



Deluxe Digital Control | [Owner's Manual](#)

Advanced microprocessor technology has been combined with solid state electronic switches to produce the Balboa digital control, the finest spa control in the world! Technologically sophisticated, but very easy to understand and use, every spa function is conveniently located at your fingertips. A backlit, highly reliable liquid crystal display gives you a complete update of the spa's status at any time of the day or night. Temperature setting, as well as control of the light, jets, blower, filtration, and time of day display, are all instantly available from spa side. All this and more with the simple touch of a finger.

Your Balboa digital spa control has been constructed to give years of trouble-free service. Safety is assured through design concepts and materials which meet or exceed the most stringent requirements of Underwriters Laboratories and other safety agencies. Field proven through years of testing and evaluation, every feature has been optimized for maximum utilization of your spa. Relax and enjoy your spa experience each and every time with the finest spa control in the world – from Balboa!

WARNING

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instruction, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a class B computing device in accordance with the specifications in subpart J of part 15 of the FCC rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures: • Reorient the receiving antenna. • Relocate the receiver with respect to the spa. • Move the receiver away from the spa. • Plug the receiver into a different outlet so that the receiver and spa are on different branch circuits. • If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. • The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to identify and resolve radio-TV interference problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

Welcome to the Balboa Digital Control.

Your control panel consists of three main parts:

1. User's Pads



Temperature controls

When either of these pads are touched once, the LCD

will display the temperature which has been set, as well as the words "set heat." Each time either of these pads is pressed again, the set temperature will increase or decrease, depending on which pad is pressed. After 3 seconds, the LCD will automatically display the spa temperature.



Light

Turns light on or off. The light will automatically turn off after some period of operation.



Time

Press to view time of day, press again to view temperature. Current spa temperature display will automatically resume after 3 seconds.



Jets control

Touch this pad once to activate the low speed of the pump. Touch again to start the high speed of the pump. (If the spa has a 2nd pump, press the pad a third time and the high speed of pump 2 will also activate. Press the pad again and only pump 2 will be operating.) Press the pad again to deactivate the pump(s). The low speed of the pump starts automatically when the heater is turned on, when a filter cycle is activated, or when a freezing condition is detected. If automatically activated, the low speed of the pump cannot be turned off with the "jets" pad; however, the high speed of the pump may be started. Whenever the high- or low speed of the pump is started with this pad, it will automatically stop after some period of operation.



Blower

Starts or stops the blower for aeration in the spa. The blower will also automatically stop after some period of operation.

2. Liquid Crystal Display

Continually shows operating status of the spa, as well as the various monitoring functions and programming information.



3. Owner's Pads



Program function

Initiates time setting, filter programming, and panel lock routines.



Mode function

Switches spa operation to either the economy or standard mode. In the economy mode, the spa will heat only during the filter cycles. In the standard mode, the preset spa temperature will be maintained. This pad also resets the control in the rare instance of an overheat (See Center Display Messages).

Initial Start-Up

Read and follow all instructions in this manual. This control system is designed to be installed by a licensed electrician. Refer to the spa manufacturer's owner's manual for specific instructions. When first powered up, your spa will be in the economy mode. Simply touch  to switch the spa to standard operation and begin heating. The spa will heat to 100° F if no other temperature is set. Depending upon the size of the spa and heater capacity, it should be ready for use in a matter of hours.

Setting the Time

Once the spa has been properly connected, notice the “set time” message flashing on the screen.

Press



Then



Then



Or



After either pad is pressed once, hours will advance or decrease automatically in one-minute increments. Press either pad again to stop the display's time-setting cycle.

Press



to exit the “set time” procedure.

Preset Filter Cycles

Now that the time has been set correctly, your spa will automatically filter itself for a 2-hour period every 12 hours. If your spa has a blower cleanout feature, the blower will activate for a short period of time at the beginning of each filter cycle to clean out the air channel. Whenever a filter cycle is active, this automatic filtering sequence is indicated by the following messages on the LCD screen:

Filter 1

The first filter cycle is automatically activated at 2:00 AM and operates the low speed of the pump until 4:00 AM. The heater will operate in the economy mode.

Filter 2

The second filter cycle is automatically activated at 2:00 PM and operates the low speed of the pump until 4:00 PM. Again, the heater will operate in the economy mode.

Changing Filter Cycles

If the preset times are inconvenient, if a different duration is preferred, or if you wish to leave the heater off during filtering, the following procedure can be used to change the automatic filter cycle settings.

Press



Time of day will be shown.

Then press



“Set time” message will appear on LCD.

Then press



“Set Start Filter 1” message will appear. At this point, each time the  is pressed, the filter start time, the heater enable status, and the filter stop time will be indicated on the LCD screen.

When the filter start or filter stop times are displayed on the screen,

Press



Or



to reset the times.

When the “set heat” message is displayed,

Press



Or



to set the center display to “on” or “off.”
In the “on” position, the spa will warm to the set temperature during the filter cycles. In the “off” position, the heater, in the economy mode, will not be activated during the filter cycles.

After entering the filter set routine, you must

Press



to proceed through all the start and stop times for both filter cycles. Just follow the same procedure to adjust the “Filter 2” settings.

To exit the filter set routine

Press



and the LCD will display the current water temperature.

Note: To properly clean and maintain your spa, filtering time of at least four hours per day (total of both cycles) is recommended.

Panel Lock

To help prevent unauthorized use of your spa, the Balboa digital control has incorporated a unique panel locking system. When the panel lock is engaged, all automatic spa functions will operate normally.

These pads must be pressed within 3 seconds to activate the lock. When locked, the center display will show the spa temperature along with the lock symbol. All the panel pads are now deactivated except the program pad, which is used to initiate the unlock sequence.

Touch



The display will read

LOC

Then



0

Then



1 

Temperature Lock

The temperature lock is provided to prevent unauthorized temperature adjustment of your spa water. While setting your spa water temperature, after you have pressed  or , follow the instructions below to lock the set temperature. When the temperature lock is engaged, all automatic spa functions will operate normally.

These pads must be pressed within 3 seconds to activate the lock. When locked, the center display will show the spa temperature, the lock symbol and the words “set heat.” The temperature pads   will be deactivated – when pressed, the set temperature will appear with a double arrow next to it.

Touch



The display will read

LOCF

Then



0

Then



1  SET HEAT

Panel Unlock

To unlock the panel, these pads must be pressed in the correct sequence and within 2 seconds. When the last pad is pressed, the lock symbol will disappear. All pads are now active.

Touch



Then



Then



Center Display Messages

These are some of the messages you may see on the center display.

FLO

Flow switch (Solid.)

A pressure switch has malfunctioned.
Contact your dealer or service organization.

Flow switch (Flashing.)

- 1 – The filter may be plugged. Remove the filter and clean.
- 2 – The amount of water may be inadequate. Be sure the spa is properly filled.
- 3 – A pressure switch has malfunctioned. The spa will operate, but the heater will not activate. Contact your dealer or service organization.

OH

Overheat protection (Spa is shut down.)

If a malfunction occurs and spa water reaches 112° F, the system will completely shut down. In such a condition, DO NOT ENTER THE WATER. Turn off all power to the spa and contact your dealer or service organization. Overheating may also occur if you set the low-speed pump to operate for extended periods of time in economy mode. In this instance, remove the spa cover and allow the water to cool to below 110° F. Touch any button to reset the system. If the water is still hotter than the set temperature, touch the blower pad to cool the spa.

Sn 1

Open sensor (Spa is shut down.)

The high-limit temperature sensor is not working. This must be repaired only by a dealer or qualified service organization.

Sn 3

Open sensor (Spa is shut down.)

The water sensor is not working. This also must be repaired by a dealer or service organization.

Warning! Shock Hazard! No User Serviceable Parts.

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

Center Display Messages

Freeze Protection

COOL

Temperature set back

If spa water is more than 20° F cooler than the temperature set point, the heater will automatically activate to provide freeze protection. This is a normal spa function; no corrective action is necessary.

Warning! Shock Hazard!

No User Serviceable Parts.

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

ICE

Freeze protection

If a freeze condition is detected by any freeze sensor, the low-speed pump is automatically activated. (With a multi-pump system, all pumps will activate.) This is a normal spa function; no corrective action is necessary. Freeze protection is enabled regardless of the spa's status.

Note:

It is recommended that the spa be set in **Standard Mode** during very cold weather. This will keep the water heated to the set temperature and circulated more often.

While the normal system freeze protection, located at the heater, is usually adequate, certain extreme climates or unique pump configurations may be best served by using an optional external freeze sensor. This sensor is attached to a location on the plumbing that a service professional can determine is most prone to freezing. Possible locations would be the output plumbing from an auxiliary pump or a section of plumbing that runs near the skirt of the spa. This sensor is then connected directly to the control system circuit board and operates in conjunction with the existing system freeze protection.



Auxiliary Freeze Sensor 22312

Program

For initiating time setting, filter programming and panel lock.

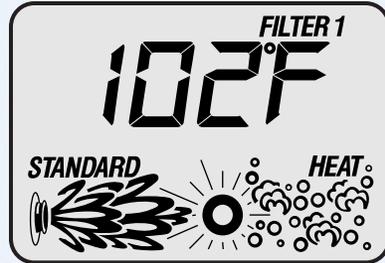


Mode

Switches your spa from economy to standard mode and vice versa.

Liquid Crystal Display

The "Information Center" of your spa.



Warm (up)

Sets the temperature of your spa warmer and sets the clock forward.



Cool (down)

Sets the temperature of your spa cooler and sets the clock back.

Time

Shows the time of day.



Jets

Controls the two-speed pump.

Light

Turns the light on and off.



Blower

Turns the air blower on or off.

Alternate Balboa Deluxe Digital Panel

Some Deluxe panels may have the button configuration below

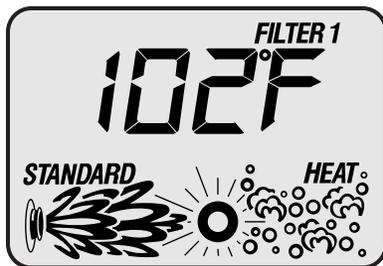
Time

Shows the time of day.



Liquid Crystal Display

The “Information Center” of your spa.



Warm (up)

Sets the temperature of your spa warmer and sets the clock forward.



Blower

Turns the air blower on or off.



Light

Turns the light on and off.



Mode

Switches your spa from economy to standard mode and vice versa.



Cool (down)

Sets the temperature of your spa cooler and sets the clock back.



Jets

Controls the two-speed pump.



Aux

(for optional equipment)
Please refer to your spa manufactures literature.



Setting the Time

Once the spa has been properly connected, notice the “set time” message flashing on the screen.

Press



Then



Then



Or



After either pad is pressed once, hours will advance or decrease automatically in one-minute increments. Press either pad again to stop the display's time-setting cycle.

Press



to exit the “set time” procedure.

Panel Lock

Press within 3 seconds. When locked, the display will show the temperature you have chosen, along with the “lock” symbol. All pads are frozen except the pad.

Panel Unlock

Press within 2 seconds. The lock symbol will disappear and all panel pads will work again.

Optional Filter Cycle Programming

While you are not required to set filter cycles, if you want to change them, press within 3 seconds. “SET START FILTER 1” (AM cycle) will appear on the display.

Press or to reset the filter start time.

When “SET HEAT” is on the display, press “on” to warm the water during filtering, or press “off” to disable the heater.

Press to see “SET STOP FILTER 1” and adjust the time with the or as done above.

Press to see “SET START FILTER 2” (PM cycle) and proceed as above.

Pressing will enter the new filter cycle times into the system and display the current water temperature.



© Copyright 2000 Balboa Instruments, Inc. All rights reserved.
2M400 DM100