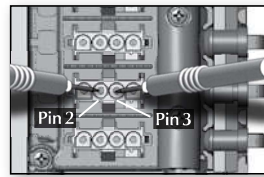
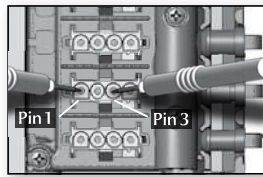


Pump 2 fuse (F3)



- | | | | |
|---|--|---|--|
| <ul style="list-style-type: none">• If Pump 2 does not work in either speed, replace Pump 2 fuse.• If replacing the fuse is not effective or if Pump 2 works in only one speed, take voltage reading on the corresponding in.link connector. | <ul style="list-style-type: none">• Turn Pump 2 to high speed and take voltage reading between:

Pin 1 & Pin 3

Your reading should be:

240 V for a
240 V pump

120 V for a
120 V pump | <ul style="list-style-type: none">• Turn Pump 2 to low speed and take voltage reading between:

Pin 2 & Pin 3

Your reading should be:

240 V for a
240 V pump

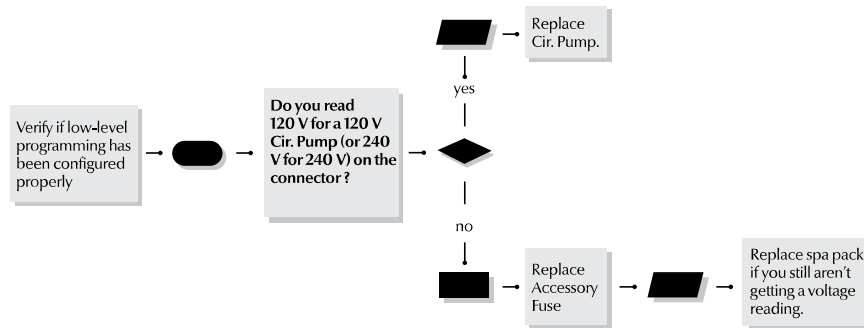
120 V for a
120 V pump | <ul style="list-style-type: none">• If voltage is as it should be, replace Pump 2.• If not, replace spa pack. |
|---|--|---|--|



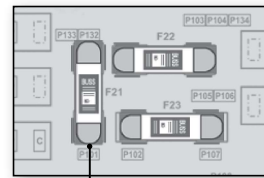
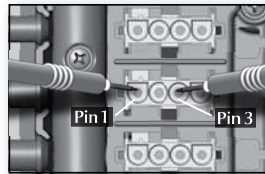
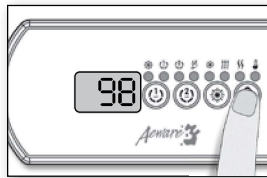
Circulation pump doesn't work / flow chart & step-by-step

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

Flow chart



Step-by-Step



Circulation pump fuse (F21)

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.
- Take voltage reading on the corresponding MP connector:
Pin 1 & Pin 3
Your reading should be:
240 V for a 240 V pump
120 V for a 120 V pump
- If you don't get a voltage reading, replace the accessory fuse.
- If changing the fuse does not fix the problem, replace the spa pack.
- If voltage is as it should be, replace circulation pump.

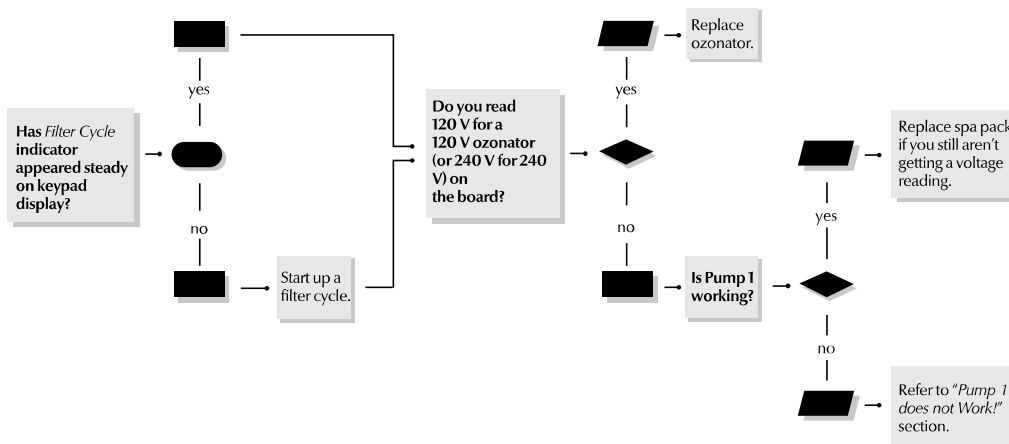


Ozonator doesn't work / flow chart & step-by-step

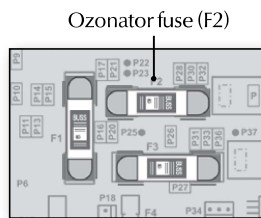
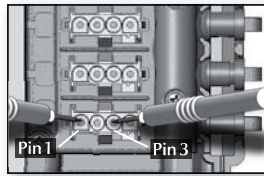
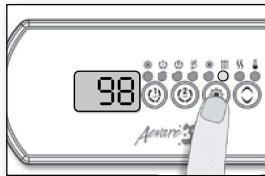
If the ozonator is not working, follow this troubleshooting flow chart:

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

Flow chart



Step-by-Step



If the ozonator is not working:

- Check if *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).
- If ozonator does not work even when filter cycle indicator is on, take voltage reading on the corresponding AMP connector:

Pin 1 & Pin 3

Your reading should be:
240 V for a 240 V pump

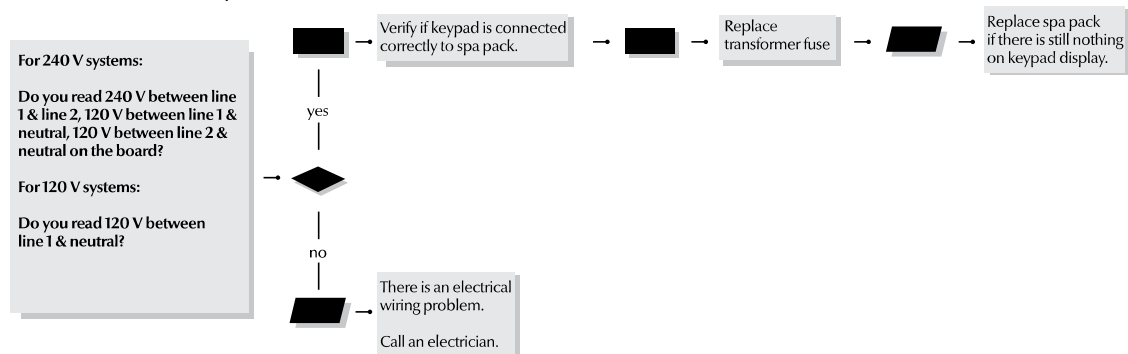
120 V for a 120 V pump
- If you don't get a voltage reading, replace the accessory fuse.
- If changing the fuse does not fix the problem, replace the spa pack.
- If voltage is as it should be, replace ozonator.



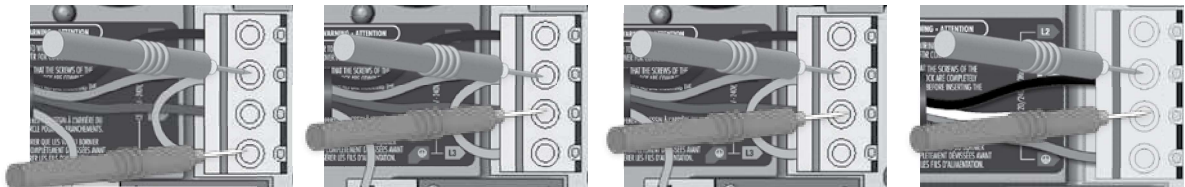
Nothing seems to work / flow chart & step-by-step

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

Flow chart For North American systems



Step-by-Step



Nothing seems to work!

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

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

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

Call an electrician!

For 120 V systems

- Measure voltage between line 1 and neutral.
- You should get 120 V.
- If you do not get good readings, this indicates an electrical wiring problem.

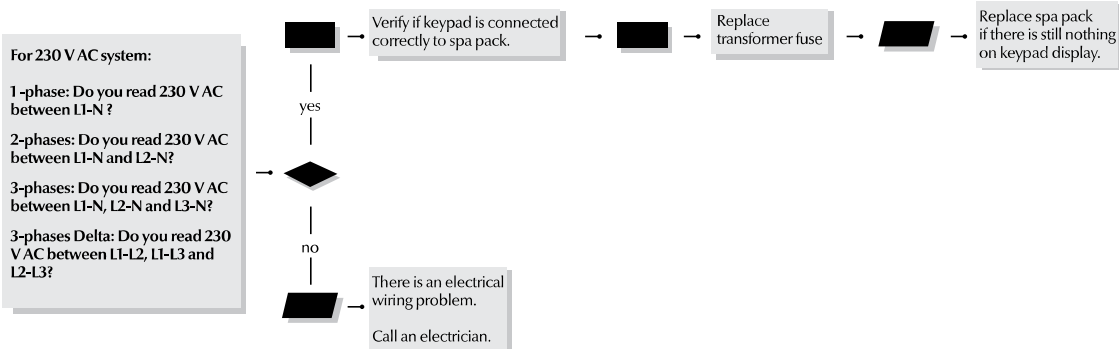
Call an electrician!



Nothing seems to work / flow chart & step-by-step

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

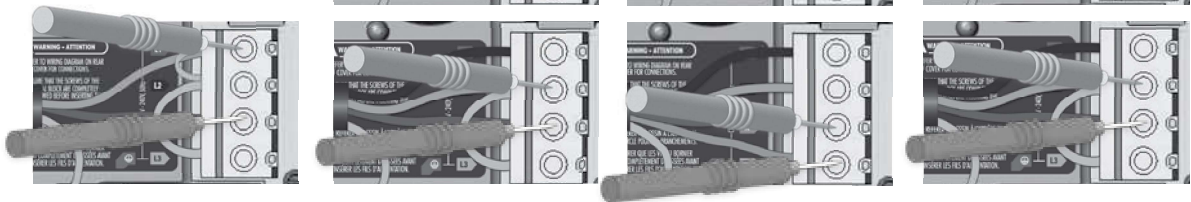
Flow chart For European systems



Step-by-Step

Nothing seems to work!

Verify that all screws are properly tightened on the terminal block. Turn power off and make sure that all cables hold firmly in the terminal block if you pull on them. Once done, turn power back on.



For 1-phase system

- On the terminal block, measure voltage between line 1 and neutral.
- You should get 230 V AC.
- If you do not get good readings, this indicates an electrical wiring problem.

Call an electrician!

For 2-phase system

- Measure voltage between line 1 and neutral and between line 2 and neutral.
 - You should get 230 V AC on both readings.
 - If you do not get good readings, this indicates an electrical wiring problem.
- Call an electrician!**

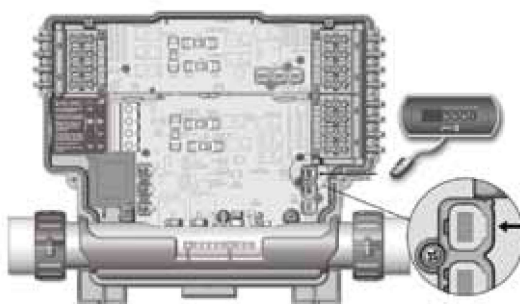
For 3-phase system

- Measure voltage between line 1 and neutral, between line 2 and neutral and between line 3 and neutral.
 - You should get 230 V AC for each reading.
 - If you do not get good readings, this indicates an electrical wiring problem.
- Call an electrician!**

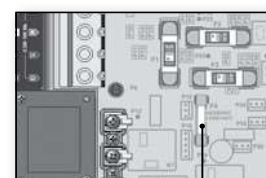
For 3-phase Delta system

- Measure voltage between line 1 and line 2, between line 1 and line 3 and between line 2 and line 3.
 - You should get 230 V AC for each reading.
 - If you do not get good readings, this indicates an electrical wiring problem.
- Call an electrician!**

If the voltage reading are OK then:



- Verify if keypad is correctly connected to the spa pack.



Transformer fuse

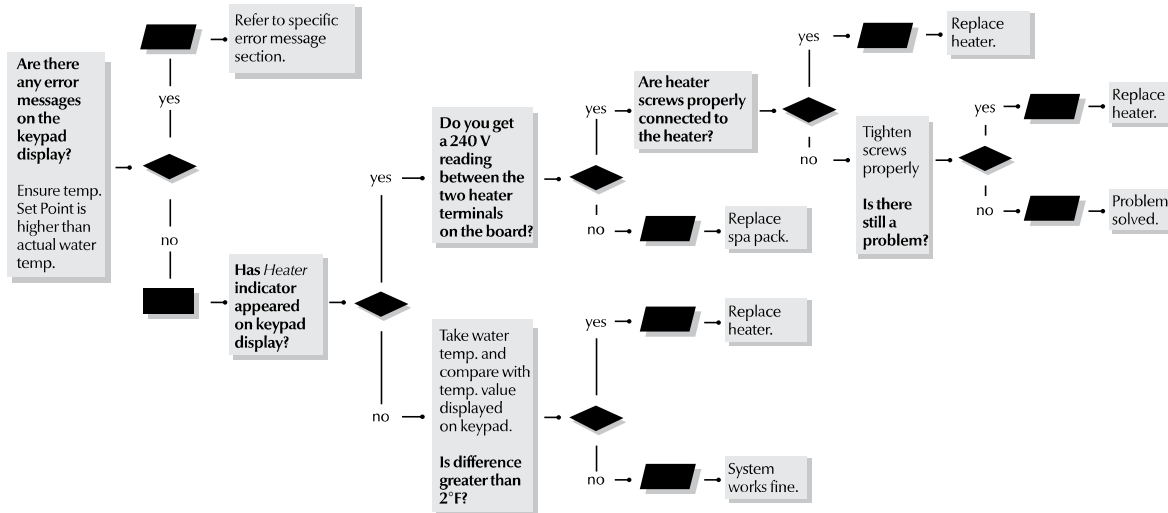
- Verify the transformer fuse.
- Replace transformer fuse if necessary.
- If problem persists, replace spa pack.



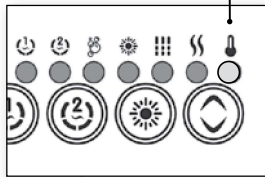
Spa not heating / flow chart & step-by-step

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

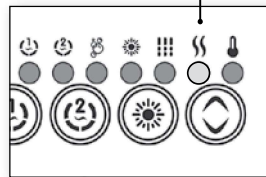
Flow chart



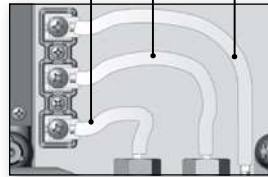
Set Point indicator



Heater indicator



Live Return Ground

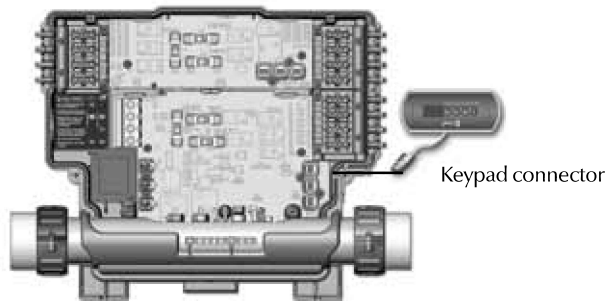


Spa not heating!

- Check for an error message on keypad display. If there is one, refer to specific section indicated by the error message.
- 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 will flash if more heat has been requested, but heater has not started yet.
- If heater indicator lights up on the display, take voltage reading between the heater live and return terminals.
Your reading should be:
240 V: for 240 V heaters
120 V: for 120 V heaters
- 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.yt.ce only, replace accessory fuse.
- If problem persists, replace spa pack.



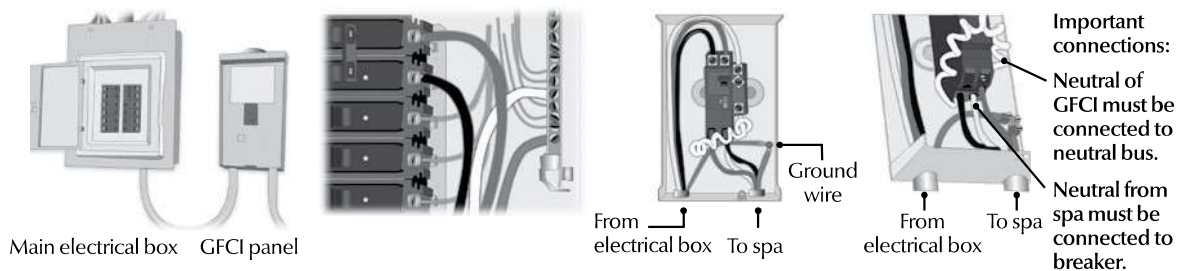
Keypad doesn't seem to work step-by-step



If a keypad doesn't work:

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

GFCI trips



⚠ Warning!

Total current output cannot exceed total current input rating!

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

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 a time until the GFCI trips again.

Replace defective component.

Verify that GFCI is properly connected.

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

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

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



Step-by-step field replacement procedure

Y Series

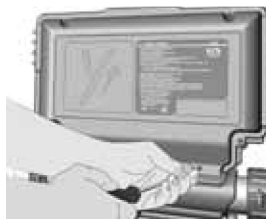
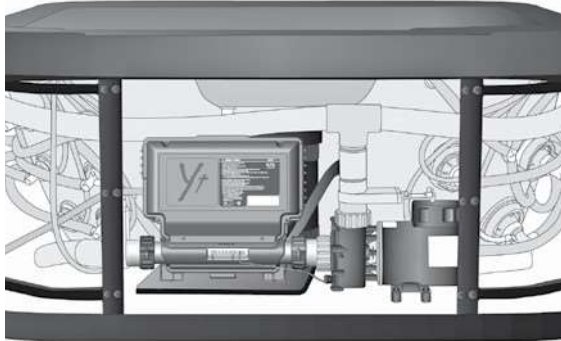
Step-by-step field replacement procedure

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

Tools needed:

- Phillips & flat screwdrivers
- Multimeter
- Open-ended adjustable wrench
- Scraper tool
- Pliers
- GFCI tester

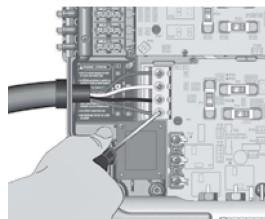
All procedures described in this service manual must only be performed by qualified personnel, in accordance with the standards applicable in the country of installation.



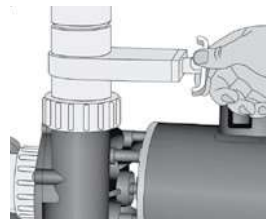
⚠ Warning!

When replacing a Y Series spa pack, it's very important to make sure to turn power off before proceeding.

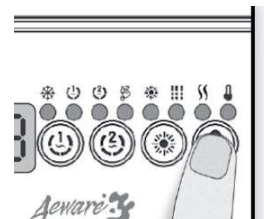
With a Phillips screwdriver loosen the screws of the spa pack cover and remove it.



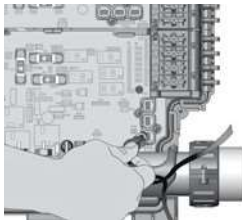
Disconnect incoming power lines by loosening the screws on the terminals of the terminal block.



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.



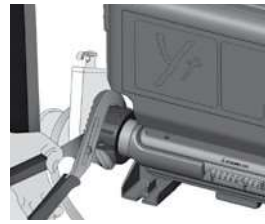
With a Phillips screwdriver loosen the screws of the strain reliefs and remove them. Unplug all accessory outputs. e.g.: Pumps, Blower or any other accessories.



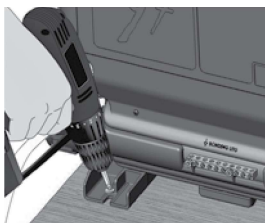
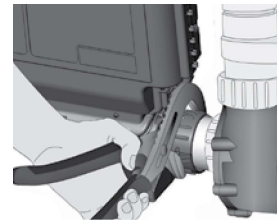
Unplug all low-voltage outputs. e.g.: main keypad, light or any other accessory.



Disconnect the grounding cable from the bonding lug of the spa pack.

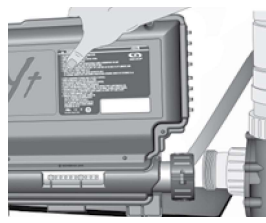


Using an open-ended adjustable wrench loosen both 2" plastic nuts at each end of the unit's heater, as illustrated.



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

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



Release the 2" heater nuts from both ends of the spa piping. Release the spa pack by sliding the unit away from the guide plate that holds the backside of the unit's feet in place. If the spa pack does not have a guide plate please refer to the installation section of the techbook for more details.

Remove the defective spa pack unit from the spa.



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

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



When removing the old 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 a scraper tool, gently clean the installation surface of the new keypad, then use an alcohol saturated paper towel to remove any unwanted residue 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 spa pack to facilitate its connection later.



Insert the keypad in the opening.

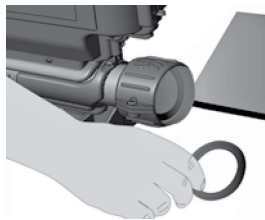


Peel off the protective layer from the adhesif on the back of the keypad.

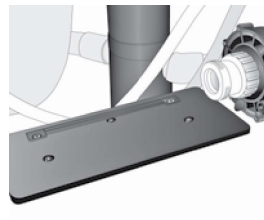
Make sure that the keypad is well aligned and rests perfectly in the recess of the spa.



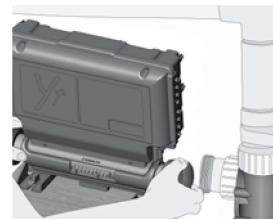
Secure the keypad in place. Ensure that its adhesive strip is properly glued by pressing evenly with your finger over the entire surface.



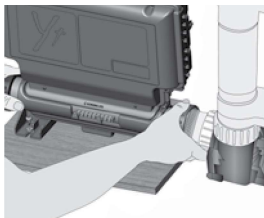
Place a rubber 2" O-ring gasket at the end of each heater nut, to prevent water leakage between the heater nuts and the 2" PVC heater tailpieces.



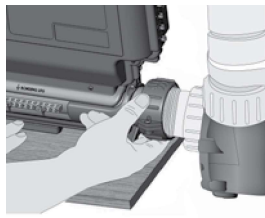
When installing the new spa pack, slide the back side of the unit's feet into the guide plate.



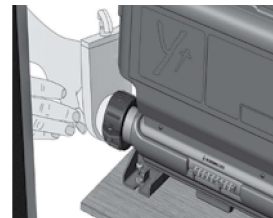
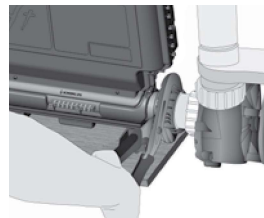
Install the new spa pack in the spa plumbing.



Screw fittings to join to the spa pipe system, making sure that the piping and nut threads are not over tightened.



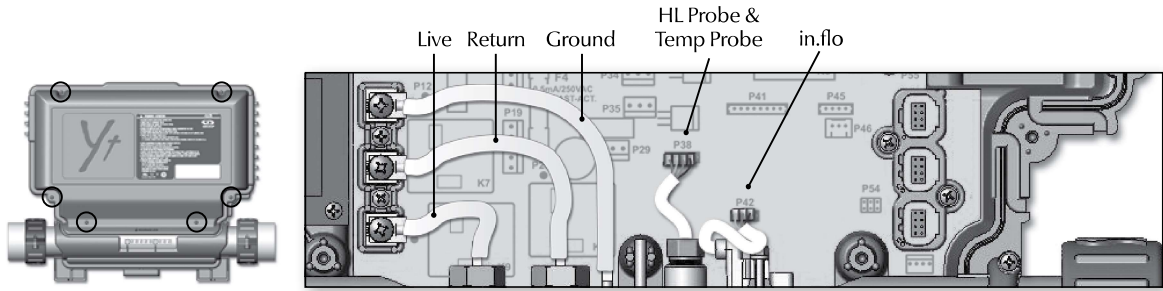
Use an open-ended wrench to tighten both 2" plastic nuts at each end of the unit's heater.



Finally, reopen both flow shut off valves and verify for leaks.



How to replace the heater



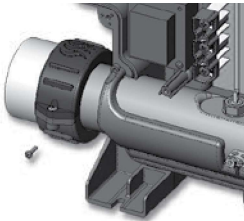
Using a Phillips screwdriver, loosen the 4 or 6 screws that hold the cover in place. Use a Phillips screwdriver to loosen the terminals and remove all electrical heater connections: Return, Live and Ground. Manually remove the HL probe & Temp. probe connector.

Manually remove in.flo connector. Be careful not to damage any connector by twisting or pulling too hard.

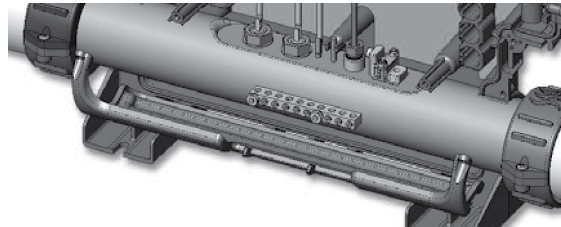
Warning!

Before starting removal procedure be sure to:

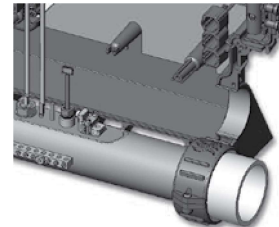
- Turn off electric power to the unit.
- Ensure spa water valves are closed (or that the spa is drained).



Loosen and remove the 2 screws and disengage the heater bracket. Remove the heater and replace with a new one. Put the heater bracket back in place and secure it with the 2 screws.



Adjust the heater position and tighten the screws. Plug the in.flo connector back in socket P42. Plug the HL probe and temp probe connectors back in socket P38.



Reconnect the heater connections: Return, Live and Ground. Tighten the screws with a Phillips screwdriver. Put the cover back in place and tighten the 4 or 6 screws with a Phillips screwdriver. Screw fittings to the spa pipe system, making sure that the piping and nut threads are not over tightened.

Reopen the spa water valves or fill the spa and check for leaks.

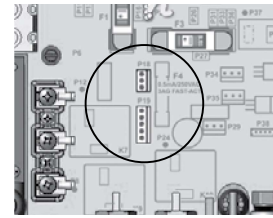
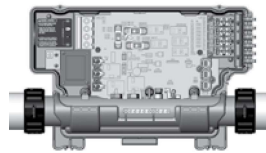


How to replace main control board on in.ye

⚠ Warning!

Before starting removal procedure be sure to:

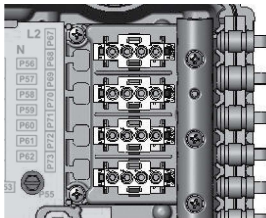
- Turn off electric power to the unit.



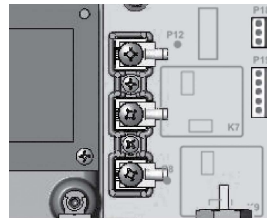
Using a Phillips screwdriver, loosen the 4 screws that hold the cover in place. Disconnect incoming power lines by loosening the screws on the terminals of the terminal block.

Use a Phillips screwdriver to loosen the terminals and remove all electrical heater connections: Return, Live and 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.

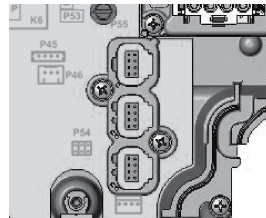
Manually remove the transformer connector. Manually remove the topside cable and the in.link cables.



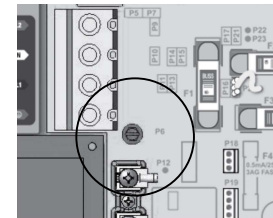
Use a Phillips screwdriver to loosen and remove the cable strain relief cover. Unplug power cord by squeezing the latches on the side of each AMP plug and pulling it from its socket, one at a time, identify each output power cord.



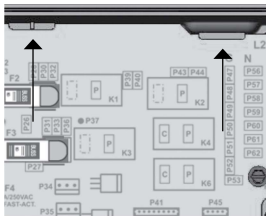
Using the Phillips screwdriver remove the strain relief bracket. Remove the 2 screws from the assembly AMP bracket. Remove the 2 screws of the shroud around the heater's connection post and remove it.



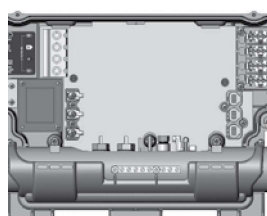
Do the same for the in.link bracket.



Unscrew the 2 green grounding screws located on either side of the PCB. Slide the PCB down to disengage it from the upper holder. Pull it and slide it upward to remove the card from the in.ye enclosure. Unplug the wires coming from the AMP bracket from the faulty board and replug them in the same location on the new board.



Be sure the ground connection bracket holds in place on the 2 locating pins in the enclosure. Put the new PCB back in the enclosure. Slide it downward, at an incline, behind the heater assembly. Then push it back, just underneath the



upper PCB holder, and slide it upward. Install the 2 green ground screws. Be sure the circuit board is lying flat on the back of the enclosure. Put the in.link bracket back in place and secure it with the 2 screws. Be sure the locating pin is fully in the PCB hole.

Install the shroud around the heater's connection posts. Reinstall the AMP assembly bracket. Put the strain relief bracket in place. Plug the topside and in.link cables back in. Plug the output power cord in its initial location. Screw the strain relief cover in place. Reinstall the transformer connector. Plug the in.flo, the HL probe and temperature probe connectors back in. Plug the heater connections back in: Return, Live, and Ground.

Tighten the screws with a Phillips screwdriver. Connect the incoming power lines and tighten the terminal block screws firmly. Put the cover back in place and tighten the 4 screws.

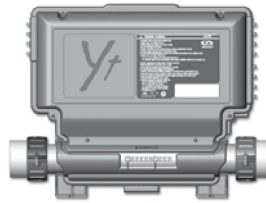


How to replace the main control board on in.yt

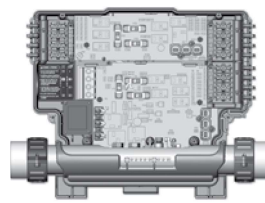
⚠ Warning!

Before starting removal procedure be sure to:

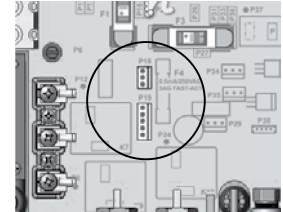
- Turn off electric power to the unit.



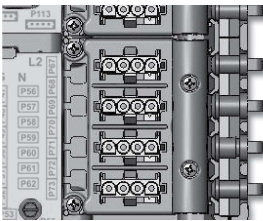
Using a Phillips screwdriver, loosen the 6 screws that hold the cover in place. Disconnect incoming power lines by loosening the screws on the terminals of the terminal block.



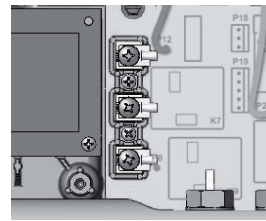
Use a Phillips screwdriver to loosen the terminals and remove all electrical heater connections: Return, Live and Ground. Manually remove the HL probe & Temp. probe connector. Manually remove in.flo connector. Be careful not to damage any connector by twisting or pulling too hard.



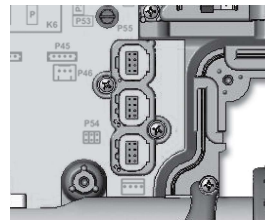
Manually remove the transformer connector. Manually remove the topside cable and the in.link cables.



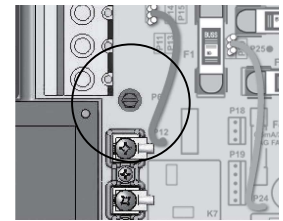
Use a Phillips screwdriver to loosen and remove the cable strain relief cover. Unplug power cord by squeezing the latches on the side of each AMP plug and pulling it from its socket, one at a time, identify each output power cord.



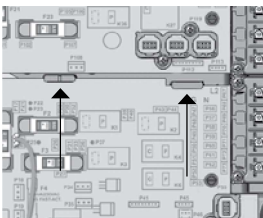
Using the Phillips screwdriver remove the strain relief bracket. Remove the 2 screws from the assembly AMP bracket. Remove the 2 screws of the shroud around the heater's connection post and remove it.



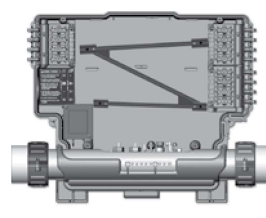
Do the same for the in.link bracket.



Unscrew the 2 green grounding screws located on either side of the PCB. Slide the PCB down to disengage it from the middle holder. Pull it and slide it upward to remove the card from the in.yt enclosure.



Put the new PCB back in the enclosure. Slide it downward, at an incline, behind the heater assembly. Then push it back, just underneath the middle PCB holder, and slide it upward. Install the 2 green ground screws. Be sure the circuit board is



lying flat on the back of the enclosure. Put the in.link bracket back in place and secure it with the 2 screws. Be sure the locating pin is fully in the PCB hole. Install the shroud around the heater's connection posts. Reinstall the AMP assembly bracket. Put

the strain relief bracket in place. Plug the topside and in.link cables back in. Plug the output power cord in its initial location. Screw the strain relief cover in place. Reinstall the transformer connector. Plug the in.flo, the HL probe and temperature probe connectors back in. Plug the heater connections back in: Return, Live, and Ground. Tighten the screws with a Phillips screwdriver. Connect the incoming power lines and tighten

the terminal block screws firmly. Put the cover back in place and tighten the 6 screws.

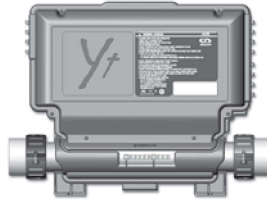


How to replace the upper extension board on the in.yt

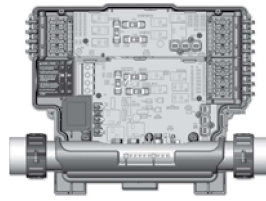
⚠ Warning!

Before starting removal procedure be sure to:

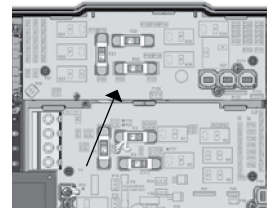
- Turn off electric power to the unit.



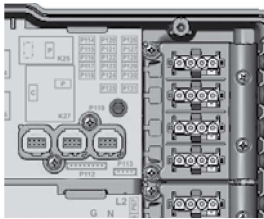
Using a Phillips screwdriver, loosen the 6 screws that hold the cover in place.



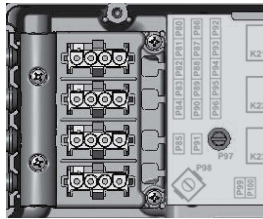
Identify each wire coming from the main board and remove them from the extension board.



Remove the control cable from the upper board. Disconnect the incoming conductors from the screw lug terminal.



Remove the in.link cables. Identify and remove all the output power cord from the AMP assembly brackets left and right. Remove the strain relief covers, left and right, and remove cords. Do the same for the strain relief brackets. Remove screws from the AMP assembly brackets. Remove the 2 green grounding screws. Remove the in.link bracket.



Remove the screw from the bottom left side of the PCB. Slide the circuit board downwards to disengage it from the upper PCB holder tab. Put the new circuit board in place by engaging it into the PCB holder tab. Secure the board with the bottom lefthand side screw. Put the 2 green grounding screws back in place. Reinstall the in.link bracket with its 2 screws.

Reinstall the 2 AMP assembly brackets and the strain relief brackets. Put all of the output power cords back in place and

secure them by reinstalling the strain relief covers. Plug the in.link cables and control cables from the main board back in. Reinstall all the remaining conductors coming from the main control board. Reconnect the incoming conductor to the screw lug terminal. Reinstall the cover and secure it with the 6 screws.



Specifications

Environmental ratings:

Operating temperature:	32°F (0°C) to 122°F (50°C)
Storage temperature:	-13°F (-25°C) to 185°F (85°C)
Humidity:	Up to 85% RH, non condensing
IPx5 level of waterproofing	

Mechanical:

in.ye

Weight:	Up to 9.7 lbs (4.4 kg)
Dimensions (W x H x D):	19.598" x 10.75" x 4.98" (497 x 273 x 126 mm)

in.yt

Weight:	Up to 12 lbs (4.4 kg)
Dimensions (W x H x D):	19.58" x 14.5" x 5.1" (497 x 368 x 130 mm)

Model Y Series UL/CSA electrical specifications

Input rating:	120/240 V AC nominal (+5/-10%) (2 lines required with neutral) 48 A Max,
or (in.ye-3 only):	120 V AC nominal only (+5/-10%) (single line with neutral) 16 A Max,
	60 Hz nominal (+1.5 / -1.0 Hz)

Heat.wav rating:

Voltage:	120 or 240 V, 60Hz
Wattage:	4 kW at 240 V, 1 kW at 120 V (Also available: 5.5 kW at 240 V AC)
Flow rate:	Minimum of 18 GPM is required

UL 1563 Sixth Ed.

UL File: E182156

CSA No. 22.2 - 218.1-M89.



Model Y Series TUV electrical specifications

Input rating:	230/240 V AC nominal (+5/-10%) (2-phase system with neutral) 20 A Max per phase,
	(3-phase system with neutral) 16A Max per phase.
or (in.ye-3 only):	240 V AC nominal only (+5/-10%) (single-phase system with neutral) 48 A Max,
	50 Hz nominal (+1.5 / -1.0 Hz)

Heat.wav rating:

Voltage:	240 V AC, 50Hz
Wattage:	3.8 kW at 230 V AC
Flow rate:	Minimum of 18 GPM is required

EN/IEC 60335 - 2 - 60/A2: 2008 - EN/IEC 60335 - 1: 2010

EN55014-1

EN55014-2

EN61000-3-2

EN61000-3-3





Device	Voltage ^{*1}	Maximum current	ye-3 ^{*2}	ye-5	yt-7 ^{*8}	yt-12 ^{*9}
Pump 1 (2-spdl)	120 or 240 V	15 FLA/60 LRA (inrush)	●	●	●	●
Pump 2 (2-spdl)	120 or 240 V	15 FLA/60 LRA (inrush)	● ^{*3}	● ^{*5}	●	●
Pump 3 (2-spdl)	120 or 240 V	15 FLA/60 LRA (inrush)		● ^{*6}	●	●
Pump 4 (2-spdl)	120 or 240 V	15 FLA/60 LRA (inrush)				●
Pump 5 (1-spdl)	120 or 240 V	15 FLA/60 LRA (inrush)				●
O3/CP	120 or 240 V	6 FLA/10 A	● ^{*4}	●		●
AI	120 or 240 V	15 FLA/60 LRA (inrush)				●
Blower	120 or 240 V	15 FLA/60 LRA (inrush)				●
CP	120 or 240 V	6 FLA/10 A			●	●
O3	120 or 240 V	6 FLA/10 A			●	●
Direct out 1	120 or 240 V	10 A (always on)		● ^{*7}	●	●
Direct out 2	120 or 240 V	10 A (always on)			●	●

*1 The output voltage for the TUV version will reflect the input voltage typically 230 V AC

*2 This model can be converted to a dedicated 120 V model.

*3 Pump #2 can only be installed if Pump #1 is a single-speed pump.

*4 Total of Pump #1-low (or Pumps #2) and O3/ CP cannot exceed 15 FLA.

*5 Total of Pump #2 and Pump #3 cannot exceed 22 FLA.

*6 Pump #3 can only be installed if Pump #2 is a single-speed pump.

*7 Total of Pump #1-low, O3/ CP, and Direct #1 cannot exceed 15 FLA.

*8 If CP is used, Pump 3 must be 1-speed
Total of pump 1-low, O3 and Di1 must not exceed 15 FLA
Total of P3, CP, and Di2 must not exceed 15 FLA

*9 If AI is used, Pump 4 must be 1-speed
Total of O3 and Di1 must not exceed 15 FLA
Total of P3, CP, and Di2 must not exceed 15 FLA
Total of P5, and B must not exceed 17 FLA
Total of P4, and AI must not exceed 22 FLA

