GL2000 Hot Sheet

System PN 53258_03 (Mach 2.1)
Balboa Instruments

System Model # GL2-GL2000-RCA-3.0k
Universal AC Service Option

Base PCBA PN
GL2000 – 53259-01

Base Panels
ML 550 – PN 53392
ML 700 – PN 52649
ML 900 – PN 52654

EPN #1279

The ML 200 and ML 400 Panels are compatible, but may require Aux panels for adequate functionality.

Balboa Instruments Incorporated

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Manufacturer Settings GL2000

INPUT

- 230V; 3 wires (line, neutral, ground)

OUTPUTS

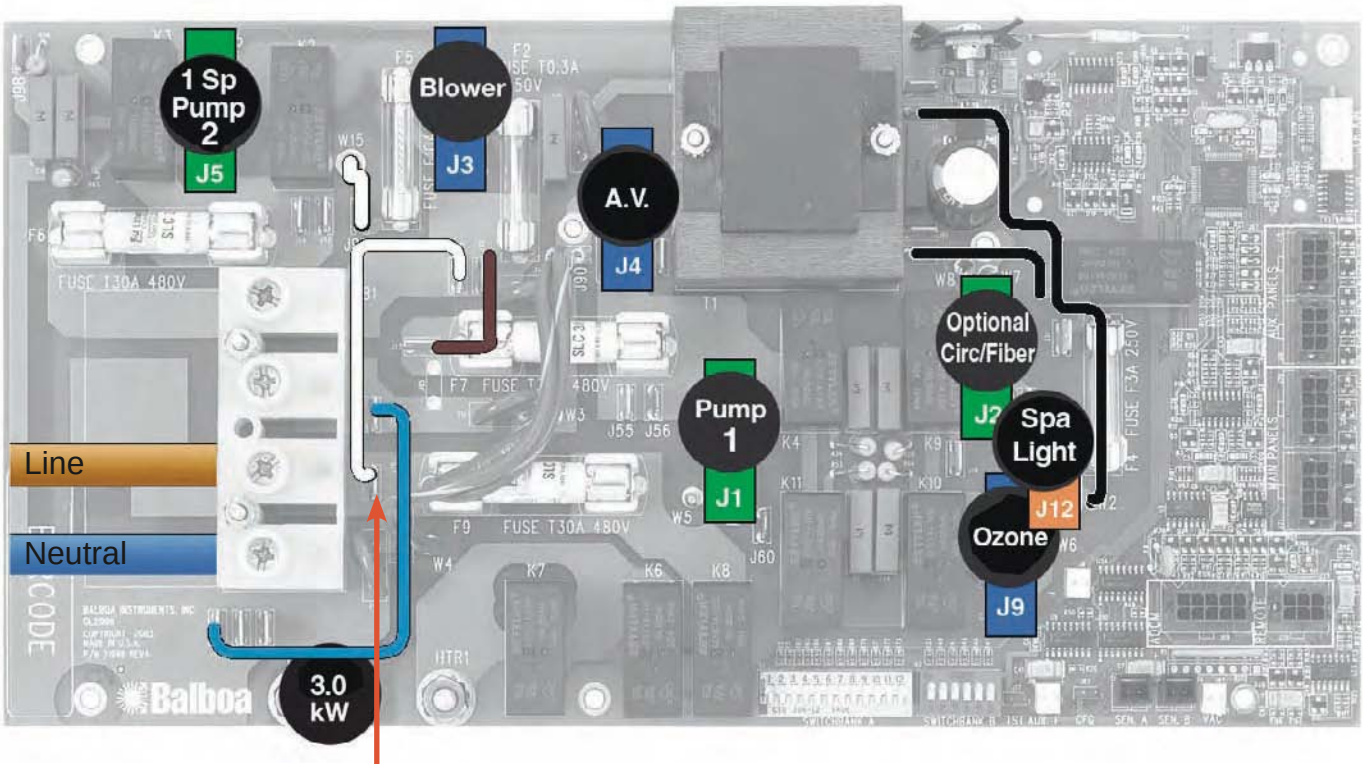
- 230V Pump 1, dual speed (high speed: 15-minute timeout; low-speed; 2-hour timeout)
- 230V Pump 2, single speed (15-minute timeout; 5-minute for purge cycle w/filter)
- 230V Blower, single speed (15-minute timeout; low-speed; 30-second for purge cycle w/filter)
- 230V Ozone (ozone runs with filter)
- 10V Spa Light (4-hour timeout)
- 230V Fiber-Optic Light only (optional) (fiber-optic light w/wheel when spa light disabled)
- 230V AV (stereo)
- Heater: 3.50kw @ 230V

FEATURES

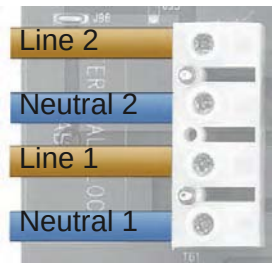
- See ML900 panel reference card (pages 8-11 of this document)
- See ML700 panel reference card (pages 12-15 of this document)
- See ML550 panel reference card (pages 16-19 of this document)

Circuit Board Configuration

Universal AC Service Option



Single Service Connection Shown Above - One 16 Amp or One 32 Amp Service.
For 16 Amp service, DIP Switch A2 should be set to the "Low Amp" setting.
For 32 Amp service, DIP Switch A2 may be set to the "High Amp" setting.



Converting from Single Service to Dual Service:

Remove the white wire connecting pins J26 and J23.

Insert and secure the second brown wire into the #1 slot of the terminal block and the second blue wire into the #2 slot of the terminal block.

DIP Switch A2 should be set to the "High Amp" setting.

Optional Circulation Pump

Review function and interaction of DIP switches A9, A10 and A11.

Optional Fiber Light & Wheel
(Spa Light not used)
Review function and interaction of DIP switches A9, A10 and B4.

Blower and Pump 2 Options

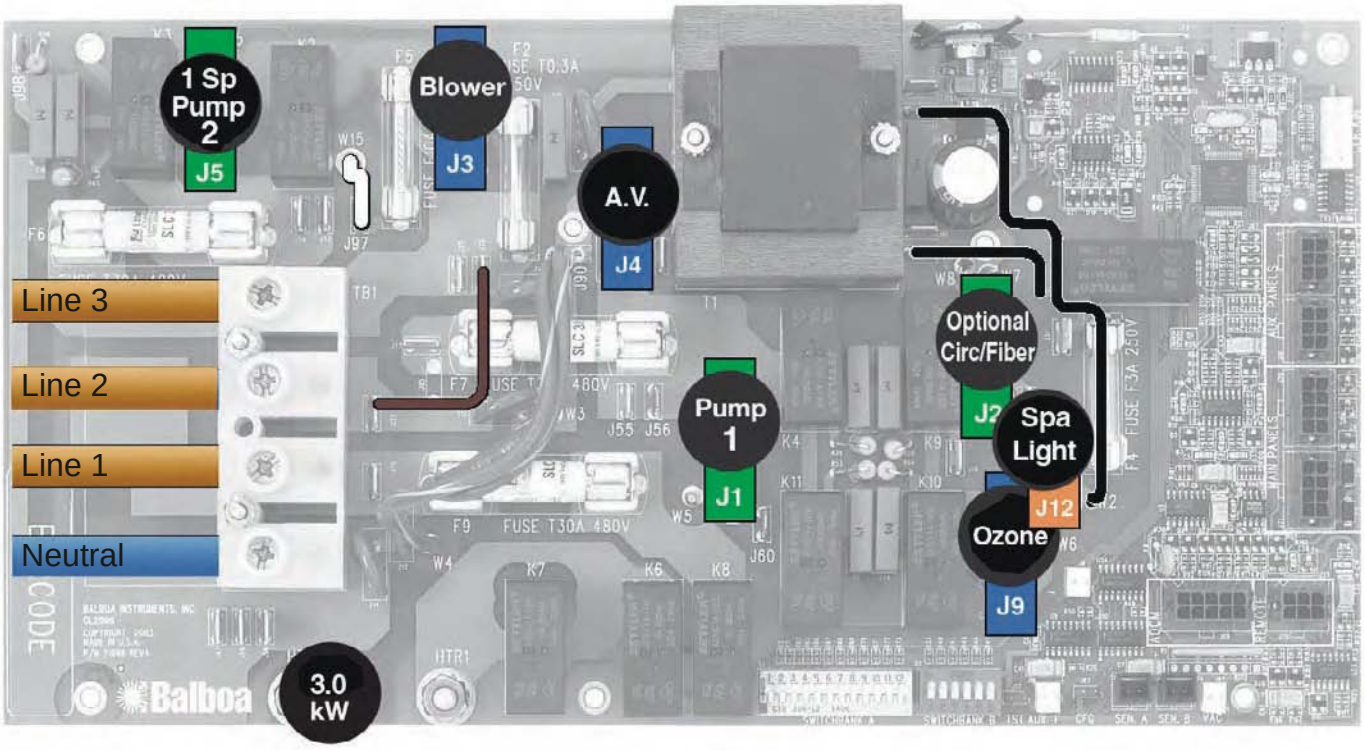
If a Blower is used, Pump 2 can only be one-speed. (W15 to J97)

If NO Blower is used, Pump 2 can be two-speed. (W15 to J98)

Review function and interaction of DIP switches B1, B2, and B3.

Circuit Board Configuration

Universal AC Service Option



Converting from Single Service to 3-Phase Service:
Important: The 3-phase service MUST include a neutral wire.

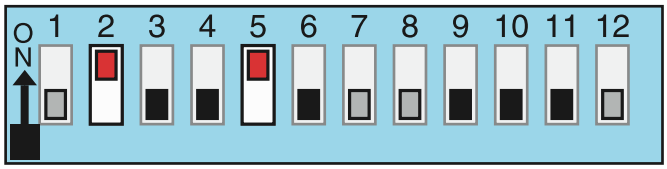
Remove the white wire connecting pins J26 and J23.
Remove the blue wire connecting pins J57 and J28.

Move the brown wire to J28.

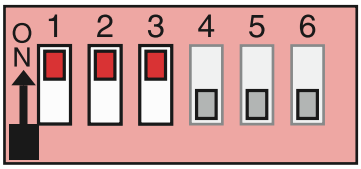
DIP Switch A2 should be set to the "High Amp" setting.

DIP Switches

Switchbank A



Switchbank B



A1, Test Mode OFF
A2, High Amp
A3, Filter by Time
A4, 12 Hr Time
A5, Degrees C
A6, Short Timeouts

A7, Cleanup Cycle OFF
A8, 1 Hr O_3 Supress OFF
A9/A10, No Circ Pump
A11, O_3 w/P1 low
A12, Memory ON

B1, Pump 2 1-Speed
B2, Pump 2 Enabled
B3, Blower Enabled
B4, Spa Light
B5, N/A
B6, Panel Scrunching OFF

DIP Switch Key

A 1 . . . . . Test Mode (normally Off)
A 2 . . . . . In “ON” position, heater can run while any/all high-speed pumps or blowers are running. (High amperage - dual 16A service, single 32A service, or 3-phase)
. . . . . In “OFF” position, heater is disabled while any high-speed pump or blower is running. (Low amperage - single 16A service)
A 3 . . . . . In “ON” position, filter cycles are programmed by duration
. . . . . In “OFF” position, filter cycles are programmed to start and end times
A 4 . . . . . In “ON” position, displays time in 24 hours (military time)
. . . . . In “OFF” position, displays 12 hour time
A 5 . . . . . In “ON” position, displays temperature in Celsius
. . . . . In “OFF” position, displays temperature in Fahrenheit
A 6 . . . . . In “ON” position, Equipment timeout 30 min (4 hrs for Pump 1-Low)
. . . . . In “OFF” position, Equipment timeout 15 min (2 hrs for Pump 1-Low)
A 7 . . . . . In “ON” position, Cleanup Cycle – 30 min after spa use/timeout, P1-Low & Ozone run for 1 hour.
. . . . . In “OFF” position, no Cleanup Cycle
A 8 . . . . . In "ON" position, Ozone suppression for one hour after pump/blower button press
A9 and A10. . . . . See **Figure 2** for Circ Pump Behavior settings
A 11 . . . . . In “ON” position
(non-circ mode operation)
Pump 1 is two-speed, Ozone is ON in Filter & Cleanup Cycles only
(in any circ mode)
Pump 1 is one-speed, Ozone is ON with circ pump
. . . . . In “OFF” position
(non-circ mode operation) Pump 1 is two-speed, Ozone is ON with Pump 1-Low
(in any circ mode) Pump 1 is two-speed, Ozone is ON with circ pump
A 12 . . . . . Peristent memory reset (used when spa is powering up)

A9	A10	Circ Pump Behavior
OFF	OFF	No Circ Pump or Circ Pump not plumbed w/heater
ON	OFF	24 Hr
OFF	ON	24 Hr w/3° Shut-Off
ON	ON	Acts like P1 low (Filter Cycles, Polls)

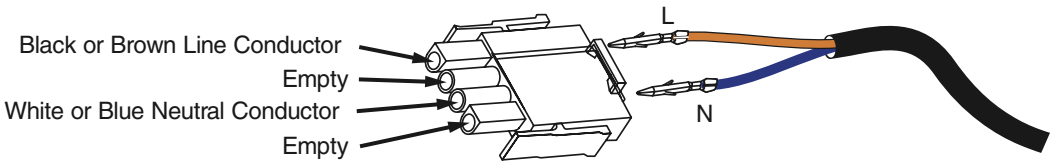
Figure 2

DIP Switches

B 1 . . . . . In “ON” position, single-speed Pump 2
. . . . . In “OFF” position, two-speed Pump 2
B 2 . . . . . In “ON” position, Pump 2 enabled
. . . . . In “OFF” position, Pump 2 disabled
B 3 . . . . . In “ON” position, Blower enabled with Pump 2 low relay
. . . . . In “OFF” position, Blower disabled
B 4 . . . . . In “ON” position, Fiber and Wheel instead of Spa Light
(on circ relay if A9, A10 off, external relay otherwise)
. . . . . In “OFF” position, Spa light enabled
B 5 . . . . . In “ON” position, Pump 3 enabled (Jets 3 replaces Blower on Aux panel)
. . . . . In “OFF” position, Pump 3 disabled
B 6 . . . . . In “ON” position, Alternate Panel layout
(ML900 scrunching enabled - ML550 / 700 Jets 3 replaces Blower)
. . . . . In “OFF” position, Normal Panel layout

Ozone Connections

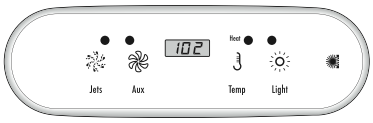
Ozone connector configuration for 240VAC 50Hz:



Note: A special tool is required to remove the pins from the connector body once they are snapped in place. Check with your Balboa Account Manager for information on purchasing a pin-removal tool.

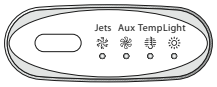
Panel Configuration

ML 700
PN 53649

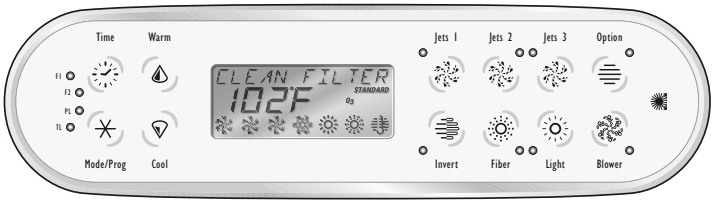


ML 400
PN 52684

ML 550
PN 53392



ML 200
PN 52958



ML 900
PN 52654

Auxiliary panels are available in the following configurations:

Infrared Remote which has a separate connector on the board.

4-Button
2-Button
1-Button

Configuration of the 4-Button and 2-Button Aux Panels can be done for custom applications.

1-button Aux panels are available in 4 different versions.

There are two Aux Panel connectors on the board.

Panel "Scrunching" on the ML 900 (requires custom panel overlays)

With DIP switch B6, unused buttons on an ML 900 can be "scrunched" in a custom configuration or the unused positions can be left blank.

Scrunching moves the buttons in a counter-clockwise direction from the bottom row to the top row, on the right side of the display. The result is that all missing buttons or gaps appear on the bottom row, just to the right of the display.

Note: Some button positions MUST be used in order to perform certain functions. For instance, the Jets 2 button and the Blower button are used in certain button press combinations, and need to be available to a user, even if they are labeled with a different name.

See reference cards for details.