

HEATEC TEC-NOTE

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TROUBLESHOOTING HFP SERIES HEAVY FUEL PREHEATERS

Scope

The troubleshooting tables in this document identify the most likely problems that may be encountered with HFP series heavy fuel preheaters. For additional information see the following:

- Tec-Note 12-04-152 Installation...
- Tec-Note 8-04-144 Setting Yokogawa controller...
- Tec-Note 12-04-153 Operation...
- Tec-Note 12-04-154 Maintenance...

Intended users

This information is intended for use by qualified technicians. The troubleshooting information assumes that the technician is familiar with operation of the preheater as described in other Heatec documents. Accordingly, this document does not provide detailed steps for operating the preheater. Moreover, we assume that qualified technicians know how to use tools and test instruments that may be required to check and adjust the heater.

Don't overlook the simple things

Make sure that electrical power is turned *on*. We often overlook the simple, obvious causes of problems and look for more complex answers.

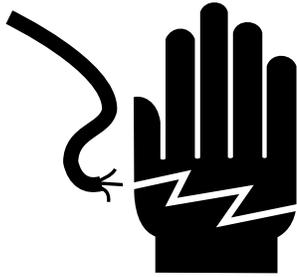
Live circuits inside the control panel

Be aware that certain preheater control panels have electrical circuits that are not shut off by the rotary door-mounted handle. Panels that combine Heatec heater controls and Astec plant controls may include live circuits controlled by circuit breakers elsewhere in the plant. Consequently, shutting off the main breaker inside the panel does not remove all power to components within the panel.

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.

 **DANGER**



SHOCK HAZARD. High voltage is present on certain terminals and wires inside this panel. Touching them will cause death or serious injury.

Do not open this panel unless you are a qualified technician familiar with the hazards of electricity.

Some circuits in this panel may receive electrical power from remote sources. Thus, the breaker operator on the door may not deenergize all exposed live parts.

Always use a voltage tester to make sure there is no voltage on terminals or bare wires you may touch.

PROBLEM	PROBABLE CAUSE	REMEDY
Burner on drum mixer or aggregate dryer fires sporadically or shuts off.	<ol style="list-style-type: none"> 1. Clogged fuel line. 2. Water or steam in fuel line. 	<ol style="list-style-type: none"> 1. Clean preheater heating coil assembly and inside of shell. 2. Drain water from preheater.
Fuel pump cavitates.	<ol style="list-style-type: none"> 1. Strainer at suction side of fuel pump is clogged. 2. Valve at suction side of fuel pump is closed. 	<ol style="list-style-type: none"> 1. Clean strainer. Replace strainer basket if necessary. 2. Open valve.
Fuel temperature does not rise when preheater is turned on.	<ol style="list-style-type: none"> 1. Relay inside preheater control panel is bad. 2. Auxiliary contacts on fuel pump motor starter are bad or are not installed properly. 3. Valve at thermal fluid inlet is closed. 4. Auxiliary pump at hot oil heater is turned off. 5. Hot oil heater is turned off. 6. Fuel preheater clogged. 7. Controller set point too low. 8. Controller is defective. 9. Actuator coupling is damaged or defective. 10. Thermal fluid temperature too low. 	<ol style="list-style-type: none"> 1. Test the relay. If it is bad, replace it. 2. Make sure auxiliary contacts are installed properly. If they are installed properly and the problem persists, replace the contacts. 3. Open valve. 4. Turn on auxiliary pump. 5. Start hot oil heater. 6. Clean fuel preheater. 7. Adjust set point. 8. Replace controller. 9. Repair or replace coupling. 10. Adjust set point on thermal fluid heater.
Fuel temperature does not reach set point.	<ol style="list-style-type: none"> 1. Heating coil assembly is fouled. 2. Thermal fluid flow rate is too low. 3. Thermal fluid temperature is too low. 4. Too much water in fuel. 5. PID settings in controller are wrong. 6. Weather has turned much colder since initial startup. 	<ol style="list-style-type: none"> 1. Clean preheater heating coil assembly and inside of shell. 2. Check thermal fluid circulation pump. 3. Make sure thermal fluid heater is operating properly. Raise set point on heater. 4. Drain water from preheater. 5. Check to see if the PID settings are different than those noted during initial startup. If the settings are different, re-set them or Auto-Tune controller. 6. Auto-Tune controller per instructions in SETTING YOKOGAWA CONTROLLER Tec-Note.

PROBLEM	PROBABLE CAUSE	REMEDY
Fuel overheats.	<ol style="list-style-type: none"> 1. Thermal fluid inlet valve is stuck open. 2. PID settings in controller are wrong. 3. Controller is defective. 4. Actuator coupling is damaged or defective. 5. Fuel temperature set too high. 	<ol style="list-style-type: none"> 1a. Lubricate thermal fluid inlet valve. 1b. Actuator may be bad. re-tune controller. If thermal fluid inlet valve does not open and close, replace actuator. 2. Check to see if the PID settings are different than those noted during initial startup. If the settings are different, re-set them or Auto-Tune controller. 3. Replace controller 4. Repair or exchange coupling. 5. Adjust set point.