DUO-THERM® SERVICE BULLETIN
DIVISION • MOTOR WHEEL CORPORATION
LAGRANGE, INDIANA 46761

BULLETIN 79-2
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Subject: 65900 Series RV Ducted Furnace with Direct Spark Ignition (DSI)

Enclosed is a copy of our DSI System Service Guide which explains the operation of the Fenwall Ignition System and general service information.

In addition, we are listing below the most common problems which are experienced with this system and the corrections for these problems.

SHORT THERMOSTAT CYCLES

A short cycling condition would be indicated if the thermostat contacts open when the furnace has operated less than 2-3 minutes. Check the following:

A. Thermostat Location - Thermostat should be located where it will not be exposed to warm air from a register or any other source of heat, as this will cause the thermostat to open before temperature reaches the temperature setting. If necessary, move the thermostat or re-direct the air from the register away from the thermostat.

B. Anticipator Setting - The Cam-Stat thermostat supplied with these units has a pre-set, non-adjustable heat anticipator. The amperage rating of the heat anticipator is stamped on the thermostat base directly below the bimetal coil.

We are aware that a number of the 65900 Series DSI units were shipped with a thermostat rated at .32 amps. In some circumstances this will cause short cycling of the thermostat, especially when the furnace is operated from a convertor. (The correct amperage rating for DSI units is .60 amps.) If short-cycling is occuring in a unit with a .32 amp thermostat, the thermostat should be changed. Service Part No. for the thermostat is 3-8092-001. This is a Cam-Stat thermostat with adjustable anticipator.

IGNITION LOCKOUT

I. If ignition lockout occurs within 10 seconds or less, check the following:

A. No main burner (with proper ignition spark) - check for 12 V DC at gas valve terminals. If no voltage is present, replace ignition module board. If voltage is present, it indicates the gas valve is defective or no gas pressure is available at the gas valve. Check for proper gas pressure(pressure should be 11 inches) at the inlet side of gas valve. If pressure is available it indicates valve is not opening. Replace valve.

B. Sensor electrode not adjusted properly, or shorted to ground - Disconnect sensor wire and check with ohm meter for short to ground. If short is indicated remove burner and re-adjust sensor electrode. If ceramic insulator is cracked replace electrode set.

C. Defective ignition module board - If sensor circuit current is 5 microamps or more and lockout still occurs, replace module board.

II. If ignition lockout occurs more than 10 seconds after start of cycle, it indicates that the sensor electrode is sending a weak signal to the ignition module board.

After the burner ignites, the ignition module applies a voltage to the sensor electrode. A small amount of this voltage passes to the ground electrode, provided that a flame is present in the gap between the sensor and ground electrodes. The ignition module senses this small current flow, and if the current is less than 5 microamps it will shut down the ignition system within 7-10 seconds; if the current is more than 5 microamps ignition will continue until the end of the cycle.

The actual current flow in the sensor circuit is directly related to amount of flame present in the gap between the sensor and ground electrodes. Check location of the sensor electrode, and adjust for highest current reading. If a microammeter is not available, adjust sensor so that the gap between sensor tip and ground electrode is in the strongest part of the flame.