BP500

SYSTEM OVERVIEW MANUAL

BALBOA water group

Transforming the Control of Hot Tubs

BP500

Intellectual Property Advisement

All Intellectual property, as defined below, owned by or which is otherwise the property of Balboa Water Group or its respective suppliers relating to the Balboa Water Group BP500 Spa Control, including but not limited to, accessories, parts, or software relating there to (the "System"), is proprietary to Balboa Water Group and protected under federal laws, state laws, and international treaty provisions. Intellectual Property includes, but is not limited to, inventions (patentable or unpatentable), patents, trade secrets, copyrights, software, computer programs, and related documentation, and other works of authorship. You may not infringe or otherwise violate the rights secured by the Intellectual Property. Moreover, you agree that you will not (and will not attempt to) modify, prepare derivative works of, reverse engineer, decompile, disassemble, or otherwise attempt to create source code from the software. No title to or ownership in the Intellectual Property is transferred to you. All applicable rights of the Intellectual Property shall remain with Balboa Water Group and its suppliers.

End User Warning

This Installation Manual is provided solely to aid qualified spa service technicians in installing spas with control systems manufactured by Balboa Water Group. Balboa controls have absolutely no end user serviceable parts. Balboa Water Group does not authorize attempts by the spa owner/user to repair or service any Balboa products. Non-qualified users should never open or remove covers, as this will expose dangerous voltage points and other dangerous risks. Please contact your dealer or authorized repair center for service.

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Warnings: Danger! Risk of Electric Shock!

- All electrical work must be performed by a qualified electrician and must conform to all national, state, and local codes.
- Before making any electrical connections, make certain that the Main Power breaker from the house breaker box has been turned off.
- Do not attempt service of this control system. Contact your dealer or service organization for assistance.
- Do not permit any electric appliance, such as a light, telephone, radio, or television within 5' (1.5m) of a pool or spa.
- Follow all owner's manual power connection instructions.
- Installation must be performed by a licensed electrician and all grounding connections must be properly installed.
- No user serviceable parts.
- Water temperature in excess of 38°C may be injurious to your health.
- Disconnect the electrical power before servicing.
- Keep access door closed.

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Transforming the Control of Hot Tubs

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CAUTION

- Test the ground fault circuit interrupter before each use of the spa.
- Read the instruction manual.
- Adequate drainage must be provided if the equipment is to be installed in a pit.
- To ensure continued protection against shock hazard, use only identical replacement parts when servicing.
- Install a VG Compliant suction guard that is suitably rated 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.

Keep access door closed.

ATTENTION

- Toujours verifier l'efficacite du disjoncteur differentiel avant d'utiliser le bain.
- Lire la notice technique.
- Lorsque l'appareillage est installe dans une fosse, on doit assurer un drainage adequat.
- Afin d'assurer une protection permanente contre le danger de shock electrique, lors de l'entretien employer seulement des pieces de rechange identiques.
- Les prises d'aspiration doivent etre equipees de grilles convenant au debit maximal indique.

AVERTISSEMENT:

Des temperatures de l'eau superieures a 38˚C peuvent presenter un danger pour la sante.

Deconnecter du circuit d'alimentation electrique avant l'entretien.

Garder la porte fermer.

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GFCI

It is required by code to install a Ground Fault Circuit Interrupter (GFCI) in the supply power for a spa. This device will trip the breaker if there is an unsafe electrical condition caused by a malfunctioning component or even the slightest short to ground.

Note: Connect the control system only to a circuit protected by a Class A GFCI mounted at least 5' (1.52M) from the inside walls of the spa/hot tub and in line of sight from the equipment compartment.

Refer to NEC (*National Electrical Code*), 2005 Edition, Article 680 for more information.

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BP500Overview

Meet the BP500

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Meet the BP500

- The first of a new series of systems
- Based on Balboa's most popular models
- Wi-Fi Ready
- New features in new enclosure
- Higher flame retardant and impact resistant materials
- Press & Hold buttons for ease of use

Incomparable system reliability

The BP500 is the first of a new series based on Balboa's most popular models, utilizing advanced technology and higher flame retardent and impact resistant materials. Wi-Fi ready with press and hold buttons for ease of use, meet the newly designed BP500.

No Documentation Needed

Without looking at a user manual, the user friendly inteface allows you to start using your spa right away, and the sleek new topside panel includes a large easy to read backlit LCD. With new press and hold button technology, setting temperature and other common tasks have been simplified. User navigation is intuitive and easier than ever, reducing customer service calls for help.

Wi-Fi Hardware Connections / Wireless System Control

Now you can control your system wirelessly. With some additional hardware and a few simple connections, anywhere that you get a Wi-Fi signal you can have full control of your spa! Download the software by going to the Apple Apps store, download the free spa app, then run through the quick setup and you're done.

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TP600 Panel

TP400T Panel

TP400W Panel

BP500 Specifications

System Model

BP500 60 Hz BP15-BP500-BJ-M

System Part Numbers, Domestic

Part Number:	56278 4kW 800 Incoloy Heater Element
	56279 4kW 825 Incoloy Heater Element
	56280 4kW Titanium Heater Element

Topside Panels

TP 600	55673-05
TP400T	50260
TP400W	50259

Auxiliary Panels:

AX10A2	55919

Couplings (nuts and seals included)

Part No. 55911 2" Tailpieces (2-Speed Pump 1)

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BP500 Components

1. Electric Housing Cover
2. Bi-directional Flow Heater
3. Heater Housing
4. Electronic Enclosure
5. Nut and Tailpiece
6. Support Legs

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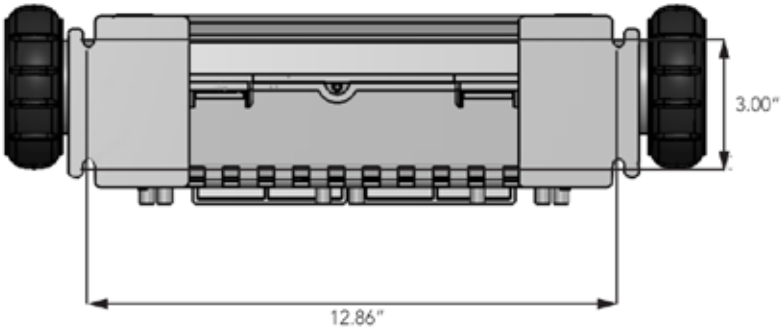
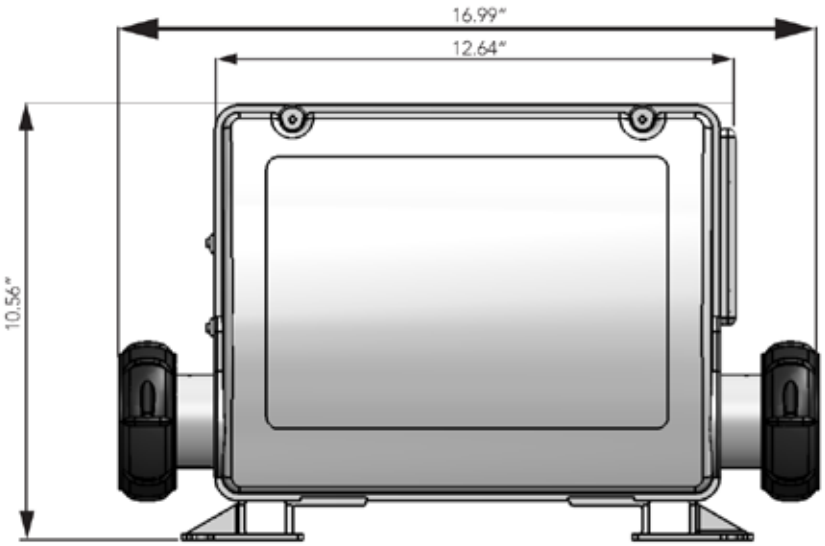
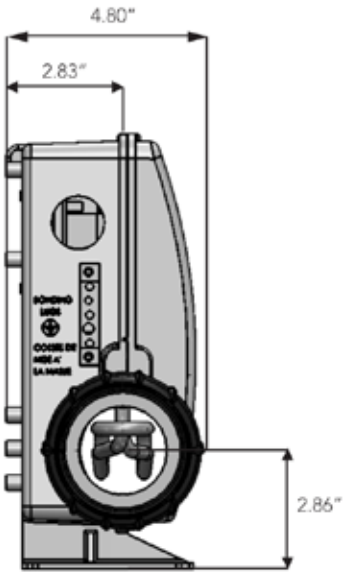
System Dimensions

Mounting Dimensions







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BP500 Menus and Panel Operation

Meet the BP500

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Menus & Panel Operation

TP Panel Series

All TP panels shown on this page work with both BP500 models BP1500 and BP1600 models. They all have capabilities for navigation, setting functions and modes (time, temperature, filter cycles, preferences), sensor related messages, reminder messages, diagnostic messages, and utilities such as fault logs. .

TP600
(55673-05)

TP400T
(50260)

TP400W
(50259)

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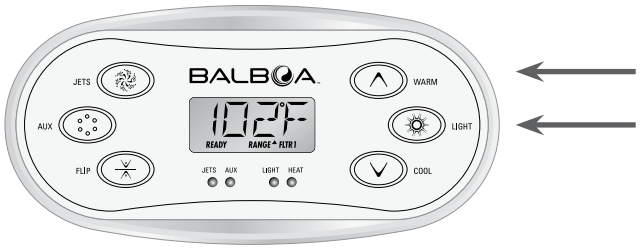

WARM

COOL

LIGHT

Panel Navigation

Navigating the entire menu can be accomplished with two buttons:

1) Either temperature button (also, if the panel has a single TEMP icon)

2) The Light button

NOTE: *Hereafter, all temperature buttons (i.e., "Warm" and "Cool") will be referred to as a TEMP button.*

Warm/Cool Temperature Buttons

An "Action" Button:

- Allows changing the Set Temperature
- Provides a flashing screen, which prompts the user for further action
- Changes preferences within a menu

Light Button

A "Choose" Button, depending on control panel configuration:

- Turns the LED lights on and off
- Enters the menus when numbers are flashing
- Scrolls through the menu
- Makes a selection ("Enter")

Waiting for 10 seconds will return the panel to normal operation and a display of spa status.

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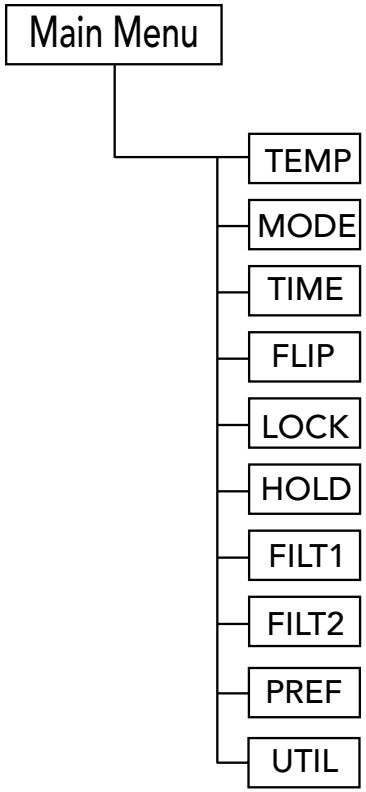

Main Menu -- BP500 TP Series Control Panels

- TEMP
- MODE
- TIME
- FLIP
- LOCK
- HOLD
- FILTER No. 1
- FILTER No. 2
- LITE TIMR *
- PREF
- UTIL

* LITE TIMR — This menu item may or may not appear depending on a manufacturer's configuration.

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Press TEMP buttons
for desired
set temperature.

Temperature Adjustment

- Press TEMP buttons for desired set temperature.
- The numbers flash during temperature adjustment.
- Press LIGHT to return to main menu; or, main screen returns in 5 seconds.

Temperature Adjustment with One TEMP Button on Panel.

- 1st TEMP button press causes temperature to flash.
- 2nd TEMP button press causes the temperature to change.
- Press LIGHT to return to main menu; or, main screen returns in 5 seconds.

Press and Hold: Temperature Adjustment with One TEMP Button.

- 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.

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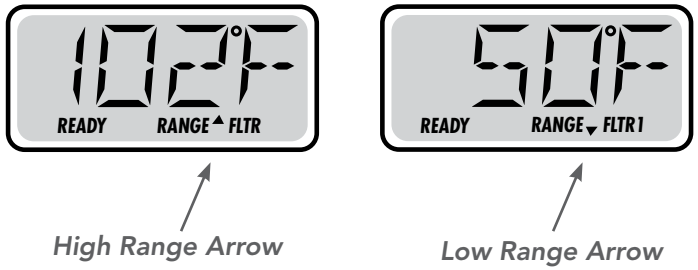

The water temperature display will show whether the system is in High or Low Range.

Dual Temperature Ranges

The BP500 system incorporates two temperature range settings that allows an independent set temperature within each range. The High Range is designated in the display by an "up" arrow, and the Low Range is designated in the display by a "down" arrow.

These ranges can be used for various reasons, with a common use being a "ready to use" setting vs. a "vacation" setting. 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.
- Freeze Protection is active in either range.
- If no key activity occurs, main menu returns in 5 seconds.
- More specific temperature ranges may be determined by the manufacturer.

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Dual Temperature Ranges (cont.)

Setting a High Temperature Range

From the Main Screen, press TEMP to view current set temperature

RANGE▲ is displayed for the High Range

Press TEMP to set desired temperature.

Press LIGHT to exit.

RANGE▲ is displayed with the new set temperature

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Dual Temperature Ranges (cont.)

Setting a Low Temperature Range

From the Main Screen, press TEMP to view current set temperature

RANGE▲ is displayed

Press TEMP to Toggle Range Arrow Up or Down

RANGE▲ is displayed

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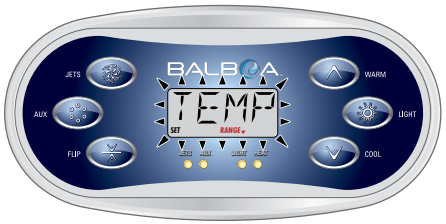
Dual Temperature Ranges (cont.)

Setting a Low Temperature Range (cont.)



RANGE▼ is displayed for Low Range

Press LIGHT to Exit to Low Range Temperature Menu

Press LIGHT to Exit to Low Range Temperature Menu

RANGE▼ is displayed for Low Range

Press TEMP to set desired temperature.

Press TEMP to set a low temperature set point

Press LIGHT to exit.

Exiting reverts the display back to the main screen.

RANGE▼ is displayed with the new set temperature

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Spa Light

The Light button turns the spa light on and off.

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Ready Mode

Rest 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 "heater pump."

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

2-Speed Pump 1

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.

24 Hour 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.

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Mode -- Ready and Rest (cont.)

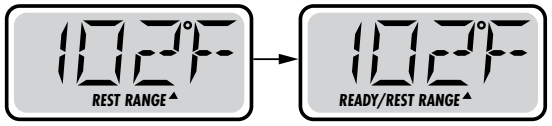
Ready Mode

- READY Mode will allow the spa to Poll and determine a need for heat. The panel will maintain a "current" temperature display.

Rest Mode

- REST Mode will not Poll and will only heat during filter cycles. The panel will not display a current temperature at all times.
- The Main Screen will display normally during Filter Cycles or when the spa is in use.
- If the filtration pump has been off for an hour or more, and when any function button (except Light) is pressed on the panel, the pump used in conjunction with the heater will run so that the temperature can be sensed and displayed.

Rest Mode: The Screen will display RUN PUMP FOR TEMP if the filtration pump has not run for over 1 hour.



Ready-in-Rest Mode Appears in the Display

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.

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Choosing between Ready and Rest Mode

Press TEMP

Press TEMP.

The temperature flashes.

Press LIGHT repeatedly for MODE

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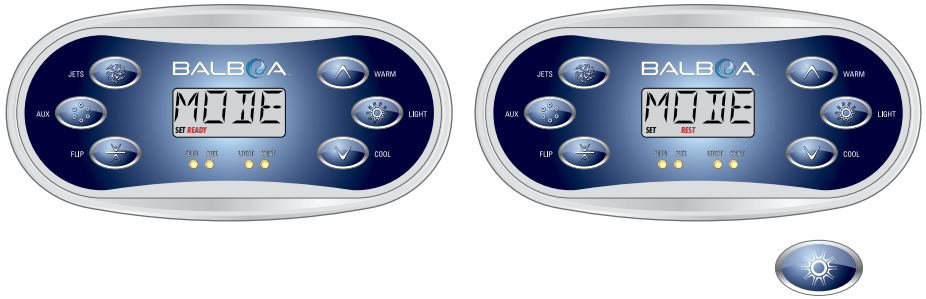
Choosing between Ready and Rest Mode (cont.)

In MODE, TEMP button toggles between SET READY and SET REST.



Choose SET READY or SET REST, then press LIGHT to set and exit.

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HOLD (Standby)

Hold Mode is used to disable the pumps during service functions like cleaning or replacing the filter.

Main Screen

Press TEMP to desired hold temperature

Press LIGHT repeatedly to HOLD

Press TEMP to Count Down

The clock will count down from 60 minutes.

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HOLD (Standby, cont.)

Drain Mode (if available)

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.

- Some spas will allow PUMPING OUT (Drain Mode) with JET 1 button.
- Press JETS Button for Pump Out/Drain, only if Drain Mode is enabled.
- Jet 1 will toggle pump on and off.

PUMP ING OUT FOR 0:57

To Exit HOLD,
press TEMP or LIGHT

To Main Menu

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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LOCK (Restricting Panel Operation)

Locking the panel prevents the spa from being used; it also prevents unwanted temperature adjustments.

Main Menu > LOCK

Main Screen

Press TEMP

The temperature flashes.

Press LIGHT repeatedly until LOCK appears

Press TEMP

NOTE:

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

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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LOCK (Restricting Operation, cont.)

Locks All Temperature & Settings

Locks All Function Buttons

Press LIGHT to Toggle TEMP or PANL

Press TEMP to Toggle ON or OFF

Press LIGHT to Exit to Menu

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Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

BP500

UNLK (Unlock, Allowing Panel Operation)

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

Press TEMP

Press TEMP. LOCK appears.

Press and hold TEMP while pressing LIGHT twice.

UNLK screen appears, and then will exit to Main Screen in approx. 3 seconds.

BALBOA water group

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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FLIP

Inverts Display.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

BP500

Setting the 24 Hour Clock

This action changes a 12 hour clock to a 24 hour clock.

Main > PREF > 24-12

- Press TEMP to initiate a flashing display.
- When the temperature flashes, press LIGHT repeatedly until PREF appears.
- Press TEMP at PREF

The temperature flashes.

Press LIGHT repeatedly until PREF appears.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Setting the 24 Hour Clock (cont.)

- Press LIGHT at F/C menu.
- Press TEMP to toggle between 24 and 12 hour.
- Press LIGHT to 1) enter choice, 2) again to exit PREF menu, 3) again to exit UTIL menu and return to main menu.

Toggle between 12 And 24 Hour

Press LIGHT
to exit.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

BP500

Temperature Display (F/C)

Provides the option to choose between Fahrenheit & Celsius.

Main Menu > PREF > F/C

To choose between Fahrenheit and Celsius, toggle between F & C in PREF menu. Press LIGHT to exit.

The temperature flashes.

Press LIGHT repeatedly until PREF appears.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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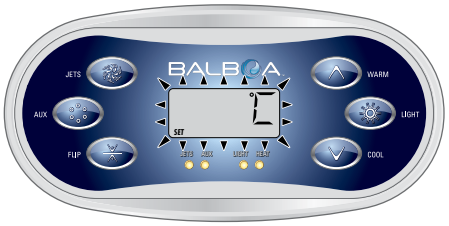
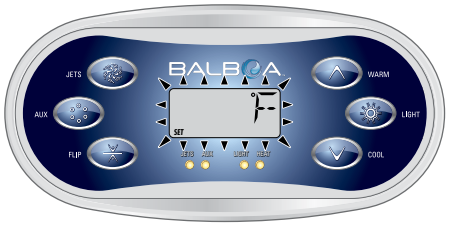
Temperature Display (F/C, cont.)

Press TEMP to toggle choice





Press LIGHT to exit to menu

Press Light two more times to exit to main menu.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

BP500

Step 1
Go to the Wi-Fi Networks screen by touching the Settings icon.

Step 2
Touch the Wi-Fi on the Settings page. ***Note:*** If Wi-Fi is not currently turned on, touch the Wi-Fi line at the top right of the list.

Step 3
The Spa Control network link will appear as BWGSpa_XXXXXX in the 'Choose a Network' list. ***Note:*** XXXXXX are the last 6 characters in the MAC address of the module.

The Balboa Water Group Spa Control App

The optional Wi-Fi interface connection for the iPhone®, iPod touch® or iPad®

It will take several seconds for the wireless connection to the spa to be available. To speed up this process, a static IP address can be assigned to the iPhone®, iPod touch® or iPad© for the point-to-point network:

1. On the Wi-Fi Networks page, touch the blue right-arrow next to the BWGSpa_XXXXXX entry to display the address setup page
2. Touch the Static button under IP Address
3. Enter 169.254.1.2 for the IP Address
4. Enter 255.255.0.0 for the Subnet Mask
5. Enter 169.254.1.1 for the Router
6. Touch the 'Wi-Fi Networks' button at the top of the page to exit the screen This address setup only has to be done once.

The iPhone®, iPod touch® and iPad® are registered trademarks of Apple Inc.

For more information on our spa control app please visit: *www.balboawatergroup.com/iphone-application* or you can contact our technical support at 714.834.0384.

Note: The wireless WI-FI Spa Control requires optional equipment not supplied with the BP500 System. Installation or repairs must be done by a qualified spa technician or electrician, and in accordance with the country or local electrical codes in effect at the time of installation.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

BP500 Spa Behavior

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Pumps, Operation

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.

TIP

- If the spa is in Ready Mode, Pump 1 low may turn on 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 by pressing the "Jets" button.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Pumps, Operation (cont.)

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.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Circulation Pump Modes

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

- 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).
- The circ pump stays on continuously, regardless of water temperature.
- 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.

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. A second filter cycle can be enabled as needed.

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

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Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Freeze Protection

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

In colder climates, an optional additional freeze sensor may be added to protect against freeze conditions that may not be sensed by the standard sensors. Auxiliary freeze sensor protection acts similarly except with the temperature thresholds determined by the switch. See your dealer for details.

Clean-up Cycle (optional)

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

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

BP500

System Default Operation Settings

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.

TIP

- If the spa is in Ready Mode, Pump 1 low may turn on 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 by pressing the "Jets" button.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Adjusting Filtration

FILT1: 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.

FILT2, 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.

Pump Purge default time is 60 seconds.

Blower Purge default time is 30 seconds.

The following pages describe how to set up filtration times.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Adjusting Filtration Time for F1

In adjusting the filtration times, you'll enter Filtration Screen one (F1), set the beginning time (in hours and minutes), and then the duration. The second filtration times (F2) are created the same way.

Main Menu > FILT1 > OFF/ON > BEGN

At the main screen, begin by pressing TEMP.

The temperature flashes.

Press LIGHT repeatedly until $FLTR_1$ appears.

A capital F appears with a flashing number one to designate that it's the first filtration cycle that's being adjusted.

(An extra press of LIGHT will take you to F2.)

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Adjusting Filtration Time for F1 (cont.)

FLTR$_1$ flashes

Press TEMP to advance to the beginning of the time setting process for filtration.

TEMP advances to the first screen to change time for F1. (BEGN will appear, which stands for begin.)

The hour will flash. Press TEMP to change the hour.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Adjusting Filtration Time for F1 (cont.)

Press LIGHT to advance to minutes.

Press TEMP to change minutes.

Press LIGHT to set Run Hours.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Adjusting Filtration Time for F1 (cont.)

Press TEMP to begin hour change for F1.

Each TEMP press increments the hours.

LIGHT press advances to minutes.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Adjusting Filtration Time for F1 (cont.)

Each TEMP press advances the time 15 minutes.

Press LIGHT when finished.

The read out scrolls the information that is now programmed.

Press TEMP to exit to main screen.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Adjusting Filtration Time for F2

Filter Cycle 2: Optional Filtration

Filter Cycle 2 is OFF by default. It must be turned ON.
The process is the same for setting F1. Once the BEGN (begin) screen displays, it is ready for more input. Revert back to "Adjusting Filtration Time Filter 1" above.

Main Menu > FILT2 > OFF/ON > BEGN

At the Main Screen, begin by pressing TEMP.

The temperature flashes.

Press LIGHT repeatedly until $FLTR_2$ appears.

When the temperature is still flashing, press LIGHT repeatedly until $FLTR_2$ appears. (A capital F will appear with a flashing number two to designate that it's the second filtration cycle that's being adjusted.)

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Adjusting Filtration Time for F2 (cont.)

Press TEMP to advance to the beginning of time setting the process for filtration.

Press TEMP
to turn FILT$_2$ ON

If the display shows OFF, press TEMP again to witch the filtration mode to ON.

Press LIGHT to accept your choice to program F2.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Adjusting Filtration Time for F2 (cont.)

TEMP advances to the first screen to change time for F2. (BEGN will appear, which stands for begin.)

The hour will flash. Press TEMP to change the hour.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Adjusting Filtration Time for F2 (cont.)

Press LIGHT to advance to minutes.

Press TEMP to change minutes.

Press LIGHT to set Run Hours.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Adjusting Filtration Time for F2 (cont.)

Press TEMP to begin hour change for F2.

Each TEMP press increments the hours.

LIGHT press advances to minutes.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

BP500

Adjusting Filtration Time for F2 (cont.)

Each TEMP press advances the time 15 minutes.

Press LIGHT when finished.

The read out scrolls the information that had just been programmed.

Press TEMP to exit to main screen.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Adjusting Filtration Time for F2 (cont.)

TEMP will flash hours to begin filtration programming for F2.

The hour will flash. Press TEMP to change the hour.

At this point, the time setting process is the same as for F1. Please revert back to "Adjusting Filtration Time for F1" above.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

BP500

Continuous Filtration (24 Hour Filtration)

To set continuous filtration, set Filter 1 to begin at a specified time (it could be any time), and then to run for 24 hours.

In this case, the filter 2 start time only controls when the second purge happens. Filter 2 end time will be unavailable.

At the main screen, begin by pressing TEMP.

Press LIGHT repeatedly until FILT1 appears

When the temperature is still flashing, press LIGHT repeatedly until FLTR1 appears. (An extra press of LIGHT will take you to F2.)

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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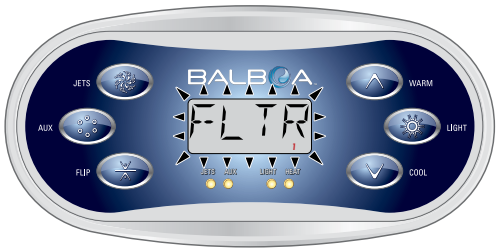
Continuous Filtration (24 Hour Filtration, cont.)



Press TEMP to advance to the beginning of the time setting process for filtration.

TEMP advances to the first screen to change time for F1. (BEGN will appear, which stands for begin.)

The hour will flash. Press LIGHT to advance to minutes. (Reminder: Since filtration will be set for 24 hours, the start/stop time is not important.)

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

BP500

Continuous Filtration (24 Hour Filtration, cont.)

"RUN HRS" appears. Press TEMP to begin SET FLTR1 process.

When the hours appear, advance those hours to 24 by pressing TEMP.

When 24 appears, press LIGHT.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Continuous Filtration (24 Hour Filtration, cont.)

If needed, adjust the minutes to zero by pressing TEMP.

Press LIGHT to exit.

F 1 ENDS appears along with the start time, which is the same as the end time, of the filtration cycle (in this example 8:00 pm). Filtration cycle then begins again.

To return to the main menu, press TEMP or wait approx. 30 seconds.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

BP500 General Messages

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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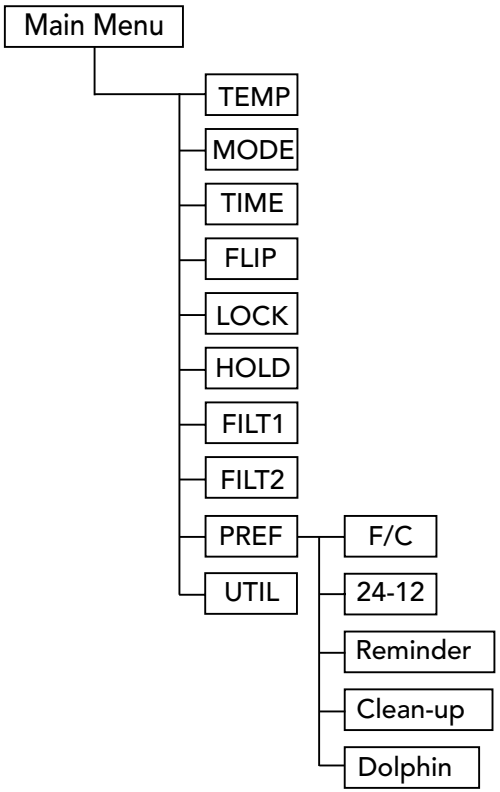

"At a Glance" of Reminder location within the Menu Tree

Reminder Messages

Main Menu > PREF > Reminder

Reminder messages help in the general maintenance of the spa.

- Reminder Messages can be suppressed by using the PREF Menu.
- Reminder Messages can be chosen individually by the Manufacturer. The OEM Spa Manufacturer may disable the messages 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.
- The Reminder options are as follows:
  - Check pH every 7 days
  - Check Chemistry every 7 days
  - Clean Filter every 30 days
  - Test GFCI every 30 days
  - Change Water every 90 days
  - Clean Cover every 180 days
  - Treat Wood every 180 days
  - Change Filter every 365 days
  - Change Cartridge as needed

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Suppressing Reminders

This action allows you to suppress reminders.

Main > PREF > Reminder

Press TEMP to initiate a flashing display.

The temperature flashes.

Press LIGHT repeatedly until PREF appears

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Suppressing Reminders (cont.)

Press TEMP
for options.

"Reminders" scrolls across screen.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Suppressing Reminders (cont.)

Press TEMP for options.

TEMP toggles between No and Yes.

- Press LIGHT to exit the PREF menu.
- Press LIGHT 3 times to return to MAIN menu.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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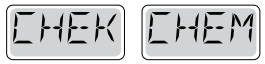
Reminder Messages (cont.)

Check pH

Alternates with temperature or normal display.

CHEK PH

Check pH with a test kit and adjust pH with the appropriate chemicals. Appears on a regular schedule, i.e. every 7 days.



Check Chemistry

CHEK CHEM

Check sanitizer level and other water chemistry with a test kit and adjust with the appropriate chemicals. Appears on a regular schedule, i.e. every 7 days.

Clean Filter

CLN FLTR

Clean the filter media as instructed by the manufacturer. See HOLD. Appears on a regular schedule, i.e. every 30 days.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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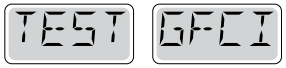
Reminder Messages (cont.)



Test GFCI

TEST GFCI

The GFCI is an important safety device and must be tested on a regular basis to verify its reliability. Appears on a regular schedule, i.e., every 30 days.

Every user should know how to safely test the GFCI associated with the hot tub installation.

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

Change Water

Alternates with temperature or normal display.

CHNG WATR

Change the water in the spa on regular basis to maintain proper chemical balance and sanitary conditions. Appears on a regular schedule, i.e. every 90 days.

Clean Cover

CLN COVR

Vinyl covers should be cleaned and conditioned for maximum life. Appears on a regular schedule, i.e. every 180 days.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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Reminder Messages (cont.)

Treat Wood

Alternates with temperature or normal display.

TRT WOOD

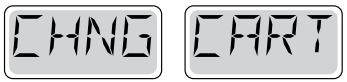
Alternates with temperature or normal display. Wood skirting and furniture should be cleaned and conditioned per the manufacturers instructions for maximum life. Appears on a regular schedule, i.e. every 180 days.

Change Filter

Alternates with temperature or normal display.

CHNG FLTR

Filters should be replaced occasionally to maintain proper spa function and sanitary conditions. Appears on a regular schedule, i.e. every 365 days.



Change Cartridge

Alternates with temperature or normal display.

CHNG CART

Install new mineral cartridge as needed.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

BP500

Glossary

Circ Pump (or circulation pump)

Low horse power pump designated especially for maintenance of filtration and heating. It often runs all day.

Clean-up (or purge) Cycle

An action designed to circulate water to maintain sanitary conditions. Pumps or blowers purge standing water to prevent the water from becoming stagnant.

Filtration Cycle

Period of time designated to filter the system. Oftentimes there are two filter cycles, 12 hours apart, and designated as F1 and F2.

Freeze Protection

A safety feature detecting water or air temperature approaching freezing. Once a set low temperature is reached, an action is often initiated automatically. Oftentimes pumps will start to keep water circulating in all plumbing and the heater may operate.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

BP500

Glossary (cont.)

GFCI

A device intended to protect people in the event of an electrical malfunction. Spa owners should know how to test the GFCI as routine maintenance.

Preferences

Programmed events according to personal preferences.

SSID

Software Self Identification

Programming

Setting an order and time for planned events, such as filter times, clean-up cycle, etc.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

BP500

Glossary (cont.)

Priming Mode

Act of water flow through the plumbing to purge air from the spa system.

Normally, priming mode can be bypassed. The priming mode is necessary only if the spa is refilled and if there's the possibility of air being in the system.

What Priming Mode does:

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.

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6976052, 6965815, 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.

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