

CARRIER - WEATHERMAKER 8000 58WAV - UPFLOW

MODEL NUMBER:	58WAV	045-08 045-12	070-08 070-12	091-14 091-16	111-12 111-16 111-20	136-16 136-20	155-20
BTU SIZES:	45,000 - 70,000 - 91,000 - 111,000 - 136,000 - 155,000 BTU'S						

ACCESSIBILITY CLEARANCE

Provide 30" front clearance for servicing. An open door in front of the unit can meet this requirement. A minimum clearance of 3" must be provided in front of the unit for combustion air and proper operation.

CLEARANCE FROM COMBUSTIBLE MATERIAL

<u>UNIT SIZE</u>	<u>045 and 070</u>	<u>091-155</u>
Sides Single-Wall Vent	1	0
..... Type B-1 Double-Wall Vent	0	0
Back	0	0
Plenum Top	1	1
Vent Single-Wall Vent	6	6
..... Type B-1 Double-Wall Vent	1	1
Front Single-Wall Vent	6	6
..... Type B-1 Double-Wall Vent	3	3
..... Service	30	30

This furnace shall not be installed directly on carpeting, tile, or any combustible material other than wood flooring

COLD AIR RETURN AIR DUCTS

WARNING: Do not install the furnace on its back; safety control operation will be adversely affected. Never connect return-air ducts to the back of the furnace. A failure to follow this warning can cause a fire, personal injury, or death.

GARAGE

When the furnace is installed in a residential garage, it must be installed so that the burners and ignition source are located at least 18 in above the floor. The furnace should be protected fro physical damage by vehicles.

GENERAL

Set heat anticipator with amp meter or amp probe.

HIGH-ALTITUDE INSTALLATIONS

Deration	Standard - See BDP orifice charts in the Resource Manual
Orifice	Change only
Regulator Pressure	3.5" w.c. + or - .3" w.c.
Pressure Switch	

MOBILE HOME

The design of this furnace line is NOT A.G.A./C.G.A. certified for installation in mobile homes, recreation vehicles, or outdoors.

VENTING MATERIAL AND REQUIREMENTS

Vent Pipe	Type "B" Type "C"
Vent Fittings	Type "B" Type "C"

VENT CLEARANCE FROM COMBUSTIBLE MATERIAL

Type "B" = 1"
Type "C" = 6"

VENTING PROCEDURE

Category I appliance - fan assisted.
Vent according to the GAMA Vent Tables or installation instructions Quick-Vent Tables.

MISCELLANEOUS INFORMATION/NOTES

Blank area for miscellaneous information/notes.

SEQUENCE OF OPERATION

CAUTION: Furnace control must be grounded for proper operation, or control will lockout. Control is grounded through green wire routed to gas valve and burner bracket screw.

Using the schematic diagram shown in Figure 11, follow the sequence of operation through the different modes. Read and follow the wiring diagram very carefully.

NOTE: If there is a power interruption and any thermostat call, the control initiates a 90-sec blower only on period before starting another cycle.

HEATING MODE - When the thermostat "calls for heat", the R-W circuit closes. The furnace control performs a self-check, verifies the pressure switch contacts are open, and starts inducer motor.

- a. Prepurge period - As the inducer motor comes up to speed, the pressure switch contacts close to begin a 15-sec prepurge period.
- b. Ignitor warm-up - At the end of the prepurge period, the ignitor is energized for a 17-sec ignitor warm-up period.
- c. Ignition sequence - When the ignitor warm-up period is completed, the gas valve opens, permitting gas flow to the burners where it is ignited. After 5 sec, the ignitor is de-energized and a 2-sec flame-sensing period begins.
- d. HUM terminal is energized with the gas valve.
- e. Flame sensing - When burner flame is sensed, the control begins the blower on delay period and continued holding the gas valve open. If burner flame is not sensed, the control closes the gas valve and repeats the ignition cycle.

NOTE: Ignition sequence will repeat 3 additional times before a lockout occurs. Lockout automatically resets after 3 hours, or can be manually reset by turning 115v off (not at thermostat) for 3 sec minimum, then on again.

- f. Blower on delay - Forty sec after burner flame is proven, the blower motor is energized on heating speed. Simultaneously, the humidifier and electronic air cleaner terminals (HUM and Com for humidifier, EAC-1 and EAC-2 for electronic air cleaner) are energized. Jumper is on pin 6 and pin 9, blower on delay is 60 sec.
- g. Blower off delay - When the thermostat is satisfied, the circuit between R-W is broken, de-energizing the gas valve and stopping gas flow to the burners. The blower motor and EAC remain energized 90, 135, 180, or 225 sec (depending on the blower off time selection). The furnace is factory set for a 135-sec blower off delay period.
- h. Post purge - The inducer motor remains energized 5 sec after the burners are extinguished. If jumper is on pin 6 and pin 9, the post-purge period is 15 sec.

COMPONENT TEST - The furnace control allows all components, except gas valve, to be run for a short period of time.

This feature help diagnose a system problem in case of a component failure. To initiate component test procedure, short (jumper) the TEST 1/4-inch quick connect terminal on control board (adjacent to diagnostic light) and the Com terminal on thermostat connection block for approximately 2 sec (See Figure 9).

NOTE: Component test feature will not operate if any thermostat signal is present at control board.

Component test sequence is as follows.

- a. Momentarily jumper TEST and C terminal until LED goes off.
- b. LED will display previous fault 4 times.
- c. Inducer motor operates for 10 sec, then stops.
- d. Hot surface ignitor is energized for 15 sec, the de-energized.
- e. Blower motor operates on cooling speed for 10 sec, then stops.
- f. Blower motor operates on heating speed for 10 sec, then stops.

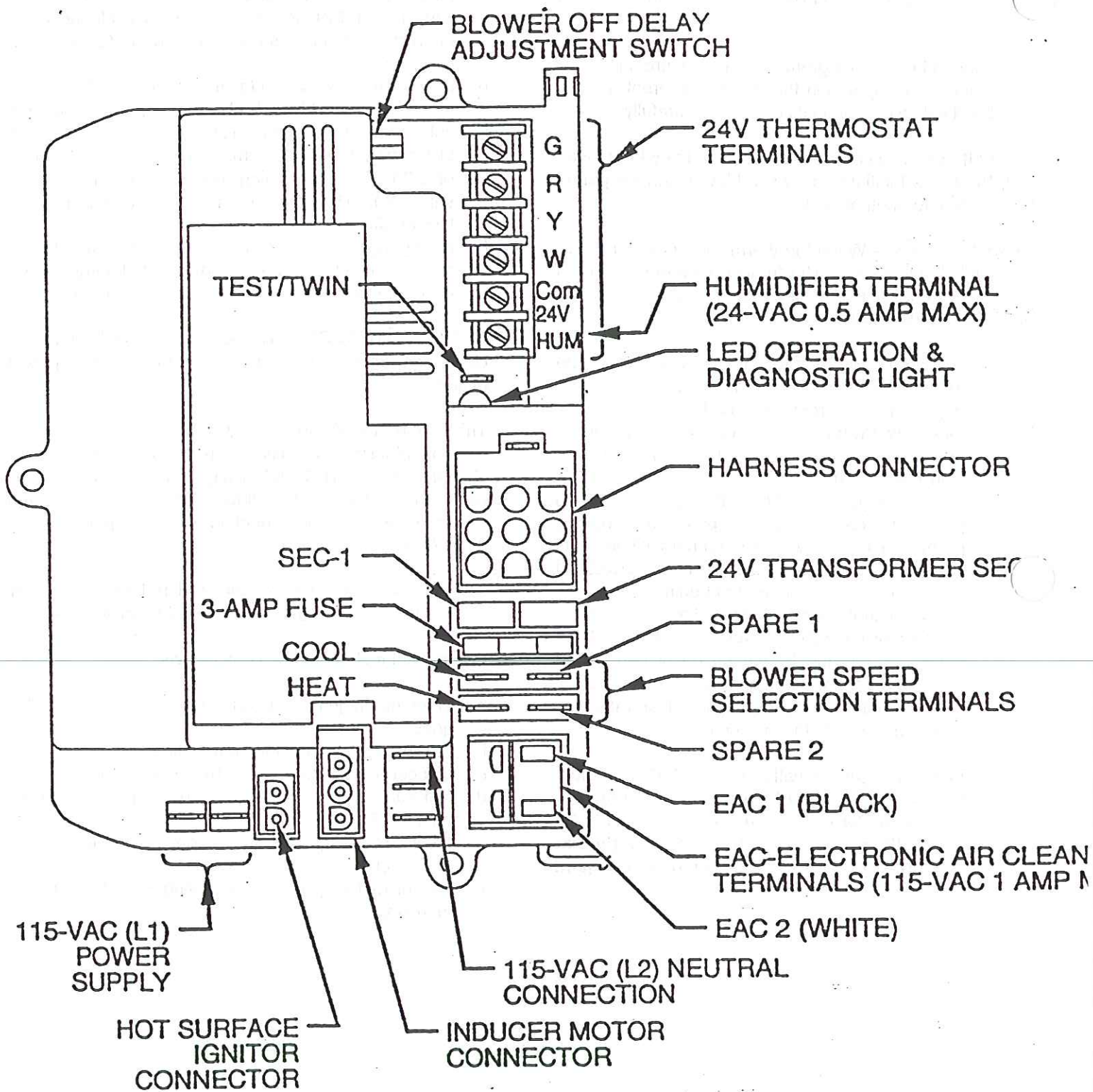
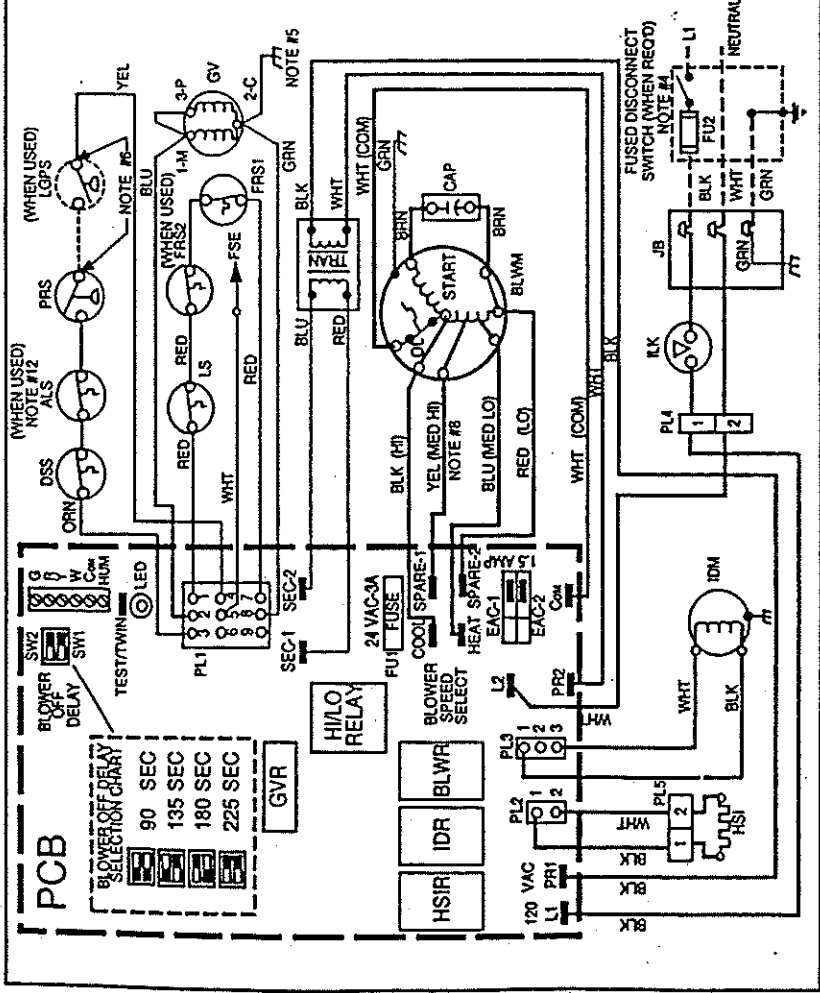
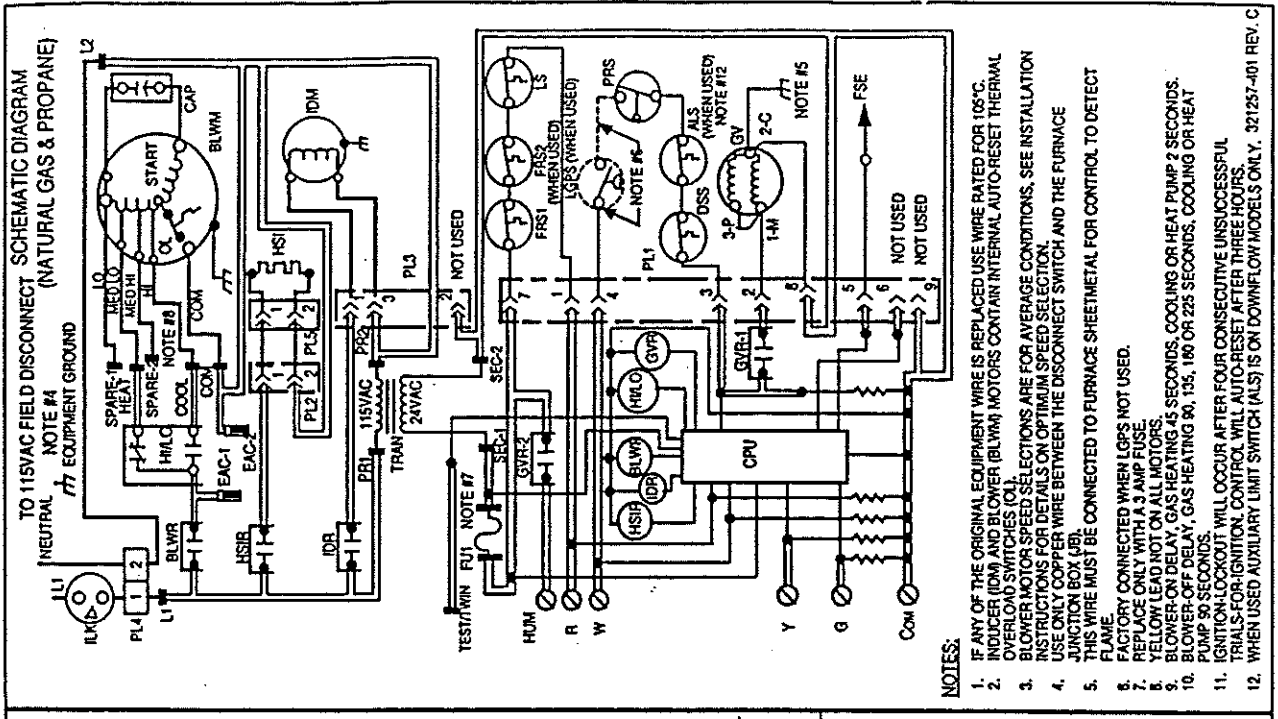


Fig. 9—Control Board



NOTES:

- IF ANY OF THE ORIGINAL EQUIPMENT WIRE IS REPLACED USE WIRE RATED FOR 105°C.
- INDUCER (IDM) AND BLOWER (BLWM) MOTORS CONTAIN INTERNAL AUTO-RESET THERMAL OVERLOAD SWITCHES (TOS).
- BLOWER MOTOR SPEED SELECTIONS ARE FOR AVERAGE CONDITIONS. SEE INSTALLATION INSTRUCTIONS FOR DETAILS ON OPTIMUM SPEED SELECTION.
- USE ONLY COPPER WIRE BETWEEN THE DISCONNECT SWITCH AND THE FURNACE JUNCTION BOX (JB).
- THIS WIRE MUST BE CONNECTED TO FURNACE SHEETMETAL FOR CONTROL TO DETECT FLAME.
- FACTORY CONNECTED WHEN LGPS (WHEN USED).
- REPLACE ONLY WITH A 3 AMP FUSE.
- YELLOW LEAD NOT ON ALL MOTORS.
- BLOWER-ON DELAY, GAS HEATING 45 SECONDS, COOLING OR HEAT PUMP 2 SECONDS.
- BLOWER-OFF DELAY, GAS HEATING 90, 135, 180 OR 225 SECONDS, COOLING OR HEAT PUMP 90 SECONDS.
- IGNITION LOCKOUT WILL OCCUR AFTER FOUR CONSECUTIVE UNSUCCESSFUL TRIALS-FOR-IGNITION. CONTROL WILL AUTO-RESET AFTER THREE HOURS.
- WHEN USED AUXILIARY LIMIT SWITCH (ALS) IS ON DOWNFLOW MODELS ONLY. 321257-401 REV. C

LEGEND

ALS AUXILIARY LIMIT SWITCH, OVERTEMP., -MANUAL RESET, SPST-(N.O.)
 BLWR BLOWER MOTOR
 CAP CAPACITOR
 CPU CONTROL PROCESSOR AND CIRCUITRY
 DSS DIODE SAFEGUARD SWITCH
 EAC-1 ELECTRONIC AIR CLEANER CONNECTION (115 VAC 1.5 AMP MAX.)
 EAC-2 ELECTRONIC AIR CLEANER CONNECTION (COMMON)
 FPS FLAME PROOFING ELECTRODE
 FUSE 3 AMP, AUTOMOTIVE BLADE TYPE, FACTORY INSTALLED (FIELD INSTALLED & SUPPLIED)
 FUI GAS VALVE REDUNDANT OPERATORS
 GV GAS VALVE
 H/LO HI/LO
 HSI HOT SURFACE IGNITOR (115 VAC)
 HSR HOT SURFACE IGNITOR RELAY, SPST
 HUM HUMIDIFIER CONNECTION (3 AMP, MAX.)
 IDM INDUCED DRAFT MOTOR
 ILK INTERLOCK SWITCH, SPST-(N.O.)
 JB JUNCTION BOX
 LED LIGHT-EMITTING DIODE FOR STATUS CODES
 LGPS LIGHT GAS PRESSURE SWITCH, SPST-(N.O.)
 LS LOCKOUT SWITCH, SPST-(N.O.)
 ALS AUTO-RESET INTERNAL MOTOR OVERLOAD TEMP. SW.
 PCB PRINTED CIRCUIT BOARD

9-CIRCUIT CONNECTOR
 2-CIRCUIT PCB CONNECTOR
 3-CIRCUIT IDM CONNECTOR
 2-CIRCUIT JUNCTION BOX CONNECTOR
 2-CIRCUIT HS/PCB CONNECTOR
 PRESSURE SWITCH, SPST-(N.O.)
 COMPONENT TEST & TWIN TERMINAL
 TRANSFORMER-115VAC/24VAC

JUNCTION
 UNMARKED TERMINAL
 PCB TERMINAL
 FACTORY WIRING (115VAC)
 FACTORY WIRING (24VAC)
 FIELD WIRING (115VAC)
 FIELD WIRING (24VAC)
 CONDUCTOR ON PCB
 FIELD WIRING SCREW TERMINAL
 FIELD GROUND
 EQUIPMENT GROUND
 FIELD SPLICE
 PLUG RECEPTACLE

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→ Fig. 11—Unit Wiring Diagram

