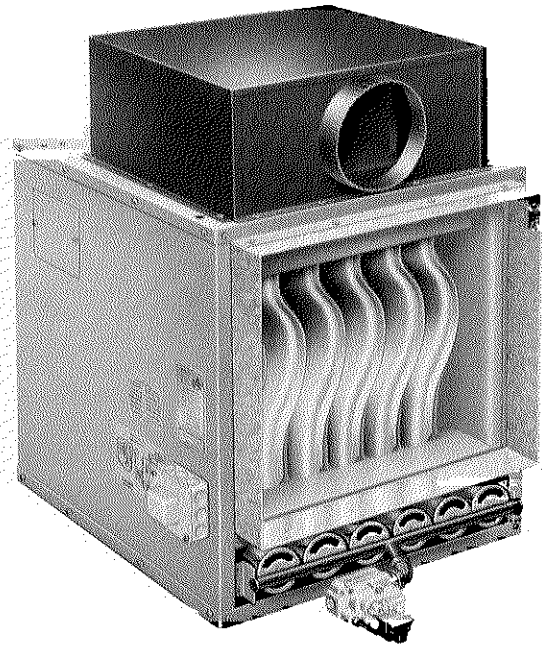




**GAS FIRED DUCT FURNACES**  
**LD3-220V & LD3-330V — HORIZONTAL**  
**220,000 & 330,000 Btuh Input**

- DURACURVE<sup>®</sup> Heat Exchanger with LENNOX DURAGLASS II<sup>™</sup> Coating
- Aluminized Steel Burners
- Electro-bonded Paint Finish
- Complete Service Access
- Compact Cabinet Design
- Minimum Installation Cost
- Efficient Steel Burners
- Easy Duct Connection
- Provisions For Suspending
- Factory Assembled
- A.G.A. Certified

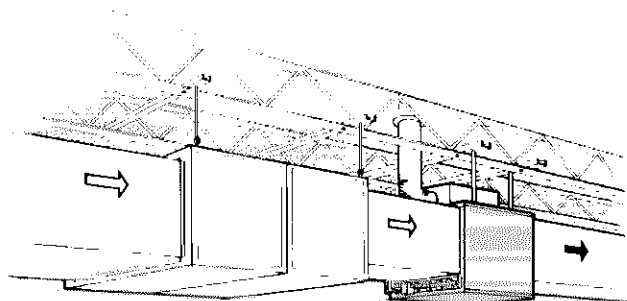


**Compact Duct Furnaces Feature Low Installation And Operating Costs**

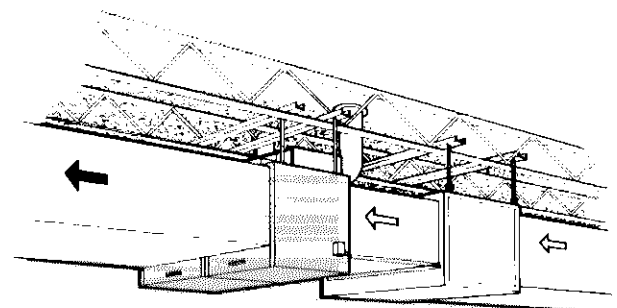
Lennox gas fired horizontal duct furnaces are designed for installation overhead, out of the way, thus saving valuable floor space. Compact construction and ease of installation make these overhead furnaces a natural for economical, out of the way heating. Versatile duct furnaces can be used in heating system, heating-cooling systems or make-up and ventilating air systems. One or more units can be installed in a duct system providing almost any Btuh capacity required. These units can also be easily added to existing heating or heating-cooling systems with little or no change required in the system. Lennox incorporated the famous DURACURVE heat exchanger into the duct furnace line, assuring max-

imum heating efficiency and many years of service. Heat exchanger is constructed of heavy gauge steel with DURAGLASS II coating. The heavy gauge steel cabinet has a Electro-bonded paint finish for a lasting, durable, automobile-like finish. Cabinet has provisions for suspending. Flanges are provided on the inlet and outlet air openings for easy duct connection. Silent operating gas controls provide 100% safety shut-off. Units are shipped completely assembled with controls factory installed and wired. In addition, each unit is test operated at the factory. Installer has only to locate the unit, make duct, flue, gas supply and electrical connections to complete a low cost installation.

**Typical Applications**



Installation with Cooling Coil



Installation with Duct Furnaces Close Coupled

## FEATURES

**Lennox DURACURVE Heat Exchanger** — Lennox engineered and constructed, direct fired heat exchanger eliminates fatigue failure, ticking, resonance and cleanability problems. With this unique heat exchanger design the sides of each section form a flue restriction zone comprised of sections of two concentric cylinders. Sides expand in the same direction and at the same rate resulting in absolute freedom of movement for the metal, proper venting and perfect combustion. Design of heat exchanger will allow cleaning with a flexible cleaning tool. Smooth lines give minimum restriction to air flow. Constructed of heavy gauge steel with DURAGLASS II coating. DURAGLASS II is a porcelainized coating fused to the steel of the heat exchanger, inside and out. It doesn't burn off, oxidize, scale or peel. Shrugs off moisture and corrosion. In addition DURAGLASS II is a good radiator of heat, helps spread evenly over the heating surfaces for maximum efficiency. This rugged heat exchanger is the quietest and most reliable ever developed.

**Efficient Steel Burners** — Each burner has four rows of practically continuous ports which result in quiet and clean combustion. Burner and port surfaces are smooth with no ledges or ridges to accumulate lint and dirt. A crossover igniter of actual burner ports, perpendicular to the main burner, carries a positive flame from burner to burner to achieve fast and quiet ignition of multiple burners. Burners are readily accessible for service.

**Cabinet Paint Process** — The duct furnace cabinet has a special Lennox "Electro-Deposition" process paint finish. Metal preparation consists of a special 6 station wash metal process. 1 — Spray application of a strong alkaline cleaner. 2 — Spray water rinse. 3 — Spray application of a corrosion resistant, paint bonding iron phosphate compound. 4 — Spray water rinse. 5 — Spray application of a chromic acid. 6 — Spray rinse with "de-ionized" water. Following the final rinse the cabinet components are completely dried in a drying oven before receiving the paint finish. The thoroughly cleaned and dried cabinet parts then enter the paint vat where the electroplating paint finish is applied. The paint solution and metal are given opposite electrical charges resulting in positive adhesion and even coverage of the paint to metal surfaces. This process completely covers the entire surfaces, inside and out, including the edges of assembly holes. After the paint process the finished cabinet components enter a high temperature oven where the Electro-bonded finish is baked on. The result is the most durable, protective finish in the industry.

**Rugged Cabinet** — Constructed of heavy gauge cold rolled steel. Metal side panel liners and foil covered fiberglass insulation in bottom of cabinet keep outer cabinet surface temperatures low. Wiring junction box is conveniently located on outside of cabinet. Limit control access cover in side panel provides complete access to controls. Four 3/8-16 spot nuts are located in top of cabinet for ease of suspension.

**Controls** — Silent operating gas controls provide 100% safety shut off. 24 volt gas control valve combines a manual main and pilot gas valve, automatic safety pilot valve, pilot adjustment, pilot and bleed gas filtration, automatic electric valve and gas pressure regulation (deleted for LPG) into a combination control. Manual lighted standing pilot burner provides sure and safe main burner ignition. For LPG models a field changeover kit is required and must be ordered extra. Also furnished as standard equipment are two factory installed limit controls for protection against abnormal operating conditions. A field installed 24 volt control transformer is furnished standard. Heating thermostat is optional equipment and must be ordered extra.

**Approvals** — Design is A.G.A. certified for use with natural and LPG gases.

**Close Couple Kit (Optional)** — Units may be close coupled with only one entering and leaving duct required. A field installed close couple kit is required for this type installation. Kit (LB-19492CA) contains installing instructions, junction box and necessary parts for securing units together.

**Hanging Bracket Kit (Optional)** — Field installed hanging bracket kit (LB-25981BA) is available for easy two point suspension of units. Kit includes (2) brackets equipped with 3/4" female pipe connection suspending points and necessary hardware for installing. Brackets mount to spot nuts provided in top of unit.

**Power Venters (Optional)** — Power venters are available for field installation 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.

## 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
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	

\*For LPG units a field changeover kit is required and must be ordered extra. Order number LB 19311CB for both models.

## HIGH ALTITUDE DERATE

If the heating value of gas does not exceed values listed in the table below derating of the unit is not required. Should the heating value of the gas exceed the table values, or if the elevation is greater than 6,000 feet above sea level it will be necessary to derate the unit. Lennox requires that derate conditions be 4% per thousand feet above sea level. Thus at an altitude of 4000 feet, if the heating value of the gas exceeds 1000 Btu/ft<sup>3</sup>, the unit will require a 16% derate.

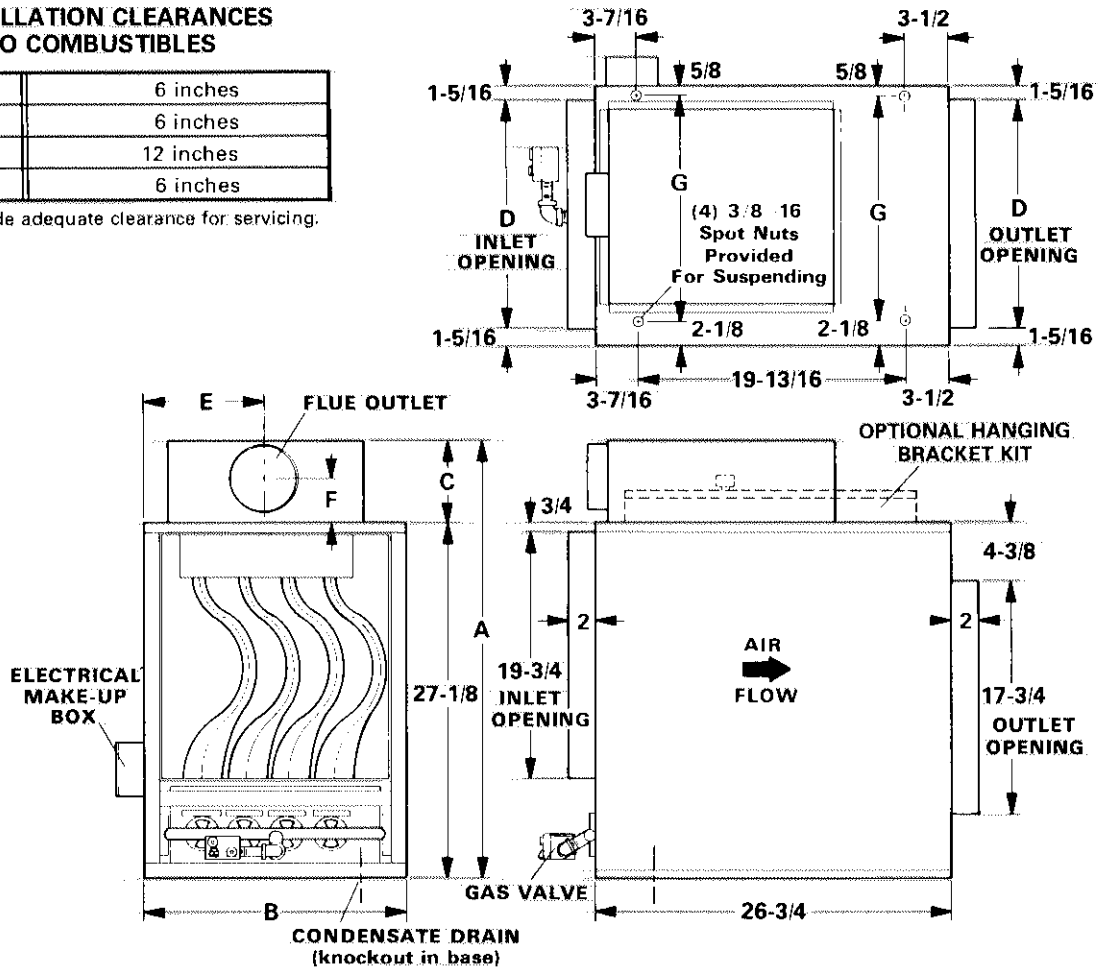
Elevation Above Sea Level (Feet)	Maximum Heating Value (Btu/ft <sup>3</sup> )
5001 - 6000	900
4001 - 5000	950
3001 - 4000	1000
2001 - 3000	1050
Sea Level - 2000	1100

### DIMENSIONS (inches)

#### INSTALLATION CLEARANCES TO COMBUSTIBLES

Four Sides	6 inches
Top	6 inches
Bottom	12 inches
Flue	6 inches

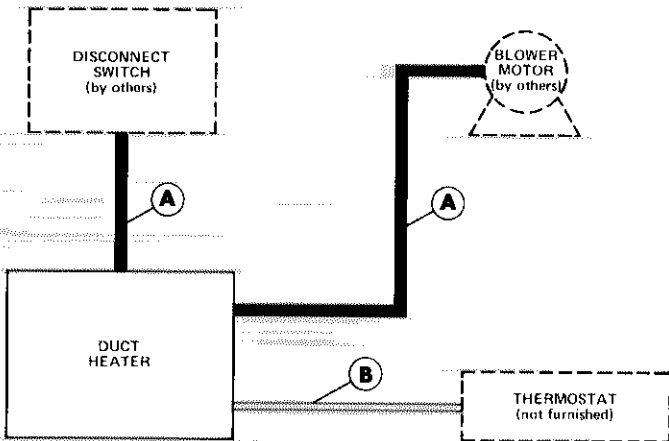
NOTE — Provide adequate clearance for servicing.



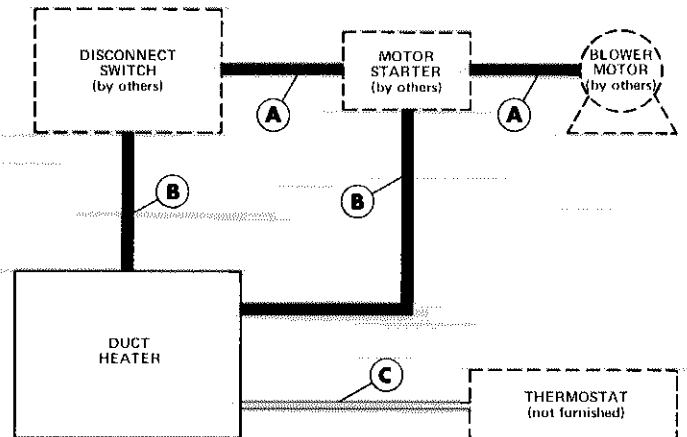
Model No.	A	B	C	D	E	F	G	H
LD3-220V	36-3/8	32-1/4	9-1/4	29-5/8	15-5/16	4-5/8	29-1/2	21-5/8
LD3-330V	37-3/8	44-3/4	10-1/4	42-1/8	21-9/16	5-1/8	42	34-1/8

# FIELD WIRING

**WITHOUT MOTOR STARTER**



**WITH MOTOR STARTER**



A—Two wire power (not furnished)

B—Two or three wire—line or low voltage (not furnished)

A—Two or three wire power (not furnished)

B—Two wire power (not furnished)

C—Two or three wire—line or low voltage (not furnished)

**NOTE—All wiring must conform to NEC and local electrical code.**

## 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
LD3-330V	2500	.03	100
	3000	.05	81
	3500	.06	70
	4000	.08	61
	4500	.10	55
	4900	.13	50