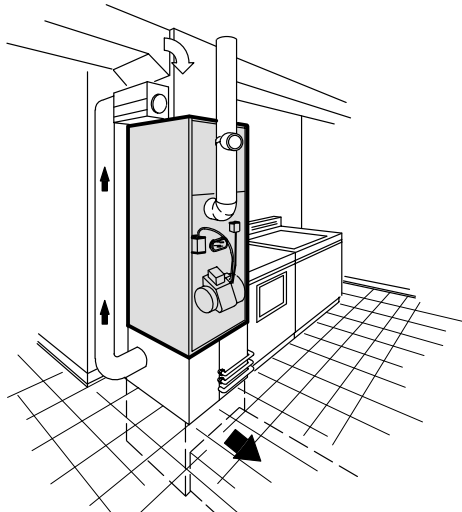


# OHR23

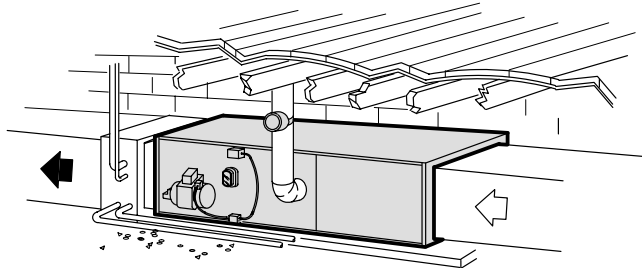
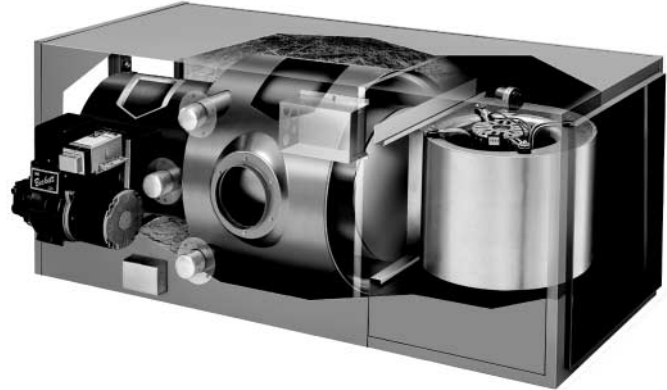
**HORIZONTAL / DOWN-FLOW**  
**Input - 30.8 to 45.1 kW (105,000 to 154,000 Btuh)**  
**Add-On Cooling - 7.0 to 17.6 kW (2 to 5 tons)**

Bulletin No. 490078  
 August 2001  
 Supersedes May 1998

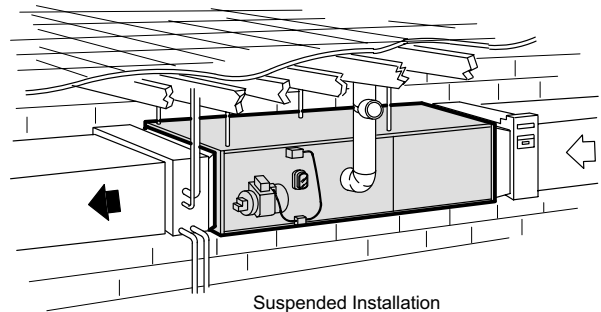
### Typical Applications



Down-Flow Installation With Cooling Coil and humidifier



Crawl Space Installation



Suspended Installation

### MODEL NUMBER IDENTIFICATION

#### OHR23 Q 3 - 105/120

<b>Unit Type</b> O - Oil Furnace		<b>Nominal Oil Heat Input</b> 105/120 - 30.8/34.9 kW (105 000/119 000 Btuh) 140/154 - 41.0/45.1 kW (140 000/154 000 Btuh)
<b>Unit Configuration</b> HR - Horizontal/Down-Flow		<b>Nominal Add-On Cooling Capacity</b> 3 - 7.0 to 10.6 kW (2 to 3 tons) 5 - 10.6 to 17.6 (3 to 5 tons)
<b>Series</b>		
<b>Direct Drive Blower Motor</b>		

### FEATURES

#### Applications

- OHR23 series furnaces are designed to be installed in either horizontal or down-flow position.
- Furnaces are designed for reduced clearances to combustibles.
- Optional additive floor base is available for installation in the down-flow position on combustible floors.
- Two models are available with a choice of heating capacities and air volumes. Both models feature dual heating inputs/outputs.
- Units can be installed on a slab or suspended in a crawl space, basement, utility room or furnace room. Units are not approved for attic installations.
- Lennox add-on evaporator coil, remote condensing unit, electronic air cleaner and humidifier can easily be added to the furnace. Each unit is completely factory assembled with all controls installed and wired.

#### Combustion Chamber

- All models have factory installed, specially designed alumina silica combustion chamber.
- Chamber can withstand temperatures of up to 1260°C (2300°F) resulting in more complete combustion and higher efficiencies.

#### EZ Clean Heat Exchanger

- Streamlined drum type heat exchanger exposes maximum surface area to the air stream with minimum air resistance.
- Strategically placed ports allow easy cleaning.
- Constructed of heavy gauge steel for long life.
- Heavy gauge mounting channels are provided in cabinet for support of heat exchanger.

#### 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 with the unit for field installation in the flue pipe.

## FEATURES

### Beckett Flame-Retention Oil Burner

- 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 102 mm (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 10 000 volt ignition transformer and ceramic glazed electrodes which provide a safe continuous flame.
- Equipped with a factory installed cadmium sulfide flame detector and primary safety control that provides complete shutdown in case of flame failure.
- All burner parts are easily removed for servicing.
- Dual input/output models are shipped for lower heating capacity operation.
- Nozzle must be field provided for field conversion to higher heating capacity.

### Cabinet

- Constructed of heavy gauge steel with a pre-painted, textured finish.
- Entire heating section is lined with foil faced insulation, keeping cabinet surface temperatures low.
- Large blower door allows complete service access to blower.
- Blower compartment is fully insulated.
- Units are shipped for horizontal installation with left hand air discharge. For field change to right hand air discharge, rotate unit 180° end for end, and reposition burner and flue connection.
- For conversion to down-flow position, turn unit on end and reposition burner.
- All models have knockouts provided in cabinet for suspending in horizontal position. See dimension drawing.

### Blower

- All models are equipped with three speed direct drive motors.
- Blower slides out of unit for servicing.
- PSC motor is dynamically balanced, resiliently mounted and has integral overload protection.
- A choice of blower speeds is available on each motor. See blower performance tables.
- Blower speed adjustment is made with a simple change in wiring.

### Fan and Limit Control

- Factory installed.
- Fan control is temperature actuated to control blower operation, 54°C (130°F) on/38°C (100°F) off temperature settings.
- Limit protects unit from abnormal operating conditions and has a fixed temperature setting.

### Limit Control

- Factory installed on vestibule panel.
- Protects unit from abnormal operating conditions and has a fixed temperature setting.

### Transformer

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

### Air Filters

- Filters are not furnished and must be ordered extra.
- Access is provided in blower compartment for filter removal and servicing on OHR23Q3-105/120 model.

## OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

### Down-Flow Additive Base

- Additive base is required for heating only units installed in the down-flow position on combustible floors. Not required in add-on cooling applications.
- Base must be ordered extra for field installation. See Specification table and dimension drawing.

### Filter Kit

- Filter kit is available for field installation. See Specifications table for order number.
- Kit for OHR23Q3-105/120 is mounted internal to unit and contains filter rails, stiffening rods and washable polyurethane filters.
- Kit for OHR23Q5-140/154 is mounted external to unit and contains filter cabinet, support rods and washable polyurethane filters.

### Oil Filter

- Recommended for proper oil filtration. See Specifications table for order no.

### Thermostat

- See Thermostats bulletin in Thermostats and Controls section and Lennox Price Book.

### Vestibule Cover

- Full cabinet height cover is available for down-flow applications. See Specifications table for order number.
- Kit consists of side and front panels to cover all exposed controls.

## INSTALLATION CLEARANCES

HORIZONTAL		DOWN-FLOW - Approved for closet or alcove installation. When installing in a closet, two ventilation openings must be provided in the closet door; one 152 mm (6 in.) from the top and one 152 mm (6 in.) from the bottom. Each opening should be (178 x 356 mm (7 x 14 in.) for 105/120 models and 203 x 406 mm (8 x 16 in.) for 140/154 models.	
Top of Cabinet	76 mm 3 in.	Bottom of Plenum & Duct work	25 mm 1 in.
*Bottom & Rear of Cabinet	25 mm 1 in.	Plenum Sides	25 mm 1 in.
Front of Cabinet	610 mm 24 in.	Side of Cabinet	25 mm 1 in.
Service Clearance (Front)	610 mm 24 in.	Rear of Cabinet	25 mm 1 in.
End of Supply Plenum	0 mm 0 in.	Front of Cabinet	406 mm 16 in.
Supply Air Opening	0 mm 0 in.	Service Clearance (Front)	610 mm 24 in.
Return Air Opening	0 mm 0 in.	Flue Pipe Horizontal	25 mm 1 in.
Above Horizontal Warm Air Duct Within 1 m (3 ft.) of Furnace	0 mm 0 in.	Flue Pipe Vertical	178 mm 7 in.
Flue Pipe Horizontal	178 mm 7 in.	Return Air Opening	0 mm 0 in.
Flue Pipe Vertical	178 mm 7 in.	*Floor	*Combustible *Combustible

\*NOTE — When furnace is installed on combustible floor, 25 mm (1 in.) spacer legs must be installed to elevate unit off of mounting surface.

\*Clearance for installation on combustible floor if optional additive base is installed between the furnace and combustible floor. Not required in add-on cooling applications.

## SPECIFICATIONS

		Model Number	OHR23Q3-105/120	OHR23Q5-140/154
Oil Heating Performance	Input - kW (Btuh) - Low		30.8 (105 000)	41.0 (140 000)
		☑High	35.2 (120 000)	45.1 (154 000)
	Output - kW (Btuh) - Low		24.9 (85 000)	33.1 (113 000)
		☑High	28.4 (97 000)	36.6 (125 000)
Oil Burner	Nozzle Rating - L/hr (US gph) - Low		2.5 (.65)	3.2 (.85)
		☑High	2.8 (.75)	3.8 (1.00)
	Nozzle Spray angle		80° solid	80° solid
	Flue Size Diameter - mm (in.)		152 (6)	152 (6)
	Oil Burner Pump		1 Stage	1 Stage
	Oil Burner Pump Pressure - Pa (psig)		965 (140)	965 (140)
Blower Data	Blower wheel nominal diameter x width - mm		254 x 254	305 x 229
		in.	10 x 10	12 x 9
	Blower motor output - W (hp)		373 (1/2)	560 (3/4)
	Nominal cooling that can be added - kW		7.0 to 10.6	10.6 to 17.6
		Tons	2 to 3	3 to 5
Shipping weight - kg (lbs.) 1 package			102 (225)	120 (265)
Electrical characteristics			220/240V-50hz-1ph	220/240V-50hz-1ph
<b>OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA</b>				
Down-flow Additive Base - Shipping Weight - kg (lbs.)			35K07 - 3 (7)	35K08 - 4 (8)
Filter Kit	Catalog number		35K05	35K06
	Shipping Weight - kg (lbs.)		3 (7)	4 (8)
	Number and size of filters - mm		260 x 521 x 25	298 x 597 x 25
		in.	(2) 10-1/4 x 20-1/2 x 1	(2) 11-3/4 x 23-1/2 x 1
Oil Filters	10 micron without mounting bracket		81P89	81P89
	10 micron with mounting bracket		53P92	53P92
	Replacement cartridge - 10 micron, 0.35 L/s (45 gph)		53P93	53P93
	Filter restriction indicator gauge		53P90	53P90
	Vestibule Cover Kit (full front cover)		37K28	37K29

☑Nozzle must be field provided for field conversion to higher heating input.

## BLOWER DATA

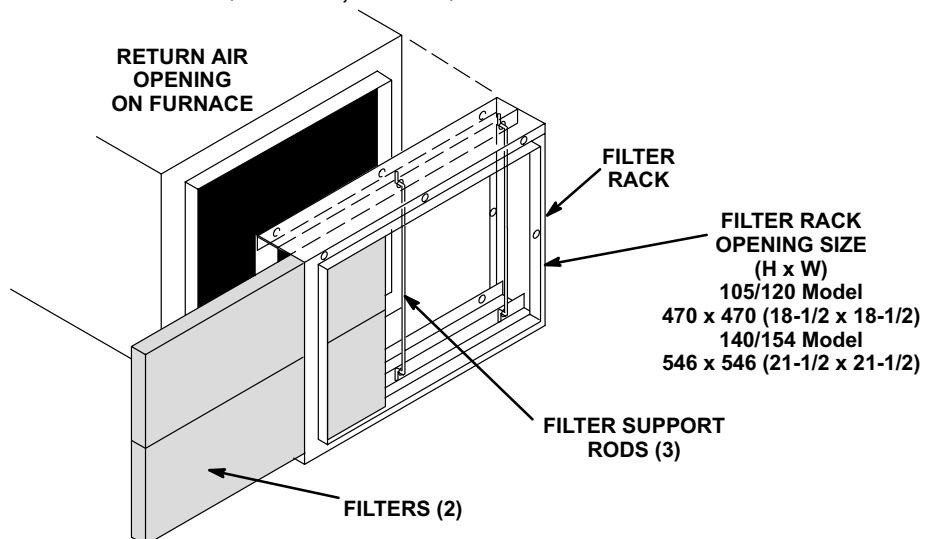
OHR23Q3-105/120 BLOWER PERFORMANCE								OHR23Q5-140/154 BLOWER PERFORMANCE							
External Static Pressure		Air Volume at Various Speeds						External Static Pressure		Air Volume at Various Speeds					
		High		Medium		Low				High		Medium		Low	
Pa	in w.g.	L/s	cfm	L/s	cfm	L/s	cfm	Pa	in w.g.	L/s	cfm	L/s	cfm	L/s	cfm
50	.20	690	1460	510	1085	380	800	50	.20	975	2065	835	1770	750	1585
75	.30	675	1430	500	1060	360	760	75	.30	950	2015	910	1720	725	1540
100	.40	660	1395	485	1025	340	720	100	.40	930	1975	790	1675	710	1500
125	.50	635	1350	465	985	320	680	125	.50	905	1920	780	1650	675	1435
150	.60	625	1320	450	950	300	640	150	.60	875	1850	750	1590	665	1415

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

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

## ACCESSORY DIMENSIONS - MM (INCHES)

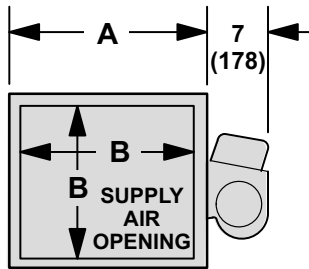
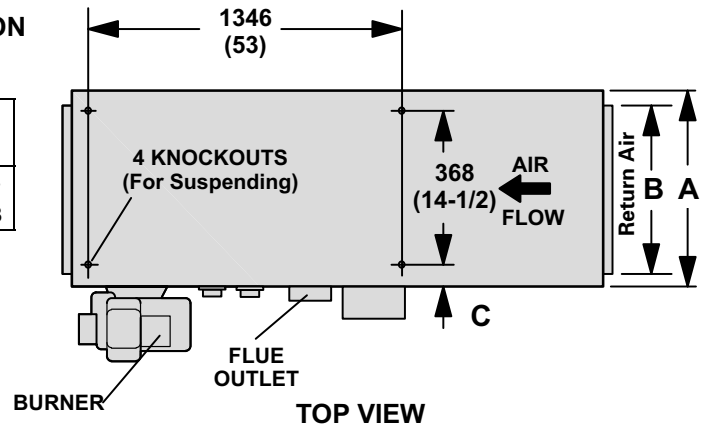
### OPTIONAL FILTER KIT FOR OHR23Q3-120/105, OHR23Q5-140/154



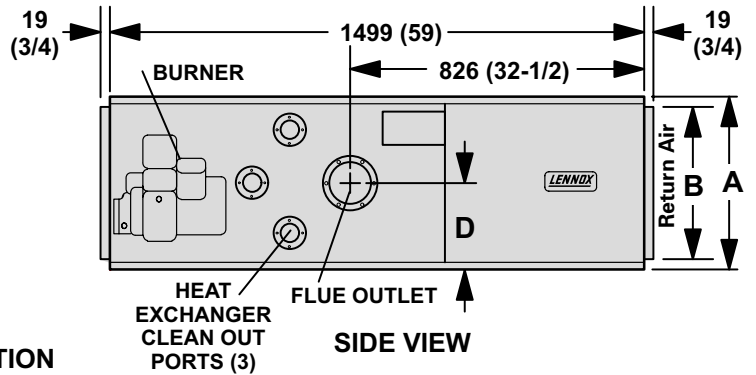
**DIMENSIONS - MM (INCHES)**

**HORIZONTAL POSITION**

Model No.	A		B		C		D	
	mm	in.	mm	in.	mm	in.	mm	in.
OHR23Q3-105/120	521	20-1/2	457	18	76	3	260	10-1/4
OHR23Q5-140/154	597	23-1/2	533	21	121	4-3/4	289	11-3/8

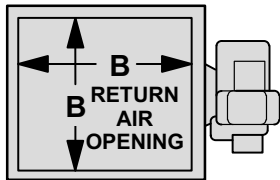


**END VIEW**



**SIDE VIEW**

**DOWN-FLOW POSITION**



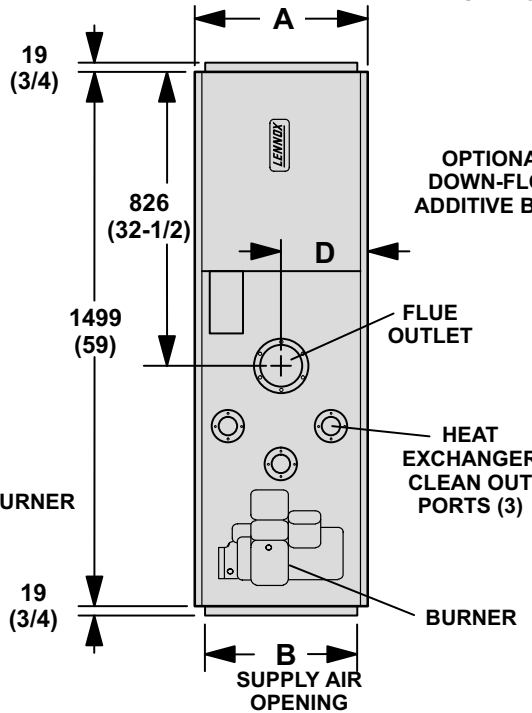
**OPTIONAL DOWN-FLOW COMBUSTIBLE FLOOR BASE**

FRONT OF FURNACE

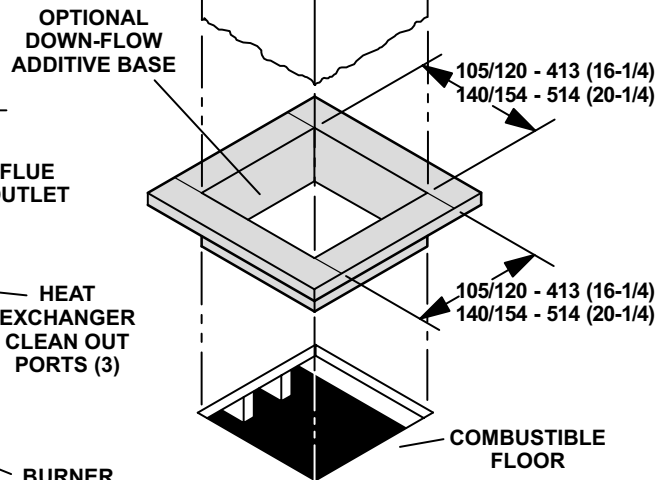
SUPPLY AIR DUCT (Not Furnished)



**SIDE VIEW**



**FRONT VIEW**



Additive Base Raises Furnace 19 mm (3/4 in.) above Floor Level