



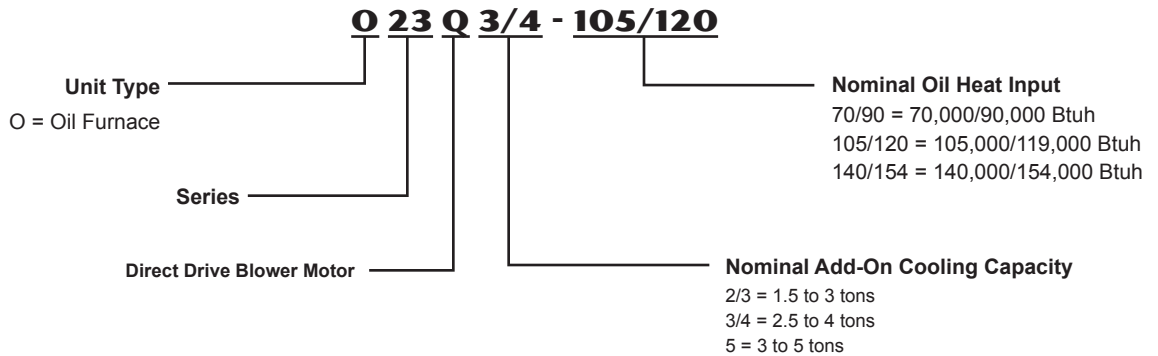
**PRODUCT SPECIFICATIONS**

Bulletin No. 210095  
October 2010  
Supersedes August 2008



**AFUE - 81%**  
**Input - 70,000 to 154,000 Btuh**  
**Nominal Add-on Cooling - 1.5 to 5 Tons**

**MODEL NUMBER IDENTIFICATION**



## FEATURES

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### EQUIPMENT WARRANTY

**Heat exchanger** - limited lifetime warranty in residential applications.

**Oil burners and all other covered components** - five year limited warranty in 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 Federal Trade Commission (FTC) labeling regulations.

Units are certified by AHRI.

Units are ETL/Intertek listed.

Developed in accordance with ISO 9001 quality standards.

### APPLICATIONS

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

Compact, rugged cabinet with side or bottom return air entry, will allow installation in a basement, closet, recreation or utility room.

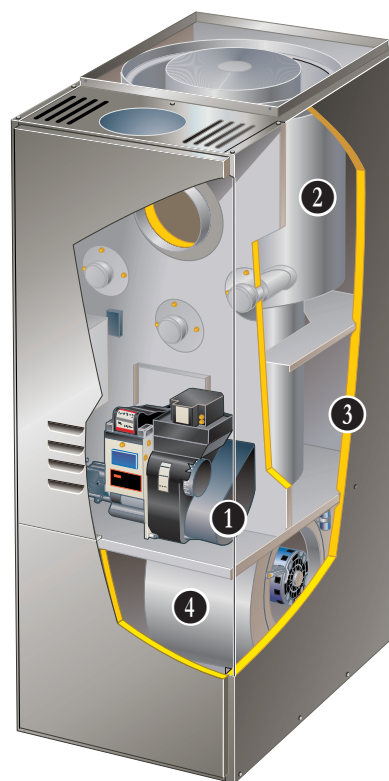
Approved for reduced clearances to combustibles.

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

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

All units are shipped factory assembled including the oil burner, with all controls installed and wired.

Each unit is factory test operated insuring proper operation after shipment.



### HEATING SYSTEM

#### 1 Beckett Flame-Retention 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.

Air turbo injector directs combustion air for smooth ignition.

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

Burner design features 4 in. connection to air inlet for optional outdoor combustion air.

Oil pump located on opposite side of air inlet to prevent any dirt accumulation from inlet air.

Burner has 14,000 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, 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 must be field provided for field conversion to higher heating capacity.

## FEATURES

### **HEATING SYSTEM (CONTINUED)**

#### **2 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.

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.

### **OPTIONS**

#### **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.

### **CONTROLS**

#### **Electronic Fan Timer Control**

Furnished and factory installed in control box.

Board contains necessary controls to operate furnace.

Fan control consists of adjustable blower timed-off delay (60, 90, 120, 150 seconds) and fixed blower timed-on delay (30 seconds).

For air-conditioning applications, blower is automatically energized on thermostat demand for cooling.

Also included on board is a low voltage terminal strip for thermostat connections.

Terminal connections are available with additional power supply requirements for 120 volt (less than 4 amps) electronic air cleaners and humidifiers.

Continuous indoor air circulation terminal is also available as an option.

#### **Limit Control**

Factory installed on vestibule panel.

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**

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

### **OPTIONS**

#### **Thermostat**

See Thermostat bulletins in Controls section and Lennox Price Book.

### **BLOWER**

- 3** Units are equipped with quiet, direct drive blowers. All models have four-speed motors.

Each blower assembly is statically and dynamically balanced.

Multiple-speed motor is resiliently mounted.

A choice of blower speeds is available on each blower.

See blower performance charts.

Change in blower speed is easily accomplished by simple wiring change

### **CABINET**

- 4** 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.

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.

Large blower access door gives complete service access to blower.

Blower compartment is completely insulated.

Blower assembly easily slides completely out of unit for service.

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

Return air entry is possible on either side or bottom of cabinet.

### **FILTER**

#### **Side Filter Adaptor Kit**

Furnished with the unit and field installed.

Adaptor is completely assembled and can be installed on either side of the cabinet.

A large cleanable frame type filter is also furnished and slides in the rack.

Adaptor has flanges for ease of duct connection. See dimension drawing.

## SPECIFICATIONS

		Model Number	O23Q2/3-70/90	O23Q3/4-105/120	O23Q5-140/154
<b>Oil Heating Performance</b>	Input - Btuh	Low Fire	70,000	105,000	140,000
		<sup>1</sup> High Fire	90,000	119,000	154,000
	Output - Btuh	Low Fire	58,000	85,000	113,000
		<sup>1</sup> High Fire	74,000	97,000	125,000
		<sup>2</sup> A.F.U.E.	81.0%	81.0%	81.0%
		Flue Size Diameter - in.	6	6	6
		Temperature rise range	50 - 80°F	50 - 80°F	55 - 85°F
<b>Oil Burner</b>	Nozzle rating - gph	Low Fire	.50	.65	.85
		<sup>1</sup> High Fire	.65	.75	1.00
	Nozzle spray angle	Low Fire	80° hollow	80° solid	80° solid
		<sup>1</sup> High Fire	80° solid	80° solid	80° solid
		Oil Burner Pump	1 Stage	1 Stage	1 Stage
		Oil Burner Pump Pressure - psig	100	140	140
		Air Inlet Connection (diameter) - in.	4	4	4
<b>Indoor Blower</b>	Blower Motor Output - hp		1/3	1/2	3/4
	Nominal add-on cooling - ÷ Tons		1.5 thru 3	2.5 thru 4	3 thru 5
	Blower wheel nom. diameter x width - in.		10 x 8	10 x 10	12 x 11
<sup>3</sup> Filter	Number of filters		1	1	<sup>4</sup> 2
	Size of filters - in.		16 x 25 x 1	16 x 25 x 1	16 x 25 x 1
<b>Shipping weight - lbs. 1 package</b>			225	225	275
<b>Electrical</b>	Characteristics		115V-60hz-1ph	115V-60hz-1ph	115V-60hz-1ph
	Maximum time delay breaker or fuse size		15 Amps	15 Amps	15 Amps
<b>OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA</b>					
<b>Oil Filters</b>	10 micron without mounting bracket		<b>81P89</b>	<b>81P89</b>	<b>81P89</b>
	10 micron with mounting bracket		<b>53P92</b>	<b>53P92</b>	<b>53P92</b>
	Replacement cartridge - 10 micron, 45 gph		<b>53P93</b>	<b>53P93</b>	<b>53P93</b>
	Filter restriction indicator gauge		<b>53P90</b>	<b>53P90</b>	<b>53P90</b>
<b>Two-Stage Oil Pump</b>			<b>65A44</b>	<b>65A44</b>	<b>65A44</b>

<sup>1</sup> Nozzle must be field provided for field conversion to higher heating input.

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

<sup>3</sup> Cleanable frame type filters. Furnished with unit in Side Filter Adaptor Kit for field installation external to the cabinet.

<sup>4</sup> Requires return air from both sides of cabinet.

## BLOWER DATA

External Static Pressure - in. w.g.	O23Q2/3-70/90 BLOWER PERFORMANCE				O23Q3/4-105/120 BLOWER PERFORMANCE			
	Air Volume (cfm) at Various Blower Speeds				Air Volume (cfm) at Various Blower Speeds			
	High	Medium-High	Medium	Low	High	Medium-High	Medium	Low
.20	1410	1260	1040	885	1755	1445	1190	990
.30	1355	1215	1025	880	1695	1425	1180	980
.40	1300	1170	990	850	1640	1400	1145	960
.50	1220	1120	960	830	1590	1335	1110	925
.60	1155	1060	910	785	1495	1285	1055	880

NOTE — All air data is measured external to the unit with the air filter in place.

External Static Pressure - in. w.g.	O23Q5-140/154 BLOWER PERFORMANCE			
	Air Volume (cfm) at Various Blower Speeds			
	High	Medium-High	Medium	Low
.20	2205	1760	1520	1365
.30	2140	1725	1495	1330
.40	2060	1670	1450	1305
.50	2000	1615	1400	1250
.60	1900	1560	1360	1210
.70	1850	1480	1315	1180
.80	1680	1390	1250	1120
.90	1560	1315	1165	1040

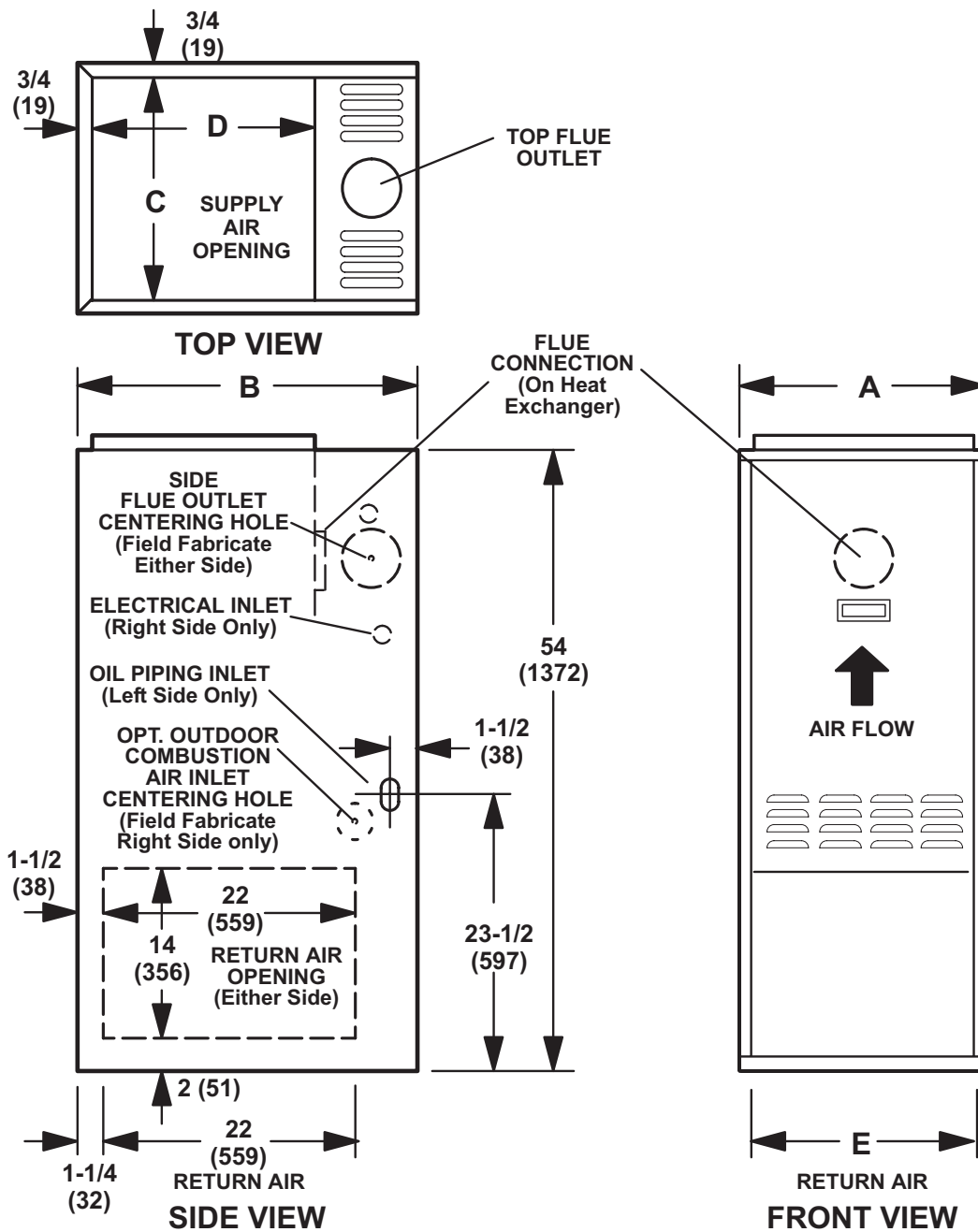
NOTE - All air data is measured external to the unit with the air filter in place.

## INSTALLATION CLEARANCES

Approved for closet or alcove installation. When installing in a confined space, two ventilation openings must be provided into the 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 in. (203 x 406 mm).

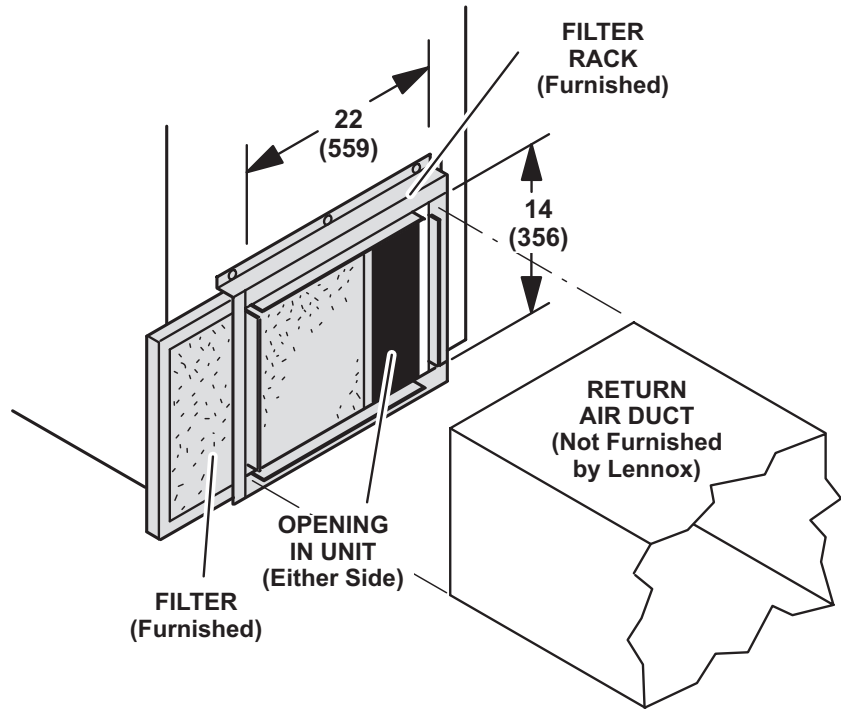
Top of Cabinet	2 in.	51 mm
Sides & Rear of Cabinet	0 in.	0 mm
Front of Cabinet	4 in.	102 mm
Service Clearance (Front)	24 in.	610 mm
Top of Plenum	2 in.	51 mm
Sides of Plenum	3 in.	76 mm
Horizontal Warm Air Duct within 3 feet (1 m) of furnace	2 in.	51 mm
Flue Pipe Vertical or Horizontal	6 in.	152 mm
Floor	Combustible	Combustible

**DIMENSIONS - INCHES (MM)**



Model No.	A		B		C		D		E	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
O23Q2/3-70/90 O23Q3/4-105/120	19-1/2	495	30-5/8	778	18	457	19-5/8	498	16	406
O23Q5-140/154	22-1/2	572	33-1/8	841	21	533	22-1/8	562	18	457

**ACCESSORY DIMENSIONS - INCHES (MM)**



## REVISIONS

Sections	Description of Change
Document	Updated to new publishing software. No changes to data.



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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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