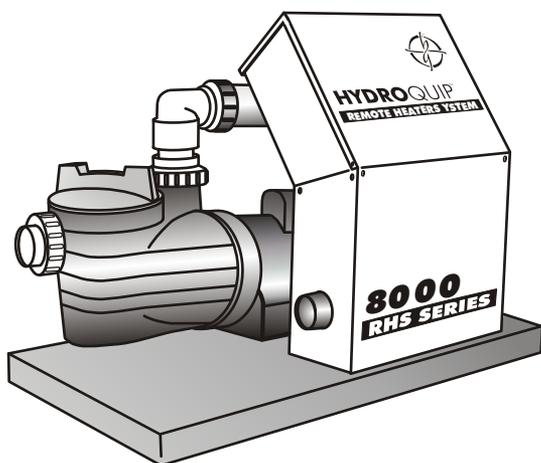


# HYDROQUIP™

## Outdoor Series CONFIGURATION MANUAL

THE **SMART CHOICE**™

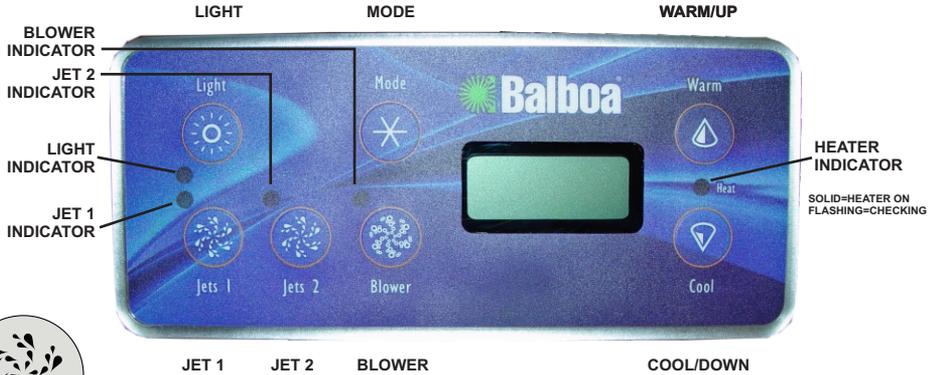


To ensure that the system is installed properly, provide your electrician with these instructions.

**8700 Series**



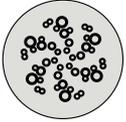
# 8700 SERIES - BASIC OPERATION



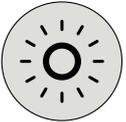
**Pump 1 Key:** Press this key to turn Pump 1 on and between High and Low speed. If the pump is Off the first press starts the pump in low speed and a second press turns the pump to high speed. An automatic timer turn the pump off after 30 minutes.



**Pump 2 Key:** Press this key once to turn Pump 2 on. A second press will turn it off. A light will appear on the panel next to the Pump 2 button when activated. A built-in timer will shut the pump off after 30 minutes of operation.



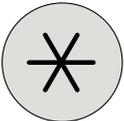
**Blower Key:** Press this key to turn the blower on and off, an automatic timer will turn the blower off after 30 minutes of operation



**Light Key:** Press this key to turn the light (120V or 12V) on and off, an automatic timer will turn the light off after 4 hours of operation



**Temperature Set Keys:** Press the “Cool/Down” button or “Warm/Up” button to display the current set water temperature. Pressing either button while the set temperature is displayed will increase or decrease the set temperature by 1°F. The temperature is adjustable between (80°F - 104°F / 26°C - 40°C)



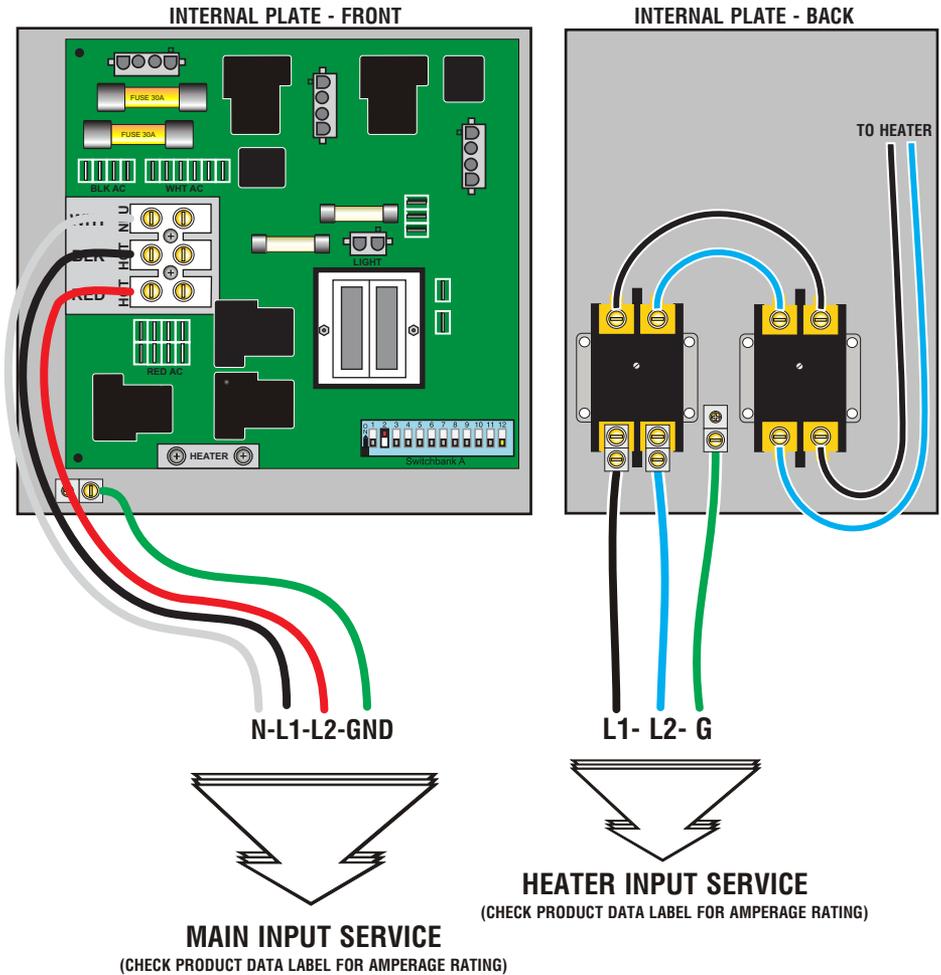
**Mode Key:** See owners manual for details regarding the “Mode” key.

# 8700 SERIES - INCOMING POWER WIRING

*Due to amperage requirements a split circuit connection may be required.*

Pumps, blower, etc are isolated to the “**Main Input Service**” connections. This connection requires a L1, L2, Neutral, and Ground (See Illustration Below)

The heater connection (non-GAS units only) is isolated to the “**Heater Input Service**” connection located on the **BACK OF THE PCB MOUNTING PLATE**. Remove the (2) upper screws on the sides of the upper box, the mounting plate will tilt forward allowing access to the connection points. This connection requires a L1, L2, and Ground connection. (See Illustration Below)

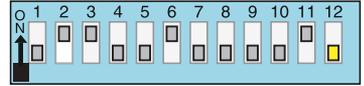


# 8700 SERIES - COMPONENT CONFIGURATION OPTIONS

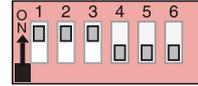
## DEFAULT CONFIGURATION:

- Pump 1 - 2 Speed
- Pump 2 - 1 Speed
- Blower

Switchbank A



Switchbank B



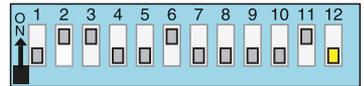
## Internal Configuration Required:

No addition configuration required

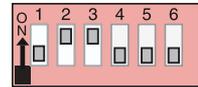
## OPTION 1:

- Pump 1 - 2 Speed
- Pump 2 - 2 Speed
- Blower

Switchbank A



Switchbank B



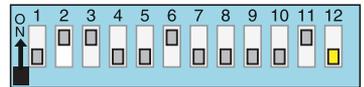
## Internal Configuration Required:

- Modify Dip-Switches as shown\*\*
- Remove **Pump 3** plug from auxiliary PCB
- Move **BLOWER (J3)** to auxiliary PCB.
- Connect **LOW SPEED PUMP 2** wire (free hanging 4 pin AMP plug w/**RED** Wire) to Blower Connection (**J3**)

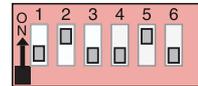
## OPTION 2:

- Pump 1 - 2 Speed
- Pump 2 - 2 Speed
- Pump 3 - 1 Speed

Switchbank A



Switchbank B



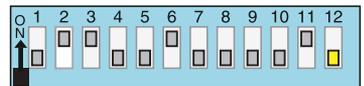
## Internal Configuration Required:

- Modify Dip-Switches as shown\*\*
- Disconnect **BLOWER (J3)**
- Connect **LOW SPEED PUMP 2** wire (free hanging 4 pin AMP plug w/**RED** Wire) to Blower Connection (**J3**)
- **NOTE: Pump 3 requires additional button (HQ PT# 34-0224)**

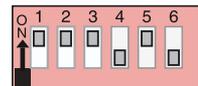
## OPTION 3:

- Pump 1 - 2 Speed
- Pump 2 - 1 Speed
- Pump 3 - 1 Speed
- Blower

Switchbank A



Switchbank B



## Internal Configuration Required:

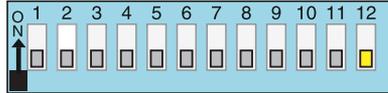
- Modify Dip-Switches as shown\*\*
- **NOTE: Pump 3 requires additional button (HQ PT# 34-0224)**

**\*\*Persistent Memory must be reset after making changes to the dip switches. To reset Persistent Memory power the system down, turn Switch A12 "ON", power up system and wait for "PR" to be displayed on the keypad. Then set switch A12 to "OFF" (this can be done with the power to the system "ON" as long as a non-conductive tool is used).**

# 8700 SERIES - PROGRAMMING

It is possible to change various operational characteristics of the control system using the Dip Switch Blocks located on the lower edge of the main control PCB (Printed Circuit Board) inside the control box. Persistent Memory must be reset when changing the dip switches. To reset Persistent Memory power the system down, turn Switch A12 "ON", power up system and wait for "PR" to be displayed on the keypad. Then set switch A12 to "OFF" (this can be done with the power to the system "ON" as long a non-conductive tool is used).

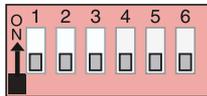
## Switchbank A



### DIP SWITCHBANK A:

- A1 - Test Mode (normally Off)
- A2 - ON=High Current/no Heater Restrictions  
OFF=Low Current/heat With Low Speed Only
- A3 - ON=Filtration Program By Duration  
OFF=Filtration Program By Time (special Keypad Required)
- A4 - ON=24 Hour Clock/Military Time  
OFF=12 Hour Clock/Standard AM/PM Time
- A5 - ON=Celsius Temp Readout  
OFF-Fahrenheit Temp readout
- A6 - ON=30 Minute Timeouts  
OFF=15 Minute Timeouts
- A7 - ON=Cleanup Cycle ON (30min after spa use Pump 1 & Ozone for 1 hour)  
OFF=Cleanup Cycle OFF
- A8 - ON=Ozone Suppression for 1 hour when Pump or Blower Press  
OFF=Ozone Suppression OFF
- A9 - OFF/NOT USED
- A10 - OFF/NOT USED
- A11 - ON=Ozone with Filtration Cycles  
OFF=Ozone with Low Speed Pump
- A12 - ON=Persistant Memory Unlocked  
OFF=Persitant Memory Locked (Normal Position)

## Switchbank B



### DIP SWITCHBANK B:

- B1 - ON=Single Speed Pump 2  
OFF=Tw0 Speed Pump 2
- B2 - ON=Pump 2 Enabled  
OFF=Pump 2 Disabled
- B3 - ON=Blower Enabled  
OFF=Blower Disabled
- B4 - ON=Fiber Wheel Enabled (additional kit required)  
OFF=Standard Light Output
- B5 - ON=Pump 3 Enabled  
OFF=Pump 3 Disabled
- B6 - ON=ML900 Panel Support/Scrunching Enabled  
OFF=Normal Panel Layout

**\*\*NOTE: Not all settings are available and are Keypad or Auxiliary PCB Dependent\*\***

# 8700 SERIES - ERROR MESSAGES

## Diagnostic Messages

Message	Meaning	Action Required
	No message on display. Power has been cut off to the spa.	The control panel will be disabled until power returns. Time of day will be preserved for 30 days with a battery back-up on EL8000 and EL5000 systems. EL1000 and some EL2000 systems reset the time of day on each power-up. Spa settings are preserved on all systems.
<b>OHH</b>	“Overheat” - The spa has shut down. <sup>1</sup> On some systems, an alarm may sound. One of the sensors has detected 118°F (approximately 47.8°C) at the heater.	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. Once the heater has cooled, reset by pushing any button. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
<b>OHS</b>	“Overheat” - The spa has shut down. <sup>1</sup> One of the sensors has detected that the spa water is 110°F (approximately 43.3°C).	DO NOT ENTER THE WATER. Remove the spa cover and allow water to cool. At 107°F (approximately 41.7°C), the spa should automatically reset. If spa does not reset, shut off the power to the spa and call your dealer or service organization.
<b>ICE</b>	“Ice” - Potential freeze condition detected.	No action required. The pumps and the blower will automatically activate regardless of spa status.
<b>SnA</b>	Spa is shut down. <sup>1</sup> The sensor that is plugged into the Sensor “A” jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
<b>SnB</b>	Spa is shut down. <sup>1</sup> The sensor that is plugged into the Sensor “B” jack is not working.	If the problem persists, contact your dealer or service organization. (May appear temporarily in an overheat situation and disappear when the heater cools.)
<b>SnS</b>	Sensors are out of balance. If this is alternating with the temperature, it may just be a temporary condition. If the display shows only this message (periodically blinking), the spa is shut down. <sup>1</sup>	If the problem persists, contact your dealer or service organization.
<b>HFL</b>	A substantial difference between the temperature sensors was detected. This could indicate a flow problem.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the pumps have been primed. Press any button to reset.
<b>LF</b>	Persistent low flow problems. (Displays on the fifth occurrence of the “ <b>HFL</b> ” message within 24 hours.) Heater is shut down, but other spa functions continue to run normally.	Follow action required for “ <b>HFL</b> ” message. Heating capacity of the spa will not reset automatically; you may press any button to reset.
<b>dr</b>	Inadequate water detected in heater.	Check water level in spa. Refill if necessary. If the water level is okay, make sure the pumps have been primed. Press any button to reset.
<b>drY</b>	Inadequate water detected in heater. (Displays on third occurrence of “ <b>dr</b> ” message.) Spa is shut down. <sup>1</sup>	Follow action required for “ <b>dr</b> ” message. Spa will not automatically reset; you may press any button to reset.
<b>Pr</b>	When your spa is first actuated, it will go into Priming mode.	See the M-7 Installation Instruction Manual for complete instructions on Power-up and Pump Priming. The Priming mode will last for up to 4 minutes and then the spa will begin to heat and maintain the water temperature in the Standard mode.



**HYDROQUIP<sup>TM</sup>**

**510A N. Sheridan Street · Corona, CA 92880-2024**

**Email: [info@hydroquip.com](mailto:info@hydroquip.com) · Internet: <http://www.hydroquip.com/>**

**Telephone: 951.273.7575 · Fax: 800.332.7190**