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REVOLUTION

SYSTEM OVERVIEW MANUAL

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Intellectual Property Advisement

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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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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 vérifier l'efficacité du disjoncteur différentiel avant d'utiliser le bain.
- Lire la notice technique.
- Lorsque l'appareillage est installé dans une fosse, on doit assurer un drainage adéquat.
- Afin d'assurer une protection permanente contre le danger de choc électrique, lors de l'entretien employer seulement des pièces de rechange identiques.
- Les prises d'aspiration doivent être équipées de grilles convenant au débit maximal indiqué.

AVERTISSEMENT:

Des températures de l'eau supérieures à 38°C peuvent présenter un danger pour la santé.
Déconnecter du circuit d'alimentation électrique avant l'entretien.
Garder la porte fermée.

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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.

TABLE OF CONTENTS

REVOLUTION OVERVIEW	7	SPA BEHAVIOR	37
Revolution Specifications	10	Pumps, Operation	38
Revolution Components	11	Circulation Pump Modes	40
System Dimensions	12	Filtration and Ozone	40
MENUS AND PANEL OPERATION	13	Freeze Protection	41
Menus & Panel Operation	14	Clean-up Cycle (optional)	41
Panel Navigation	15	System Default Operation Settings	42
Warm/Cool Temperature Buttons	15	Pumps	42
Light Button	15	Adjusting Filtration	43
Main Menu -- Revolution TP600 Control Panel	16	Adjusting Filtration Time for F1	44
Temperature Adjustment	17	Adjusting Filtration Time for F2	49
Dual Temperature Ranges	18	Filter Cycle 2: Optional Filtration	49
Setting a High Temperature Range	19	Continuous Filtration (24 Hour Filtration)	56
Setting a Low Temperature Range	20	GENERAL MESSAGES	60
Spa Light	22	Reminder Messages	61
Mode -- Ready and Rest	23	Suppressing Reminders	62
Choosing between Ready and Rest Mode	25	CHEK PH	65
HOLD (Standby)	27	CHEK CHEM	65
Drain Mode (if available)	28	CLN FLTR	65
LOCK (Restricting Panel Operation)	29	TEST GFCI	66
UNLK (Unlock, Allowing Panel Operation)	31	CHNG WATR	66
FLIP	32	CLN COVR.	66
Setting the 24 Hour Clock	33	TRT WOOD	67
Temperature Display (F/C)	35	CHNG FLTR	67
		CHNG CART	67
		Glossary	68
		INDEX	71



Revolution Overview

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Overview

REVOLUTION – Transforming the Control of Hot Tubs

Balboa's Revolution hot tub control is setting a new industry standard for unmatched system reliability, manufacturing flexibility and end user friendliness.

INCOMPARABLE SYSTEM RELIABILITY

Utilizing advanced technology and high temperature corrosion proof mission critical materials from the automotive and other industries, the Revolution hot tub control systems all but eliminate leaks due to corrosion or harsh chemicals. Together with a newly designed, energy efficient heating coil that reduces element failures due to rattling, Balboa is providing peace of mind for the end-user.

TIGHT SPOTS ARE A THING OF THE PAST

The Revolution sports a compact low profile package offering flexibility with mounting to give you the most in tub design and manufacturing line flexibility. A single model can be configured on the line to support various system configurations without adding additional skus – the Revolution expands the world for you.

POWERFUL, YET SIMPLE USERFACE

The sleek new topside panel includes a large easy to read back-lit LCD with simple to follow end user menus. 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 help calls.



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revolution features

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, AUSTRILIAN PATENT: 2373248 OTHER PATENTS BOTH FOREIGN AND DOMESTIC APPLIED FOR AND PENDING. ALL SOFTWARE COPYRIGHT BALBOA WATER GROUP.

Consumer Interface Innovations

end user friendliness
easier to see and use in low light and at night



press and hold buttons provide scrolling capabilities for temperature, time of day etc.

tactile button feel instant, positive feedback when button is pressed

bigger LCD display 1"x 2" display (easy to read)

display with backlight easier to see



End User Friendliness



System Innovations



design flexibility
the ease with which the system can be modified for use in applications or environments other than those for which it was originally designed

bi-directional flow pressure or vacuum applications

compact footprint
1/2 cubic foot of space in tight equipment compartments needed

time outs settable
energy efficient savings based on manufacturers preferences, manages energy usage more efficiently – GREEN



Heater Innovations

M7
patented technology that increases reliability

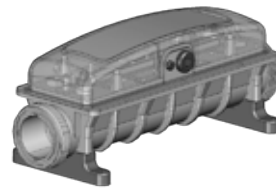
corrosion resistant heater elements materials
no brazing, no dissimilar metals, no welds

thermoplastic heater enclosure
high tech, high temp materials proven use in automotive & mission critical applications minimizes harmful effects of harsh chemicals on heater enclosure

titanium element option
standard unit ships with incoloy heater replaces incoloy heater element with titanium, longer life element

coiled heater, lower watt density
relaxed bends, more heating area reduces hot spots

flow through heater design
maximizes water flow minimal loss due to element bi-directional flow for more flexibility in tub design and plumbing configurations

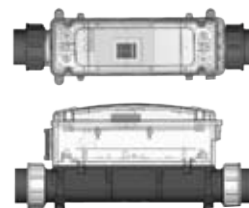


Inventory Innovations

50/60 Hz
systems available for domestic or export markets reduces inventory needs fewer skus

single skus
multiple configurations are picked via menus on the manufacturing line reduced inventory need fewer skus

low flow circ pumps configurations
special low flow adapter to support M7 more options for circ pump tubs



Consumer Usability Innovations

user settable selections
day of week/time of day user preferences more flexibility

temperature settings
50-104 – two temperature ranges lower range allows for energy savings when spa is idle



End User Friendliness

user friendly menus
intuitive, easy navigation and option settings

english messages & error codes
text error messages clearly written and easy to understand for the consumer



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Revolution Specifications

System Model

Revolution, 60 Hz (BP1500)

Part Number

55697 with a 4kW 800 Incoloy Element

55700 with a 4kW 800 Titanium Element

Topside Panels

TP 600

AX10: One button

AX20: Two button

AX40: Three button

Couplings (nuts and seals included)

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

Part No. 55914 1.5" Tailpieces (2-Speed Pump 1)

Part No. 55912 1" Tailpiece Inserts (Circ)

Part No. 55913 One Direct Circ Pump Coupling, and one 1" Tailpiece Insert



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Revolution Components

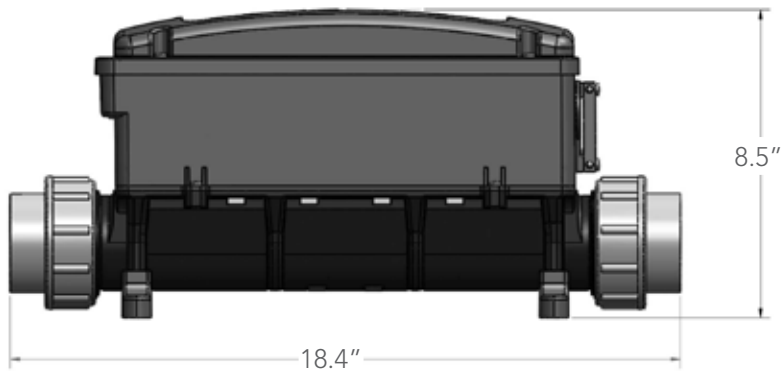


- 1 Electric Housing Cover
- 2 Bi-directional Flow Heater
- 3 Heater Housing
- 4 Electronic Enclosure
- 5 Nut and Tailpiece
- 6 Support Legs

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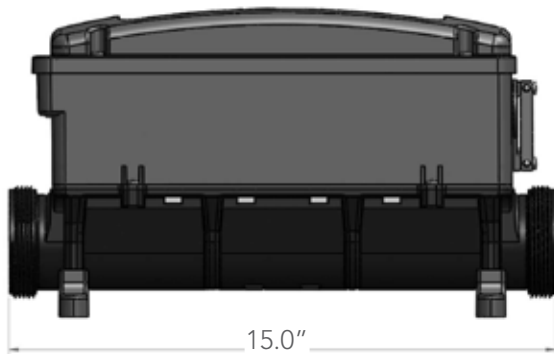
System Dimensions



FRONT VIEW with tail pieces



SIDE VIEW (RIGHT SIDE)



FRONT VIEW w/o tail pieces



BOTTOM VIEW

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Menus and Panel Operation

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Menus & Panel Operation

Panel operation includes navigation, setting functions and modes (time, temperature, filter cycles, preferences), sensor related messages, reminder messages, diagnostic messages, and miscellaneous messages.

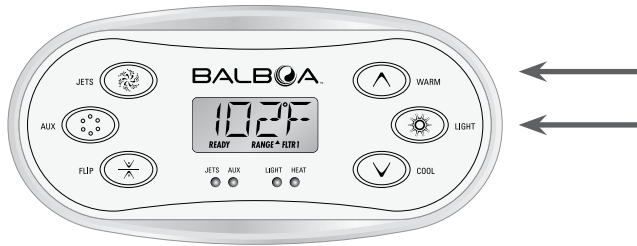
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Panel Navigation

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



LIGHT

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

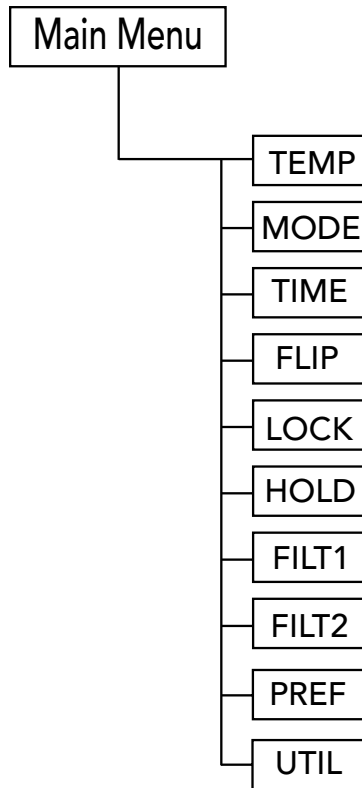
A "Choose" Button, depending on control panel configuration:

- 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 -- Revolution TP600 Control Panel



- 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.

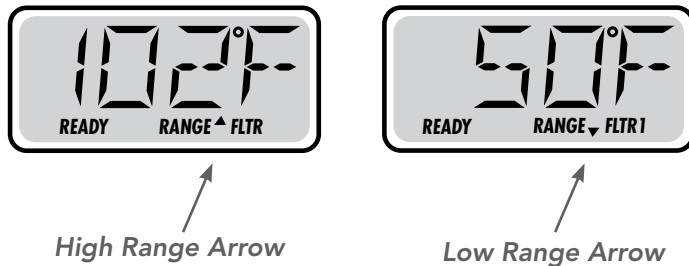
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Dual Temperature Ranges

The Revolution 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.



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

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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.)

Press LIGHT to Exit to Low Range Temperature Menu



RANGE is displayed for Low Range



Press LIGHT to Exit to Low Range Temperature Menu



RANGE is displayed for Low Range



Press TEMP to set a low temperature set point



Press TEMP to set desired temperature.



RANGE is displayed with the new set temperature



Exiting reverts the display back to the main screen.

Press LIGHT to exit.

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Spa Light

The Light button turns the spa light on and off.

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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.



Ready Mode



Rest Mode

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Mode -- Ready and Rest (cont.)

Ready Mode

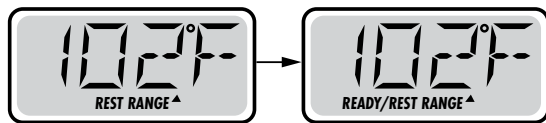
- READY Mode will allow the spa to Poll and determine a need for heat. The panel will maintain a "current" temperature display.

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.



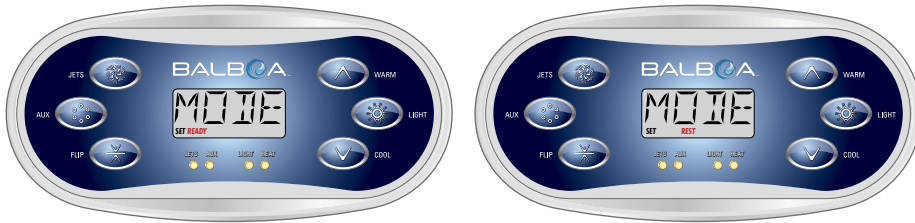
Press LIGHT repeatedly for MODE

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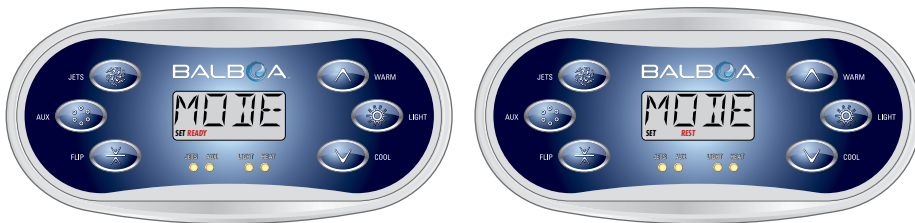
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Choosing between Ready and Rest Mode (cont.)

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.



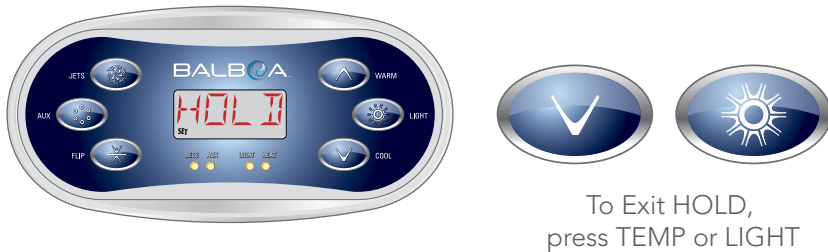
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HOLD (Standby, cont.)

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.



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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

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.



Main Screen



Press TEMP



The temperature flashes.



Press LIGHT repeatedly until LOCK appears



Press TEMP

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LOCK (Restricting Operation, cont.)



Locks All Temperature & Settings



Locks All Function Buttons



Press LIGHT to Toggle TEMP or PANEL



Press TEMP to Toggle ON or OFF



Press LIGHT to Exit to Menu

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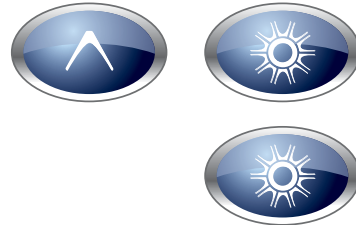
UNLK (Unlock, Allowing Panel Operation)

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

Press TEMP. LOCK appears.



Press TEMP



Press and hold TEMP while pressing LIGHT twice.



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

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FLIP

Inverts Display.



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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.



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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.

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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.

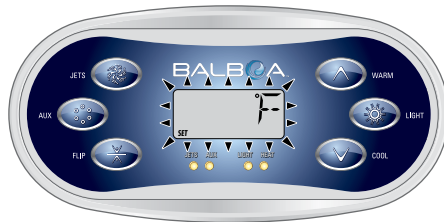


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Temperature Display (F/C, cont.)



Press TEMP to toggle choice



Press LIGHT to exit to menu

Press Light two more times to exit to main menu.



Spa Behavior

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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.



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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.



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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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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.

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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.

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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.

The following pages describe how to set up filtration times.



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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 FLTR₁ 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.)

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Adjusting Filtration Time for F1 (cont.)



FLTR, 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.

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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.

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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.

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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.

Revolution

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 FLTR₂ appears.

When the temperature is still flashing, press LIGHT repeatedly until FLTR₂ appears. (A capital F will appear with a flashing number two to designate that it's the second filtration cycle that's being adjusted.)

Revolution

Adjusting Filtration Time for F2 (cont.)



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



Press TEMP
to turn FILT₂ 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.

Revolution

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.

Revolution

Adjusting Filtration Time for F2 (cont.)



Press LIGHT to advance to minutes.



Press TEMP to change minutes.



Press LIGHT to set Run Hours.

Transforming the Control of Hot Tubs

Revolution

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.

Revolution

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.

Revolution

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.

Revolution

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.



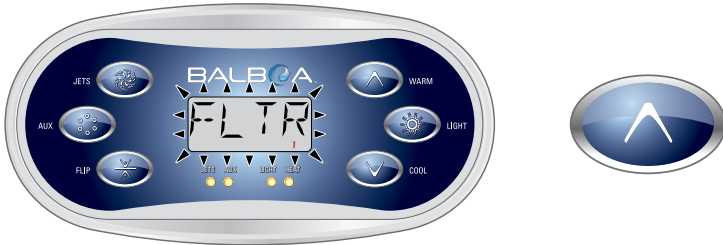
Press LIGHT repeatedly until FLTR1 appears

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

Revolution

Continuous Filtration (24 Hour Filtration, cont.)

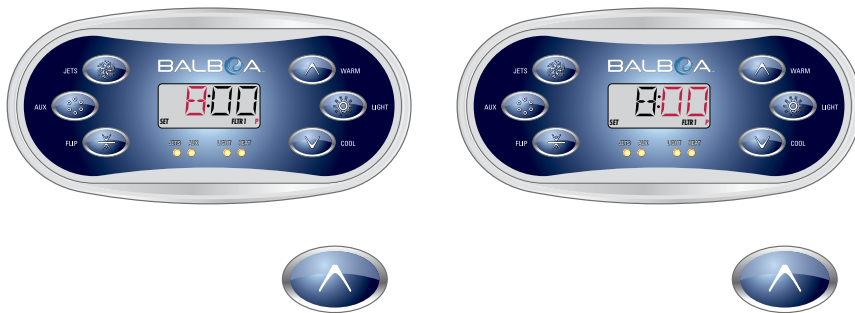
Press TEMP to advance to the beginning of the time setting process for filtration.



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.)



Transforming the Control of Hot Tubs

Revolution

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.

Transforming the Control of Hot Tubs

Revolution

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.



General Messages

BALBOA
water group

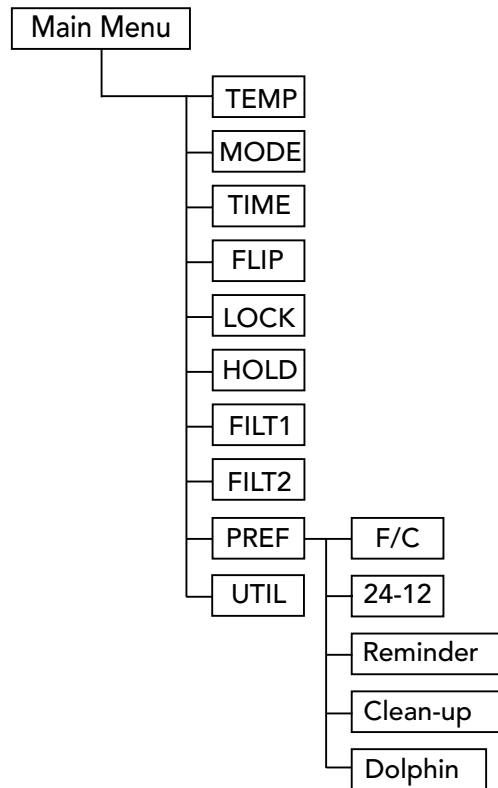
Revolution

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



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

Revolution

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



Transforming the Control of Hot Tubs

Revolution

Suppressing Reminders (cont.)



Press TEMP
for options.

"Reminders" scrolls across screen.



Revolution

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.

Revolution

Reminder Messages (cont.)



Check pH

Alternates with temperature or normal display.



Check Chemistry



Clean Filter

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.

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.

CLN FLTR

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

Revolution

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.

Revolution

Reminder Messages (cont.)



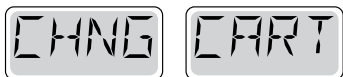
Treat Wood

Alternates with temperature or normal display.



Change Filter

Alternates with temperature or normal display.



Change Cartridge

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.

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.

CHNG CART

Install new mineral cartridge as needed.

Revolution

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.

Revolution

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.

Link

Refers to “linking” the TP600 panel with the BP1500 system so that they communicate with each other. Linking is necessary only when a new panel or auxiliary panels are installed. Linking can be done at any time the system is functioning.

Preferences

Programmed events according to personal preferences.

SSID

Software Self Identification

Revolution

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.

Programming

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

Index

Symbols

2-Speed Pump 1 23
24 Hour Circulation Mode 23
24 hour clock 33
24 Hour Filtration 56
55911, Part No. 10
55912, Part No. 10
55913, Part No. 10
55914, Part No. 10
(F/C), Temperature Display 35

A

Adequate drainage 4
Adjusting Filtration 43
Adjusting Filtration Time for F1 44
Adjusting Filtration Time for F2 49
adjusting the filtration 44
Adjustment, Temperature 17
adjust pH 65
Allowing Panel Operation 31

B

BEGN 45, 49, 51
Behavior, Spa 37
Bi-directional Flow Heater 11
button, Light 15
Button, Light 15
Buttons, Temperature 15
button, temperature 15

C

CHEK CHEM 65
CHEK PH 65
CHNG FLTR 67
CHNG WATR 66
choose between Fahrenheit and Celsius 35
circ pump 40
Circ Pump 68
Circulation Mode 23
circulation pump 68
Circulation Pump Modes 40
Class A GFCI 5
clean-up cycle 41
Clean-up Cycle 41
Clean-up (or purge) Cycle 68
CLN COVR 66
CLN FLTR 65
clock, 24 hour 33
Clock, Setting the 24 Hour 33
clock will count down 27
Components 11
conditions, freeze 41
Continuous Filtration 56
Couplings (nuts and seals included) 10
cycle, clean-up 41
Cycle, Clean-up 41
Cycle, Clean-up (or purge) 68
Cycle, Filtration 68
cycle, second filtration 49
Cycles, Purge 43

D

Default Operation Settings 42
Dimensions 12
Display, Inverts 32
drainage, Adequate 4
Drain Mode 28
Dual Temperature Ranges 18

E

End User Warning 2

F

F1, Adjusting Filtration Time for 44
F2, Adjusting Filtration Time for 49
FILT1: Main Filtration 43
FILT2 43
Filter Cycle 2: Optional Filtration 43, 49
Filtration 40
Filtration, 24 Hour 56
Filtration, Adjusting 43
filtration, adjusting the 44
Filtration, Continuous 56
Filtration Cycle 68
Filtration, FILT1: Main 43
Filtration, Filter Cycle 2: Optional 43, 49
Filtration, Optional 43
filtration programming 55
filtration pump 24
FLIP 32
freeze conditions 41
freeze protection 41
Freeze Protection 18, 41, 68
freeze sensor 41

G

general maintenance 61
General Messages 60
generator, ozone 40
GFCI 69
GFCI, Class A 5
Glossary 68
guard, VG Compliant suction 4

H

Heater, Bi-directional Flow 11
High or Low Range 18
High Range 18
Hold Mode 27
Hours, Run 52

I

Identification, Software Self 69
instructions, power connection 3
Inverts Display 32

K

kit, test 65

L

Light button 15
Light Button 15
Light, Spa 22
Link 69
linking 69
LITE TIMR 16
LOCK (Restricting Panel Operation) 29

Lock, Temperature 29
Low Range 18
low temperature set point 21

M

Main Menu 16
maintenance, general 61
Menu, Main 16
Messages, General 60
Messages, Reminder 61
Mode, 24 Hour Circulation 23
Mode, Circulation 23
Mode, Drain 28
Mode, Hold 27
Model, System 10
Mode, Priming 70
Mode, Ready 24, 38, 39, 42
Mode, READY 23
Mode -- Ready and Rest 23
Mode, Ready-in-Rest 24
Mode, Rest 24
Mode, REST 23
Modes, Circulation Pump 40

N

Navigation, Panel 15
NEC (National Electrical Code) 5
non-circ systems 38, 39, 40, 42

O

Operation 38
Operation, Allowing Panel 31
Operation, Panel 14
Operation, Restricting Panel 29

Optional Filtration 43
overlap Filter Cycle 1 and Filter Cycle 2 43
Ozone 40
ozone generator 40, 41

P

Panel Navigation 15
Panel Operation 14
Panels, Topside 10
Part No. 55911 10
Part No. 55912 10
Part No. 55913 10
Part No. 55914 10
period, time-out 38
pH, adjust 65
Poll 24
polling 23, 38, 39, 40, 42
power connection instructions 3
Preferences 69
Press and Hold 17
Priming Mode 70
programmable circ pump 40
Programming 70
programming, filtration 55
protection, freeze 41
Protection, Freeze 18, 41, 68
pump, circ 40
Pump, Circ 68
pump, circulation 68
pump, filtration 24
pump, programmable circ 40
Pumps 38
Purge Cycles 43
purge water 43

R

- Range, High 18
- Range, High or Low 18
- Range, Low 18
- Ranges, Dual Temperature 18
- Range, Setting a High Temperature 19
- Range, Setting a Low Temperature 20
- Ready-in-Rest Mode 24
- Ready Mode 24, 38, 39, 42
- READY Mode 23
- “ready to use” setting 18
- Reminder Messages 61
- Reminders, Suppressing 62
- RESET, TEST and 66
- Rest Mode 24
- REST Mode 23
- Restricting Panel Operation 29
- Run Hours 52

S

- second filtration cycle 49
- sensor, freeze 41
- sensors, standard 41
- sensors, temperature 41
- sequence, Unlock 31
- SET READY 26
- SET REST 26
- set temperature 17, 23
- Set Temperature 29
- Setting a High Temperature Range 19
- Setting a Low Temperature Range 20
- setting, “ready to use” 18
- Settings, Default Operation 42

- Setting the 24 Hour Clock 33
- setting, “vacation” 18
- Software Self Identification 69
- Spa Behavior 37
- Spa Light 22
- Specifications 10
- SSID 69
- standard sensors 41
- Suppressing Reminders 62
- System Model 10
- systems, non-circ 38, 39, 40, 42

T

- Temperature Adjustment 17
- temperature button 15
- Temperature Buttons 15
- Temperature Display (F/C) 35
- Temperature Lock 29
- temperature sensors 41
- temperature, set 17, 23
- Temperature, Set 29
- temperature thresholds 41
- TEST and RESET 66
- TEST GFCI 66
- test kit 65
- Test the ground fault circuit interrupter 4
- thresholds, temperature 41
- time-out period 38
- toggle between F & C 35
- Topside Panels 10
- TRT WOOD 67

U

- UNLK 31
- Unlock sequence 31

V

- “vacation” setting 18
- VG Compliant suction guard 4

W

- Warning, End User 2
- water, purge 43

