PORTABLE HOT TUB
USER MANUAL

SUN WAVE SPAS

OPERATING INSTRUCTIONS
& MAINTENANCE GUIDELINES

PROUDLY
MADE IN

THE USA

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IMPORTANT HOT TUB OWNER INFORMATION

Sunwave Hot Tubs utilizes the latest in technology to provide you with a hot tub of the highest quality that is easy to maintain. It is imperative that you read all of the information provided in your homeowner's manual and maintain your hot tub utilizing the correct chemicals and maintenance schedule.

The spa surface is made of Lucite Acrylic and must be protected from direct sunlight by use of the spa cover provided. Exposure of the spa surface and fittings to direct sunlight or ultraviolet rays may cause damage to the spa's surface. Exposure will void warranty to the spa surface and to the fittings. Sunwave Hot Tubs Installation Requirements must be met by the homeowner including slab and electrical requirements. Any deviation from the Installation Requirements will result in void of warranty.

Sunwave Hot Tubs strives to provide the best possible hot tub for your use therefore modifications and enhancements to the hot tub, mechanics, equipment, and structure may be made which effect the specifications, illustrations, and/or instructions within this manual.

Sunwave Hot Tubs meet all requirements and regulations of ETL laboratories. Sunwave Hot Tubs ETL listing is 9901934 and conforms to UL STD 1563 of Electric Hot Tubs, Spas and Associated Equipment.

Further information may be requested from Sunwave Hot Tubs, 3924 Dunvale Rd. Houston, TX 77063.

IMPORTANT HOT TUB SAFETY INFORMATION

RISK OF ACCIDENTAL DROWNING - Extreme caution must be used exercised at all times to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use the hot tub unless they are closely supervised at all times.

DANGER - To reduce the risk of injury, do not remove the suction fittings. Never operate a hot tub if the suction fittings are broken or missing. Never replace a suction fitting with one rated less than the flow rate marked on the equipment assembly.

DANGER - Risk of electrical shock. Install at least 5 feet (1.5m) from all metal surfaces. Do not permit any appliance such as a radio, television, or light within 5 feet (1.5m) of the hot tub. Install at least 5 feet (1.5m) from inside wall of hot tub using non-metallic plumbing.

TO REDUCE THE RISK OF INJURY -

- The water in the hot tub should never exceed 104 F (40 C). Water temperatures between 100 F (38 C) and 104 F (40 C) are considered safe for a healthy adult. Lower water temperatures are recommended for younger children and anytime hot tub use exceeds 10 minutes.

- Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possible pregnant women should limit spa water temperatures to 100 F (38C).

- Before entering a hot tub, the user should measure the water temperature with an accurate thermometer since the tolerance of water temperature regulating devices varies.

- The use of alcohol, drugs or medication before or during hot tub use may lead to unconsciousness with the possibility of drowning.

- Obese persons and persons with a history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a hot tub.

FOR EQUIPMENT ASSEMBLIES WITH A GAS HEATER - Risk of suffocation. On hot tubs with a gas heater the heater must be placed outside unless proper ventilation can be provided for an indoor installation.
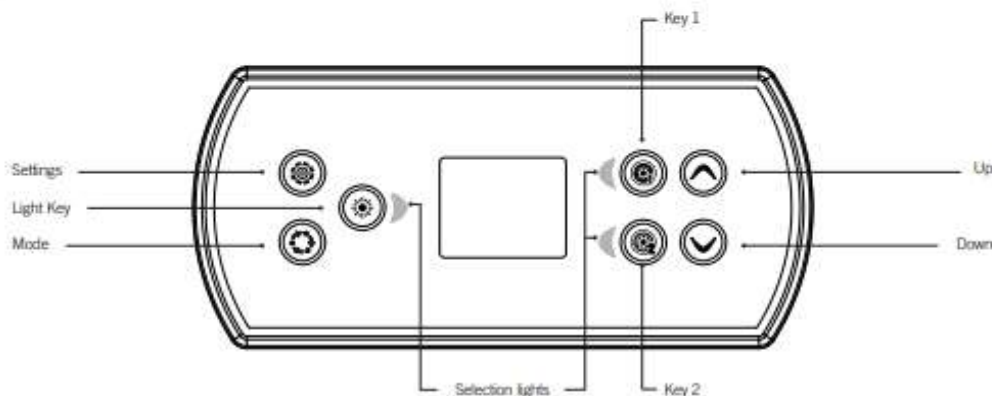
SAVE THESE INSTRUCTIONS!

in.k500
intuitive color keypad

The in.k500 is built with all the great features you've come to love in the in.k800, but in a smaller package. It is discreet, compact, and unobtrusively beautiful. Save space without losing out on function.

Description

Settings — Light Key — Mode — Selection lights — Key 1 — Key 2 — Up — Down

*Functions for keys 1 and 2 will depend on your system's low level configuration.

Main functions

Settings key

One press gives you access to a menu to manage the settings of your spa. Refer to the settings section for details about the settings menu.

Main screen

The main screen gives you access to your accessories and water temperature. At the bottom of the screen you will see any error or maintenance messages that are present.

Power

Press any button to turn the keypad on. After 30 minutes without activity it will shut off.

Start or stop accessories

To start or stop an accessory, press the associated button. Icons will become animated when their accessory is turned on, and inanimate when turned off. Icons on the screen will reflect the speed or state of the devices running on your spa.

When an accessory has more than two states, press the button until it reaches the desired state.

Note (version 14.00 and higher): A special buttons and icons mapping may be used when the spa configuration has 4 accessories* (3 pumps and a blower or 4 pumps and no blower). In this case only, buttons and icons are divided in 2 sets of accessories. Button #1 starts or stops pump #1 and pump #2. Button #2 starts or stops Pump #3 and Pump #4/ blower. Corresponding icons will be animated when one or more accessories are on.

* Only Pump #1 can have a dual speed.

Mode key

Successive presses on the Mode key will give access to control different optional accessories of your spa such as Audio and others. Note that if an accessory is not present in your spa configuration, its menu will not appear. Refer to the following section to get details about the possible accessories and their detailed functionalities. The screen will revert back to the spa mode if no key is pressed for 60 seconds.

If you don't have any accessories, Mode key can be used to change your display orientation

Water temperature

The temperature shown at the top of the screen gives the actual water temperature.

Use the Up and Down buttons to set the desired temperature. The set point will appear in blue at the bottom. After 3 seconds without any change to the set temperature value, the keypad will resume the normal display of messages.

Settings

Settings

From the home page you can access the Settings, where you will find:

- *Water Care*
- *Heat Pump (if installed)*
- *Audio (if installed)*
- *in.clear-200 linked version (version 13.00 and higher*
- *Standby (version 6.00 only)*
- *Maintenance (version 7.00 and higher)*
- *Date & time*
- *Keypad*
- *Wi-Fi (Version 7.00 and higher. Only available on in.touch with software 11.00 and higher.)*
- *Config **
- *Restore **
- *About*

Use the arrow keys to move up and down in the list. To select an option, press the lit button beside it (Light button). At any point you can press the Settings button to return to the home screen.

*Reserved for qualified electricians installers

Water care

The Water Care section will help you set up your ideal filtration and heating settings. Choose a mode depending on your need.

Use the Light key to choose your setting. A checkmark will appear on the selected icon to confirm.

In Economy mode, the set point will be reduced by 20°F*, which means that the heating system will not be engaged unless the temperature falls to 20°F below the spa's set temperature.

*Default pack value

Water care modes

Away:
In this mode the spa will always be in economy; the set point will be reduced by 20° F*.

Standard:
The spa will never be in economy mode and will be filtering according to the pack's low level configuration.

Energy Savings:
The spa will be in economy mode during the peak hours of the day and resume normal mode on the weekend*.

Super Energy:
The spa will always in economy mode during peak hours, every day of the week*.

Weekender:
The spa will be in economy mode from Monday to Friday, and will run normally on the weekend*.

*Filtration will be reduced when the economy mode is active.

Modifying schedules

Use the arrow keys to scroll through the Water Care selections. To see and/or modify a Water Care category, use the lit button to the right (key 1) to open the selected Water Care menu.

Use the arrow keys to choose a schedule to modify (choice of economy and filtration schedules). Use the Light key to move between parameters.

You have several possibilities for the schedule (Mon-Fri, weekend, every day, or single days). The schedules will be repeated every week. The time and duration are set in 30 minute increments. Once you have set the schedule, use Key 1 to go back. Ensure that you have selected the desired Water Care option in the main Water Care menu.

If your spa uses a circulation pump configured to run 24 hours, the screen will show you the purge setting instead of filtration. The purges are pre-programmed for a fixed number of minutes, therefore the duration will be set to N/A on the screen, and only the start time can be modified.

Heat pump

This menu allows you to change the regulation mode of your heat pump. You can choose from Eco Heat, Smart Heat, Eco Auto, Smart Auto, Cool and Electric.

A green checkmark indicates the currently selected regulation mode. To change the setting, simply navigate the menu using the arrow key and press the Light Key to choose the desired regulation mode.

Heat pump modes:

Eco Heat
In this mode, the heat pump is used as the unique source of heating. The heating element is kept off and the heat pump is not used to cool the water should its temperature rise above the current set point.

Smart Heat
This mode uses the heat pump as the main heating source. The heating element is turned on only if there is a large temperature difference between the water and the set point. The heat pump is not used to cool the water in this mode.

Eco Auto
This mode borrows functionality from both Eco Heat and Cool modes and has the ability to select the proper Heat or Cool mode automatically according to the water temperature. The heating element is never activated in this mode.

Smart Auto
This mode borrows functionality from both Smart Heat and Cool modes and has the ability to select the proper Heat or Cool mode automatically according to the water temperature. The heating element is activated only if there is a large temperature difference between the water and the set point.

Cool
This mode uses the heat pump in cooling mode only. The heat pump is not used as a heating source and the heating element is never activated.

Electric
This mode keeps the heat pump off and uses only the heating element to regulate water temperature.

Settings

Audio

The in.k500 can be used with the in.tune, in.stream or in.stream 2 audio systems. The Audio section in the Settings menu of an in.stream gives you the option to disconnect or unpair your Bluetooth enabled device when using the in.stream.

With version 7.00 and higher, it is also possible to select Source to use a device connected by auxiliary cable or Bluetooth wireless connection.

The in.stream 2 Settings menu gives you a Source selector, a Bluetooth disconnect option, an On/Off switch and an audio control on fader, balance and subwoofer.

For more information on audio functions, see the in.tune, in.stream or in.stream 2 operation section.

The Audio option will only appear in the menu for keypads that are set up for an in.stream connection. The in.stream 2 is automatically detected at power-up.

Maintenance (version 7.00 and higher)

From the Settings page you can access the Maintenance menu, which gives you access to the following options:

- Maintenance reminders
- Standby

Use the Up and Down keys to make a selection, and Light key to confirm.

Maintenance reminders (version 7.00 and higher)

The in.k500 keypad will remind you of maintenance required on your spa, like rinsing or cleaning the filter.

Each task has its own duration, based on normal use.

The Maintenance reminders menu allows you to verify the time left before maintenance is required, as well as to reset the time once a task is completed.

Use the Up and Down keys to move through the list.

To reset a task select it by pressing Light key, then confirm when prompted. Once you have confirmed the task will be reset.

Standby (version 6.00 and higher)

The Standby mode allows you to service your spa.

Pumps will stop for 30 minutes, and automatically restart after this time.

Once Standby mode has been activated a screen will appear to show that pumps are stopped. The normal spa page will return at the end of maintenance.

Press on the Light key to leave Standby mode and restart the spa.

Note: In version 6.00 only, Standby mode is accessible directly from the Settings page.

Date and time

Here you can adjust the time format, change the year, date and time. Use the arrows to choose the setting that you want to adjust, and select it by pressing the Light key. Use the arrow buttons to change the parameters, and the Light key to move between parameters.

Key 1 will take you back to the main Settings menu.

Note: In version 6.00 and earlier, only the day of the week can be changed, and not the year or date.

Keypad settings

In this section, you can change the temperature unit, language, display orientation, rim light color and keypad security. Note the spa pack must be configured accordingly to be able to change the rim light color.

When you change the display orientation, the contextual options and arrow keys adjust to the chosen orientation. The Mode and Menu keys remain unchanged, as well as the accessory keys in the main spa menu.

Settings

With the in.k500 equipped with a selectable rim light color modul: If the "RGB backlight" option is enabled in the spa configuration an option will appear to allow selection of the keypad rim light color.

You can lock the keypad by selecting one of 3 security levels: Unlock, Partial or Full. The Partial level locks the set point adjustment and many options in the settings menu. The Full level locks all keypad functions. To unlock the keypad (either Partial or Full), press and hold the Light key for 5 seconds.

About

This section shows information about the in.k500 software number, and the revision numbers of the different components of your system.

Audio operation

in.tune operation

Press the Mode key to access your in.tune.

Play/Pause audio
Press the Play/Pause key to start or pause the audio.

Adjusting the volume
Press the Up or the Down key to increase or decrease the volume.

Changing tracks
Use the Last Track and Next Track keys to change tracks for the CD or AUX input. When in Radio mode, the Last Track and Next Track keys will move through preset radio stations on the selected band. To change bands or preset stations, see your in.tune manual.

Turn power On/Off *(version 7.00 and higher)*
Press and hold the Play/Pause key for 3 seconds to turn the in.tune on or off.

in.stream operation

Press the Mode key to access your in.stream.

Play/Pause audio
Press the Play/Pause button to start or pause the audio

Adjusting the volume
Press the Up or the Down key to increase or decrease the volume.

Changing tracks
Use the Last Track and Next Track keys to change tracks

Disconnect or Unpair Bluetooth
These options can be found under the Audio section in the Settings menu.

Turn power On/Off *(version 7.00 and higher)*
Press and hold the Play/Pause key for 3 seconds to turn the in.stream on or off.

in.stream 2 operation *(version 11.00 and higher)*

Press the Mode key to access your in.stream 2.

Play/Pause audio
Press the Play/Pause button to start or pause the audio. This button is available for Bluetooth and USB only.

Adjusting the volume
Press the Up or the Down key to increase or decrease the volume.

Turn power On/Off
This option can be found under the Audio section in the Settings menu.

Changing tracks
Use the Last Track and Next Track keys to change tracks or FM stations. This is not available with Aux source.

Disconnect
This option can be found under the Audio section in the Settings menu.

Fader, Balance and Subwoofer
These options can be found under the Audio section in the Settings menu.

in.clear

in.clear-200 / linked version
(version 13.00 and higher)

The in.k500 keypad can be used with the in.clear sanitization system. The in.clear section allows you to configure your maintenance settings and Boost level.

For more information on maintenance and Boost settings, see the in.clear user manual.

Use the Up and Down keys to make your selection, then light key to confirm.

Use the Up and Down keys to change the maintenance or Boost value, and light key to confirm.

* If the maintenance value is modified by more than 2, a warning message will appear with an option to cancel or confirm the change.

Press on the Mode key to access your in.clear module.

This menu allows you to activate or deactivate your in.clear, to start or stop a Boost, and to enter diagnostic mode.

Turning the in.clear on/off

Press the power key to turn the in.clear on or off.

Control the Boost level

Press on the Boost activation/deactivation key to start a Boost, and again to cancel.

To adjust the Boost level use the arrow keys.*

A message indicating that Boost mode is active is displayed at the bottom of the main screen for the duration of the Boost.

* See the in.clear user manual for more details about Boost levels.

Diagnostic Mode

Press on the Diagnostic key to start a BromiCharge concentration level test. To exit diagnostic mode press on the Diagnostic key again. The system will automatically exit after 15 minutes.

In diagnostic mode, the BromiCharge gauge indicates the approximate level of BromiCharge in the spa water. Do not add BromiCharge if the indicator is in the green zone.

When BromiCharge is added the indicator will move slowly to the right. When water is added to the spa the indicator will move to the left. To obtain a good level of BromiCharge, start the pumps and add the specified amount of BromiCharge** and allow 5 minutes for the indicator to adjust before adding more.

For optimal performance, aim for the middle of the green zone.

** For more information on adjusting your BromiCharge level see the in.clear user manual.

Wi-Fi (in.touch only)

WIFI (version 7.00 and higher)

For the WiFi menu to appear in the Settings menu your in.touch module must be equipped with software version 11.00 or higher. This menu allows you to connect your in.touch module to a WiFi network or to change its network.

For more details about other in.touch connection methods please see the in.touch techbook.

To connect your in.touch module to a wireless network, use the Up/Down keys to go to the WiFi option in the Settings menu and Light key to select it.

After a few seconds the available networks will appear on the screen, as well as their signal strength.

Use the Up/Down keys to move through the list. Select your network by pressing on Light key.

If the WiFi network is password protected enter it when prompted.

- Use the arrow keys to choose your letters and change the type of character (uppercase, lowercase, number, symbol).
- Use Key 2 to move the curser forward
- Use Key 1 to backspace
- Use Light key to confirm

If no password is required the in.touch will connect automatically.

Once the in.touch module is connected to a WiFi network a check mark in a green circle will appear in the WiFi menu, and the network logo will change to green in Settings menu.

Note: WiFi logo color in Settings menu corresponds to the in.touch connection state.

Yellow = not connected
Green = connected to a network
Yellow with wait icon = connection attempt to a network
Red with wait icon = in.touch no longer detected (in.touch must be reset before next connection attempt)

HOT TUB COMPONENTS

Depending on the hot tub model you selected and optional features you may have added, you may or may not have all of the features depicted below. They are listed here so that you may easily identify and become familiar with the functions of your specific tub.

CONTROL PACK AND TOP SIDE CONTROL:

The Control Pack is the electronic brain for the functions of you tub. This is how your hot tub's components communicate with one another synchronously and allow safe function of each component. It works automatically with pre-settings and manually with your input on the Top Side Control.

Your specific Control Pack and Topside Control will vary slightly based on the configuration of your hot tub, such as number of pumps, jets, and additional features. Some two-pump or more systems will have an "Auxiliary" Top Side Control located on a different side of the tub than where the main Top Side Control is located. This Auxiliary remote allows for you to change basic settings without getting out of the hot tub or interrupting your relaxation.

WATER PUMP/S & JETS:

Your hot tub will operate with one or more pumps. The pumps power the water through the circulation system and jets. You will find one or more types of jets in your hot tub, depending on the specifications of the model and customization. Your hot tub's jets are specially designed with the latest in innovative technology to remain secure and leak free for years to come.

AIR CONTROLS, DIVERTERS, & WATER FEATURE VALVES:

Your new hot tub may have one or all of these features. Every hot tub will have at least one or more air control knobs. These regulate the amount of air flow pushed through your jets. This feature can increase the power of hydro-massage. The more air you allow through with the air control, the more powerful the massage.

If your hot tub has a water feature (waterfall/s or spout/s), it will have a control knob/s to control the flow of this feature. You can choose to have the feature turned completely off or flow at maximum capacity, and at any rate in between.

If your spa has a diverter knob, this will allow your to divert the power of a secondary pump from one portion of the spa to another. For example, if your spa has a foot dome with jets installed, you will likely have a diverter to shift the power of the jets from the foot dome jets to a seat in the tub. The path of diversion will depend on the model & features you have selected.

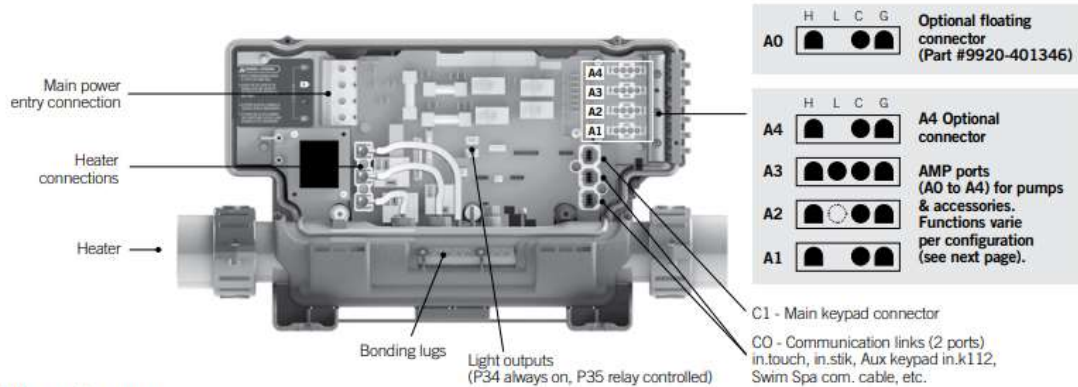**AIR CONTROL KNOB**   **WATER FEATURE KNOB**   **DIVERTER KNOB**

SUCTIONS:

Your hot tub is equipped with the number of VGB High Flow Suctions in ratio to the number of pumps to ensure even water-flow and safety. These are located at the bottom of, or in the footwell of the tub.
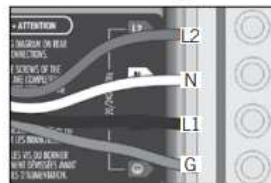
Quick Start Card
## in.ye-3 & in.ye-5™ North American version

1- Connect all outputs & keypads

Main power entry connection

Heater connections

Heater

Bonding lugs

Light outputs (P34 always on, P35 relay controlled)

	H L C G	
A0		Optional floating connector (Part #9920-401346)
A4		A4 Optional connector
A3		AMP ports (A0 to A4) for pumps & accessories. Functions varie per configuration (see next page).
A2		
A1		

C1 - Main keypad connector

CO - Communication links (2 ports) in.touch, in.stik, Aux keypad in.k112, Swim Spa com. cable, etc.

2- Connect the main power

2.a- Electrical wiring

For 240 V (4 wires)

Connect wiring of the electrical service box GFCI. Neutral wire is mandatory.
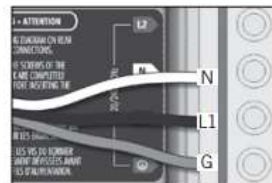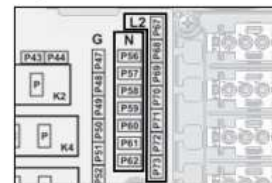

For 120 V (*3 wires)

* If connected to a 3 wire system, any 240 V components will not work.

2.b- Heater & pump/accessories voltage
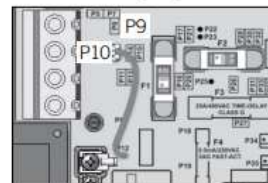
Heater voltage

Verify BROWN common wire connection to tab:
P9 - 240 V
P10 - 120 V

Pumps & accessories voltage

Verify each WHITE common wire connection to tab:
N - 120 V
L2 - 240 V pump/acc.

WARNING! All connections must be made by a qualified electrician in accordance with the national electrical code and any state, provincial or local electrical code in effect at the time of the installation. This product must always be connected to circuit protected by a Ground Fault Circuit Interrupter (GFCI).

3- Select spa configuration (if prompt on startup)

❶
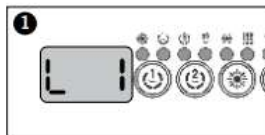
At first startup the keypad display will show **Lx** or **LLx**, where « x » representing the config. number. Some spa packs come with a pre-selected config. and you may skip this step if your system automatically starts up[1].

❷

Use the **Up/Down** key to choose the new low level configuration number.

❸

Press the **Program**[2] key to confirm the selection.

For more information, see our website: www.geckoalliance.com

[1] **Note: To re-enter the low level selection menu, hold the Pump 1 key for 30 seconds.**

Note: For the **Color keypad series**, select **Settings menu**, go into **Electrical config** and choose the appropriate Low level.

[2] **Note: If the keypad does not have a Program or Filter key, use the Light key instead.**

4- Select breaker current

❶

Press and hold the **Program** key for 20 seconds until you access the breaker setting menu.

Note: For the **Color keypad series**, select **Settings menu**, go into **Electrical config** and choose **Input current**.

❷

The values displayed by the system correspond to **80%** of the maximum amperage capacity of the GFCI.

For more information, see our website: www.geckoalliance.com

GFCI	b
60 A	48 A
50 A	40 A
40 A	32 A
30 A	24 A
20 A	16 A
15 A	12 A

(10 to 20 A dedicated to 120 V)

❸

Use the **Up/Down** key to select the desired value. Then press the **Program** key to confirm the selection.

Note: If the keypad does not have the **Program** or **Filter** key, use the **Light** key instead.

Troubleshooting guide
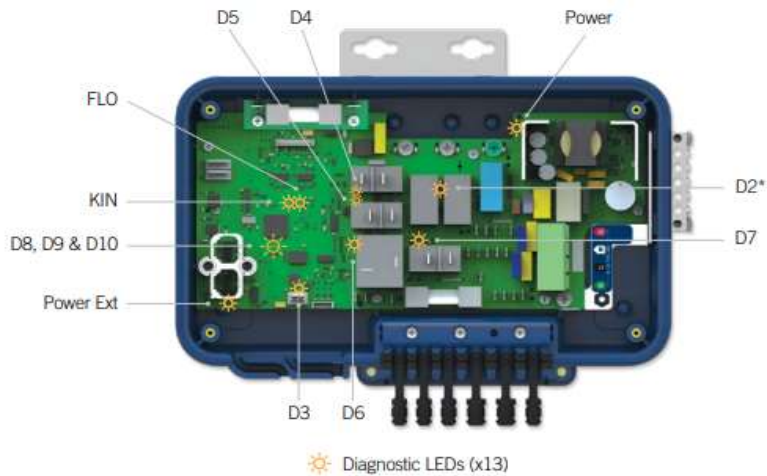
Y series and in.xe

Possible error codes

Error code explanation

Step by step troubleshooting

Troubleshooting

Diagnostic LEDs description in.yj

Diagnostic LEDs (x13)

* D2 designation is not visible on the PCB, D2 is situated between component RD2 and E2.

Case	Designation	Description	Details	Action
1	Power	General 12V power supply status	Should always be ON If OFF, nothing will work. Possible causes:	
			Input not connected	Check the input connection on P12
			Installation main breaker OFF	Check the main breaker of the installation. Go to GFCI/RDC Trips section.
			Short on one connector between 12V line and near signal	Check following connectors in order: P22 (C-pin 6); P17 (CO-pin 6); P38 (RGB-pin 4), P33 (LIGHT-pin 3), P1 (pin 6)
			Issue on board	Change the in.yj-V3 board
2	Power Ext	External 12V and 5V power supplies status	Should always be ON If OFF, external accessories won't work. Possible causes:	
			Short on one connector between 12V line and near signal	Check following connectors in order: P22 (C-pin 6); P17 (CO-pin6)
			Short on one connector between 5V line and near signal	Check following connectors in order: P22 (C-pin 4); P17 (CO-pin 4); P1 (pin 4); P8 (Pin 1)
			Keypad disconnected	Check the keypad connection on P22 connector (C2).
3	D8, D9 & D10	MCU status	D8 should always blink, D9 and D10 are always OFF. If not, possible causes:	
			The board is starting (power on)	Wait about 10s
			D8, D9 and D10 flashing in sync: bootloader present, but there is no valid firmware in the MCU memory	Power down the in.yj, insert an in.stik with a valid software and reapply power

Page: 12

Case	Designation	Description	Details	Action
			D8 always ON (more than 10s), D9 and D10 are always OFF: the in.yj is in UPL state	Power down the in.yj, insert an in.stik with a valid software and reapply power
			D8 always ON, D9 flashing and D10 is always OFF: software loading from an in.stik in progress	Wait about 1 minute
			POWER Led is OFF	Go to case #1
			Issue on board	Change the in.yj-V3 board
4	D2	HL Relays (K2-K3) cmd status	Should always be ON If OFF, possible causes:	
			High Limit situation happens	Go to HL section
			Remote heater cable or the Probes cable disconnected	Check remote heater cable or Probe cable
			F2 burnt (on CE models only)	Check F2
5	D6	Pump 1 low relay (K6) cmd status	Should always be ON when the Pump 1 is running in low speed, and OFF otherwise.	
			If Led ON and pump isn't running:	
			Issue on pump and connection	Check pump connection
			F2 burnt	Check F2
			If Led OFF and pump running in low speed:	
			Issue on relay K6	Change the in.yj-V3 board
6	D7	Pump 1 high relay (K7) cmd status	Should always be ON when the Pump 1 is running in high speed, and OFF otherwise.	
			If Led ON and pump isn't running:	
			Issue on pump and connection	Check pump connection
			F2 burnt	Check F2
			If Led OFF and pump running in high speed:	
			Issue on relay K7	Change the in.yj-V3 board
7	D5	Pump 2 relay (K5) cmd status or Kinetic protection (-KR option) relay (K5) cmd status	Should always be ON when the Pump 2 is running, and OFF otherwise.	
			If Led ON and pump isn't running:	
			Issue on pump and connection	Check pump connection
			F2 or F4 burnt	Check F2 and F4
			If Led OFF and pump running:	
			Issue on relay K5	Change the in.yj-V3 board

8	D4	Regulation relay (K4) cmd status	Should always be ON when the system is heating and OFF otherwise.	
			If Led ON and no heating:	
			Issue heater connection	Check heater connection
			F2 burnt (on CE models only)	Check F2
			Issue on remote heater	Change remote heater
			If Led OFF and heating:	
			Issue on relay K4	Change the in.yj-V3 board
9	FLO	Flow detection status	Should be ON when flow is detected and OFF otherwise.	If a FLO error message, go to FLO section
			If not, possible causes:	
			Pump 1 low isn't running	Go to case #5
			The system is running a flow checking sequence	Wait around 2 min
			The flow rate is too low	Make sure the installation respects the flow rate requirements
			Issue on remote heater	Change remote heater
10	KIN	KINETIC protection status	Should be OFF on normal situation.	If a FLO error message, go to FLO section
			If ON, possible causes:	
			KINETIC state: No flow detected for more than 2 hours	Wait 2 hours and validate the status of the LED KIN another time to confirm that KINETIC error is permanent
			All outputs including heater are deactivated until the next flow check 2 hours later.	Reboot the controller and wait the FLO status update.
				If the FLO LED is OFF, go to case #10.
			Then if the controller succeeds in flow checking, the Kinetic error will disappear.	If the FLO LED is ON, proceed to the normal maintenance, filters cleaning...
				Keep in mind that the Kinetic error could happen again, it is really rare to get an intermittent Kinetic error.
			Flashing: internal communication between the remote heater and the pack	n/a
			Issue on remote heater	Change the remote heater
11	D3	Light & RGB cmd status	Is ON only when the Light is turned ON by the user, and OFF otherwise.	
			If not, possible causes:	
			No POWER	Go to case #1

Diagnostic LEDs description in.ye-v3

Diagnostic LEDs (x16)

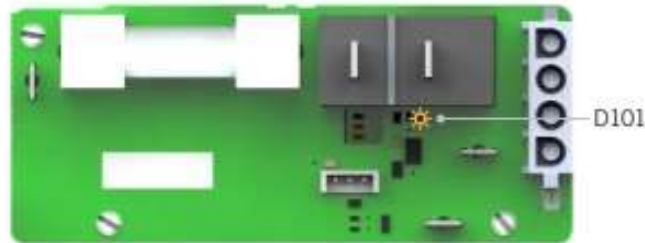| Case	Designation	Description	Details	Action
1	Power	General 12V power supply status	Should always be ON. If OFF, nothing will work. Possible causes:	
			Input not connected	Check the input connection on P1.
			Installation main breaker OFF	Check the main breaker of the installation. Go to GFCI/RDC Trips section.
			Short on one connector between 12V line and near signal	Check following connectors in order: P73 (CO-pin 6); P72 (CO-pin 6); P63 et P64 (RGB-pin 4); P65 (LIGHT-pin 3); P59 (A.PORT-pin 4); P62 (K.PORT-pin 4); P61 (B-EXT-COM-pin 8); P58 (pin 1); P74 (C1-pin 6); P75 (pin 6).
			Issue on board	Change the in-ye-V3 board
2	Power Ext	External 12V and 5V power supplies status	Should always be ON. If OFF, external accessories won't work. Possible causes:	
			Short on one connector between 12V line and near signal	Check following connectors in order: P74 (C1-pin 6).
			Short on one connector between 5V line and near signal	Check following connectors in order: P74 (C1-pin 4); P73 (CO-pin 4); P72 (CO-pin 4).
			Keypad disconnected	Check the keypad connection on P74 connector (C1).
3	D6, D7 & D8	État du MCU	D6 should always blink. D7 and D8 are always OFF. If not, possible causes:	
			The board is starting (power on)	Wait about 10s

Case	Designation	Description	Details	Action
			D6, D7 and D8 flashing in sync: bootloader present, but there is no valid firmware in the MCU memory	Power down the in.ye, insert an in.stik with a valid software and reapply power
			D6 always ON, D7 flashing and D8 is always OFF: software loading from an in.stik in progress	Wait about 1 minute
			POWER Led is OFF	Go to case #1
			Issue on board	Change the in.ye-V3 board
4	D11	HL Relays (K7-K10) cmd status	Should always be ON If OFF, possible causes:	
			High Limit situation happens	Go to HL section
			F1 burnt (on CE models only))	Check F1
5	D4	Relays (K1) cmd status	Should always be turned on when the accessory is on. (Refer to the accessory configuration documentation)	
			If turned on and the accessory isn't working:	
			Connection of accessory problem	Check the connection of the accessory
			F2 burnt	Check F2
			If turned off and the accessory is working:	
			Issue on relay K1	Change the in.ye-V3 board
6	D5	Relays (K2) cmd status	Should always be turned on when the accessory is on. (Refer to the accessory configuration documentation)	
			If turned on and the accessory isn't working:	
			Connection of accessory problem	Check the connection of the accessory
			F2 burnt	Check F2
			If turned off and the accessory is working:	
			Issue on relay K2	Change the in.ye-V3 board
7	D1	Relays (K3) cmd status	Should always be turned on when the accessory is on. (Refer to the accessory configuration documentation)	
			If turned on and the accessory isn't working:	
			Connection of accessory problem	Check the connection of the accessory
			F3 burnt	Check F3
			If turned off and the accessory is working:	
			Issue on relay K3	Change the in.ye-V3 board

Case	Designation	Description	Details	Action
8	D3	Relays (K4) cmd status	Should always be turned on when the accessory is on. (Refer to the accessory configuration documentation)	
			If turned on and the accessory isn't working:	
			Connection of accessory problem	Check the connection of the accessory
			F1 or F3* burnt	Check F1 or F3*
			If turned off and the accessory is working:	
			Issue on relay K4	Change the in.ye-V3 board
9	D2	Relays (K6) cmd status	Should always be turned on when the accessory is on. (Refer to the accessory configuration documentation)	
			If turned on and the accessory isn't working:	
			Connection of accessory problem	Check the connection of the accessory
			F3 burnt	Check F3
			If turned off and the accessory is working:	
			Issue on relay K6	Change the in.ye-V3 board
10	D13	Regulation relay (K9) cmd status	Should always be ON when the system is heating and OFF otherwise.	
			If Led ON and no heating:	
			Issue heater connection	Check heater connection
			F1 burnt (on CE models only)	Check F1
			Issue on heater	Change heater
			If Led OFF and heating:	
			Issue on relay K9	Change the in.ye-V3 board
11	FLO	Flow detection status	Should be ON when flow is detected and OFF otherwise.	If a FLO error message, go to FLO section
			If not, possible causes:	
			The system is running a flow checking sequence	Wait around 2 min
			The flow rate is too low	Make sure the installation respects the flow rate requirements
			Issue on heater	Change heater

Case	Designation	Description	Details	Action
12	KIN	KINETIC protection status	Should be OFF on normal situation.	If a FLO error message, go to FLO section
			If ON, possible causes:	
			KINETIC state: No flow detected for more than 2 hours.	Reboot the controller and wait the FLO status update.
			All outputs including heater are deactivated until the next flow check 2 hours later.	If the FLO LED is OFF, go to case #11. If the FLO LED is ON, proceed to the normal maintenance, filters cleaning...
			Then if the controller succeeds in flow checking, the Kinetic error will disappear.	Keep in mind that the Kinetic error could happen again, it is really rare to get an intermittent Kinetic error.
			Flashing: internal communication	n/a
			Issue on spa control (e.g. FLO and KIN LEDs are ON at the same time)	Replace the spa control
13	D10	Light & RGB cmd status	Is ON only when the Light is turned ON by the user, and OFF otherwise.	
			If not possible causes:	

Option EXT-1R

Case	Designation	Description	Details	Action
14	D101	Relay (K26) cmd status * Please note that the relay is included on the PCB EXT-IR which is optional.	Should always be turned on when the accessory is on. (Refer to the accessory configuration documentation)	
			If turned on and the accessory isn't working:	
			Connection of accessory problem	Check the connection of the accessory
			F23 burnt	Check F23
			If turned off and the accessory is working:	
			Issue on relay K26	Change the in.EXT-1R board

Possible error codes on in.yj, in.ye, in.yt and in.xe control systems

The error messages listed below display on the LCD and LED keypads. If your spa is equipped with a color keypad, please refer your techbook for more information on error messages.

HL

The water temperature in the water heater has reached 119 °F (48°C).

Do not enter spa water!

Prr

The system detects a problem with the regulation probe. The system constantly verifies if the temperatures read by the probe are inside the normal limits.

FLO

The system has detected no water flow during the main pumps operation.

UPL

No low-level configuration is present in the control system memory, insert a valid in.stik to program the control unit.

AOH

The temperature inside the spa skirt is too high and causes an increase of the internal temperature of the control system above normal limits.

OH

The spas water temperature has reached 108°F (42°C)

Do not enter spa water!

Hr
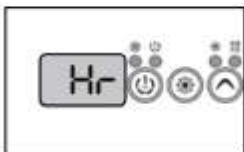
An internal error with the system hardware has been detected.

Note: Only on in.xe control, can't be displaid with a in.k330 keypad.

HL error message

The system has stopped because the water temperature in the water heater reached 119 °F (48 °C).

Probe connector (regulation and overheat captor)

in.yj-re

Warning! Do the following operations with precaution the water heater's body may be very hot.

- Measure the water temperature with an DIGITAL thermometer and compare the measured temperature with the one displayed on the keypad.

If the measured temperature is inferior to 119 °F (48 °C):

For the in.yj-re control systems:

- Verify that the regulation and overheat probe is correctly placed in the plumbing.

  If it is, assure yourself that nothing is blocking the water flow (closed valves or clogged filter).

- Verify that the probe is correctly plugged into the probe connector (P40).

- Turn the spa off and turn it back on to reinitialise the system.

- If error HL persists replace the probe.

- If error HL persists after the probe replacement, replace the control system.

If the measured temperature is below 119 °F (48°C) and the water heater's body is hot:

- With care, verify the water heater's body temperature. If it is hot, assure yourself that nothing is blocking the water flow (closed valves or dirty filter).

- Turn the spa off and turn it back on to reinitialise the system.

- If error HL persists replace the water heater.

- If error HL persists replace the control system.

Probe connector (heat.wav low voltage cable)

in.yj

Regulation and overheat captor probe

in.ye-V3

Regulation and overheat captor probe

in.ye and in.yt

Regulation and overheat captor probe
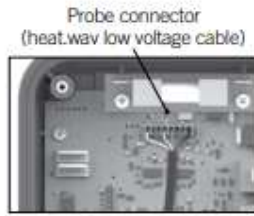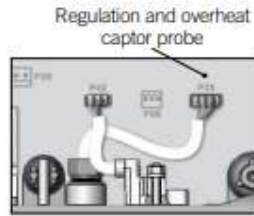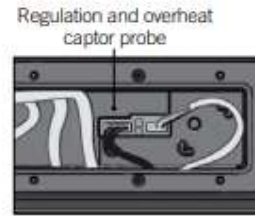
in.xe

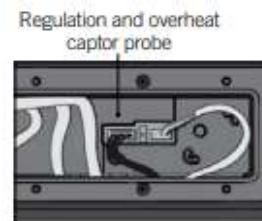**If the measured temperature is below 119 °F (48°C) and the water heater's body *is not hot*:**

For the in.yj control systems:

- Verify that the heat.wav low voltage cable is correctly plugged into the probe connector (P1).

For the in.ye, in.yt and in.xe control systems:

- Verify that the regulation and overheat captor are plugged in correctly.
- Turn the spa off and turn it back on to reinitialise the system.
- If error HL persists replace the water heater.
- If error HL persists replace the control system.

Probe connector (regulation and overheat captor)

in.yj-re

Probe connector (heat.wav low voltage cable)

in.yj

If the measured temperature is 119 °F (48°C) or above and does not correspond to the one displayed on the keypad:

For the in.yj-re control systems:

- Verify that the probe is correctly plugged into the probe connector (P40).
- If the cable is correctly plugged in, replace the probe.
- Turn the spa off and turn it back on to reinitialise the system.
- If error HL persists replace the control system.

For the in.yj control systems:

- Verify that the heat.wav low voltage cable is correctly plugged into the probe connector (P1).

Regulation and overheat captor probe

in.ye-V3

Regulation and overheat captor probe

in.ye and in.yt

Regulation and overheat captor probe
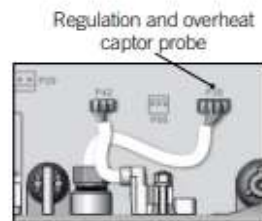
in.xe

For the in.ye, in.yt and in.xe control systems:

- Verify that the regulation and overheat captor are plugged in correctly.
- If the cable is correctly plugged in, replace the water heater.
- Turn the spa off and turn it back on to reinitialise the system.
- If error HL persists replace the control system.

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Probe connector (regulation and overheat captor)

in.yj-re

If the measured temperature is 119 °F (48°C) or above and the exterior temperature is very high:

- Take of the spa lid (even for the night).
- Start the blowers if the spa is equipped with it.
- Wait that the spa cools down (add cold water if needed).
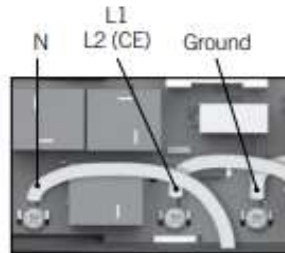- Turn the spa off and turn it back on to reinitialise the system.

If the measured temperature is 119 °F (48°C) or above and the exterior temperature is not the cause:

For the in.yj-re control systems:

- Verify that the probe is correctly plugged into the probe connector (P40).
- Set the consigned value to a temperature lower than the actual water temperature.

  The water heater indicator should turn off.

- Turn off all the pumps. If a pump is still running, replace the control system.
- Turn the spa off and turn it back on to reinitialise the system.
- If error HL persists replace the probe.

- If error HL persists after the probe replacement, replace the control system.
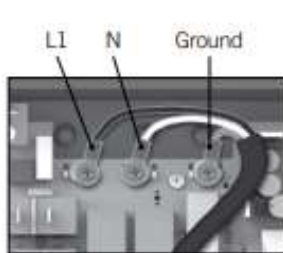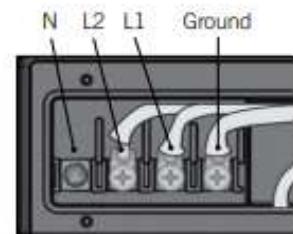

in.yj

in.ye-V3
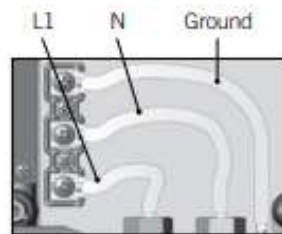
in.ye and in.yt

in.xe

If the measured temperature is 119 °F (48°C) or above and the exterior temperature is not the cause:

For the in.yj, in.ye, in.yt and in.xe control systems:

- Set the consigned value to a temperature lower than the actual water temperature. The water heater indicator should turn off.
- Use the voltmeter on the water heater's terminal block to measure the tension between the line (L1) and the ground.
- If you measure 120 V or 240 V, replace the control system.
- If you do not measure 120 V or 240 V, the pump may be heating the water excessively during the filtration cycle.
- Reduce the length of the filtration cycle.
- Turn the spa off and turn it back on.

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Prr error message

Prr   **Problem with the regulation probe**

Probe connector (regulation and overheat captor)

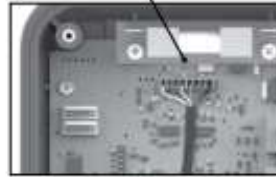Probe connector (heat.wav low voltage cable)

in.yj-re

in.yj

For the in.yj-re control systems:

- Verify that the probe is plugged in correctly to the probe connector (P40).
- Replace the probe if problem persists.
- If error persists after the probe replacement, replace the control system.
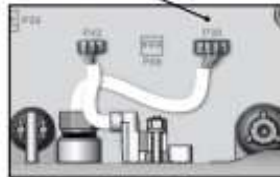
For the in.yj control systems:

- Verify that the heat.wav low voltage cable is correctly plugged into the probe connector (P1).
- If error persists replace the water heater.
- If error persists replace the control system
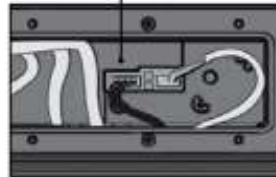
Regulation and overheat captor probe
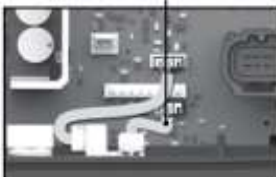
Regulation and overheat captor probe

Regulation and overheat captor probe

in.ye-V3

in.ye and in.yt

in.xe

For the in.ye, in.yt and in.xe control systems:

- Verify that the regulation and overheat captor probe (situated over the heater) are plugged in correctly.
- Replace the water heater if the problem persists.
- Replace the control system if the problem persists.

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FLO error message

 The system has detected no water flow during the main pumps operation.

Ensure that the selected low-level is compatible with your spa's material. Verify that the pump linked to the heating is configured correctly. (See HP option in the dealer menu option. For more details on the HP option, refer to the manual Start up guide and basic configuration for Y series and in.xe).

Probe connector
(heat.wav low voltage cable)
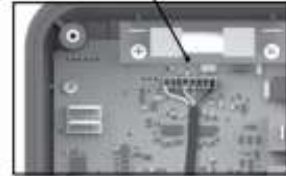
in.yj

- Ensure the water circulation valves are open and that the water level is high enough.

- Verify that nothing is blocking the filter.

- Ensure the flow is adequate (minimum 68 LPM/ 18 GPM).

- Ensure no air bubbles are trapped in the plumbing circuits of the device (the pumps may be making abnormal sounds). If bubbles have formed, start the pump, unscrew slowly one of the union nuts to free the air trapped in the plumbing. Tighten back the nut once done.

- Ensure the pump linked to the water heater (main pump) is running.

- For in.yj control systems, verify the water heater's low voltage cable is linked correctly to the probe connector (P1).

in.flo cable

in.flo cable

in.flo cable

in.ye-V3
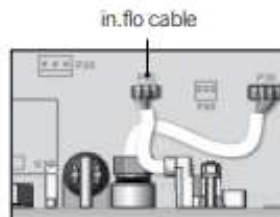
in.ye and in.yt
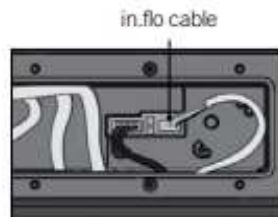
in.xe

- For the in.ye, in.yt and in.xe control systems, ensure the in.flo cable (located over the water heater) is plugged in correctly.

- If the problem persists, replace the water heater.

- If the problem still persists, replace the control system

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UPL error message

No low-level configuration is present in the control system memory!

- Insert a valid in.stik to program the low-level configurations in the control unit. Without them, the system cannot function.

- For technical assistance, use our toll-free number (1 800 784-3256)

  Note: this line is dedicated to assist authorized service technicians and dealers only.

AOH error message

The temperature inside the spa skirt is too high.

- Remove the spa skirt and let the water temperature cool down until the error disappears.

- Replace the control system if the problem persists.

OH error message

OH The spas water temperature has reached 108°F (42°C).

- Measure the water temperature with a DIGITAL thermometer and compare the measured temperature with the one displayed on the keypad.

If the measured temperature is different from the one displayed on the keypad (inferior to 108°F / 42°C):

- Turn the spa off and turn it back on to reinitialise the system.

- For in.yj-re control system, if the error persists, replace the probe.

- For in.yj, in.ye, in.yt and in.xe control systems, if the error persists, replace the water heater.

- If error still persists, replace control system.

If the measured temperature corresponds (superior to 108°F / 42°C) and the exterior temperature is high:

- Remove the spa lid and let the spa cool down.

- Add cold water and reduce filtration cycle length.

- If error still persists, replace control system.

If the measured temperature corresponds (superior to 108 °F / 42 °C) and the exterior temperature is not high:

- Set the consigned value to a temperature below that of the spa water.

  The keypad's water heater indicator should turn off.

- Turn off all pumps*. If one of the pumps is still running, replace the control system.

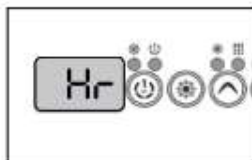- The pump may be excessively heating the water during the filtration cycle. Reduce filtration cycle length.

Note: the main pump may not turn off if you are currently running a filtration cycle.

Hr error message

Hr An internal error with the hardware was detected.

Note: Only on in.xe control, can't be displaid with a in.k330 keypad.

- First, restart the spa system, then, start and stop all pumps and blowers.

- If the error comes back, replace the control system.

HOT TUB MAINTENANCE GUIDE

EASY CARE GUIDE - THE BASICS

- Place "Spa Frog" mineral purifier in skimmer tray or inside the inline frog system.

- Test pH, Alkalinity, Chlorine levels 1 - 2 times per week (regularly) with test strips. Add pH up or down and chlorine granules accordingly.

- Maintain a minimum chlorine level of 0.5 – 1 ppm. A 1/2 ounce of of Granular Sodium Dichlor after each use works very well.

- Add 8 oz. of "Metal Gon" on start-up and each time the water is changed.

- Shock after each use or at least once a week (if tub is not used) with nonchlorine shock such as Leisure Time's "Renew". **Any hot tub shock that is at least 30% Potassium Peroxymonosulfate work sufficiently.

- Add 1 – 2 oz of water clarifier and scale remover per week.

- Remove and pressure wash cartridge filters with your garden hose every 1-2 weeks.

- If your hot tub has the FROG Inline System, replace "Spa Frog" mineral purifier every 4 months. A great way to know it is time to replace your mineral cartridge is after 3 cycles of changing the bromine cartridge.

- Change the Frog Bromine Cartridge of your FROG system approximately every 6 weeks, or when empty.

HOT TUB CHEMICAL GUIDE

The following guide is a general outline of spa care and is intended for use with water testing in order to maintain the spa. The following are all chemicals and techniques recommend for use with all Sunwave Hot Tubs.

Test Strips: Use at least two times a week to check your chemical levels. Utilize the instructions on the test strips to perform the test and read results accurately. Do not add chemicals to the spa without testing the spa first. Leaving the strips outside or storing them with other chemicals will impair the functions of the strip. Test kits from a local spa or pool supplier are often easier to understand and interpret than test strips.

Spa Defender/Stain and Scale Control: This product will remove calcium from the water. Calcium can make deposits in the jets, plumbing, and pumps. Use ½ oz per week.

Clarifier: This is usually a viscous blue liquid. This will remove oils, soap, and suntan lotions. Clarifier will stop the spa from foaming without leaving a residue, but it takes several hours to completely clear the water. Use ½ oz per week.

Metal Gon: This product will remover copper and iron from the water. Use one pint with each refill of fresh water.

Ozone: If the ozone generator is installed in your Sunwave Hot Tub it will run while it is on the filtration cycle. Ozone will greatly reduce the total amount of chemicals you will use over the lifetime of your tub.

PH Down: Always test the PH first, add PH Down to the water to lower the levels of PH if needed. Granular PH Down is usually more effective than the liquid form. Re-test daily until the PH is within normal range. DO NOT USE MURIATIC ACID!

Spa Frog Mineral Stick: Works on eliminating bacteria and preventing algae growth while helps to neutralize ph. A unique blend of minerals to make your water softer, safer and sparkling clear.

This can be used with bromine, chlorine, and ozone system.

Renew Spa Shock : Sodium Moropursulfate, or "Renew" is a chlorine free sanitizing product that keeps water clean and healthy. Add Renew after use to destroy wastes left behind and eliminate bacterial contaminants.

PH Plus: Always test the PH before adding PH plus. Only add PH Plus when the PH levels are low.

De-foamer: This product contains silicone and alcohol and temporarily prevents the spa water surface from foaming. Use very sparingly and only if absolutely necessary. A few drops at a time (no more than four) is all that is needed. When the alcohol evaporates the accumulated silicone will cause the water to become cloudy.

Spa Fast Gloss : This is an excellent product to use after draining and cleaning your spa. This wax will improve the shine of the acrylic and protect it.

Aromatherapy: If your Sunwave Hot Tub is fitted with an aromatherapy canister that emits the aromas through the blower system, the beads can be purchased at most spa and pool suppliers. Remember to use only beads that are located inside of mesh netting to ensure they do not get into the spa components. Liquid aromatherapy is another option if you do not have the aromatherapy option on your hot tub. Remember to use one ounce of aroma per 300 gallons of water. NEVER USE aromatherapy products intended for bath use, bath salts, bubble baths, or bath oils in your hot tub. This will cause significant problems within your spa components, filters, and water chemistry.

MOST IMPORTANTLY: NEVER USE POOL CHEMICALS FOR YOUR Sunwave SPA!

Pool chemicals are manufactured for large bodies of water and are highly concentrated. This will damage your acrylic surface, your hot tub's components, and WILL VOID YOUR WARRANTY!

DRAINING AND RE-FILLING - EVERY 120 DAYS:
It is necessary to drain your hot tub at least every 120 days. Do not hesitate to drain the spa more if needed or wanted. If water becomes difficult to clean, gritty due to large dirt deposits, clouded with body oils and any other situation that results in hard to maintain water chemistry change the water. Do not fill the hot tub with soft water.

TO EMPTY THE HOT TUB:
- Turn off the hot tub at the breaker.
- Remove the plug from the drain plug. The plug can be used by turning counter clockwise.
- Attach the drain plug water hose adapter to your garden hose. This should be done prior to attaching to the hot tub as it will drain immediately.
- Attach the drain plug water hose adapter to the tub.
- The hot tub will drain. On some models there will be a small amount of water left in the bottom of the footwell and/or the bottom of a deep seat. This water can be removed by hand. This small amount of water will be diffused through the large amount of water during refill.

TO FILL THE HOT TUB:
- Disconnect the hose and drain plug water hose adapter from the hot tub. Reattach the plug to the drain plug.

- Fill it with your garden hose by placing it into the interior of the hot tub. Do not place the hose into the aromatherapy canister; it is not a fill valve. Fill the spa. It is best to place the hose in the filter canister to fill.

- Turn on the breaker. Remember not to turn the tub back on until the water is at the proper level as this could result in dry firing of the pumps and heater and damage to the components.

- Check your settings on your topside control to ensure filtration, temperature and readings are to your personal liking.

WINTERIZATION: Winterization is the process of emptying your spa of all water and turning the product off during winter/cold months. All Sunwave Spas are designed for year round use and are intended for use throughout cold weather conditions. The spa controls will automatically start a freeze protection mode if the temperature reaches cold levels.

As it is very difficult to remove all water from tubing and plumbing lines to ensure they do not freeze and crack, Sunwave Hot Tubs does not recommend retail consumers perform winterization of Sunwave Hot Tubs products. Please contact your dealer, a local spa service company, or Sunwave Hot Tubs in order to have a professional winterization preformed.

It is imperative that you do not just turn your spa off and leave it with water and no power.

The following section is a listing of the regular scheduled maintenance items you should complete to keep your hot tub working well.

Testing Your Water - Minimum 2-3 Times A Week: Test the water by placing a test strip into the water according to the manufacturer's instructions. Read the results and increase and decrease your chemicals according to the findings on your test strip.

Filtration Cleaning - 2 Week Intervals:
- Turn off your breaker so the filter cycle will not activate while cleaning.
- The filter is located inside the skimmer or floating filter compartment.
- The filter cartridge should be removed by turning the filter cartridge in a counter-clockwise direction. It can be pulled out of the skimmer.
- Using a regular garden hose with a spray nozzle, rinse filter until clean. Every few months it may be necessary to soak the filter in a cleaning solution. Make sure it is a filter cleaner designed for hot tub use as soaps often leave residue that creates bubbles and problems with the components.
- After soaking in a filter cleaner, spray the filters, making sure to remove all of the solution before replacing into the filter compartment.
- Replace the filter.
- Turn the breaker back on.

Cleaning The Hot Tub Surface - As Needed: The surface of your spa is Lucite Cast Acrylic. This is a hard, non-porous surface that prevents dirt from accumulating and resists stains.

- **For Normal Care:** Use a soft cloth or sponge with soap and water making sure that the soap is not introduced into the spa water. Rinse well and dry with a soft, clean cloth. If using a household cleaner make sure it is recommended by the manufacturer.
- **For Dust/Dry Dirt:** Use a soft clean damp cloth and wipe.
- **For Grease, Oil, Paint, Ink Stains:** Use isopropyl (rubbing) alcohol. Rinse well with a dry soft clean cloth.
- **For Small Scratches:** Buff lightly with a clean cloth and use either an automotive polishing iquid or toothpaste containing a fine polishing ingredient.
- **For Deep Scratches:** Sand the surface lightly with 600 grit "wet or dry" paper and buff with a fine polishing compound.
-

Make sure never to allow your spa to come into contact with – abrasive cleaners, nail polish, nail polish remover, wintergreen oil, dry cleaning solutions, lacquer thinners, gasoline, pine oil and similar items.

Maintaining The Hot Tub Cabinet - As Needed:

- Regular surface cleaning with a damp cloth will be adequate for most installations and keep the Synthetic cabinet looking its best.
- Stubborn surface stains and accumulation can be removed using a mild soap or detergent with a <u>soft clean</u> cloth. Household stains, food, body oils and airborne contaminants will be removed using the mild soap as well.
- Make sure not to use any kind of solvent on Synthetic Cabinets. Clean any chemical spills immediately including, suntan lotion, bug spray and household chemicals. Do not attempt to clean the surface with abrasive, oil-based cleaners, furniture polish or wax, or any prepared cleaning solution other than soap or detergent and water.
- Synthetic can be scratched but normal scratches from wear and tear will become less noticeable as Synthetic weathers to a matte finish in the first year of outdoor use.

HOT TUB COVER MAINTENANCE

Whether you are in the market for a new hot tub cover or just want to get the most out of your existing one, there are a few simple steps to ensure longevity. It is a good idea to thoroughly clean your cover every 120 days. The easiest way to remember this is to do it at the same time you do your water changes.

Fun Facts: Hot Tub cover material (cover vinyl) is a backed fabric with the outer layer made of polyvinyl chloride (PVC). In the manufacturing process, it is sealed with a special topcoat containing compounds called plasticizers, plus softening agents to keep it supple and attractive. All vinyl, even the special marine grade used in our premium hot tub covers, is a UV- sensitive material which can degrade after long time sunlight exposure or mildew formation.

Basic Tips to Prevent Your Investment from Damage:

- 303 Protectant conditions beautifully and prevents fading & cracking. We recommend only 303 Aerospace Protectant. With regular use, 303 blocks up to 100% of harmful UV to prevent sun damage. When applied to the underside of your cover, it also helps prevent mildew. Using the wrong vinyl treatment product is worse than using nothing at all! The well-known automotive vinyl treatment contains silicone oil which is death to vinyl.
- If a vinyl protectant product label says "flammable" or contains petroleum distillates, keep it AWAY from your cover.

Cleaning Your Cover:

- Rinse the cover with cool water using a garden hose.
- sing warm soapy water and a <u>clean soft</u> cloth, wipe the entire cover down.
- DO NOT USE laundry detergent, bleach, alcohols, liquid dishwasher soaps or any other harsh cleaners.
- Rinse the cover of all soap and allow <u>to</u> fully dry.
- On a warm dry day, stand the cover on end to allow the cover to drain fully of any water.

After cleaning the cover, spray a light coating of the 303 <u>protectant</u> on top and cover apron. Spread evenly with a damp terry cloth. Repeat procedure on the underside of your cover. Repeat monthly in the summer and every 3-4 months the rest of the year.

Do Not Use products such as Armor All, Turtle Wax, and petroleum-based cleaners, as they will cause the cover to dry dramatically and crack.

Dealing with Mildew: Unzip the jacket and carefully remove the foam cores. Clean the inside of the jacket. Clean the core's plastic vapor barrier. Spray off surfaces with a garden hose and towel-dry all surfaces. Allow for additional air-dry time of the jacket. Sunlight exposure for an hour or two helps rid residual mildew from inside the jacket. Carefully reassemble when dry.

Care Tips: A spa cover manufacturer's warranty covers original defects in materials, but will not apply to damage cause by abuse, accidents, <u>neglect</u> or normal wear-and-tear. We've put together information that you need for proper maintenance to get the most life out of your spa cover.

Tips for Protecting Foam Core:

- Never allow children to play or jump on a cover, this may cause breakage of the core. Grit from shoes or bare feet can also mark the vinyl covering.
- Avoid placing sharp objects on the cover, which can puncture the core liner, permitting water to enter and be absorbed by the foam core.
- Animal claw scratches or chewing can have the same result, so if your fury little friend likes to chew try to keep them away. avoid placing glass or any other sort of object that may create excessive heat from the magnified effects of sunlight. This heat can <u>actually cause</u> the foam core to melt and is not covered by warranty.

Tie Down Straps & Broken Latches: Tie down straps are there for one purpose: to secure the cover to the spa. To avoid ripping the straps, never use them to carry or remove the cover. Another common cause of ripped straps is failure to unlatch all of the locks before attempting to lift the cover off of the tub. This type of damage is not covered by any hot tub warranty.

Snow or Water Accumulation: Cover manufacturer's warranties do not cover snow or other weight-related damage. So if it snows where you live, make sure you help prevent breakage of the cover's foam core by carefully removing excess accumulation during winter months.

Sometimes a hot tub cover which has been weight-stressed will develop water puddles due to sagging. Some cheap covers (as well as older ones) were not designed with a tapered core for proper water runoff, which exacerbates the problem. If you start to get a small puddle on your cover, unzip the vinyl covering and carefully remove the foam core, then flip it over. Flipping it sometimes corrects the issue (at least temporarily) if not too severe.

Water Intrusion: Although a few water droplets inside the clear plastic liner which protects the foam core are not a major concern, a large accumulation of liquid water needs attention. The cause is normally a vapor barrier puncture or break in the plastic seam around the perimeter, which is easy to fix yourself. If you believe that your cover core liner may contain a lot of liquid water and it has a zipper vinyl jacket open the zipper and carefully remove the foam core for inspection. Look for any puncture or openings that it may have around the perimeter seal. Even a small hole can let in a lot of water over time.

Lucite. SPA

Feel the difference with **Lucite® Spa Cast Acrylic**, the highest quality, most durable material available. Its hard, non-porous surface prevents dirt from accumulating and resists mold and mildew. With normal use **Lucite® Spa Cast Acrylic** is so durable it will retain its high gloss for years with only the minimum of care. To maintain the elegant look of **Lucite® Spa Cast Acrylic**, follow the simple steps below.

①	For normal care and cleaning use a soft cloth or sponge with soap and water. Rinse well and dry with a soft clean cloth. If using a household cleaner, make sure it is recommended for use on acrylic by the manufacturer.
②	Remove dust and dry dirt with a soft clean damp cloth.
③	Remove grease, oil, paint and ink stains with isopropyl alcohol (70% rubbing alcohol). Rinse well and dry with a soft clean cloth.
④	Never use abrasive cleaners or cleaners with coarse grit. These will dull the surface.
⑤	Do not allow your **Lucite® Spa Cast Acrylic** surface to come into contact with: nail polish remover, Wintergreen oil (methyl salicylate) lacquers, thinners, paint stripper or cleaners containing acetone.
⑥	Avoid placing sharp objects on the surface, as they may scratch. Small scratches can be removed by buffing lightly with a clean cloth and automotive polishing compound or toothpaste. For deeper scratches, sand the surface lightly with 400 grit 'wet and dry' paper and buff with fine grit buffing compound.

Keep this surface glossy and beautiful by giving it proper care, and remember with **Lucite® Spa Cast Acrylic** proper care is EasyCare™.

EasyCare™

WARNING!

NO TRI-CHLOR!
Tri-Chlor is very corrosive to the spa surface - above and below the water - and can affect pumps and jets.

CMP

172 GPM SPA SUCTION

CMP# 25200-202-000

VGB 2008   VGB-2008

For Multiple Drain Use Only
172 GPM - Submerged
Life: 7 Years
Wall
Only

Read and keep these instructions for future reference.
Always plumb and install all suction fittings according to all building codes that apply in your area.

WARNING: When using two or more suction fittings on a common suction line, suctions must be separated by a minimum of 3 ft or they must be located on two different planes (i.e., one on floor and one on the wall).
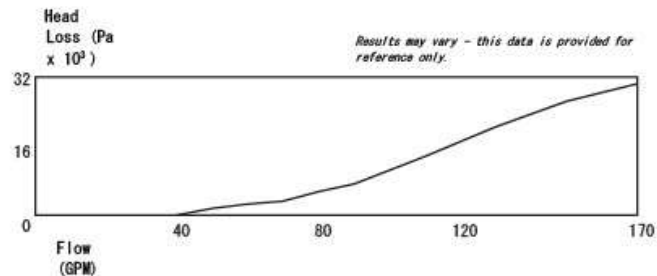
WARNING: DO NOT locate suction outlets on seating areas or on backrests for such seating areas.

The maximum flow rating for this suction fitting is 172 GPM. This suction fitting is designed for installation on side wall of portable spa and hot tubs in conjunction with at least one other suction fitting per pump. DO NOT adapt suction fitting to any pipe size smaller than ASTM 2" SCH 40 PVC. Suction fitting and fasteners should be observed for damage or tampering before each use. Missing, broken, or cracked suction fittings shall be replaced before use. Loose suction fittings shall be reattached or replaced before use. Mount suction fittings on the walls, in the foot wells of portable spas and hot tubs. Do not mount directly under seats. Follow all winterizing instructions and recommendations supplied by the spa manufacturer.

Tools Needed: Hole Saw, Torque Wrench, Phillips Head Screwdriver

INSTALLATION INSTRUCTIONS (WALL INSTALLATION ONLY)
1. Using hole saw, cut/drill the installation hole.
2. If optional gasket is used, gasket must be placed around threads of suction wall fitting at this time.
3. Place threads of wall fitting through hole from the inside (water side) of tub.
4. Install nut from dry side of tub onto the threads of the wall fitting.
5. Using torque wrench, torque nut to <44.0 ft. lbs. (60Nm)
6. Verify that the suction cover is properly tightened and secured with stainless steel screw.

Head Loss (Pa x 10³)

Results may vary – this data is provided for reference only.

Flow (GPM)

INSTALLATION NOTES:
1. Mount suction outlets on the wall or floor. DO NOT locate suction outlets on seating areas or on backrests for seating areas.
2. Always use multiple suction outlets. DO NOT use with single drain applications. Use with single drain applications will void any and all warranties.
3. When using two or more suction fittings on a common suction line, suctions must be separated by a minimum of 3 ft or they must be located on two different planes (i.e. one on floor and one on the wall).
4. To reduce the risk of drowning from hair and body entrapment, install suction fittings with a marked flow rate in gallons per minute that exceeds the flow rate of your system by at least 25%. Increasing size of the pump may increase flow rate of suction beyond rated safety limits causing entrapment or death.
5. CMP drain covers are only certified for use with CMP sumps and frames. Do not mismatch with parts from other manufacturers.
6. If silicone is used on fitting, verify that silicone is compatible with ABS and PVC plastics.
7. DO NOT over-torque fitting. Excessive torque can cause premature failure of threads or damage to suction fitting increasing risk of entrapment.

⚠ DANGER

Hair or body parts blocking the spa or pool suctions may become trapped and held against the suction fitting. Keep hair and clothing a minimum of 12 inches from all suction fittings and drains at all times. Entrapment against the suction fittings can result in drowning or other severe injury. Never sit on or lean up against suction fittings.

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