles. On some systems, the ozone generator operates whenever the pump runs.
If your system is configured with the optional ozone suppress feature, the ozone generator will turn off for 1 hour any time a function button (Jets, Jets 2, Blower, etc.) is pressed.

Clean-up Cycle (optional ML400)

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 one to four hours, depending on the system. (On some systems, you can change this setting; see User Preferences section.)

Freeze Protection ML400

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.

Locking Features ML400

If this panel is used as the main panel, locking features will not be available. If this panel is used as a remote or additional panel, it will lock when the main panel is locked. To unlock this panel, unlock the main panel.
In the same way, the set temperature can be locked and unlocked by a main panel. When the set temperature is locked, it cannot be changed from either panel.

Preset Filter Cycles ML400

On all systems, the pump and the ozone generator will run during filtration. At the start of each filter cycle, the blower will run briefly on its highest speed to purge the air channels. The lowest speed of any other pumps and the mister will also run briefly. On some circ systems, pump 1 may also run for the duration of the filter.

(Note: This panel cannot be used to program filter cycles for systems that are programmed by time rather than by duration. For these systems, a larger panel is needed and the following description does not apply.)

The first filter cycle ("day") begins 6 minutes after the spa is powered up. The second filter cycle ("night") begins 12 hours later. Filter duration is programmable for 1-12 hours ("F 1"-" F 12"). The default filter duration can vary from system to system. To program, press "Temp" then "Jets". Press "Temp" to select the filter duration. Press "Jets" to select the number of filter cycles. The display will show "dn" (both "day" and "night" cycles); "d" (day cycle only); or "n" ("night" cycle only). Press "Temp" to adjust, then press "Jets" to exit the programming mode. For continuous filtration, use "F 12" and "dn".

Displaying Information About Your Spa ML400

There are several pieces of information about your spa that can be called up from the panel, but are only needed in special cases.

To access this information, press "Temp" then "Jets", then "Light". (Each press must be within 3 seconds of the previous press.) Then press "Temp" until you see "S Id" on the display. Press "Jets" to see the SSID (a series of 3 numbers, such as 100 133 10, which indicates the precise revision of the software in your spa), followed by the Mach software version number (such as 2.1), followed by "CSn" and then your spa's network ID number (consisting of both letters and digits displayed in 5 steps).

If you need to see this series of numbers again, and "S Id" is once again on the display, just press "Jets" again.
When done, press the "Light" button (more than once if necessary) until you see the normal temperature display.

ML200, 240, 260, 400 Panel Operation (cont.)

User Preferences ML400

There are several aspects of spa operation that you can customize using the User Preferences submenu.
Press "Temp" then "Jets", then "Light". (Each press must be within 3 seconds of the previous press.) At this point, if "USr " is not showing on the display, press "Temp" until you see "USr " on the display. Then press "Jets" to enter the User Preferences submenu.
Once in the User Preferences submenu, press "Temp" to cycle between these settings:

Sr – Suppress Reminders
When set to "Sr.Y", reminders are never displayed on the panel. When set to "Sr.n", reminders are displayed on the panel periodically.

tc – Temperature in Celsius
When set to "tc.Y", temperatures are displayed on the panel in degrees Celsius. When set to " tc.n", temperatures are displayed in Fahrenheit.

24 – 24-hour Time Display
When set to "24.Y", time is displayed in 24-hour (military) format (00:00 is midnight, 23:00 is one hour before midnight). When set to "24.n ", time is displayed in 12-hour (am/pm) format (12:00 is midnight, 11:00 pm is one hour before midnight).

cc – Clean-up Cycle Duration (some systems only)
When set to "cc.0", Clean-up Cycles are disabled. When set to "cc. 1" through "cc.4", the number indicates how many hours each Clean-up Cycle will run.

Ad – Dolphin II Address
When set to "Ad.0", no addressing is used. Use this setting for a Dolphin I, or for a Dolphin II which is set for no address (which is the Dolphin II factory default). When set to "Ad. 1" through "Ad.7", the number is the address (see your Dolphin II manual for details).

Editing User Preferences ML400

View the setting.
The left two characters (before the decimal point) tell you what setting you're viewing or editing, the right most character (after the decimal point) tells you the value of that setting (for example, ".Y " for Yes or ".n " for No). If the value is flashing, you're editing it. If the value is not flashing, you're just viewing it.

Press "Jets" to switch editing of the value on (flashing) or off (not flashing).

Once you're editing the value (it's flashing), use the "Temp" buttons to change the value to the one you want.
After you change the value, you must press "Jets" again to stop the flashing before the change will register, and before you can view or edit another setting.
If you don't interact with the menu for more than 30 seconds, it may time out.

If you press "Light" to back out of the menu, or pause long enough for it to time out, while a value was flashing, the changes you were making to that setting are not remembered. But changes you previously made to other settings will be in effect.

Any User Preferences that you change will stay in effect "forever" or until you change them again (unless the spa's "persistent memory" is reset by a service technician), and will override the factory defaults for those settings.

GL Series Mach 3 -- Persistent Memory & Power Up

This document applies when using ML Series panels with any EL or GL Mach 3 series system.

GL, ABOUT PERSISTENT MEMORY

Any time you change DIP Switches or Software Configuration Settings that affect parameters the user can change (any filter settings, set temperature default, Celsius vs Fahrenheit, 12-hour vs 24-hour time, reminders suppression, etc), you must reset Persistent Memory for your DIP Switch or Software Configuration Settings changes to take effect. You should also reset Persistent Memory after loading a new file into a board (using the ESM, purchased seperately).

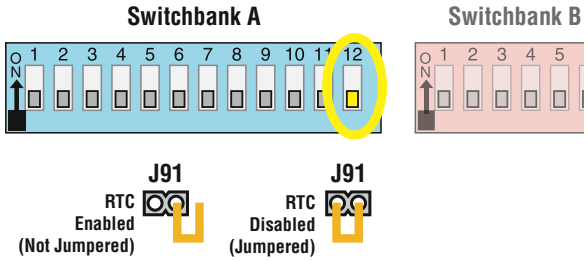
To reset Persistent Memory:

- Power down.
- Set A12 ON (See illustration below).
- Power up.
- Wait until "Pr" or "PRIMING MODE" is displayed on your panel. Note: If "CFE" appears see section below.
- Set A12 OFF. (This can be done safely with power on if you use a non-conductive tool such as a pencil to push the switch back to the OFF position. Otherwise, power down before setting A12 OFF)
- Power up again (if you powered down in the previous step).
- For all other power ups, leave A12 OFF.

About Persistent Memory and Time of Day Retention:

This system uses memory that doesn't require a battery to store a variety of settings. What we refer to as Persistent Memory stores all the User Preferences, as well as all the filter settings, the set temperature, and the heat mode.

Persistent Memory is not used for Time of Day. Time of Day needs to be "kept running" (not just stored) while the power is off, so a separate Real Time Clock feature (on all models except the EL1000) keeps track of Time of Day while the unit is off. Time of Day Retention, and Time of Day Retention alone, is controlled by the J91 jumper. J91 must be set according to main system panel used.



POWER UP DISPLAY SEQUENCE, SOFTWARE ID

CFE message on power up:

If "CFE" appears before (and instead of) "Pr" or "PRIMING MODE", you have not configured DIP Switches and/or Software Configuration Settings in a valid manner. This must be corrected before you can reset Persistent Memory.

The switch numbers, jumpers, or configuration settings displayed after "CFE" are ones with which the system has found a configuration problem. For example:

- "CFE A5 b2" would mean that the combination of how you've set A5 and how you've set B2 is not supported on this system.
- "CFE J99" would mean that there is a problem with jumper J99
- "CFE P3.1 bL.1" would mean that the combination of how you've set pump 3 for 1-speed and blower for 1-speed is not supported on this system.
- "CFE P3._ bL._" would mean that the combination of how you've set DIP switches which have been assigned to pump 3 and blower is not supported on this system.

Power Up Display Sequence

Upon power up, you should see the following on the display:

- Three numbers in a row, which are the SSID (the System Software ID). The third display of these numbers is the Software Version, which should match the version of your system. For example, if these three numbers are 100 134 26, that is a Mach 3 EL8000 at version 26.
- If there is a Configuration Error, the CFE message (see above) will appear at this point (and none of the messages below will display). Otherwise what comes next is:
- An indication of either the input voltage detected (EL1000/EL2000), or the heater wattage range supported (EL8000/GL2000/GL8000).
  - Heater wattage display: "1-3" means the system supports a heater from 1 kW to 3 kW. "3-6" means the system supports a heater from 3 kW to 6 kW. "3-3" means the system supports a 3 kW heater only. (These ranges may be modified slightly in the case of special heaters, which the next bullet covers.)
  - Input voltage display: A system showing "240" supports 3 kW to 6 kW heaters. A system showing "120" supports the very same heaters, although at 120V those heaters will function at only 1/4 of their 240V rated wattage. (The system shows only either "240" or "120" as a general indication of input voltage; it does not show the actual input voltage.)
- If your system is using a special type of heater, a display such as "H 6" may appear next. If your system is using the generic Balboa heater, no heater type display will appear.
- "Pr" or "PRIMING MODE" will appear to signal the start of Priming Mode.

At this point, the power up sequence is complete. Refer to the User Guide for the ML Series panel on your system for information about how the spa operates from this point on.

VL Series Panels -- For use with GS Systems

VL Panel Line-up

VL802D

VL801D

VL702S

VL701S

VL700S

VL600S

DELUXE SYSTEMS

STANDARD SYSTEMS

"Phone Plug" RJ Type,
VL/GS Connector

VL406U

VL406T

VL404

VL403

Note:
VL404 and VL403 have red LED's on black background

VL402

VL401

VL400

VL260

VL240

VL200

DUPLEX SYSTEMS

"Phone Plug" RJ Type, VL/GS Connector

GS Panel -- 500 Series and Operation

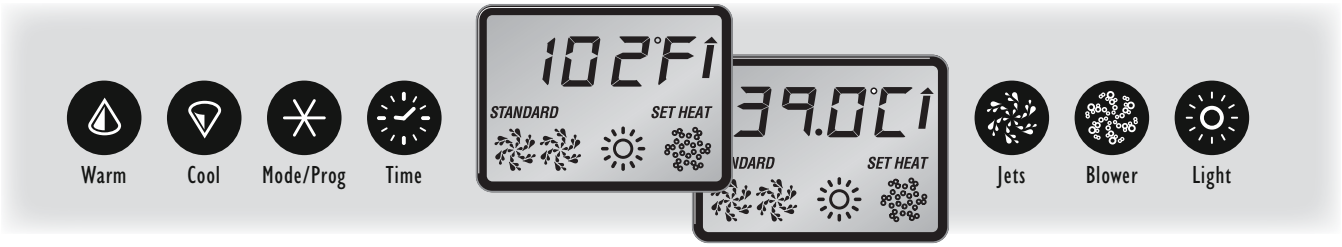
Please refer to the User Guides for additional information.
500 Z Series User Guide: P/N 40789
500 SZ Series User Guide: P/N 40790
500 DZ Series User Guide: P/N 40788

500Z Series Panel

Note: Button shapes and labels may vary.

500SZ Series Panel

Note: Button shapes and labels may vary.



500DZ Series Panel

Note: Button shapes and labels may vary.

Initial Start-up

Your spa will enter Priming Mode (Pr) when it is energized. During Priming Mode, press "Jets" button(s) repeatedly and be sure all pumps are free of air. Priming Mode lasts less than 5 minutes. Press "Temp" to exit. After Priming Mode, the spa will run in Standard Mode (see Mode section). Some panels may not have a "Temp" button. On these panels the "Set", "Warm", or "Cool" buttons are used.

The pump responsible for heating and filtration (pump 1 low-speed on non-circ system, or the circ pump on circ systems) will be referred to simply as the pump.
In multi-button sequences, if the buttons are pressed too quickly in sequence, they may not register.

TEMP CONTROL (26°C - 40°C / 80°F - 104°F)

The last measured water temperature is constantly displayed.
The water temperature displayed is current only when the pump has been running for at least 2 minutes.
On panels with a single "Temp" or "Set" button, to display the set temperature, press the button once. To change the set temperature, press the button a second time before the display stops flashing.

Each press of the button will continue to either raise or lower the set temperature. If the opposite direction is desired, allow the display to revert to the current water temperature. Press the button to display the set temperature, and again to make the temperature change in the desired direction.

On panels with "Warm" and "Cool" buttons, to display the set temperature, press "Warm" or "Cool" once. To change the set temperature, press a temperature button again before the display stops flashing. Each press of "Warm" or "Cool" will adjust the set temperature.
After three seconds, the display will stop flashing and begin to display the current spa temperature.

JETS

Jets 1 500Z, 500DZ, 500SZ Series

Press "Jets 1" to turn pump 1 on or off, and to shift between low and high speeds (if equipped). The low-speed will turn off after 4 hours. High-speed will turn off after 15 minutes. Low-speed may run automatically at times, during which it cannot be deactivated from the panel, but high-speed may be operated.

Jets 2/Jets 3/Blower (If equipped)

Press the corresponding button once to turn the device on or off. The device will turn off after 15 minutes. Pump 2 may be two-speed on some systems.
Some systems use this one button to control two devices. The first button press will activate one device. Press again to have both devices active. Press again to turn off the first device only. Press one more time to turn both devices off.

LIGHT

Press "Light" to operate the spa light. Turns off after 4 hours.

SETTING THE TIME OF DAY

When the spa is first powered up, the words SET TIME will flash on the display. Press "Time", then "Mode/Prog", then "Warm" or "Cool". The time will begin changing in one-minute increments. Press "Warm" or "Cool" to stop the time from changing. Press "Time" to confirm.

MODE/PROG

Mode 500Z

- Depending on system configuration, mode changing may not be available and will be locked in Standard Mode.
- Mode is changed by pressing "**Temp**", then "**Light**".
- STANDARD Mode maintains set temperature. 5t will be displayed momentarily when you switch into Standard Mode.
- ECONOMY Mode heats the spa to the set temperature only during filter cycles. Ec will display when water temp is not current, and will alternate with water temp when the pump is running.
- SLEEP Mode heats the spa to within 10°C/20°F of the set temperature only during filter cycles. SL will display when water temp is not current, and will alternate with water temp when the pump is running.

Mode 500SZ

- Mode is changed by pressing "**Warm**" or "**Cool**", then pressing "Mode".
- STANDARD Mode maintains set temperature. Std will be displayed momentarily when you switch into Standard Mode.
- ECONOMY Mode heats the spa to the set temperature only during filter cycles. Ecn will display when water temp is not current, and will alternate with water temp when the pump is running.
- SLEEP Mode heats the spa to within 10°C/20°F of the set temperature only during filter cycles. SLP will display when water temp is not current, and will alternate with water temp when the pump is running.

Mode/Prog 500DZ

- Mode is changed by pressing "**Warm**" or "**Cool**", then pressing "Mode/Prog" button.
- Standard Mode maintains set temperature and the STANDARD icon will be displayed.
- ECONOMY Mode heats the spa to the set temperature only during filter cycles. Ecn will display when water temp is not current, and will alternate with water temp when the pump is running. The ECONOMY icon will be displayed.
- SLEEP Mode heats the spa to within 10°C/20°F of the set temperature only during filter cycles. SLP will display when water temp is not current, and will alternate with current water temp when the pump is running.

FILTER CYCLES

Preset Filter Cycles 500Z

- The first preset filter cycle begins 6 minutes after the spa is energized. The second preset filter cycle begins 12 hours later. Filter duration is programmable for 2, 4, 6, or 8 hours or for continuous filtration (indicated by FC). The default filter time is 2 hours.
- To program, press "Temp", then "Jets 1". Press "Temp" to adjust. Press "Jets 1" to exit programming.
- For non-circ systems, low-speed pump 1 and the ozone generator (if installed) run during filtration.
- For circulation systems, the circ pump and the ozone generator (if installed) run 24 hours. In hot environments, the circ pump may turn off for 30 minute periods, except during filter cycles. At the beginning of each filter cycle all other equipment will run briefly to purge the plumbing.

Preset Filter Cycles 500SZ

- The first preset filter cycle begins 6 minutes after the spa is energized. The second preset filter cycle begins 12 hours later. Filter duration is programmable for 2, 4, 6, or 8 hours or for continuous filtration (indicated by F ILC). The default filter time is 2 hours for non-circ systems and 4 hours for circ systems.
- To program, press "Warm" or "Cool", then "Jets 1". Press "Warm" or "Cool" to adjust. Press "Jets 1" to exit programming.
- In hot environments, the circ pump may turn off for 30 minute periods, except during filter cycles. At the beginning of each filter cycle all other equipment will run briefly to purge the plumbing

Preset Filter Cycles 500DZ

- The first preset filter cycle starts at 8:00 AM and ends at 10:00 AM. The second preset filter cycle starts at 8:00 PM and ends at 10:00 PM.
- For non-circ systems, low-speed pump 1 and the ozone generator (if installed) run during filtration.
- For circulation systems, the circ pump and the ozone generator (if installed) run 24 hours. In hot environments, the circ pump may turn off for 30 minute periods, except during filter cycles. At the beginning of each filter cycle, all other equipment will run briefly to purge the plumbing.

Optional Filter Cycle Programming 500DZ

- You are not required to change the filter cycles, but if you wish to, press "Time", "Mode/Prog", "Mode/Prog" within 3 seconds. SET START FILTER 1 (AM) will appear. Press "Warm" or "Cool" to reset the filter start time.
- Press "Mode/Prog" to see SET STOP FILTER 1 and adjust the time with "Warm" or "Cool" as done above. Press "Mode/Prog" to see SET START FILTER 2 (PM) and proceed as above. Press "Mode/Prog" to see SET STOP FILTER 2 and proceed as above. Press "Mode/Prog" to confirm.

LOCKING THE PANEL 500DZ

- Press "Time", "Blower", and "Warm" within 3 seconds. The Panel is now locked. To unlock the panel, press the "Time", "Blower", and "Cool" within 2 seconds.
- Note: On some systems, "Jets 1", instead of "Blower", is used in Lock/Unlock sequences**.**

LOCKING THE TEMPERATURE 500DZ

- Press "Warm", "Time", "Blower", and "Warm" within 3 seconds. The "Warm" and "Cool" buttons are now disabled. To unlock the temperature, press "Time", "Blower", and "Cool" within 2 seconds.
- Note: On some systems, "Jets 1", instead of "Blower", is used in Lock/Unlock sequences.

OZONE

For non-circ systems (if installed) runs during filtration.
For circulation systems (if installed) runs 24 hours.

Any time you change a DIP Switch, other than A1, you must reset Persistent Memory for your new DIP Switch Settings changes to take effect. If you do not reset Persistent Memory, your system may function improperly.

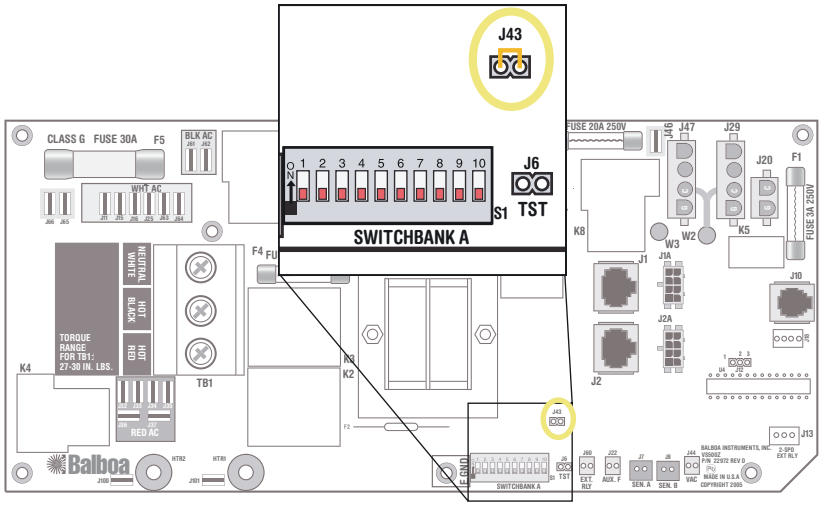
To reset Persistent Memory:

- Power down by disconnecting power source from spa.
- Put a jumper on across J43, covering both pins. (See illustration below)
- Power up by connecting power source to spa.
- Wait until "Pr" is displayed on your panel.
- Power down again.
- Remove jumper from J43 (May also move to cover 1 pin only)
- Power up again.

About Persistent Memory and Time of Day Retention:

This system uses memory that doesn't require a battery to store a variety of settings. What we refer to as Persistent Memory stores the filter settings, the set temperature, and the heat mode.

Persistent Memory is not used for Time of Day. Only models with a Serial Deluxe panel installed (GS5xxDZ) can display the time. However, during power loss to the spa, the system will lose the correct time, and reset to 12:00 PM when power is restored.



J43 on GS Series Main Board Shown.

Power Up Display Sequence

Upon power up, you should see the following on the display:

- Three numbers in a row, which are the SSID (the System Software ID). The third display of these numbers is the Software Version, which should match the version of your system. For example, if these three numbers are 100 67 38, that is a VS511SZ at version 38.
- Displayed next is: "24" (indicating the system is configured for a heater between 3 and 6 kW) or "12" (indicating the system is configured for a heater effectively* between 1 and 3 kW). "24" should appear for all VS models running at 240VAC. "12" should appear for all VS models running at 120VAC, as well as all GS models. (*A heater which is rated at 4 kW at 240VAC will function as a 1 kW heater at 120VAC.)
- "Pr" will appear to signal the start of Priming Mode.

At this point, the power up sequence is complete. Refer to the Reference Card for the GS System model of your spa for information about how the spa operates from this point on, including how to adjust the Time of Day if using a Serial Deluxe style panel.

Changing a System Circuit Board

Important!

Be sure to turn the power off before replacing any component, ***especially a circuit board.***

Important!

DO NOT REMOVE AND REPLACE THE CIRCUIT BOARD UNLESS THE FAULT HAS POSITIVELY BEEN DETERMINED TO BE THE CIRCUIT BOARD.

HOW TO REMOVE A SYSTEM CIRCUIT BOARD

NOTE: Before you begin, labeling all wires to be removed may help speed up reinstallation. The wiring diagram should always be used to ensure proper wire placement.

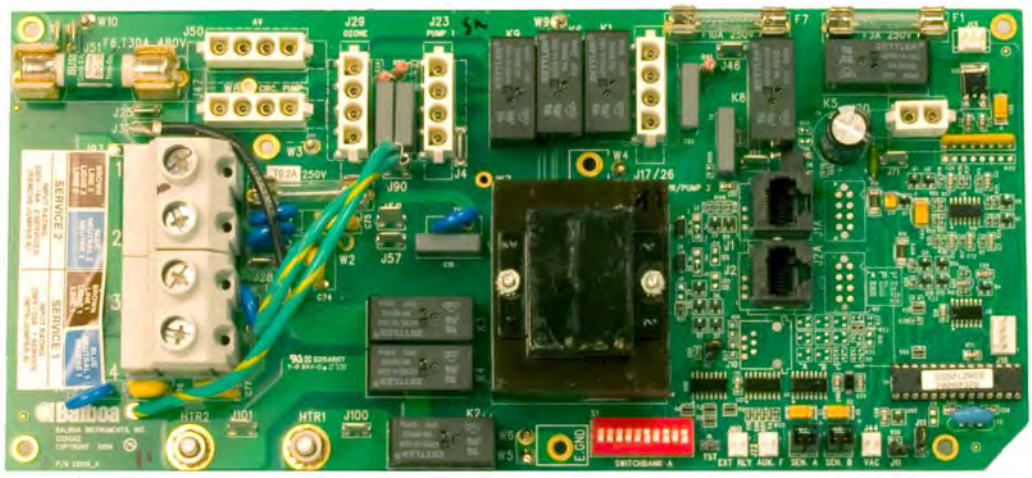
- Shut OFF line power to the spa at the main circuit breaker panel. Do not attempt to service a spa without shutting off the power. Serious injury or damage may result.
- Disconnect all wires and slip-on connectors as necessary to remove the board.
- Remove all the screws which mount the board to the system enclosure.
- Remove the board from the plastic stand-offs by gently squeezing the locking flange on each stand-off with a pair of pliers. The board should now be free and can be removed from the system box.

HOW TO REPLACE A SYSTEM CIRCUIT BOARD

- Check all jumpers and dip switch positions on the new board. Make sure they are in the same position as the old board.
- Make sure the new board snaps in place on the plastic stand-offs. Use care to be sure the connectors on the right side of the board clear the enclosure openings as the board is installed.
  Caution: Do Not Overtighten this screw.
- Install all screws which mount the board to the system enclosure.
- Reconnect all wires and slip-on connectors.
- Restore power to the spa at the main breaker.
- Test to make sure all functions work correctly.

Important

DO NOT REMOVE AND REPLACE THE CIRCUIT BOARD UNLESS YOU HAVE TESTED ALL OTHER COMPONENTS AND PROVEN THAT THE CIRCUIT BOARD IS ACTUALLY CAUSING THE PROBLEM.



GS500Z Board

1. Check sensor wires for cracks or damage that may indicate the presence of a rodent.

2. Inspect the connections of both sensors on the circuit board. The plugs must be clean.

3. If the sensors are not totally failing but are showing excessive (1.0°C/2.0°F or more) difference between the two sensors when not heating (a possible cause of Sn/SnS/SENSOR SYNC, HL/HFL/HTR FLOW LOW, and LF/LOW/FLOW/messages), do the following: Note which sensor is reading consistently higher (A vs B or t vs H).

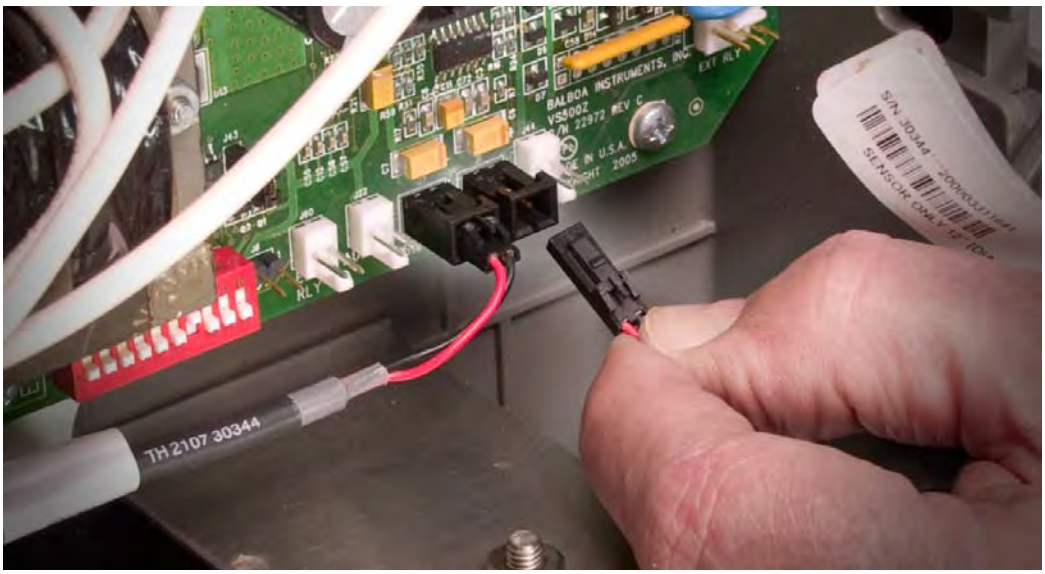
4. Unplug the two sensors from the circuit board and exchange their positions (i.e., plug the one that was in the "Sen. A" jack into the "Sen. B" jack and vice versa).

5. Press a panel button if any "stray" faults appeared during the process. (Stray faults are normal when sensors are unplugged then plugged back in while the system is running.)

6. Within a minute or so*, see if the same or other sensor is now reading consistently higher:
   - If the same sensor (A vs B or t vs H) is reading higher after the sensor interchange, the problem is on the circuit board. Replace the circuit board.
   - If the opposite sensor is now reading higher, the problem is with the sensor(s). Replace the sensor set.

   ** If you wait more than 2 minutes after plugging the sensors back in, heating may start (even outside a filter in Economy or Sleep mode) due to a stray Cd/CLd/COLD WATER condition usually detected when sensors are being plugged in while the system is running.*

7. If there is a message indicating an open or faulty sensor:
   - Unplug the sensor set (but leave the original sensors in the heater) and plug in the test sensor set. Put both sensors into the same cup of warm water (ideally above the set temperature, so the spa won't try to heat during this test, as there is no heater protection during this test) and verify that they read the same temperature (within 0.5°C/ 1°F).
   - If the problem is solved, replace the sensor set. If the problem is not solved, do not replace the sensor set.
   - Plug in the original sensor set to verify that there is not a connection problem.
   - If the problem continues after following the above steps, then replace the circuit board.



Removing the Heater Assembly from a Spa System

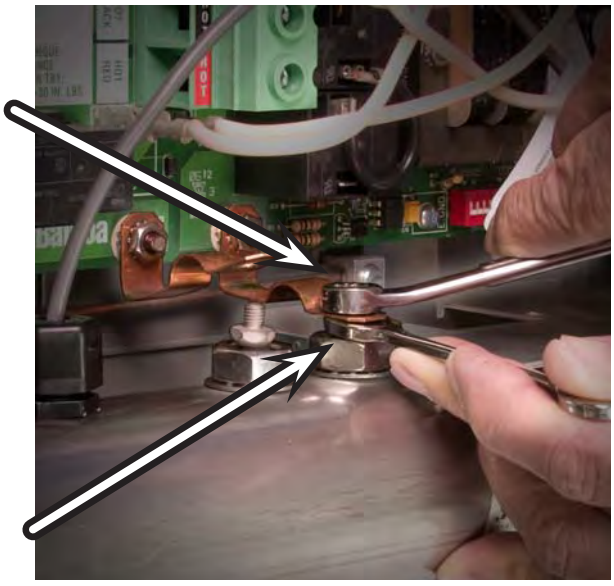
Note: Be careful when removing a heater assembly from a spa plumbing system. Water may splash out under pressure.

Water under pressure in the plumbing may splash out, and onto the system's electronic board. Do not remove the system door until the water has been drained from the heater assembly tube.

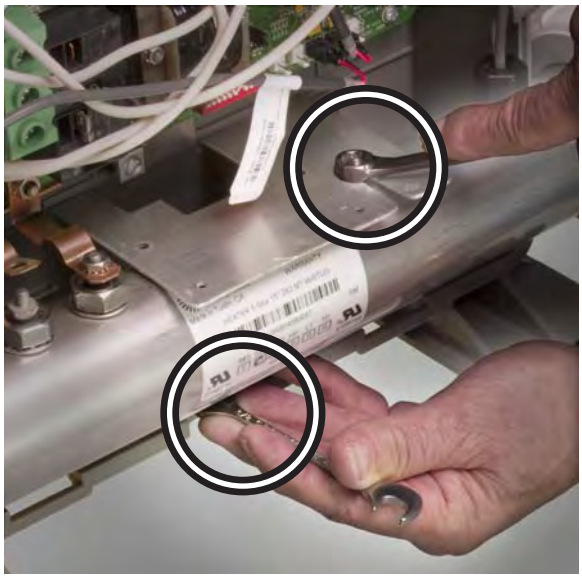
1. Turn off the main power.

2. Close off the slice valves (or, ball valves) adjacent to the heater assembly.

3. Once the valves are closed, slowly crack the heater assembly end tubes until water flows out. If the connectors are on too tight, it may be necessary to loosen the Phillips screws that hold the connectors together. Once the water has been drained, continue.



Keep the lower nut from turning by supporting it with another end-wrench



Remove both nuts that secure the element in place.

4. Remove the system door cover.

5. Remove the nuts securing the copper straps to the heater assembly's terminal connectors. **Be sure to use a supporting end wrench on the lower nut.** Otherwise, excessive torque may be occur on the straps and put undue stress on the PCB.

6. Remove the heating assembly sensor wires and replace if necessary.

7. Remove both nuts that secure the element in place.

8. Remove the heater assembly.

Panel Message Reference Guide

Message	Meaning / Frequency	Action Required
- - - - - --F or --C	Temperature not current in Economy or Sleep mode.	In Economy or Sleep mode, the pump may be off for hours outside a filter cycle. If you wish to see the current spa temperature, either switch to Standard mode or turn Jets 1 on for 2 minutes. Please see "Diagnosing Topside Control Panels". (Page 16)
CFE	Configuration error. Spa cannot start up.	Please see "Diagnosing Topside Control Panels". (Page 16)
CHANGE MINERAL CARTRIDGE	As needed [3]	Install new Mineral cartridge. Reminder, Suppress in User Preferences. [2]
CHECK PH	Every 7 days [3]	Test and adjust pH chemical levels per manufacturer's instructions. Reminder, Suppress in User Preferences. [2]
CK SANITIZER	Every 7 days [3]	Test and adjust sanitizer chemical levels per manufacturer's instructions. Reminder, Suppress in User Preferences. [2]
CHKSUM FAIL	Firmware install problem.	Contact Balboa if message appears on more than one power up.
CLEAN COVER	Every 180 days [3]	Clean and condition cover per manufacturer's instructions. Reminder, Suppress in User Preferences. [2]
CLEAN FILTER	Every 30 days [3]	Remove, clean, and reinstall filter per manufacturer's instructions. Reminder, Suppress in User Preferences. [2]
CONFIG ERROR	System configured incorrectly. Menu panel displays errors.	Contact Balboa. Please see "Diagnosing Topside Control Panels". (Page 16)
CrC	Firmware install problem.	Contact Balboa if message appears on more than one power up. Please see "Diagnosing Topside Control Panels". (Page 16)
dr (ML Panels)	Inadequate water detected in heater.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the pumps have been primed. Press any button to reset.
dr (VL panels)	Possible inadequate water, poor flow, or air bubbles in detected in the heater. Spa is shut down for 15 minutes.	If water level is normal, make sure all pumps have been primed. Press any button to reset. This message will reset within 15 minutes.
DRAIN WATER	Every 90 days [3]	Drain and refill spa per manufacturer's instructions. Reminder, Suppress in User Preferences. [2]

[1] 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.
[2] Please see the User Manual of the specific panel that the Reminders need to be suppressed.
[3] This is a Reminder Message.
Note: All Messages may not appear on your panel.

Panel Message Reference Guide (cont.)

DRAINING drn	The pump is on during Standby Mode to assist in draining the spa.	Press "Jets 1" to turn off the pump when water has drained (or power off the spa.)
dry dY	Inadequate water detected in heater. (Displays on third occurrence of "dr" message.) Spa is shut down. [1]	Follow action required for dr message. Spa will not automatically reset. Press any button to reset manually.
Ec Ecn **Economy**	The spa is operating in Economy Mode.	"Ecn" will appear solid on the display when the temperature is not current. "Ecn" will alternate with the temperature when the temperature is current.
FC	As needed.	Continuous Filtration is on.
FREEZE COND	"Ice" - Potential freeze condition detected.	No action required. The pumps and the blower will automatically activate regardless of spa status.
GF I GFCI FAILURE	Spa could not trip GFCI.	Continued operation may be unsafe.
HEATER DRY SERVICE ROD	Inadequate water detected in heater. (Displays on third occurrence of the above message.) Spa is shut down. [1]	Follow action required for the above message. Spa will not automatically reset. Highlight and press to reset.
HEATER MAY BE DRY- WILL RETEST SHORTLY	Inadequate water detected in heater.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the pumps have been primed. Press any button to reset.
HL HFL HTR FLOW LOW	A substantial difference between the temperature sensors was detected. This could indicate a flow problem.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the pumps have been primed. Press any button to reset.
HH	"Overheat" - The spa has shut down. [1] One of the sensors has detected 118°F/47.8°C at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button.
HOt HOT-CALL SVC	A pump appears to have been stuck on the last time spa was powered down.	POWER DOWN SPA IMMEDIATELY. DO NOT ENTER THE WATER.
HTR TEMP LMT	"Overheat" - The spa has shut down. [1] On some systems, an alarm may sound. One of the sensors has detected 118°F (approx. 47.8°C) at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, test sensors.

[1] 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.
[2] Please see the User Manual of the specific panel that the Reminders need to be suppressed.
[3] This is a Reminder Message.
Note: All Messages may not appear on your panel.

IC ICE	"Ice" - Potential freeze condition detected.	No action required. The pumps and the blower will automatically activate regardless of spa status.
LF LOW FLOW	Persistent low flow problems. (Displays on the fifth occurrence of the "Heater Flow Low" message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for "HFL" or "HL" message. Heating capacity of the spa will not reset automatically; you may press any button to reset.
NEW FILTER	Every 365 days [3]	Install new filter. Reminder, Suppress in User Preferences. [2]
OH OHS	"Overheat" - The spa has shut down. [1] One of the sensors has detected that the spa water is 110°F/43.5°C.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F/41.7°C, the spa should automatically reset. If spa does not reset, test sensors.
OHH	"Overheat" - The spa has shut down. On some systems, an alarm may sound. One of the sensors has detected 118°F (approx. 47.8°C) at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. Test sensors.
PERSIST FAIL	Hardware failure.	Contact Balboa if message appears on more than one power up.
PH IS HIGH LOWER PH PHH	pH is high.	Add pH reducer according to manufacturer's instructions.
PH IS LOW RAISE PH PHL	pH is low.	Add pH increaser according to manufacturer's instructions.
Pr PRIMING MODE TAKES 4 MIN	When your spa is first actuated, it will go into Priming mode.	See the M-7 Installation Instruction Manual for complete instructions on Power-up and Pump Priming. The Priming mode will last for up to 4 minutes and then the spa will begin to heat and maintain the water temperature in the Standard mode.
PSE	Hardware failure.	Contact Balboa if message appears on more than one power up.
rCA	As needed [3]	Install new Mineral cartridge. Reminder, Suppress in User Preferences. [2]
rCH	Every 365 days [3]	Install new filter. Reminder, Suppress in User Preferences. [2]
rCL	Every 30 days [3]	Remove, clean, & reinstall filter per manufacturer's instructions. Reminder, Suppress in User Preferences. [2]

[1] 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.
[2] Please see the User Manual of the specific panel that the Reminders need to be suppressed.
[3] This is a Reminder Message.
Note: All Messages may not appear on your panel.

Panel Message Reference Guide (cont.)

rCO	Every 180 days [3]	Clean & condition cover per manufacturer's instructions. Reminder, Suppress in User Preferences. [2]
rdr	Every 90 days [3]	Drain and refill spa per manufacturer's instructions. Reminder, Suppress in User Preferences. [2]
rPH	Every 7 days [3]	Test and adjust pH chemical levels per manuf. instructions. Reminder, Suppress in User Preferences. [2]
rSA	Every 7 days [3]	Test and adjust sanitizer chemical levels per manufacturer's instructions. Reminder, Suppress in User Preferences. [2]
rtC RTC FAILURE	Hardware failure.	Contact Balboa.
rt9	Every 30 days [3]	Test & reset RCD per manufacturer's instructions. [2]
rtr	Every 180 days [3]	Clean and condition wood per manufacturer's instructions. [2]
SA	Spa is shut down. [1] The sensor that is plugged into the Sensor "A" jack is not working.	If the problem persists, contact Balboa. (May appear temporarily in an overheat condition.) See "Testing the Sensor Set". (Page 41)
Sb	Spa is shut down. [1] The sensor that is plugged into the Sensor "B" jack is not working.	If the problem persists, contact Balboa. (May appear temporarily in an overheat condition.) See "Testing the Sensor Set". (Page 41)
SAH SANITIZER HIGH	Sanitizer is high.	Remove spa cover and allow sanitizer to dissipate.
SAL SANITIZER LOW	Sanitizer is low.	Add sanitizer according to manufacturer's instructions.
Sby	Standby Mode has been activated by pressing a button combination on the user panel.	Press any button, except "Jets 1", to leave Standby Mode and return to normal operation.
SE	The spa is operating in Standard-in-Economy Mode.	Operates the same as Standard mode, then reverts to Economy mode after 1 hour. Press "Mode" to switch directly to Economy mode.
SENSOR A SERVICE R01	Spa is shut down. [1] The sensor that is plugged into the Sensor "A" jack is not working.	Test sensor, and replace if bad. Please see Testing the Sensor Set. (Page 41)

[1] 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.
[2] Please see the User Manual of the specific panel that the Reminders need to be suppressed.
[3] This is a Reminder Message.
Note: All Messages may not appear on your panel.

SENSOR B SERVICE ROD	Spa is shut down. [1] The sensor that is plugged into the Sensor "B" jack is not working.	Test sensor, and replace if bad. Please see Testing the Sensor Set. (Page 41)
SENSOR SYNC Sn SnS	Sensors are out of balance. If this is alternating with the temperature, it may just be a temporary condition. If the display shows only this message (periodically blinking), the spa is shut down. [1]	Test sensor, and replace if bad. Please see Testing the Sensor Set. (Page 41)
SLP	Sleep Mode has been activated by pressing a button combination on the user panel.	"SLP" will appear solid on the display when the temperature is not current. "SLP" will alternate with the temperature when the temperature is current.
SnA	Spa is shut down. The sensor that is plugged into the Sensor "A" jack is not working.	Test sensor, and replace if bad. Please see Testing the Sensor Set. (Page 41)
Snb	Spa is shut down. The sensor that is plugged into the Sensor "B" jack is not working.	Test sensor, and replace if bad. Please see Testing the Sensor Set. (Page 41)
SPA TEMP LMT	"Overheat" - The spa has shut down. [1] One of the sensors has detected that the spa water is 110°F (approx. 43.3°C).	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F (approximately 41.7°C), the spa should automatically reset. If spa does not reset, shut off the power to the spa.
STANDBY MODE	Standby Mode has been activated by pressing a button combination on the user panel.	Press any button to leave Standby Mode and return to normal operation.
Std	The spa is operating in Standard Mode.	Temperature display is current after pump has been running for at least 2 minutes.
StU STUCK ON	A pump appears to be stuck on, causing the water temperature to creep up, possibly to hazardous levels.	POWER DOWN SPA IMMEDIATELY. DO NOT ENTER THE WATER.
TEST GFCI	Every 30 days [3]	Test & reset per manufacturer's instructions. Reminder, Suppress in User Preferences. [2]
TREAT WOOD	Every 180 days [3]	Clean and condition wood per manufacturer's instructions. Reminder, Suppress in User Preferences. [2]

[1] 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.
[2] Please see the User Manual of the specific panel that the Reminders need to be suppressed.
[3] This is a Reminder Message.
Note: All Messages may not appear on your panel.

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