Gas Furnace Control Center

Installation Instructions
Part No. HH84AA020

NOTE: Read the entire instruction manual before starting the installation.

INTRODUCTION
This instruction covers installation of the gas furnace control center Part No. HH84AA020, in a standing pilot or intermittent ignition (IID), natural draft gas furnace.

SAFETY CONSIDERATIONS
Installing and servicing of heating equipment can be hazardous due to gas and electrical components. Only trained personnel should install or service heating equipment.

Untrained personnel can perform basic maintenance functions such as cleaning coils, or cleaning and replacing filters. All other operations should be performed by trained service personnel.

When working on heating equipment, observe precautions in the literature, on tags, and on labels attached to the unit.

Follow all safety codes. Wear safety glasses and work gloves. Have a fire extinguisher available.

WARNING
Before beginning the installation or modification, be sure the main electrical disconnect switch is in the OFF position. Electrical shock can cause personal injury or death.

DESCRIPTION AND USAGE
The HH84AA020 control center is a new generation control for the replacement market.

The control center is designed to function similarly to previous control center designs, while incorporating some of the latest features in furnace control center technology. It is a direct replacement for the following control center Part No.: 302075-3, HH84AA010, HH84AA011, HH84AA012 HH84AA013, CESO110017, or CESO110018.

Following is a description of the slight operational differences and added features. Refer to Fig. 3 for location of control center components.

OPERATION WITH NEW BLOWER RELAYS—The previous design control centers used a SPST-NC heating fan relay (HFR or 2A) and a DPDT cooling fan relay (CFR or 2F).

NOTE: Some furnace models used control centers without a cooling fan relay. This new control center uses a SPST-NO blower relay (BLWR) and a DPST blower speed change relay (HI/LO).

The furnace sequence of operation with the new control center is unchanged with 2 exceptions. Refer to Fig. 2 for new relay and control logic and compare to existing furnace wiring diagram.

1. The LO speed blower will not operate on a transformer failure as on previous designs.

2. If JW1 jumper is cut between R and GH terminals, a constant LO speed blower will occur without any thermostat inputs to the control center. A GC or Y signal to the control center WILL NOT bring on the HI speed blower for cooling operation. JW1 jumper MUST NOT be cut on cooling applications.

24-V CIRCUIT PROTECTION—An automotive type, 3-amp fuse is provided to protect the transformer and thermostat from shorts in the low-voltage circuitry. An open fuse will initiate a constant blower. Refer to Fig. 3 for location on control center.

NEW THERMOSTAT TERMINAL BLOCK—Refer to Fig. 3 for the location on control center and to Fig. 1 for screw terminal identification.

LO SPEED CONTINUOUS G BLOWER AND 90 SECOND HI SPEED BLOWER OFF DELAY OPTION—Resistor (R17) on the control center can be cut to achieve heating speed continuous blower with a thermostat R-G call and a HI speed blower with 90 sec off delay with a thermostat R-Y call.

When this option is chosen, Y from the thermostat and the outdoor unit MUST be connected to the control center Y terminal to get the HI speed blower on an R-Y call. Refer to Fig. 3 for resistor location and Table 1 for blower operation modes.

INSTALLATION

1. Disconnect wiring from blower control center, noting location. Be sure to remove quick-connect jumper on standing pilot models between Gas 1 and Gas 3 and place on new control center.

2. Remove existing blower control center and install new blower control center in control box. Be sure top edge of board is in the mounting slot. If board is installed behind slot, electrical shorting could occur in the control box. Replace wiring on board as removed. See unit wiring label.

3. Turn power to ON position and check unit sequence of operation per unit Installation Instructions.

4. This instruction MUST be placed with the original unit Instruction Packet or with the unit for future reference.

Table 1—Blower Operation Modes

<table>
<thead>
<tr>
<th>INPUT FROM THERMOSTAT</th>
<th>RESISTOR (R17) UN-CUT</th>
<th>RESISTOR (R17) CUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>LO Speed Heating Blower*</td>
<td>LO Speed Heating Blower*</td>
</tr>
<tr>
<td>Gc</td>
<td>HI Speed Cooling Blower</td>
<td>LO Speed Heating Blower</td>
</tr>
<tr>
<td>Y</td>
<td>No Blower</td>
<td>HI Speed Cooling Blower†</td>
</tr>
</tbody>
</table>

* 75 sec on delay and 105 sec off delay.
† 90 sec off delay.

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.
Fig. 1—Thermostat Terminals

Fig. 2—Wiring Schematic

LEGEND
- ALS  AUXILIARY LIMIT SWITCH, MANUAL-RESET (SPST-NC)
- BLWR  BLOWER MOTOR RELAY (SPST-NO)
- BVSS  BLOCKED VENT SHUTOFF SWITCH, MANUAL-RESET (SPST-NC)
- CAP  RUN CAPACITOR
- FL  FUSIBLE LINK
- FU  FUSE (ATO 3AMP)
- HI/LO  BLOWER MOT OR SPEED CHANGE RELAY (DPST)
- ILK  SWITCH, BLOWER DOOR INTERLOCK (SPST-NO)
- LS  LIMIT SWITCH, AUTO.-RESET (SPST-NC)
- MC  MICROCONTROLLER
- MTR  MOTOR, BLOWER
- TRAN  TRANSFORMER
- WHEN USED

- PLUG RECEPTACLE
- JUNCTION
- UNMARKED TERMINAL
- TERMINAL PCB
- FACTORY WIRING (115V AC)
- FACTORY WIRING (24V AC)
- CONDUCTOR ON PRINTED CIRCUIT BOARD
- SCREW TERMINAL FOR FIELD WIRING
- EQUIP. GROUND

Fig. 3—Control Center Component Location