



OIL FURNACES

SL0185BV

DAVE LENNOX SIGNATURE® COLLECTION

Lo-Boy - Variable Speed Blower

PRODUCT SPECIFICATIONS

Bulletin No. 210677

September 2014

Supersedes July 2014

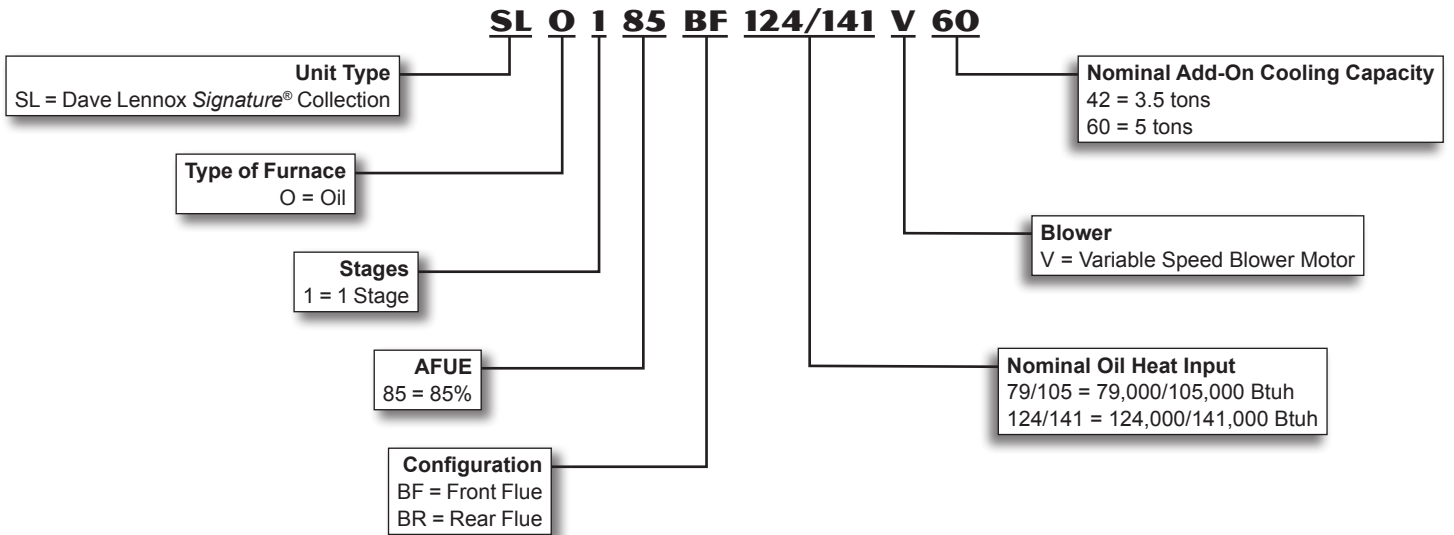


AFUE - Up to 87%

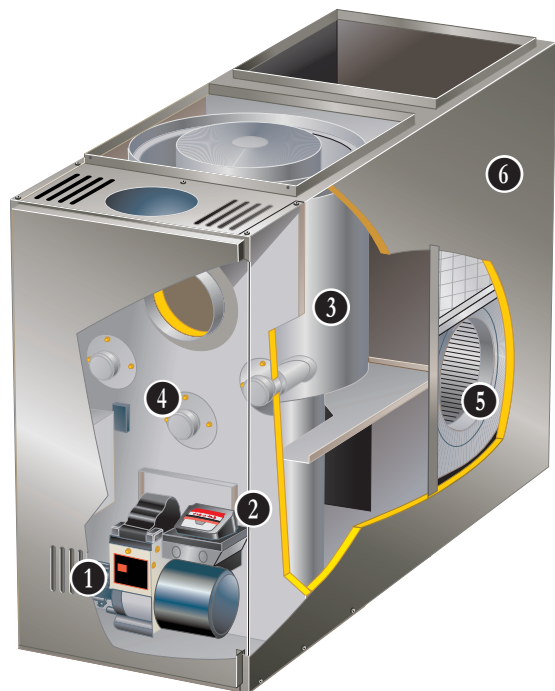
Heating Input - 79,000 to 141,000 Btuh

Nominal Add-on Cooling - 3 to 5 Ton

MODEL NUMBER IDENTIFICATION



FEATURES



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EQUIPMENT WARRANTY

Heat Exchanger - Limited lifetime warranty in residential applications, ten years in non-residential applications.

Oil Burners and all other covered components - Ten year limited warranty in residential applications, one year in non-residential applications.

Refer to the Lennox Equipment Limited Warranty certificate included with the equipment for details.

APPROVALS

Units have been rated and tested according to U.S. Department of Energy (DOE) test procedures and are labeled according Federal Trade Commission (FTC) labeling requirements.

Units are certified by AHRI.

Units are ETL-Intertek listed.

ENERGY STAR® certified units are designed to use less energy, help save money on utility bills, and help protect the environment.

APPLICATIONS

Suitable for installation in a residence, small business or commercial establishment.

Compact, rugged cabinet allows installation in a basement, closet, recreation or utility room.

Approved for reduced clearances to combustibles.

Lennox add-on indoor coils, powered air cleaners and humidifiers can be added to the furnace.

Quiet operating blowers have sufficient capacity to handle add-on cooling air volume requirements.

Shipped factory assembled including the oil burner, with all controls installed and wired.

Factory test operated ensuring proper operation after shipment.

Feature large front and rear doors providing complete service access.

Zoning Applications

Units are not approved for zoning applications.

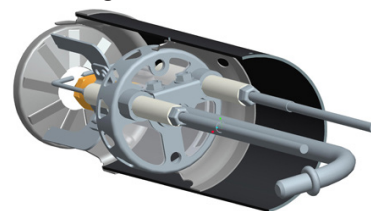
HEATING SYSTEM

1 Beckett™ NX Oil Burner

Smooth operating, high-pressure atomizing type burner blends oil and air to attain maximum efficiency.

Advanced Air Tube Technology

Burner maximizes fuel/air mixing, flame retention, and minimizes excess air by regulating flow zones in the air tube. The furnace remains cleaner and more efficient with improved heat transfer.



Burner produces a narrower, shorter flame shape than typical flame-retention burners. It is optimized for high-efficiency heating.

Heavy duty PSC motor drives quiet operating blower wheel and fuel pump.

Air turbo injector directs combustion air for smooth ignition.

Retention head is designed to agitate and mix oil and air for complete combustion and highest efficiency.

Burner has 120VAC primary safety control 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, C.S.A. certified and certified according to ANSI Standard 296.6.

Burner is factory installed in the unit, wired and fire tested.

Units are shipped for lower heating capacity operation. Nozzle is provided for field conversion to higher heating capacity.

FEATURES

HEATING SYSTEM (continued)

2 Advanced Burner Control



120 VAC primary safety control.

Controls the oil burner motor and igniter.

Control features:

- Welded Relay Protection
- Limited Reset and Limited Recycle
- Reset Button - Resets burner if a restricted lockout is present
- 3 Status Lights for System Monitoring and Diagnostics
 - Yellow - Pump Prime Mode
 - Green - Flame sensing (flashing = 60 second recycle)
 - Red - Restricted Lockout (flashing = Soft lockout) "Strike three" lockout protection to avoid nuisance calls
- Valve-On Delay / Motor-Off Delay
- 15 Second Lockout Time
- Interrupted or Intermittent Duty Ignition
- Technician Pump Priming Mode
- Disable Function

3 EZ Clean Heat Exchanger

Streamlined drum type heat exchanger exposes maximum surface area to the air stream with minimum air resistance.

Constructed of heavy gauge steel for maximum service life.

4 Strategically placed ports allow easy cleaning.

Heavy gauge mounting channels are provided in cabinet base for support of heat exchanger.

Combustion Chamber

All models have a factory installed, specially designed alumina silica ceramic fiber combustion chamber.

Combustion chamber can withstand temperatures of up to 2550°F resulting in more complete combustion and higher efficiencies.

Flame Inspection Tube

Conveniently located at the front of the unit.

Opening is large enough for normal inspection mirror.

Barometric Draft Control

Furnished as standard equipment and field installed in flue pipe.

Optional Accessories

Air Intake Kit

Provides an inlet connection to burner for outdoor combustion air.

Oil Filter

Recommended for proper oil filtration. See Specifications table for order number.

Two-Stage Oil Pump

Two-stage oil pump is available.

See Specifications table for order number.

5 BLOWER

Variable Speed Direct Drive Blower

Each blower assembly statically and dynamically balanced.

Variable speed blower motor for quiet operation.

Change in blower speed is easily accomplished by simple jumper change on blower control.

See Blower Performance tables.

Blower assembly easily removed for servicing.

6 CABINET

Constructed of heavy gauge steel with a pre-painted, textured finish.

Entire heating section is lined with foil faced fiberglass insulation keeping cabinet surface temperatures low.

Large blower access door gives complete service access to blower.

Blower compartment is completely insulated.

Removal of louvered heating section door allows access to oil burner, inspection door and control compartment.

Door is equipped with handhold for ease of removal.

Control compartment is totally enclosed to provide a safe, compact and clean area.

Oil line and electrical inlet openings are provided in sides of cabinet, see dimension drawing.

Lo-boy units have a lower profile than standard upflow oil furnaces. They are configured with both the supply and return air openings on the top of the unit.

Flue Outlet

Flue outlet is located on top of cabinet on front flue models and can be relocated to either side of cabinet. See dimension drawing.

Rear flue models allow the flue to be installed away from indoor coils and air cleaners. See dimension drawing.

FEATURES

CONTROLS

Electronic Blower Control

HEAT and COOL settings (with four different air volume selections for cooling and two selection for heating) are made by jumper pins on board.

ADJUST jumper pin allows approximately 15% higher, normal or 15% lower motor speed selection within COOL speeds selected for fine tuning air volume. See Blower Data Tables.

Single Stage Cooling Airflow Ramp Up - At the beginning of a call for cooling, the variable speed blower will run at 82% of rated airflow for 7.5 minutes (passive dehumidification mode). After 7.5 minutes, the motor will increase to 100% of the rated airflow. When the call for cooling is satisfied, the blower ramps back down to 82% of the selected cooling airflow for 1 minute, then shuts off.

Two-Stage Cooling Airflow Ramp Up - At the beginning of a call for 1st stage cooling, the variable speed blower will run at 57% of rated airflow for 7.5 minutes of the 1st stage cooling demand (passive dehumidification mode). After 7.5 minutes, the motor will increase to 70% of the rated airflow until 1st stage cooling demand is satisfied. If 1st stage cooling is not satisfied a call for 2nd stage cooling is made. The blower motor runs for 100% of rated air volume until the demand is satisfied. When the call for cooling is satisfied, the blower ramps back down to 57% of the selected cooling airflow for 1 minute, then shuts off.

Passive and Active Dehumidification - For situations where humidity control is an issue, the variable speed motor can operate at 82% of the rated airflow for 7.5 minutes. After 7.5 minutes the blower operates at 100% of rated air volume.

For additional dehumidification the variable speed motor control provides for connection of a thermostat with humidity control or a humidistat on the HUM terminal. When connected, the dehumidify jumper on the control must be removed. The control should be wired to open during high humidity, which will reduce blower airflow.

Continuous Blower Operation

Continuous blower operation allows the blower to operate at 50% of rated cooling air volume without any cooling or heating demand (Fan "On" setting on thermostat).

Powered Air Cleaner Connections

Terminals are provided on the control for connection of a 120-volt powered air cleaner. The "EAC" terminal is energized whenever the thermostat calls for heat, cooling, or continuous blower.

Limit Control

Factory installed on vestibule panel.

Control has fixed temperature setting and protects unit from abnormal operating conditions.

Transformer

24 volt (40VA) control transformer with circuit breaker is furnished as standard and factory installed.

Optional Accessories

ComfortSense® 7000 Touchscreen Thermostat

Electronic 7-day, universal, multi-stage, programmable, touchscreen thermostat.

4 Heat/2 Cool.

Auto-changeover.

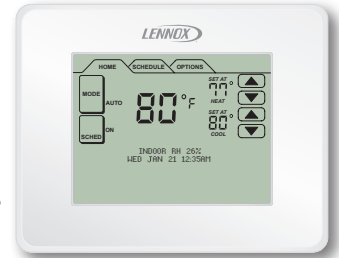
Controls humidity during cooling mode.

Offers enhanced capabilities including humidification / dehumidification / dewpoint measurement and control, *Humiditrol*® control, and equipment maintenance reminders.

Easy-to-use, menu driven thermostat with a back-lit, LCD touchscreen.

Remote outdoor temperature sensor (optional) allows the thermostat to display outdoor temperature. Required in dual-fuel and *Humiditrol*® applications.

See the *ComfortSense*® 7000 Product Specifications bulletin in the Controls section for more information.



Thermostat

Thermostat (programmable/non-programmable) is not furnished with unit.

See Thermostat bulletins in Controls Section and Lennox Price Book for selection.

INDOOR AIR QUALITY

Filter

Units are equipped with large, cleanable, frame-type filters. Can be easily removed when service is required.

SPECIFICATIONS

Oil Heating Performance	Model Number	Front Flue Rear Flue	SLO185BF79/105V42	SLO185BF124/141V60
			SLO185BR79/105V42	SLO185BR124/141V60
	Input - Btuh	Low Fire	79,000	124,000
		¹ High Fire	105,000	141,000
	Output - Btuh	Low Fire	67,000	104,000
		¹ High Fire	87,000	118,000
		² AFUE - Low Fire Front Flue	86%	85%
		² AFUE - High Fire Front Flue	85%	85%
		² AFUE - Low Fire Rear Flue	87%	85%
		² AFUE - High Fire Rear Flue	85%	85%
		Flue Size Diameter - in.	6	6
		Temperature rise range	50 - 80°F	45 - 70°F Front Flue 50 - 80°F Rear Flue
Oil Burner	Nozzle rating - US gph	Low Fire	.50	.75
		¹ High Fire	.65	.85
		Nozzle spray angle	60° hollow	60° hollow
		Oil Burner Pump	1 Stage	1 Stage
		Oil Burner Pump Pressure - psig	150	145
Indoor Blower		Blower Motor Output - hp	1/2	1
		Nominal add-on cooling - Tons	2.5 thru 4	3 thru 5
		Blower wheel nom. diameter x width - in.	10 x 9	12 x 10
³ Filter		Number of filters	1	1
		Size of filters - in.	18 x 19 x 1	19 x 21 x 1
Shipping weight - lbs. 1 package			225 (Front Flue) 230 (Rear Flue)	270
Electrical		Characteristics	120V-60hz-1ph	120V-60hz-1ph
		Maximum Overcurrent Protection (amps)	15	15
OPTIONAL ACCESSORIES - ORDER SEPARATELY				
Air Intake Kit			11F44	11F44
ComfortSense® 7000 Thermostat			Y2081	Y2081
Remote Outdoor Temperature Sensor (for dual fuel and Humiditrol® control)			X2658	X2658
Oil Filters	10 micron without mounting bracket		81P89	81P89
	10 micron with mounting bracket		53P92	53P92
	Replacement cartridge - 10 micron, 45 gph		53P93	53P93
	Filter restriction indicator gauge		53P90	53P90
Two-Stage Oil Pump	without solenoid		65A44	65A44
	with solenoid		71M18	71M18

¹ Nozzle is furnished for field conversion to higher heating input.

² Annual Fuel Utilization Efficiency based on U.S. DOE test procedures and FTC labeling regulations. Isolated combustion system rating for non-weatherized furnaces.

³ Cleanable flame type filters furnished.

BLOWER DATA

SLO185BF79/105V42 BLOWER PERFORMANCE 0 through 0.50 in. w.g. External Static Pressure Range

"ADJUST" Jumper Setting	Jumper Speed Positions					
	"HEAT" Speed		"COOL" Speed			
	.65 High Fire	.50 Low Fire				
	B	D	A	B	C	D
	cfm	cfm	cfm	cfm	cfm	cfm
+	N/A	N/A	1500	1400	1200	950
NORM	1450	1200	1400	1200	1000	800
-	N/A	N/A	1200	1050	860	650

NOTE - Continuous Fan air volume is 50% of COOL speed.

SLO185BR79/105V42 BLOWER PERFORMANCE 0 through 0.50 in. w.g. External Static Pressure Range

"ADJUST" Jumper Setting	Jumper Speed Positions					
	"HEAT" Speed		"COOL" Speed			
	.65 High Fire	.50 Low Fire				
	A	D	A	B	C	D
	cfm	cfm	cfm	cfm	cfm	cfm
+	N/A	N/A	1500	1400	1200	950
NORM	1550	1200	1400	1200	1000	800
-	N/A	N/A	1200	1050	860	650

NOTE - Continuous Fan air volume is 50% of COOL speed.

SLO185BF124/141V60 BLOWER PERFORMANCE 0 through 0.50 in. w.g. External Static Pressure Range

"ADJUST" Jumper Setting	Jumper Speed Positions					
	"HEAT" Speed		"COOL" Speed			
	.85 High Fire	.75 Low Fire				
	B	C	A	B	C	D
	cfm	cfm	cfm	cfm	cfm	cfm
+	N/A	N/A	2100	2000	1800	1350
NORM	1730	1550	2000	1800	1600	1200
-	N/A	N/A	1650	1500	1350	950

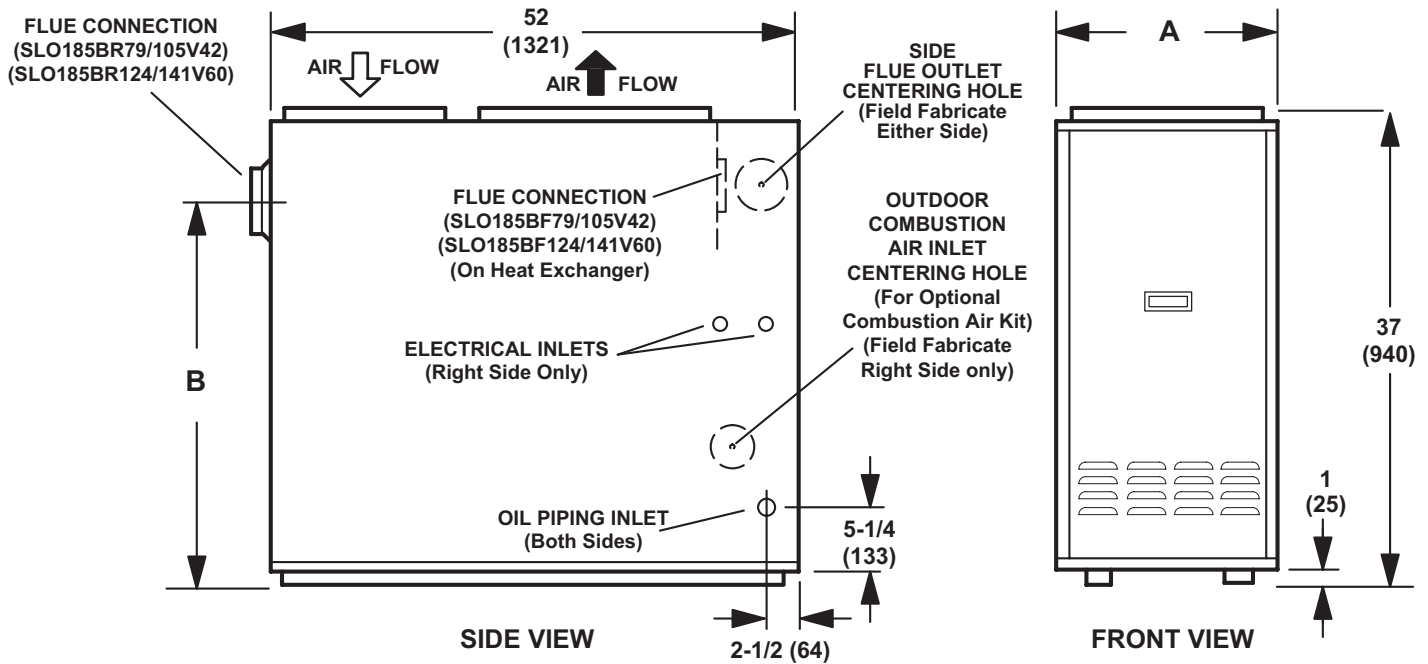
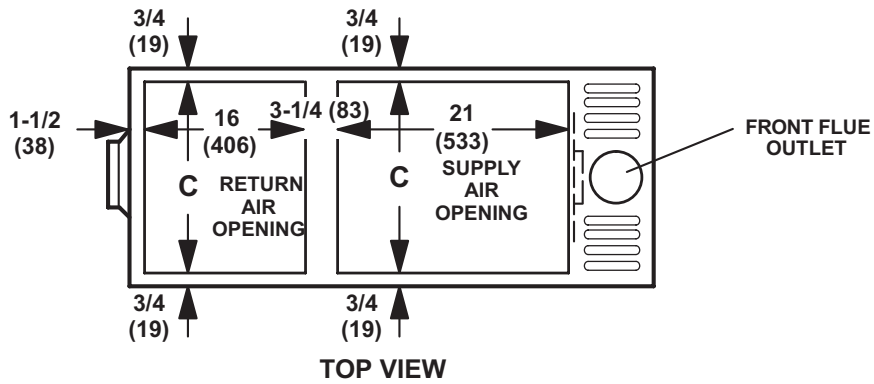
NOTE - Continuous Fan air volume is 50% of COOL speed.

SLO185BR124/141V60 BLOWER PERFORMANCE 0 through 0.50 in. w.g. External Static Pressure Range

"ADJUST" Jumper Setting	Jumper Speed Positions					
	"HEAT" Speed		"COOL" Speed			
	.85 High Fire	.75 Low Fire				
	B	D	A	B	C	D
	cfm	cfm	cfm	cfm	cfm	cfm
+	N/A	N/A	2100	2000	1800	1350
NORM	1730	1450	2000	1800	1600	1200
-	N/A	N/A	1650	1500	1350	950

NOTE - Continuous Fan air volume is 50% of COOL speed.

DIMENSIONS - INCHES (MM)



Model No.	A		B		C	
	in.	mm	in.	mm	in.	mm
SLO185BF79/105V42	19-1/2	495	---	---	18	457
SLO185BR79/105V42	19-1/2	495	27-5/8	702	18	457
SLO185BF124/141V60	22-1/2	572	---	---	21	533
SLO185BR124/141V60	22-1/2	572	27-5/8	702	21	533

INSTALLATION CLEARANCES

Approved for closet or alcove installation. When installing in a confined space, two ventilation openings must be provided into the space; one 6 in. (152 mm.) from the top and one 6 in. (152 mm.) from the bottom. Each opening should be 8 x 16 inches (203 x 406 mm).

Sides of cabinet	6 in.	152 mm
Rear of cabinet	24 in.	610 mm
Front of cabinet	4 in.	102 mm
Service Clearance (Front)	24 in.	610 mm
Service Clearance (Rear)	24 in.	610 mm
Floor	0 in.	0 mm
Top of plenum	2 in.	51 mm
Plenum sides	3 in.	76 mm
Flue pipe horizontal	9 in.	229 mm
Horizontal warm air duct within 3 feet (1 m) of furnace	2 in.	51 mm

REVISIONS

Sections	Description of Change
Warranty	Updated for non-residential applications.



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For the latest technical information, www.lennoxravenet.com

Contact us at 1-800-4-LENNOX

NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

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