

My spa won't heat, now what?

There comes a time in every spa owner's life that they go out to the spa to enjoy all the benefits of the warm bubbly waters that only a spa can give only to find that the water is not so warm. What can a spa owner do to fix this?

If your spa has an electronic controller, here is the way to troubleshoot the problem. The first thing to do is to determine if the spa is "calling for heat". This means, does the spa think that it is supposed to be heating. On most electronic spa controllers, there is some indicator that the spa is calling for heat. This could be just a red light or some icon on the face of the topside that when visible, indicates that the spa is heating. If that is on then the spa is sensing that the water is too cold and is trying to heat it to the set temp. on the topside.

If that is the case then it is time to look into the spa controller to see what is causing the problem. The most common reason for a spa not heating is that the heating element is bad. Heating elements are like light bulbs and either they work or they don't. The way to determine that is to shut down the spa from the disconnect by the spa and take a resistance reading from the two heater connections. Make sure that the spa has no power going to it, and then use an ohmmeter to measure the resistance of the heating element. When the spa is has no power, the element is disconnected from the electronics by way of a combination of relays. The ohmmeter should read about 12 ohms for a 5.5 kilowatt element. If you have a smaller element the reading will be lower and if you have a larger element the reading will be higher. Don't be too concerned if the reading that you get is not exactly as above. It just needs to be close. Remember the light bulb idea. If you get a very high reading or a reading that is as if your two probes are just held in the air, the element is open and needs to be replaced. That is the easiest problem and by far the most common.

If the reading is close to 12 ohms then the element is good and you need to troubleshoot further. The only thing now standing in the way of warm water is a series of relays that need to be closed to direct the electricity to the heating element. Most electronic spa controllers use from one to 4 relays in the heating circuit. The design may differ but the troubleshooting is the same. If your power to the spa is still off then you need to separate the element from the printed circuit board. The best way to do this is to remove the wires or copper straps from the heating element. This is an easy job but you need to be careful of not twisting the element wires and breaking the epoxy seal on the heating element. To do this you have to support the back side of the joint with a wrench on the hex backing nut. This may be a 1/4 inch or a 3/8 inch wrench. With the back side supported, gently remove the nuts holding the wires to the heating element. Now wrap the ends of the wires with electrical tape to protect them from coming in contact with anything when you power up the spa.

This next measurement will be taken with the power on, so safety is the name of the game. Apply power to the spa and make sure that the topside is indicating that the spa is calling for heat. Set your meter to the ohms scale. Place one lead on the black wire that comes into the box from the disconnect. Place the other lead at the place where one of the wires to the heating element is connecting to the circuit board. You are looking for a very low ohms reading. Close to 0 ohms is best. If you do not read 0 ohms move the lead to the

other wire that goes to the heating element. Note which one of the heating element wires you read 0 ohms on. Then move your first lead to the red wire that comes in from the disconnect. Place your second lead again on the each of the two wires going to the heating element. Most likely, one of the sets of reading will not give you a 0 ohm reading and that is the path to the heater from the incoming power that is open and not allowing the heating element to get hot. In that path are the heating element relays and one or more of them are not functioning properly.

Once you have determined the cause of the problem you can save a lot of money by just taking the board out and getting it repaired. The cost of this repair is considerably less than multiple visits by the local spa tech who will in the best case scenario perform the same tests with the same results and in the worst case scenario replace parts that have nothing to do with the problem. For information regarding getting your circuit board repaired

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