

# SERVICE ——— UNIT INFORMATION ——— LF/LF3

Litho U.S.A.

## LF AND LF3 SERIES UNITS

### I - INTRODUCTION

LF3 units are built with Duracurve heat exchangers formed out of cold rolled steel. Both LF3 and LF unit heaters use a standing pilot with a thermocouple to verify flame. In the event of pilot outage, the gas valve locks itself out in response to the thermocouple.

Power venters are available for LF3 installations and must be ordered extra:

LF3-110 thru LF3-275 models:

PV3-115-24 (volt) — (P-8-8519)

(4" flue connection)

Optional PV3 flue adaptors (flue size and no.):

5" to 4" — (P-8-8515) 7" to 4" — (P-8-85178)

6" to 4" — (P-8-8516) 8" to 4" — (P-8-8518)

LF3-330 models

PV4-115-24 (volt) — (P-8-8521)

(6" flue connection)

Flue adaptor must be supplied by installer.

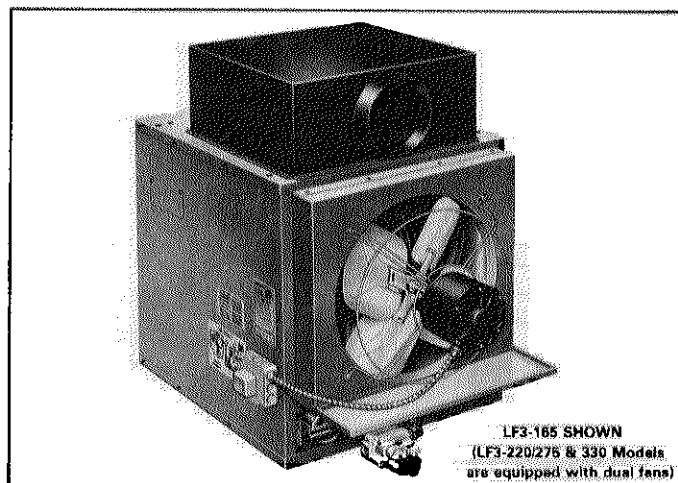


FIGURE 1

An optional summer fan switch (P-8-317) allows fan operation independently from heating controls.

Figure 1 shows an encased view of an LF3.

### II - UNIT INFORMATION

#### A - Specifications

Model No.	LF3-110	LF3-137	LF3-165	LF3-220	LF3-275	LF3-330
Heating Capacity Input (Btuh)	110,000	137,000	165,000	220,000	275,000	330,000
Heating Capacity Output (Btuh)	88,000	109,600	132,000	176,000	220,000	264,000
Fan diameter (in.)	14	16	18	(2) — 14	(2) — 16	(2) — 18
Fan motor hp	1/15	1/15	1/8	(2) — 1/15	(2) — 1/15	(2) — 1/8
Air volume (cfm)	1250	1635	2185	2400	3135	4415
Temperature rise (degrees F)	65	62	56	68	65	55
Vent size (in. round)	5	6	7	8	8	9
No. of burners	4	5	6	8	10	12
Gas piping size (in.)	Natural	1/2	3/4	3/4	3/4	3/4
	LPG	1/2	3/4	3/4	3/4	3/4
Electrical characteristics	120 volt, 60 hertz, 1 phase — All Models					

Model Number	LF-50	LF-75
Heating Capacity Input (Btuh)	50,000	75,000
Heating Capacity Output (Btuh)	40,000	60,000
Fan diameter (in.)	12	12
Fan motor hp	1/40	1/40
Air volume (cfm)	530	795
Temperature rise (degrees F)	70	70
Flue size (in. round)	4	5
Gas piping size (in.)	Natural	1/2
	LPG	1/2
Electrical characteristics	120 volt—60 hertz—1 phase	

#### B - Field Wiring

Line voltage connections are made at unit junction box. The transformer furnished with unit must be field installed. Thermostat connections are made directly to transformer.

#### C - Requirements

Installation of gas unit heaters must conform with local codes or in absence of local codes, with the National Fuel Gas Code (ANSI - Z223.1 - 1974).

### III - UNIT COMPONENTS

#### 1 - Combination Fan/Limit Control

The limit control is wired through the 120 volt circuit to

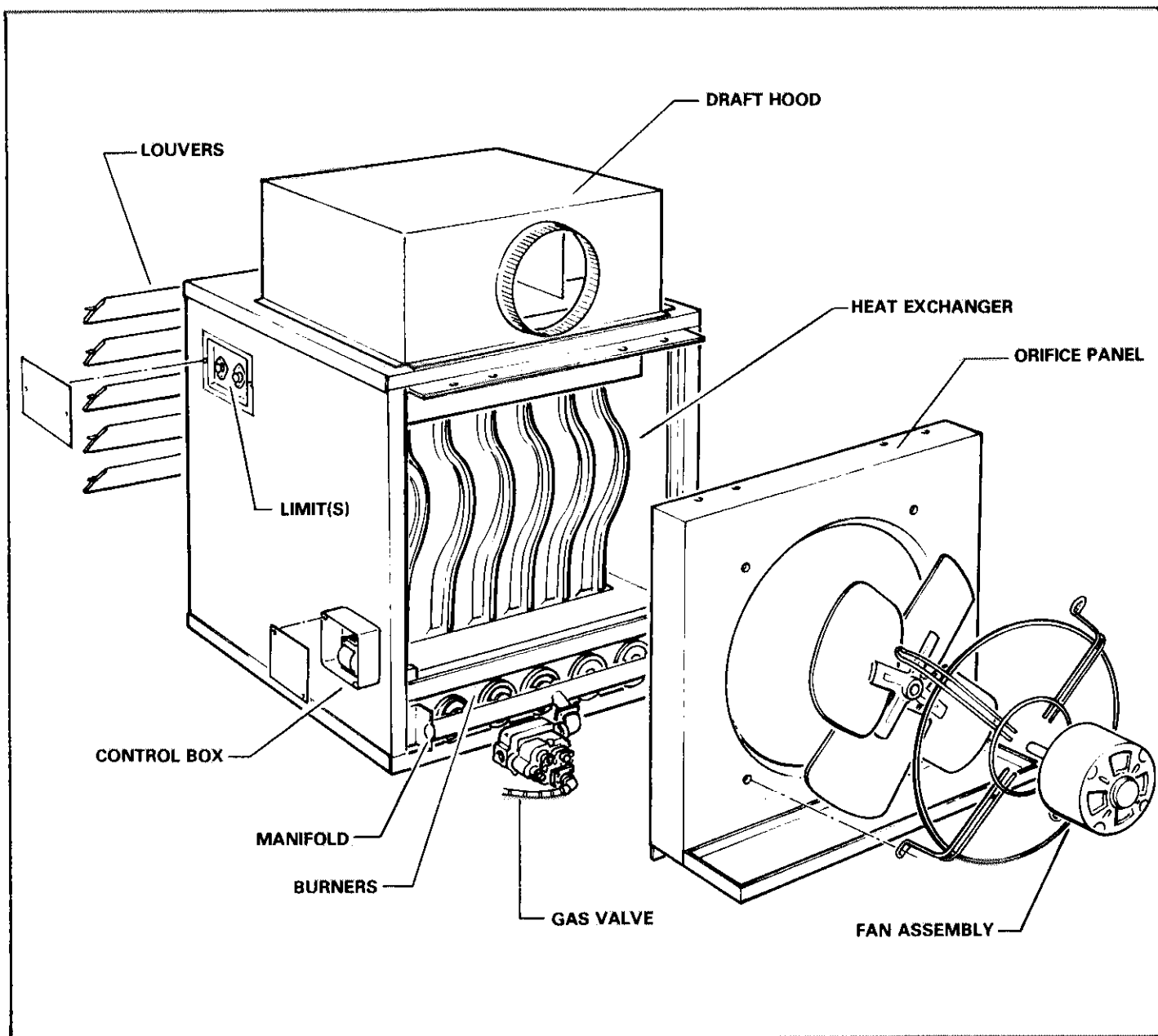


FIGURE 2

de-energize the transformer at excessive unit temperature. On LF3-220, -275 & -330 models a secondary limit is wired in series to the other.

## 2 - Fan Motor

LF and LF3-110, -137 & -165 use a single fan. Larger models have two motors. All motors have overload protection.

## 3 - Air Shutters

Minor adjustments for flame lifting, burner noise, etc., may be necessary. Refer to Figure 3.

# IV - SCHEMATIC WIRING DIAGRAM OPERATING SEQUENCE

Figure 4 shows a typical LF3 sequence of operation.

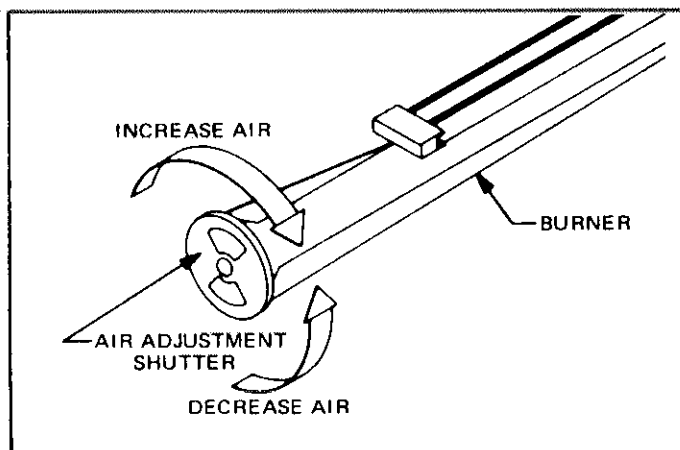
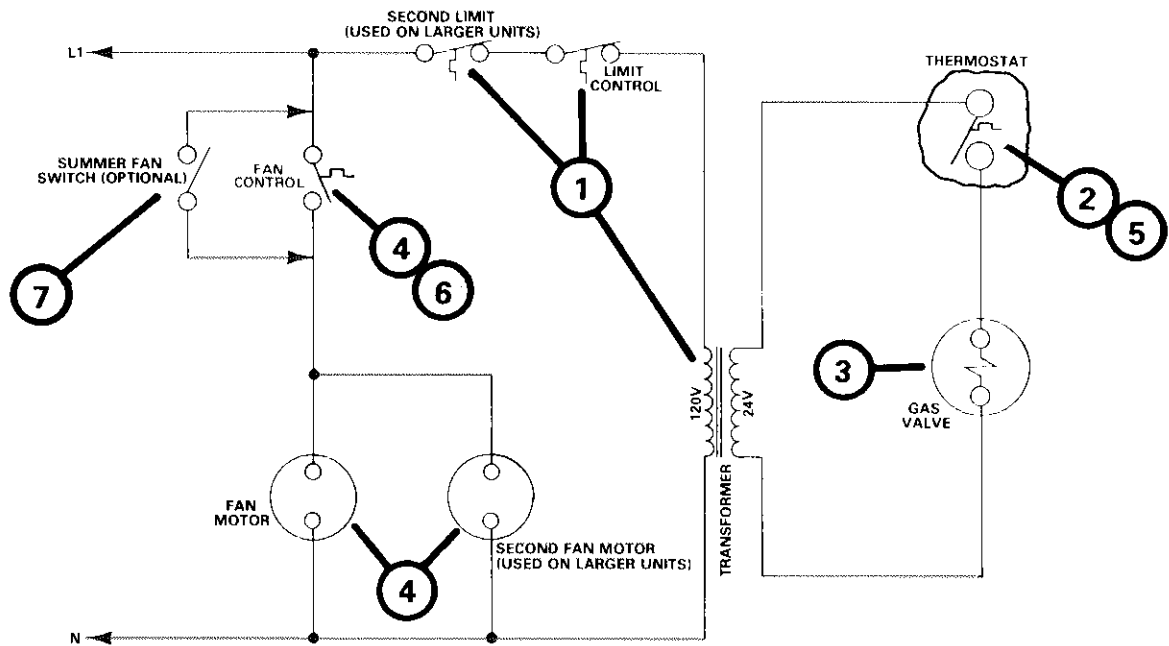


FIGURE 3

# TYPICAL LF3 SEQUENCE OF OPERATION



- 1 - Line potential feeds through limit(s) to power transformer and provide the 24 volt control circuit.
- 2 - On a heating demand the thermostat heating bulb makes.
- 3 - This energizes the gas valve to ignite the main burners.
- 4 - The fan control makes after temperature rises above cut-in setpoint. This energizes the fan motor(s).
- 5 - As the heating demand is satisfied, the thermostat heating bulb breaks. This de-energizes the gas valve.
- 6 - The blower motor continues running until furnace temperature drops below fan control setpoint.
- 7 - If optional summer fan switch is used, the fan control can be by-passed to operate fan motors.

FIGURE 4