



G20RE and G20RXE WhisperHeat™ DOWN-FLO GAS FURNACES

*78.0% A.F.U.E.

50,000 to 150,000 Btuh Input

Add-On Cooling — 2 thru 5 Nominal Tons

*Isolated Combustion System rating for Non-Weatherized Furnaces

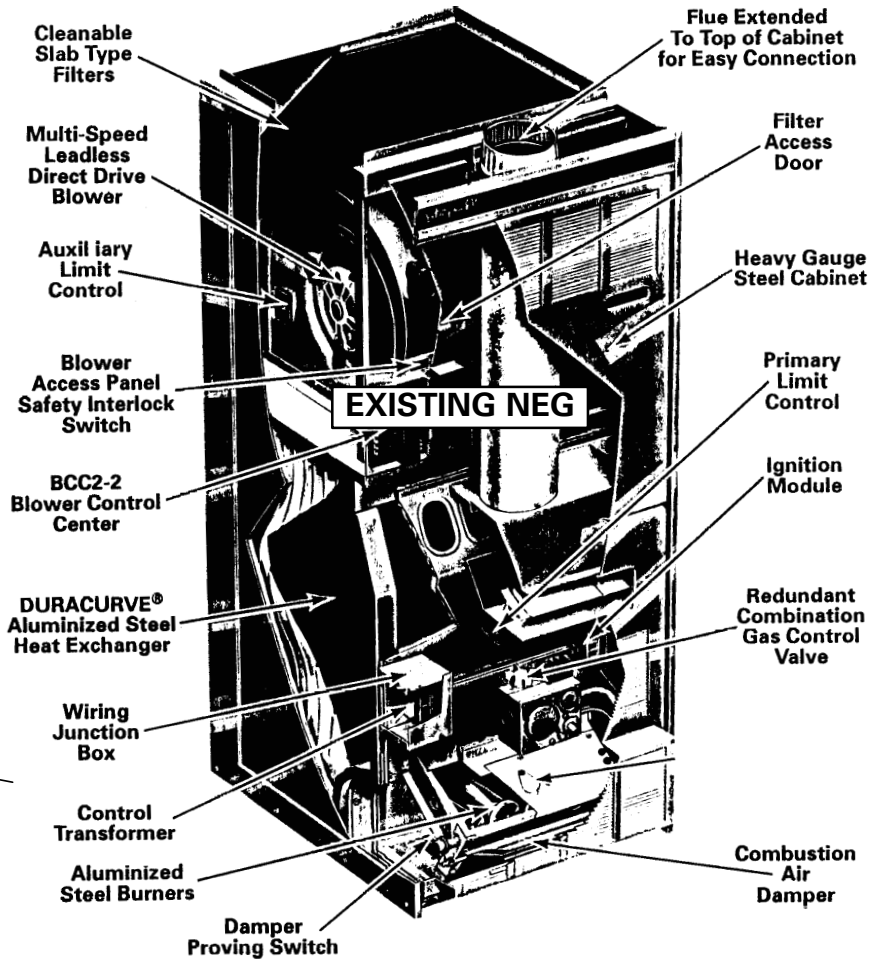
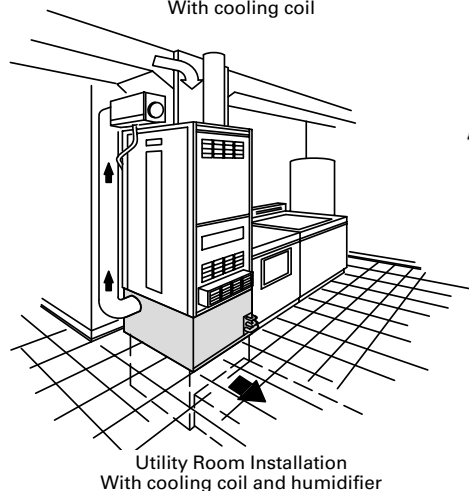
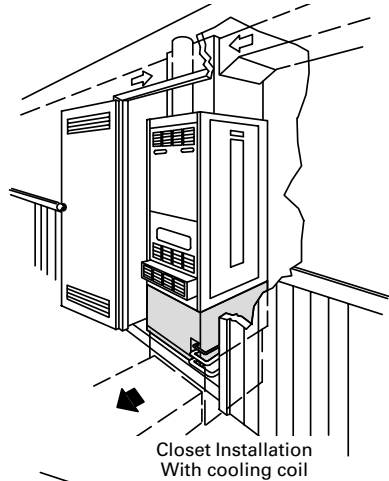
G20RE/ G20RXE

Bulletin #480112

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Supersedes May 1991

Typical Applications

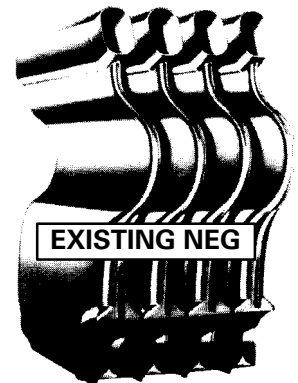


Applications — G20RE and G20RXE series gas fired furnaces include eight models with input capacities of 50,000, 75,000, 100,000, 125,000 and 150,000 Btuh and energy efficiencies (AFUE) of 78.0%. G20RE models are available with either natural gas or LPG. G20RXE models are available with natural gas only. Down-flo furnaces are designed for installations with the distribution duct work installed under the floor or tunneled into a concrete slab floor. Units can be installed in a family or recreation room, utility room or closet.

Approvals — Units are certified by A.G.A. Laboratories and ratings are certified by GAMA. Units have been rated and tested in the Lennox Research Laboratory according to DOE test procedures and FTC labeling regulations. G20RXE models meet California Nitrogen Oxides (NO_x) Standards and California Seasonal Efficiency requirements. Blower data is from unit tests conducted in the Lennox Laboratory air test chamber.

Equipment Warranty — "DURACURVE" Aluminized Steel Heat Exchangers have a limited warranty for a full twenty 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.

Lennox DURACURVE® Aluminized Steel Heat Exchanger — Lennox developed heat exchanger eliminates fatigue failure, ticking, resonance and cleanability problems. In the unique design of this heat exchanger the sides of the clam section form a flue restriction zone comprised of two concentric cylinders. As the sides grow, they expand and move, but in the same direction and at the same rate. The result is perfect combustion, proper venting and absolute freedom of movement for the metal. Design also results in high input to heat surface ratio, low resistance to air travel, reducing blower motor horsepower requirements and ease of cleaning. Heavy gauge aluminized steel construction provides long service life. Compact size of heat exchanger permits low overall design of furnace cabinet and smooth lines give minimum resistance to air travel. Laboratory life cycle testing proves long life of the heat exchanger.



FEATURES

Aluminized Steel Burners — Each burner has four rows of practically continuous ports which result in quiet and clean combustion. A crossover igniter of actual burner ports, perpendicular to the main burner, carries a positive flame from burner to burner to achieve quiet and sure ignition. "X" models have stainless steel NO_x rods.

Electronic Pilot Ignition — Solid-state electronic spark igniter provides positive ignition of pilot burner on each operating cycle. Pilot gas is ignited and burns during each running cycle (intermittent pilot) of the furnace. Main burners and pilot gas are extinguished during the off cycle. This system permits main gas valve to open only when the pilot burner is proven to be lit. Should a loss of flame occur, the main valve closes, shutting down the unit. Pilot is a fully automatic operation on demand for heat. Also features Watchguard circuit. Solid-state control provides automatic reset of ignition controls after one hour of continuous thermostat demand after unit lockout.

Automatic Gas Control — Silent operating gas controls provide 100% safety shut off. 24 volt redundant combination gas control valve combines automatic safety pilot, manual shut off knob (On-Off), pilot filtration, automatic electric valve (dual) 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 off cycle.

Rugged Cabinet — Constructed of heavy gauge cold rolled steel. Cabinet is subject to five station metal wash process resulting in a perfect bonding surface for a paint finish of baked-on enamel. The paint solution and metal are given opposite electrical charges resulting in positive adhesion and even coverage of the paint to the metal surfaces. Cabinet surface temperatures are low due to interior metal liners on each side of cabinet and foil faced fiberglass insulation on vestibule panel, side panels and on back panel. Complete service access is accomplished by removing furnace and blower compartment doors and access panels. Safety interlock switch located on the blower vestibule panel automatically shuts off power to the unit when filter access door is removed. Gas piping and electrical inlet knockouts are provided in both sides of the cabinet. Return air opening is flanged for ease of duct connection. Supply air opening matches the supply air opening in add-on Lennox down-flo evaporator coils.

Combustion Air Damper — Damper is factory installed in the aluminized steel burner box extension of the heat exchanger. Energy saving damper closes off combustion air flow through the heat exchanger during burner off cycle to prevent loss of heated air up the flue. Heavy gauge aluminized steel damper is gasketed for tight seal and rotates smoothly in nylon bearings. Equipped with a heavy duty synchronous spring return damper motor. Removable top on burner box allows access into the burner area for servicing and field conversion to LPG. Damper proving switch confirms that damper is open before allowing main gas valve to open.

Flame Rollout Switch — Manual reset switch is furnished as standard and is factory installed on the burner box. Switch prevents unit operation in the event combustion products passage through the flueway is reduced or blocked.

Blocked Safety Shutoff Sensor — Manual reset temperature sensor prevents unit operation in case of flue blockage and meets ANSI requirements. Sensor is furnished as standard and is factory installed on the draft hood.

Limit Controls — Factory installed and accurately located limit controls (dual) have fixed temperature settings and are located in furnace and blower sections. Protects unit in case of abnormal operating conditions.

BCC2-2 Blower Control Center — Furnished and factory installed on blower vestibule panel. Solid-state board contains all necessary controls and relays to operate furnace. Fan control consists of adjustable blower timed-off delay (90 to 330 seconds) and fixed blower timed-on delay (45 seconds). For air-conditioning applications, blower is automatically energized on thermostat demand for cooling. Provisions have been made for additional wiring connections required for power humidifiers and electronic air cleaners. Also included is a low voltage terminal strip for thermostat connections.

Wiring Junction Box — Power supply connections are made at the wiring junction box which is located on the furnace vestibule panel. Box contains control transformer.

Transformer — 24 volt control transformer is furnished as standard equipment and is factory installed in wiring junction box. Transformer has fuse wired in series for added protection.

Powerful Blowers — Units are equipped with quiet multi-speed direct drive blowers. Each blower assembly is statically and dynamically balanced. Multiple-speed leadless motor is resiliently mounted. A choice of blower speeds is available on each blower. See blower performance charts.

Cleanable Air Filters — Washable or vacuum cleanable frame type filters are furnished as standard. Polyurethane media is coated with oil for increased efficiency. Factory installed filter rack is furnished for easy filter replacement.

OPTIONAL ACCESSORIES (Must Be Ordered Extra)

Continuous Low Speed Blower Kit (Optional) — Field installed kit LB-63646A (67H91) is available to provide continuous low speed blower operation. Kit includes switch and all necessary wiring. Kit is not furnished and must be ordered extra. Not used if Twinning Kit is used.

Furnace Twinning Kit (Optional) — Field installed kits are available to operate two furnaces simultaneously. Two kits are available — Twinning Kit for Continuous Low Speed Blower LB-63093C (35J93) or Twinning Kit for Non-Continuous Low Speed Blower LB-63093B (64H88) Kits consists of heavy gauge steel control box and two auxiliary limit controls. Control box has electrical inlet knockouts and contains low voltage and high voltage terminal strips, blower control relay, heat relays, door interlock relay and 24 volt control transformer. All controls are factory installed and wired. Limit controls are field installed in each furnace. Holes for mounting control box are provided. Box may be field installed in any convenient location adjacent to or on one of the furnaces.

Down-flo Additive Base (Optional) — Additive base is required for heating only units installed on combustible floors. Base is not furnished and must be ordered extra for field installation. See specifications table. Not required in add-on cooling applications.

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 specifications table for order number. Not available for "X" models.

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

SPECIFICATIONS

Model No.	G20RQ2/3E-50 ●G20RQ2/3XE-50	G20RQ3E-75 ●G20RQ3XE-75	G20RQ4E-75 ●G20RQ4XE-75	G20RQ3/4E-100 ●G20RQ3/4XE-100
Input Btuh	50,000	75,000	75,000	100,000
Output Btuh	40,000	58,000	59,000	79,000
*A.F.U.E.	78.0%	78.0%	78.0%	78.0%
California Seasonal Efficiency	72.1%	74.5%	72.7%	74.4%
Flue size connection (in. diameter)	4 round	4 round	4 round	5 oval
Temperature rise range (°F)	20-50	50-80	30-60	50-80
High static certified by A.G.A. (in wg.)	0.50	0.50	0.50	0.50
Gas Piping Size I.P.S. (in.)	Natural	1/2	1/2	1/2
	**LPG	1/2	1/2	1/2
Blower wheel nominal diameter x width (in.)	10 x 8	10 x 8	11 x 9	11 x 9
Blower motor hp	1/3	1/3	1/2	1/2
Number and size of filters (in.)	(2) 20 x 10 x 1	(2) 20 x 10 x 1	(2) 20 x 12 x 1	(2) 20 x 12 x 1
Tons of cooling that can be added	2, 2-1/2 or 3	2, 2-1/2 or 3	3, 3-1/2 or 4	3, 3-1/2 or 4
Shipping weight (lbs.)	175	191	223	243
Number of packages in shipment	1	1	1	1
Electrical characteristics	120 volts – 60 hertz – 1 phase (less than 12 amps) All models			
**LPG kit (optional)	LB-62384DD (35J90) (All non "X" Models)			
Continuous Low Speed Blower Kit (optional)	LB-63646A (67H91) (All Models)			
Twinning Kits (optional)	Non-continuous low speed	LB-63093B (64H88) (All models)		
	Continuous low speed	LB-63093C (35J93) (All models)		
Down-Flo Additive Base (optional)	Part No.	LB-80639BA (68386)		LB-80639BB (68387)
	Shipping weight (lbs.)	6		6

●Not available with LPG.

*Annual Fuel Utilization Efficiency based on D.O.E. test procedures and according to F.T.C. labeling requirements. Isolated combustion system rating for non-weatherized furnaces.

**LPG kit must be ordered extra for field changeover.

SPECIFICATIONS

Model No.	G20RQ5E-100 ●G20RQ5XE-100	G20RQ3E-125 ●G20RQ3XE-125	G20RQ4/5E-125 ●G20RQ4/5XE-125	G20RQ4/5E-150
Input Btuh	100,000	125,000	125,000	150,000
Output Btuh	77,000	98,000	99,000	118,000
*A.F.U.E.	78.0%	78.0%	78.0%	78.0%
California Seasonal Efficiency	74.6%	75.5%	74.3%	74.6%
Flue size connection (in. diameter)	5 oval	6 oval	6 oval	6 oval
Temperature rise range (°F)	40-70	70-100	50-80	55-85
High static certified by A.G.A. (in wg.)	0.50	0.50	0.50	0.50
Gas Piping Size I.P.S. (in.)	Natural	1/2	1/2	1/2
	**LPG	1/2	1/2	1/2
Blower wheel nominal diameter x width (in.)	12 x 12	10 x 8	12 x 12	12 x 12
Blower motor hp	3/4	1/3	3/4	3/4
Number and size of filters (in.)	(2) 20 x 14 x 1	(2) 20 x 14 x 1	(2) 20 x 14 x 1	(2) 20 x 16 x 1
Tons of cooling that can be added	4 or 5	2, 2-1/2 or 3	4 or 5	4 or 5
Shipping weight (lbs.)	246	261	276	310
Number of packages in shipment	1	1	1	1
Electrical characteristics	120 volts – 60 hertz – 1 phase (less than 12 amps) All models			
**LPG kit (optional)	LB-62384DD (35J90) (All non "X" Models)			
Continuous Low Speed Blower Kit (Optional)	LB-63646A (67H91) (All Models)			
Twinning Kits (optional)	Non-continuous low speed	LB-63093B (64H88) (All models)		
	Continuous low speed	LB-63093C (35J93) (All models)		
Down-Flo Additive Base (optional)	Part No.	LB-80639BC (69252)		LB-80639BD (69253)
	Shipping weight (lbs.)	8		9

●Not available with LPG.

*Annual Fuel Utilization Efficiency based on D.O.E. test procedures and according to F.T.C. labeling requirements. Isolated combustion system rating for non-weatherized furnaces.

**LPG kit must be ordered extra for field changeover.

BLOWER DATA

G20RQ2/3(X)E-50 BLOWER PERFORMANCE

External Static Pressure (in. wg)	Air Volume (cfm) @ Various Speeds		
	High	Medium	Low
0	1660	1420	1155
.05	1630	1400	1140
.10	1600	1380	1125
.15	1560	1350	1115
.20	1520	1320	1100
.25	1460	1295	1080
.30	1400	1265	1055
.40	1290	1170	1000
.50	1205	1065	885
.60	1045	905	800
.70	860	780	675
.80	710	620	550

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

G20RQ3(X)E-75 BLOWER PERFORMANCE

External Static Pressure (in. wg)	Air Volume (cfm) @ Various Speeds			
	High	Med-High	Med-Low	Low
0	1340	1250	1065	880
.05	1310	1220	1050	875
.10	1280	1195	1030	865
.15	1250	1165	1010	855
.20	1220	1135	990	840
.25	1195	1105	965	825
.30	1165	1075	940	805
.40	1070	1000	880	755
.50	990	915	815	700
.60	895	835	750	645
.70	815	760	665	565
.80	735	660	575	470

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

G20RQ4(X)E-75 BLOWER PERFORMANCE

External Static Pressure (in. wg)	Air Volume (cfm) @ Various Speeds			
	High	Med-High	Med-Low	Low
0	1740	1340	1085	860
.05	1715	1340	1095	875
.10	1695	1340	1105	885
.15	1670	1345	1095	885
.20	1645	1345	1085	885
.25	1610	1340	1080	885
.30	1575	1335	1075	885
.40	1520	1310	1080	875
.50	1450	1270	1065	865
.60	1390	1220	1030	840
.70	1310	1145	980	800
.80	1210	1060	920	750

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

G20RQ3/4(X)E-100 BLOWER PERFORMANCE

External Static Pressure (in. wg)	Air Volume (cfm) @ Various Speeds			
	High	Med-High	Med-Low	Low
0	1805	1485	1300	1005
.05	1780	1470	1290	995
.10	1755	1455	1280	985
.15	1720	1440	1265	965
.20	1685	1425	1245	945
.25	1650	1400	1215	925
.30	1615	1370	1190	910
.40	1515	1315	1140	870
.50	1430	1250	1085	825
.60	1330	1155	1025	765
.70	1225	1065	920	700
.80	1100	935	840	630

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

G20RQ5(X)E-100 BLOWER PERFORMANCE

External Static Pressure (in. wg)	Air Volume (cfm) @ Various Speeds				
	High	Med-High	Medium	Med-Low	Low
0	2510	2335	2115	1910	1690
.05	2470	2300	2085	1880	1665
.10	2430	2260	2055	1855	1645
.15	2390	2230	2020	1820	1610
.20	2350	2200	1980	1790	1580
.25	2310	2165	1940	1740	1535
.30	2270	2125	1905	1690	1490
.40	2175	2030	1825	1625	1400
.50	2080	1940	1730	1535	1330
.60	1990	1835	1640	1450	1245
.70	1880	1735	1545	1350	1155
.80	1785	1635	1470	1280	1075

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

G20RQ3(X)E-125 BLOWER PERFORMANCE

External Static Pressure (in. wg)	Air Volume (cfm) @ Various Speeds		
	High	Medium	Low
0	1640	1345	1060
.05	1610	1325	1055
.10	1575	1305	1055
.15	1535	1280	1040
.20	1495	1255	1025
.25	1455	1220	1005
.30	1415	1185	985
.40	1330	1095	890
.50	1195	970	785
.60	970	835	690
.70	850	715	575
.80	650	545	---

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

BLOWER DATA

G20RQ4/5(X)E-125 BLOWER PERFORMANCE

External Static Pressure (in. wg)	Air Volume (cfm) @ Various Speeds				
	High	Med-High	Medium	Med-Low	Low
0	2415	2215	1980	1770	1575
.05	2390	2180	1960	1750	1555
.10	2360	2150	1945	1730	1535
.15	2325	2115	1915	1710	1515
.20	2290	2085	1890	1690	1495
.25	2245	2055	1860	1665	1485
.30	2195	2025	1825	1640	1475
.40	2135	1970	1775	1595	1425
.50	2050	1910	1720	1540	1385
.60	1965	1835	1685	1485	1325
.70	1905	1765	1605	1425	1260
.80	1790	1695	1545	1355	1195

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

G20RQ4/5E-150 BLOWER PERFORMANCE

External Static Pressure (in. wg)	Air Volume (cfm) @ Various Speeds				
	High	Med-High	Medium	Med-Low	Low
0	2520	2190	1995	1730	1570
.05	2515	2170	1965	1725	1550
.10	2510	2145	1940	1720	1535
.15	2475	2125	1915	1695	1510
.20	2440	2100	1890	1675	1485
.25	2410	2070	1855	1650	1460
.30	2380	2045	1820	1630	1435
.40	2320	1980	1765	1575	1385
.50	2220	1920	1705	1505	1315
.60	2150	1850	1635	1430	1245
.70	2060	1775	1545	1335	1185
.80	1945	1660	1455	1280	1130

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

A.G.A. INSTALLATION CLEARANCES

Sides	1 inch
Rear	1 inch
Top	1 inch
**Front	**6 inches
***Floor	***Combustible
●Flue	●1 inch
*Flue	*6 inches

●Type "B" vent clearances as listed by U.L.

*This is clearance to all flue pipes except type "B".

**Measured from the draft hood relief opening.

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

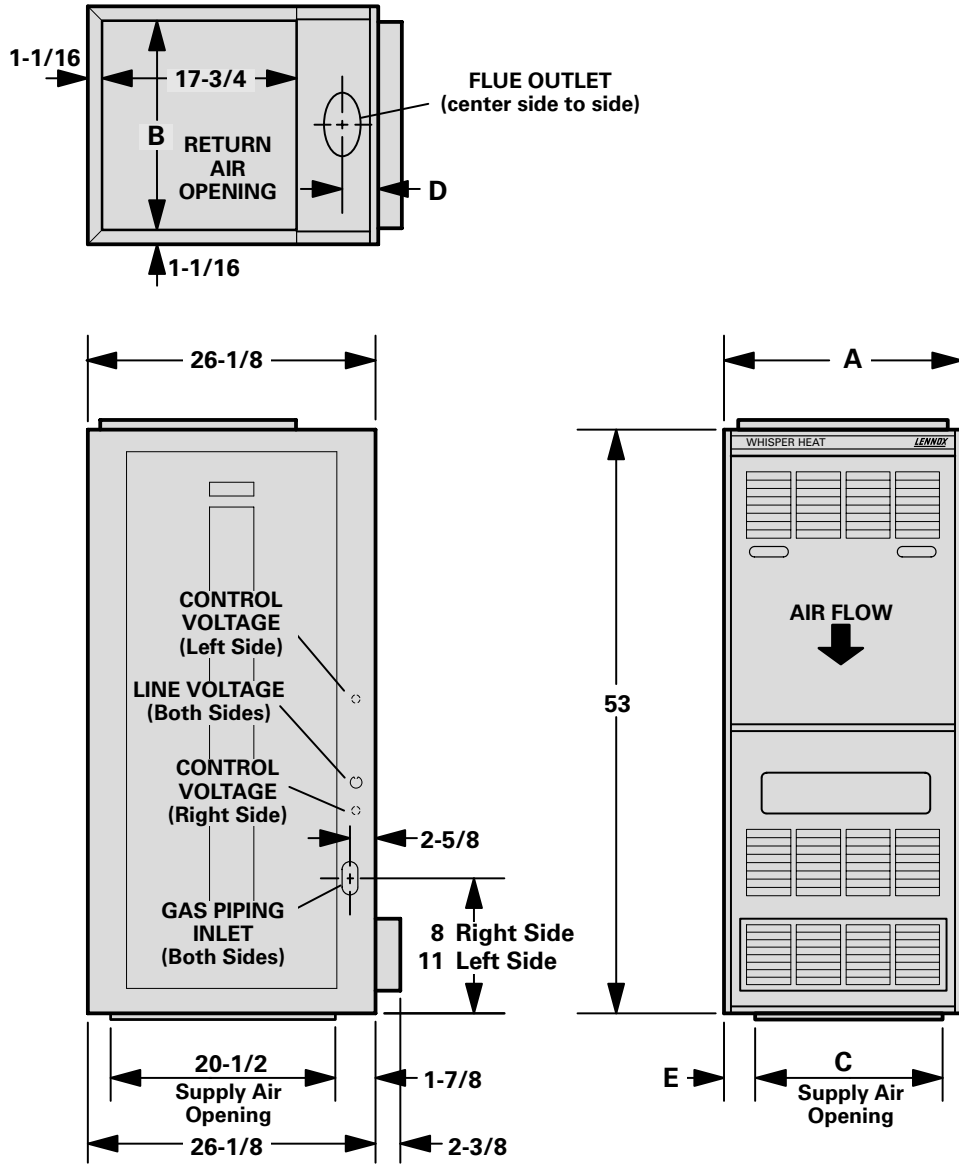
***Clearance for installation on combustible floor if optional additive base is installed between the furnace and the combustible floor. Not required in add-on cooling coil applications if installed in accordance with local codes or National Fuel Gas Code ANSI-Z223.1.

A.G.A. HIGH ALTITUDE DERATE

A.G.A. certified units must be derated when installed at an elevation of more than 2000 feet above sea level. If unit is installed at an altitude higher than 2000 feet, the unit must be derated 4% for every 1000 feet above sea level. Thus, at an altitude of 4000 feet, the unit would require a derate of 16%.

NOTE — This is the only permissible derate for the units.

DIMENSIONS (inches)



Model No.	A	B	C	D	E
G20RQ2/3(X)E-50 G20RQ3(X)E-75	16-1/4	14-1/8	12	3-1/8	2-1/8
G20RQ4(X)E-75	21-1/4	19-1/8	17	3-1/8	2-1/8
G20RQ3/4(X)E-100	21-1/4	19-1/8	17	3-1/4	2-1/8
G20RQ5(X)E-100 G20RQ3(X)E-125 G20RQ4/5(X)E-125	26-1/4	24-1/8	20	3-5/16	3-1/8
G20RQ4/5E-150	31-1/4	29-1/8	24-1/4	3-1/2	3-1/2

NOTE — When unit is installed on a combustible floor, an additive base is required. This is optional equipment and must be ordered extra. When using additive base make opening in floor 2-5/8 inches larger (front to rear and side to side) than furnace supply air opening.