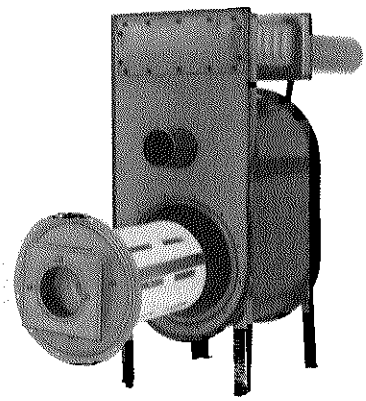
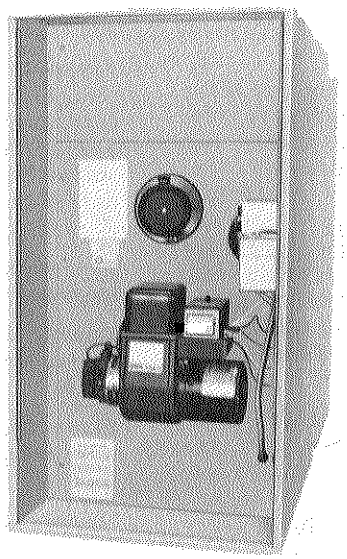
LENNOX®

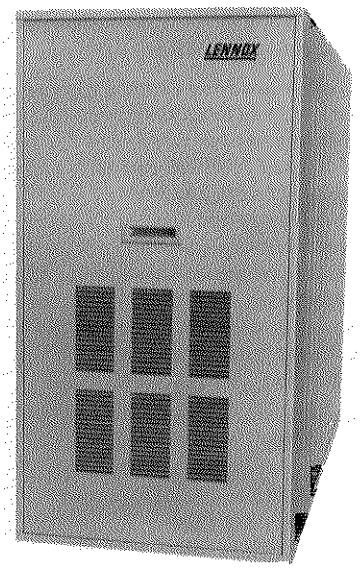
OF16 SERIES — LO-BOY OIL FURNACES

105,000 to 312,000 Btuh Input
Add-On Cooling — 1-1/2 thru 5 Nominal Tons



Heat Exchanger

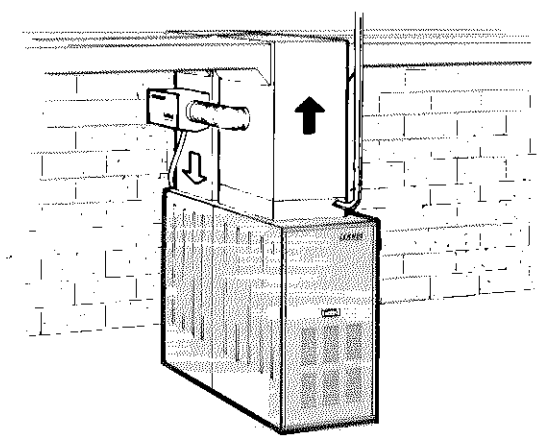




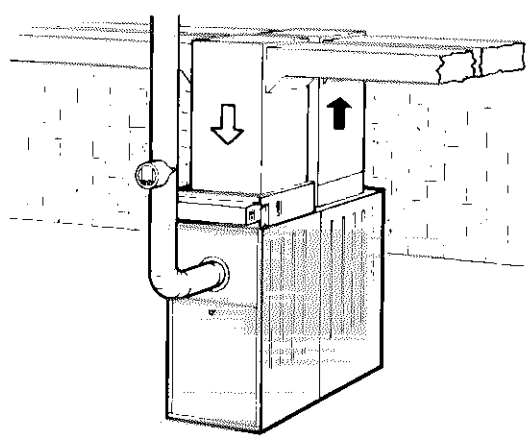
OF16 Lo-Boy Style Oil Furnaces Feature High Efficiencies And Ease Of Installation

Lennox OF16 series lo-boy oil furnaces are available in six models with input capacities of 105,000 to 312,000 Btuh. Units are applicable to residential or commercial applications. Lennox direct expansion evaporator units with high efficiency condensing units, electronic air cleaners and power humidifiers can be added to the lo-boy units for a all season total comfort installation. Furnace cabinet is constructed of heavy gauge steel with a durable baked-on paint finish. Large front and rear doors provide complete service access. Powerful blowers have sufficient capacity to handle cooling air volume requirements. Rugged heat exchanger and high performance oil burner combine to provide maximum efficiency. In addition, units have been rated and tested according to Department of Energy (DOE) test procedures and Federal Trade Commission (FTC) labeling regulations. Units are also U.L. listed and ratings are certified by GAMA. Units are shipped completely assembled ready for installation. Heating section and blower section of OF16-250 and OF16-310 are shipped separately (two packages) for ease in handling. Installer has only to set unit in desired location, install draft control, mount thermostat, duct, flue, oil line and electrical connections to complete a low cost installation.

Typical Application



Basement Installation
(Front View)



Basement Installation
(Rear View)

NOTE — Specifications, Ratings and Dimensions subject to change without notice.

FEATURES

Heat Exchanger — Streamlined heat exchanger design exposes maximum surface area to the air stream with minimum air resistance. Constructed of heavy gauge steel for maximum service life. Slide out combustion chamber and removable cleanout cover plate provide ease of cleaning heat exchanger. Heavy gauge mounting channels are provided in cabinet base for support of heat exchanger.

Combustion Chamber — OF16Q3-105, OF16Q3/4-125, OF16-155 and OF16-185 models have a factory installed Alumina Silica combustion chamber. OF16-250 and OF16-310 models are equipped with a stainless steel combustion chamber. Combustion chamber slides completely out of heat exchanger for servicing.

Oil Burner — Smooth operating high pressure atomizing type burner blends oil and air to attain maximum efficiency. Heavy duty motor drives quiet operating blower wheel and fuel pump. Flame retention head (OF16Q3-105 thru OF16-185 models) is designed to agitate and mix oil and air for complete combustion and highest efficiency. Burner has 10,000 volt ignition transformer and ceramic glazed electrodes which provide a safe continuous flame. Equipped with a factory installed cadmium sulfide cell flame detector and primary safety control that provides complete shutdown in case of flame failure. All burner parts are easily removable for servicing. Burner is U.L. approved and certified according to Commercial Standard CS75-56. Burner is factory installed in the unit, wired and fire tested insuring proper operation.

Rugged Cabinet — Constructed of heavy gauge steel with a baked-on enamel paint finish. Entire heating section is lined with foil faced fiberglass insulation keeping cabinet surface temperatures low. Removal of louvered heating section front door allows access to oil burner, inspection door and control compartment. Control compartment is totally enclosed to provide a safe, compact, clean and quiet control area. Door is equipped with hand-hold for ease of removal. Large blower access door at rear of cabinet gives complete service access to blower and air filters. Oil line and electrical inlet openings are provided in both sides of cabinet, see dimension drawing for details.

Flame Inspection Door — Conveniently located at the front of the unit. Large enough opening for normal inspection mirror. Hinged door is spring loaded so it cannot be left open.

Air Filters — Units are equipped with large throwaway frame type filters. Easily removed and replaced when servicing is required.

Powerful Blowers — OF16Q3-105 and OF16Q3/4-125 models are equipped with variable speed direct drive blowers. Three speed motor is resiliently mounted and has integral overload protection. Change in blower speed is easily accomplished by simple wiring change. See blower performance charts. OF16-155, OF16-185, OF16-250 and OF16-310 models have belt drive blowers. Adjustable motor pulley permits varying speed adjustment. Blower bearings are self-lubricating. Motor is overload protected and resiliently mounted.

Fan and Limit Control — Factory installed on vestibule panel in control compartment. Time-start fan control (OF16Q3-105 thru OF16-185 units) assures proper blower operation and has adjustable blower off temperature setting. OF16-250 and OF16-310 units are equipped with a temperature actuated fan control. Control turns fan on 60 to 90 seconds after thermostat demand. Limit control has fixed temperature setting and protects unit from abnormal operating conditions.

Barometric Draft Control — Furnished as standard equipment and field installed in flue pipe.

Transformer and Terminal Strip — 40VA transformer and low voltage terminal strip are furnished as standard and factory installed on the oil burner.

Blower Cooling Relay — Furnished with the unit and factory installed in the wiring junction box. Relay activates blower operation during cooling cycle.

Thermostat (Not Furnished) — Heating thermostat is not furnished and must be ordered extra. See Accessories Section, Page 13 and Lennox Price Book. For all season applications heating-cooling thermostat is available with the condensing unit.

Equipment Warranty — Heat Exchangers have a limited warranty for a full twenty years. Oil burners have a limited warranty for a full five years. All other components have a limited warranty for one year. Refer to the Lennox Equipment Limited Warranty certificate included with the equipment for details.

SPECIFICATIONS

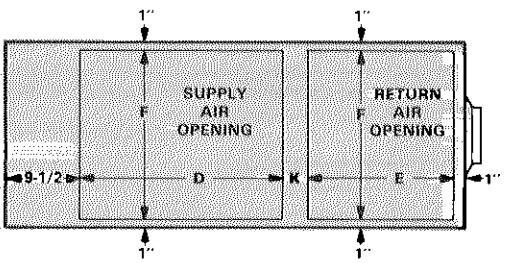
Model Number		OF16Q3-105	OF16Q3/4-125	OF16-155	OF16-185	OF16-250	OF16-310
Input Btuh		105,412	124,830	155,344	187,245	249,660	312,075
Output Btuh		84,000	99,000	122,000	149,000	200,000	250,000
†A.F.U.E.		79.1%	79.0%	79.0%	79.0%	----	----
Nozzle Rating (gph)		.75	.90	1.10	1.35	1.80	2.25
Oil Burner Pump		1 Stage	1 Stage	1 Stage	2 Stage	2 Stage	2 Stage
Optional 2 Stage Fuel Pump		65A44			----	----	----
Filters — Number and Size (in.)		(2) 15 x 20 x 1	(2) 15 x 20 x 1	(1) 15 x 20 x 1 (1) 20 x 20 x 1	(1) 15 x 20 x 1 (1) 20 x 20 x 1	(2) 20 x 25 x 1	(3) 16 x 25 x 1
Flue Size (in. round)		5	7	7	7	8	9
Blower Wheel Nominal Diameter x Width (in.)		10 x 10 Direct Drive	10 x 10 Direct Drive	12 x 9	12 x 12	12 x 12	15 x 15
Blower Pulley Bore x Diameter (o.d. in.)		----	----	3/4 x 6	3/4 x 6	3/4 x 7	1 x 7
Blower Motor Horsepower		1/3	1/2	1/2	1/2	1/2	3/4
Motor Pulley Bore x Diameter (o.d. in.)		----	----	1/2 x 3-1/4	1/2 x 3-1/4	1/2 x 3-1/4	5/8 x 3-1/4
Belt Length (in.)		----	----	39	39	41	45
Tons of Cooling that can be added		1-1/2 thru 3	2-1/2 thru 4	3-1/2 or 4	3-1/2 or 4	3-1/2 or 4	4 or 5
Shipping Weight (lbs.)	Complete Unit	280	302	357	375	474 Total	554 Total
	Furnace Section	----	----	----	----	336	374
	Blower Section	----	----	----	----	138	180
Number of Packages in Shipment		1	1	1	1	2	2
Electrical Characteristics		115 volts — 60 hertz — 1 phase					

†Annual Fuel Utilization Efficiency based on DOE test procedures and FTC labeling regulations. Isolated combustion system rating for non-weatherized furnaces.

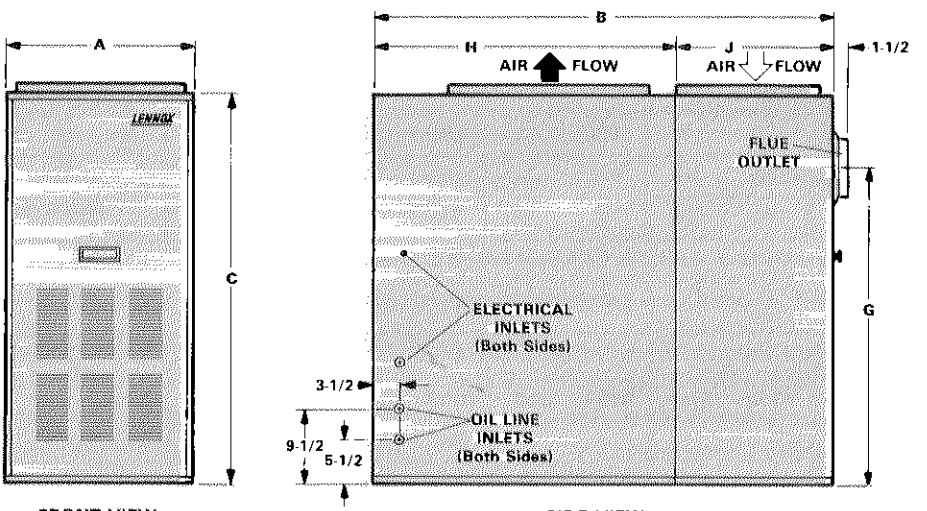
U.L. INSTALLATION CLEARANCES (inches)

Model No.	All Models
Sides of cabinet	6
Rear of cabinet	6
Front of cabinet	24
Floor	0
Top of plenum	2
Plenum sides	2
Flue pipe	18
Horizontal warm air duct within 6' of furnace	2

DIMENSIONS (inches)



TOP VIEW



FRONT VIEW

SIDE VIEW

Model No.	A	B	C	D	E	F	G	H	J	K
OF16Q3-105	22	51-1/2	42	20	18	20	37-1/2	----	----	3
OF16Q3/4-125	22	53-1/2	48	22	18	20	39-1/2	----	----	3
OF16-155	24	57-1/2	50	24	20	22	41-1/2	----	----	3
OF16-185	24	59-1/2	50	26	20	22	41-1/2	----	----	3
OF16-250	30	65-1/2	54	28	23	28	45-1/2	41-1/2	24	4
OF16-310	30	75-1/2	54	32	29	28	45-1/2	45-1/2	30	4

BLOWER DATA

OF16Q3-105 BLOWER PERFORMANCE

External Static Pressure (in. wg.)	Air Volume (cfm) @ Various Speeds		
	High	Medium	Low
.15	1710	1390	1040
.20	1670	1370	1030
.25	1630	1350	1020
.30	1590	1320	1010
.35	1550	1290	1000
.40	1500	1250	980
.45	1450	1220	960
.50	1400	1180	940

NOTE – All cfm data is measured external to the furnace without air filters.

OF16Q3/4-125 BLOWER PERFORMANCE

External Static Pressure (in. wg.)	Air Volume (cfm) @ Various Speeds		
	High	Medium	Low
.15	1950	1650	1170
.20	1900	1620	1160
.25	1860	1590	1130
.30	1820	1560	1110
.35	1780	1520	1080
.40	1730	1490	1050
.45	1680	1450	1020
.50	1630	1410	980

NOTE – All cfm data is measured external to the furnace without air filters.

BLOWER DATA

OF16-155 BLOWER PERFORMANCE

Air Volume (Cfm)	STATIC PRESSURE EXTERNAL TO UNIT — (Inches Water Gauge)											
	0		.10		.20		.30		.40		.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1300	----		----		----		660	.36	710	.39	755	.43
1400	----		----		640	.37	690	.40	740	.44	780	.48
1500	----		----		675	.42	725	.45	770	.50	810	.54
1600	----		655	.43	710	.47	750	.51	795	.55	825	.59
1700	650	.45	690	.47	750	.53	780	.57	825	.62	----	
1800	675	.49	725	.53	770	.59	----		----		----	
1900	715	.56	760	.62	----		----		----		----	

NOTE — All cfm data is measured external to the furnace without air filters.

OF16-185 BLOWER PERFORMANCE

Air Volume (Cfm)	STATIC PRESSURE EXTERNAL TO UNIT — (Inches Water Gauge)											
	0		.10		.20		.30		.40		.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	----				585	.32	640	.37	690	.41	740	.46
1600	----		----		620	.37	665	.41	715	.46	750	.50
1700	----		590	.38	640	.42	690	.46	730	.51	----	
1800	----		620	.43	670	.47	710	.52	750	.56	----	
1900	590	.44	650	.48	690	.52	735	.57	----		----	
2000	625	.49	675	.54	720	.58	760	.61	----		----	
2100	660	.55	700	.59	740	.63	----		----		----	

NOTE — All cfm data is measured external to the furnace without air filters.

OF16-250 BLOWER PERFORMANCE

Air Volume (Cfm)	STATIC PRESSURE EXTERNAL TO UNIT — (Inches Water Gauge)											
	0		.10		.20		.30		.40		.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1400	----		----		660	.36	720	.41	775	.48	825	.55
1500	----		625	.36	685	.41	740	.46	795	.52	845	.58
1600	----		660	.41	720	.47	770	.52	820	.58	865	.63
1700	----		690	.46	745	.52	800	.59	840	.63	----	
1800	660	.46	725	.53	775	.59	825	.64	----		----	
1900	700	.53	750	.59	805	.64	----		----		----	
2000	730	.59	785	.63	----		----		----		----	

NOTE — All cfm data is measured external to the furnace without air filters.

OF16-310 BLOWER PERFORMANCE

Air Volume (Cfm)	STATIC PRESSURE EXTERNAL TO UNIT — (Inches Water Gauge)											
	0		.10		.20		.30		.40		.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1400	----		----		----		----		560	.40	620	.48
1600	----		----		----		----		580	.46	630	.54
1800	----		----		----		550	.43	600	.52	645	.70
2000	----		----		----		570	.49	625	.60	660	.68
2200	----		----		575	.54	615	.62	650	.70	685	.78
2400	----		565	.56	610	.65	645	.73	680	.83	715	.91
2600	560	.59	610	.69	640	.78	675	.87	715	.97	----	
2800	610	.73	640	.83	680	.95	----		----		----	
3000	650	.92	----		----		----		----		----	

NOTE — All cfm data is measured external to the furnace without air filters.