



in.xe

Entry-level spa pack platform



TechBook Aftermarket Edition

All you need to know to install,
use and enjoy your in.xe spa system

So advanced!
It's like walking on water!

Aeware:3
by gacno



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in.k200

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in.xe

Entry-level spa system

Congratulations! You have purchased one of the finest entry-level spa packs available.

To install, use and enjoy your in.xe spa system take the time to carefully read these instructions.

The in.xe has been designed for these typical spa configurations:

- Single Pump System
- Dual Pump System
- Pump & Blower System
- Dual Pump & Blower System

In.xe can be wall-mounted or installed on its mounting base and comes with an integrated heat.way water heater.

**WARNINGS:**

Before installing or connecting the unit, please read the following.

-
- * FOR UNITS FOR USE IN OTHER THAN SINGLE-FAMILY DWELLINGS, A CLEARLY LABELED EMERGENCY SWITCH SHALL BE PROVIDED AS PART OF THE INSTALLATION. THE SWITCH SHALL BE READILY ACCESSIBLE TO THE OCCUPANTS AND SHALL BE INSTALLED AT LEAST 5 FEET (1.52 M) AWAY, ADJACENT TO, AND WITHIN SIGHT OF THE UNIT.
 - * ANY DAMAGED CABLE MUST BE IMMEDIATELY REPLACED.
 - * TURN POWER OFF BEFORE SERVICING OR MODIFYING ANY CABLE CONNECTIONS IN THIS UNIT.
 - * TO PREVENT ELECTRIC SHOCK HAZARD AND/OR WATER DAMAGE TO THIS CONTROL, ALL UNUSED RECEPTACLES MUST HAVE A DUMMY PLUG.
 - * THIS CONTROLLER MUST NOT BE INSTALLED IN PROXIMITY OF HIGHLY FLAMMABLE MATERIALS.
-
- * LOW VOLTAGE OR IMPROPER WIRING MAY CAUSE DAMAGE TO THIS CONTROL SYSTEM. READ AND FOLLOW ALL WIRING INSTRUCTIONS WHEN CONNECTING TO POWER SUPPLY.
 - * THIS PACK CONTAINS NO SERVICEABLE PARTS. CONTACT AN AUTHORIZED SERVICE CENTER FOR SERVICE.
 - * ALL CONNECTIONS MUST BE MADE BY A QUALIFIED ELECTRICIAN IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ANY STATE, PROVINCE OR LOCAL ELECTRICAL CODE IN EFFECT AT THE TIME OF THE INSTALLATION.



In.xe boast a long list of technical features. Each of them stands on its own merits and contributes to bring to in.xe equipped spa owners the most advanced solutions available to them:



In.put new input terminal bloc

In.put was designed to ease wire insertion (up to # 4 AWG) and connections. Tighter input connection reduces heat generated for increased component lifetime.



In.seal watertight protection

In.seal provides extra level of protection against water infiltration. Connectors and power box are designed to be watertight and no water can be in direct contact with electrical components.



In.axess board access prevention

Electronic components are placed into separate and inaccessible compartments. Only serviceable parts are made accessible to service technicians.



In.kin kinetic heat monitoring

First ever UL approved kinetic heating protection manages water temp. increase generated by pump heat dissipation. Hardware protection shuts all accessories off if it senses water overheat.



In.flo dry-fire protect

A new heater safety system located in the in.therm power box - an all-electronic dry-fire protection.



In.t.cip water temp. algorithm

In.t.cip is an intelligent water temp. refresh algorithm that calculates optimal time to start pumps and get water temp. readings. In.t.cip continuously readjusts heater start time.



In.link

ingenious plugs and connectors

In.link cables are very cool output and input plugs and connectors that come with colored and tagged polarizers. Totally waterproof, they are designed to be easily configured and to ensure that all cables of equipment used to make a spa or an hot tub work properly are well connected at their intended connection port, eliminating any risk of mis-wiring.



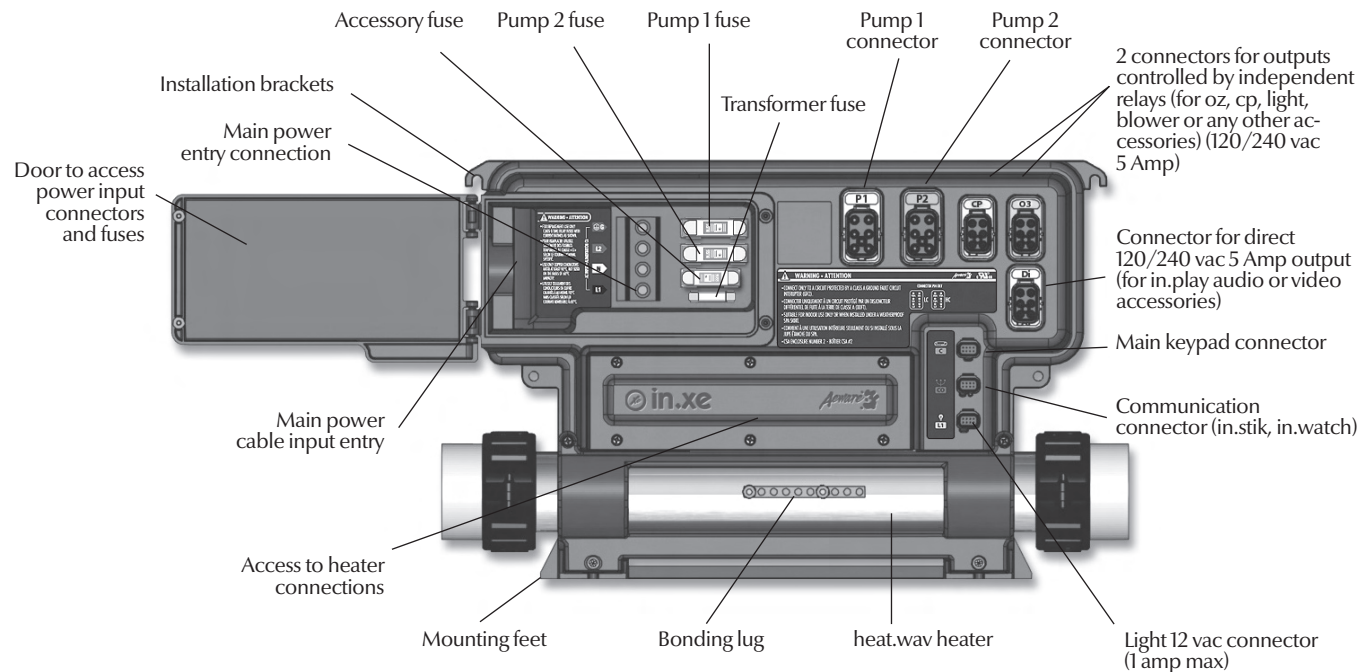
In.stik

automated software upload

In.stik a pen drive with an in.link connector very similar to a USB memory stick. It connects to in.xe and contains data to program or configure its system. In.xe executes the data upload automatically.

Specifications

Refer to the detailed specification chart printed in Annex.

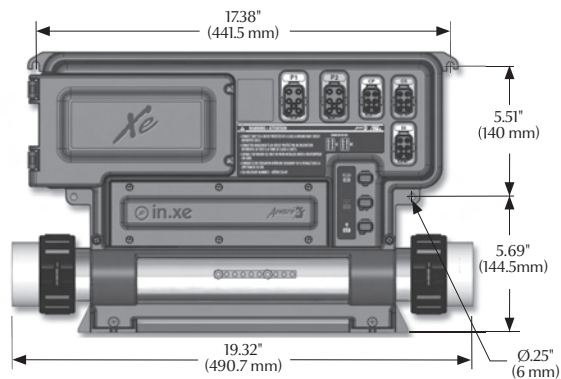


Note: No connectors should remain unplugged. Use blank plugs to fill unused connectors.

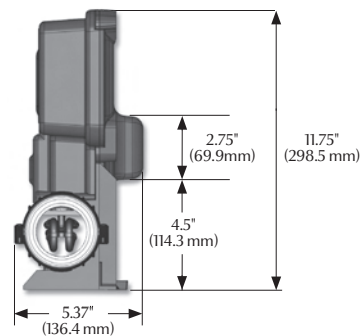


in.xe dimensions:

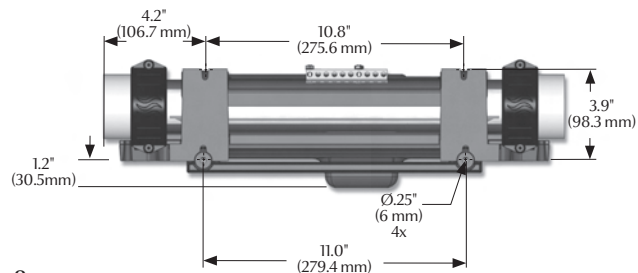
Front view



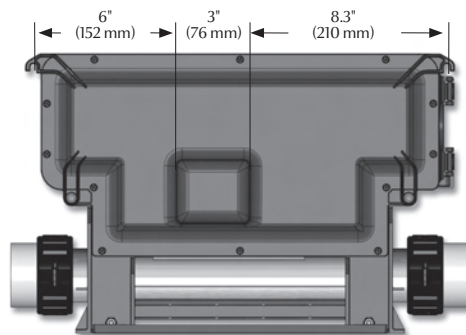
Side view



Bottom view

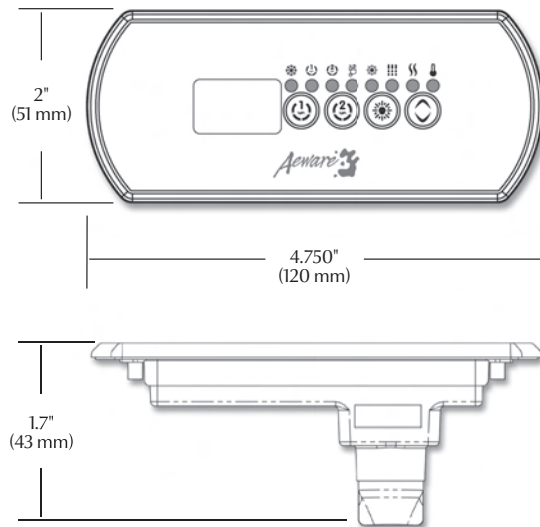


Rear view





in.k200 dimensions:

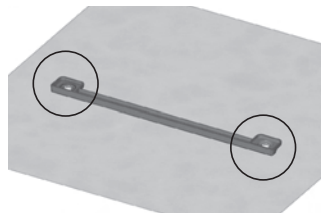


Features:	LED display
	4 Keys
	8 Light indicators
	in.link connector
Mechanical Specs:	
Weight:	0.41 kg (0.9 lbs)
Dimensions (W x H x D):	Front Panel:
	120 mm x 51 mm x 43 mm (4.75" x 2" x 1.7") Soft gasket
Approvals:	UV resistance (ASMTD4329)
	UL, CSA, TUV and CE

Specifications and design are subject to change without notice.



Floor installation procedure

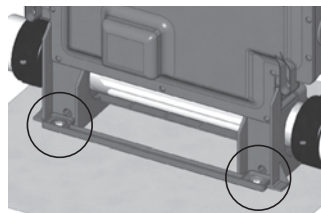


The following material is recommended:

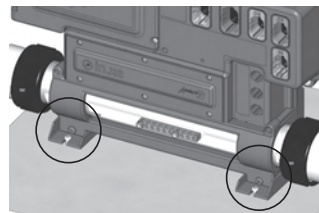
4- # 10 screws of appropriate length with round, truss or pan head.

4- washers 1/2 OD x 1/16" thickness.

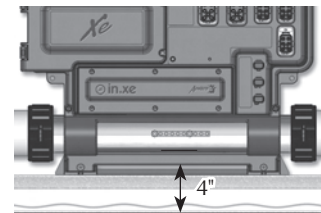
Select the most appropriate location on the floor for spa pack and firmly attach guide plate to wooden base with (2) screws backed by (2) washers.



Slide back side of the unit's feet into the guide plate. It should easily slide into place.



Now firmly attach unit to wooden base by using the remaining (2) screws backed by (2) washers to fix the front of the foot.



Note: The spa pack must be installed at least 4 inches above potential flood level. If floor is on ground level, pack should be raised at least 4 inches.

Important!

Please note that **countersunk** screws should **not** be used as they can damage the power box support.



Wall installation procedure

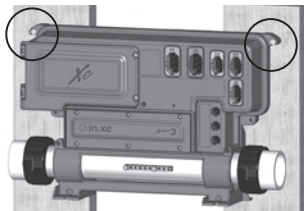


The following material is recommended:

4- # 10 screws of appropriate length with round, truss or pan head.

4- washers 1/2 OD x 1/16" thickness.

Use two (2) standard 2 x4 or 2x6 wall studs, spaced on 16-inch centers to affix the spa pack.

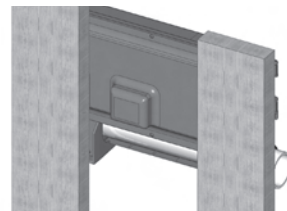


In the case of a flat wooden surface: select the most appropriate location on wall for the spa pack. A square cut-out of about 4-inch per side will be needed to allow the transformer to fit through it.

Firmly attach, one at the time, upper mounting holes on each side of the spa pack with (2) screws backed by (2) washers.



Firmly attach lower mounting holes on each side of the pack with the (2) remaining screws and (2) washers.



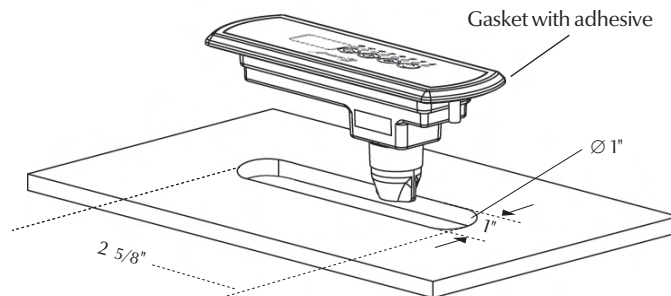
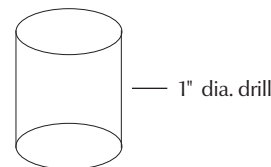
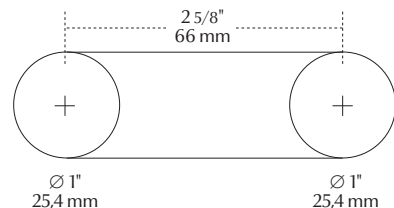
Note: Make sure these (2) screws and (2) washers are installed. They will make the pack stable when input, outputs and accessory connectors will be inserted in their ports.



Installing the in.k200

The keypad should be installed directly onto the spa (or very close to it) so that it is easily accessible to the user.

- To install the in.k200, drill two 1" (25 mm) diameter holes at 2 5/8" (67 mm) from center to center as illustrated.
- Cut out the material between the two holes (see illustration).
- Clean the installation surface and peel the adhesive gasket from the back of the keypad.
- Insert keypad and align it correctly, then ensure it's properly glued by gently pressing evenly on the entire surface.

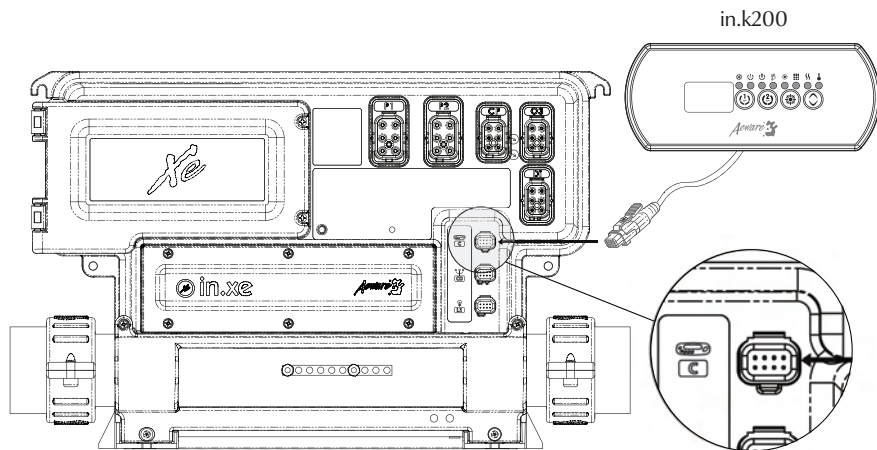




Connecting main keypad to in.xe

The in.k200 comes with a 10 ft cable and an in.link connector.

To connect the in.k200, simply insert its in.link connector into the appropriate keypad connector (as illustrated)



Connect the main keypad in.k200 as indicated here.



Electrical wiring North American model in.xe



Main electrical box

GFCI panel

**Warning!**

"For units for use in other than single-family dwellings, a clearly labeled emergency switch shall be provided as part of the installation. The switch shall be readily accessible to the occupants and shall be installed at least 5 feet (1.52 m) away, adjacent to, and within sight of the unit".

This product must always be connected to a circuit protected by a ground fault interrupter.

Proper wiring of the electrical service box, GFCI and in.xe terminal block is essential!

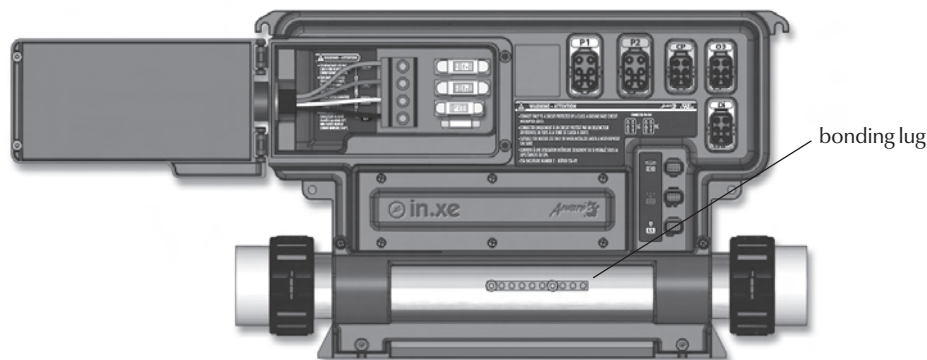
Check your electrical code for local regulations. Only copper wire should be used, never aluminum.

**Disposal of the product**

The appliance (or the product) must be disposed of separately in accordance with the local waste disposal legislation in force.



Electrical wiring North American model in.xe



To install the wiring for the in.xe spa control, you'll need a Phillips screwdriver and a flat screwdriver.

Loosen the 2 screws of the Spa Pack door and open it.

Remove 5 1/2" of cable insulation.

Strip away 1" of each wire insulation.

Pull the cable through the cutout of the box and secure it with a strain relief (1" NPT strain relief; hole diameter: 1.335").

Make sure that only the uncut sheathing is clamped at this opening.

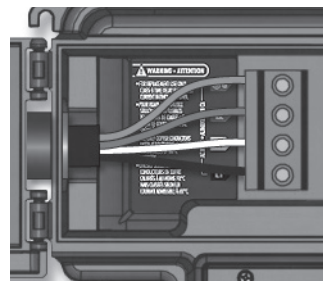
Push the color-coded wires into the terminals as indicated on the sticker and use the flat screwdriver to tighten the screws on the terminals.

After making sure wire connections are secure, push them back into the box and close the door. Tighten the 2 screws of the Spa Pack door.

Connect the bonding conductor to the bonding lug on the front of the in.xe Spa Pack (a grounded electrode conductor shall be used to connect the equipment grounding conductors).

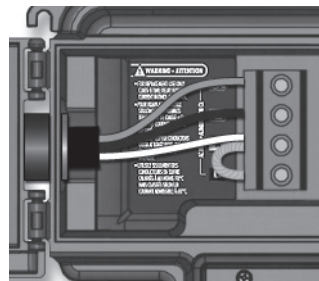


Electrical wiring North American model in.xe



For 240 VAC (4 wires)

Correct wiring of the electrical service box, GFCI, and pack terminal block is essential. Call an electrician if necessary.

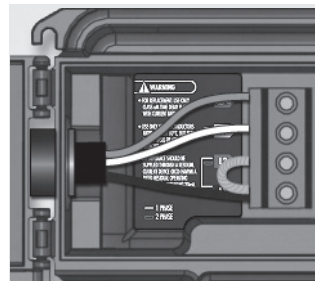


For 120 VAC (*3 wires)

*If connected to a 3 wire system, no 240 VAC component will work.

Refer to "Connections for 120v heater" section of this manual.

Electrical wiring European model in.xe.ce

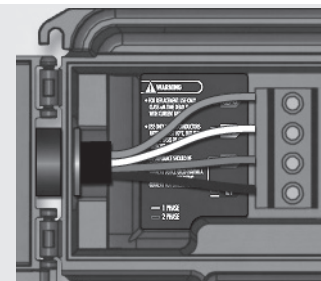


Single-phase

In.xe.ce 230 VAC or 230/400 VAC

Correct wiring of the electrical service box, RCD, and pack terminal block is essential!

Call an electrician if necessary.

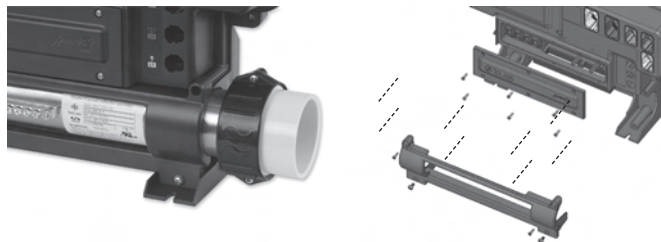


Dual-phase



Warning!

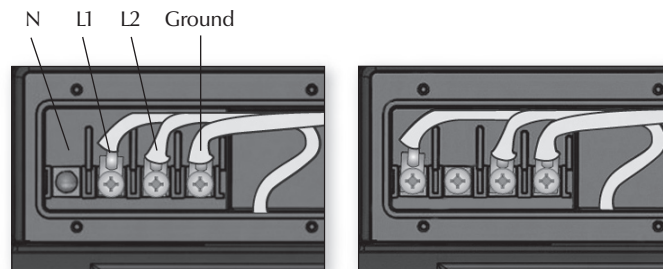
In.xe.ce models must always be connected to a circuit protected by a Residual-Current Device (RCD) having a rated operating residual-current not exceeding 30 mA.



Heat.wav heater

In.xe comes with a high performance heat.wav heater. With no pressure switch, it features in.flo integrated dry-fire protection.

A watertight panel protects the heater and probe connectors. Removing the panel gives access to in.flo dry-fire protection and hi-limit/regulation probe connectors, line 1, line 2 and ground power input cables connection ports.



Connections for 230/240 VAC heater (4KW or 2 KW)

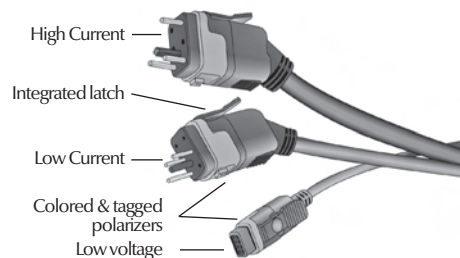
Connections for 120v heater (1KW)

The heat.wav heater is factory configured 240v / 4 kW (or 2KW), but it can be converted to a dedicated 120v / 1kW by a simple switching a cable connection port. (Option available on NorthAmerican models only).

Heat.wav specification summary:

- Supports 120v or 240v
- Protected by external breaker (not fused)*
- Incoloy® or Titanium (optional) heater element for greater protection against corrosion.

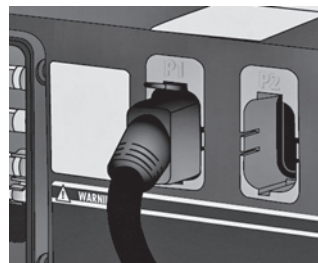
Note: European models are 230 or 240 VAC and are fuse protected



In.link connectors

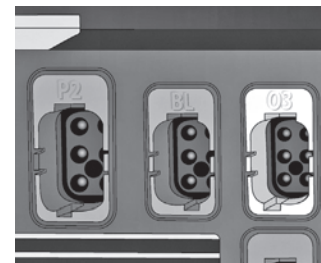
In.xe features in.links connectors with colored and tagged polarizers. This new plug and connector technology has been specifically designed for easy and safe assembly. The tags are interchangeable depending on the output; the polarizers are designed to avoid misconnections.

In.link connectors are easily and conveniently accessible from the front of the pack offering a wide range of possible connection configurations. In.link connectors come in 3 sizes (HC, LC and low voltage) for all types of inputs and output devices.



Latch snap & strain relief

A latch mechanism is provided to maintain male and female connectors together. The tab provided on the male part gives the operator an audible and tactile feedback at the insertion of the cable in the female part. Once the latch is engaged, it will prevent both parts from separating unintentionally by vibration or shock. To unplug the male connector, a gentle press on the tab will allow the release of the locking mechanism to separate both parts.

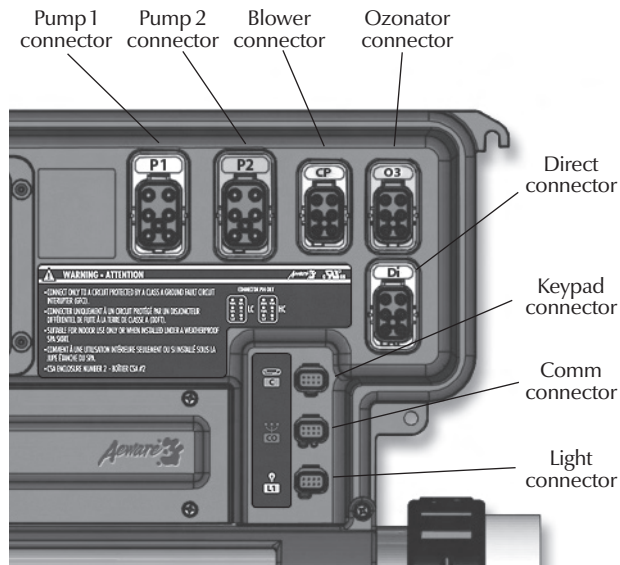


Watertight design UL & CE

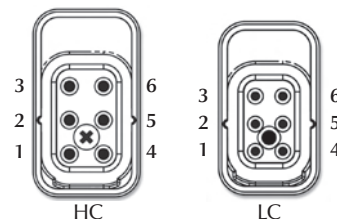
The female connector comes with a built-in seal ensuring a watertight connection assembly sealed from moisture and water ingress. This sealing is intended to be suitable for the North American and European standards and the demanding spa environment.



Connector Map



Female connector on Spa Pack



In.link output connectors:

High-Current - HC connectors:

Output	Typical Device
Out 1	Pump 1
Out 2	Pump 2

Low-Current - LC connectors: (relay controlled)

Output	Typical Device
Out 3	Blower
Out 4	Ozonator
Out 5	Audio/video (direct to line)

Low-Voltage - LV connectors:

Output	Typical Device
C	Main keypad
CO	Comm.connector (in.stik, in.watch)
L1	Light



Assembly 240v cable kit in.link for in.xe



High Current



Low Current

Gecko P/N	Description	Typical use	Cable	Length
600DB0821	Cable in.link HC 2S 15A 240V 8FT	dual-output loads up to 15 FLA (pump dual speed)	14/4	96"
600DB0833	Cable in.link HC 1S 15A 240V 8FT	single-output loads up to 15 FLA (pump single speed)	14/3	96"
600DB0721	Cable in.link LC 1S 5A 240V 4FT	single output loads up to 5 FLA (ozone, blower, circ. pump, DC supply, etc.)	18/3	48"
600DB0754	Cable in.link LC 1S 5A 120V 4FT	single output loads up to 5 FLA (ozone, circ. pump, DC supply, etc.)	18/3	48"
9920-401022	Cable in.link LV Light 12V 12FT	light 12V	24/4	144"



Assembly 240v cable kit in.link for in.xe (continuation)



Gecko P/N	Description	Typical use
9917-100894	Keying cable LC - BL - blue	LC Keying for Blower cable
9917-100898	Keying cable LC - O3 - gray	LC Keying for Ozonator cable
9917-100887	Keying cable HC - P2 - violet	HC Keying for Pump 2 cable
9917-100888	Keying cable HC - P1 - orange	HC Keying for Pump 1 cable

Assembly 120 v cable kit in.link for in.xe



Gecko P/N	Description	Typical use
9917-100894	Keying cable LC - BL - blue	LC Keying for Blower cable
9917-100898	Keying cable LC - O3 - gray	HC Keying for Ozonator cable
9917-100887	Keying cable HC - P2 - violet	HC Keying for Pump 2 cable
9917-100888	Keying cable HC - P1 - orange	HC Keying for Pump 1 cable



Assembly 120 v cable kit in.link for in.xe (continuation)



High Current



Low Current

Gecko P/N	Description	Typical use	Cable	Length
9920-401239	Cable in.link HC 2S 15A 120V 8FT	dual-output loads up to 15 FLA (pump dual speed)	14/4	96"
600DB0857	Cable in.link HC 1S 15A 120V 8FT	single-output loads up to 15 FLA (pump single speed)	14/3	96"
600DB0754	Cable in.link LC 1S 5A 120V 4FT	single output loads up to 5 FLA (ozone, circ. pump, DC supply, etc.)	18/3	48"
9920-401022	Cable in.link LV Light 12V 12FT	light 12V	24/4	144"



Valuable Tips

Make sure that all valves are open in the spa plumbing and that you have a good water flow circulating from the primary pump into the heater.

Important: a minimum flow rate of 18 gpm is required.

Technical stuff

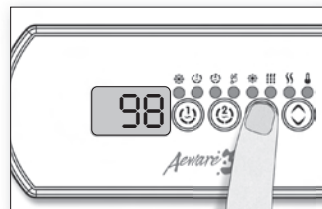
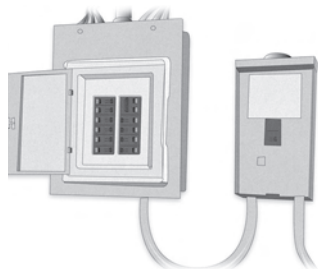
There is no mechanical switch in the in.xe heater. Instead in.xe systems have integrated in.flo technology. The in.flo is an all electronic dry-fire protection device built-in in.xe's heater. At power up, in.flo performs a flow check through the following process:

Pump 1 starts for 2 min. The display will show " __ " during the check flow process. After 2 mins, the system validates proper water flow.

In case of failure, the systems tries again.

The water temperature is shown on the keypad display.

Once the water has reached the set point value plus 0.8 degrees °F the heater is turned off.



Make sure all accessories are linked to the bonding connector and connected to pack.

Turn on the breaker.

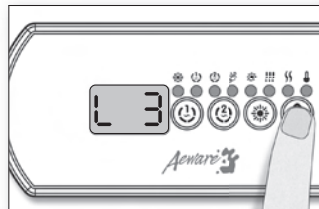
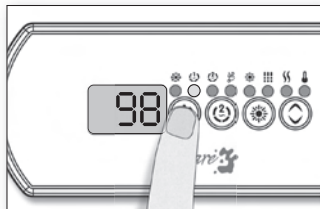
It is important to specify the current rating of the GFCI used to insure safe and efficient current management (and no GFCI trippings).

Press and hold **Light** button until you access the breaker setting menu.

The values displayed by the system correspond to 0.8 of the maximum amperage capacity of the GFCI.

GFCI	Br
60 Amp	48 Amp
50 Amp	40 Amp
40 Amp	32 Amp
30 Amp	24 Amp
20 Amp	16 Amp

Use **Up or Down** button to select the desired value. Then press **Light** button to set breaker rating.



Programming the in.xe using the keypad

Although every in.xe spa pack is factory set, in certain cases when servicing or replacing a new unit in the field, it may be necessary to set a new pre-determined low level program configuration into the spa pack.

Follow this simple steps to re-enter the low level programming menu using the keypad:

Press and hold the **Pump 1** key for 30 seconds.

The keypad display will show **L xx** where "xx" represents the previous configuration number registered in the system.

Use the **Up/Down** key to choose the new desired low level configuration number and press the **Program** key to confirm the selected configuration (consult the configuration selection chart section in this manual).

If the **Program** key is not pressed within 25 seconds, the unit will exit this menu without changing any settings.

If at power-up of the system your keypad display shows the following message: "L __", it means that all low level configurations have been downloaded, but no configuration number has been chosen.

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



Low Level Configuration Selection Chart

Config. #	P1	P2	BL	CP configuration	Ozone configuration	Filter Type	Heater Pump
1	2sp	1sp	X	Always on	---	Clean, PIL	P1
2	2sp	1sp	X	Always on	---	Purge	CP
3	2sp	1sp	X	---	On during Filter cycle, with P1	Clean, PIL	P1
4	2sp	1sp	-	Duration filtration	On during Filter cycle, with CP	Clean, CP	P1
5	2sp	1sp	-	Always on	Always on with CP	Clean, PIL	CP
6	2sp	1sp	-	Duration filtration	On during Filter cycle, with CP	Clean, CP	CP
7	2sp	1sp	-	---	On during Filter cycle, with P1	Clean, PIL	P1
8	2sp	-	X	---	On during Filter cycle, with P1	Clean, PIL	P1
9	2sp	-	-	---	On during Filter cycle, with P1	Clean, PIL	P1
10	1sp	1sp	X	---	On during Filter cycle, with P1	Clean, PIL	P1
11	1sp	1sp	-	Duration filtration	On during Filter cycle, with CP	Clean, CP	P1
12	1sp	1sp	-	Always on	Always on with CP	Purge	CP



in.xe programming field options

In the event where none of the pre-determined low level program configurations built in the in.xe system suit your spa equipment assembly, it's possible to custom configure the in.xe system by manually entering key parameter settings.

To access this menu, press and hold **Prog.** (or **Light** key) for 30 seconds. Use **Up** or **Down** key to choose setting. Press **Progr.** key (or **Light** key) to go to the next parameter.

Parameter	Display	Options	Description
Pump 1 Config		Single-speed = 1 Dual-speed = 2	Pump #1 configuration
Pump 2 Config		Not installed = 0 Single-speed = 1 Dual-speed = 2	Pump #2 configuration
Blower Config		Not installed = 0 Installed = 1	Blower configuration
Circ. Pump Config		Not installed = 0 Installed = 1 Always on = 2	Circulation Pump configuration
Ozone Config		Not installed = 0 During filter cycle = 1 Always on = 2	Ozone generator configuration
Ozone Pump		Circulation pump = 0 Pump #1 = 1	Pump associated to Ozone generator
Ozone Type		Standard = 0 Timed = 1	Type of Ozone generator
Heater Pump		Circulation pump = 0 Pump #1 = 1	Pump associated to Heater



Parameter	Display	Options	Description
Filter Config	FL__	Purge only = 0 With Circ. Pump = 1 With Pump #1, Low speed = 2	Filter cycle configuration
Temp. Units	Un__	°F = 0 °C = 1	Temperature units used on display
Time Format	CL__	No time display = 0 AM/PM format = 1 24H format = 2	Clock display format
Pump #1 High current	1__	1 to 20 amperes (10)	Pump #1 High speed current
Pump #1 Low current	2__	1 to 15 amperes (4)	Pump #1 Low speed current
Pump #2 High current	3__	1 to 15 amperes (10)	Pump #1 Low speed current
Pump #2 Low current	4__	1 to 15 amperes (4)	Pump #2 Low speed current
Blower current	5__	1 to 10 amperes (5)	Blower current
Circ. Pump current	6__	1 to 5 amperes (2)	Circulation Pump current
Direct current	7__	0 to 5 amperes (1)	Direct accessory output current
Heater current	8__	4 to 17 (17)	Heater current
Input current	6__	15 to 48 (on UL/CSA packs) (48) 15 to 32 (on CE packs) (32)	Available household supply current



in.k200

Compact series of entry-level keypads that gives complete control to wet fingers!

In.k200 is a compact keypad designed to be used with Aeware's in.xe spa systems.

This new series of entry-level keypads comes in a waterproof plastic enclosure and is available in single pump, dual pump; dual pump/blower or pump/blower configurations.

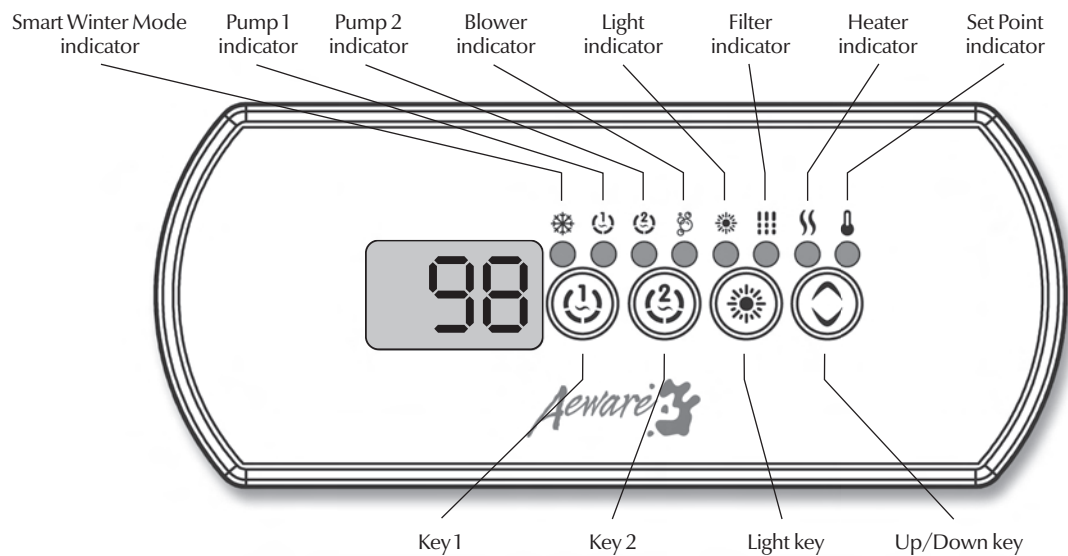
Easy to install, in.k200 comes with an in.link connector.

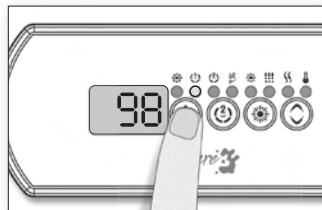
Note: The in.xe spa control is also compatible with the following keypads: in.k200, in.k400, in.k450 in.k600 (static). K-19, k-35 and k-8 (with in.link connector).

Note: The following instructions are generic and provide a quick overview of the main functions. Please refer to your own QRC for specific functions.



function description



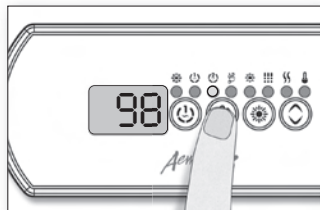


Key 1

Press **Key 1** key to turn Pump 1 on at low speed. Press a second time to turn pump to high speed (with a dual-speed pump). A third time turns pump off.

A built-in timer automatically turns pump off after a predetermined period of time, unless it has been manually deactivated.

The "Pump 1" indicator lights up when Pump 1 is on. With dual-speed pump, indicator will flash when Pump 1 is on at low speed.



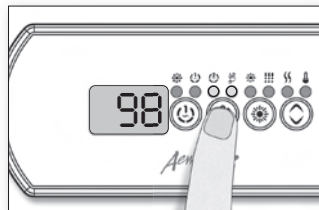
Key 2 2 Pump (or single pump/blower)

Press **Key 2** key to turn Pump 2 or Blower on. Press a second time to turn pump or blower off.

A built-in timer automatically turns pump off after a predetermined period of time, unless it has been manually deactivated.

The "Pump 2" and/or "Blower" indicator lights up when the corresponding output is on.

Note: with dual-speed pump, indicator will flash when Pump 2 is on at low speed.

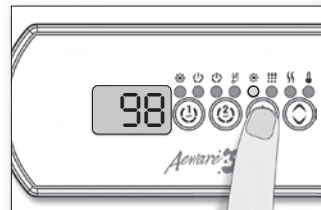


Key 2 (2 Pump/Blower)

Press **Key 2** to turn Pump 2 on at high speed. Pressing a second time turns blower on. A third press turns Pump 2 off but leaves blower on. A final press turns blower off.

A built-in timer automatically turns pump/blower off after a predetermined period of time, unless it has been manually deactivated.

The "Pump 2" and/or "Blower" indicator lights up when the corresponding output is on.

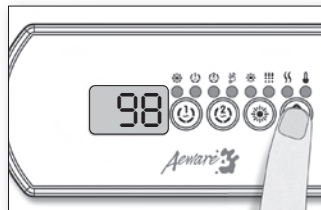


Light key

Press **Light** key to turn light on. Press Light key a second time to turn light off.

A built-in timer automatically turns light off after a predetermined period of time, unless it has been manually deactivated.

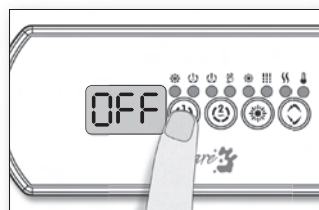
The "Light" indicator lights up when light is on.



Up/Down key

Use **Up** or **Down** key to set desired water temperature. The temperature setting will be displayed for 5 seconds to confirm your new selection.

The "Set Point" icon indicates that the display shows the desired temperature, NOT the current water temperature!

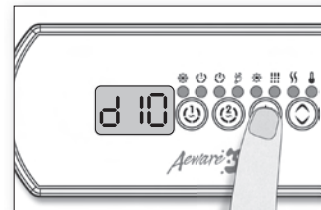


Off Mode

This mode allows you to stop all outputs for 30 minutes to perform a quick spa maintenance.

Press and hold **Key 1** key for 5 secs to activate the Off mode. Quick press **Key 1** key to reactivate the system before the expiration of the 30 minute delay.

While the Off mode is engaged, the display will toggle between OFF and the water temperature.



Programming the system

Depending on system configuration the system performs either purge cycles or filter cycles.

Setting filter cycle duration

Press and hold **Light** key until the display shows **dxx**, with "xx" representing the duration in hours. (Default: 2 hours).

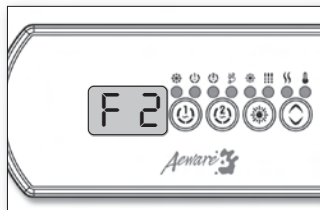
Use Up or Down key to change setting.

0 = no filtration
24 = continuous filtration

Note: it's not recommended to set this to "0".

Programming filter cycles

To program the filter cycles, you must enter these parameters: duration and frequency. During a filter cycle, pumps & blower run at high speed for one minute to purge the plumbing. Pump 1 or CP then runs at low speed for the remaining of the cycle.



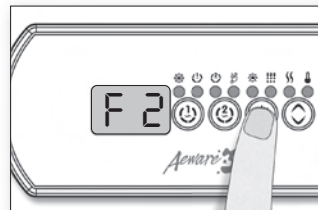
Filter cycle frequency

Press **Light** key again. The display will show Fx, with "x" representing the number of filter cycles per day (up to 4). (Default: twice a day).

Use **Up** or **Down** key to change setting.

When the desired setting is displayed, press **Light** key to confirm. A filter cycle will start immediately.

The "Filter" indicator lights up when a filter cycle is on.



Programming purge cycles

To program the purge cycles, you must select the frequency. During a purge cycle, all pumps and the blower run for one minute.

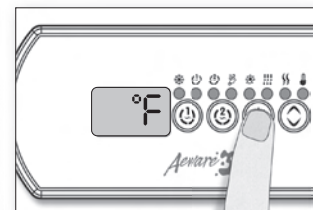
Purge cycle frequency

Press and hold **Light** key until the display shows Fx, with "x" representing the number of purge cycles per day (up to 4).

Use **Up** or **Down** key to change setting.

When the desired setting is displayed, press **Light** key to confirm. A purge cycle will start immediately.

The "Filter" indicator lights up when a purge cycle is on.



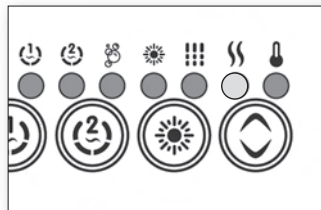
Setting the temperature display units

Quick press **Light** key again. The display will show either °F or °C.

Use **Up** or **Down** key to change units.

Press **Light** key a last time to go back to normal mode.

°F = Fahrenheit
°C = Celsius



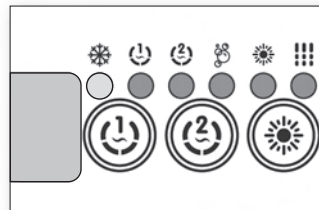
Water temperature regulation

In a regulation cycle, the system first generates water flow through the heater housing and the plumbing, in order to ensure accurate water temperature readings as well as avoiding heater activation in dry conditions.

The system verifies periodically that all parameters are within normal range.

If the readings received from the system are not valid, blanks (- - -) will be displayed until normal readings have been successfully found.

After verifying pump activation and taking a water temperature reading if required, the system automatically turns the heater on to reach and maintain water temperature at Set Point. The "Heater" indicator lights up when the heater is on. It flashes when there is a request for more heat but the heater has not yet started.



Smart Winter Mode

Our Smart Winter Mode protects your system from the cold by turning pumps on several times a day to prevent water from freezing in pipes. The "Smart Winter Mode" indicator lights up when the Smart Winter Mode is on.

Cooldown

After heating the spa water to the desired Set Point, the heater is turned off, but its associated pump (Pump 1 Low-speed or CP) remains on for a certain amount of time to ensure adequate cooling of the heating element, this prolongs its useful life.

The heater icon flashes during this time.

**in.xe typical settings:**

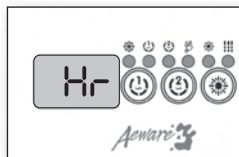
Set Point :	59°F to 104°F / Factory set at 95°F
Filter Cycle Duration:	0 to 24 hrs / Factory set at 2hrs
Filter Cycle Frequency:	1 to 4 times a day / Factory set at 2
Filter Cycle Start:	00:00 to 23:59 / Factory set at 12:00
Pump Runtime:	1 to 255 min. / Factory set at 20 min.
Light Timeout:	1 to 255 min. / Factory set at 120 min.
Max Set Point:	59°F to 104°F / Factory set at 104°F



in.xe error codes

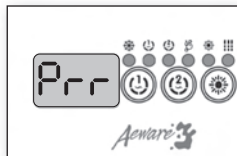
Error codes indicate a failure condition or a problem which needs to be corrected to ensure proper functioning of the system. Both the error code and the water temperature are alternatively displayed.

All errors codes will be displayed on the keypad display.



Hr

An internal hardware error has been detected in in.xe.



Prr

The Prr error message indicates a problem with regulation probe. The system is constantly verifying if temperature probe reading is within normal limits.



HL

Water temperature at the heater has reached 119°F. Do not enter spa water!



FLO

The system did not detect any water flow while the main pump was running.



in.xe error codes

**UPL**

No low level configuration software has been downloaded into the system.

**AOH**

Temperature inside the spa skirt is too high, causing the internal temperature in the in.xe to increase above normal limits.

**OH**

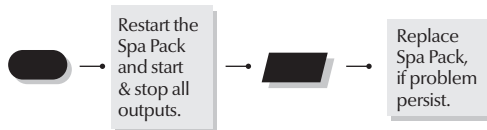
Water temperature in the spa has reached 108°F.
Do not enter spa water!

Specifications subject to change without prior notice.

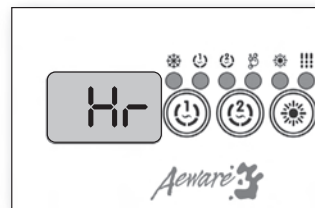
**Hr**

An internal hardware error has been detected

Flow chart



Step-by-Step

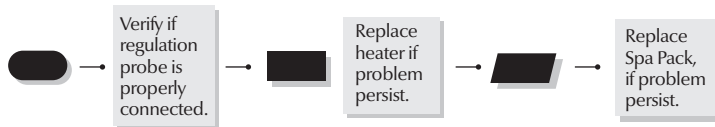


- Restart the Spa Pack and start & stop all pumps and blower.
- If error reappears, replace in.xe Spa Pack.

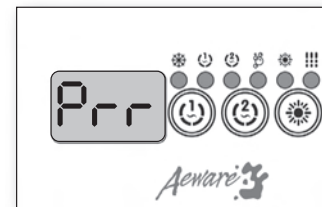


Regulation probe issue

Flow chart



Step-by-Step

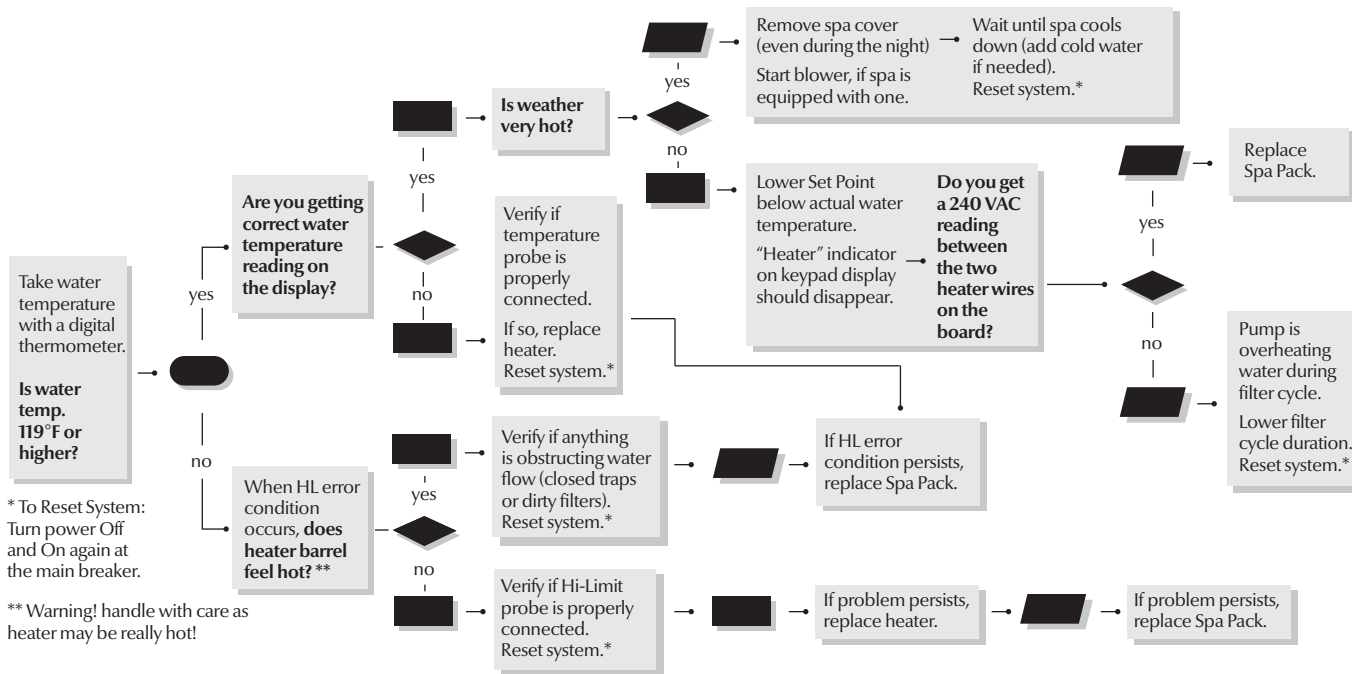


- Verify if regulation probe (located above the heater) is properly connected.
- Replace heater if problem persists.
- Replace Spa Pack, if problem persists.



HL

The system has shut down because the temperature at the heater has reached 119°F (48°C).



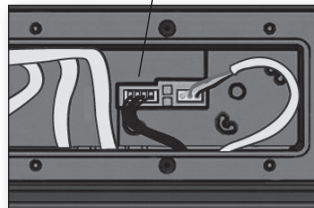


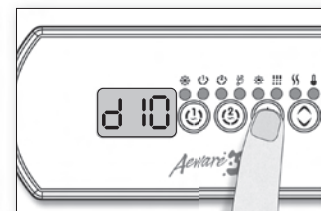
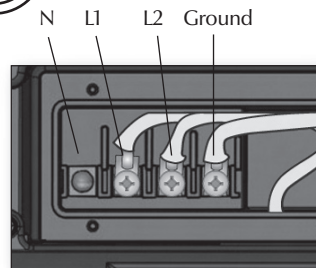
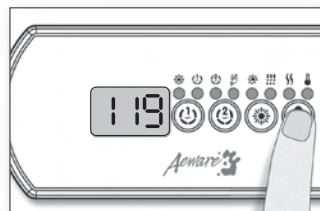
HL

Water temperature at the heater has reached 119°F

- 1• Measure the temperature with a DIGITAL thermometer and compare its reading with temp. on the display. Make sure the temp. reading is lower than 119°F.
- 2• If reading is below 119°F:
 - a- Check if heater barrel feels hot. If it's hot, verify if anything is obstructing water flow (closed valves or dirty filter).
 - b- Shut power off and power the spa up again to reset the system.
 - c- If HL error condition persists, replace heater.
 - d- If HL error condition persists, replace Spa Pack.
- 3• If reading is 119°F or higher:
 - Verify if the Temp. & High Limit probes are properly connected.
 - Shut power off and power the spa up again to reset the system.
 - If problem persists, replace heater.
 - If problem persists, replace Spa Pack.

HL Probe & Temp Probe





If weather is very hot:

- 1• Remove spa cover (even during the night). Start blower if spa is equipped with one. Wait until spa cools down (add cold water if necessary).
- Shut power off and power the spa up again to reset the system.

If hot weather is not a factor:

- 2• Lower Set Point below current water temperature.

The "Heater" indicator should disappear from keypad display.

- 3• With a voltmeter, read voltage between the two heater terminals.

- 4• If you do read 240 VAC, replace Spa Pack.

- 5• If you do not read 240 VAC, pump may be overheating water during filter cycle.

Shorten filter cycle duration.

To shorten filter cycle duration:

- 6• Press and hold Light key for 5 seconds. Display will show a value that represents the filter cycle duration in hours.

- 7• Use Down arrow key to lower the number of hours.
0 = no filtration
12 = continuous filtration

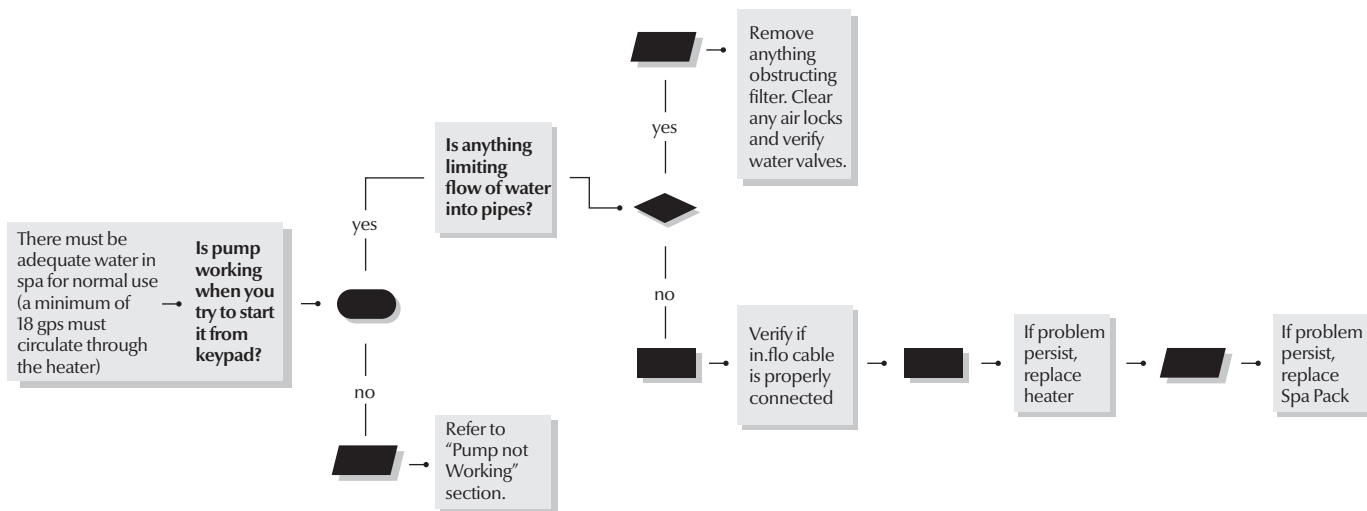
When the desired setting is displayed, press Light key again. The filter cycle will start immediately.



FLO

The system did not detect any water flow while the primary pump was running. Follow Troubleshooting Flow Chart below to identify the problem:

Make sure that the low-level programming has been properly set, with or without circulation pump (depending on your system configuration).

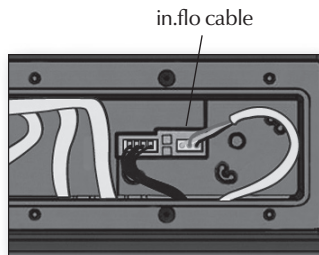




FLO

Primary pump is activated but the system doesn't detect any water flow

- Make sure water valves are open and that water level is high enough.
- Check and remove anything obstructing the filter.
- Make sure there are no air locks (or that no object obstructs the passage of water in the heater channel). Pumps may make strange noises.



Follow air lock procedure to clear them.

- Make sure that the pump associated to the heater (primary pump) is running.
- Make sure in.flo cable (located above the heater) is properly connected.
- If problem persists replace heater.
- If problem not solved replace Spa Pack.



No low level configuration software in system!

Step-by-Step



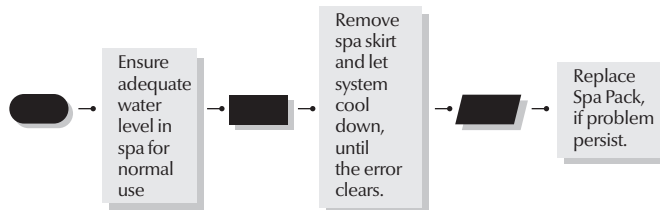
- New low level configuration software needs to be downloaded into the in.xe spa system, without it the system will not be operable.
- Contact our toll free line for technical support (1-800-784-3256).

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



Temperature inside the spa equipment compartment is too high

Flow chart



Step-by-Step



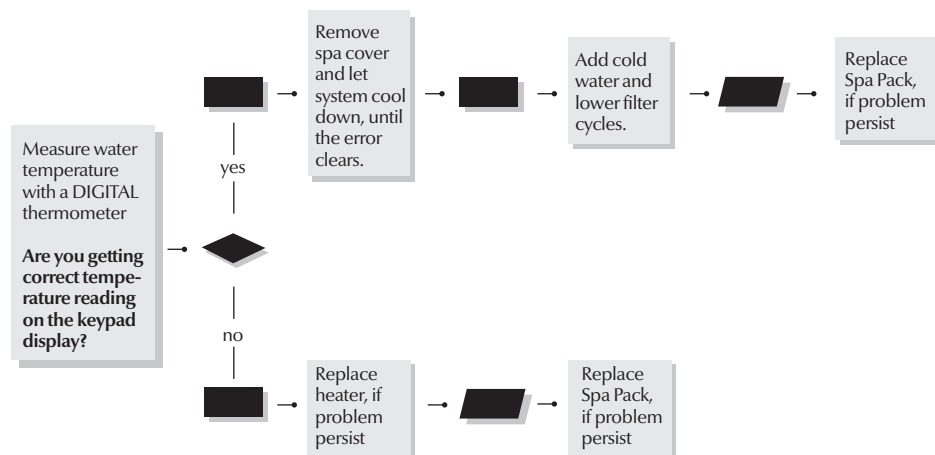
- There must be adequate water in spa for normal use (a minimum of 18 gps must circulate through the heater).
- Remove spa skirt and let system cool down, until the error clears.
- If problem persists replace Spa Pack.



OH

Water temp. in the spa has reached 108°F

Flow chart



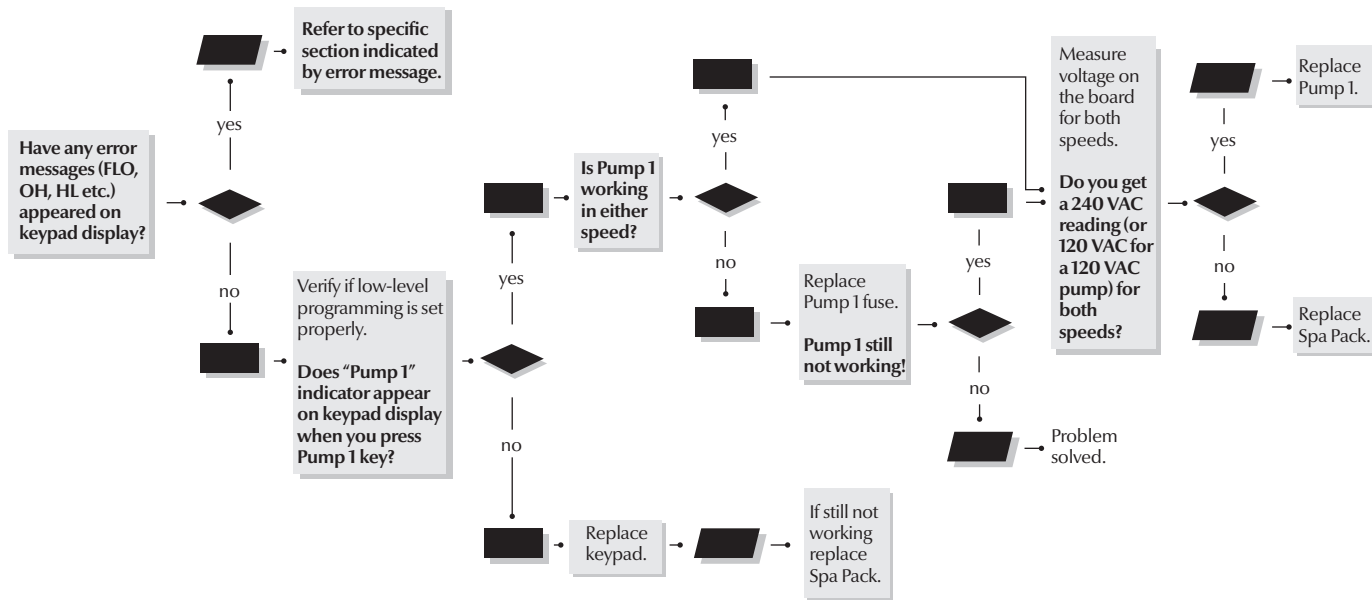
Step-by-Step

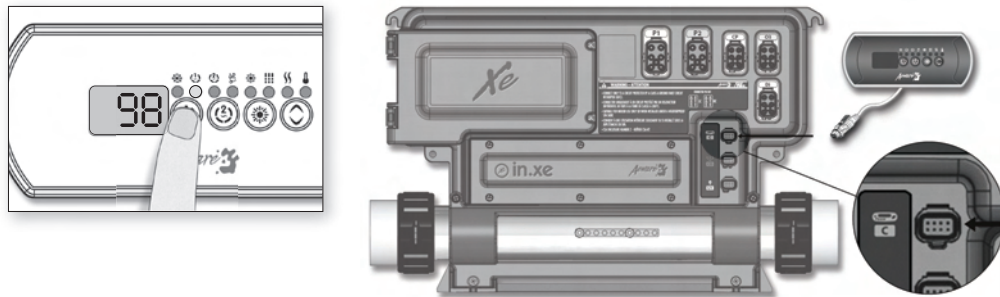


- Measure water temperature with a DIGITAL thermometer and compare its reading with temp. on the display. If temp. reading is different, replace heater.
- Remove spa cover and let spa cool down.
- Add cold water and lower filter cycles.
- If problem persists replace Spa Pack.



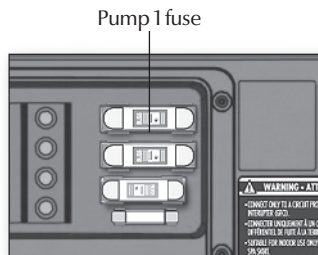
If Pump 1 is not working,
follow this troubleshooting flow chart:





Pump 1 does not work!

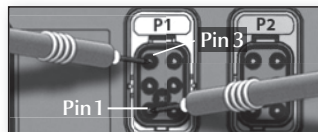
- Check for an error condition on keypad display. If there is one, refer to specific section indicated by the error condition.
- Verify low level programming configuration.
- Verify if "Pump 1" indicator appears on keypad display when you press **Key 1** button.
- If "Pump 1" indicator does not appear, use a spare keypad to verify if keypad is defective.
If it is, replace keypad.
If not, replace Spa Pack.
- If "Pump 1" indicator appears when **Key 1** button is pressed, verify if pump works in either speed.



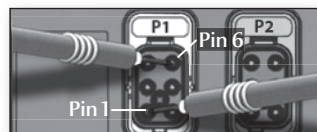
- If Pump 1 does not work in either speed, replace Pump 1 fuse.
- If replacing the fuse is not effective or if Pump 1 works in only one speed, take voltage reading on the corresponding in.link connector.
- Turn Pump 1 to **high speed** and take voltage reading between:

Pump up to 20 Amp :

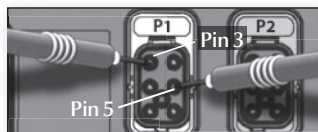
240 VAC: Pin 3 & Pin 1
120 VAC: Pin 3 & Pin 5



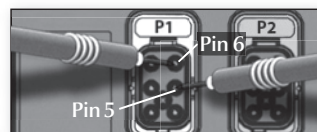
240 VAC at P1 connector:
Pin 3 & Pin 1



240 VAC at P1 connector:
Pin 6 & Pin 1



120 VAC at P1 connector:
Pin 3 & Pin 5



120VAC at P1 connector:
Pin 6 & Pin 5

Pump up to 15 Amp :

240 VAC: Pin 2 & Pin 1
120 VAC: Pin 2 & Pin 5

Your reading should be:

240 VAC for a 240 VAC pump
120 VAC for a 120 VAC pump

- Turn Pump 1 to **low speed** and take voltage reading between:

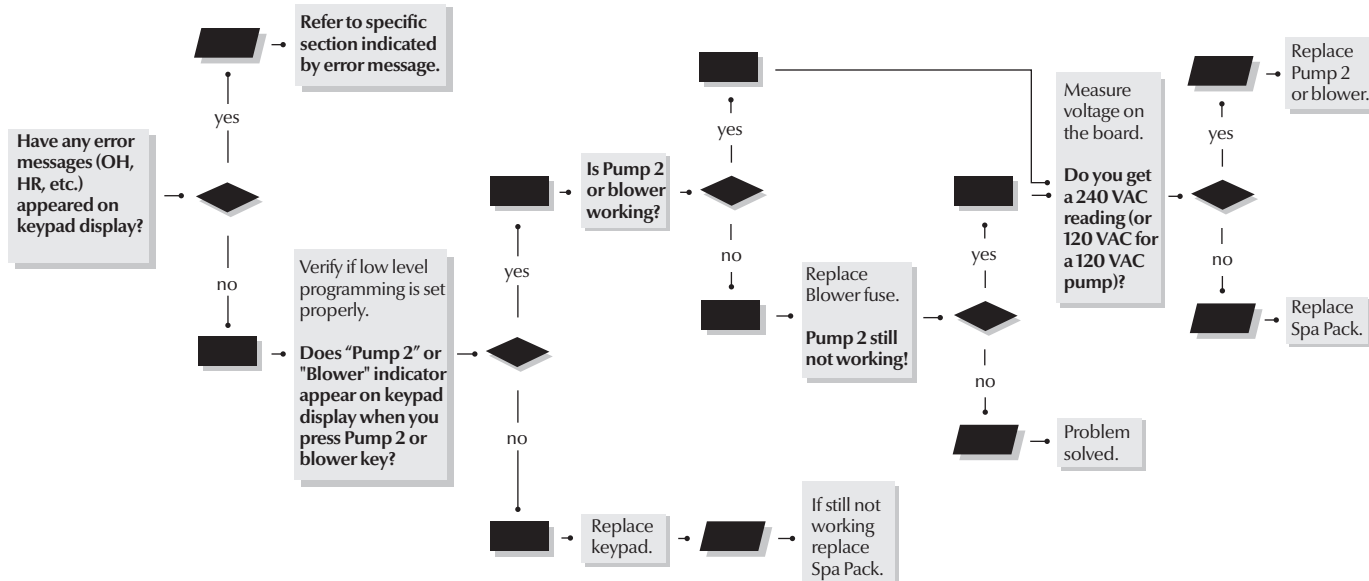
240 VAC: Pin 6 & Pin 1
120 VAC: Pin 6 & Pin 5

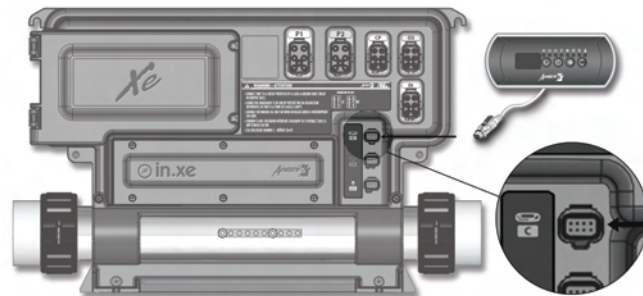
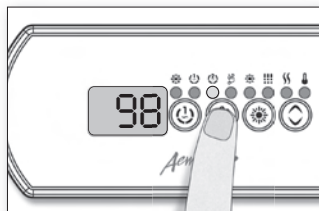
Your reading should be:
240 VAC for a 240 VAC pump
120 VAC for a 120 VAC pump

- If voltage is as it should be, replace Pump 1.
- If not, replace Spa Pack.



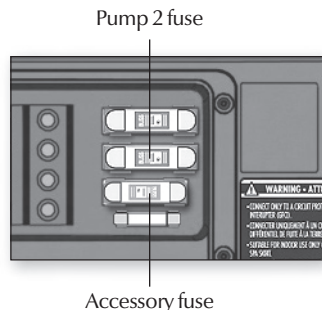
If Pump 2 or blower is not working,
follow this troubleshooting flow chart:



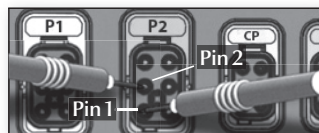


Pump 2 or blower is not working!

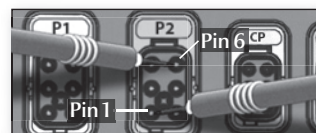
- Check for an error condition on keypad display. If there is one, refer to specific section indicated by the error condition.
- Verify low level programming configuration.
- Verify if "Pump 2" or "Blower" indicator appears on keypad display when you press **Key 2** button.
- If "Pump 2" or "Blower" indicator does not appear, use a spare keypad to verify if keypad is defective.
If it is, replace keypad.
If not, replace Spa Pack.
- If "Pump 2" indicator appears when **Key 2** button is pressed, verify if pump works in either speed (if dual speed pump).



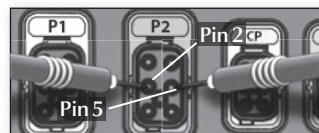
- If "Pump 2" or "Blower" does not work in even when indicator is on, replace Pump 2 fuse or the accessory fuse for the blower.
- If replacing the fuse is not effective, take voltage reading on the corresponding in.link connector.



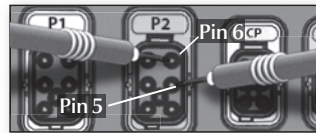
240 VAC at P2 connector:
Pin 2 & Pin 1



240 VAC at P2 connector:
Pin 6 & Pin 1



120 VAC at P2 connector:
Pin 2 & Pin 5



120 VAC at P2 connector:
Pin 6 & Pin 5

- Turn "Pump 2" to **high speed** and take voltage reading between:

240 VAC: Pin 2 & Pin 1
120 VAC: Pin 2 & Pin 5

Your reading should be:

240 VAC for a 240 VAC pump
120 VAC for a 120 VAC pump

- Turn "Pump 2" to **low speed** and take voltage reading between:

240 VAC: Pin 6 & Pin 1
120 VAC: Pin 6 & Pin 5

Your reading should be:

240 VAC for a 240 VAC pump
120 VAC for a 120 VAC pump

- Turn "Blower" on and take voltage reading between:

240 VAC: Pin 2 & Pin 1
120 VAC: Pin 2 & Pin 1

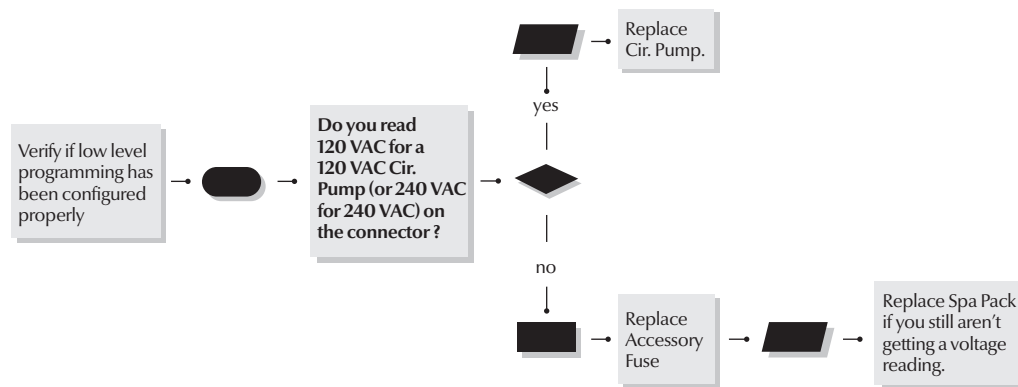
Your reading should be:

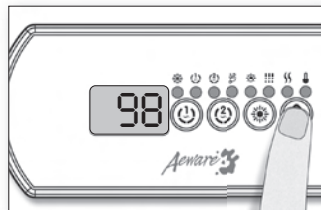
240 VAC for a 240 VAC blower
120 VAC for a 120 VAC blower

- If voltage is as it should be, replace Pump 2 or blower.
- If not, replace Spa Pack.



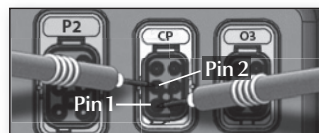
If Circulation pump is not working,
follow this troubleshooting flow chart:



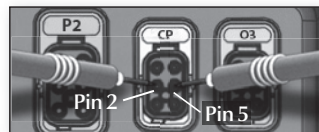


If Circulation pump is not working:

- Verify low level programming configuration.
- Start circulation pump by setting temperature set point 2 °F higher than actual water temperature.



240 VAC at CP connector:
Pin 2 & Pin 1



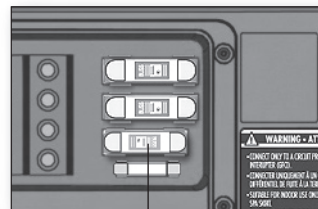
120 VAC at CP connector:
Pin 2 & Pin 5

- Take voltage reading on the corresponding in.link connector:

240 VAC: Pin 2 & Pin 1
120 VAC: Pin 2 & Pin 5

Your reading should be:

240 VAC for a 240 VAC pump
120 VAC for a 120 VAC pump



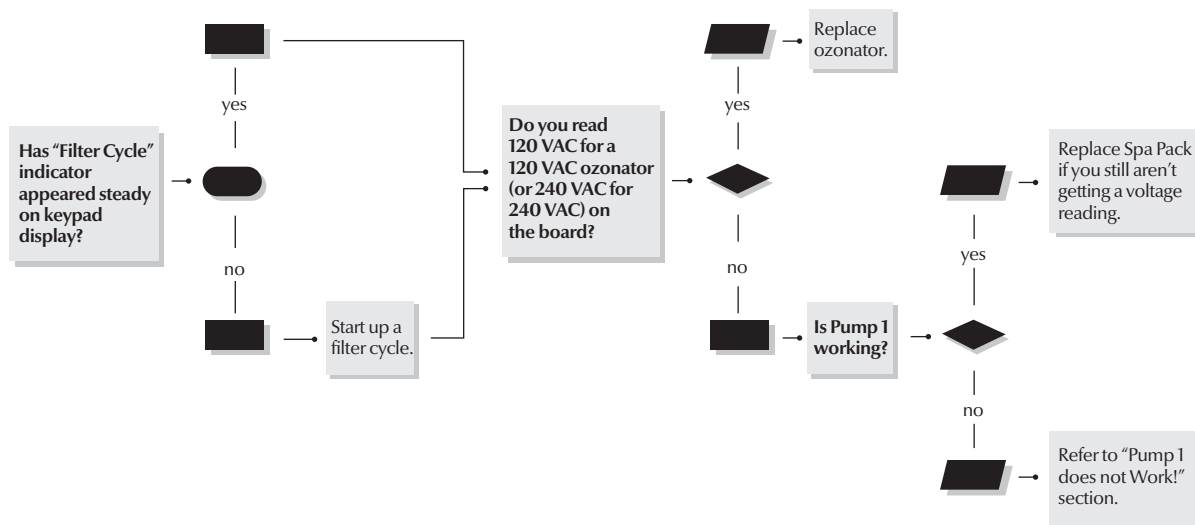
Accessory fuse

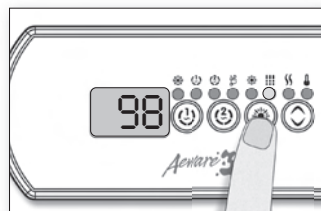
- If you don't get a voltage reading, replace the accessory fuse.
- If voltage is as it should be, replace circulation pump.
- If not, replace Spa Pack.



If Ozonator is not working,
follow this troubleshooting flow chart:

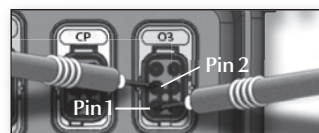
Ozonator output will be shut down when Pump 1, Pump 2 or blower have been turned on manually.



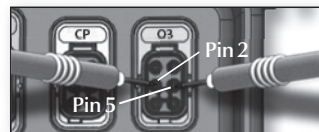


If Ozonator is not working:

- Verify "Filter Cycle" indicator appears steady on keypad.
- If the filter indicator is blinking it indicates that the filter cycle has been interrupted. In that case, reset the breaker by turning the power off and on again to resume cycle.
- If not, start up a filter cycle (see Programming filter cycles section).



240 VAC at O3 connector:
Pin 2 & Pin 1

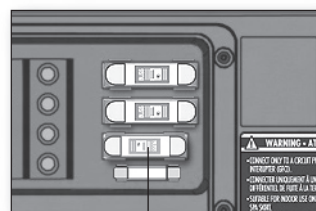


120 VAC at O3 connector:
Pin 2 & Pin 5

- If ozonator does not work even when filter cycle indicator is on, take voltage reading on the corresponding in.link connector:

240 VAC: Pin 2 & Pin 1
120 VAC: Pin 2 & Pin 5

Your reading should be:
240 VAC for a 240 VAC
ozonator
120 VAC for a 120 VAC
ozonator

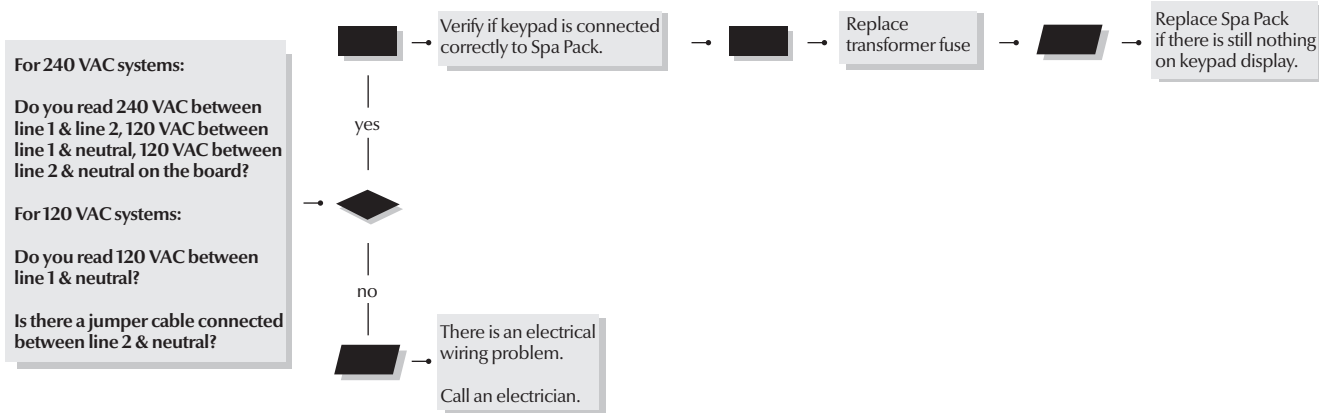


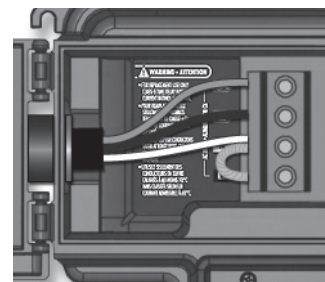
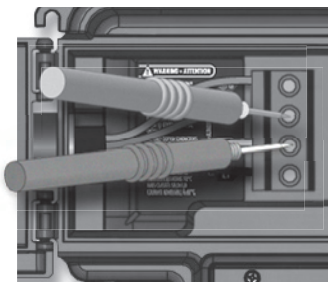
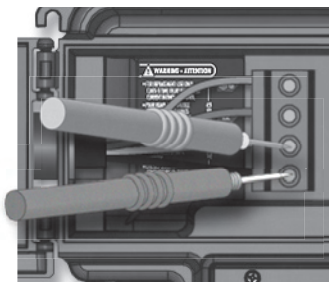
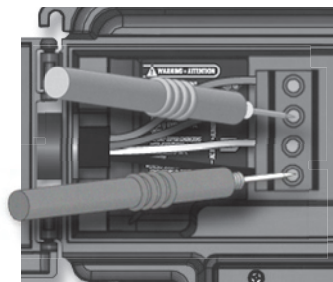
Accessory fuse

- If you don't get a voltage reading, replace the accessory fuse.
- If voltage is as it should be, replace ozonator.
- If not, replace Spa Pack.



If nothing seems to work, turn off the main breaker off and visually inspect power input cable, gently pull on it to make sure is properly tighten. Then, follow this troubleshooting flow chart:





Nothing seems to work!

- Verify that all screws are properly tighten on the terminal block.
Turn power off and make sure that all cables hold firmly in the terminal block if you pull on them.
- On the terminal block, measure voltage between line 1 and line 2.
- You should get 240 VAC.

- Measure voltage between line 1 and neutral.
- You should get 120 VAC.

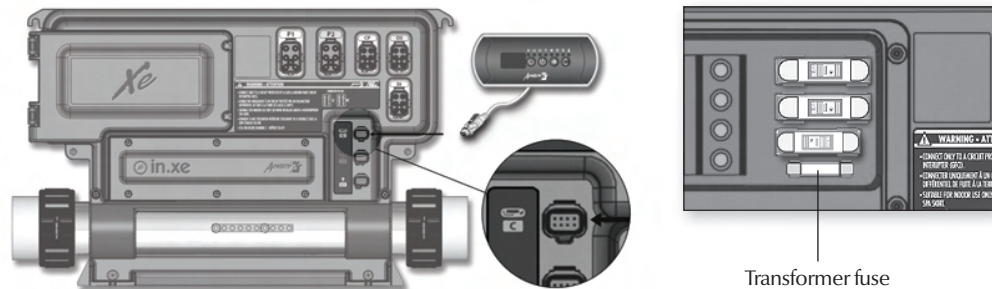
- Measure voltage between line 2 and neutral.
- You should get 120 VAC.
- If you do not get good readings, this indicates an electrical wiring problem.

Call an electrician!

For 120 VAC Systems

- Measure voltage between line 2 and neutral.
- You should get 120 VAC.
- Verify that there is a jumper between line 1 and neutral.
- If you do not get good readings, this indicates an electrical wiring problem.

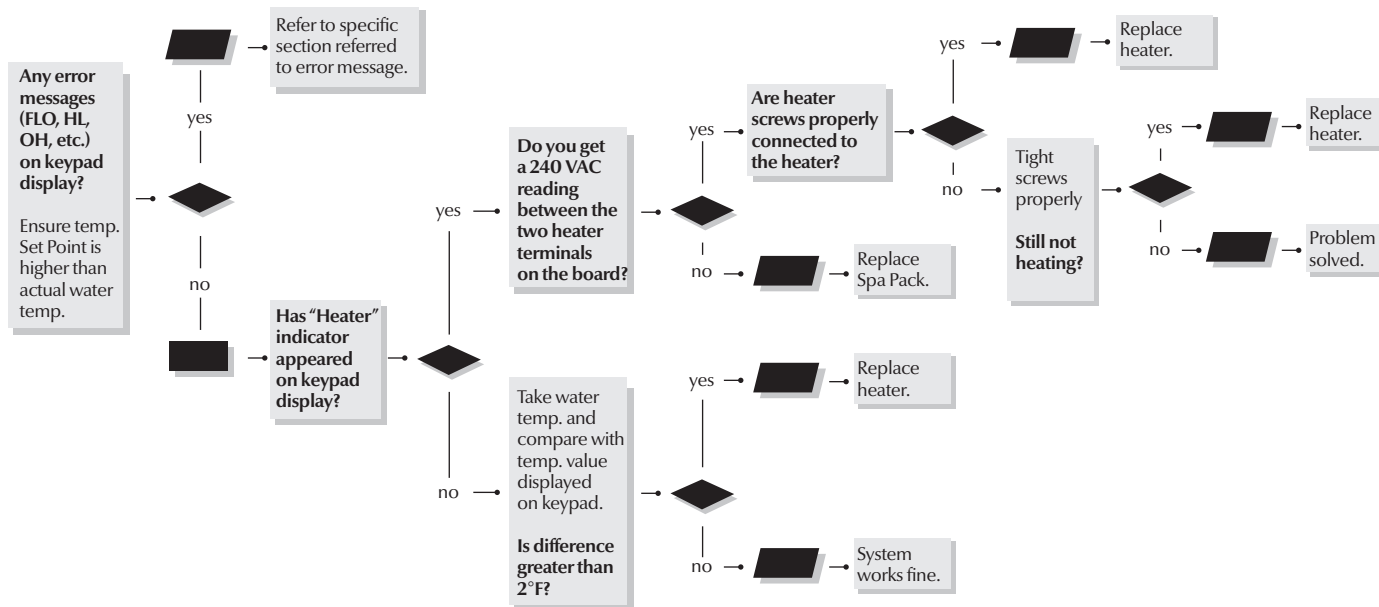
Call an electrician!

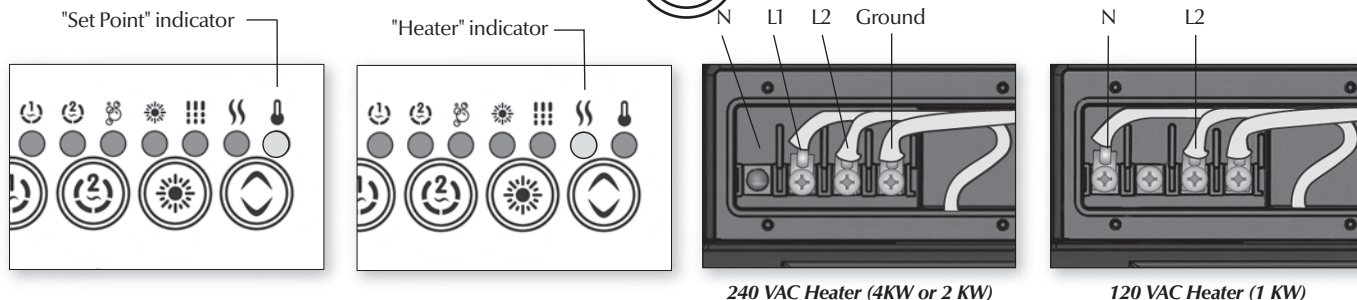


- Verify if keypad is correctly connected to the Spa Pack.
- Replace transformer fuse.
- If problem persists, replace Spa Pack.



If spa is not heating,
follow this troubleshooting flow chart:





Spa not heating!

- Check for an error condition on keypad display. If there is one, refer to specific section indicated by the error condition.
- If there is no error message, try to raise water temperature by increasing the Set Point 2°F higher than actual water temperature. Press Up key to increase Set Point.
- Verify if "Heater" indicator appears on keypad display.
- The heater indicator will be on when heater is on. It'll flash if more heat has been requested, but heater has not started yet.

- If heater indicator lights up on the display, take voltage reading on the heater terminals.

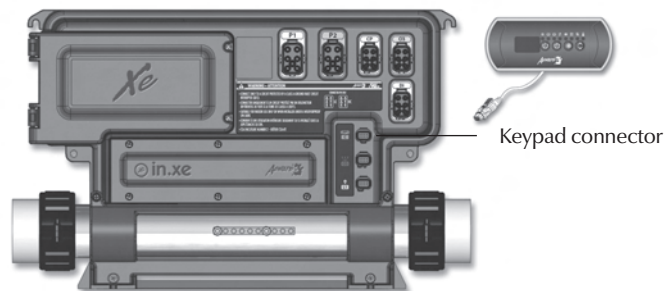
Your reading should be:

240 VAC: Line 1 & Line 2
120 VAC: Line 1 & Neutral

- If voltage reading is not as it should be, verify if heater terminals are properly connected .
- If it is, replace Spa Pack.
- In the case of the European model in.xe.ce only, replace accessory fuse.
- If problem persists, replace Spa Pack.

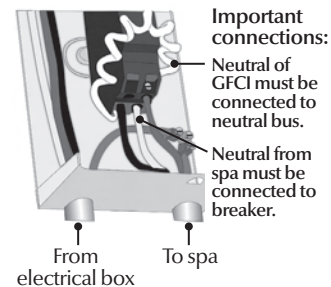
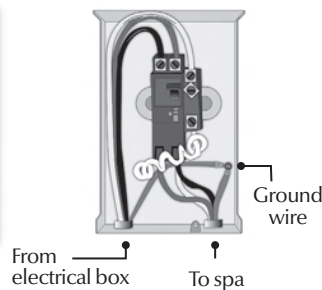
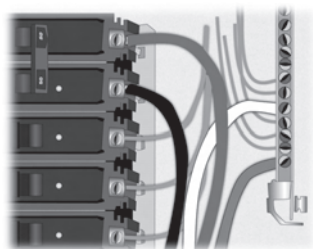
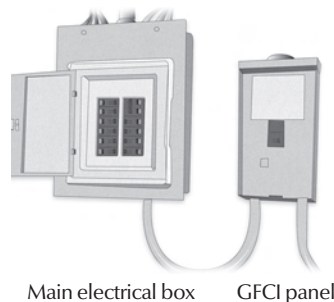


Keypad doesn't seem to work!



If a keypad doesn't seem to work:

- Verify keypad connections and try spare keypad.
- Replace keypad if problem is corrected.
- Replace in.xe if problem is not corrected.



Warning! Total current output cannot exceed total current input rating!

There are different GFCI models used on the market. See manufacture's instructions that come with the GFCI for specific information. Note that all illustrations are examples only.

Verify if GFCI is properly connected.

If it's not, verify GFCI diagram and reconnect it.

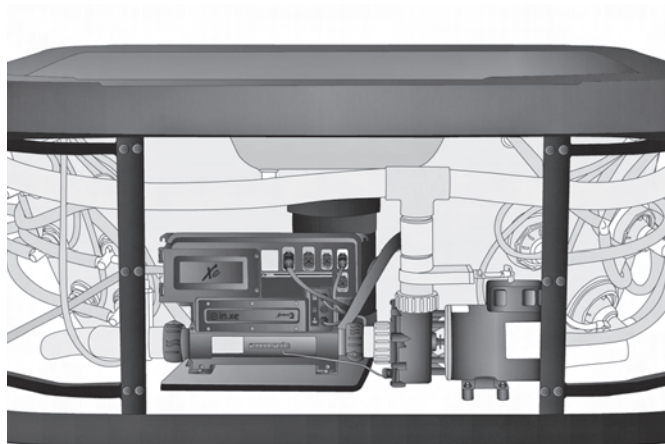
Verify in.xe pack wiring (make sure that the neutral and the ground have not been inverted).

If the GFCI is properly connected but still tripping, unplug all outputs from the Spa Pack (pumps, blower, heater, ozonator etc).

Reconnect one output at the time until the GFCI trips again.

Replace defective component.

Note: Incorrect GFCI wiring may lead to a condition where the GFCI may NOT trip when it should. Therefore, causing electrical shock hazard. All electrical installations should be done by qualified personnel only.



in.xe

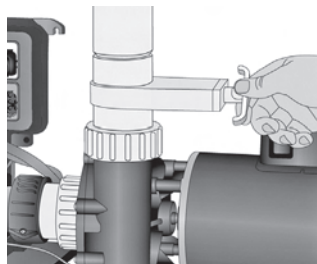
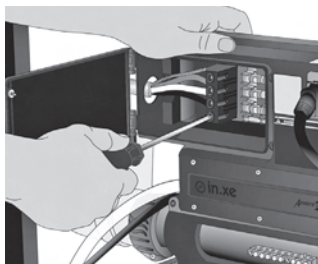
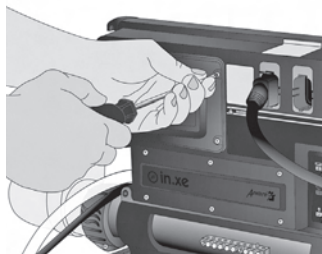
Step by Step Field Replacement Procedure

As part of our technical support services, this section provides step by step proper methods to facilitate the replacement of in.xe spa packs systems in the field.

Tools needed:

- Phillips & flat screwdrivers
- Multimeter
- Open-Ended Adjustable Wrench
- Scraper tool
- Pliers
- GFCI tester

All procedures described in this service manual must only be performed by qualified personnel, in accordance with the standards applicable in the country of installation.

**Warning!**

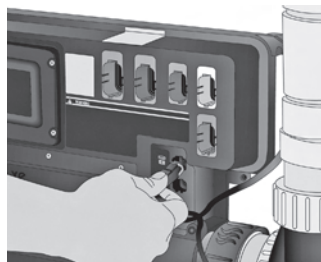
When replacing an in.xe spa pack, its very important to make sure to turn Power off before proceeding.

With a Phillips screwdriver or a flat screwdriver loosen the 2 screws of the Spa Pack door and open it.

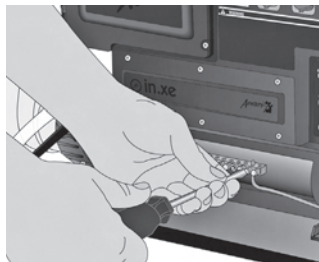
Disconnect incoming power lines by loosening the screws on the terminals of the terminal block.

Carefully revise the spa plumbing schematics and identify the spa Flow Shut Off Valves. Make sure that both Flow Shut Off Valves which control water inlet before and after the heater are closed.

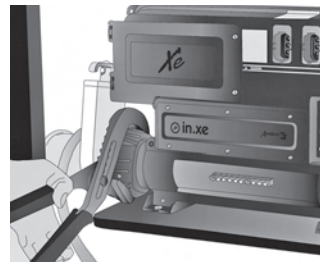
Unplug all HC (high current) outputs. e.g.: Pumps, Blower or any other accessories.



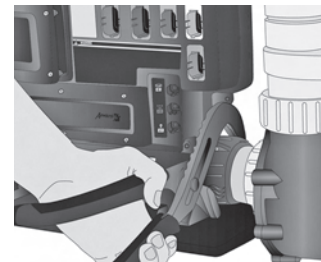
Unplug all LC (Low Current) outputs. e.g.: main keypad, light or any other accessory.



Disconnect the grounding cable from the Bonding Lug of the in.xe Spa Pack.



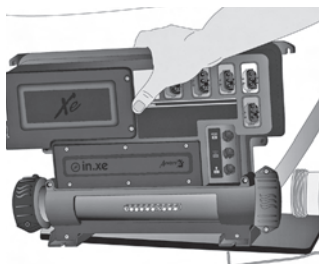
Using an Open-Ended Adjustable Wrench loosen both 2" plastic nuts at each end of the in.xe heater, as illustrated.





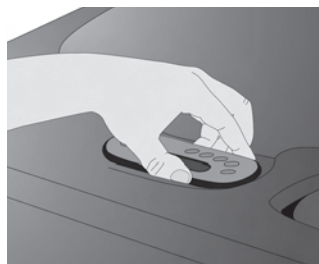
Remove the 2 screws that hold the front of the unit's feet attached to the spa floor.

Note: the in.xe can be also wall-mounted. For more details on wall installation procedure refer to the wall installation section of the in.xe techbook.



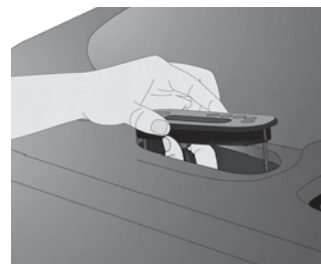
Release the 2" heater nuts from both ends of the spa piping. Release the in.xe Spa Pack by sliding the unit away from the guide plate that holds the backside of the unit's feet in place.

Remove the defective in.xe spa pack unit from the spa.



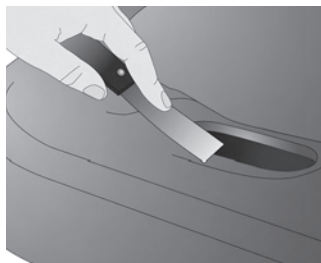
Once that is done, remove the old in.xe keypad from the spa.

Note: the procedure on keypad replacement shown here is for educational purposes only. Is not always necessary to replace the keypad, unless it may be the cause of the malfunctioning of the in.xe system. Common sense should prevail.



When removing the old in.xe keypad, make sure to note the exact model, available options etc. Ideally, the new replacement keypad should be of the exact same model as the old one.

If it's not, contact our Technical Support Department for keypad compatibility list.



With an scraper tool, gently clean the surface of installation of the new keypad, finish the job with an alcohol saturated paper towel to remove any unwanted residu left over from the old keypad.



Feed the cable of the new keypad through the hole opening in the spa.

Orient the cable's connector towards the in.xe pack to facilitate its connection later.



Insert the keypad in the opening.

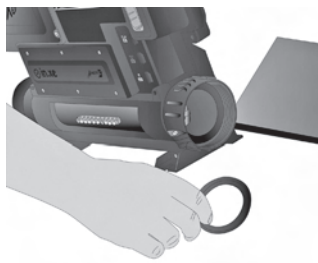


Peel off the double-sided tape protective layer from the back of the keypad.

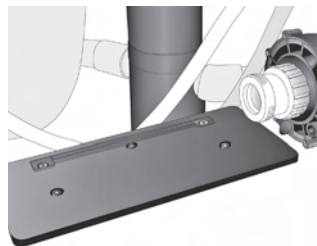
Make sure that the keypad is well aligned and rests perfectly in the recess of the spa.



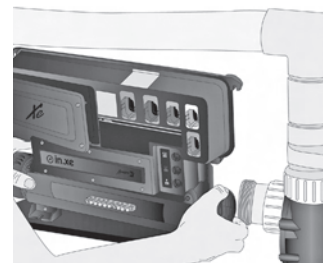
Secure the keypad in place. Insure that its adhesive strip is properly glued by pressing evenly with your finger over the entire surface.



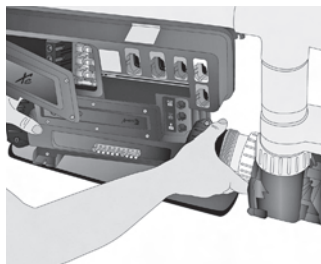
Place a rubber 2" O-ring gasket at the end of each heater nut, to prevent water leakage between the heater nuts and the 2" PVC heater tailpieces.



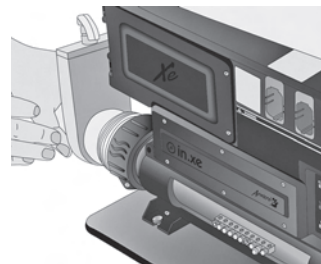
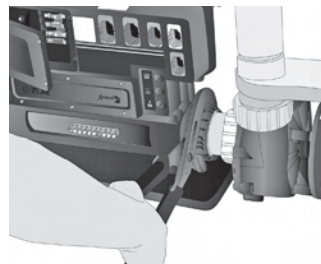
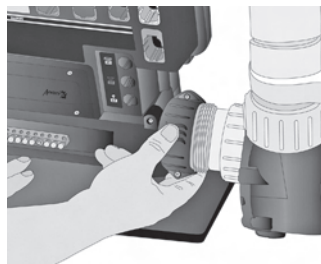
When installing the new in.xe spa pack, slide back side of the unit's feet into the guide plate.



Install the new in.xe spa pack in the spa plumbing.



Screw fittings to joint to the spa pipe system. Making sure that the piping and nut threads are not overtighten.



Finally, follow same procedure in reverse order to connect replacement in.xe spa pack.

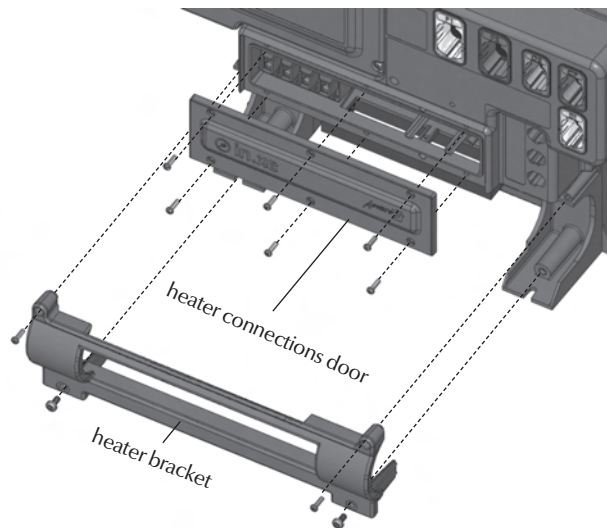
**Warning!**

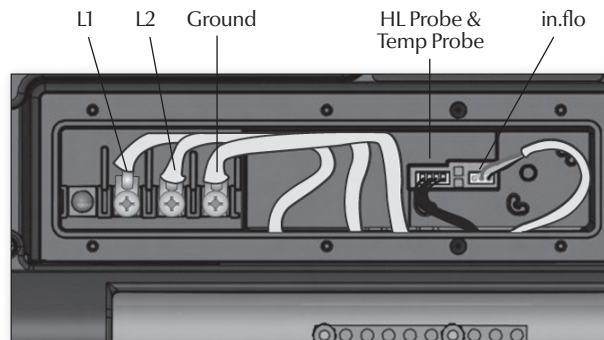
Before starting removal procedure be sure to:

- Turn off electric power to the the unit.
- Ensure spa water valves are closed (or that the spa is drained).

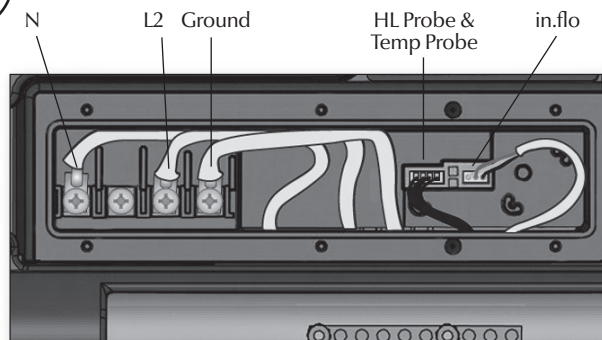
Using a Phillips screwdriver, loosen the six (6) screws that hold the heater connections door in place. Once the screws are removed, disengage the heater connections door.

Loosen and remove the four (4) screws and disengage the heater bracket.





240 VAC Heater (4KW or 2 KW)



120 VAC Heater (1 KW)

Use a Phillips screwdriver to loosen the terminals and remove all electrical heater connections:

Neutral Line (N), Line 1 (L1), Line 2 (L2) and Ground Line (Ground).

Manually remove the HL probe & Temp. probe connector.

Manually remove in.flo connector.

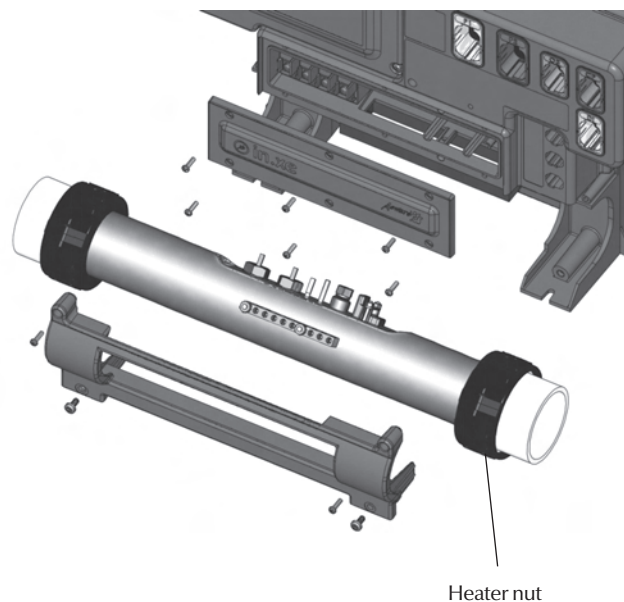
Be careful not to damage any connector by twisting or pulling too hard.



After disconnecting all electrical heater connections, loosen and remove the two (2) heater nuts retaining the heater.

Disengage heater from in.xe pack by slightly twisting in such way that the bottom of the heater comes out first and pull the heater away from the pack.

Replace the defective heater with a new one, and repeat the same procedure in reverse order to reconnect replacement heater to the in.xe pack.





in.xe UL/CSA electrical specifications

Input rating :	120/240 VAC nominal (+ 5/- 10 %)
	(2-phase required with neutral) 48 A Max,
	60Hz nominal (+ 1.5 / -1.0 Hz).

in.xe.ce electrical specifications

Input rating :	230/400 VAC nominal (+ 5/- 10 %)
	single-phase system (10 to 40 A Max)
	2-phase system (10 to 20 A Max)
	50 Hz nominal (+ 1.5 / -1.0 Hz)

Output ratings:

Output	Voltage	Current	Typical Device
Out 1	120/240V	20 FLA/70 LRA (in-rush)	Pump 1
Out 2	240 V	15 FLA/60 LRA (in-rush)	Pump 2
Out 3	120/240V	6 FLA/60 LRA (in-rush)	Circulation Pump
		10 FLA (resistive load)	(CP)/Blower

Important:

- All low voltage accessories use + 5Vdc and/or + 12 Vdc.
- All low voltage accessories combined: 150 mA max, on + 12 Vdc.
- The maximum amperage for outputs 3 to 5 cannot exceed 12 Amps.

heat.wav ratings:

Voltage:	120/240VAC
Current:	1120/240VAC
Current:	17A resistive (4 kW heater at 240V)
	8.7 A resistive (2kW at 230v)
	8.5 A resistive (1kW at 120v)
	5.7 A resistive (1.3 kW at 230v)
Frequency:	50 / 60 Hz

heat.wav heater flow rate:

Minimum of 18 GPM is required

Output ratings:

Output	Voltage	Current	Typical Device
Out 4	120/240V	6 FLA	Ozone Generator
Out 5	120/240V	10 A	Audio/Video device
LI	Light, 12VAC, 1 A		
CO	Communications port	<i>Comm.connector (in.stik)</i>	
CI	Top side controller *		

**General specifications:****Environmental:****Operating temperature****North American model in.xe:**

-20°C (-4°F) to 60°C (140°F) for Pump 1 15 A

-20°C (-4°F) to 50°C (122°F) for Pump 1 20 A

European model in.xe-ce:

for single-phase system (1 x 32 A Max) or 2-phase (2 x 16 A)

-20°C (-4°F) to 60°C (140°F)

for single-phase system (1 x 40 A Max) or 2-phase (2 x 20 A)

-20°C (-4°F) to 50°C (122°F)

Storage temperature: -25°C (-13°F) to 85°C (185°F)

Humidity: up to 85% RH, non condensing

IPx5 level of waterproofing is conditional on 3 items:

- Both front covers (heater and input wiring) are closed and screwed shut.
- A waterproof strain-relief/bushing is used for the cable entry into the pack.
- Any unused in.link connections (HC, LC, or low voltage) is plugged with the appropriate blank plug.

Mechanical:

Weight: 4.76 kg (10.5 lbs)

Dimensions (W x H x D):

Chassis: 441.5x298.5 x129 mm (17.38" x 11.75" x 5.1")

UL/CSA Standards:

UL 1563 Fifth Ed.

File: E182156

CSA No. 22.2 - 218.1-M89.

**TUV Standards:**

EN/IEC 60335 - 2 - 60: 2003/2002 - EN/IEC 60335 - 1: 2002/2001
(incl. Corr. & Am. up to 2004)

EN55014-1

EN55014-2

EN61000-3-2

EN61000-3-3



The in.xe is lab tested to IPx5 enclosure protection levels.

Advanced electronics! Water resistance!



Aeware 3
by gecko

Gecko Alliance

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9225 Stellar Court, Corona, CA 92883 USA, 951.667.2000

www.geckoalliance.com