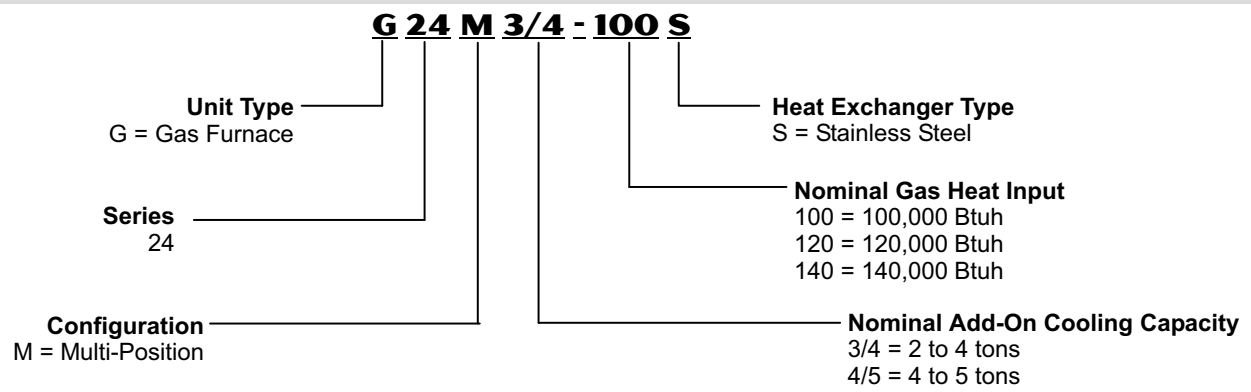




**AFUE - 80%**  
**Input - 100,000 to 140,000 Btuh**  
**Nominal Add-on Cooling - 2 to 6 Tons**

**MODEL NUMBER IDENTIFICATION**



## FEATURES

### CONTENTS

Blower Data .....	Page 7
Dimensions .....	Pages 6 - 7
Features and Options .....	Pages 2
Filter Air Resistance .....	Page 5
High Altitude Information .....	Page 5
Horizontal Venting Requirements .....	Page 5
Installation Clearances .....	Page 5
Model Number Identification .....	Page 1
Optional Accessories Selection table .....	Page 4
Specifications .....	Page 4

### WARRANTY

**Heat exchanger - Limited ten year warranty.**  
**All other covered components - Limited one year.**

### APPROVALS

Certified by CSA.  
Ratings are certified by GAMA.  
Tested and rated according to U.S. DOE test procedures and FTC labeling regulations.  
Blower data is from unit tests conducted in the Lennox Laboratory air test chamber.  
Developed in accordance with ISO 9001 quality system.  
Approved for vertical or horizontal (sidewall) venting.  
NOTE - Horizontal venting requires optional sidewall power venting kit.

### APPLICATIONS

Three models (natural gas or LPG/propane) with input capacities of 100,000, 120,000 and 140,000 Btuh.  
Energy efficiencies (AFUE) of 80%.  
Up-flow, down-flow or horizontal applications.  
Add-on indoor coils, high efficiency air cleaners and power humidifiers available.  
Shipped factory assembled with all controls installed and wired.  
Each unit is factory test operated to insure proper operation.

### HEATING SYSTEM

#### 1 Tubular Heat Exchanger

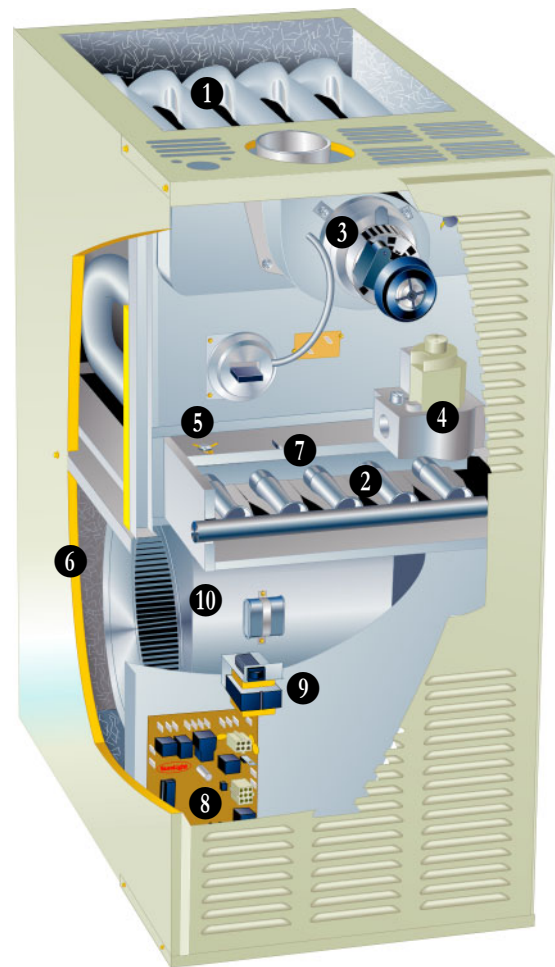
Constructed of stainless steel for superior resistance to corrosion and oxidation.  
Curving design allows complete exposure of heating surfaces to supply air stream.  
Round surfaces create minimum air resistance and allow air to surround all surfaces for excellent heat transfer.  
Compact design reduces space requirements in unit cabinet.  
Heat exchanger has been laboratory life cycle tested.

#### 2 Inshot Burners

Aluminized steel inshot burners provide efficient trouble free operation.  
Burner venturi mixes air and gas in correct proportion for proper combustion.  
Assembly is removeable from the unit as a single component for ease of service and each burner may be removed individually.

#### 3 Induced Draft Blower

Shaded pole heavy duty induced draft blower prepurges heat exchanger and safely vents flue products.  
Pressure switch prevents unit operation in case of blockage of combustion air or flue outlet.  
Induced draft blower operates only during heating cycle.



#### 4 Gas Control Valve

24 volt redundant combination gas control valve combines a manual main shutoff valve, pressure regulation and automatic electric valve (dual) into one compact combination control.

#### 5 Flame Rollout Switches

Dual manual reset switches are furnished as standard and are factory installed on either side of the burner box. Prevent unit operation in the event combustion products passage through the flueway is reduced or blocked.

#### Limit Controls

Factory installed and accurately located.  
Provides protection from abnormal operating conditions.  
Primary limit is located on heating compartment vestibule panel.  
Two secondary limits are located on either side of the blower housing.

### OPTIONS

#### LPG/Propane Conversion Kit

For LPG/propane models a conversion kit is required for field changeover from natural gas.  
See specifications table for order number.

#### High Altitude Pressure Switch

Required on certain units for proper unit operation on installations above 4,500 ft.  
See Specifications table for applications and order numbers.

## FEATURES

### 6 CABINET

Constructed of heavy gauge pre-painted cold rolled steel. Five station metal wash process resulting in a perfect paint bonding surface.

Insulated with foil faced fiberglass insulation on side and back panels of heat section.

Blower section is completely insulated with mat faced fiberglass insulation.

Complete service access is accomplished by removing one-piece front panel and interior blower access door. Blower assembly may be completely removed from unit for service.

Safety interlock switch located on blower access door automatically shuts off power to the unit when door is removed.

Gas piping inlets are provided in both sides and top of cabinet. Electrical knockouts are provided in both sides, top and bottom of cabinet.

Units have flanges on top and bottom of cabinet that may be bent out for duct connection to unit. See dimension drawing.

Painted panel is furnished to block off bottom air return air. Return air entry is possible on either side or bottom of cabinet for up-flow applications.

End return air entry is available for horizontal and down-flow applications.

#### Multi-Position Capability

Shipped from factory for up-flow applications and horizontal applications with right hand or left hand air discharge.

Down-flow applications: interchange top and bottom caps, remove heat exchanger section, rotate 180° top for bottom and re-install.

#### OPTIONS

##### Down-Flow Combustible Floor Base

Additive base is required for field installation with heating only, down-flow units installed on combustible floors. Not required in add-on cooling applications.

See Specifications table and dimension drawing.

##### Hanging Bracket Kit

Available for easy suspension of unit in horizontal applications.

Includes four vertical supports for mounting to joists and two horizontal channels.

##### Sidewall Power Venting Kit

Required for horizontal venting.

Kit includes ETL listed power venter and control kit.

Control kit includes junction box with pressure switch, aluminum tubing, tubing, conduit connectors and barometric draft control.

See venting table for requirements. Flue piping must be field provided.

#### **FILTER (NOT FURNISHED)**

Filter and provisions for external mounting must be field provided.

##### Down-Flow Filter Rack

Available for field installation in down-flow applications.

Filters are not furnished and must be ordered extra. See Specifications table for filter sizes and filter rack order number.

##### Economizer Dampers

Economizer dampers are designed for applications requiring outdoor air in an HVAC system allowing fresh outdoor air for free cooling. See separate Engineering Handbook bulletin for additional information.

### Up-Flow/Horizontal Filter and Rack Kit

Washable or vacuum cleanable polyurethane frame type air filter and external rack is available for field installation. Includes adjustable filter rack with access door, filter removal tool for bottom return air applications, and filter. Available in single and ten pack kits. See Specifications table for order number.

#### CONTROLS

### 7 SureLight® Hot Surface Ignition

Tough, reliable, long-life, trouble-free performance.

Tungsten heater element sandwiched between two plates of silicon nitride.

Cemented to steatite block for protection against current leakage.

Ignition leads constructed of nickel plated copper enclosed in high temperature Teflon insulation for dependable operation.

Adaptive technology of ignition control board monitors and adjusts voltage and temperature for ignition at just the needed combustion point - extending ignitor life.

No electrical noise.

### 8 SureLight® Integrated Control Board

Solid-state board contains all necessary controls and relays to operate furnace.

Induced draft blower is controlled by module. Prior to ignition, a pre-purge cycle for 15 seconds is initiated. After the main burners are turned off, a post-purge cycle for 5 seconds is run.

Continuously monitors and adjusts the ignitor voltage to operate at minimum igniter temperature required for ignition, prolonging ignitor life.

Electronic flame sensor control assures safe and reliable operation.

Should loss of flame occur, flame sensor controls will initiate 5 attempts at re-ignition before locking out unit operation for 60 minutes.

Watchguard type circuit automatically resets ignition controls after one hour of continuous thermostat demand after unit lockout, eliminating nuisance calls for service.

Fan control consists of adjustable blower timed-off delay (60 to 180 seconds) and fixed blower timed-on delay (45 seconds).

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

Provisions for additional power supply requirements for 120 volt (less than 4 amps) power humidifiers and electronic air cleaners.

Ignition control has two LED's to indicate status and as an aid in troubleshooting.

### 9 Transformer

24 volt control transformer furnished as standard equipment and is factory installed on blower access door.

#### OPTIONS

##### Thermostat

Thermostat is not furnished and must be ordered extra.

See Thermostat bulletins in Controls section and Lennox Price Book.

### 10 BLOWER

Units are equipped with quiet multi-speed direct drive blower.

Each blower assembly is statically and dynamically balanced.

Multiple-speed motor is resiliently mounted.

Choice of blower motor speeds is available on each blower. See blower performance tables.

## SPECIFICATIONS

Gas Heating Performance		Model No.	G24M3/4-100S	G24M3/4-120S	G24M4/5-140S
		Input Btuh	100,000	120,000	140,000
		Output Btuh	82,000	98,400	114,800
		Temperature rise range - °F	45 - 75	45 - 75	45 - 75
		<sup>1</sup> AFUE	80.1%	80.0%	80.0%
		High static (CSA) - in wg.	.50	.50	.65
Connections (in.)	Flue size connection diameter - round		4	4	5
	Gas Piping Size IPS - Natural and LPG		1/2	1/2	1/2
Indoor Blower	Wheel nominal diameter x width - in.		12 x 8	12 x 8	12 x 9
	Motor output - hp		1/2	1/2	3/4
	Tons of add-on cooling		2 thru 4	2 thru 4	3.5 thru 6
Shipping Data	lbs. (1 package)		175		190
Electrical characteristics			120 volts - 60 hertz - 1 phase (less than 12 amps) All models		

## OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

### FILTER KITS

Bottom Return Air Filter Kit (includes Filter Media)	70J08	70J08	70J09
<sup>2</sup> Down-flow Filter Kit	<b>32J01</b>	<b>32J01</b>	<b>32J01</b>
No. & size of filters - in.	(1) 16 x 20 x 1	(1) 16 x 20 x 1	(1) 16 x 20 x 1
Up-Flow/Horizontal Filter and Filter Rack Kits <sup>3</sup> No. & size of filters - in.	Single ( <b>46J14</b> ) Ten Pack ( <b>66K65</b> ) (1) 20 x 20 x 1		Single ( <b>58J93</b> ) Ten Pack ( <b>66K66</b> ) (1) 20 x 20 x 1

### CABINET

Down-Flow Combustible Base	<b>67J92</b>	<b>67J92</b>	<b>67J92</b>
Economizer Dampers	EMD14-65 (3-Position)	<b>15H34</b>	<b>15H34</b>
	EMD14M-65 (Modulating)	<b>15H35</b>	<b>15H35</b>
Hanging Bracket Kit	<b>46J66</b>	<b>46J66</b>	<b>46J66</b>

### CONTROLS

Twinning Kit	<b>15L38</b>	<b>15L38</b>	<b>15L38</b>
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### HEATING

High Altitude Pressure Switch	<b>18L24</b>	<b>18L24</b>	---
LPG/propane kit	<b>81J14</b>	<b>81J14</b>	<b>81J14</b>

### VENTING

Sidewall Power Venting Kit	<b>79J15</b>	<b>79J15</b>	<b>79J15</b>
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<sup>1</sup> Annual Fuel Utilization Efficiency based on U.S. DOE test procedures and according to FTC labeling regulations. Isolated combustion system rating for non-weatherized furnaces.

<sup>2</sup> Filters are not furnished with kit and must be ordered extra.

<sup>3</sup> Polyurethane frame type filter is furnished with kit.

## INSTALLATION CLEARANCES

### UP-FLOW OR DOWN-FLOW POSITION

Vent Type	Type "B"	Type "C"
Sides	0 inches	0 inches
Rear	0 inches	0 inches
Top	1 inch	1 inch
Front	2 inches	2 inches
Front (service)	24 inches	24 inches
Floor (up-flow)	Combustible	Combustible
<sup>1</sup> Floor (down-flow)	Combustible	Combustible
Flue	1 inch	6 inch

NOTE—Air for combustion and supply air ventilation must conform to the methods outlined in American National Standard (ANSI-Z223.1) National Fuel Gas Code or National Standard of Canada CSA-149.1, & CSA-149.2 "Installation Code for Gas Burning Appliances".

NOTE—In the U.S. flue sizing must conform to the methods outlined in current GAMA/CSA venting tables, American National Standard (ANSI-Z223.1) National Fuel Gas Code or applicable provisions of local building codes. In Canada flue sizing must conform to the methods outlined in National Standard of Canada CSA-149.1 and .2.

<sup>1</sup> Down-flow Applications Only — Clearance for installation on combustible floor if optional additive base is installed between the furnace and the combustible floor. Not required in add-on cooling applications if installed in accordance with local codes or National Fuel Gas Code ANSI-Z223.1 or CSA-149.1,.2.

### HORIZONTAL POSITION

Vent Type	Type "B"	Type "C"
<sup>1</sup> Sides	2 inches	2 inches
Rear	0 inches	0 inches
<sup>1</sup> Top	0 inches	0 inches
Front	2 inches	2 inches
Front (service)	24 inches	24 inches
Floor	0 inches	0 inches
Flue	1 inch	6 inch

NOTE—Air for combustion and supply air ventilation must conform to the methods outlined in American National Standard (ANSI-Z223.1) National Fuel Gas Code or National Standard of Canada CSA-149.1, & CSA-149.2 "Installation Code for Gas Burning Appliances".

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<sup>1</sup> Line contact installation permissible between jacket top or sides and building joists.

## HIGH ALTITUDE INFORMATION

Unit does not require gas pressure adjustment when operating at elevations of 0 to 4500 feet. See table for correct manifold pressures for natural and LPG/Propane gases at altitudes greater than 4,500 ft.

In Canada, certification for installation at altitudes over 4500 feet above sea level is the jurisdiction of local authorities.

### MANIFOLD GAS PRESSURE

Altitude ft.	Fuel	Manifold Pressure (Outlet) in. w.g.
0-4500	Natural Gas	3.5
	LPG/Propane	9.5
4501 - 5500	Natural Gas	3.4
	LPG/Propane	9.2
5501-6500	Natural Gas	3.3
	LPG/Propane	8.9
6501-7500	Natural Gas	3.2
	LPG/Propane	8.6

## FILTER AIR RESISTANCE

cfm	in. w.g.
0	0.00
200	0.01
400	0.03
600	0.04
800	0.06
1000	0.09
1200	0.12

cfm	in. w.g.
1400	0.15
1600	0.19
1800	0.23
2000	0.27
2200	0.33
2400	0.38
2600	0.44

## HORIZONTAL VENTING REQUIREMENTS (THROUGH THE WALL)

Furnace Model No.	Vent Pipe Diameter Furnace Connection	Vent Pipe Minimum Equivalent Length	Vent pipe Maximum Equivalent Length
	in.	feet	feet
G24M3/4-100, G24M3/4-120,	4	10	60
G24M4/5-140	<sup>1</sup> 5	10	48

VENTING NOTES - Elbows - One 3 inch diameter 45° elbow is equivalent to 3 feet of straight vent pipe.  
One 4 inch diameter 45° elbow is equivalent to 4 feet of straight vent pipe.  
One 3 inch 90° elbow is equivalent to 5 feet of straight vent pipe.  
One 4 inch 90° elbow is equivalent to 7 feet of straight vent pipe.  
Two 45° elbows are equal to one 90° elbow.

Tees - One 3 inch diameter tee is equivalent to 19 feet of straight vent pipe.  
One 4 inch diameter tee is equivalent to 25 feet of straight vent pipe.

Transition - 3 inch to 4 inch transition is equivalent to 2 feet of straight vent pipe.

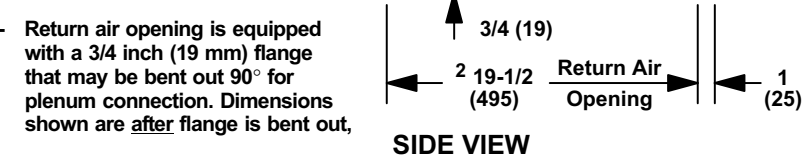
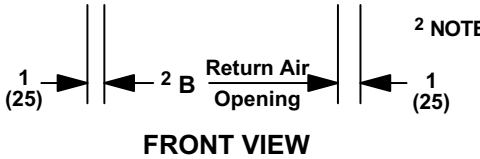
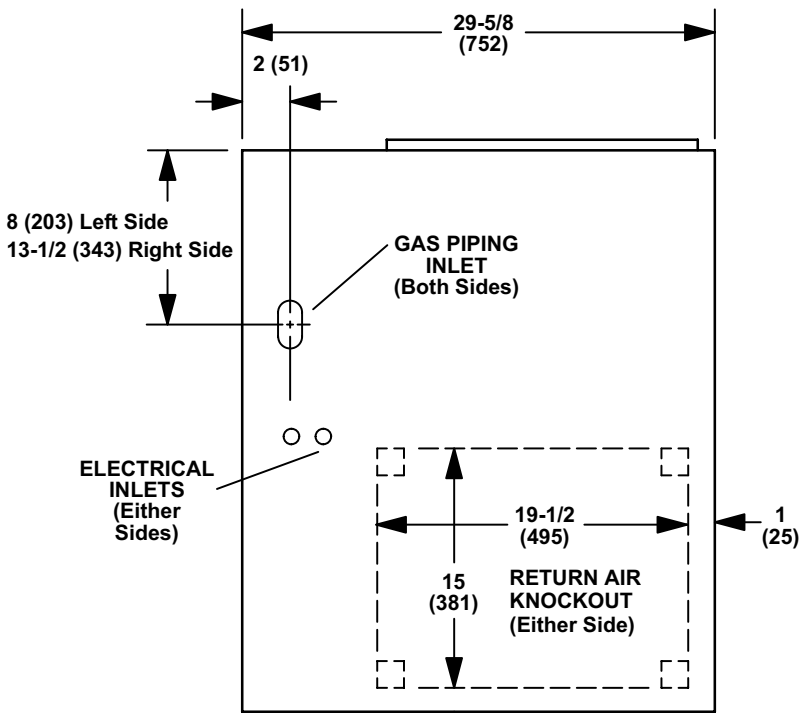
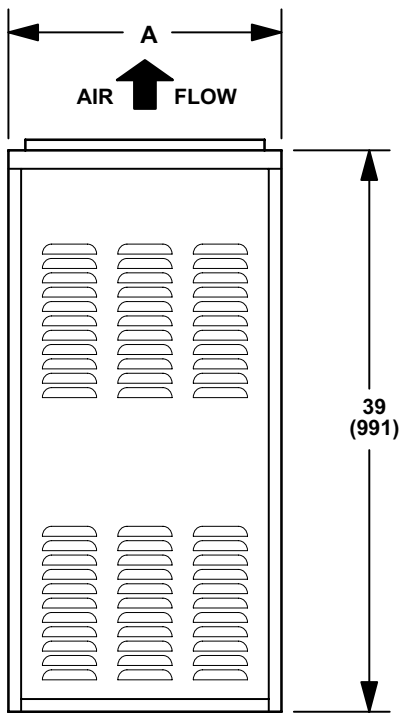
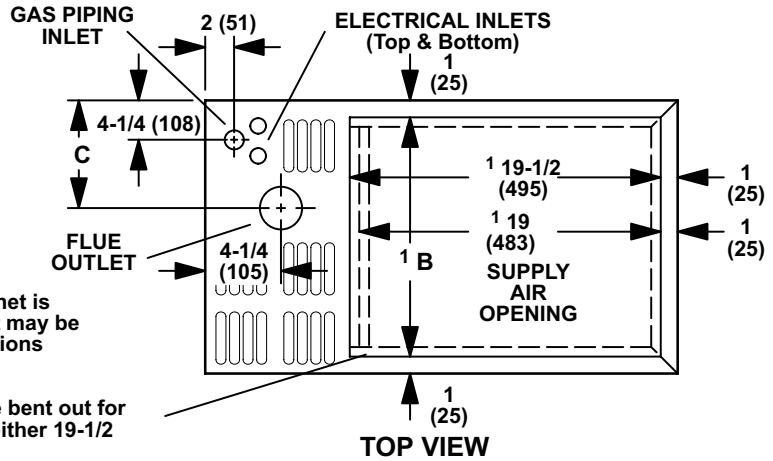
<sup>1</sup> Flue Adaptors -2 in x 5 in. flue adaptor furnished with -140 input furnaces for connection to furnace induced draft blower.

NOTE - All horizontal venting applications require optional Sidewall Power Venting Kit.

**DIMENSIONS - INCHES (MM) - UP-FLOW POSITION SHOWN**

<sup>1</sup> NOTE- Supply air opening at rear and sides of cabinet is equipped with a 3/4 inch (19 mm) flange that may be bent out 90° for plenum connection. Dimensions shown are after flange is bent out,

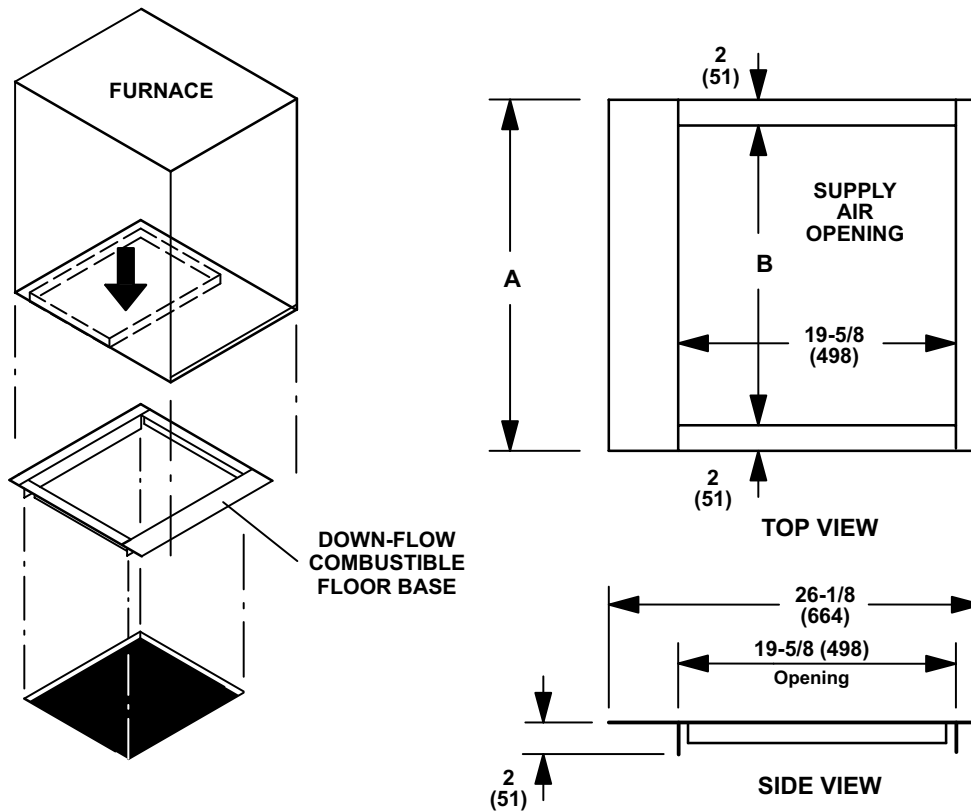
Flange at front of supply air opening may be bent out for a total opening dimension (front to rear) of either 19-1/2 inches (495 mm) or 19 inches (483 mm).



<sup>2</sup> NOTE - Return air opening is equipped with a 3/4 inch (19 mm) flange that may be bent out 90° for plenum connection. Dimensions shown are after flange is bent out,

Model No.	A		B		C	
	in.	mm	in.	mm	in.	mm
G24M3/4-100, G24M3/4-120	20-1/2	521	18-1/2	470	8-3/8	213
G24M4/5-140	23-1/4	591	21-1/4	540	9-3/4	248

## OPTIONAL ACCESSORY DIMENSIONS - INCHES (MM)



Furnace Model No.	A		B	
	in.	mm	in.	mm
G24M3/4-100, G24M3/4-120	22-1/2	572	18-1/2	470
G24M4/5-140	25-1/4	641	21-1/4	540

## BLOWER DATA

### G24M3/4-100 AND G24M3/4-120 BLOWER PERFORMANCE

External Static Pressure in. w.g.	Air Volume at Various Blower Speeds				
	High cfm	Medium-High cfm	Medium cfm	Medium-Low cfm	Low cfm
0	1830	1600	1325	1070	880
.05	1815	1585	1320	1070	880
.10	1800	1570	1315	1070	880
.15	1875	1550	1310	1065	875
.20	1750	1530	1300	1060	875
.25	1725	1515	1290	1050	870
.30	1700	1500	1275	1040	870
.40	1650	1460	1245	1020	860
.50	1600	1420	1210	1000	840
.60	1550	1380	1170	980	820
.70	1480	1330	1130	960	790

NOTE - All air data is measured external to unit with 1 in. cleanable filter (not furnished) in place. Also see Filter Air Resistance table

### G24M4/5-140 BLOWER PERFORMANCE

External Static Pressure in. w.g.	Air Volume at Various Blower Speeds				
	High cfm	Medium-High cfm	Medium cfm	Medium-Low cfm	Low cfm
0	2450	2160	1970	1700	1500
.05	2440	2155	1965	1695	1500
.10	2430	2150	1960	1690	1495
.15	2415	2135	1950	1685	1495
.20	2400	2120	1940	1680	1490
.25	2380	2105	1930	1675	1480
.30	2360	2090	1915	1670	1470
.40	2310	2050	1870	1650	1440
.50	2260	2000	1810	1610	1410
.60	2180	1950	1750	1560	1370
.70	2100	1890	1700	1520	1330

NOTE - All air data is measured external to unit with 1 in. cleanable filter (not furnished) in place. Also see Filter Air Resistance table



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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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