

HEATEC TEC-NOTE

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TROUBLESHOOTING Firestorm™ water heaters

Scope

The troubleshooting table on the following pages identifies the most common problems likely to be encountered with Firestorm water heaters.

Intended users

This information is intended for use by qualified technicians. The technician doing the troubleshooting should be familiar with operation and maintenance of the heater covered in other Heatec Tec-Notes. Accordingly, this document does not provide detailed steps for operating the heater or checking components covered in those documents. Moreover, qualified technicians should know how to use tools and test instruments that may be required to check and adjust the heater.

Make sure you know control functions

Before attempting to troubleshoot your heater you should fully understand the functions of its controls. Controls are described in a separate Tec-Note.

Don't overlook the simple things

The first thing to do when you find that an indicator light is not *on* when it should be *on* is to check its bulb. You would be amazed at how many service problems have been solved by replacing a burned-out bulb with a new one. Also make sure that electrical power is turned *on* to all heater components that should be working. We often overlook the simple, obvious causes of problems and look for more complex answers.

Pay special attention to the limit circuit

Most heater problems show up in the limit circuit. A problem in that circuit is indicated by one or more lights being *off*. So pay close attention to all the lights in the limit circuit. They are the ones with the clear lenses. They should all be *on* during normal operation.

⚠ DANGER



SHOCK HAZARD. Hazardous voltage is present inside this panel. Contact with it will cause death or serious injury.

Disconnect and lock out electrical power to this panel before opening the panel door.

⚠ PELIGRO

RIESGO DE ELECTROCUCION. Hay niveles peligrosos de voltaje dentro de este tablero. El contacto causará la muerte o lesiones graves.

Desconectar y bloquear la alimentación eléctrica suministrada a este tablero antes de abrir su puerta.

Part No. 5014130

Live circuits inside the control panel

Be aware that all electrical power inside the control panel is not shut off by the rotary door-mounted handle. With the handle set to off, high voltage is still present on the top terminals of the main breaker.

Technical Support

If you have a problem that you can't resolve, call our service department (1-800-235-5200). Even if you are not able to solve the problem without our help, your efforts to do so before calling will pay off. You will gain familiarity with the product and be in a better position to describe the problem to our service personnel.

PROBLEM	PROBABLE CAUSE	REMEDY
Heater will not start.	<ol style="list-style-type: none"> 1. Limit device in 3-P limit circuit is open. 2. Pump is not running. 3. Heater reservoir is full. 4. No signal from remote tank when burner switch is set to AUTO. 	<ol style="list-style-type: none"> 1. See discussion of limit circuit in separate Tec-Note on controls. 2. (See this problem below) 3. Check for defective high water level switch. 4. Check for signal from remote tank (See wiring diagram)
Heater will not start. Flame monitor shows message LOCKOUT PTFI-FLAME FAIL (PTFI means pilot trial for ignition)	<ol style="list-style-type: none"> 1. Defective flame scanner. 2. Igniter improperly set. 3. Defective ignition transformer. 4. Defective ignition wire. 5. Defective pilot solenoid. 6. Pilot gas regulator improperly set. 	<ol style="list-style-type: none"> 1. Check the flame scanner per instructions in Tec-Note on maintenance. Replace if defective. 2. Reset per manual on Power Flame burner. 3. Check for 120 vac at primary. If OK check ignition wire for break. If OK check for spark. If no spark replace transformer. 4. Check wire for break. Replace if broken. 5. Check for click when energized. If no click check for 120 vac at solenoid terminals. Replace solenoid if there is no click when voltage is applied. 6. Check regulator and reset if necessary per separate Tec-Note on maintenance.
Low combustion air. The COMB. AIR/ALL LIMITS MADE indicator light is <i>off</i> , but all other lights in limit circuit are <i>on</i> .	<ol style="list-style-type: none"> 1. Breaker for blower is tripped. 2. Line to low combustion air switch is clogged. 3. Fan blades of combustion air blower clogged with dust. 4. Low combustion air switch out of adjustment. 5. Blower motor runs backwards. 	<ol style="list-style-type: none"> 1. Reset breaker. 2. Disconnect air line and blow compressed air through the line. 3. Clean blades to remove dust. 4. Readjust low combustion air switch per separate Tec-Note on maintenance. 5. Check water pump rotation. If both are wrong, switch main power leads. If only the blower rotation is wrong, switch blower motor leads.
High flue gas stack temperature indicator light is <i>off</i> .	<ol style="list-style-type: none"> 1. Inlet strainer clogged. 2. Inlet nozzle(s) are clogged. 	<ol style="list-style-type: none"> 1. Flush strainer. Disassemble and clean if necessary. Reset stack switch. 2. Check nozzles for debris and/or wear. Clean/replace as needed. Reset stack switch.
Water level sight gauge does not accurately indicate water level in reservoir.	Two valves on sight gauge not open.	Open both valves on sight gauge.

PROBLEM	PROBABLE CAUSE	REMEDY
Burner does not modulate.	<ol style="list-style-type: none"> 1. Burner modulation controller in manual mode. 2. Defective power transformer in modulating actuator. 3. Defective motor in modulating actuator. 	<ol style="list-style-type: none"> 1. Reset controller to auto mode. 2. Check the transformer in the actuator and replace it if defective per separate Tec-Note. 3. Check the motor in the actuator and replace if defective per separate Tec-Note.
Water does not reach set point temperature.	<ol style="list-style-type: none"> 1. Burner not modulating. 2. Inlet water is too cold. 3. Water flow rate is too high. 4. Burner out of tune. 	<ol style="list-style-type: none"> 1. (See problem above). 2. Use warmer supply water or reduce flow rate. 3. Reduce flow rate. 4. Have qualified technician to retune burner.
No water flows out of heater.	<ol style="list-style-type: none"> 1. Manual water outlet valve is closed. 2. Auto water outlet valve is inoperative. 3. Incorrect rotation of water pump. 4. Water pump is not running. 	<ol style="list-style-type: none"> 1. Open valve. 2. Check for compressed air supply if valve is pneumatically operated. Check solenoid if valve is solenoid operated. 3. Reverse rotation of pump motor per Tec-Note on operation. 4. (See problem below)
Water pump is not running.	<ol style="list-style-type: none"> 1. Water level is too low. 2. Float switch(s) not operating properly. 3. Breaker for pump motor is tripped. 4. No signal from remote tank when water pump switch is set to AUTO. 	<ol style="list-style-type: none"> 1. Check manual and automatic inlet water valves. 2. Check low and low-low water level switches and replace if necessary. 3. Reset breaker. 4. Check for signal from remote tank (See wiring diagram)