# **INSTRUCTION MANUAL**









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# 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!

- $\bullet$  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 verifier l'efficacite du disjoncteur differentiel avant d'utiliser le bain.
- Lire la notice technique.
- Lorsque l'appareillage est installe dans une fosse, on doit assurer un drainage adequat.
- Employer uniquement a l'interieur d'une cloture CSA Enclosure 3.
- Connecter uniquement a un circuit protege par un disjoncteur differentiel de Class A.
- Afin d'assurer une protection permanente contre le danger de shock electrique, lors de l'entretien employer seulement des pieces de rechange identiques.
- Les prises d'aspiration doivent etre equipees de grilles convenant au debit maximal indique.

#### **ADVERTISSEMENT!**

- Des temperatures de l'eau superieures a 38°C peuvent presenter un danger pour la sante.
- Deconnecter du circuit d'alimentation electrique avant l'entretien. Garder la porte fermer.

# MARNING! 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. For Warranty questions or claims please contact point of purchase.

# NEO TP500 OPERATION



# **PRIMING MODE:**

When power is ON, the system will enter Priming Mode. In this mode, all devices such as JETS, BLOWERS or LIGHT 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 Circle icon is tapped, or after 4 minutes of inactivity.

# **SPA OPERATION:**

Turn system accessories ON and OFF by the tapping appropriate icon on the left side of panel (LIGHT, JET 1 SPEED, BLOWER, JET 2...) These accessories have timeout defaults from the manufacturer and will turn OFF automatically after the time has expired. Default timeout for LIGHT is 60 minutes; BLOWER is 15 minutes; JET at low speed is 60 minutes; and JET at high speed is 15 minutes. Users can change these times in "DEVICE TIMEOUT" setting menu.

# **SETTING TEMPERATURE:**

To change the water set temperature, tap the smaller temperature number and scroll to the desired temperature. Tap SELECT icon to choose temperature or EXIT to return to Main Screen. Changing the set temperature will make the Heater Pump turn on to get an accurate water temperature and to determine if the water needs to be heated up.

### **HEATER:**

When the Heater Pump turns on the HEATER START-UP icon will appear if heat is needed. The heater will turn on and HEATER icon will appear after 5 minutes.

# PANEL TIMEOUT:

If a user is in the Setting Menus and no icon is tapped within 60 seconds, the screen will timeout, current screen setting will be lost and the panel reverts back to the Main Screen. In Main Screen, if no icon is tapped within 60 seconds, all LED and LCD lights will turn off and the panel will go to sleep. Tap the screen to wake the panel, LED and LCD lights will turn back on and the panel will poll for water temperature.

### **MENU NAVIGATION:**

- To enter settings, swipe from right to left from Main Screen.
- To return to Main Screen from settings, swipe from left to right.

# MAIN SCREEN CONTROL ICONS



# **STATUS ICONS**



\*For specific Swim, Workout or Therapy applications only, not available on all systems.

# **NEOTP500 MAIN SCREEN CONTROL**

The Main Screen displays current time, water temperature, spa setting temperature, and status of the system accessories in the center of the screen. To change spa set temperature, tap the spa set temperature number. Select the appropriate temperature level and tap SAVE to save the desired setting or EXIT to reverse back to the last setting without saving the setting.

**NOTE:** For configurations with Swim Spa and/or Therapy, turn OFF Swim mode or Therapy mode in order to adjust the Set Temperature.

When Swim Spa and/or Therapy is ON, instead of the current temperature, it will display the current speed/therapy number. In this case, tap the number to change the swim speed/therapy number. Select the appropriate speed/therapy number and tap SAVE to save the desired setting or EXIT to reverse back to the last setting without saving the setting.

#### See MAIN SCREEN CONTROL & STATUS ICONS page 4.

The left side of the screen shows all device icons available for the current configuration. Turn system accessories ON and OFF by tapping the appropriate icon on the left 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 for LIGHT is 60 minutes; BLOWER is 15 minutes; JET at low speed is 60 minutes; and JET at high speed is 15 minutes. Users can change these times in DEVICE TIMEOUT setting menu.



MUSIC: Tap this icon to control music from your Bluetooth device.

In order to play media from a Bluetooth device to a Spa with a NEO 2100 & Bluetooth module:

- Open the Bluetooth settings for your device (phone, tablet, computer).
- Connect your device (phone, tablet, computer) to the 'HotTub- ...' Bluetooth device.
- On your paired device (phone, tablet, computer), select the music or video that you would like to play.
- · Select the 'Music/Bluetooth' icon on the Home screen of the TP500 to control playback of your device.

NOTE: If you do not see your HotTub-... listed, turn the Breaker to Spa Off for one minute, then on again.

Selecting the 🍂 icon will open the Bluetooth Music App.



Opens the Volume Control to adjust Volume

Selects the Previous song if a play list is being played.

Play or Pause the current song.



Disconnect the paired Bluetooth device.

Connect the paired Bluetooth device.





MENU NAVIGATION: Swipe Main Screen from right to left to go to Setting Screen. In Setting Screen swipe from left to right to return to Main Screen. To change the setting, tap the appropriate icons to enter the sub-menu and change the setting.



After changing a setting tap **SAVE** icon to save the setting.

Tap **RETURN** icon to go back to the previous screen.

Tap **HOME** icon to go back to the Main Screen.

# **NEOTP500 SETTING SCREENS**





**GENERAL SETTINGS:** This will allow user to change the following settings:

**DEGREE F/C:** displays spa temperature in Celsius or Fahrenheit. This option is only available for 60 Hz countries. **TIME DISPLAY:** displays spa time in 12 hours, AM/PM or 24 hours time.

LANGUAGE: Select from: English, Spanish, French, German, Norwegian or Italian.

DEVICE TIMEOUT: Change timeout setting for: Light/Option, Pump High, or Pump Low.

**WATER TEMPERATURE CHECK TIME:** Sets how frequently the Spa checks the water temperature (Poll Time). Non-Circ configurations only.

SET SYSTEM PASSWORD: Set the password to lock the screen.



DATE-TIME SETTING: sets the date and time of the system.



HEAT MODE SETTING: sets the system heat mode to Standard; Energy Saving; or Vacation mode



**PANEL LOCK SETTING:** provides various choices to lock the panel. If one of the Lock Mode is selected, the main panel will display the selected Lock Mode instead of "Spa Set Temperature". To unlock the panel enter "0000" at the pop-up panel Lock screen, unless a custom code has been entered, then that will be used.



TIMERS SETTING: set the following timers:

NO HEATING TIME: sets the time for NOT allowing heater to turn on for saving energy cost.

FILTER CYCLE 1 TIME: sets the time to turn on Filter Cycle number 1.

FILTER CYCLE 2 TIME: sets the time to turn on Filter Cycle number 2.

FILTER CYCLE 3 TIME: sets the time to turn on Filter Cycle number 3.

FILTER CYCLE 4 TIME: sets the time to turn on Filter Cycle number 4.

**QUIET TIME:** sets the time for NOT allowing pump to turn on to check for water temperature during the night or other desired periods. Note that this setting will not stop Filter Cycle setting if it overlaps with this time. This only available for Non-Circ configurations.

OPTION TIME: sets the time to turn on Option device. This only available for configurations with Option device.

**SWIM WORKOUT TIME**\*: sets the time period for each of the swim speeds in Swim Workout \*For specific Swim applications only, not available on all systems.

# **NEOTP500 SETTING SCREENS** (continued)



BACKGROUND SETTING: allows user to set one of the 6 backgrounds for the spa application



**CLEANER CYCLE SETTING:** sets the duration and starts the additional filtration period after using the spa. Only available for Non-Circs configurations.



**GENERAL INFORMATION:** displays Panel Version, Controller Version, Configuration, and pump connections. Please have this information ready for technical calls.



**SPECIAL TEMPERATURE SELECTION:** allows the user to temporarily set the spa to higher than maximum set temperature for Therapy.



SERENITY MODE: Start/Stop Serenity Mode by turning off all outputs and provides quite time while in the spa. Duration is set when this mode is selected.



DEMO MODE: starts Demo Mode to demonstrate all device capabilities of the spa.



**SERVICE MODE:** available only for Authorized Dealers and Spa Manufacturer. Please contact your Dealer or Spa Manufacturer for additional information or support.



SYSTEM SETTING: set system settings such as Wi-Fi connection, font size, and other aspects of the Android system.



MOBILE APP DEVICE REGISTRATION: allows registration of the system so users can operate the spa with the Spa Mobile App.

### ERROR CODES (Shown on top of Main Menu screen)

Sensor 1 Open: Check SENSOR 1 connection.

Sensor 1 Short: Check SENSOR 1 connection or replace SENSOR 1.

Sensor 2 Open: Check SENSOR 2 connection.

Sensor 2 Short: Check SENSOR 2 connection or replace SENSOR 2.

Sensor 3 Open: Check SENSOR 3 connection.

Sensor 3 Short: Check SENSOR 3 connection or replace SENSOR 3.

**PLUMBING ERROR:** Error caused when SENSOR 1 and SENSOR 3 have been plugged in incorrectly. Swap the SENSOR 1 (JP6) and SENSOR 3 (JP8) plugs in the controller to correct this problem.

**INSUFFICIENT FLOW:** Error caused by no water flow through heater or no water in heater. Check to be sure there is enough water flow through heater.

LOW FLOW: Check to be sure there is enough water flow through heater.

WATER OVERHEAT: Wait for water temperature to cool down.

HEATER OVERHEAT: Wait for water temperature to cool down. Check to be sure there is enough water flow through heater.

**POTENTIAL FREEZE:** 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.

# THERAPY SPA WITH VARIABLE SPEED PUMPS

The TP500 operates and programs your spa. The basic function icons are described below.

# **SPA FUNCTION ICONS**



**JET 1 (SPEED) ICON:** Tap the white JET 1 icon once to turn Therapy Pump 1 on. Jet 1 will run at 40% speed (default setting low), and the yellow jet low icon will appear on the display. If left running, the current speed will be displayed for 15 seconds. Tap the number on the screen to change the JET 1 speed, scroll to the desired speed and tap SAVE to save the setting, or EXIT to reverse without saving.

Wait for several seconds for JET 1 to reach the desired speed. Any time the display shows speed, tap the number, scroll to the desired speed, and SAVE the new setting or EXIT to maintain the previous pump speed. When the display shows the water temperature tap the JET 1 icon, and the speed will appear on the display.

When the spa is in HEAT MODE (heater is on), the speed cannot be set below 40%. When the spa is in FILTRATION MODE the speed can be set between 0-99%. The orange jet high icon appears on the display when the pump speed is equal to or exceeds 50%. The yellow jet low icon appears on the display when the pump speed is below 50%. To stop the pump, tap the JET 1 icon when the speed number is displayed. If the spa is in a filter cycle, JET 1 pump speed will change to a preset filter cycle speed.



JET 2 (2-SPEED PUMP 2) ICON: Tap the white JET 2 icon once to run JET 2 on low. Tap a second time for high, and a third time for off. The Icon will change color to yellow for low speed and to orange for high speed. If left running, low speed turns off after 60 minutes and high speed turns off after 15 minutes. Users can change these default times in "General Setting"/"Device Timeout" Setting Screen.



**JET 1 (THERAPY) ICON:** Tap the white JET 1 THERAPY icon once to turn on JET 1 (VS) to one of 18 preprogrammed therapy cycles (therapy number). The duration of each cycle is 15 minutes and will automatically turn off at the end of the cycle. Each therapy cycle is unique and simulates a different type of massage therapy. To change the therapy number tap the yellow number under JET 1 THERAPY. Scroll to the desired therapy number (1-18) and tap SAVE, or EXIT to maintain previous therapy setting. The heater will turn off while the spa is in Therapy mode.



**LIGHT ICON:** Tap the white LIGHT icon to turn the spa light on; the LIGHT icon will change color to yellow. Choose from: Red, Green, Blue, Magenta, White, Slow Color Wheel, Fast Color Wheel, and Strobe. Tapping one of these options will turn the light to the selected mode. The light will automatically turn off after 60 minutes. Users can change the default times in "General Setting"/"Device Timeout" setting Menu.

**SEAT CONTROL PANEL OPERATION (AUXILIARY PANEL):** For spas equipped with therapy variable speed pump. The pump is dedicated to one or two hot tub seats and a seat equipped with the seat control panel. The panel has 4 buttons and a display: "Up", "Down", "Speed", & "Therapy". • To adjust the pump speed press the "Speed" button; the display will show the current speed, then press the "Up" or "Down" button to set the desired speed. The Display will show the new speed. Speeds range from 0-99%. • To switch to Therapy mode press the "Therapy" button. The display will show a "Therapy Number" between 1 and 18. To change the "Therapy Number" press the "Up" or "Down" button to choose the desired "Therapy Number". The pump will start immediately and provide the selected therapy cycle. The duration of each cycle is 15 minutes.

**SPA CIRCULATION AND FILTRATION:** Your system is equipped with a variable speed pump. JET 1 provides continuous water circulation, filtration and sanitation. A dedicated, high performance variable speed pump running on low speed constantly draws water from the spa filter, runs it through the heater (heating only when necessary), and moves water back to the spa. The ozone output is on when JET 1 is running in filter mode. The ozone will turn off for one hour if a user taps any button on the top side panel (spa in use). See filter cycle setting (1-4) in TP500 setting screen.

NOTE: Using variable speed technology significantly increases spa efficiency, and setting pump speed to the lowest level can save money. Please be careful when choosing pump speed in filtration cycles, if it is set too low it can interrupt water filtration (skimming). We do not recommend setting pump speed to less than 30% in filtration cycles.

**HEATER OPERATION:** Your spa is equipped with an electrical heater. By setting your thermostat to the desired temperature, your heater will automatically turn on and off as needed. The temperature set point (Set Temperature) can be adjusted from 60°F to 104°F/15.5°C to 40°C. To change the water Set Temperature tap the temperature number and scroll to your desired temperature. Tap the SELECT button to save the setting, or EXIT to return to the Main screen. Changing the Set Temperature will make JET 1 turn on (if it was off) to get an accurate temperature reading and determine if the water needs to be heated. The startup temperature is set at 100°F/37.5°C. The last measured temperature is constantly displayed on the screen. The heater is off when JET 1 is running in "Therapy" mode.

# SPA FUNCTION ICONS (continued)

**FILTER CYCLE PROGRAMMING:** At the start of Filter Cycles 1-4 the VS JET 1 will run on 40% speed, JET 2 (2-speed pump) will run on low for 15 seconds to prevent the spa water from becoming stagnant in the plumbing and air lines and to improve skimming action (removing debris and suspensions from the water surface). Your spa is programmed from the factory with these defaults: Filter Cycle 1 is automatically activated at 8 a.m. and operates JET 1 for 4 hours. Filter Cycle 2 is automatically activated at 8 p.m. and operates Jet 1 for 4 hours. Filter Cycle 2 icons will turn on when that filter cycle is running. The default setting is every day of the week. If the duration for Filter Cycles 3 or 4 are set to 0 hours these cycles will skipped. See details of FILTER CYCLES setting in "Setting Screen" section.

**OZONE SYSTEM:** Your spa is equipped with an ozone purification system. You will find that your spa water stays fresh and clear with significantly less chemical usage. You will be able to go longer between complete spa draining. The ozone generator operates in conjunction with the JET 1 Filtration Cycle. Ozone is on when JET 1 is in filtration mode. Ozone will turn off for one hour if user taps any icon on the top side panel (spa in use).

**SPA CONTROL POWER LIMITATIONS:** The spa is protected by a 60A GFCI (maximum spa load should not exceed 48 Amps). The spa control deactivates the heater if maximum load exceeds 48A. The spa control allows only three high speed pumps (14A per pump) to run at the same time. The spa control will not heat when more than two pumps are running on high speed.

**SPECIAL OPERATING INSTRUCTIONS:** For spas equipped with waterfall features. Turn on waterfall features by pressing the "Jet 2" icon (2-speed pump) on top side panel turn "on/off" water feature valve located on the lip of the spa and adjust water flow as desired. Please adjust the water flow when the pump is running on high speed to prevent water splashing.



### **TVSP THERAPY CYCLES**

# **NEO TP500 WI-FI OPERATING INSTRUCTIONS**





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- **1** Touch the glass panel to start up the display.
- 2. Make sure your Touch Screen panel is connected to your home Wifi and you have a good signal. On the main screen, swipe to the left and tap the Wi-Fi Remote Control Icon.
- **3.** Type your email address and password (any combination of letters and numbers). Tap Create Account.

**4.** Tap Register.







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|-----|---------------------|----------|----------|--|--|--|
|     |                     |          |          |  |  |  |
|     | Spa Set Temperature |          |          |  |  |  |
|     | 66°F                |          |          |  |  |  |
|     |                     |          |          |  |  |  |
|     | 67°F                |          |          |  |  |  |
|     | 68°F                |          |          |  |  |  |
|     | 51/17               | 0.11/5   |          |  |  |  |
|     | EXII                | SAVE     |          |  |  |  |
|     |                     |          |          |  |  |  |
|     |                     |          |          |  |  |  |
|     |                     |          |          |  |  |  |
|     |                     |          |          |  |  |  |
|     |                     |          |          |  |  |  |
| SPA | CONTROL             | PANELS   | SETTINGS |  |  |  |
|     | CONTINUE            |          |          |  |  |  |





- 7. The Light, Jets, and Blower can be turned on and off. Select **'Spa Set** Temperature' to adjust the set temp.
- **8.** Swipe up or down to adjust the temperature.

EXIT to go back or

SAVE to save the setting.

- **9.** If a multicolor light is installed, select Light, then choose a color and **SAVE**.
- **10.** Select  $\equiv$  to view Device Settings.
- **11.** Select General Information to view the NEO Configuration.



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| TEMPERATURE<br>SETTING    |  |  |  |  |
|---------------------------|--|--|--|--|
| Display in Fahrenheit 🛛 💭 |  |  |  |  |
| Display in Celsius        |  |  |  |  |
|                           |  |  |  |  |
|                           |  |  |  |  |
|                           |  |  |  |  |
|                           |  |  |  |  |
|                           |  |  |  |  |





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| GENERAL<br>SETTINGS            |     |  |  |  |  |
|--------------------------------|-----|--|--|--|--|
| Degree F/C                     | >   |  |  |  |  |
| Time Display                   | >   |  |  |  |  |
| Device Timeout                 | >   |  |  |  |  |
| Water Temperature Chec<br>Time | k 🗲 |  |  |  |  |
| •                              | •   |  |  |  |  |
| 14                             |     |  |  |  |  |

- **12.** Select **Panel Settings** to display the settings for the NEO.
- **13.** Select **General Info** to display information about the NEO controller.
- **14.** Select **General Settings** to display the options listed.
- **15.** Select **Degree F/C** to choose between Fahrenheit or Celsius.
- **16.** Select **Time Display** to choose between 12 hours (AM/PM) or 24 hours.











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**27.** Each filter cycle can be customized. By default; Filter Cycle 1 = 8:00 am, 2 hrs and Filter Cycle 2 = 8:00 pm, 2 hrs.

- **28.** Select **Quiet Timer** to set the times that the NEO will not run pumps.
- **29.** Select **Serenity Mode** to temporarily stop pumps from running.
- **30.** Swiping to the right displays **Cleaner Cycle** and **Update System.**



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- **31.** Select **Cleaner Cycle** to set the number of minutes for the cycle to run. **START** will start the cycle.
- **32.** Select **Update System** to update the App if the Configuration has been changed on the NEO.
- **33.** The **WRENCH** icon displays account settings for the App.

# WIRING DIAGRAM 777-WW00800 50 Hz with DB2 Daughter Board

