

HSG Burners with Wayne Ignition Controls

General Information

The information in this insert is specific to HSG burners with Wayne ignition controls. Burners with a spec number that contains a “D,” for example, 62377D, use Wayne ignition controls. Spec numbers can be found on HSG burners on a small label located below the T-shaped label on the back of the burner. All information in the manual not addressed in this insert is still applicable to those burners.

Wiring the Burner

The HSG burner ships with black, white, and green wires exiting the junction box via its conduit connection point. The black and white wires are used for testing at the factory and should be removed and discarded. After that, connect incoming L1 to the connector where the black wire was and L2 where the white wire was. Use a wire nut to connect earth ground to the green wire. **FAILURE TO CONNECT THE GREEN GROUND WIRE TO EARTH GROUND WILL CAUSE THE IGNITION CONTROL TO LOCK OUT WITH A “LINE VOLTAGE ERROR” FAULT.**

Sequence of Operation

On a call for heat, 24V goes to the motor start relay and air switch. Once the motor reaches operating rpm, combustion air pressure closes the air proving switch, energizing the ignition control.

The Wayne ignition control has an internal 30 second pre-purge timer. After the initial 30 second pre-purge, the control simultaneously energizes the gas valve and ignition transformer. Gas flows to the burner head and the transformer produces a spark at the electrode establishing main burner flame.

At the start of each heat cycle, there is a trial for ignition period of four (4) seconds duration. Normally, burner flame will be established before the end of this period. Once the flame is established and the trial for ignition ends, sparking will cease and the flame rod will provide flame monitoring to the ignition control for the remainder of the heat cycle. If the flame should be extinguished during the heat cycle, the ignition control will attempt to establish the main burner flame. If this does not occur within the trial for ignition period, the ignition control will go into lockout de-energizing the gas valve and ignition transformer. The LED on the ignition control will flash an error code in this case. These error codes are listed on the ignition control’s label near the LED and in the table below.

To restart the system, the main power or thermostat must be de-energized momentarily, then re-energized. If at any time during the heat cycle, there is an insufficient supply of combustion air to the burner, the air switch will open, putting the system into lockout closing the gas valve.

Flame Sensing

The ignition control senses flame by looking for a DC current entering the “Sense” terminal. DC current is measured in units called DC microamperes (or microamps). This current can be measured by disconnecting the wire from the Sense terminal and connecting the probes of a meter that can measure microamps between that wire and the sense terminal. A steady current of .2 microamps or higher through the sensing circuit of the ignition control is sufficient to keep the burner running without a safety lockout. Consult the burner manual for information to increase the strength of this signal.

Error Codes

NUMBER OF FLASHES	ERROR
GREEN	NORMAL OPERATION
1	NO FLAME DURING TRIAL
3	GAS VALVE RELAY FAIL
4	LINE VOLTAGE ERROR
5	INTERNAL CONTROL ERROR

Replacement Parts

Ignition control	64420-002
Ignition cable – 8”	64460-001
14”	64460-002
18”	64460-003
24”	64460-004
Mounting plate	64635-001

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Wiring Diagram

