

LD3 SERIES UNITS

I - INTRODUCTION

LD3 units are built with Duracurve heat exchangers formed out of cold rolled steel. Units 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. Figure 1 shows an encased view of an LD3.

Units may be close coupled with only one entering and leaving duct required. A field installed close couple kit (LB-19492CA) is required. See Figure 2.

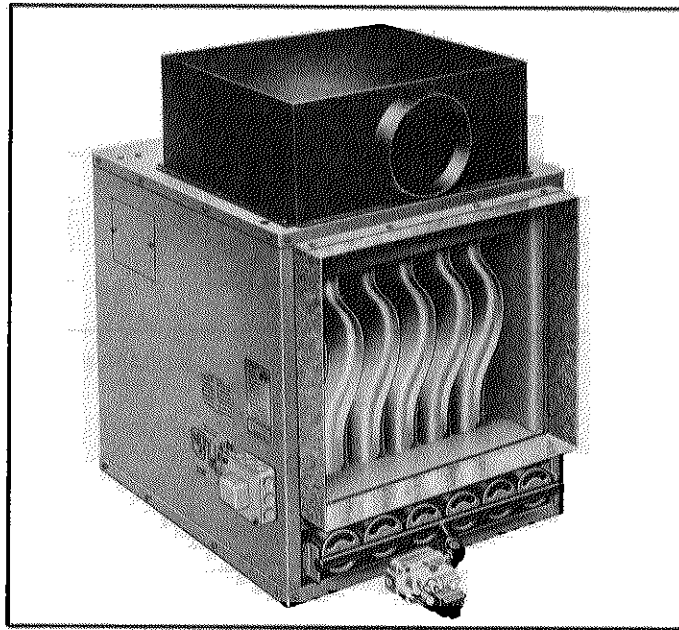


FIGURE 1

Power venters are available for LD3 installations and must be ordered extra:

LD3-220V models.

PV3-115-24 (volt) — (P-8-8519)

PV3-230-24 (volt) — (P-9-8520)

(4" flue connection)

Optional PV3 flue adapters:

8" to 4" flue size — (P-8-8518)

LD3-330V models:

PV4-115-24 (volt) — (P-8-8521)

PV4-230-24 (volt) — (P-8-8522)

(6" flue connection)

Flue adapter must be supplied by installer.

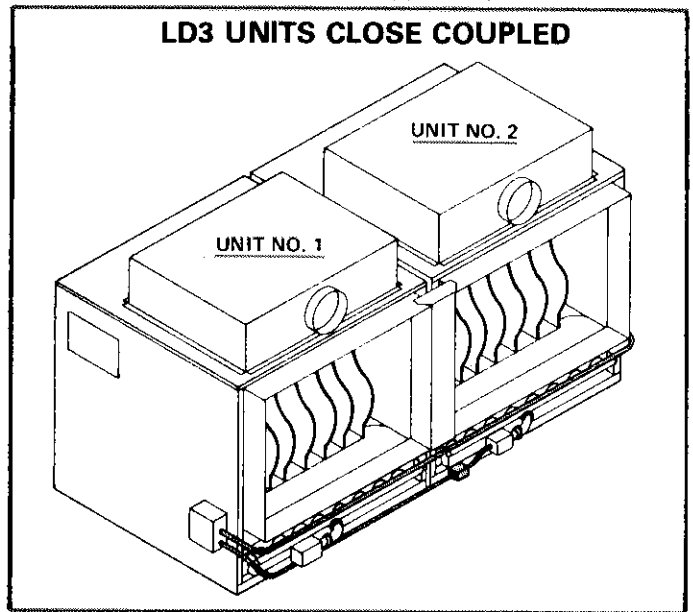


FIGURE 2

II - UNIT INFORMATION

A - Specifications

Model Number		LD3-220V	LD3-330V
Heating Capacity Input (Btuh)		220,000	330,000
Heating Capacity Output (Btuh)		176,000	264,000
Air Volume (cfm)	Minimum	1,700	2,500
	Maximum	3,200	4,900
Temperature Rise (Degrees F)	Minimum	50	50
	Maximum	100	100
High statics certified by A.G.A. (in. wg)		2.00	2.00
Flue size (in. round)		8	9
Gas Piping Sizes	Natural	3/4	3/4
	*LPG	3/4	3/4
No. of burners		8	12
Condensate drain fpt (in.)		1/2	1/2
Number of packages		1	1
Net weight (lbs.)		258	344
Electrical characteristics		120 volts — 60 hertz — 1 phase	

B - Air Resistance

Model No.	Air Volume (cfm)	Total Resistance (in. wg.)	Temperature Rise Degrees F
LD3-220V	1700	.06	100
	1800	.07	91
	2000	.08	81
	2200	.10	74
	2400	.11	68
	2600	.13	63
	2800	.15	58
	3000	.17	54
	3200	.19	51
LD3-330V	2500	.03	100
	3000	.05	81
	3500	.06	70
	4000	.08	61
	4500	.10	55
	4900	.13	50

C - Field Wiring

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

D - Requirements

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

Unit is approved for installation downstream from refrigeration units with supply air below the dew point of the ambient air surrounding the appliance.

CAUTION - In these conditions condensate will form in duct furnace. A condensate drain connection is provided on furnace for condensate removal. Installer must make adequate provisions to route condensate from this drain connection.

The CFM through unit must be adjusted within the range listed on the unit rating plate. The air-flow pattern must be even.

The connection ductwork to unit shall have removable access panels on both upstream and downstream sides of furnace. These openings shall be accessible when the furnace is installed in service and shall be of such size that smoke or reflected light may be observed inside the casing to indicate the presence of leaks in the heat exchanger. The cover for the openings shall be attached in such a manner as to prevent leaks.

III - UNIT COMPONENTS

Figure 3 shows an LD3.

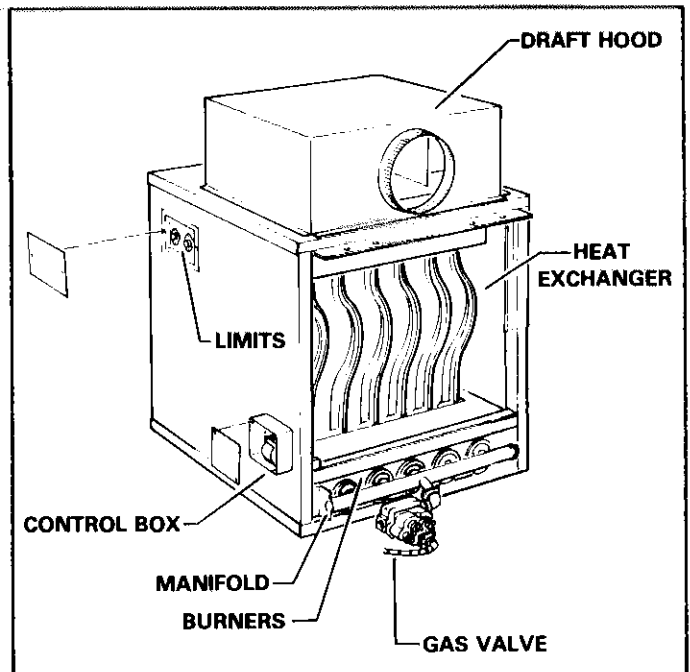


FIGURE 3

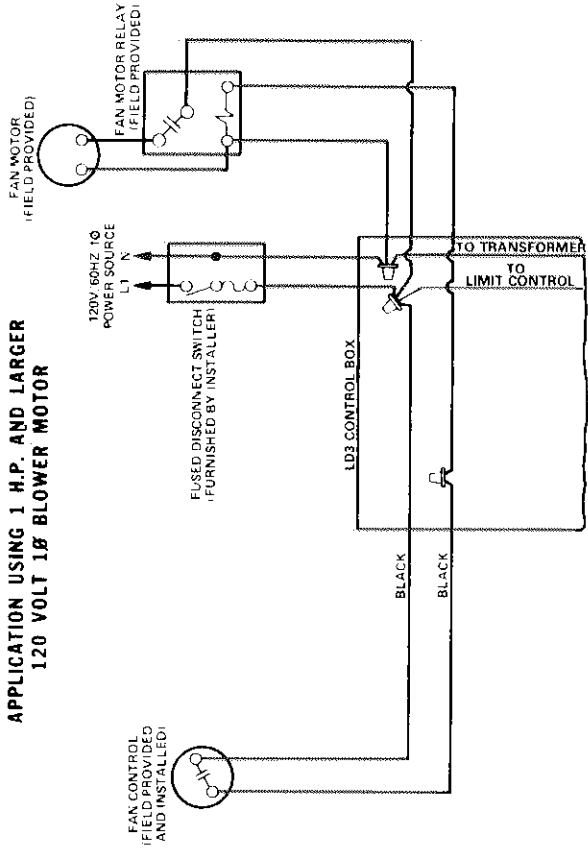
1 - Limit Controls

Limit controls are wired through the 120 volt circuit to de-energize transformer at excessive unit temperature.

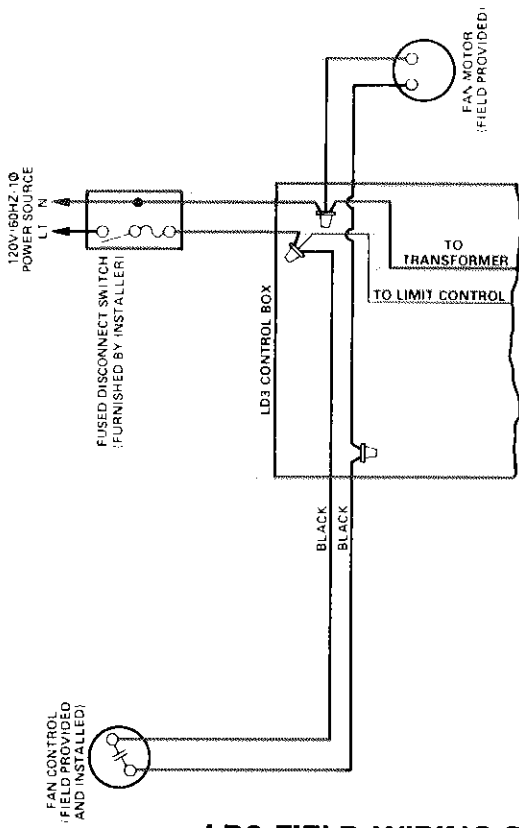
2 - Air Shutters

Minor adjustments for flame lifting, burner noise, etc., may be necessary. Refer to Figure 4.

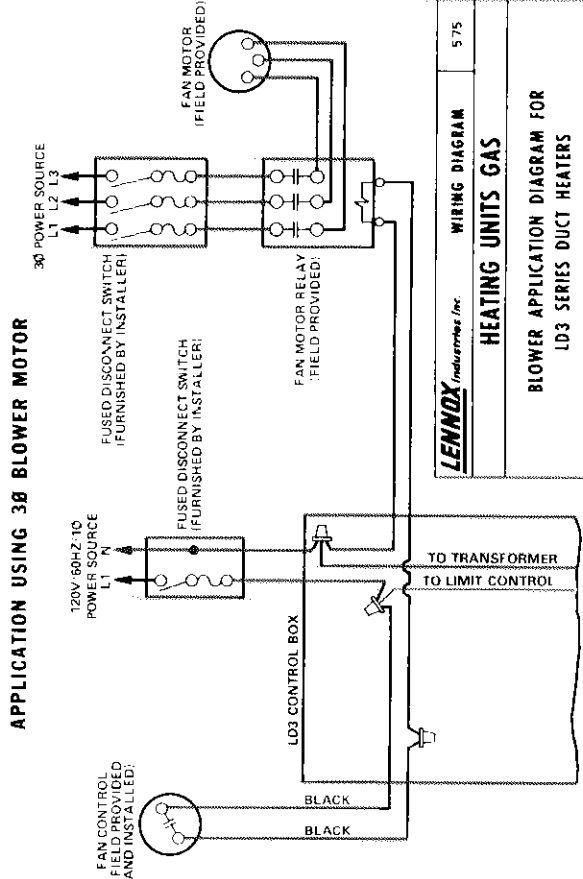
**APPLICATION USING 1 H.P. AND LARGER
120 VOLT 1Ø BLOWER MOTOR**



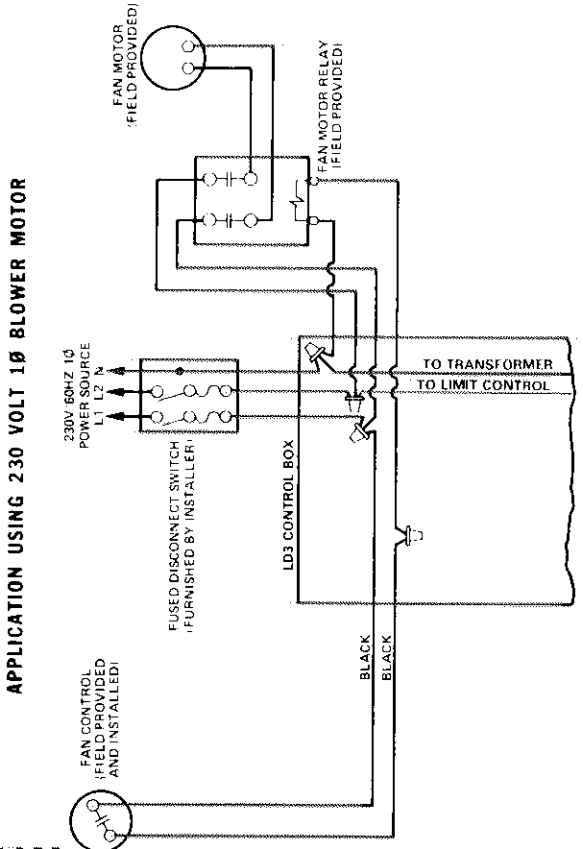
**APPLICATION USING 3/4 H.P. OR SMALLER
120 VOLT 1Ø BLOWER MOTOR**



APPLICATION USING 3Ø BLOWER MOTOR



APPLICATION USING 230 VOLT 1Ø BLOWER MOTOR



LD3 FIELD WIRING DIAGRAM

LENNOX Industries, Inc.	5 75
HEATING UNITS GAS	
BLOWER APPLICATION DIAGRAM FOR LD3 SERIES DUCT HEATERS	
Supersedes Form No.	New Form No.
	525,040W
Lennox U.S.A.	

LINE VOLTAGE INSTALLED AT FACTORY
LINE VOLTAGE TO BE INSTALLED

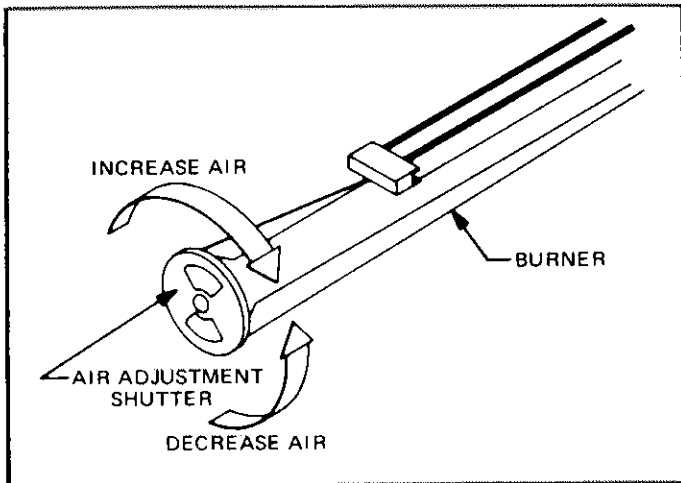


FIGURE 4

IV - TEMPERATURE RISE

Adjust blower speed for proper air temperature rise listed on unit nameplate. To measure this temperature rise, place (2) thermometers to sense the normal supply and return air. Locate supply air thermometer so that it will not "see" heat exchanger thus picking up radiant heat. Turn up thermostat as high as possible to start unit. After thermometers have reached their highest and steadiest readings, subtract the readings. The difference should be in the range listed on unit nameplate. If this temperature is low, decrease blower speed; if temperature is high, increase blower speed.

V - SCHEMATIC WIRING DIAGRAM OPERATING SEQUENCE

Figure 5 shows a typical LD3 sequence of operation. The application shows a 1 H.P. 120 volt single phase blower motor.

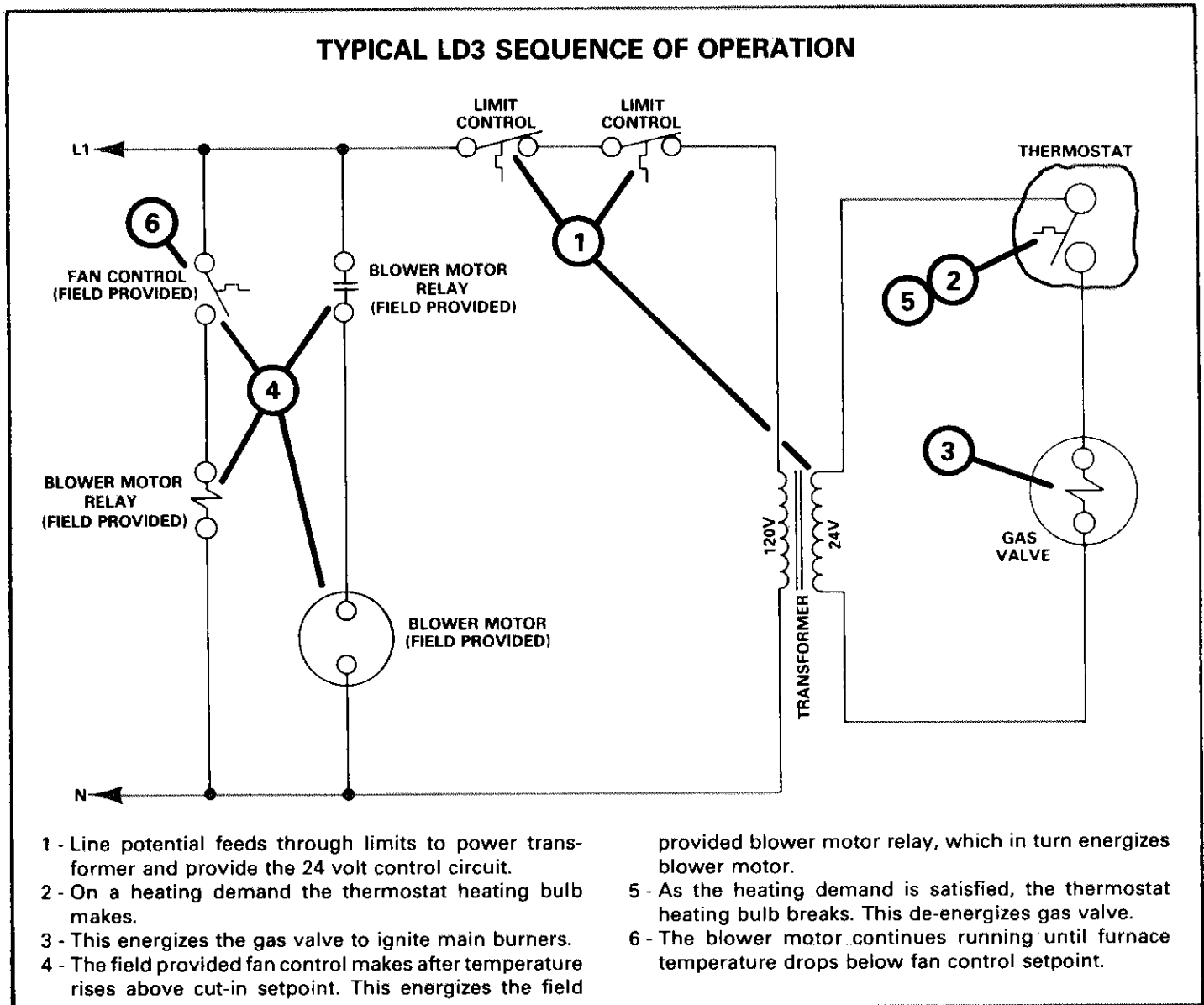


FIGURE 5