

# INSTRUCTION MANUAL

## NEO 1500 SPA CONTROL SYSTEM

*The standard in Spa Control.*



# NEO 1500 SPA CONTROL SYSTEM

## SAVE THIS MANUAL

PLEASE MAKE IT AVAILABLE TO ALL OTHER SPA USERS



### **WARNING! Qualified Technician Required for Service and Installation**

#### **BASIC INSTALLATION AND CONFIGURATION GUIDELINES**

- Use minimum 6AWG copper conductors only.
- Readily accessible disconnecting means to be provided at time of installation.
- Permanently connected power supply.
- Connect only to a circuit protected by a Class A Ground Fault Circuit Interrupter (GFCI) or Residual Current Device (RCD) mounted at least 5' (1.52M) from the inside walls of the spa/hot tub and in line of sight from the equipment compartment.
- CSA enclosure: Type 2
- Refer to Wiring Diagram inside the cover of the control enclosure.
- Refer to Installation and Safety Instructions provided by the spa manufacturer.

**WARNING!** People with infectious diseases should not use a spa or hot tub.

**WARNING!** To avoid injury, exercise care when entering or exiting the spa or hot tub.

**WARNING!** Do not use a spa or hot tub immediately following strenuous exercise.

**WARNING!** Prolonged immersion in a spa or hot tub may be injurious to your health.

**WARNING!** Maintain water chemistry in accordance with the Manufacturers instructions.

**WARNING!** The equipment and controls shall be located not less than 1.5 meters horizontally from the spa or hot tub.

#### **WARNING! GFCI OR RCD PROTECTION.**

The Owner should test and reset the GFCI or RCD on a regular basis to verify its function.

#### **CAUTION! CSA COMPLIANCE**

- 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.
- For use only within an enclosure rated CSA Enclosure 3.
- Connect only to a circuit protected by a Class A ground fault circuit interrupter or residual current device.
- To ensure continued protection against shock hazard, use only identical replacement parts when servicing.
- Install a suitably rated suction guard to match the maximum flow rate marked.

#### **WARNING!**

- Water temperature in excess of 100°F may be injurious to your health.
- Disconnect the electric power before servicing. Keep access door closed.

#### **ATTENTION! CSA CONFORMITÉ**

- 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.
- Employer uniquement à l'intérieur d'une clôture CSA Enclosure 3.
- Connecter uniquement à un circuit protégé par un disjoncteur différentiel de Class A.
- 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.

#### **ADVERTISSEMENT!**

- 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.



### **WARNING! SHOCK HAZARD! NO USER SERVICEABLE PARTS.**

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



**CAUTION!** High voltage levels exist inside the control box and can cause injury or possibly electrocution. To prevent premature control failure do not hose down, flood or allow water to enter the control box.

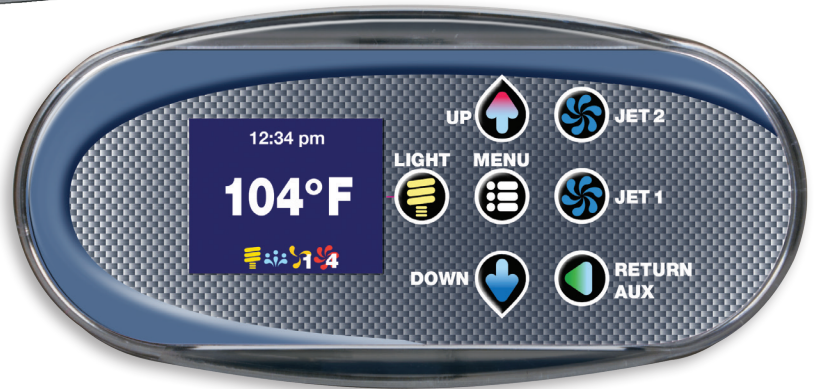
#### **WARRANTY**

For product registration visit: [www.waterwayplastics.com](http://www.waterwayplastics.com).

For Warranty questions or claims please contact point of purchase.

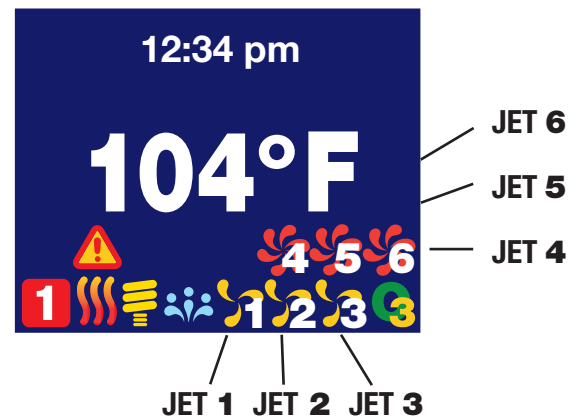
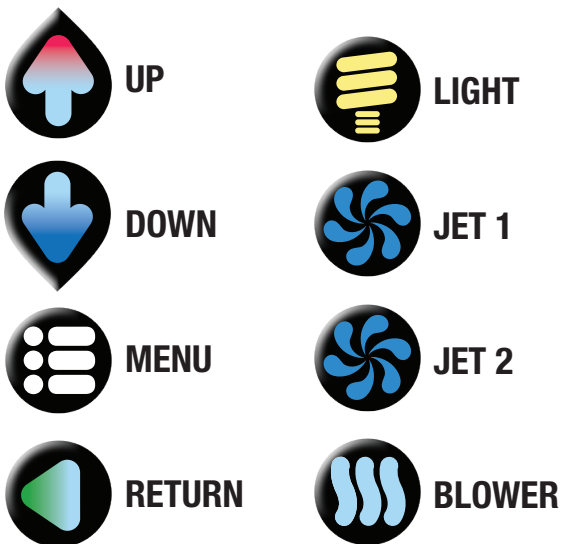


NEO 2100 CONTROL PANEL



NEO 1100 CONTROL PANEL

INSTRUCTIONS APPLY TO BOTH  
NEO 2100 & NEO 1100 CONTROL PANEL  
ICONS & FUNCTIONS



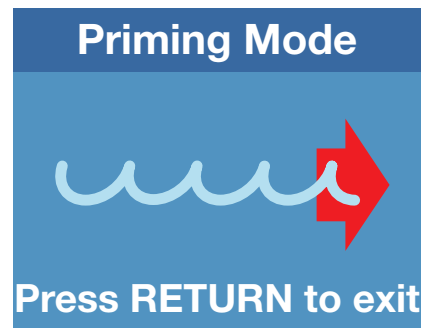
## MAIN SCREEN:

The main screen displays current time, water temperature, and status of the system accessories. The screen below from bottom, left to right indicates LIGHT ON, BLOWER ON, JET 1 at low speed, and JET 2 at high speed.



## PRIMING MODE:

When power is ON, the system will enter priming mode with 'Priming Mode' displayed on the panel. In this mode, all devices such as JETS, BLOWERS or LIGHTS are operable. JETS can be turned on and off to prime the pump. The System will exit Priming Mode and go to the MAIN display when the RETURN button is pushed, or after 4 minutes of inactivity.



## SPA OPERATION:

Turn system accessories ON and OFF by pushing button on the right side of panel (LIGHT, JET 1, BLOWER, JET 2...) These accessories have timeout defaults from the manufacturer and will turn OFF automatically after the time has expired. Default Timeout time for LIGHT is 60 minutes; BLOWER is 15 minutes; JET at low speed is 60 minutes; and JET at high speed is 15 minutes. The User can change these default times in "DEVICE TIMEOUT" settings menu.

## MENU NAVIGATING:

- MENU: use to enter Setting menu and sub-menu screens. For screens with several settable fields (example: DATE-TIME screen), use MENU to navigate between different fields within the screen.
- UP and DOWN: use to navigate between different options or changing values of a field.
- RETURN: use to confirm the setting and go back to previous screen.

## SET TEMPERATURE:

To change water Set Temperature, use UP and DOWN buttons to set the desired temperature. The screen will display "SET TEMP" with the current set temperature. After 5 seconds without change to the set temperature, the screen will go back to the MAIN screen with the current water temperature displayed. Changing the Set Temperature will turn on a pump so that the controller will be able to get an accurate water temperature and determine if the water needs to be heated.



## HEATER:

When starting the heater, a pump turns on and the HEATER START-UP icon will appear. The Heater will turn on and HEATER icon will appear after 5 minutes



## SELECTION ICONS:

 FILTER CYCLE 1


 FILTER CYCLE 2

 FILTER CYCLE 3

 FILTER CYCLE 4

 LIGHT ON

 HEATER ON

 HEATER START-UP

 ENERGY SAVING HEAT MODE


 VACATION HEAT MODE

 CLEANER CYCLE

 POLLING CYCLE

 TEMPERATURE LOCK

 PANEL LOCK

 OZONE ON

 JET ON LOW SPEED

 JET ON HIGH SPEED

 BLOWER ON

 SPECIAL TEMP SELECT

 OPTION

## PANEL TIMEOUT:

If a user is in Settings menu and no button is pushed within 15 seconds, the screen will timeout. The current screen setting will be lost and the panel will revert back to the MAIN screen. In MAIN screen, if no button is pushed within 60 minutes, all LED and LCD lights will turn off and the panel will go to sleep. Any button pushed will wake the panel, LED and LCD lights will turn back on and panel will Poll for water temperature.

## ENTER SETTING SCREENS:

Press the MENU button to display a list of setup screens.

Use UP and DOWN to navigate between various setup screens.

Press MENU again to enter a particular setup screen or press RETURN to go back to MAIN screen.







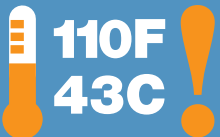





**Rotate View**  
Special Temp  
Heat Mode  
Filter Cycles  
Date-Time

**Rotate View**  
Special Temp  
**Heat Mode**  
Filter Cycles  
Date-Time

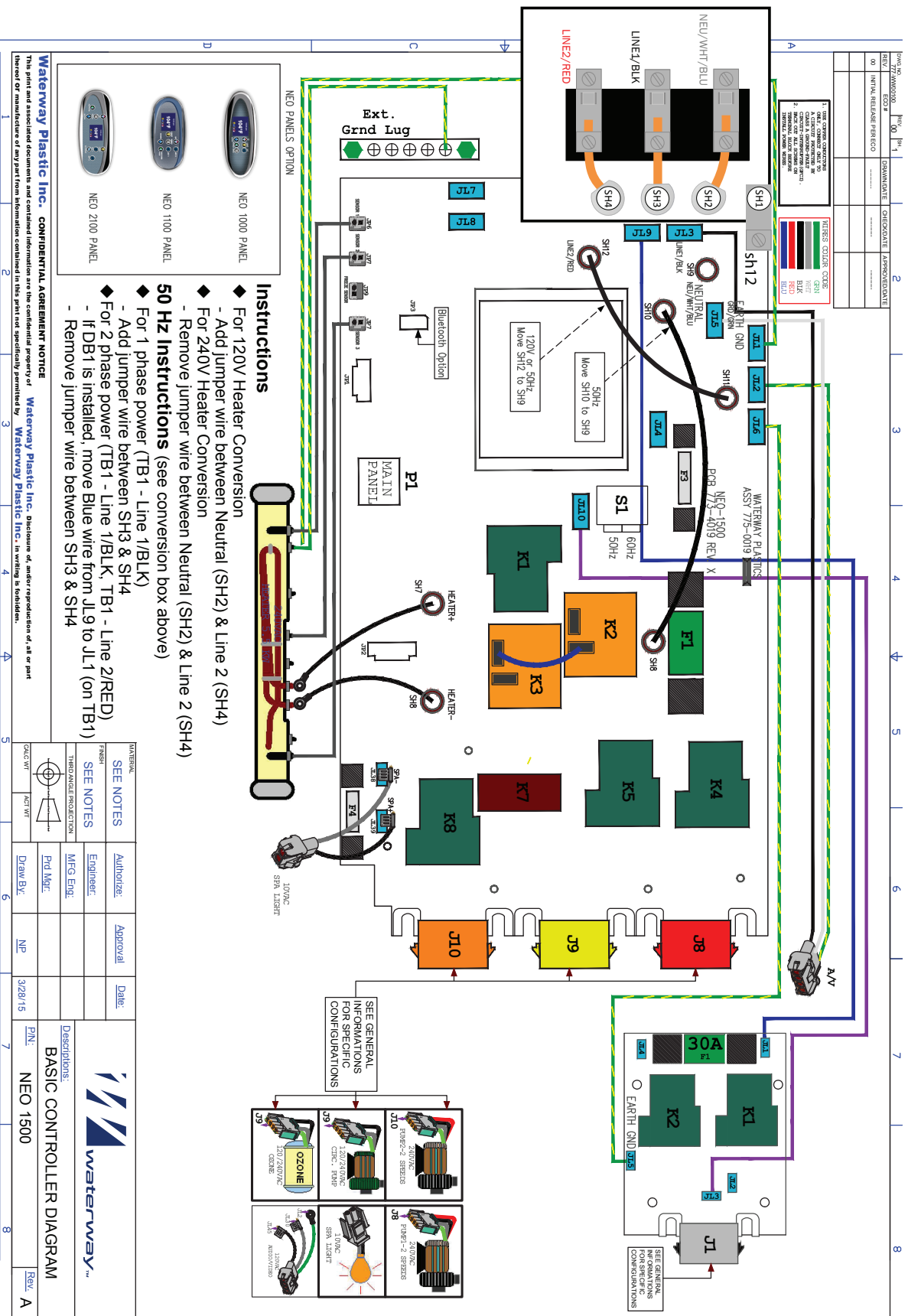
## SETTINGS EXPLAINED:

- **ROTATE VIEW:** Rotate the view 180 degrees. The UP and DOWN buttons also swap when rotated. • With ROTATE VIEW highlighted, press MENU to enter ROTATE VIEW setting. Use UP/DOWN to select desired setting and RETURN to confirm the setting and exit.
- **SPECIAL TEMP:** To temporarily heat spa to 105°F or 106°F once, and return to previous temperature setting. • With SPECIAL TEMP highlighted, press MENU to enter SPECIAL TEMP setting. Use UP/DOWN to select the desired setting and RETURN to confirm the setting and exit.
- **HEAT MODE:** select STANDARD heating mode (polls every Energy Interval) for most users or ENERGY SAVING mode (polls every other Energy Interval) or VACATION mode (set temp set to 60°F). • With mode highlighted, press MENU to enter setting. Use UP/DOWN to select the desired setting and RETURN to confirm the setting and exit.
- **FILTER CYCLES:** set up filter cycle START TIME, DURATION, and DATE for filtering the spa. For FILTER CYCLE 1 and 2, if DURATION is set to ZERO the system will do a purge cycle at the start time setting. • With FILTER CYCLE highlighted, press MENU to enter FILTER CYCLE 1, 2, 3, or 4. Select a FILTER CYCLE and press MENU again to enter the TIME/DURATION setting screen. In this screen, press MENU to move between HOURS, MINUTES and DAYS; use UP/DOWN to change the values and RETURN to exit and confirm the setting. FILTER CYCLES 3 & 4 by default are OFF. To set them, enter START TIME, DURATION and enable ALL DAYS or a specific day for both FILTER CYCLES 3 & 4.
- **DATE-TIME:** set up Date and Time for the spa. • With DATE-TIME highlighted, press MENU to enter the DATE-TIME setting. In this screen, pressing MENU will move and highlight various fields that can change the setting; UP/DOWN to change the values and RETURN to confirm the setting and exit.
- **DEGREE F/C:** displays spa temperature in Celsius or Fahrenheit. This option is only available for 60 Hz countries. Unit automatically displays Celsius for 50 Hz. • With DEGREE F/C highlighted, press MENU to enter the DEGREE F/C setting. Use UP/ DOWN to select the desired setting and RETURN to confirm the setting and exit.
- **TIME DISPLAY:** displays spa time in AM/PM or 24 hour time. • With TIME DISPLAY highlighted, press MENU to enter TIME DISPLAY setting. Use UP/DOWN to select the desired setting and RETURN to confirm the setting and exit.
- **DEVICES TIMEOUT:** allows changes to timeout setting for various devices. LIGHT can be set to a maximum of 4 hours; PUMP in high speed and BLOWER can be set to a maximum of 1 hour; and PUMP in low speed can be set to a maximum of 2 hours. • With DEVICES TIMEOUT highlighted, press MENU to enter and select various devices setting. Use UP/DOWN to select the desired time setting and RETURN to confirm the setting and exit.
- **PANEL LOCK:** provides a choice to select PANEL LOCK for locking all panel buttons except MENU button; use TEMP LOCK to lock UP/DOWN button for changing set temperature; and MENU LOCK to lock MENU button (push and hold MENU button more than 15 seconds to unlock the Menu). • With PANEL LOCK highlighted, press MENU to enter PANEL LOCK setting. Use UP/DOWN to select the desired setting and RETURN to confirm the setting and exit.
- **NO HEAT TIME:** set the time frame for not allowing the heater to turn on. • With NO HEAT TIME highlighted, press MENU to enter the NO HEAT TIME setting. In this screen, pressing MENU will move and highlight various fields that can change the setting; use UP/DOWN to change the values and RETURN to confirm the setting and exit.
- **SERVICE MODE:** *only available for Authorized Dealers and Spa Manufacturer.*
- **DEMO MODE:** To demonstrate all device capabilities of the spa. • With DEMO MODE highlighted, press MENU to enter MODE setting. Use UP/DOWN to select the desired setting and RETURN to confirm the setting and exit.
- **GENERAL INFORMATION:** Displays general information for the spa. • With GENERAL INFORMATION highlighted, press MENU to enter the GENERAL INFORMATION menu. Use UP/DOWN to view different pages and information, press RETURN to exit the page. This screen will indicate which plug should be inserted to correct side connector.
- **LANGUAGES:** To select various languages for the spa display. • With LANGUAGES highlighted, press MENU to enter and select a specific language. Use UP/DOWN to select the desired setting and RETURN to confirm the setting and exit.
- **SERENITY MODE:** Set to turn off all outputs and provide quiet while in the spa. • With SERENITY MODE highlighted, press MENU to enter and select a specific time. Use UP/DOWN to select the desired time setting. Press MENU again to navigate to EXIT/START. Select the desired option and RETURN to confirm the setting and exit.
- **ENERGY INTERVAL:** Only available for Non-Circ systems. • With ENERGY INTERVAL highlighted, press MENU to enter the ENERGY INTERVAL setting. Use UP/DOWN to select the desired minutes setting and RETURN to confirm the setting and exit.
- **SILENT TIME (FUNCTIONS PAUSE):** Only available for Non-Circ systems. Set the time frame for no polling during night or other desired periods. • With SILENT TIME highlighted, press MENU to enter the SILENT TIME setting. In this screen, pressing MENU will move and highlight various fields that can change the setting; use UP/DOWN to change the values and RETURN to confirm the setting and exit.
- **CLEANER CYCLE:** Only available for Non-Circ systems. To turn on filtration after using the spa for short cleaning period. • With CLEANER CYCLE highlighted, press MENU to enter and select a specific duration. Use UP/DOWN to select the desired time setting. Press Menu again to navigate to Exit/Start. Select the desired option and RETURN to confirm the setting and exit.
- **BLUETOOTH:** Only available with Bluetooth module in the system. To use the control panel and play music from mobile devices. • With BLUETOOTH highlighted, press MENU to enter BLUETOOTH menu. In this screen, use UP/DOWN to select an option and MENU will execute or enter the selected option. Press RETURN to exit BLUETOOTH menu.
- **RESET WI-FI:** Only available with Wi-Fi module in the system. This is used to reset Wi-Fi module. • With RESET Wi-Fi highlighted, press MENU to enter. Use UP/DOWN to select the desired setting and RETURN to confirm the setting and exit.

## ERROR SCREENS:

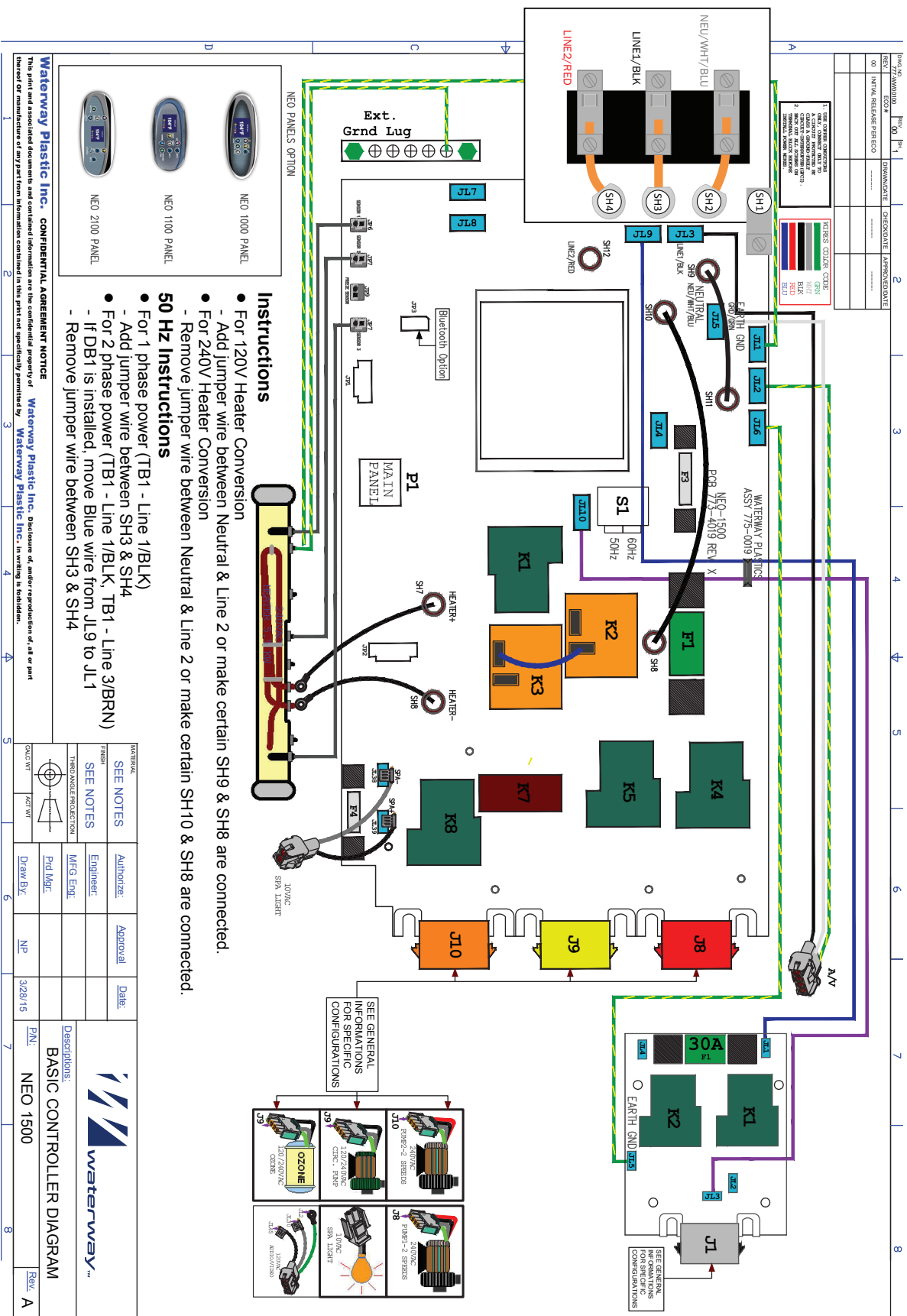
<div><b>Plumbing Error</b></div> <div></div> <div>Press RETURN to clear</div>	<div>Error caused when SENSOR 1 and SENSOR 3 have been plugged in incorrectly. Swap the SENSOR 1 and SENSOR 3 plug in controller to correct this problem.</div> <div>Check SENSOR 1 connection.</div>	<div><b>Sensor 1 Fault</b></div> <div></div> <div>Press RETURN to clear</div>
<div><b>Insufficient Flow</b></div> <div></div> <div>Press RETURN to clear</div>	<div>Error caused by no water flow through heater or no water in heater. Check to be sure there is enough water flow through heater.</div> <div>Check SENSOR 1 connection or replace SENSOR 1.</div>	<div><b>Sensor 1 Fault</b></div> <div></div> <div>Press RETURN to clear</div>
<div><b>Low Flow</b></div> <div></div> <div>Press RETURN to clear</div>	<div>Check to be sure there is enough water flow through heater.</div> <div>Check SENSOR 2 connection.</div>	<div><b>Sensor 2 Fault</b></div> <div></div> <div>Press RETURN to clear</div>
<div><b>Water Overheat</b></div> <div></div> <div>Press RETURN to clear</div>	<div>Wait for water temperature to cool down.</div> <div>Check SENSOR 2 connection or replace SENSOR 2.</div>	<div><b>Sensor 2 Fault</b></div> <div></div> <div>Press RETURN to clear</div>
<div><b>Heater Overheat</b></div> <div></div> <div>Press RETURN to clear</div>	<div>Wait for water temperature to cool down. Check to be sure there is enough water flow through heater.</div> <div>Check SENSOR 3 connection.</div>	<div><b>Sensor 3 Fault</b></div> <div></div> <div>Press RETURN to clear</div>
<div><b>Potential Freeze</b></div> <div></div> <div>Press RETURN to clear</div>	<div>Error caused when SENSOR 1, 2, or 3 detects low temperature. All JETS and BLOWERS will turn on automatically to protect plumbing from freezing. JETS and BLOWERS will shut down when all 3 SENSORS reach a desired temperature.</div> <div>Check SENSOR 3 connection or replace SENSOR 3.</div>	<div><b>Sensor 3 Fault</b></div> <div></div> <div>Press RETURN to clear</div>

## WIRING DIAGRAM: 50hz Conversion





## WIRING DIAGRAM: For 120V Pump, Blower & Ozone & 120V/240V Heater



# NEO 1500

## SPA CONTROL SYSTEM



C: 70.00  
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