WARNING
This conversion kit is to be installed by a qualified Lennox service technician or other qualified agency in accordance with the manufacturer's instructions, all codes and requirements of the authority having jurisdiction in the USA, and the requirements of the CSA-B149 installation codes in Canada. If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life. The qualified agency performing this work assumes responsibility for this conversion.

ELECTROSTATIC DISCHARGE (ESD)
Precautions and Procedures

CAUTION
Electrostatic discharge can affect electronic components. Take precautions during furnace installation and service to protect the furnace's electronic controls. Precautions will help to avoid control exposure to electrostatic discharge by putting the furnace, the control and the technician at the same electrostatic potential. Neutralize electrostatic charge by touching hand and all tools on an unpainted unit surface, such as the gas valve or blower deck, before performing any service procedure.

Application
This kit is used when replacing either an EGC-1 or an EGC-2 control with an EGC-1 control in any Lennox unit in which they are used.

Installation - EGC-1 Replaced by EGC-1

WARNING
Before installing or servicing unit, be sure ALL power to unit is OFF. More than one disconnect switch may be present. Electrical shock can cause personal injury or death!

1 - Shut off gas supply and disconnect electrical power from the unit.
2 - Remove access door.
3 - Mark and disconnect all wires from control board. Disconnect harness plug.
4 - Remove control board.
5 - Snap-mount the replacement control board, positioned as the existing control board.
6 - Reconnect wires and harness plug to control board. The kit-provided jumper is not used. Install wire ties as required.

IMPORTANT - DO NOT INCLUDE IGNITION LEAD IN ANY GROUP OF BUNDLED WIRES. ROUTE IGNITION LEAD SEPARATELY.

Installation - EGC-2 Replaced by EGC-1

WARNING
Before installing or servicing unit, be sure ALL power to unit is OFF. More than one disconnect switch may be present. Electrical shock can cause personal injury or death!

1 - Shut off gas supply and disconnect electrical power from the unit.
2 - Remove access door.
3 - Mark and disconnect all wires from control board. Disconnect harness plug.
4 - Remove control board.

Shipping and Packing List
Package 1 of 1 contains:
1 - Replacement ignition control (EGC-1)
1 - Continuous fan jumper (used with EGC-2 units converted to EGC-1)

NOTE - This kit contains components for converting ignition controls for two different series of units. Use only the components required for the particular unit(s) being converted.

Shipping Damage
Check all components for shipping damage. Consult last carrier immediately if damage is found.
REFER TO EXISTING WIRING DIAGRAM STICKER ON UNIT FOR BLOWER SPEED TAP.

FIGURE 1

5 - Snap-mount the replacement control board, positioned as the existing control board.

6 - Reconnect wires and harness plug to control board. For **kit-provided jumper usage see step 7**. Install wire ties as required.

**IMPORTANT - DO NOT INCLUDE IGNITION LEAD IN ANY GROUP OF BUNDLED WIRES. ROUTE IGNITION LEAD SEPARATELY.**

7 - Blower Speed and Continuous Fan Connections:

Existing units with continuous low speed fan operation:

Do not install provided continuous fan jumper as shown in figure 1 and do not change existing low speed tap connection. Make the ACB HEAT and ACB COOL connections as shown.

Existing units with no continuous low speed fan operation:

Connect provided continuous fan jumper between control board terminals ACB HEAT and ACB LOW to obtain continuous fan operation on the heating speed when thermostat is set to FAN ON and there is no heating or cooling demand. Make the ACB HEAT and ACB COOL connections as shown in figure 1.

**Warning - Do not install jumper if continuous low speed is installed, either at control board ACB LOW terminal or to a separate circuit controlled by terminal G of the thermostat. Damage to the control board and/or blower motor may result.**

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**EGC-1 Control Board Operation**

**EGC-1 Integrated Blower and Ignition Control Board**

The EGC-1 control board controls blower operation and fan off timings, allows for thermostat connections, controls ignition and provides two diagnostic LEDs with a memory recall button. To interpret the LEDs, see the diagnostic codes section near the end of these instructions. To check operation sequence refer to the flow charts at the end of this instruction.

**Blower Speed / Timing Adjustments**

**Important - Turn electrical power off before making any adjustments.**

**Continuous Speed**

Systems using a cooling thermostat subbase may operate continuous blower through the Fan-ON switch of the thermostat. For continuous blower with a system without a cooling subbase, a toggle switch must be installed between the “R” and “G” of unit thermostat connections. Refer to existing unit wiring diagram sticker for factory connected blower speed taps.
EGC-2 controls replaced by EGC-1
Some units may have existing continuous low speed fan connected independently of the control board. If this is the case, do not connect continuous fan jumper. If this is not the case, install continuous fan jumper as outlined in step 7 of EGC-2 TO EGC-1 installation section to obtain continuous blower operation on the heating speed.

Warning - Do not install jumper if continuous low speed is installed, either at control board ACB terminal or to a separate circuit controlled by terminal G of the thermostat. Damage to the control board and/or blower motor may result.

EGC-1 controls replaced by EGC-1
The blower will operate continuously on low speed when connected to the control board as previously installed.

Fan On and Off timings
The fan on time of 45 seconds is not adjustable. Fan off time (time that the blower operates after the heating demand has been satisfied) can be adjusted by moving the jumper on the integrated control board. The replacement integrated control is shipped with a factory fan off setting of 180 seconds. Fan off time will affect comfort and is adjustable to satisfy individual applications. See figure 2.

To adjust fan-off timings:
Remove jumper and select one of the other pin combinations to achieve the desired time.

<table>
<thead>
<tr>
<th>TIMING PINS (seconds)</th>
<th>Fan-off Time Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>240 second fan-off timing.</td>
</tr>
<tr>
<td>90</td>
<td></td>
</tr>
<tr>
<td>120</td>
<td></td>
</tr>
<tr>
<td>180</td>
<td></td>
</tr>
</tbody>
</table>

FIGURE 2

Start-Up
BEFORE LIGHTING smell all around the appliance area for gas. Be sure to smell next to the floor because some types of gas are heavier than air and will settle on the floor.

Unit may be equipped with either a gas control knob or lever. Use only your hand to push in or turn the gas control knob or move the gas control lever. Never use tools. If the knob will not push in or turn or if lever will not move by hand, do not try to repair it, call a qualified service technician. Force or attempted repair may result in a fire or explosion.

To place unit in operation
1 - Make sure thermostat is set below room temperature and power is turned off to unit.
2 - This appliance is equipped with an ignition device which automatically lights the pilot burner. DO NOT try to light the pilot burner by hand.
3 - On units with a gas valve control knob, turn knob to OFF. On units with a gas valve control lever, switch lever to OFF. Do not force.
4 - Wait 15 minutes to clear out any gas. If you then smell gas, immediately call your gas supplier from a neighbor’s phone. Follow the gas supplier’s instructions. If you do not smell gas go to next step.
5 - On units with a gas valve control knob, turn knob to ON. On units with a gas valve control lever, switch lever to ON. Do not force.
6 - Turn on all electrical power to unit.
7 - Set thermostat to above room temperature.
8 - Check gas line supply pressure with unit operating. The minimum pressure as shown on the name rating plate must be available. Then check and adjust manifold pressure to the value indicated on the unit rating plate.
9 - Set heat anticipator to 0.65 for Honeywell gas valve and 0.50 for WhiteRodgers gas valve.
10 - Run unit through a minimum of three complete cycles to check for normal operation.
11 - Set thermostat to desired setting.
12 - Replace access panel.
### EGC-1 Diagnostic Codes

#### INTEGRATED CONTROL BOARD

- **BLOWER OFF DELAY JUMPER**
- **FAULT RECALL**
  - Press for 10 seconds to clear fault history.
- **DIAGNOSTICS LEDS**

#### Diagnostic Codes Table

<table>
<thead>
<tr>
<th>DSI BOARD DIAGNOSTIC PATTERNS</th>
<th>MODE INDICATION</th>
<th>REMEDY</th>
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</thead>
<tbody>
<tr>
<td><strong>DIAG 1</strong></td>
<td>Flashing Together</td>
<td>Normal Operation</td>
</tr>
<tr>
<td><strong>DIAG 2</strong></td>
<td>Flashing Together</td>
<td>Normal Operation</td>
</tr>
<tr>
<td><strong>DIAG 1</strong></td>
<td>Flashing</td>
<td>Limit Switch Open</td>
</tr>
<tr>
<td><strong>DIAG 2</strong></td>
<td>On</td>
<td>Limit Switch Open</td>
</tr>
<tr>
<td><strong>DIAG 1</strong></td>
<td>Off</td>
<td>Pressure Switch Open</td>
</tr>
<tr>
<td><strong>DIAG 2</strong></td>
<td>Flashing</td>
<td>Pressure Switch Open</td>
</tr>
<tr>
<td><strong>DIAG 1</strong></td>
<td>Flashing Alternately</td>
<td>Watchguard</td>
</tr>
<tr>
<td><strong>DIAG 2</strong></td>
<td>Flashing Alternately</td>
<td>Watchguard</td>
</tr>
<tr>
<td><strong>DIAG 1</strong></td>
<td>Flashing</td>
<td>Flame Failure</td>
</tr>
<tr>
<td><strong>DIAG 2</strong></td>
<td>Off</td>
<td>Flame Failure</td>
</tr>
<tr>
<td><strong>DIAG 1</strong></td>
<td>On</td>
<td>Flame Roll-Out</td>
</tr>
<tr>
<td><strong>DIAG 2</strong></td>
<td>Flashing</td>
<td>Flame Roll-Out</td>
</tr>
<tr>
<td><strong>DIAG 1</strong></td>
<td>Continuously On</td>
<td>Control Board Failure</td>
</tr>
<tr>
<td><strong>DIAG 2</strong></td>
<td>Continuously On</td>
<td>Control Board Failure</td>
</tr>
</tbody>
</table>
HEATING SEQUENCE OF OPERATION

NORMAL HEATING MODE

CONTROL MAIN POWER "ON"

NO

FLAME OFF?

YES

CONTROL SELF-CHECK OKAY?

NO

ROLL-OUT SWITCH CLOSED

YES

LED: SLOW FLASH RATE

THERMOSTAT CALLS FOR HEAT

LED: FAST FLASH RATE

COMB. AIR BLOWER PRESSURE SWITCH OPEN?

NO

COMBUSTION AIR BLOWER ON?

YES

PRESSURE SWITCH CLOSED WITHIN 2.5 MIN.?

NO

YES

COMB. AIR BLOWER PREPURGE (15 seconds)

IGNITION TRIAL (10 seconds) -- START IGNITION SPARK, OPEN MAIN GAS VALVE.

HAS FLAME REGISTERED WITHIN 10 SECONDS AFTER IGNITION TRIAL?

NO

IS FLAME SENSED AFTER 10 SECOND FLAME RECTIFICATION PERIOD?

YES

INDOOR AIR BLOWER ON. (Fixed 45-second delay)

YES

PRIMARIES/SECONDARIES LIMITS MONITORED IN HEAT CYCLE. ARE SWITCHES CLOSED?

NO

PRESSURE SWITCH CLOSED?

YES

THERMOSTAT OPENS

LED: SLOW FLASH RATE

COMB. AIR BLOWER OFF (5 sec. delay)

INDOOR AIR BLOWER OFF (After selected 60, 90, 120, 180, or 240 delay)?

NO

YES

ABNORMAL HEATING MODE

GAS VALVE OFF. COMB. BLOWER ON. INDOOR BLOWER ON HEAT SPEED. SEQUENCE HOLDS UNTIL NO FLAME SENSED OR MAIN POWER IS INTERRUPTED AND RESET. DIAG. CODE: 1-FLASHING / 2-OFF (FLAME FAILURE)

GAS VALVE, COMB. BLOWER AND INDOOR BLOWER (WITH DELAY) OFF. REMOVE POWER TO RESET CONTROL. DIAG. CODE: BOTH ON (SELF-CHECK FAILURE)

GAS VALVE, COMB. BLOWER AND INDOOR BLOWER (WITH DELAY) OFF. SEQUENCE HOLDS UNTIL ROLL-OUT SWITCH CLOSES. DIAG. CODE: 1-ON / 2-FLASHING (FLAME ROLL-OUT OPEN)

GAS VALVE, COMB. BLOWER AND INDOOR BLOWER (WITH DELAY) OFF. SEQUENCE HOLDS UNTIL PRESSURE SWITCH CLOSES OR THERMOSTAT RESETS CONTROL. DIAG. CODE: 1-OFF / 2-FLASHING (C.A.B. PRESSURE SWITCH OPEN)

PRESSURE SWITCH WATCHGUARD CONDITION:
GAS VALVE, COMB. BLOWER AND INDOOR BLOWER (WITH DELAY) OFF. PRESSURE SWITCH CLOSES OR THERMOSTAT RESETS CONTROL. DIAG. CODE: 1-OFF / 2-FLASHING (C.A.B. PRESSURE SWITCH OPEN) IS 5 MINUTE RESET PERIOD COMPLETE?

GAS VALVE OFF. COMB. BLOWER ON. INDOOR BLOWER (WITH 45 DELAY) ON. HAS CONTROL FAILED FLAMESENSE 5 TIMES DURING ONE HEAT DEMAND? IF YES, SYSTEM GOES INTO 60 MIN.WATCHGUARD, DIAG. CODE: 1-ALT. FLASHING / 2-ALT. FLASHING IF NO, GO TO "COMB. AIR BLOWER ON?"

HAS CONTROL RESET IGNITION SEQUENCE 5 TIMES IF YES, SYSTEM GOES INTO 60 MIN. WATCHGUARD. DIAG. CODE: 1-ALT. FLASHING / 2-ALT. FLASHING IF NO, GO TO "COMB. AIR BLOWER ON?"

GAS VALVE AND COMB. BLOWER OFF. INDOOR BLOWER ON UNTIL LIMIT CLOSES. DIAG. CODE: 1-FLASHING / 2-ON (LIMIT OPEN) IS LIMIT NOW CLOSED?

HAS PRIMARY LIMIT OPENED 5 TIMES DURING ONE UNSATISFIED HEAT DEMAND. IF YES, SYSTEM GOES INTO 60 MIN.WATCHGUARD. DIAG. CODE: 1-FLASHING / 2-ON IF NO, GO TO "COMB. AIR BLOWER ON?"

GAS VALVE, COMB. BLOWER AND INDOOR BLOWER (WITH DELAY) OFF. DIAG. CODE: 1-OFF / 2-FLASHING (C.A.B. PRESSURE SWITCH OPEN) HAS C.A.B. PRESSURE SWITCH CLOSED IN 2.5 MINUTES?
COOLING SEQUENCE OF OPERATION

LED: Slow flash rate. REMAINS UNCHANGED THROUGHOUT COOLING CYCLE.

THERMOSTAT CALLS FOR COOLING.

COMPRESSOR CONTACTOR AND SYSTEM FAN ENERGIZED AT COOLING SPEED AFTER 0 SECOND DELAY. ACC TERMINAL ENERGIZED.

THERMOSTAT OPENS.

COMPRESSOR OFF.

SYSTEM FAN AND ACC TERMINAL OFF AFTER 0 SECONDS.

MANUAL FAN SEQUENCE OF OPERATION

LED: Slow flash rate. REMAINS UNCHANGED THROUGHOUT SEQUENCE.

MANUAL FAN SELECTION MADE AT THERMOSTAT. CONTROL ENERGIZES SYSTEM FAN AT CONTINUOUS SPEED*. ACC TERMINAL ENERGIZED.

THERMOSTAT CALLS FOR HEAT.

THERMOSTAT CALLS FOR COOLING.

SYSTEM FAN SWITCHES TO HEATING SPEED AFTER IGNITION SEQUENCE. ACC TERM. REMAINS ENERGIZED.

THERMOSTAT CALLS FOR COOLING. YES

SYSTEM FAN SWITCHED TO COOLING SPEED. ACC TERMINAL REMAINS ENERGIZED. NO

THERMOSTAT OPENS.

THERMOSTAT CALLS FOR COOLING.

SYSTEM FAN SWITCHES TO CONTINUOUS SPEED* AND ENERGIZES ACC TERMINAL. BOTH REMAIN ON UNTIL MANUAL FAN IS SWITCHED OFF AT THERMOSTAT.

*CONTINUOUS SPEED

Units with EGC-2 control replaced with EGC-1 with continuous low wired independent of control board. Continuous speed is low speed.

Units with EGC-2 control replaced with EGC-1 wired with continuous fan jumper. See figure 1. Continuous speed is heating speed.

Units with EGC-1 control replaced with EGC-1. Continuous speed is low speed.