



LD20 SERIES — HORIZONTAL GAS FIRED DUCT FURNACES

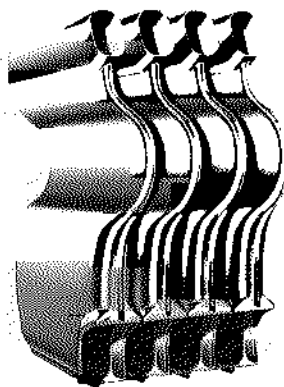
110,000 to 330,000 Btuh Input

ENGINEERING DATA
HEATING UNITS

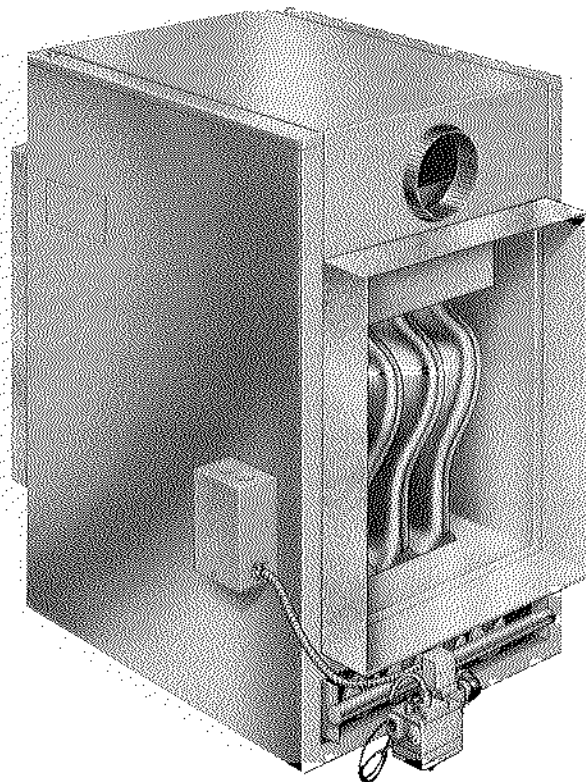
GAS

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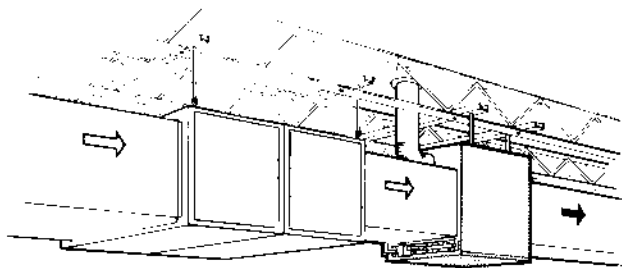
June 1991



Lennox DURACURVE[®]
Aluminized Steel
Heat Exchanger



Typical Application



Installation with blower coil

SPECIFICATIONS

Model No.		*LD20(E)-110A	*LD20(E)-137A	*LD20(E)-165A	*LD20(E)-220A	*LD20E-275A	*LD20E-330A
Heating Capacity Input (Btuh)		110,000	137,000	165,000	220,000	275,000	330,000
Heating Capacity Output (Btuh)		83,600	104,100	125,400	167,200	209,000	250,800
A.G.A. Thermal Efficiency		76.0%	76.0%	76.0%	76.0%	76.0%	76.0%
Air Volume Throughput (cfm)	Minimum	800	1000	1300	1700	2100	2500
	Maximum	1600	2000	2400	3200	4000	4900
Temperature Rise (°F)	Minimum	60	60	60	50	50	50
	Maximum	100	100	100	100	100	100
High static (A.G.A. approved) (in. wg.)		2.00	2.00	2.00	2.00	2.00	2.00
Flue diameter (in.)		5	6	7	8	8	9
Gas Piping Size (in.) Natural Gas only		1/2	1/2	1/2	3/4	3/4	3/4
Condensate drain fpt (in.)		3/4	3/4	3/4	3/4	3/4	3/4
Number of packages		1	1	1	1	1	1
Shipping weight (lbs.)		185	215	250	310	360	430

*"E" suffix denotes models available with electronic ignition.

NOTE — Models in shaded area not available with standing pilot.

Application — Lennox offers several different sizes of duct furnaces with a wide range of heating capacities available. Compact duct furnaces can be used in heating systems, heating-cooling systems or heating and ventilating air systems. These versatile units can also be easily added to existing heating or heating-cooling systems with little or no change required in the system. Duct furnaces are shipped completely assembled with controls factory installed and wired. In addition each unit is fire tested at the factory insuring proper operation. Installer has only to locate the unit in desired location, make duct, flue, gas supply and electrical connections.

Rugged Cabinet — Constructed of heavy gauge cold rolled steel with a finish of baked-on enamel. Steel inner panel liners keep outer cabinet surface temperature low. Wiring junction box is conveniently located on outside of cabinet. Six spotnuts are provided on top of cabinet for suspension of unit. Limit control access cover in side panel provides complete access to control. Flanges on cabinet inlet and outlet openings assure positive and air tight duct connection. A condensate drain knockout for moisture removal is located in base. Built-in draft diverter is constructed of aluminized steel.

Lennox DURACURVE® Aluminized Steel Heat Exchanger — Lennox engineered 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, eliminating metal fatigue and ticking. Laboratory life cycle testing of the heat exchanger proves long life of heating element. Heat exchanger is constructed of durable aluminized steel.

Aluminized Steel Burners — Each burner has four rows of practically continuous ports which result in quiet and clean combustion. 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 in bottom of unit for service.

Controls — The following controls are furnished as standard equipment: 24 volt main gas valve with 100% shutoff and pilot valve, automatic pilot burner, main shutoff valve, gas pressure regulation, 115/24v transformer, fan control and limit control. Two limit controls are furnished with the LD20(E)-220A, LD20(E)-275A and LD20(E)-330A models.

Standing Pilot Models (Natural Gas Only) — Available on LD20-110, 137, 165 and 220 models only. Models are equipped with manual lighted standing pilot with continuous flame.

"E" Models With Electronic Pilot Ignition (Natural Gas Only) — Equipped with a solid-state electronic direct spark igniter that provides positive ignition of pilot burner on each operating cycle. Pilot gas is ignited and burns during each running cycle (intermittent pilot) of the furnace. Main burners and pilot gas are extinguished during the off cycle. This system permits main gas valve to open only when the pilot burner is proved to be lit. Should a loss of flame occur the main valve closes and the pilot spark recurs immediately. Pilot ignition is a fully automatic operation on demand for heat.

Thermostat (Not Furnished) — Heating thermostat is optional equipment and must be ordered extra. See Accessories Section and Lennox Price Book.

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 on the top of unit.

Power Venters (Optional) — Power venters are available for field installation and must be ordered extra.

LD20(E)-110A thru LD20(E)-275A models:

PV3(115-24 volt) — (P-8-8519)
(4" flue connection)

Optional PV3 Flue Adaptors:
5" to 4" flue size — (P-8-8515)
6" to 4" flue size — (P-8-8516)
7" to 4" flue size — (P-8-8517)
8" to 4" flue size — (P-8-8518)

LD20E-330 model:

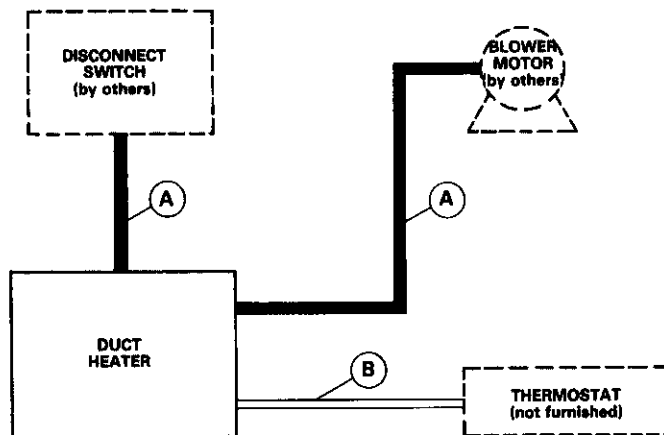
PV4 (115-24 volt) — (P-8-8521)
(6" flue connection)

Flue adaptors for PV4 models are not available and must be supplied by installer.

Approvals — Certified by A.G.A. for use with natural gas.

Equipment Warranty — "DURACURVE" Heat Exchangers have a limited warranty for a full ten years. Solid-state ignition modules have a limited warranty for a full three years. All other components have a limited warranty for one year. Refer to the Lennox Equipment Limited Warranty certificate packed with the equipment for details.

FIELD WIRING



A — Two wire power (not furnished)

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

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

HIGH ALTITUDE DERATE

A.G.A. certified units must be derated when installed at an elevation of more than 2000 feet above sea level. If unit is installed at an altitude higher than 2000 feet, the unit must be derated 4% for every 1000 feet above 2000 feet. Thus, at an altitude of 4000 feet, the unit would require a derate of 8%.

NOTE — This is the only permissible derate for the units.

AIR RESISTANCE

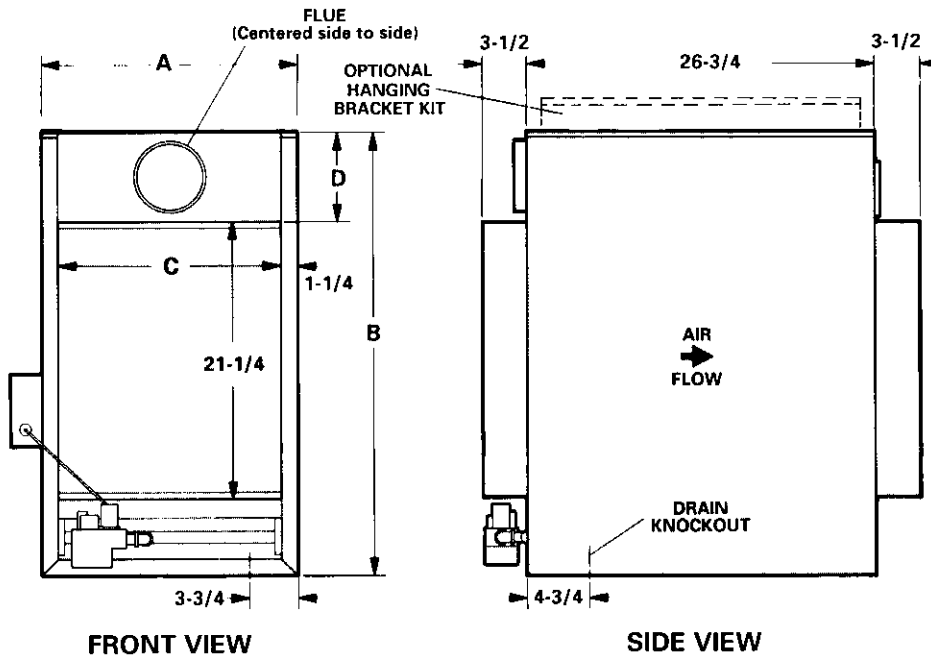
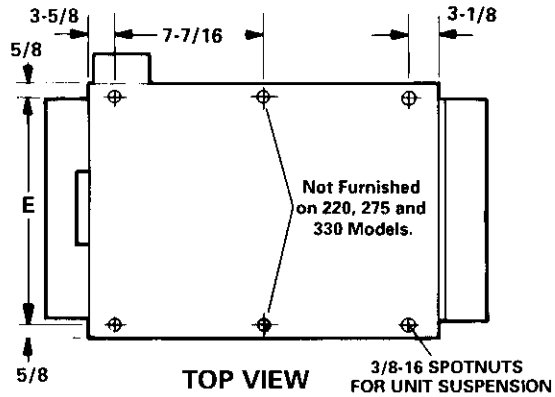
Model No.	Air Volume (cfm)	Total Resistance (in. wg.)	Temperature Rise (°F)
LD20(E)-110A	800	.04	100
	1000	.05	81
	1200	.07	67
	1400	.10	58
	1600	.12	51
LD20(E)-137A	1000	.03	100
	1200	.05	85
	1400	.07	78
	1600	.08	68
	1800	.11	56
LD20(E)-165A	2000	.13	52
	1300	.05	96
	1400	.06	89
	1600	.07	83
	1800	.09	69
	2000	.11	62
LD20(E)-220A	2200	.13	57
	2400	.15	52
	1700	.06	96
	1800	.07	91
	2000	.08	82
	2200	.10	74
	2400	.11	68
	2600	.13	63
LD20E-275A	2800	.15	58
	3000	.17	54
	3200	.19	51
	2100	.05	98
	2500	.06	82
LD20E-330A	3000	.09	68
	3500	.11	58
	4000	.15	51
	2500	.03	98
	3000	.05	82
	3500	.06	70
LD20E-330A	4000	.08	61
	4500	.10	55
	4900	.13	50

INSTALLATION CLEARANCES TO COMBUSTIBLES

Four Sides	18 inches
Top	6 inches
Floor	12 inches
Flue	6 inches

NOTE - Provide adequate clearance for servicing.

DIMENSIONS (inches)



Model No.	A	B	C	D	E
LD20(E)-110A	$19\text{-}5/8$	$36\text{-}3/8$	$17\text{-}1/8$	$8\text{-}7/8$	$18\text{-}3/8$
LD20(E)-137A	$22\text{-}3/4$	$36\text{-}3/8$	$20\text{-}1/4$	$8\text{-}7/8$	$21\text{-}1/2$
LD20(E)-165A	$25\text{-}7/8$	$36\text{-}3/8$	$23\text{-}3/8$	$8\text{-}7/8$	$24\text{-}5/8$
LD20(E)-220A	$32\text{-}1/8$	$38\text{-}3/8$	$29\text{-}5/8$	$10\text{-}7/8$	$30\text{-}7/8$
LD20E-275A	$38\text{-}3/8$	$38\text{-}3/8$	$35\text{-}7/8$	$10\text{-}7/8$	$37\text{-}1/8$
LD20E-330A	$44\text{-}5/8$	$38\text{-}3/8$	$42\text{-}1/8$	$10\text{-}7/8$	$43\text{-}3/8$