

# MS90U Tech Sheet

## Customer: Master Spas

Part Number: 59470-03 825 Incoloy 4.0kW "3S" heater

Custom Box Overlay

Box Overlay Part Number N/A

UL System Model (4.0kW): BP20-MS90U-BS

Software Version ID: M100\_221 V65.0

Software Version: 65.0

File Name: BP1800\_65.0\_MS90U\_SW9.hex

Configuration Signature: A24F4132

Eng. Project Number: 5500

Control Panels (See later pages for more information):

spaTouch™ 3 Any version (version 3.2 or later required for Clim8zone™ heat pump support)

spaTouch™ 2 Any version (version 2.19 or later required for CHROMAZONE™ support; version 2.37 or later required for Clim8zone™ heat pump support)

Icon spaTouch™ Any generic version (version 3.36 or later required for bba™ 2 fully integrated functionality)

Menued spaTouch™ Any generic version (version 2.8 or later required for bba™ 2 integrated functionality)

MP800/TP800 Version 3.1 and later (Version 3.13 or later required for bba™ ; version 4.11 or later required for bba™ 2 integrated functionality)

TP600 Version 2.7 and later (Version 2.12 or later required for bba™ /bba™ 2 On/Off control via menu)

TP400T US Version 2.7 and later (TP400T CE may be used) (Version 2.12 or later required for bba™ /bba™ 2 On/Off control via menu)

TP200T Any version



# System Revision History

Part #	EPN	Date	Originator	Changes Made
ZT000545	5446	08-17-20	Customer	Custom BP1800 system with optional expander board, patterned after MS6013XE and MS501X.
ZT000545	5446	09-08-20	Customer	Updated to add Setups from MS40U, change heater to 4.0kW "3S" only, and renamed to MS90U.
59470	5446	09-22-20	Customer	Approved for production.
59470-01	5563	06-23-21	BWG	Update with Wago terminal block (later discontinued).
59470-02	5663	06-09-22	Customer	Update to support Clim8zone™ heat pump.
59470-03	5500	11-21-22	Customer	Add DIP switch A9 for choosing between 2 types of Circ behavior, with A9 defaulting to On. Also change filter cycle defaults on Circ Setups.

bba™ 2 / bba™ 3 (Balboa Bluetooth Amp) connection is documented separately.

bba™ 2 / bba™ 3 is integrated into graphic display panels (including TP800 and spaTouch™).

With TP600/400, use the "BT" entry on the menu to toggle bba™ 2 / bba™ 3 power On/Off.

# Basic Functions Setup 1-28

---

## Power Requirements:

240VAC, 50/60Hz\*, 48A, Class A GFCI-protected service (Circuit Breaker = 60A max.),  
4 wires [hot, hot, neutral, ground]

120/240VAC, 50/60Hz\*, 16\*\*/40A, Class A GFCI-protected service (Circuit Breaker = 20 /50A max.) - Setups 7, 8, 17, 18, 25 & 26 ONLY,  
3 or 4 wires [hot, hot (optional), neutral, ground].

### \*\*NOTE:

The above 120V spec is only when using a wall-mount GFCI / breaker.

If using a GFCI cord, the breaker is 15A and so the service is limited to 12A.

\* BP systems automatically detect 50Hz vs 60Hz. However, power frequency (50Hz vs 60Hz) is just one of many differences between North American (UL) and CE power, and it is because of these other differences that different BP systems must be used for UL vs CE territories. Also, there are a few countries that use CE power but 60 Hz (such as South Korea) which need CE systems, and a few countries that use UL power but 50 Hz which need UL systems.

### HiPot Testing Note:

Disconnect slip terminal with green wires from J6 prior to performing HiPot test. Failure to disconnect may cause a false failure of the test. Reconnect terminal to J6 after successful completion of HiPot test.

# Basic Functions Setup 1 - 28

## System Outputs:

Pump 1	240VAC	2-Speed	12A max	15-minute timer (120-minute timer for low speed in Non-Circ Setups only)
		This is the heater pump in Setups 2, 4, 6, 8, 12, 14, 16, 18, 22, 24 & 28 Must deliver 20 GPM through heater		
		1-Speed in Setups 9, 10, 19, 20, 25 & 26		
Pump 2	240VAC	2-Speed	12A max	15-minute timer
		1-Speed in Setups 3 - 6, 9, 10, 13 - 16, 19, 20 Unused in Setups 7, 8, 17, 18, 21 - 26		
Pump 3	240VAC	1-Speed	12A max	15-minute timer
		Used in Setups 3, 4, 9, 13, 14, 19, 27 & 28 only		
Circ Pump	240VAC*	1-Speed	2A max	24-hour with 3°F shutoff (outside of filter cycles)
		This is the heater pump in Setups 1, 3, 5, 7, 9, 10, 11, 13, 15, 17, 19, 20, 21, 23, 25 - 27 Must deliver 20 GPM through heater		
Ozone	240VAC*	0.5A max	Independent in Non-Circ Setups and Slaved to Circ Pump in Circ Setups	
Spa Light	10VAC	On/Off	2A** max	60-minute timer.
		Unused in Setups 21 - 24		
AV only	120VAC****	Hot	4A max	Always on
AV + C8Z****	240VAC****	Hot	2A + 8A max	Always on
Heater	4.0kW @ 240VAC max			

\*Circ Pump and Ozone must be the same voltage.

With 120VAC power input (for Setups 7, 8, 17, 18, 25 & 26 only), Pump 1, Circ Pump, and Ozone must be set to 120VAC by moving wires attached to J50, J51 and J32 to area 1 (Neutral).

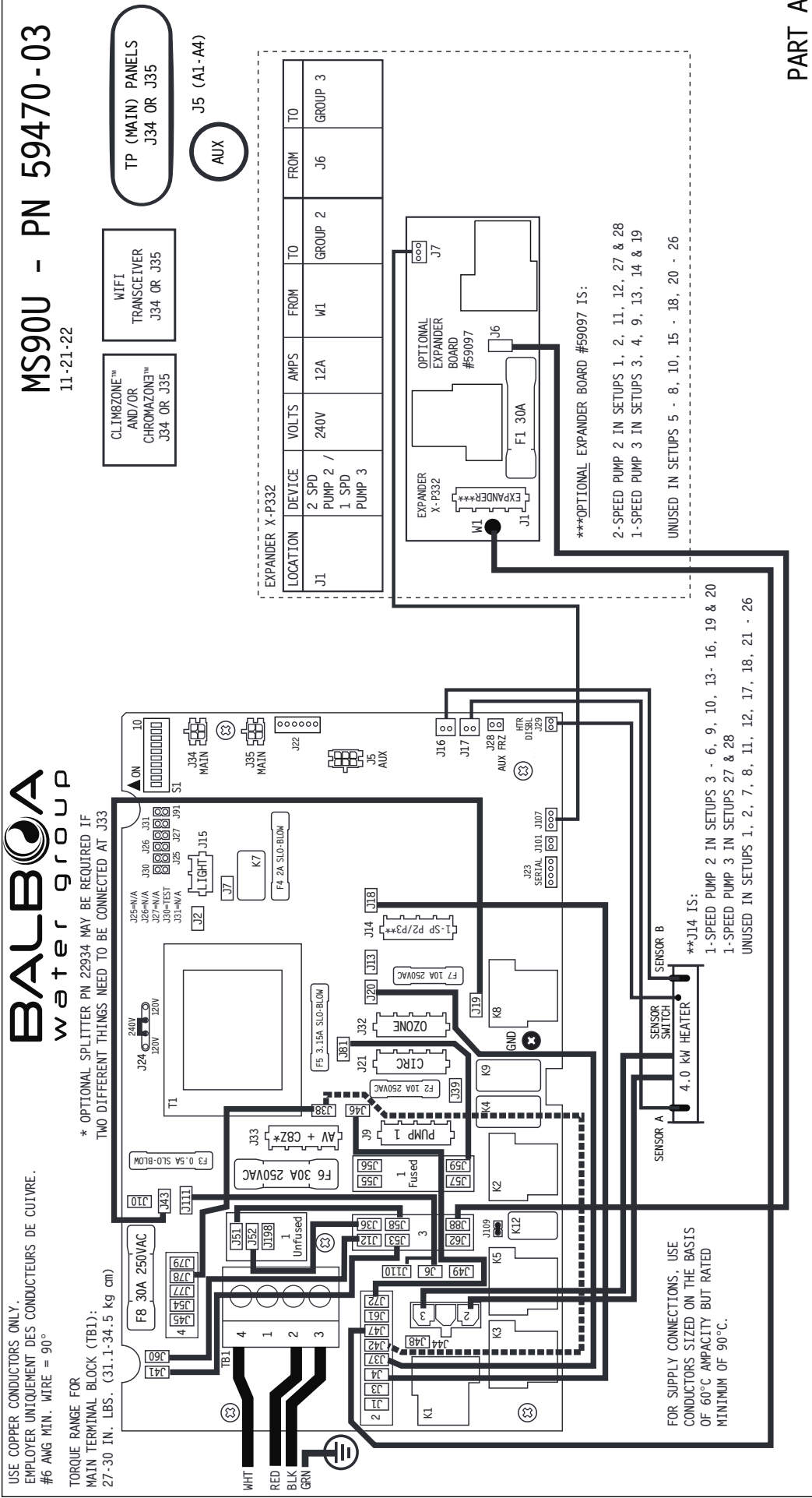
\*\* 2A max limit is shared by On/Off Spa Light and CHROMAZONE™.

\*\*\* Optional splitter PN 22934 can be used to connect two things, such as an audio device and Clim8zone™ (C8Z), to J33.

\*\*\*\* AV is configured by default to 120VAC, but must be converted to 240VAC if using Clim8zone™ (C8Z) heat pump.

# Hardware Setup

## Wiring Diagram for "3S" heater versions



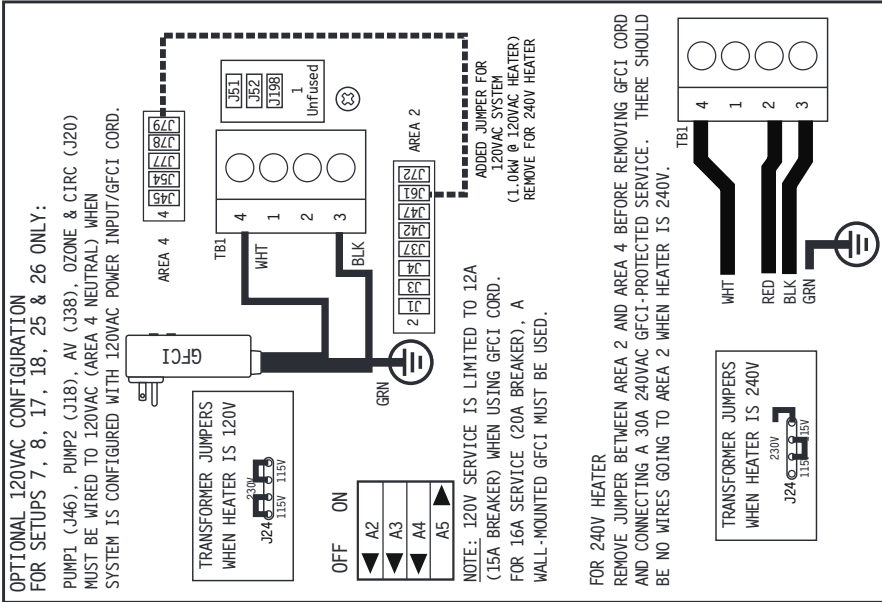
\* OPTIONAL SPLITTER PN 22934 MAY BE REQUIRED IF TWO DIFFERENT THINGS NEED TO BE CONNECTED AT J33

USE COPPER CONDUCTORS ONLY.  
EMPLOYER UNIFORMEMENT DES CONDUCTEURS DE CUIVRE.  
#6 AWG MIN. WIRE = 90°

TORQUE RANGE FOR MAIN TERMINAL BLOCK (TB1):  
27-30 IN. LBS. (31.1-34.5 kg cm)

# Hardware Setup

## Settings for "3S" heater versions



**BALBOA**  
 water group  
 MS90U - PN 59470-03  
 11-21-22

LOCATION	DEVICE	VOLTS	MAX AMPS	FROM	TO
J9	2-SP PUMP 1	240V	12A MAX	J46	GROUP 2
J14	1-SP PUMP 2/3 J14 LINE 1 CONNECTION	240V	12A MAX	J18 J43 J10	GROUP 2 J19 J50
J15	SPA LIGHT	10V	2A*		
J21	CIRC PUMP	240V	2A MAX	J20	GROUP 2
J32	OZONE		0.5A		
J33	CIRC AND OZONE LINE 1 CONNECTION				
J33	AV ONLY	120V**	4A	J81	J59
J33	AV + CLIMBZONE™ (CBZ)	240V**	2A + 8A	J38	GROUP 4
J44	HEATER	240V	4.0 kW	J38	GROUP 2

\* 2A LIMIT IS SHARED BY J15 SPA LIGHT AND CHROMAZON™

\*\* AV MUST BE REWIRED FROM 120V TO 240V WHEN USING CLIMBZONE™ (CBZ) BY MOVING THE J38 WIRE FROM GROUP 4 TO GROUP 2.

TEST MODE OFF	SWITCHBANK S1 OFF	SWITCHBANK S1 ON
DON'T ADD 1 HS PUMP W/HTR	◀ A1	TEST MODE ON
DON'T ADD 2 HS PUMPS W/HTR	◀ A2	ADD 1 HS PUMP WITH HEAT
DON'T ADD 4 HS PUMPS W/HTR	◀ A3	ADD 2 HS PUMPS WITH HEAT
SPECIAL AMPERAGE RULE A	◀ A4	ADD 4 HS PUMPS WITH HEAT
SPECIAL AMPERAGE RULE B	◀ A5	SPECIAL AMPERAGE RULE B
STORE SETTINGS*	◀ A6	MEMORY RESET*
ONLY HEATER PUMP IN FILTER	◀ A7	P1 ASSISTS CIRC IN FILTER
REGULAR HIGH RANGE	◀ A8	ALTERNATE HIGH RANGE
CIRC: 24HR W/ 3F SHUTOFF	◀ A9	CIRC: PROG FILTERS + POLLING
NOT ASSIGNED	◀ A10	NOT ASSIGNED

\*SWITCH # 6 SHOULD BE SET TO OFF UPON FINAL INSTALLATION.

CONNECT ONLY TO CIRCUITS PROTECTED BY A CLASS A GFCI.

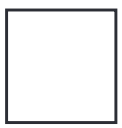
A DISCONNECTING MEANS MUST BE INSTALLED WITHIN SIGHT FROM A DISCONNECT MEANS MUST BE INSTALLED WITHIN SIGHT FROM THE EQUIPMENT AND AT LEAST 5 FEET (1.52 M) FROM THE INSIDE WALLS OF THE POOL, SPA OR HOT TUB.

TOTAL OUTPUT AMP DRAW NOT TO EXCEED MAX INPUT RATING OF SPA.

USE EARTH GROUND CONNECTIONS AS INDICATED INSIDE THE SYSTEM ENCLOSURE.

\*+ AFTER THE SETUP NUMBER MEANS THAT SETUP NEEDS THE #59097 EXPANDER BOARD INSTALLED

\* CIRC BEHAVIOR DEPENDS ON THE SETTING OF DIP SWITCH A9



INSTEAD OF SETUP #5, THIS SYSTEM IS CONFIGURED IN SETUP #:

**PART B**

# Setup Reference Table

Setup #	Circ Pump	Pump 1	Pump 2	Pump 3	Lights	Menu Type	Temp Scale
1+	Yes*	2-Speed	2-Speed	None	1-Speed	Standard	°F
2+	None	2-Speed	2-Speed	None	1-Speed	Standard	°F
3+	Yes*	2-Speed	1-Speed	1-Speed	1-Speed	Standard	°F
4+	None	2-Speed	1-Speed	1-Speed	1-Speed	Standard	°F
5	Yes*	2-Speed	1-Speed	None	1-Speed	Standard	°F
6	None	2-Speed	1-Speed	None	1-Speed	Standard	°F
7	Yes*	2-Speed	None	None	1-Speed	Standard	°F
8	None	2-Speed	None	None	1-Speed	Standard	°F
9+	Yes*	1-Speed	1-Speed	1-Speed	1-Speed	Standard	°F
10	Yes*	1-Speed	1-Speed	None	1-Speed	Standard	°F
11+	Yes*	2-Speed	2-Speed	None	1-Speed	Simple	°F
12+	None	2-Speed	2-Speed	None	1-Speed	Simple	°F
13+	Yes*	2-Speed	1-Speed	1-Speed	1-Speed	Simple	°F
14+	None	2-Speed	1-Speed	1-Speed	1-Speed	Simple	°F
15	Yes*	2-Speed	1-Speed	None	1-Speed	Simple	°F
16	None	2-Speed	1-Speed	None	1-Speed	Simple	°F
17	Yes*	2-Speed	None	None	1-Speed	Simple	°F
18	None	2-Speed	None	None	1-Speed	Simple	°F
19+	Yes*	1-Speed	1-Speed	1-Speed	1-Speed	Simple	°F
20	Yes*	1-Speed	1-Speed	None	1-Speed	Simple	°F
21	Yes*	2-Speed	None	None	None	Standard	°F
22	None	2-Speed	None	None	None	Standard	°F
23	Yes*	2-Speed	None	None	None	Simple	°F
24	None	2-Speed	None	None	None	Simple	°F
25	Yes*	1-Speed	None	None	1-Speed	Standard	°F
26	Yes*	1-Speed	None	None	1-Speed	Simple	°F
27+	Yes*	2-Speed	2-Speed	1-Speed	1-Speed	Standard	°F
28+	None	2-Speed	2-Speed	1-Speed	1-Speed	Standard	°F

**System** (and any replacement board) **is shipped in Setup 5**

'+' after the Setup number means that Setup needs the #59097 expander board installed

\* Circ type is either 24hr/3°F or Programmable Filters + Polling, depending on the setting of DIP switch A9.

# Changing Software Setups with spaTouch™ Icon-Driven Panels

## Test Menu Access (S1, Switch 1 ON) Service Technician ONLY.

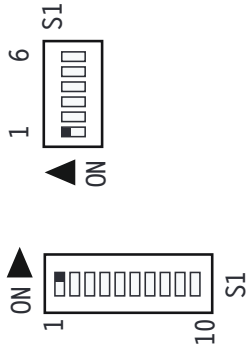
**DANGER! HIGH VOLTAGE WILL BE ACCESSIBLE! SERVICE TECHNICIAN ONLY!**

While the system is running, move DIP Switch 1 (on S1 on the Main circuit board) to ON. The system will enter Test Mode.

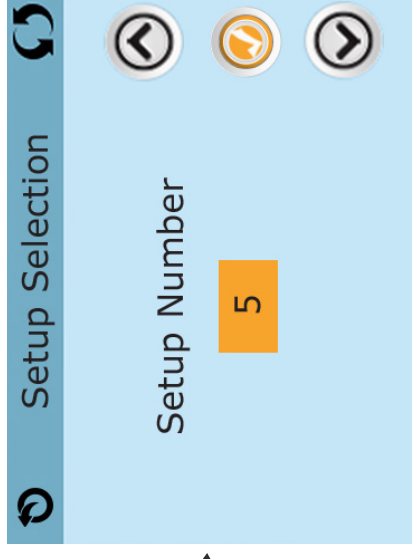
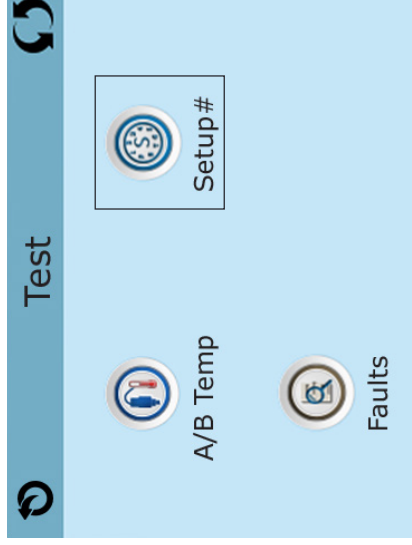
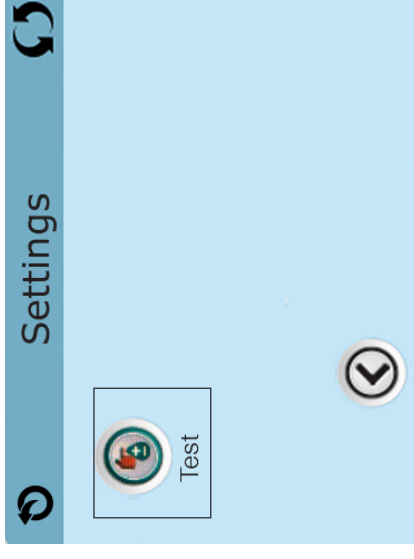
Moving DIP Switch 1 to OFF will exit Test Mode.

## To Change Software Setups:

While in Test Mode, press the indicated icons to move from screen to screen.



The example screens shown here are from the spaTouch 1 Icon-Driven Panel, but the screens on the spaTouch 2 Panel are similar. The main difference is that the spaTouch 2 display is wider.



Once on the Setup Selection screen, press the Up or Down icon to select the desired Setup Number, then press the Check Mark icon to confirm and to have the spa restart.

After the system restarts, you may see a message that "The settings have been reset"; this is normal after changing Setups with DIP Switch 6 in the OFF position. Press "Clear" to dismiss this message.

# Changing Software Setups with TP800 / TP900 / spaTouch™ Menued Panel

## Test Menu Access (S1, Switch 1 ON) Service Technician ONLY.

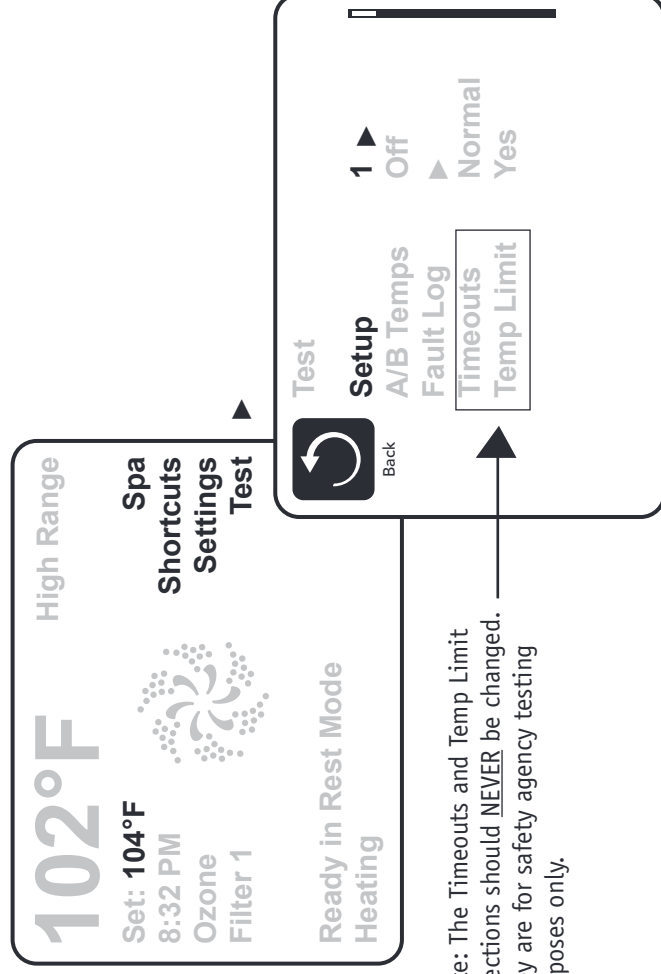
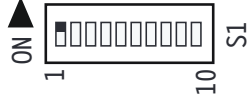
**DANGER! HIGH VOLTAGE WILL BE ACCESSIBLE! SERVICE TECHNICIAN ONLY!**

While the system is running, move DIP Switch 1 (on S1 on the Main circuit board) to ON. The system will enter Test Mode.

Moving DIP Switch 1 to OFF will exit Test Mode.

## Software Setups

Under the TEST Menu, the Setup screen will allow changing the Setup from 1 to any number established by the Manufacturer. Changing the Setup may require wiring changes as well.



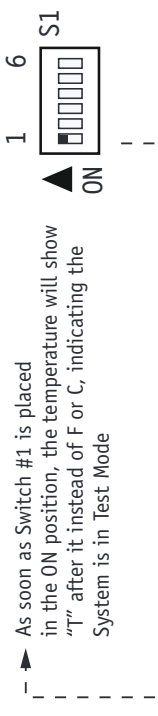
# Changing Software Setups with TP600 / TP400

## Test Menu Access (S1, Switch 1 ON) Service Technician ONLY.

**DANGER! HIGH VOLTAGE WILL BE ACCESSIBLE! SERVICE TECHNICIAN ONLY!**

While the system is running, move DIP Switch 1 (on S1 on the Main circuit board) to ON. The system will enter Test Mode.

Moving DIP Switch 1 to OFF will exit Test Mode.



## Software Setups

Under the TEST Menu, the Setup screen will allow changing the Setup from 1 to any number established by the Manufacturer. Changing the Setup may require wiring changes as well.

**You will have 1 minute** to complete the setup change after you manually exit Priming Mode. (Once familiar with the process, the Setup change should take less than 15 seconds.)



When the panel displays RUN PMPS PURG AIR, press any Temperature button ONCE to exit Priming Mode. You should see "---T" where the T indicates the system is in Test Mode.



Continued on Next Page.

# Changing Software Setups with TP600 / TP400 Continued

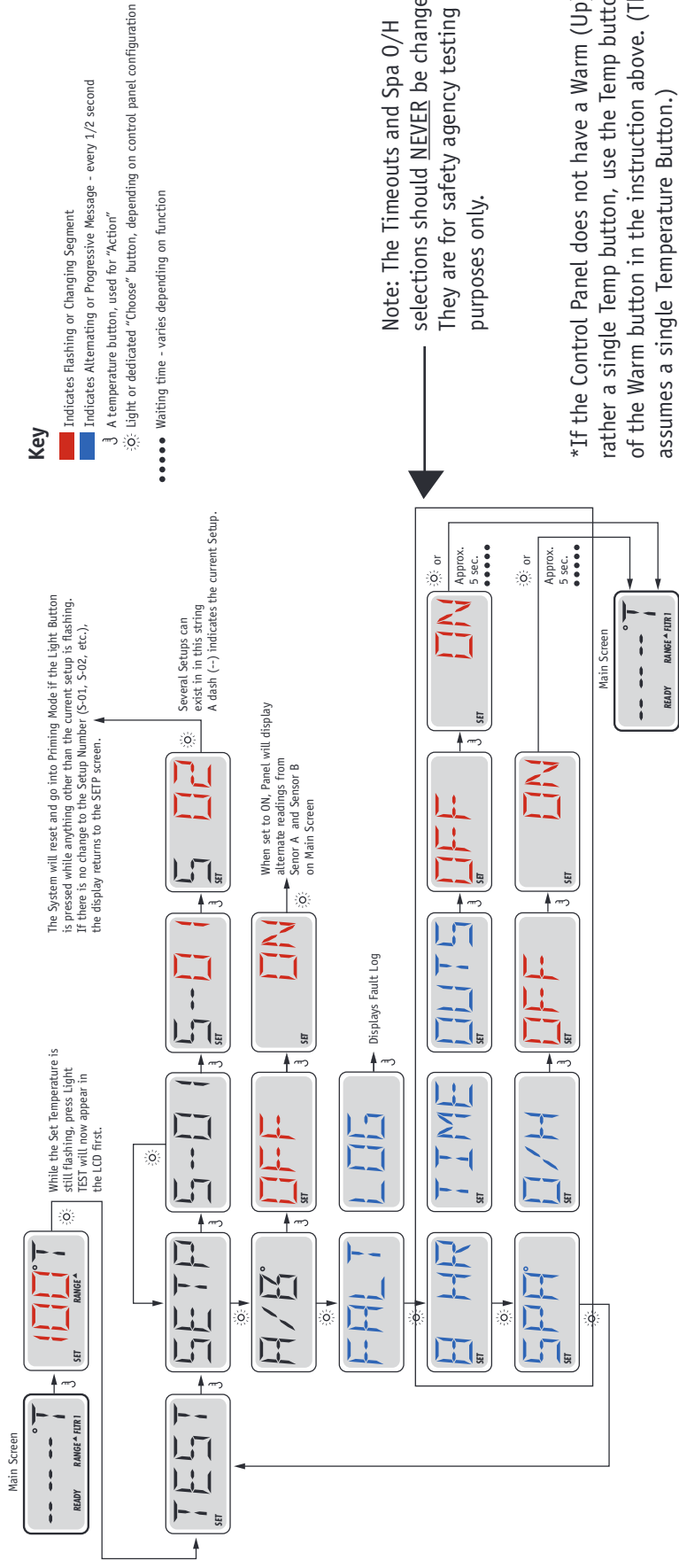
Again, **You will have 1 minute** to complete the setup change after you manually exit Priming Mode.

Immediately after exiting Priming Mode, press this sequence of buttons: Warm\*, Light, Warm, Warm, Warm. Continue to press Warm until the display shows the Setup Number (S-01, S-02, etc.) you want to switch to. When the correct setup number is showing, press Light once, and the system will reset, using the newly-selected Setup from that point on.

Move DIP Switch 1 to the OFF position to take the spa out of Test Mode. °F or °C will replace °T.

**Using a permanent marker, write the Setup number on the Setup label mounted inside the system lid (right). This is very important to any service person in the future who may need to replace a circuit board or system and needs to change the Setup on a replacement part while in the field.**

**NOTE:** Changing the Setup may require wiring changes as well - refer to the wiring diagram or wiring diagram addendum.



# Equipment Expansion

---

## Expansion Features

### Control Connection

Relay 1 (J101)

Relay 7/8 (J107)

### Default

Undefined

2-Speed Pump 2 or

1-Speed Pump 3

### Fuse

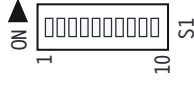
None

30A

# DIP Switch Functions

## Fixed-function DIP Switches

- A1 Test Mode (normally Off).
- A2 In "ON" position, add one high-speed pump (or blower) with Heater.
- A3 In "ON" position, add two high-speed pumps (or 1 HS Pump and Blower) with Heater.
- A4 In "ON" position, add four high-speed pumps (or 3 HS Pumps and Blower) with Heater.
- A5 In "ON" position, enables Special Amperage Rule B. See Special Features section under Configuration Options for functionality with your system.
- In "OFF" position, enables Special Amperage Rule A.
- A6 Persistent memory reset (Used when the spa is powering up to restore factory settings as determined by software configuration).



**A2, A3, and A4** work in combination to determine the number of high-speed devices and blowers that can run before the heat is disabled. i.e. A2 and A3 in the ON position and A4 in the OFF position will allow the heater to operate with up to 3 high-speed pumps (or two HS Pumps and Blower) running at the same time. Heat is disabled when the fourth high-speed pump or blower is turned on.

**Note:** A2/A3/A4 all off = No heat with any high-speed pump or blower.

## Assignable DIP Switches

- A7 In "ON" position, Pump 1 (at lowest speed) assists Circ Pump in Filter Cycles (on Circ Setups only).
- In "OFF" position, only the heater pump runs during Filter Cycles.
- A8 In "ON" position, High Range is replaced by Alternate High Range settings (see page 17)
- In "OFF" position, the regular High Range settings are used
- A9 In "ON" position, Circ Type is Programmable Filters + Polling (aka Acts Like Pump 1 Low)
- In "OFF" position, Circ Type is as configured under General Features (see page 16)

*Undesignated switches are not assigned a function.*

# Jumper Definitions

**J109**

GFCI Test/Trip Enable/Disable

**Note:** This feature must be enabled in software as well.

J109



**J91**

Not used on BP1800 board.

**J30**

Do Not Use

**J31**

Not used on BP1800 board.

**J29**

Heater Disable Switch Connection. If J29 is shorted by any means, the heater will not run until J29 is no longer shorted.

If J29 is shorted during power-up "J29" will appear on the panel.

The message can be dismissed with a button press, and is the only control panel notification of J29 being shorted.

No message is displayed if J29 is shorted after power-up, but the heater will not run until J29 is no longer shorted.

J29 expects a switch closure (not a voltage) as the command signal.

In some areas, a local power company may offer discounts based on voluntary "power shedding" devices that may be installed in conjunction with the spa.



J29

**J25, J26, J27**

Not used on BP1800 board.

**Note:** Factory Configured do not change.

**J24**

Jumper on center two pins (230V) when heater is running at 240V.

Two Jumpers installed; one on left 2 pins and one on right 2 pins (115V) when heater is running at 120V.



## Warning!

Setting DIP switches or jumpers incorrectly may cause abnormal system behavior and/or damage to system components. Refer to Switchbank illustration on Wiring Configuration page for correct settings for this system. Contact Balboa if you require additional configuration pages added to this tech sheet.

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. © Copyright 2014, Balboa Water Group.

# Replacement Parts

---

**PCBA:**

Main PCBA: 59471-03  
 Expander PCBA: 59097

**HEATER(s):**

Plug + Click Heater Kit: 58442R16 4.0kW 825 Inc "3S" heater  
 Temp Sensor Kit: 53605

**CABLES:**

N/A

**FUSES:**

Part Number	Amperage*	Location
30136	30A	F6, F8, F1 (Expander)
26307	2A	F4
26905	0.5A	F3
26904	10A	F2, F7
26976	3.15A	F5

\* The amperages shown above are only intended for identifying fuses on our boards. They are not complete descriptions of those fuses. Please use the part numbers at the left to order fuses directly from Balboa.

# BP1800 Configuration Options

---

## General Features

Feature	Default
Pump 1 in Filter Cycle (Circ Only)	No
Pump 1 Low Timer	<i>120 Minutes</i> Applies in non-circ Setups (configurations) only
General Pump Timer	15 Minutes Applies to all pumps, except Pump 1 low in Non-Circ Setups
Blower Timer	15 Minutes
Mister Timer	15 Minutes
Light Timer	<i>60 Minutes</i>
Circ (when enabled)	<i>24 hr with 3°F shutoff (outside of filter cycles)</i>
Circ Type Select switch	<i>DIP switch A9 (see page 13)</i>
Cleanup Cycle	<i>60 Minutes</i>
Cleanup as Preference setting	Yes
Ozone	With Heater Pump*
Ozone Suppression	<i>60 Minutes</i>
Pump Purge	60 Seconds
Blower Purge	30 Seconds
Mister Purge	5 Seconds
Purge Type	Serial - Pumps at lowest speed

\* The heater Pump can be either a Circ Pump or Pump 1 Low.

# BP1800 Configuration Options

## Temperature Features

### Feature Default

Temperature Display

°F

*All temperatures must be specified in °F. The system converts °F to °C dynamically. If Celsius is required for default settings, choose a desired °C value that (after rounding) corresponds to a Fahrenheit value.*

°C	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
°F	39	41	43	45	46	48	50	52	54	55	57	59	61	63	64	66	68	70	72
°C	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
°F	73	75	77	79	81	82	84	86	88	90	91	93	95	97	99	100	102	104	

Hi-Range Min. Set Temp

80°F

Hi-Range Max. Set Temp

104°F

Hi-Range Default Temp\*

100°F

Lo-Range Min. Set Temp

50°F

Lo-Range Max. Set Temp

99°F

Lo-Range Default Temp\*

70°F

Alternate Hi-Range Min. Set Temp

50°F

Alternate Hi-Range Max. Set Temp

99°F

Alternate Hi-Range Default Temp\*

85°F

Freeze Threshold

44°F

Freeze Type

Rotating - Pumps at Lowest Speed

Temp Lock Type

Temp + Settings

*\*May be changed by end-user (if enabled)*

Manufactured under one or more of these patents. U.S. Patents: 5332944, 5361215, 5550753, 5559720, 5,883,459, 6253227, 6282370, 6590188, 6676052, 6965815, 7030343, 7,417,834, b2, Canadian Patent: 2342614, Australian patent: 2373248 other patents both foreign and domestic applied for and pending. © Copyright 2014 Balboa Water Group.

# BP1800 Configuration Options

---

## Time Features

### Feature

Time Format\*

Default

12 Hour

Filter 1 Start Hour\*

20:00 (8:00 PM)

Filter 1 Duration \*

4 Hours in Circ Setups, 4 Hours 30 Minutes in Non-Circ Setups

Filter Cycle 2 Default\*

ON in Circ Setups, OFF in Non-Circ Setups

Filter 2 Start Hour\*

08:00 (8:00 AM)

Filter 2 Duration \*

4 Hours in Circ Setups, 15 Minutes in Non-Circ Setups

Light Cycle

Disabled

Light Cycle Default\*

OFF

Light Cycle Start Hour\*

21:00 (9:00 PM)

Light Cycle Duration\*

15 Minutes

Cooling Time A

1 Minute

Cooling Time B

5 Minutes

*\* May be changed by end-user (if enabled)*

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. © Copyright 2014 Balboa Water Group.

# BP1800 Configuration Options

---

Reminder Features Feature	Default
Reminders Shown*	Yes
Check pH	OFF
Check Sanitizer	OFF
Clean Filter	30 Days
Test GFCI	OFF
Drain Water	180 Days
Change Cartridge	OFF
Clean Cover	OFF
Treat Wood	OFF
Change Filter	180 Days

\* May be changed by end-user (if enabled)

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. © Copyright 2014 Balboa Water Group.

# BP1800 Configuration Options

---

## Special Features

Feature	Default
Special Amperage Rule A	No Limitation
Special Amperage Rule B	No Limitation
Drain Mode	Disabled
Demo Mode	Disabled
GFCI Trip	Enabled
Automatic GFCI Test	Disabled
Ozone Slaved to Heater Pump	<i>Yes in circ setups</i> <i>No in non-circ setups</i>
Dual Voltage Heater	Always Input Voltage
Safety Suction	Disabled

# TP800 Panel Configuration

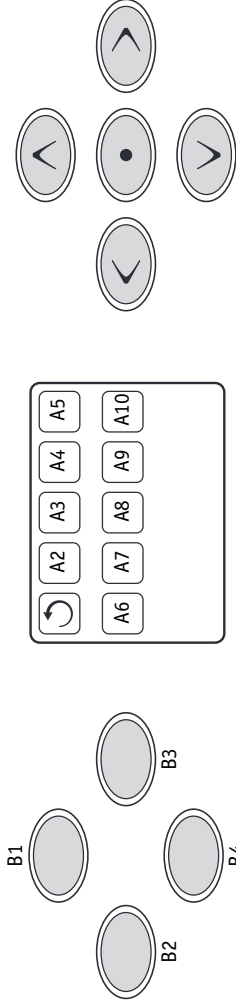
**Button Layout Table**

Feature #	Setups 4 & 28	Setups 2 & 6	Setups 3, 9 & 27	Setups 1, 5 & 10	Setups 7 & 25	Setup 8	Setup 21	Setup 22
A1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A2	Jets 1	Jets 1	Jets 1	Jets 1	Jets 1	Jets 1	Jets 1	Jets 1
A3	Jets 2	Jets 2	Jets 2	Jets 2	Light 1	Light 1	Invert	Invert
A4	Jets 3	Light 1	Jets 3	Light 1	Invert	Invert	(Circ Icon)	Undefined
A5	Light 1	Invert	Light 1	Invert	(Circ Icon)	Undefined	Undefined	Undefined
A6	Invert	Undefined	Invert	(Circ Icon)	Undefined	Undefined	Undefined	Undefined
A7	Undefined	Undefined	(Circ Icon)	Undefined	Undefined	Undefined	Undefined	Undefined
A8	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined
A9	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined
A10	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined
A11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A13	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined
A14	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined
A15	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined
A16	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined
B1	Jets 1	Jets 1	Jets 1	Jets 1	Jets 1	Jets 1	Jets 1	Jets 1
B2	Jets 2	Jets 2	Jets 2	Jets 2	Undefined	Undefined	Undefined	Undefined
B3	Jets 3	Undefined	Jets 3	Undefined	Undefined	Undefined	Undefined	Undefined
B4	Light 1	Light 1	Light 1	Light 1	Light 1	Light 1	Undefined	Undefined

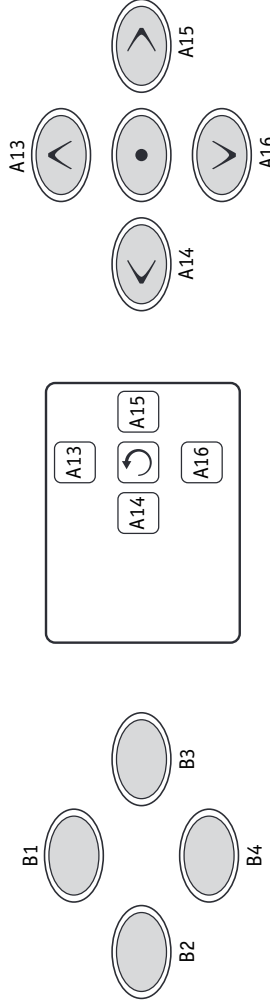
TP800 not supported in Setups 11 - 20, 23, 24 & 26.

# TP800 Panel Configuration

## Spa Screen



## Shortcuts Screen



**Note:** Buttons 11 and 12 are not used in this configuration. Button 1 is fixed.

Panel Part Number 50204-XX

Overlay Part Number N/A

# TP600 Panel Configuration

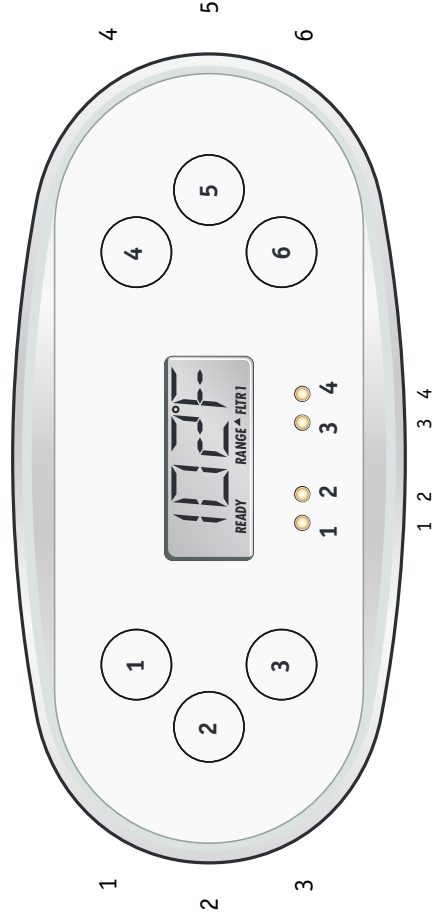
**Button Layout Table**

Button #	Setups 11, 12, 15, 16 & 20	Setups 17, 18, 23, 24 & 26	Setups 13,14 & 19
1	Jets 1	Jets 1	Jets 1
2	Jets 2	Undefined	Jets 2
3	Invert	Invert	Jets 3
4	Up	Up	Up
5	Light 1	Light 1	Light 1
6	Down	Down	Down
LED 1	Jets 1	Jets 1	Jets 1
LED 2	Jets 2	Undefined	Jets 2
LED 3	Light 1	Light 1	Light 1
LED 4	Heat On	Heat On	Heat On

TP600 not supported in Setups 1 - 10, 21, 22, 25, 27 & 28.

In Setups 23 & 24, which have no Light output, the only functions of button 5 are:

- Activates Circ Pump during Priming Mode.
- Acts as navigation button for menus.



## TP600

55676-XX

No Overlay

# TP400/TP200 Panel Configuration

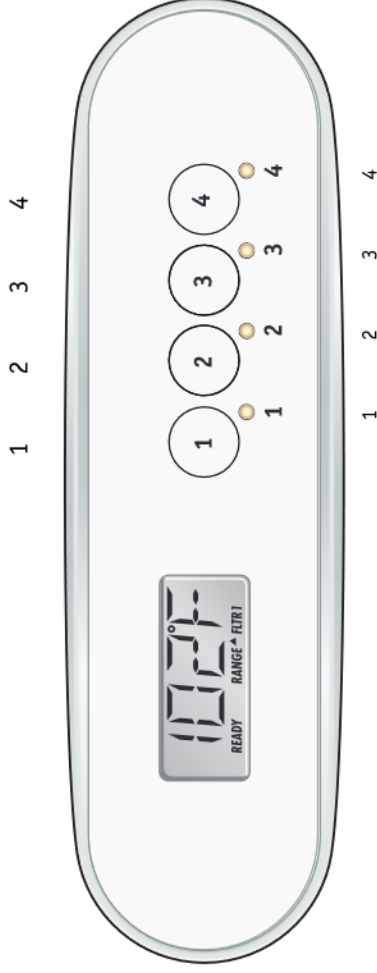
**Button Layout Table for TP400T/TP200T**

Button #	Setups 11, 12, 15, 16 & 20	Setups 17, 18, 23, 24 & 26
1	Temperature	Temperature
2	Jets 1	Jets 1
3	Light 1	Light 1
4	Jets 2	Undefined
LED 1	Heater ON	Heater ON
LED 2	Jets 1 ON	Jets 1 ON
LED 3	Light ON	Light ON
LED 4	Jets 2 ON	Undefined

TP400T/TP200T not supported in Setups 1-10, 13, 14, 19, 21, 22, 25, 27 & 28.

In Setups 23 & 24, which have no Light output, the only functions of button 3 are:

- Activates Circ Pump during Priming Mode.
- Acts as navigation button for menus.



## TP400T US

50380-XX includes overlay PN 12511.



## TP200T

57281-XX with no overlay

57282-XX includes overlay PN 17325

# BP1800 Configuration Options

---

## Auxiliary Panel Features on Bank 1\*

Feature	Default
---------	---------

Aux Button A1	Jets 1
---------------	--------

Aux Button A2	Jets 2
---------------	--------

Aux Button A3	Jets 3
---------------	--------

Aux Button A4	Light
---------------	-------

Buttons that are assigned to equipment that is not defined in a Setup will not do anything in that Setup.

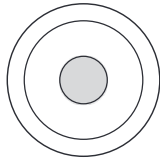
\*Bank 1 consists of J5 on the Main Circuit Board.  
**Aux Connection Splitter PN 25257 may be required.**

# BP1800 Configuration Options

## Auxiliary Panel Features

### AX10 Panels on Bank 1\*

A1, AX10A1	No 0/L	52803
A2, AX10A2	No 0/L	52804
A3, AX10A3	No 0/L	52805 ▲
A4, AX10A4	No 0/L	52806



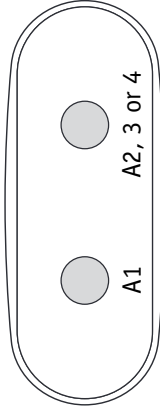
Call Customer Service for additional information about Auxiliary Panels.

\* Bank 1 consists of J5 on the Main Circuit Board.

Aux Connection Splitter PN 25257 may be required.

### AX20

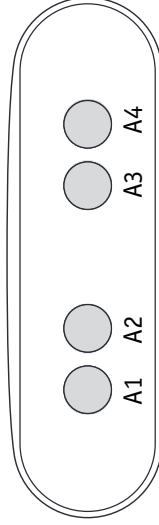
AX20 A1A2	No 0/L	52800
AX20 A1A3	No 0/L	52801
AX20 A1A4	No 0/L	52802



AX20 Auxiliary Panel plugged into Bank 1 will operate A1 + A2, A3 or A4.

### AX40

AX40	No 0/L	52799
------	--------	-------



AX40 Auxiliary Panel plugged into Bank 1 will operate A1 + A2, A3 and A4.