

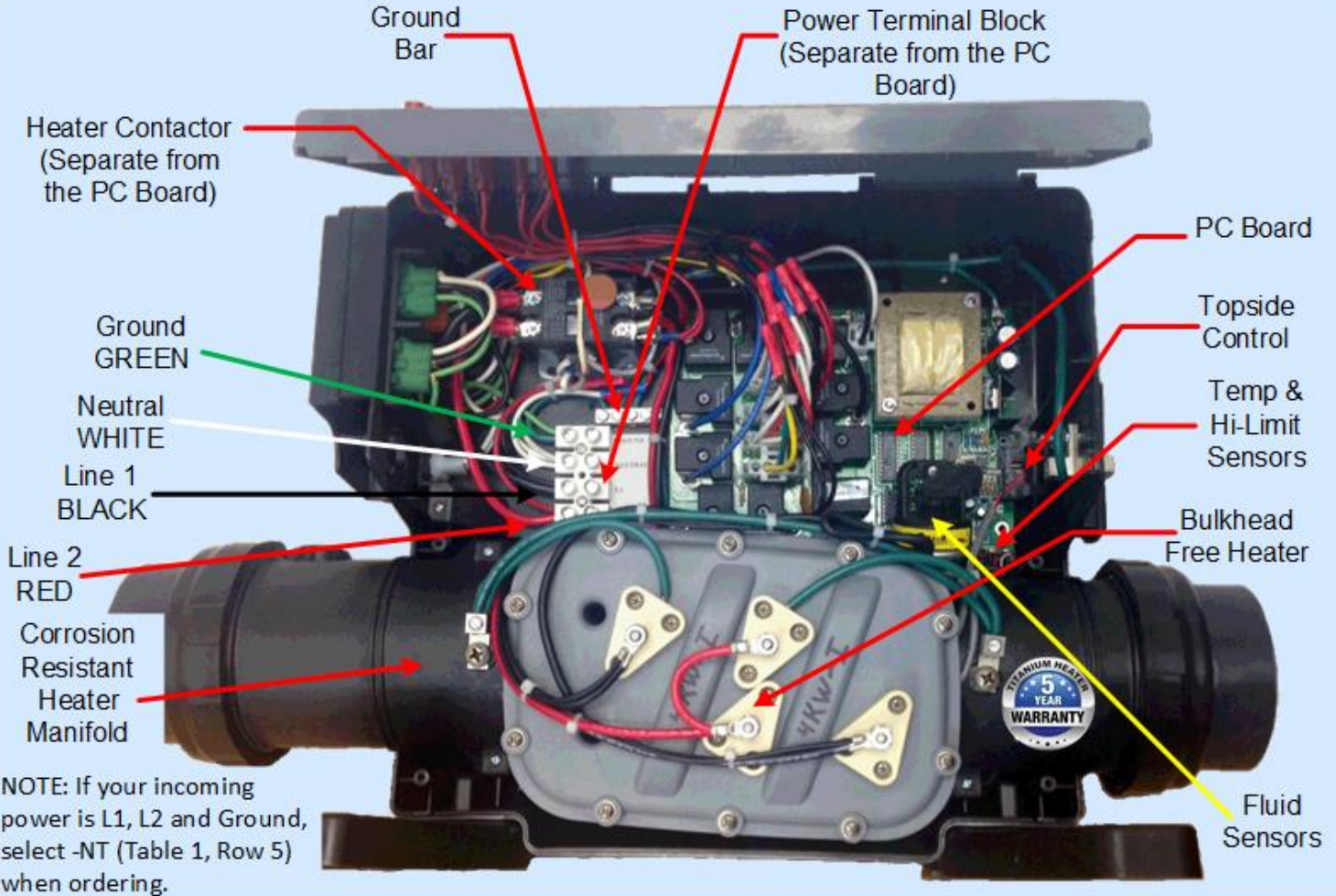


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Make the Smart Choice!
Look inside the control box and compare to our competitors!

Many USA spa control manufacturers reduce production costs by importing their PC Boards from China, Power Relays from Taiwan. In addition they eliminated important electrical components such as **fluid sensors**, **big heater contactor separate from the PC board**, **terminal block separate from the PC board**, **their heaters are equipped with failure-prone bulk-heads**, ..., etc. At Acura Spa Systems, because we are so proud of our products, we removed the front cover to show you how our reliable products are built to last. Unlike our competitors, we have nothing to hide!

At Acura Spa Systems we reduce cost by eliminating the middle man and all sales commissions. Buy factory direct and save!



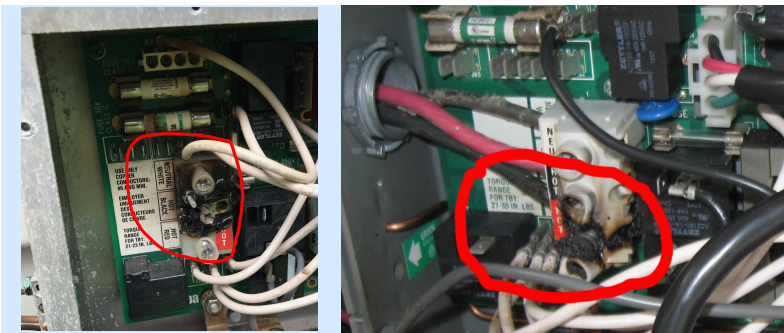
Internal components used on controls may not look like photos. Different models require different components.

Most Spa Controls Are Built to Fail With a Short Life Span! Read the problems below as reported to us by consumers.

The reason their control's fail prematurely is because most of our competitors eliminate valuable components to reduce their cost and increase their profit. This causes the consumer to pay high \$ on repairs. Many USA spa control manufacturers reduce their costs by importing their PC boards from China, power relays from Taiwan and they eliminated important components such as fluid sensors, big contactor, independent terminal blocks, 304 stainless steel that is not corrosion resistant, and heaters with bulk-heads.

Problem (1): Power Terminal Block Soldered Directly on PC Board

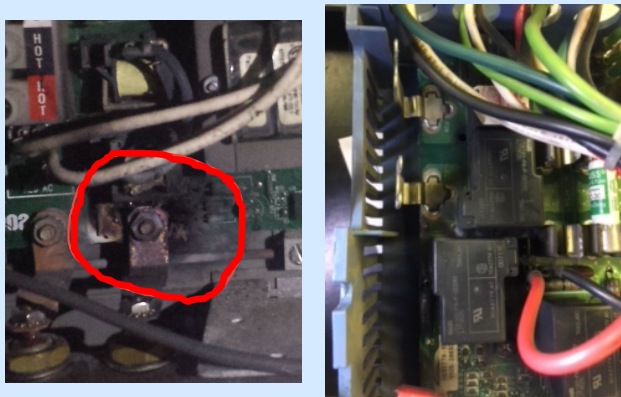
Typical failures occur when the incoming power is connected directly on the PC board. The PC board must be replaced at hundreds of dollars.



Solution (1): Installing the Power Terminal Block separate from the PC board. If the Power Terminal Block burns due to voltage fluctuations on the power line, the repair can be done by simply replacing a \$20 Power Terminal Block, not the entire PC board for hundreds of dollars.

Problem (2): Heater Load is Carried by Relays That Are Soldered Directly on the PC Board

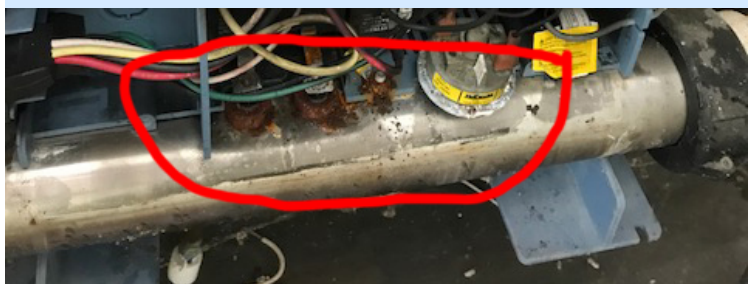
Typical failures occur when the heater load is directly connected to the PC board. Once again, the PC board must be replaced at high \$ cost.



Solution (2): Since 1984 we have used separate and heavy duty contactors to carry the ON/OFF loads of the heaters. Very seldom does a contactor fail; and if it does, since it is separate from the PC board, it only cost \$40 to replace. In addition, all relays are energized at Zero Crossing to minimize electrical spikes.

Problem (3): Heater with Bulk-Heads and 304 Stainless Steel Manifold

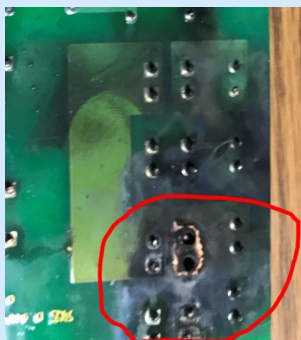
Typical failures occur on this style of heater with bulk-heads where the bulk-heads are braised or welded or crimped and epoxied and the heater manifold is made out of 304 stainless steel.



Solution (3): Our patented CosmoHeat with O-ring seals, no bulk-heads, no braising, no welding, no crimping, no epoxy and no 304 stainless steel manifold. [Click to see why our bulk-head free heater is the best.](#)
[Click to see why our heater manifold is the best.](#)
[Click to see why our submersible heater is the safest in the industry.](#)

Problem (4): Over-Loaded Single Common Power Relay

Typical failures occur when operating two pumps on a single common relay soldered on the PC board. The common relay cannot carry both inductive loads for very long.



Solution (4): We use two separate common relays to operate two water pumps. In addition, all relays are energized at Zero Crossing to minimize the peak load from the motor on the relay contact points.

Problem (5): Crowded Circuitry to Reduce Size and Cost

Control circuitry is too crowded. Not enough real estate inside the Control Box with too many wires.



Solution (5): All our circuit traces on the PC boards are properly separated at 1/8" between the AC and DC power lines. We use the proper gauge wires for all circuit loads. All wires that carry AC Power Signals are separated from DC signals on the PC Board to minimize noise and odd software logic glitches. In addition, we maintain a proper ground bus throughout the entire control box.

We have prepared the following 21 points explaining from the engineering point of view why we believe Our CosmoHeat and USC Computer Spa Control are the best choice based on our 30 years of knowledge in the hot tub industry.

Please read the following power points and compare to our competitors:

- 1 - CosmoHeat is 100% efficient in transferring electric to heat energy.
 - 2 - CosomoHeat Titanium heater is 100% corrosion resistant.
 - 3 - The optional patented ES Electronic Sensor replaces the mechanical pressure or vacuum switch.
 - 4 - CosmoHeat Current Collectors are 64% safer than the 5ma electrical leakage safety allowed by UL and NEC.
 - 5 - CosmoHeat operates at lower watt density per square inch when compared to industry standard heater used by many spa control providers.
 - 6 - CosoHeat manifold is 100% corrosion resistant.
 - 7 - CosmoHeat Titanium can be used with salt water.
 - 8 - CosmoHeat Titanium heater comes with 5 years corrosion free warranty.
 - 9 - CosmoHeat is free of the troublesome bulkheads, epoxy seams or joint crimps that are used on other hot tub submerged heaters.
 - 10 - CosmoHeat is Patented with O-Ring Seal, patent numbers 7,702,224 B2 and 8,014,654 B2 with priority dates 11/07/2007. We reserve all legal rights against any copiers, users or sellers that are infringing on our claims.
 - 11 - CosmoHeat is Patented without troublesome bulkheads, patent numbers 7,702,224 B2 and 8,014,654 B2 with priority dates 11/07/2007. We reserve all legal rights against any copiers, users or sellers that are infringing on our claims.
 - 12 - CosmoHeat is Patented with safety current collector, patent number 7,514,652 B2 with a priority date 11/16/2005. We reserve all legal rights against any copiers, users or sellers that are infringing on our claims.
 - 13 - CosmoHeat, when equipped with the Patented Automatic AirBleeder (ABV140), is protected against heater dry fire. We reserve all legal rights against any copiers, users or sellers that are infringing on our claims.
 - 14 - CosmoHeat with USC can be installed on the intake side of the pump (with the Vacuum Switch) or on the discharge side of the pump (with the Pressure Switch).
 - 15 - USC is equipped with a Contactor mounted off the PC Board. This diverts the heater resistive load away from the PC Board extending its longevity.
 - 16 - The USC Power Terminal Block is not mounted on the PC Board minimizing PC Board failure due to brown out, voltage drop or electrical fluctuations on the line.
 - 17 - Our economy mode heating cycle only turns on the heater when necessary saving hundreds of \$ in unnecessary electrical consumption.
 - 18 - The USC is equipped with a Temperature Sensor, Overheating Sensor and 2 Freeze Guard modes of operation.
 - 19 - The USC computer control is equipped with 4 programmable filtration cycles in addition to a post use filtration and more.
 - 20 - Since 1999, we have been successfully using air-tight membrane switches. This technology is commonly used in the aerospace industry.
 - 21 - Many other features as well as trouble shooting error messages are also included, please refer to our [operating manual](#).
- You also may send your comments or questions to questions@acuraspa.com.