



INSTALLATION INSTRUCTION LO AND HO SERIES OIL FIRED WARM AIR FURNACE

ELECTRIC FURNACE MAN
EMMAUS, PENNA.

GENERAL

This furnace is shipped as a packaged unit. The burners and controls are supplied as standard equipment, and are completely wired and assembled in place.

The air handling capacity of this furnace is designed for cooling air flows.

The construction of this furnace provides clearance for plenum mounted cooling coils in basements with low ceilings or confined areas.

The control compartment which is an integral part of this furnace, is totally enclosed to provide a safe, compact, clean and quiet control area.

Codes and local requirements governing the installation of oil burning equipment, wiring and flue connections must be followed.

LOCATION

This furnace may be located in basements where economy of head room is either desired or required or where confined area requires same.

It should be installed level, on a solid base. Sufficient space for servicing should be provided at the front and rear of the furnace.

The minimum required clearances for this furnace are outlined below.

Front	Sides	Rear	Flue	Inlet And Outlet Plenum
24"	6"	6"	18"	2"

Minimum clearances

INSTALLATION

Attach the supply and return ductwork to the flanged openings provided. Flexible duct connectors are recommended to connect both the supply and return ducts to the furnace.

Before securing the flue pipe to the chimney, be sure that the chimney flue servicing the furnace is:

1. At least 2 feet higher than the ridge of the house. If it is only as high as the ridge, it should be 10 feet from the nearest ridge.
2. Cleaned of any dirt or debris.
3. Not serving an open fireplace.

Connections from the furnace to the chimney should be:

1. Short and direct.
2. Pitched at $\frac{1}{4}$ " per foot downward toward the furnace.
3. Tightly joined and checked for leaks.

BURNER

The furnace is supplied with a high pressure atomizing type burner. Complete instructions for installation of the fuel oil piping will be found with the burner.

FAN AND LIMIT CONTROL

This control is factory mounted in proper location.

BAROMETRIC DRAFT CONTROL

Instructions for installation are packed with the control.

ELECTRICAL

A separate line voltage supply should be used with a fused disconnect switch between the main power panel and the unit. Service line shall be grounded.

All wiring must comply with local and National Electric Code requirements. The units operate on a 115V-1-60 power supply. Be sure the jumper on the fan-limit switch is in place as shown in the connection diagrams.

FILTERS

Filter racks are provided with this furnace. The filters are shipped with the furnace.

OPERATIONAL CHECKOUT

The installation of the furnace is now complete and the operational checkout may be performed.

START-UP

1. Check the wiring against the diagram
2. Open the valve on the oil supply line
3. Reset the primary control
4. Set the thermostat above room temperature
5. Set the main electrical switch to "ON" position and the burner should start.

COMBUSTION CHECK

NOTE: Use instruments to adjust the fire.

1. Adjust the primary air band to a "O" smoke.

ALLOW THE FURNACE TO RUN AT LEAST 10 MINUTES BEFORE FINAL ADJUSTMENTS ARE MADE.

2. Check the overfire draft. Adjust the overfire draft for a minus 0.02" wg. If necessary adjust the barometric draft regulator.

OIL PUMP CHECK

The oil pressure regulator is factory set to give nozzle oil pressures of 100 psig. The firing rate is noted on the nameplate.

If the burner fails to pump oil and there are no leaks in the oil supply line to the furnace, it may be necessary to prime the pump. Turn off the electric power supply to the unit. Refer to the priming instructions with the pump.

NOTE: Use 70° solid nozzle.

HEATING

The blower speed is factory set to deliver the required air flow at normal static pressure.

FAN ADJUSTMENT CHECK

This furnace is equipped with a belt drive motor with a variable pitch motor pulley. The blower speed should be adjusted to deliver a differential air temperature of 85° F. between the return and supply plenums at the duct static pressure noted on the U.L. label.

To adjust the belt drive motor pulley, loosen the set screw on the adjustable hub, then to increase speed turn clockwise to close or to decrease speed turn counter-clockwise to open. Retighten the set screw on flat section of hub. The pulley belt tension should be adjusted to provide a 1" deflection midway between the two pulleys.

FAN & LIMIT CHECK

After the furnace has been in operation for at least 15 minutes restrict the return air supply by blocking the filters or closing the return registers and allow the furnace to shutdown on high limit. The fan must continue to run. Remove the restriction and the burner should come on in a few minutes.

The operational checkout is now complete. Be sure to adjust the thermostat to the desired setting before leaving the installation.

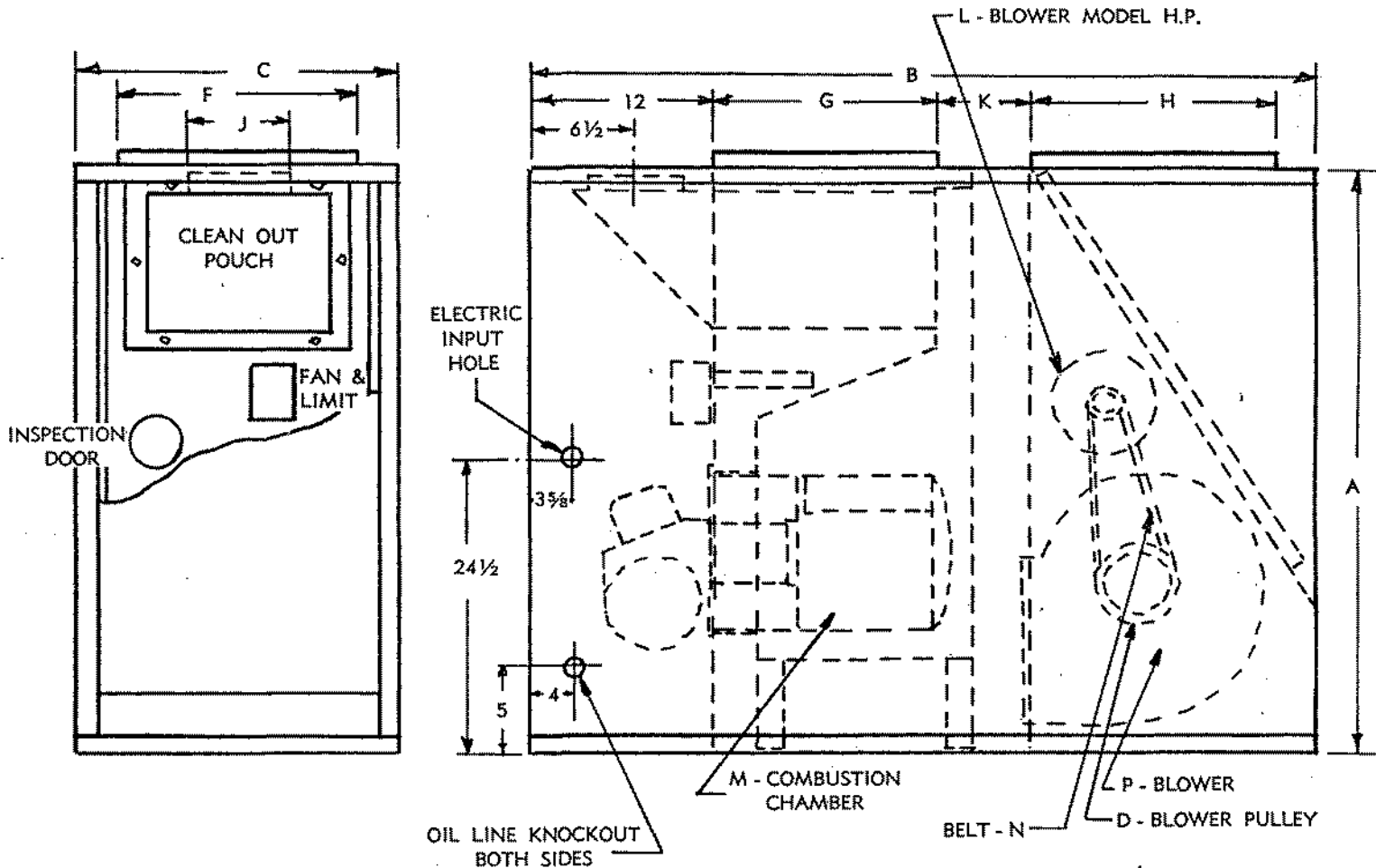
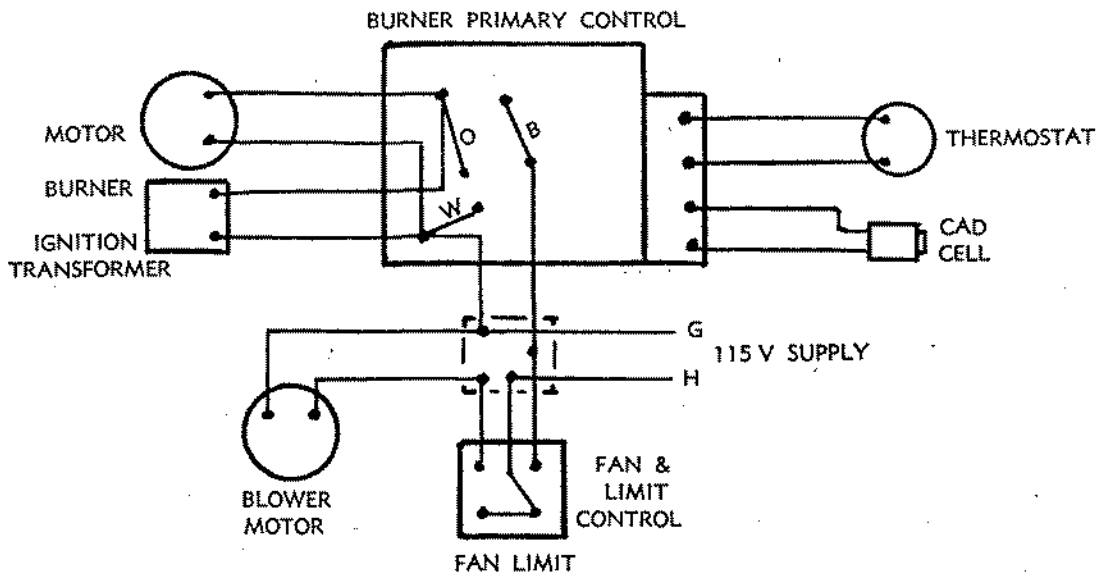
FOR YEAR ROUND AIR CONDITIONING

The furnace is designed for use in conjunction with cooling equipment to provide year round air conditioning. The blower has been sized for both heating and cooling. However, the fan motor must be changed to obtain the necessary cooling air flow.

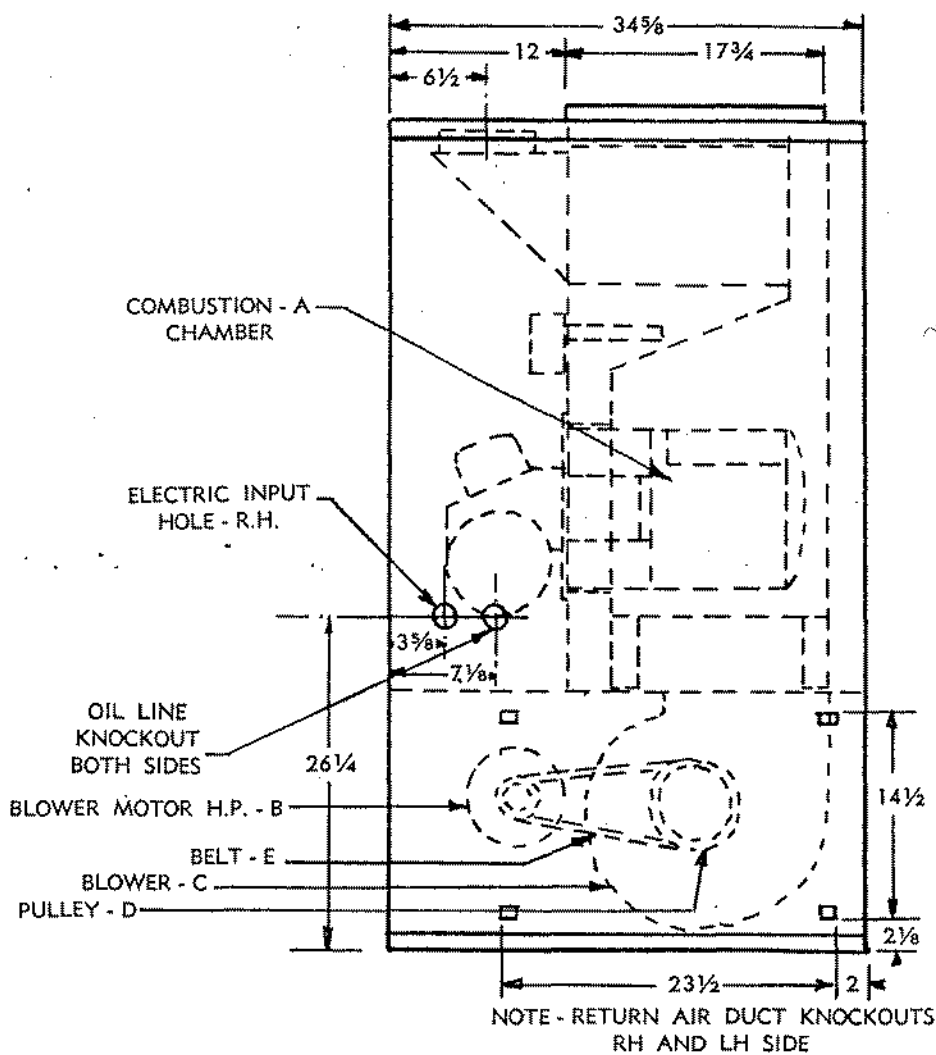
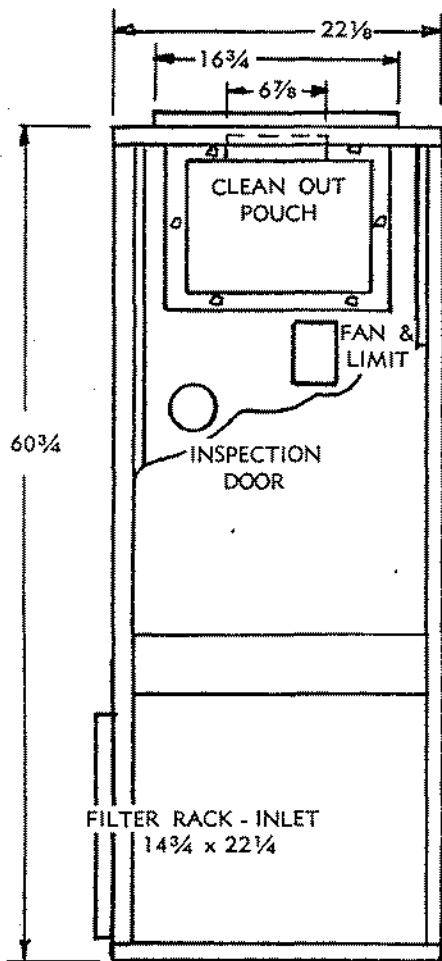
COOLING

The blower speed may be adjusted in the field to deliver the required air flow.

MODEL	BURNER	STANDARD NOZZLE SIZE G.P.H.	MAX FIRING RATE G.P.H.	BTU/HR BONNET CAPACITY
HO100-LO100	AF56XN	.75	.90	100,000
HO125-LO125	AF56XN	1.00	1.12	125,000
LO150	AF56XO	1.25	1.35	150,000



MODEL	BONNET CAP. BTUH	A	B	C	D	F	G	H	J	K	L	Dia. M Lg.	N	P	FILTER SIZE
LO 100-4	100,000	40 $\frac{3}{4}$	58	22 $\frac{1}{8}$	6	16 $\frac{3}{4}$	17 $\frac{3}{4}$	17 $\frac{3}{4}$	6 $\frac{7}{8}$	7 $\frac{3}{4}$	$\frac{1}{4}$	11 x 10 $\frac{1}{4}$	37	10 x 10	(2) 16 x 20 x 1
LO 125-4	125,000	40 $\frac{3}{4}$	58	22 $\frac{1}{8}$	6	16 $\frac{3}{4}$	17 $\frac{3}{4}$	17 $\frac{3}{4}$	6 $\frac{7}{8}$	7 $\frac{3}{4}$	$\frac{1}{3}$	11 x 12 $\frac{1}{4}$	39	12 x 9	(2) 16 x 20 x 1
LO 150-4	150,000	47 $\frac{3}{4}$	63 $\frac{3}{8}$	22 $\frac{1}{8}$	6	16 $\frac{3}{4}$	20 $\frac{3}{4}$	20 $\frac{3}{4}$	6 $\frac{7}{8}$	8 $\frac{3}{8}$	$\frac{1}{2}$	11 x 15 $\frac{1}{4}$	40	12 x 9	(2) 20 x 20 x 1



MODEL	BONNET CAP. BTUH	DIA. ^A	LGTH.	B	C	D	E	FILTER SIZE
HO100-4	100,000	11	10 1/4	1/4	10 x 10	6	36	(1) 16 x 25 x 1
HO125-4	125,000	11	12 1/4	1/3	12 x 9	6	39	(1) 16 x 25 x 1

ELECTRIC FURNACE-MAN, EMMAUS, PA.

DIVISION OF GENERAL MACHINE CORPORATION

BOILER BURNER UNITS—FURNACE BURNER UNITS—CONVERSION BURNERS—OIL-GAS-ELECTRIC HEATING UNITS—AIR CONDITIONING