

PANEL MODEL: ML551-4 JETS



SYSTEM MODEL: NANSWGL2



When your spa is first actuated, after displaying some configuration information, it will go into Priming mode, Displays "Pr" on the Temp Display, Heating is Disabled, Automatic Functions Do Not Turn On.

The Priming mode will last for 4 minutes, and then the heater will start to heat the spa and maintain the water temperature in the Standard mode. You can exit priming mode by pressing "Temp".



Temp up and down Button(26°C-40°C)

After Manual or Automatic Exit ,Set Temp will be momentarily displayed, followed by "----" ,on the Temp Display .After 2 minutes of water flow, actual water temp will be displayed and heater will turn on if the heater is required .The last measured temperature is constantly displayed on the LCD .

Note: The last measured spa temperature displayed is current only when the pump has been running for at least 2 minutes .

Press the "Warm/Cool" button once to display the set temperature. To change the set temperature, press the "Warm/Cool" button a second time before the LCD stops flashing. Each press of the "Warm" button will continue to raise the set temperature, Each press of the "Cool" button will continue to lower the set temperature; The set temperature will increase or decrease by 0.5°C between (26°C-40°C). After 3 seconds, the LCD will automatically display the last measured spa temperature. If heating is required, within a few seconds, the "Heat" LED will illuminate for 6.5 sec, then flicker for 90 sec, and then remain on until the Set Temperature is achieved.



Jets1 Button

Press the "Jets1" button once to turn Jet Pump 1 on, press a second time to turn Jet Pump 1 off. A built in timer will turn the Jet Pumps off after 15mins, unless they have been turned off manually.

For 2-speed pumps, press the "Jets" button once to start the pump in low speed. Press the "Jets" button again to change to high speed. Press the "Jets1" button again to turn off the pump.

When a "Jets1" button is pushed the pump runs for 15 minutes. This duration is a safety feature of the spa. It is not recommended to be submerged in a spa for more than 15 minutes. After 15 minutes, exit or use the cool down seat to regulate body temperature.



Jets2 Button

Press the "Jets2" button once to turn Jet Pump 2 on, press a second time to turn Jet Pump 2 off. A built in timer will turn the Jet Pumps off after 15mins, unless they have been turned off manually.



Jets3 Button

Press the "Jets3" button once to turn Jet Pump 3 on, press a second time to turn Jet Pump 3 off. A built in timer will turn the Jet Pumps off after 15mins, unless they have been turned off manually.



Jets4/Blower Button(Optional based on model)

Press the "Jets4" button once to turn Jet Pump 4 / blower on, press a second time to turn Jet Pump 4 / blower off. A built in timer will turn the Jet Pumps off after 15mins, unless they have been turned off manually.



Light Button

Press the button to turn the Spa Light on/off. If left on, the Light automatically turns off after 4 hours. If perimeter LED lighting is fitted, then it is operated via same button.



Mode Button

This button is used to switch between standard, economy, and sleep modes. Press "Mode" to enter mode programming, press "Cool" to cycle through to desired mode (LCD flashes until confirmed), then press "Mode" to confirm selection.

Standard Mode is programmed to maintain the desired temperature (heating on demand). Note that the last measured spa temperature displayed is current only when either Jet Pump has been running for at least 2 minutes. 'St' will be displayed momentarily when you switch to Standard Mode.

Economy Mode is programmed to heat the spa to the set temperature only during 'F' (Filtration) cycles. 'Ec' will display solid when temperature is not

current, and will alternate with temperature when temperature is current.

Sleep Mode heats the spa to within approximately 11°C of the set temperature, only during 'F' (Filtration) cycles. 'SL' will display solid when temperature is not current, and will alternate with temperature when temperature is current.

'Slp" or 'SL' and the current water temperature alternate on the Topside Console display until a temperature within 20°F (12°C) of the set temperature is achieved.

For example: A spa controller in Sleep Mode with a set temperature of 104°F (40°C) and a current water temperature of 83°F (28°C) will turn on the Heater when the Filtration Cycle begins and the heater will stay on until the water temperature reaches 84°F (29C).

The lowest temperature a spa will reach in Sleep Mode is 60°F (15.5°C).

SPA MODES AND ENERGY USAGE

Understanding Spa Modes helps control energy usage of the spa. The heater is the component of the spa that consumes the most energy. Utilizing Spa Modes and the Spa Cover are the best ways to control energy costs.

Default Factory Settings:

- Internal clock begins when power to the spa is turned on
- 2- hour Filtration Cycle duration every 12 hours
- 100°F (38°C) spa temperature
- Standard Mode (Std or St)

All factory settings can be changed except the internal clock. If power is lost to the spa for more than 10 seconds, settings will return to the Default Factory Settings when power is reestablished.

Circulation Pump(Optional based on model)

The circulation pump will come on when the system is checking temperature (polling), during filter cycles, during heating, during freeze conditions, or when the blower or another pump is on.

Setting 'F' (Filtration) Cycles

The circulation pump and Ozone generator(Optional for some models) will run during filtration. At the start of each filter cycle, pump 1, pump 2, and blower will run at the same time, after 30 seconds, the blower off, and pump 1 & 2 will stop after 5 minutes.

The first filter cycle begins approximately 6 minutes after the spa is

energised. The second filter cycle begins 12 hours later. Filter duration is programmable for 2,4,6,8 or 12 hours (indicated by 'FC'). The default time is 2 hours. The clock for the Filtration Cycle starts when the power is turned on to the spa. For example: If power to the spa is turned on at 8:00am, 6 minutes later, a 2-hour Filtration Cycle begins. At 8:00pm, 12 hours later, the next 2-hour Filtration Cycle begins. The cycle repeats as long as the spa has power. The Spa Mode does not effect the Filtration Cycle. In many areas, electric companies charge a peak usage rate. Contact the power company to determine the time of day when the cost of power is the least expensive. Turn on the power to the spa at the appropriate time to take advantage of the best rate and lower energy costs. you can vary the duration of the Filtration Cycle based on use and water balance.

If the circulation pump is used, then the purpose of the filtration cycles are only to conduct heating in SL and Ec Modes. At the beginning of each filter cycle, the Jet Pumps purge for 5 minutes.

Step 1: Press  button and then

Step 2: Press  button

Step 3: Either

F2–2 hours x 2 times per day

F4–4 hours x 2 times per day

F6–6 hours x 2 times per day

F8–8 hours x 2 times per day

F12–12 hours x 2 times per day – FC (Filter Continuously)

Will be displayed on LCD Screen

Step 4: Press  button again to change 'F' cycle hours

Step 5: Press  button once you have selected the desired 'F' Mode

Step 6: Either

"dn"(both "day" and "night" cycles) will show on display

"d"("day" cycle only)

"n"("night" cycle only)

will show on display

Step 7: Press  button to select

Step 8: Press  to exit the programming mode



Caution

Long and/or numerous filter cycles could cause overheating of the spa, especially in hot climates.

Freeze Protection Mode

If the temperature sensors detect a drop of water temperature to approximately 6.7°C, then the circulation pump will automatically activate to provide freeze protection. The pump stays on for 4 minutes after the temperature sensors detect a rise of 0.5°C in water temperature.

AIR CONTROL VALVE OPERATION

Air Control Valves are located around the top rail of the spa. When the air control valves are turned open, air is drawn through the jets by venturi action and mixed with water creating hydrotherapy action.

To open Air Control Valves, turn valve clockwise and turn valve counter-clockwise to close.

JET OPERATIONS

Variable Jet control allows water flow from jets to be controlled by turning the jet face in a clockwise direction. Jets do not turn off completely, but flow from the jets is reduced.

The spa does not contain a Diverter Valve or Diverter Jet; all jets operate when the Pump controlling them is turned on. To increase water flow from specific jets, completely open those jets and reduce flow from jets not being used.

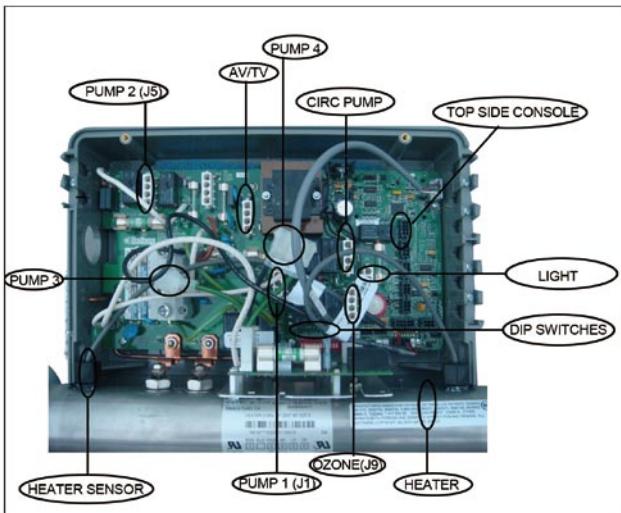
OZONE GENERATOR UNIT OPERATION (Optional equipment based on model)

The operation and function of the Ozone Generation Unit is automatically controlled by the Spa Controller. Adjustments can not be made to the control of this unit.

The Ozone Generation Unit operates only during a Filtration Cycle. To verify the Ozone Generation Unit is operating, use the following procedure:

- Spa must be filled and operational.
- Spa must be in a Filtration Cycle.
- Locate and remove Equipment Bay Access Panel.
- Locate Ozone Generation Unit with small hose attached and verify the LED Indicator light is on or a light is emitting from inside the unit.
- Replace the Equipment Bay Access Panel.

SYSTEM NANSWGGL2(SWIMMING SPA)

**WARING:**

Setting DIP switches incorrectly may cause abnormal system behavior and/or damage to system components.

DIP Switchbank A Key

- 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.
- A10 When switched ON when spa is on, system will enter the Edit Menu Four Configuration Settings. Do not start spa with A10 turned on or CFE* error will occur
- A11 In "ON" position, enables Special Amperage Rule, see "SA" in Software Configuration section for functionality with your system
In "OFF" position, disables Special Amperage Rule
- A12 Persistent memory reset (used when spa is powering up) See "Persistent Memory and Powering Up" page.

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.

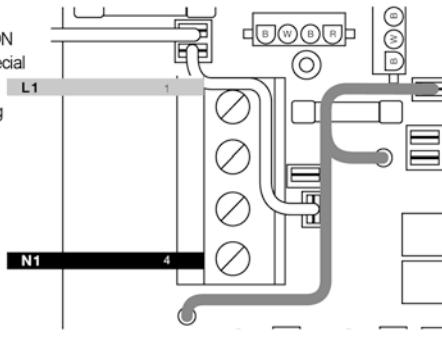
Note: A2/A3/A4 all off = No heat with any high-speed pump or blower.

SINGLE SERVICE (1 x 32 Amp)

This option is configured and shipped as the default.

- For 1 x 32 Amp Service:
Set DIP Switch A2, A3, A4 ON
DIP Switch A11 must be ON if using Special Amperage Rule

DIP Switch A11 must be OFF if not using Special Amperage Rule



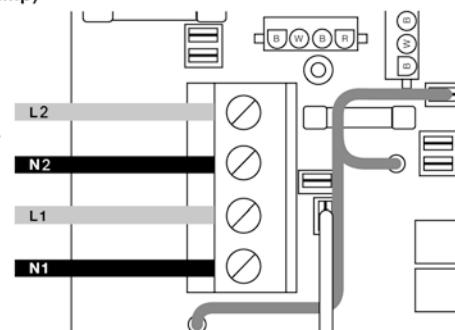
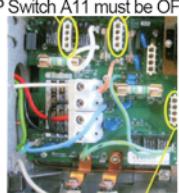
DUAL SERVICE (2 x 16 Amp)

Completely remove the white wire from J26 and J32.

Note: J32 and J23 are electrically identical. The white wire may be attached to either terminal before removal.

DIP Switch A2A3A4 must be OFF

DIP Switch A11 must be OFF



3-Phase Service Option

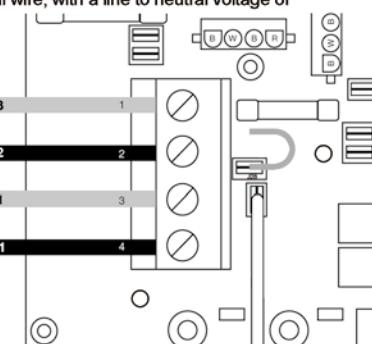
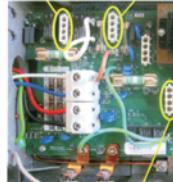
IMPORTANT - Service MUST include a neutral wire, with a line to neutral voltage of 230VAC. (DIP Switch A2 must be ON)

Completely remove the white wire from J26 and J32; the blue wire from J28 and J57; Move the brown wire from J23 or J32 to J28.

Note: J57, J58 and J59 are electrically identical. The blue wire may be attached to any of these terminals before removal.

DIP Switch A2 A3 A4 must be OFF

DIP Switch A11 must be OFF



OWNER'S MANUAL

MESSAGE	MEANING	ACTION REQUIRED
	No message on display. Power has been cut off to spa	The control panel will be disabled until power is reestablished. Based on spa controller configuration will return to Factory Default Settings.
--	Temperature unknown	After the Pump has been running 2 minutes, the current water temperature will be displayed.
HH/OHH	"Overheat" The spa has shut down. One of the sensors has detected that the spa water is 110°F/43.3°C or higher.	DO NOT ENTER THE WATER. Remove Spa Cover and allow water to cool. Once the Heater has cooled, press any button to reset. If spa does not reset, shut off power to the spa and contact the dealer.
OH/OHH	"Overheat" The spa has shut down. One of the sensors has detected that the spa water is 110°F/43.3°C	DO NOT ENTER THE WATER. Remove spa cover and allow water to cool. At 107°F/41°C, the spa should automatically reset. If spa does not reset, shut off power to the spa and call your dealer.
SA/SnA	Spa is shut down. The sensor that is plugged into Sensor "A" jack is not working.	If problem persists, contact the dealer. (May appear temporarily in an overheat condition).
Sb/Snb	Spa is shut down. The sensor that is plugged into Sensor "B" jack is not working.	If problem persists, contact the dealer. (May appear temporarily in an overheat condition).
Sn/Sns	Sensors are out of balance. If alternating with spa temperature, it may be a temporary condition. If flashing by itself, spa is shut down.	If problem persists, contact the dealer. (May appear temporarily in an overheat condition).
HL/HFL	A significant difference between temperature sensors has been detected. This could indicate a flow problem.	If the water level is normal, make sure all pumps have been primed and no Air Lock exists. If problem persists, contact the dealer.

MESSAGE	MEANING	ACTION REQUIRED
LF	Persistent low flow problems. (Display on the fifth occurrence of HL/HFL message with in 24 hours.) Heater is shut down, but other spa functions continue to operate.	Follow action required for HL/HFL message. Heating capability of the spa will not reset automatically; Press any button to reset.
dr	Possible inadequate water, poor flow or air bubbles detected in the heater. Spa is shut down for 15 minutes.	If the water level is normal, make sure all pumps have been primed and no Air Lock exists. This message will reset within 15 minutes. If problem persists, contact the dealer.
dy	Inadequate water detected in heater. (Displays on third occurrence of dr message). Spa is shut down.	Follow action required for dr message. Spa will not reset automatically; Press any button to reset.
IC/ICE	"Ice" Potential freeze condition detected.	No action required. All equipment will automatically activate regardless of spa status. The equipment stays on 4 minutes after sensors detect that the spa temperature has risen to 45°F/7.2°C or higher.
EC/ECN	Spa is in Economy Mode	See Spa Modes section
SL/SLP	Spa is in Sleep Mode	See Spa Modes section

AIR LOCK RELEASE



If initial non starting or error messages HL, LF, dr & dy, these error warnings normally indicate "air lock". Do as below to release "air lock": turning off the power supply, undoing the highest pump coupling on the circ pump two turns by a large wrench, until you hear air escape(some water also escapes), and gently shaking the pipe or hose attached to the pump until any air pocket has escaped from the pump. Retighten the pump collar and repeat start up procedure.

NOTE: DO NOT COMPLETELY REMOVE PUMP COLLAR!