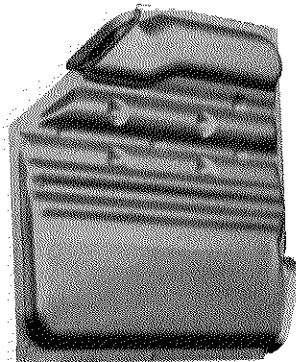




**GS16 SERIES — STOWAWAY®
HORIZONTAL GAS FURNACES**
50,000 to 125,000 Btuh Input
Add-On Cooling 1-1/2 thru 5 Nominal Tons

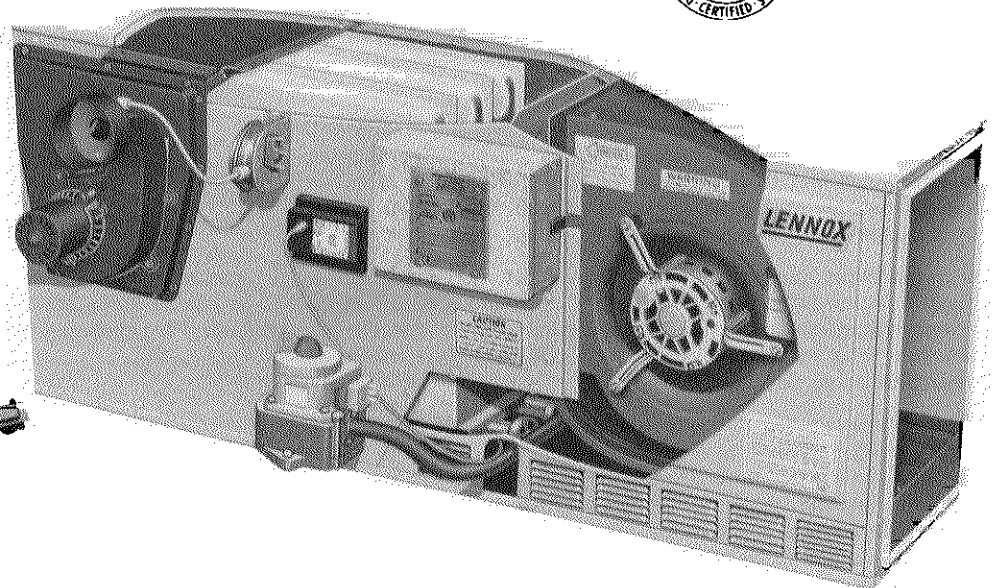
ENGINEERING DATA
HEATING UNITS
GAS
Page 40
October 1989
Supersedes
December 1986



Heat Exchanger
Clamshell Section



Efficient
Steel Burners

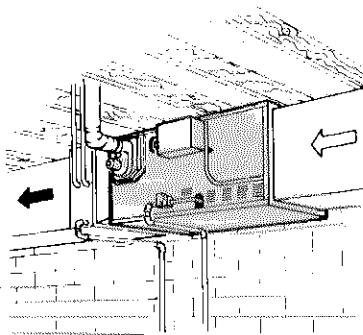


Horizontal Gas Furnaces Provide Efficient and Dependable, Space-Saving Comfort Systems

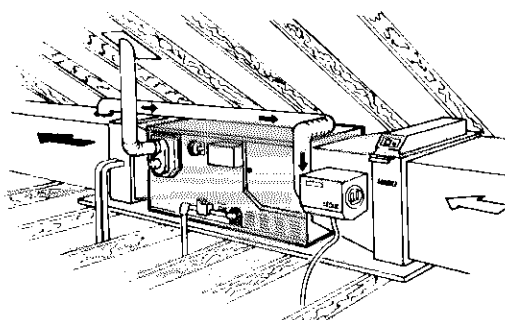
The Lennox GS16 series horizontal STOWAWAY gas furnaces are designed for installations that will save valuable floor space for other purposes. These versatile units can be installed in an attic space, on a slab in crawl space, hanging from joists in a basement or crawl space, suspended from the ceiling in a utility or furnace room. Lennox direct expansion evaporator cooling unit, electronic air cleaner and automatic humidifier can easily be added to the horizontal gas furnace for a complete all season Total Comfort system. Units are equipped with energy and cost saving automatic electronic pilot ignition system. Pilot flame is on only during furnace operating cycle. No need to shut off pilot during air conditioning season. Heavy gauge steel cabinet has deluxe baked-on enamel finish. Heating section panels are insulated to cut heat loss. Induced draft blower safely vents combustion products. A choice of flue connection,

controls location and blower service access is provided at the front or rear of the unit. All units are shipped assembled for left-hand air discharge. Rugged heat exchanger is designed for maximum heat transfer and minimum air resistance. Quiet operating blower has sufficient capacity to handle add-on air conditioning air volume requirements. Air filter and filter rack are available as optional equipment and must be ordered extra. Horizontal furnaces are design certified by A.G.A. laboratories and ratings are certified by GAMA. 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 test operated at the factory and shipped completely factory assembled. Installer has only to mount thermostat, make duct, flue, gas line and electrical supply connections to complete a low cost installation.

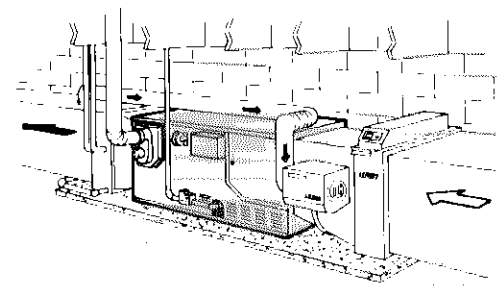
Typical Applications



Basement Installation
With cooling coil



Attic Installation
With cooling coil, electronic air
cleaner and automatic humidifier



Crawl Space Installation
With cooling coil, electronic air
cleaner and automatic humidifier

FEATURES

Rugged Cabinet — Constructed of heavy gauge cold rolled steel with a durable baked-on enamel finish. Front and rear cabinet panels of the heating section are lined with foil faced fiberglass insulation. Flanges on supply and return air openings permit ease of duct connection. Large removable blower access panel provides complete service access to blower compartment. Blower access panel is equipped with a door knob for easy removal. Safety interlock switch, located on wiring junction box, automatically turns power off to unit when blower access panel is removed. Units are shipped for left-hand supply air discharge. For applications requiring a change in supply air direction simply relocate the blower access panel knob, induced draft blower, controls, gas valve and the pilot burner components to the opposite side of the unit.

Efficient Direct Drive Blower — Units are equipped with quiet, variable speed direct drive blowers. Each blower is statically and dynamically balanced. Multiple-speed motor is resiliently mounted. A choice of blower speeds is available on each blower. See blower performance tables. Change in blower speed is easily accomplished by a simple change in wiring.

Durable Heat Exchanger — Clamshell type heat exchanger is constructed of heavy gauge aluminized steel and is designed for normal expansion and contraction without metal fatigue. Design provides long service life, maximum efficiency and minimum resistance to air flow.

Steel Burners — Each burner has two rows of lance type ports which result in quiet and clean combustion. A crossover igniter carries a positive flame from burner to burner to achieve fast, sure and safe ignition. Each burner is equipped with an adjustable primary air shutter. Burner assembly (burners, pilot burner components and manifold) is removable for ease of service.

Fan and Limit Control — Factory installed, wired and accurately located. Time-start heat assisted fan control assures proper blower operation and has adjustable blower off temperature setting. Limit control protects the unit from abnormal operating conditions. Located in wiring junction box.

Wiring Junction Box — Power supply and thermostat wiring connections are made at junction box. Conveniently located on front of the unit for easy access. Junction box has a screw terminal board for ease of thermostat wiring connections. Blower access panel safety interlock switch is mounted on box.

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

Transformer — 24 volt control transformer is furnished as standard equipment and is factory installed in the wiring junction box.

Induced Draft Blower — Factory installed induced draft blower prepurges heat exchanger and safely vents combustion products. Centrifugal switch proves blower operation before allowing main gas valve to open. Operates only during heat demand cycle.

Automatic Gas Controls & Electronic Pilot Ignition — 24 volt combination gas control valve combines automatic safety pilot, pilot filtration, automatic electric valve (dual) with manual set knob (off-on) and gas pressure regulation into a compact combination control. Dual valve design provides double assurance of 100% close off of gas to the pilot and main burners on each heating cycle. Solid-state electronic direct spark igniter provides positive ignition of pilot burner on each operating cycle. Pilot gas ignited and burns during each running cycle of the furnace. Main burners and pilot gas are extinguished during the off cycle. This system permits main gas valve to open when the pilot burner is proven to be lit. Should a loss of flame occur the main valve closes, shutting down the unit. Pilot ignition is fully automatic operation on demand for heat.

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

Filter Rack Kit (Optional) — Must be ordered extra. Filter media is washable or vacuum cleanable. See specifications table for order no. and filter cut size. Filter and rack field installs in blower compartment. Clips are provided in cabinet for securing rack in place. See dimension drawing.

LPG Conversion Kit (Optional) — For LPG models a conversion kit is required for field changeover from natural gas. Kit is not furnished and must be ordered extra. See specification table.

Equipment Warranty — Cold rolled steel heat exchangers have a limited warranty for a full ten years. Solid-state ignition modules have a limited warranty for a full three 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	GS16Q3-50	GS16Q3-75	GS16Q3/4-100	GS16Q4/5-125
Input Btuh	50,000	75,000	100,000	125,000
Output Btuh	40,000	60,000	80,000	100,000
†A. F. U. E	78.8%	78.8%	78.8%	78.8%
Temperature rise range (°F)	35 — 65	40 — 70	40 — 70	40 — 70
Flue size (in.) — diameter	4	4	5	5
A. G. A. certified high static (in. wg.)	.50	.50	.50	.50
Gas piping size (in.) (Natural or *LPG)	1/2	1/2	1/2	1/2
Blower wheel nominal diameter x width (in.)	10 x 6	10 x 6	10 x 8	12 x 9
Blower motor horsepower	1/3	1/3	1/3	1/2
Tons of additive cooling	1-1/2, 2, 2-1/2 or 3	1-1/2, 2, 2-1/2 or 3	3, 3-1/2 or 4	3, 3-1/2, 4 or 5
Shipping weight (lbs.) (1 package)	175	185	210	250
Electrical characteristics	115 volts — 60 hertz — 1 phase (All Models) (Less than 12 amps)			
*Optional LPG Kit	13H91 (All Models)			
*Optional	41G96 (All Models)			
Filter Rack Kit	Order No.			
	Media cut size (in.)	(1) 14 x 22 x 1	(1) 14 x 22 x 1	(1) 17-1/2 x 22 x 1
			(1) 17-1/2 x 22 x 1	(1) 21 x 22 x 1

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

*For LPG units a field changeover kit is required and must be ordered extra.

•Field installed.

HIGH ALTITUDE DERATE

Units must be derated when installed at an elevation of 2000 feet or more above sea level. Table shows the derate manifold pressure for high altitude operation with both natural gas and LPG. Operating the unit at manifold pressure specified will insure proper unit heat input at high altitude.

Elevation Above Sea Level (feet)	Manifold Pressure (in. wc.)					
	†Heating Value (Btu/ft ³) Natural Gas					
	900	950	1000	1050	1100	LPG Only
Sea Level — 0	4.32	3.88	3.50	3.16	2.84	10.50
1000	4.32	3.88	3.50	3.16	2.84	10.50
2000	3.67	3.29	2.97	2.68	2.41	8.92
3000	3.38	3.04	2.74	2.47	2.22	8.22
4000	3.11	2.79	2.52	2.27	2.04	7.57
5000	2.88	2.58	2.33	2.10	1.89	6.98
6000	2.64	2.37	2.14	1.93	1.73	6.43

†Heating value is based on an atmospheric pressure of 30 inches mercury and temperature at 60 °F. Consult your gas utility for the local natural gas heating value.
NOTE - This is the only permissible field derate for the units.

INSTALLATION CLEARANCES (inches)

Top	8
Sides	6
**Back	8
†Floor	Combustible
*Flue	6

*This clearance to all flue pipes except type "B". Type "B" flue clearance is listed by U.L.

NOTE — A clearance of at least 30 inches should be provided at the front of the unit for combustion air and servicing.

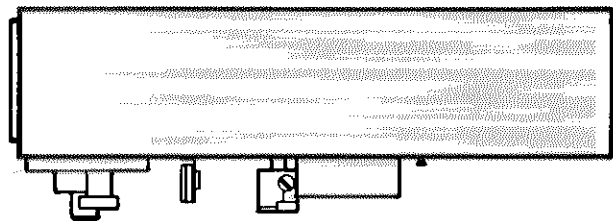
NOTE — Air for combustion and ventilation must conform to the methods outlined in American National Standard (ANSI-Z223.1) National Fuel Gas Code.

†The areas adjacent to the combustion air opening must be covered with fireproof board or sheet metal extending a minimum of 12 inches from the furnace.

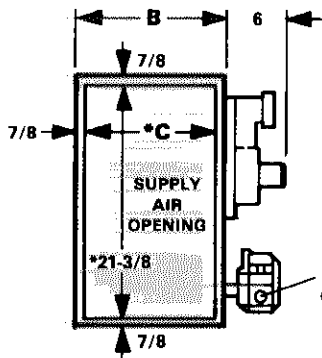
**8 inches with drafthood on front of furnace.
18 inches with drafthood on back of furnace.

DIMENSIONS (inches)

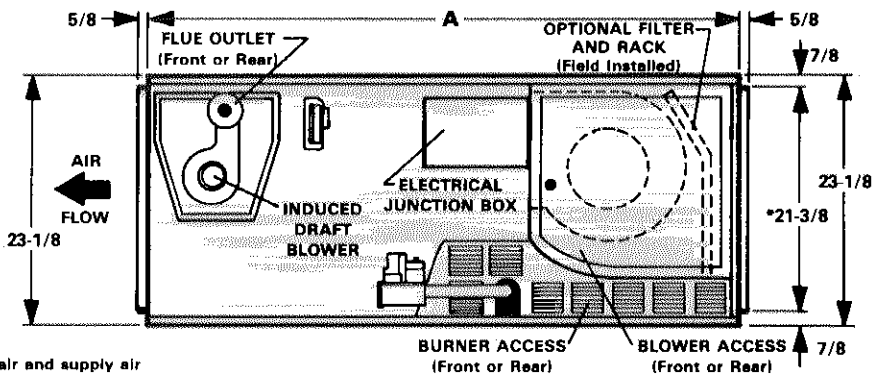
NOTE — Flue outlet and controls may be used on either side of unit.



TOP VIEW



DISCHARGE END



FRONT VIEW

*Return air and supply air opening are same size

Model No.	A	B	C
GS16Q3-50			
GS16Q3-75	54	13-1/2	11-5/8
GS16Q3/4-100	54	17	15-1/8
GS16Q4/5-125	56	20-1/2	18-5/8

BLOWER DATA

GS16Q3-50 BLOWER PERFORMANCE

External Pressure (in. wg.)	Air Volume (cfm) @ Various Speeds		
	High	Medium	Low
.10	1460	1090	800
.20	1410	1070	790
.30	1340	1055	780
.40	1290	1025	765
.50	1220	990	740
.60	1150	950	710
.70	1070	895	670

NOTE — All cfm is measured external to furnace. Filter resistance not included.

GS16Q3-75 BLOWER PERFORMANCE

External Pressure (in. wg.)	Air Volume (cfm) @ Various Speeds		
	High	Medium	Low
.10	1640	1200	860
.20	1590	1200	885
.30	1535	1180	905
.40	1470	1160	910
.50	1410	1130	895
.60	1335	1085	865
.70	1250	1025	825

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

GS16Q3/4-100 BLOWER PERFORMANCE

External Pressure (in. wg.)	Air Volume (cfm) @ Various Speeds		
	High	Medium	Low
.10	1910	1485	1170
.20	1850	1405	1095
.30	1800	1400	1095
.40	1740	1380	1090
.50	1655	1340	1075
.60	1580	1280	1040
.70	1480	1205	1040

NOTE — All cfm is measured external to furnace. Filter resistance not included.

GS16Q4/5-125 BLOWER PERFORMANCE

External Pressure (in. wg.)	Air Volume (cfm) @ Various Speeds		
	High	Medium	Low
.10	2270	1880	1540
.20	2220	1860	1530
.30	2150	1830	1515
.40	2080	1795	1490
.50	2010	1750	1455
.60	1935	1690	1405
.70	1855	1610	1360

NOTE — All cfm is measured external to furnace. Filter resistance not included.