



How Your Pool Heater Works

Understanding the basic components and operation of a residential pool heater.

Pool and spa heaters have changed considerably over the past 30 years. From the old millivolt heaters, to electronic ignition to Low Nox heaters, we have seen it all. The purpose of this section is to give you a working knowledge of pool heater operation.

THE BASIC COMPONENTS OF A POOL HEATER

There are several basic parts of every pool heater. In many ways, these components have not changed much in the past forty years.

Heater Controls - dual thermostats (pool/spa) and an ON/OFF switch

Safety Circuit - pressure switch, high limit switches, flame rollout sensor, air pressure and vacuum switches

Printed Circuit Board - this is the brain of the heater

Ignition Control - this module controls and monitors the heater firing process.

Burner Assembly - this includes the gas valve, igniter and burners

HEATER FIRING PROCESS

Call for heat - either the remote system (AquaLink) or the controls on board the heater tell the heater that it needs to make heat.

Safety Circuit Test - the system will test all the safety switches to make sure that it is safe to actually fire the heater. If all safety switches do not indicate "all systems go" then the heater will not try to fire. If the heater has a blower, the blower will also start up at this time.

If there is a call for heat and all the safety circuits all check out, then the firing sequence will begin

Firing Sequence - the ignition device activates, the gas valve opens and the heater should light at this point. You should be able to hear the gas valve open. The ignition

control module governs this process.

Ignition Verification - the ignition module will check for feedback from the flame sensing rod. If it does not sense the flame, the heater will shut down.

At this point, the heater will continue to run normally, but it will continue to monitor the safety circuit. In the event that it senses a loss of pressure, or unacceptably high heat levels inside the heater, it will shut down the heater, otherwise the heater will run until the set temperature is reached.

Pool heater repair is not for the inexperienced technician. It requires a considerable amount of knowledge and experience to get to the heart of the problem quickly. We have the experience and knowledge.