LENNOX

ENGINEERING DATA

GAS FURNACES

GHR32V

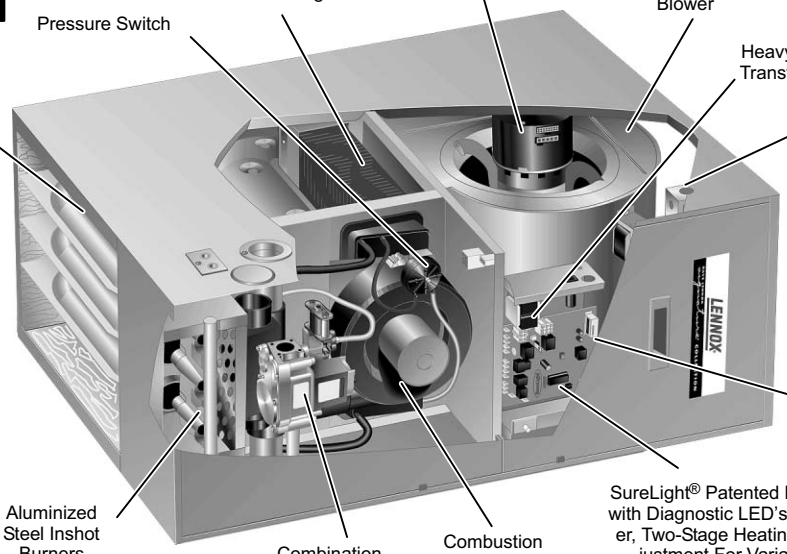
DAVE LENNOX SIGNATURE™ COLLECTION

Horizontal / Down-Flow
Two-Stage Heat - Variable Speed Blower
AFUE - 92.7%
Input - 72,000 and 100,000 Btuh (21.1 and 29.3 kW)
Add-on Cooling - 2 to 5 Tons (7.0 to 17.6 kW)

Bulletin No. 210271
January 2003
Supersedes November 2002

REGISTERED QUALITY SYSTEMS

Down-Flow Configuration



CONTENTS

MODEL NUMBER IDENTIFICATION

GHR 32 V 3 - 75 - 1

Unit Type
GHR - Horizontal/Down-Flow Gas Furnace

Series
32 - 90% Two-Stage Heating

Blower Motor
V - Variable Speed

Nominal Add-On Cooling Capacity
3 - 2 to 3.5 tons (7.0 to 12.3 kW)
5 - 3.5 to 5 tons (12.3 to 17.6 kW)

Nominal Gas Heat Input
75 - 72,000 Btuh (21.1 kW)
100 - 100,000 Btuh (29.3 kW)

Minor Revision Number

FEATURES

Applications

- Two models (natural gas or LPG/propane).
- High fire input capacities of 72,000 and 100,000 Btuh (21.1 and 35.2 kW).
- Energy efficiencies (AFUE) of 90%.
- Utility room, alcove, closet, crawl space or attic installation.
- Lennox add-on evaporator coils, electronic air cleaners and power humidifiers can be added to furnace.
- Shipped factory assembled with all controls installed and wired.
- Shipped for down-flow and horizontal left hand air discharge, easily converted to horizontal right hand air discharge.
- Each unit factory test operated to insure proper operation.

FEATURES

Equipment Warranty
- "DuralokPlus™", ArmorTuf™ Aluminized Steel Heat Exchangers - limited twenty year warranty.
- All other covered components - limited five years (residential applications), one year (non-residential applications).
- Refer to Lennox Equipment Limited Warranty certificate included with equipment for details.

Approvals
- Units certified by CSA International.
- Ratings are certified by GAMA.
- Units tested and rated according to U.S. DOE test procedures and FTC labeling regulations.
- Approved by California Energy Commission and meet California Seasonal Efficiency requirements and California Nitrogen Oxides (NO_x) Standards.
- Blower data from unit tests conducted in Lennox Laboratory air test chamber.
- Units approved for conventional or horizontal venting.
- Manufactured in accordance with ISO 9002 quality standards.
- ENERGY STAR® certified units are designed to use less energy, help save money on utility bills, and help protect the environment.

Variable Speed Blower
- Variable-speed, direct drive blower.
- Each blower assembly statically and dynamically balanced.
- Change in blower speed is easily accomplished by simple DIP switch settings on SureLight® Integrated Control Board.
- A selection of blower motor dehumidification profiles is available during cooling mode on the SureLight® Integrated Control Board.
- See Blower Performance tables.

VSM Blower Motor
- Variable speed motor (VSM) maintains specified air volume from 0 though 0.80 in. w.g. (0 through 200 Pa) static range.
- Gradual acceleration and deceleration of variable speed blower motor when starting and stopping over a specific time frame results in extremely quiet operation.
- Motor is controlled by SureLight® Integrated Control Board.
- Motor is resiliently mounted.
- When units are used with Harmony II™ Zone Control System, blower motor operates between low and high speed settings depending on number of zones operating.

Lennox DuralokPlus™ Aluminized Steel Primary and Stainless Steel Secondary Heat Exchanger Assembly
- Heavy-gauge, ArmorTuf™ aluminized steel primary heat exchanger.
- Crimped seam clamshell type design.
- Minimum resistance to air flow.
- Secondary stainless steel condenser coil heat exchanger with aluminum fins fitted to stainless steel tubes.
- Heat exchanger assembly has been laboratory life cycle tested.
- Combined flue vent / condensate drain header box.
- Secondary condenser coil factory tested for leaks.

Inshot Burners
- Aluminized steel inshot burners.
- Burners completely enclosed.
- Heavy-gauge steel burner box.
- Burner sight glass furnished on burner box.
- Burner assembly removeable from unit.

Intake, Exhaust and Condensate Connections
- Connects to either side of unit.
- Inlet air pipe connects with no-hub connector clamp (provided).
- Exhaust pipe connects to outside of cabinet.
- Quick connect, low profile condensate trap provided for field installation.
- Condensate hose re-routing not required if unit position changed.

Two-Stage Gas Control Valve
- 24 volt redundant combination two-stage gas control valve combines manual shut off valve (On-Off), automatic electric valve (dual) and gas pressure regulation into a compact combination control.

Two-Speed Combustion Air Inducer
- Shaded pole, heavy-duty, two-speed combustion air inducer prepurges heat exchanger and safely vents flue products.
- Controlled by SureLight® Integrated Control Board for a 15 second prepurge cycle and a 5 second post-purge cycle.
- Pressure switch proves blower operation before allowing gas valve to open.
- Blower operates only during heating cycle.

Limit Controls
- Automatic reset, primary and secondary limits are accurately located.
- Primary limit factory installed on vestibule panel, secondary limit factory installed on blower housing.

Flame Rollout Switch
- Manual reset.
- Factory installed on top of burner box.

Field Wiring Make-up Box
- Furnished for line voltage wiring.
- Box may be installed internally or externally on either side of furnace on GHR32V5-100 models.
- Box may be installed externally on either side of furnace or internally on left side of furnace on GHR32V3-75 models.
- Contains plug-in connection for power supply wiring, wire for 120 volt accessory connection and all necessary hardware for installation.

FEATURES

24 Volt Transformer
- Furnished and factory installed in control box.
- 40VA transformer has circuit breaker wired in series.

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.
- No electrical noise.

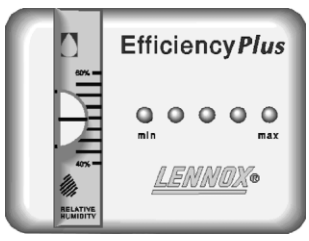
SureLight® Integrated Control Board
- Solid-state board contains all necessary controls and relays to operate furnace.
- Adaptive technology of ignition control board continuously monitors and adjusts the ignitor power to operate at minimum igniter temperature required for ignition, prolonging ignitor 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.
- In heating mode, DIP switches 1 and 2 are set to adjust blower time-off delay for either 60, 90 (default), 120 or 180 seconds. The blower time-on delay is fixed at 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.
- Factory installed behind blower access door.
- Control allows two different modes of operation by selecting jumper pin settings:
  1. Two-stage operation controlled from two-stage thermostat.
  2. Two-stage operation controlled from single-stage thermostat with timed-on second stage.
- Blower control interfaces VSM motor with thermostat and optional CCB1 humidity control.
- SureLight board controls evaporator humidity by controlling blower and compressor speed on two-speed outdoor units when used with CCB1 humidity control.
- Four blower speeds are available. Simple DIP switch (switches 5, 6, 11 and 12) settings control blower air volume.
  COOL Low Speed - for first stage cooling with two-speed heat pump and condensing units.
  COOL High Speed - for single stage cooling or high speed cooling with two-speed heat pump and condensing units.
  HEAT Low Speed - for first stage heating.
  HEAT High Speed - for second stage heating.
- DIP switch (switches 7 and 8) settings allow normal or - (minus) 15% lower motor speed selection within HEAT and COOL speeds selected for fine tuning air volume.
- DIP switch (switches 9 and 10) settings allows a selection of blower motor de-humidification profiles during cooling mode.
  Option A (factory default) - Motor runs at 50% capacity for 30 seconds, then 82% capacity for approximately 7-1/2 minutes. If demand is not satisfied, motor runs at 100% capacity until demand is met. Once demand is met, motor runs at 50% capacity for 30 seconds, then ramps down to stop.
  Option B - Motor runs at 50% capacity for 30 seconds, then 82% of capacity for approximately 7-1/2 minutes. If demand is not satisfied, motor runs at 100% capacity until demand is satisfied. Once demand is met, motor ramps down to stop.
  Option C - Motor runs at 82% of capacity for approximately 7-1/2 minutes, then 100% capacity (if needed) until demand is satisfied. Once demand is met, motor ramps down to stop.
  Option D - Motor runs at 100% of capacity until demand met. Once demand is met, motor ramps down to stop.
- Control board has six LED's. DS1 and DS2 LED's indicate status and aid in troubleshooting the ignition control functions of the board. CFM, ON/OFF, HEAT and HI/LOW LED's indicate status and aid in troubleshooting the blower functions.
- Control is factory installed in the unit control box.

Cabinet
- Low-profile, narrow width cabinet allows easy installation.
- Heavy-gauge cold rolled steel constructed.
- Baked-on enamel paint finish.
- Fully insulated cabinet with complete service access and easy blower removal.
- Safety interlock switch automatically shuts off power to unit when blower compartment access door is removed.
- Gas piping and electrical inlets are provided in both sides of cabinet.

Filter
- Washable or vacuum cleanable polyurethane frame type air filter.
- Secured by one rear filter clip and two side filter clips, easily removed for servicing by pushing up filter clips on each side of cabinet.
- See Specifications table.

OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

CCB1 EfficiencyPlus™ Humidity Control



- Electronic control installs next to room thermostat, allows selection of desired indoor humidity level during cooling mode.
- During heating operation, control is inoperable.
- CCB1 controls indoor humidity by changing indoor blower speed and compressor speed (two speed outdoor units only).
- Humidity level is adjusted with vertical set point slide on scale of 40% thru 60%, 50% recommended setting.
- Five indicator LED's (MIN - MAX) in a bar graph configuration indicate difference in actual relative humidity and set point, indicates demand imposed on system equipment, more lights on, the longer equipment will operate to obtain desired humidity level. No lights on, humidity is at or below set point.

OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

Condensate Drain Heat Cable Kits
- Self-limiting wattage heat cable prevents condensate drain from freezing in unconditioned areas.
- Heat cable kits are available in 6, 24, or 50 ft. (1.8, 7.3, or 15.2 m) lengths
- 1/2 in. x 66 ft. (13 mm x 20 m) fiberglass and 2 in. x 60 ft. (51 mm x 18 m) aluminum foil Heat Cable Tape is available.

Down-flow Additive Base
- Required for heating only units installed on combustible floors.
- Not required in add-on cooling applications.
- See Specifications table for order number.

High Altitude Pressure Switch kit
- Required on units for proper second-stage operation at altitudes over 4500 ft. (1372 m).
- See Specifications table and High Altitude Information table for applications and catalog number.

Horizontal Support Frame Kit
- Provides support of unit in horizontal applications.
- Consists of (2) 1 x 1-1/2 x 32-5/8 in. (25 x 38 x 829 mm) and (2) 1 x 3 x 53-7/8 in. (25 x 76 x 1368 mm) painted, heavy-gauge cold-rolled steel support channels with assembly and suspending holes.
- Bolts and nuts furnished for field assembly.
- Suspending rods must be field provided.
- See Specifications table.

LPG/Propane Conversion Kit
- Required for field changeover from natural gas.
- See Specifications table for order number.

Termination Kit - Concentric
- Facilitates installation of combustion air intake pipe and flue exhaust pipe.
- 1-1/2 or 2 inch (38 or 51 mm) kit contains concentric termination assembly, mounting clamp, roof flashing, reducer bushing and 45 degree elbow.
- Kit requires single hole penetration of roof or wall for installation.
- AGA/CGA certified.
- See Specifications table and dimension drawings.

Termination Kit - Roof
- Facilitates installation of combustion air intake pipe and flue exhaust pipe.
- 2 or 3 inch (51 or 76 mm) kit contains two neoprene rubber roof flashings.
- See Specifications table and dimension drawings.
- Refer to venting tables in this bulletin to determine pipe size needed and proper termination kit required.

Termination Kits - Wall Assembly
- Facilitates installation of combustion air intake pipe and flue exhaust pipe.
- Refer to venting tables in this bulletin to determine pipe size needed and proper termination kit required.
- See Specifications table and dimension drawings.

Close Couple
- 2 or 3 inch (51 or 76 mm) kit consists of close-couple, side-by-side PVC piping with galvanized steel wall cover plate for sealing and isolating piping penetration of the wall.
- Piping spacing and length is sized for proper wall installations.
- CSA certified.

Close Couple WTK
- 2 or 3 inch (51 or 76 mm) kit contains one insulated faceplate, one insulated exhaust pipe, elbow and fittings.

Extension Riser WTKX
- 2 inch (51 mm) is used where extended grade line clearance is required.
- Includes 3 ft. (1.0m) extension riser containing both vent lines (exhaust vent insulated) and wall securing bracket.
- See dimension drawings.

Wall Ring
- 2 inch (51 mm) kit contains 2 stainless steel outside seal caps, 2 galvanized steel inside seal caps, 4 seal rings for the caps and 18 inch (457 mm) insulation sleeve for sealing and isolating intake and exhaust piping penetration of wall.
- Maintain a maximum of 6 inches (152 mm) between the inlet and outlet openings in the installation of the pipes.
- See dimension drawings.

Thermostat
- See Thermostats bulletin in Thermostats and Controls section and Lennox Price Book for a complete list of thermostats.

INSTALLATION CLEARANCES

DOWN-FLOW		
Sides	0 inches	0 mm
Rear	0 inches	0 mm
Top	1 inch	25 mm
*Front	*0 inches	*0 mm
Floor	†Combustible	†Combustible
Exhaust Pipe	0 inches	0 mm
Exhaust Pipe (service)	6 inches	152 mm
Service Clearance (front)	30 inches	762 mm
Service Clearance (condensate side)	4 inches	102 mm

†Clearance for installation on combustible floor if optional additive base is installed between furnace and combustible floor. Not required in add-on cooling applications if installed in accordance with local codes or National Fuel Gas Code ANSI-Z223.1.
*Front clearance for alcove installations is 30 inches (762 mm).

HORIZONTAL		
Sides	0 inches	0 mm
Rear	0 inches	0 mm
Top	0 inches	0 mm
*Front	*0 inches	*0 mm
Floor	Combustible	Combustible
Exhaust Pipe	0 inches	0 mm
Exhaust Pipe (service)	6 inches	152 mm
Service Clearance (front)	30 inches	762 mm
Service Clearance (condensate side)	4 inches	102 mm

*Front clearance for alcove installations is 30 inches (762 mm).

NOTE—In the U.S. flue sizing must conform to the methods outlined in current GAMA/ A.G.A. 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 CAN/CGA-149.1 and CAN/CGA-149.2.
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 CAN/CGA-149.1 and CAN/CGA-149.2 “Installation Code for Gas Burning Appliances”.

SPECIFICATIONS

Gas Heating Performance	**Model No.**	**GHR32V3-75**	**GHR32V5-100**
	Input Btuh (kW) High	72,000 (21.1)	100,000 (29.3)
	Input Btuh (kW) Low	51,000 (14.9)	68,000 (19.9)
	Output Btuh (kW) High	67,000 (19.6)	95,000 (27.8)
	Output Btuh (kW) Low	48,000 (14.1)	65,000 (19.0)
	[1] AFUE	92.7%	92.7%
	[2] California Seasonal Efficiency	87.6%	87.8%
	Temperature rise range - °F (°C) Low Fire	20 - 50 (11 - 28)	20 - 50 (11 - 28)
	High Fire	40 - 70 (22 - 39)	40 - 70 (22 - 39)
	High static (CSA certified) - in wg. (Pa)	.80 (200)	.80 (200)
Connections	[3] Exhaust pipe (PVC) - in. (mm) diameter	2 (51)	2 (51)
	[3] Intake pipe (PVC) - in. (mm) diameter	2 (51)	2 (51)
	Condensate drain (PVC) - in. (mm)	1/2 (12.7)	1/2 (12.7)
	Gas Piping Size I.P.S. - in. (mm)	1/2 (12.7)	1/2 (12.7)
Indoor Blower	Blower motor output - hp (W)	1/2 (373)	1 (746)
	Wheel nominal diameter x width - in.	10 x 8	11-1/2 x 9
	mm	254 x 203	292 x 229
	Add-on cooling - Tons	2 to 3.5	3.5 to 5
	kW	7.0 to 12.3	12.3 to 17.6
Filter	[4] Number and size of filters - in.	(1) 14 x 25 x 1	(1) 20 x 25 x 1
	mm	(1) 356 x 635 x 25	(1) 508 x 635 x 25
Shipping Data	Weight - lbs. (kg) 1 package	160 (73)	201 (91)
Electrical		120 volts — 60 hertz — 1 phase (less than 12 amps)	

OPTIONAL ACCESSORIES (MUST BE ORDERED EXTRA)

CCB1 EfficiencyPlus™ Humidity Control		**35H00**	**35H00**
Condensate Drain Heat Cable	6 ft. (1.8 m)	**26K68**	**26K68**
	24 ft. (7.3 m)	**26K69**	**26K69**
	50 ft. (15.2 m)	**26K70**	**26K70**
Condensate Drain Heat Cable Tape	1/2 in. (38 mm) fiberglass	**39G04**	**39G04**
	2 in. (25 mm) aluminum foil	**39G03**	**39G03**
Down-Flow Additive Base		**32K52**	**32K53**
[5] **High Altitude Pressure Switch Kit**		**67K27** (natural gas models only)	**67K27**
Horizontal Support Frame Kit - Shipping Weight		**56J18 -** 18 lbs. (8 kg)	**56J18 -** 18 lbs. (8 kg)
LPG/Propane Kit (Honeywell)		**11M57**	**11M57**
Termination Kits Concentric	1-1/2 inch (38 mm)	**60G77**	- - -
	2 inch (51 mm)	- - -	**33K97**
Termination Kits Roof	2 inch (51 mm)	**15F75**	**15F75**
	3 inch (76 mm)	**44J41**	**44J41**
Termination Kits Wall Assembly	Close Couple 2 inch (51 mm)	**22G44**	**22G44**
	3 inch (76 mm)	**44J40**	**44J40**
	Close Couple WTK 2 inch (51 mm)	**30G28**	**- - -**
	3 inch (76 mm)	**81J20**	**81J20**
	Close Couple WTKX 2 inch (51 mm) w/ 3 ft. (0.9 m) extension riser	**30G79**	**- - -**
	Wall Ring Kit 2 inch (51 mm)	**15F74**	**15F74**

[1] Annual Fuel Utilization Efficiency based on U.S. DOE test procedures and FTC labeling regulations. Isolated combustion system rating for non-weatherized furnaces.
[2] Meets California Nitrogen Oxides (NO_x) Standard and California Seasonal Efficiency requirements.
[3] Determine from venting tables proper intake and exhaust pipe size and termination kit required.
[4] Polyurethane frame type filter.
[5] Required for proper second stage operation at altitudes over 4500 ft. (1370 m).

FILTER AIR RESISTANCE

cfm	L/s	in. w.g.	Pa
0	0	0.00	0
200	95	0.0	0
400	190	0.03	5
600	285	0.04	10
800	380	0.06	15
1000	470	0.09	20
1200	565	0.12	30
1400	660	0.15	35
1600	755	0.19	45
1800	850	0.23	55
2000	945	0.27	65
2200	1040	0.33	80
2400	1130	0.38	95
2600	1225	0.44	110

BLOWER PERFORMANCE

0 THROUGH 0.80 IN. W.G. (0 THROUGH 200 PA) EXTERNAL STATIC PRESSURE RANGE

HEATING OPERATION

DIP Switch Settings	**Low Speed** - first stage heat								**High Speed** - second stage heat							
	Option 1 **Low** Switch 11 - On Switch 12 - On		**Option 2** **Medium Low** (factory default) Switch 11 - Off Switch 12 - On		**Option 3** **Medium High** Switch 11 - On Switch 12 - Off		**Option 4** **High** Switch 11 - Off Switch 12 - Off		**Option 1** **Low** Switch 11 - On Switch 12 - On		**Option 2** **Medium Low** (factory default) Switch 11 - Off Switch 12 - On		**Option 3** **Medium High** Switch 11 - On Switch 12 - Off		**Option 4** **High** Switch 11 - Off Switch 12 - Off	
	cfm	**L/s**	**cfm**	**L/s**	**cfm**	**L/s**	**cfm**	**L/s**	**cfm**	**L/s**	**cfm**	**L/s**	**cfm**	**L/s**	**cfm**	**L/s**
GHR32V3-75																
NORMAL (Factory Default) Switch 7 - Off Switch 8 - Off	945	445	1025	485	1125	530	1270	600	1080	510	1170	535	1285	605	1450	685
[1] **minus 15%** Switch 7 - Off Switch 8 - On	805	380	870	410	955	450	1080	510	920	435	995	470	1095	515	1235	580
GHR32V5-100																
NORMAL (Factory Default) Switch 7 - Off Switch 8 - Off	1100	520	1260	595	1445	680	1635	770	1640	775	1825	860	2150	1015	2315	1090
[1] **minus 15%** Switch 7 - Off Switch 8 - On	935	440	1015	480	1195	565	1355	640	1360	640	1465	690	1770	835	1905	900

COOLING OPERATION

DIP Switch Settings	**Low Speed** - first stage cooling (two stage cooling applications)								**High Speed -** second stage cooling or single stage cooling							
	Option 1 **Low** Switch 5 - On Switch 6 - On		**Option 2** **Medium Low** Switch 5 - Off Switch 6 - On		**Option 3** **Medium High** Switch 5 - On Switch 6 - Off		**Option 4** **High** (factory default) Switch 5 - Off Switch 6 - Off		**Option 1** **Low** Switch 5 - On Switch 6 - On		**Option 2** **Medium Low** Switch 5 - Off Switch 6 - On		**Option 3** **Medium High** Switch 5 - On Switch 6 - Off		**Option 4** **High** (factory default) Switch 5 - Off Switch 6 - Off	
	cfm	**L/s**	**cfm**	**L/s**	**cfm**	**L/s**	**cfm**	**L/s**	**cfm**	**L/s**	**cfm**	**L/s**	**cfm**	**L/s**	**cfm**	**L/s**
GHR32V3-75																
NORMAL (Factory Default) Switch 7 - Off Switch 8 - Off	875	415	940	445	985	465	1060	500	1070	505	1130	535	1270	600	1290	610
[1] **minus 15%** Switch 7 - Off Switch 8 - On	750	355	795	375	850	400	915	430	900	425	940	445	1055	500	1120	530
GHR32V5-100																
NORMAL (Factory Default) Switch 7 - Off Switch 8 - Off	1100	520	1260	595	1445	680	1635	770	1670	790	1960	925	2165	1020	2285	1075
[1] **minus 15%** Switch 7 - Off Switch 8 - On	935	440	1015	480	1195	565	1355	640	1335	630	1495	705	1690	800	1800	850

[1] 15% lower motor speed than NORMAL setting.

NOTE - The effect of static pressure and filter resistance is included in air volumes shown.

NOTE - Continuous Fan only speed is nonadjustable and approximately 825 cfm (390 L/s) [GHR32V3-75] or 1050 cfm (495 L/s) [GHR32V5-100].

NOTE - Lennox Harmony II™ zone control applications - MAX CFM is determined by COOL DIP switch settings with approximately 875 cfm (415 L/s) [GHR32V3-75] or 1100 cfm (520 L/s) [GHR32V5-100] for all positions.

HIGH ALTITUDE INFORMATION

No gas pressure adjustment is needed when operating from 0 to 4500 ft. (0 to 8 m). See below for correct manifold pressures for altitudes greater than 4500 ft. (1372 m) for natural gas.

FUEL	Manifold Pressure (Outlet) in. w.g. (kPa)							
	0-4500 ft. (0-1372 m) above sea level		4501-5500 ft. (1373-1676 m) above sea level		5501-6500 ft. (1677-1981 m) above sea level		6501-7500 ft. (1982-2286 m) above sea level	
	Low Fire	High Fire	Low Fire	High Fire	Low Fire	High Fire	Low Fire	High Fire
Natural Gas	1.7 (0.42)	3.5 (0.87)	1.7 (0.42)	3.4 (0.85)	1.7 (0.42)	3.3 (0.82)	1.7 (0.42)	3.2 (0.80)
LPG/Propane	4.7 (1.17)	10.0 (2.49)	4.7 (1.17)	10.0 (2.49)	4.7 (1.17)	10.0 (2.49)	4.7 (1.17)	10.0 (2.49)

NOTE - Pressure switch is factory set. No adjustment is necessary. All models use the factory installed pressure switch from 0-4500 feet (0-1370 m) altitude. Units require a High Altitude Pressure Switch Kit for proper second stage operation if installed at altitudes above 4500 feet (1370 m). See Specifications table for ordering information.

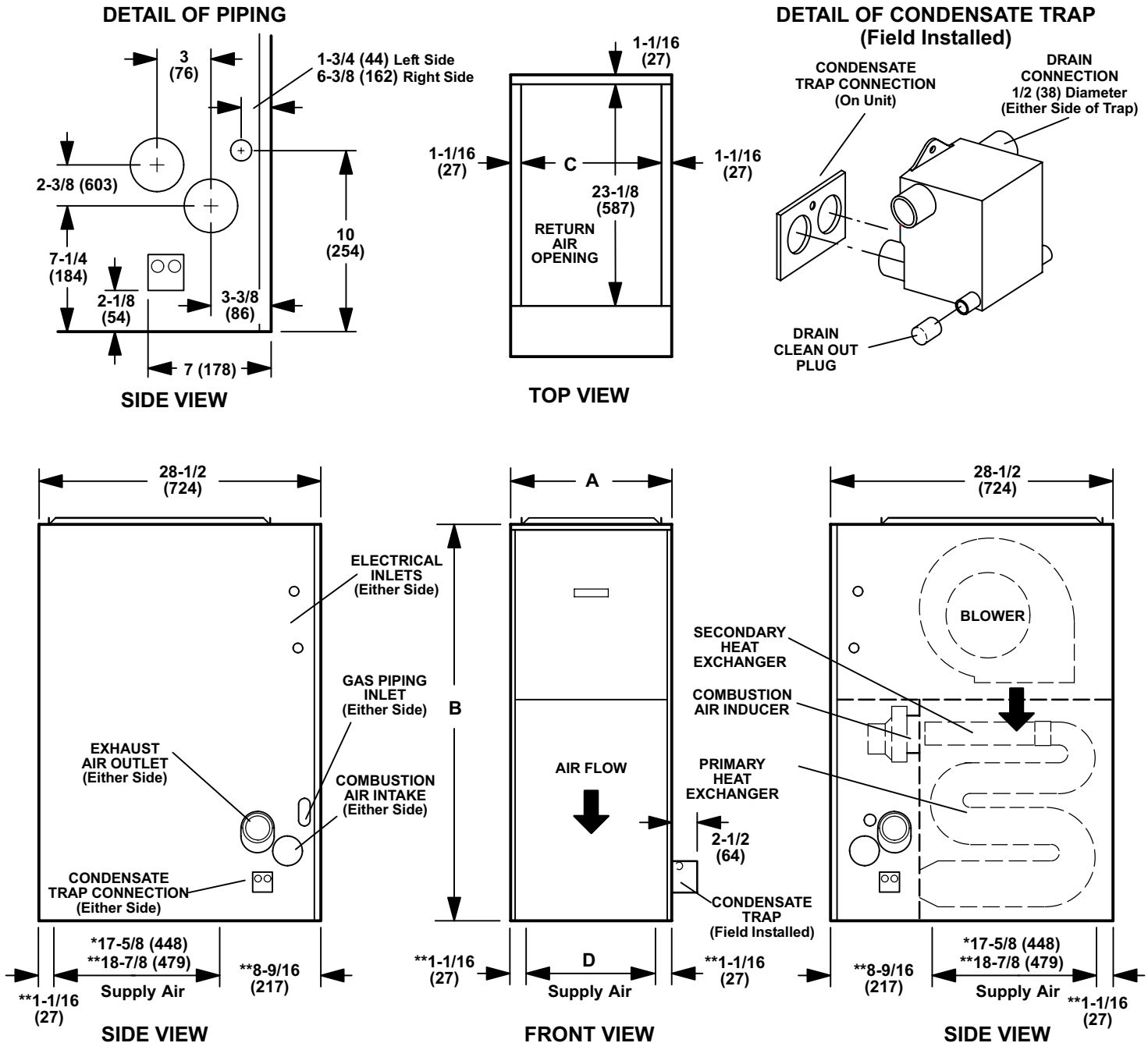
TERMINATION, INTAKE AND EXHAUST PIPE VENTING TABLE

VENTING REQUIREMENTS

		Model No.	GHR32V-75	GHR32V-100
Vent Pipe Minimum Equivalent Length with Accelerator - Exhaust pipe should terminate with an accelerator. See Termination Kits, below.			[1]20 ft. (6.1 m)	[2]15 ft. (4.6 m)
		feet (m)	Minimum Vent Pipe Diameter Required	
Maximum Equivalent Vent Length Maximum length is for one individual run, either intake or exhaust.		15 (4.6)	Not Recommended	2 in. (51 mm)
		16 - 40 (4.8 - 12.2)	2 in. (51 mm)	3 in. (76 mm)
		41 - 60 (12.5 - 18.3)	3 in. (76 mm)	3 in. (76 mm)
		61 - 100 (18.6 - 30.5)	3 in. (76 mm)	Not Available
VENT/INTAKE AIR TERMINATION KIT USAGE				
Termination Kits See Pages 10-12 for dimensions and descriptions NOTE - Intake and Exhaust pipes must be the same diameter.	**Kits for 2 in. (51 mm) Venting** NOTE - Exhaust pipe must be terminated with an accelerator; 1-1/2 in. (38.1 mm) diameter pipe, 12 in. (305 mm) in length.	Roof Kit **(15F75)**	Acceptable	Acceptable
		Wall Ring Kit **(15F74)**	Acceptable	Acceptable
		Closed Couple Wall Kit (**22G44**)	Acceptable	[3]Acceptable
		Concentric Roof/Wall Kit **(60G77)**	Acceptable	Not Available
		Closed Couple Wall Kit **30G28**	Acceptable	Not Available
		[4]Closed Couple Wall Kit with extension riser **(30G79)**	Acceptable	Not Available
	Kits for 3 in. (76 mm) Venting NOTE - Exhaust pipe must be terminated with an accelerator; 2 in. (51 mm) diameter pipe, 12 in. (305 mm) in length.	Vent/Intake Air Roof Kit **(44J41)**	Acceptable	Acceptable
		[5]Closed Couple Wall Kit (**44J40**)	Acceptable	Acceptable
		Concentric Roof/Wall Kit **(33K97)**	Acceptable	Acceptable

Equivalent Vent Lengths:
[1]10 ft. (3 m) and two 90° elbows of 2 in. (51 mm) pipe equals 20 ft. (6.1 m).
[2]5 ft. (1.5 m) and two 90° elbows of 2 in. (51 mm) pipe equals 15 ft. (4.6 m).
One 90° elbow equals 5 feet (1.5 m) of straight vent pipe.
One 45° elbow equals 2.5 feet (.75 m) of straight vent pipe.
[3]90° intake elbow **CANNOT** be used in this application.
[4]12 feet (3.6 m) of additional vent must be figured into the Maximum Equivalent Vent Length/Minimum Vent Pipe Diameter Requirements if this kit is used.
[5]When additional/field supplied venting is used to clear average snow accumulation, the additional length of pipe and elbows must be figured into the Maximum Equivalent Vent Length/Minimum Vent Pipe Diameter Requirements.

DIMENSIONS - INCHES (MM) - DOWN-FLOW POSITION SHOWN



NOTE — Supply air opening is equipped with a 5/8 inch (16 mm) flange that may be bent 90° for plenum connection on conventional down-flow furnace applications or to help in alignment with cooling coil.

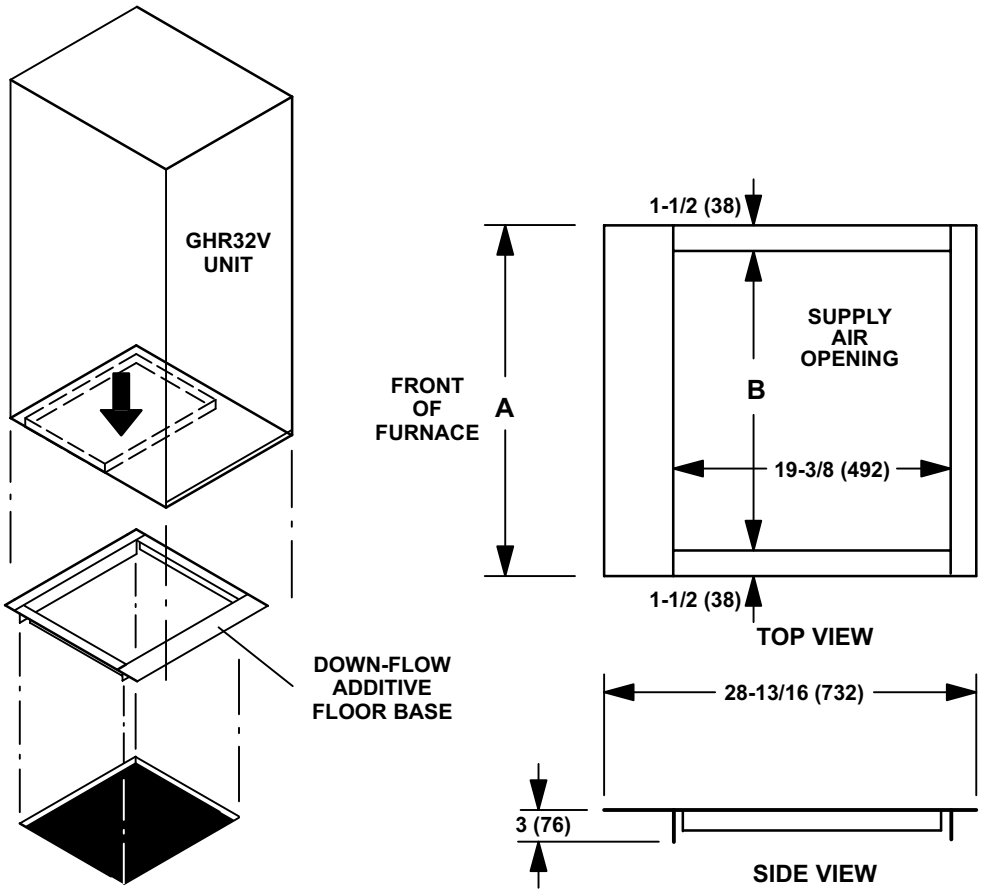
***Dimensions before both flanges are bent.**

****Dimensions after both flange are bent.**

Model No.	A		B		C		*D		**D	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
GHR32V3-75	16-1/4	413	40	1016	14-1/8	305	12-7/8	327	14-1/8	359
GHR32V5-100	21-1/4	540	46	1168	19-1/8	457	17-7/8	454	19-1/8	486

OPTIONAL ACCESSORY DIMENSIONS - INCHES (MM)

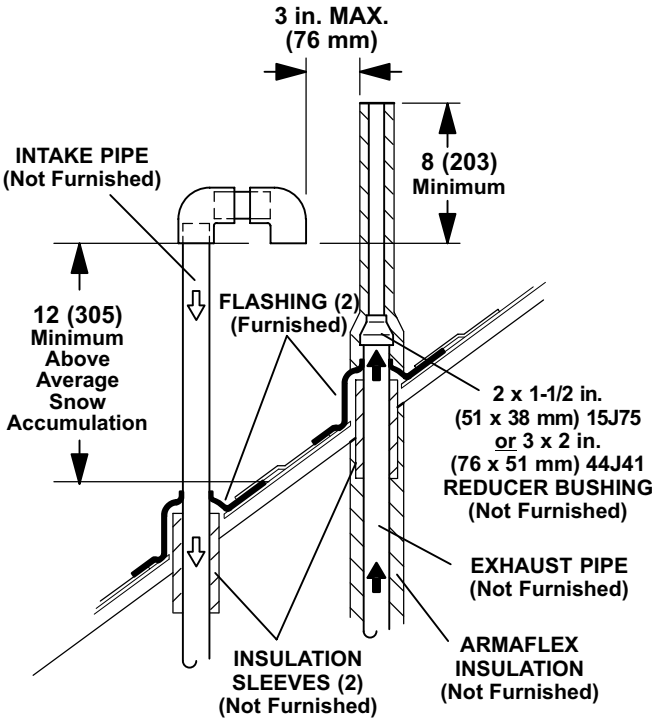
DOWN-FLOW ADDITIVE FLOOR BASE



Furnace Model No.	A		B	
	in.	mm	in.	mm
GHR32V3-75	17-3/8	302	14-3/8	207
GHR32V5-100	22-3/8	501	19-3/8	375

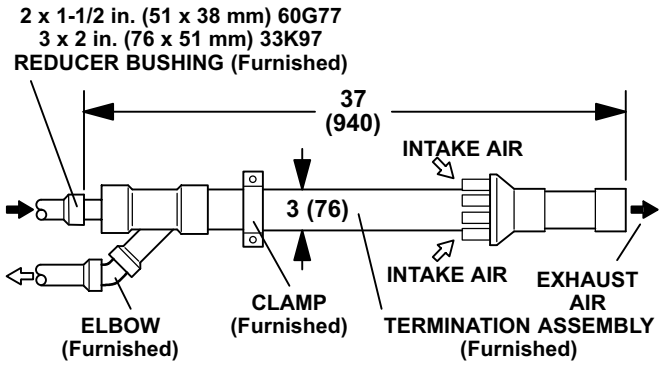
OPTIONAL ACCESSORY DIMENSIONS - INCHES (MM)

ROOF TERMINATION KITS
15F75 — For 2 inch (51 mm) Venting
44J41 — For 3 inch (76 mm) Venting

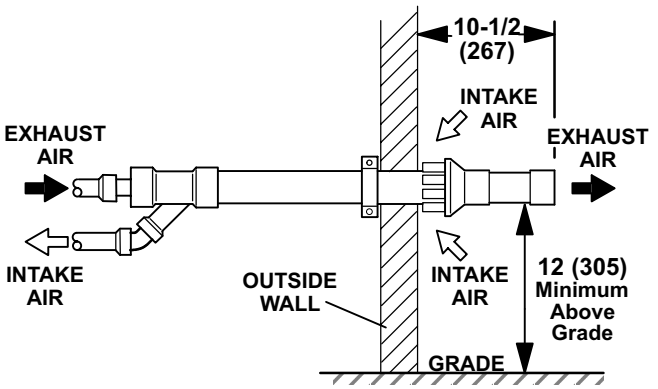


CONCENTRIC TERMINATION KITS

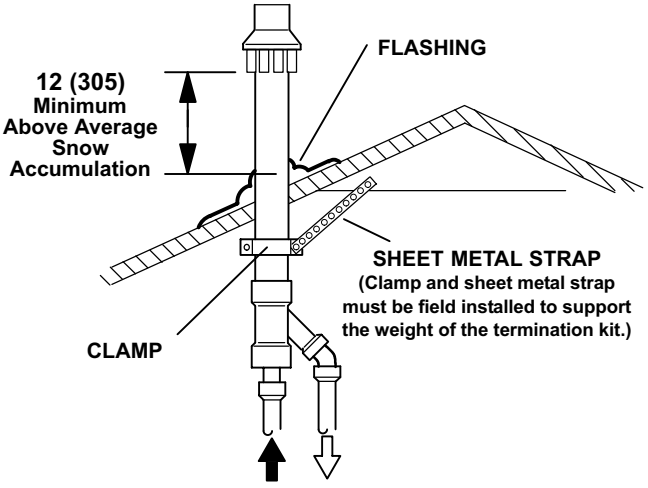
60G77 — For 1-1/2 inch (38 mm) Venting
33K97 — For 2 inch (51 mm) Venting



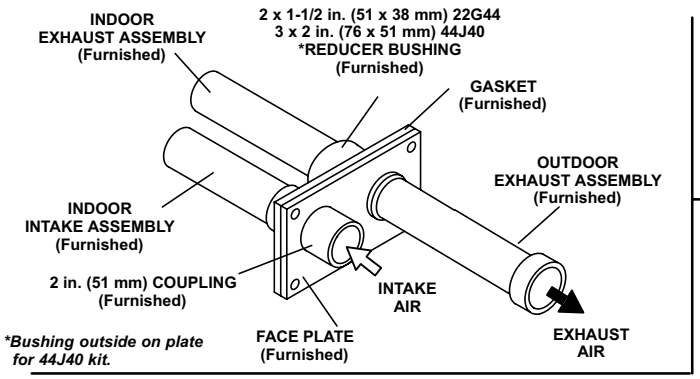
CONCENTRIC WALL TERMINATION APPLICATIONS



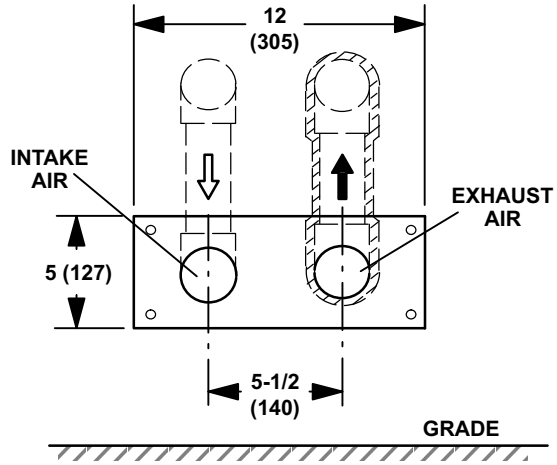
CONCENTRIC ROOF TERMINATION APPLICATIONS



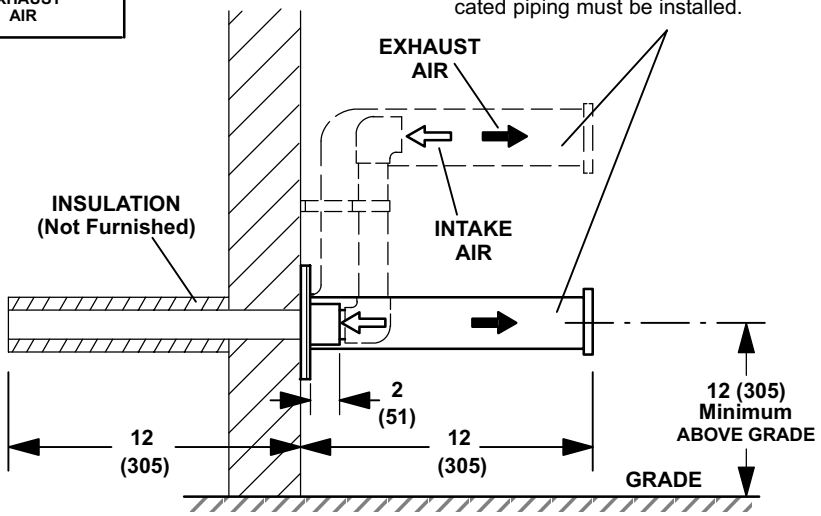
OPTIONAL ACCESSORY DIMENSIONS - INCHES (MM)

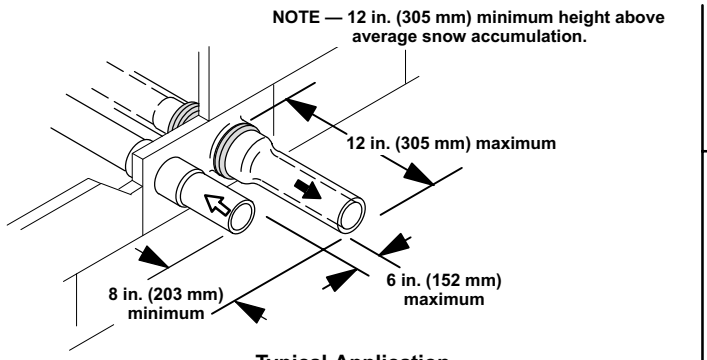


WALL ASSEMBLY TERMINATION KITS (CLOSE-COUPLE)
22G44 — For 2 inch (51 mm) Venting
44J40 — For 3 inch (76 mm) Venting



If Intake and Exhaust Pipe is less than 12 in. (305 mm) above snow accumulation or other obstructions, field fabricated piping must be installed.

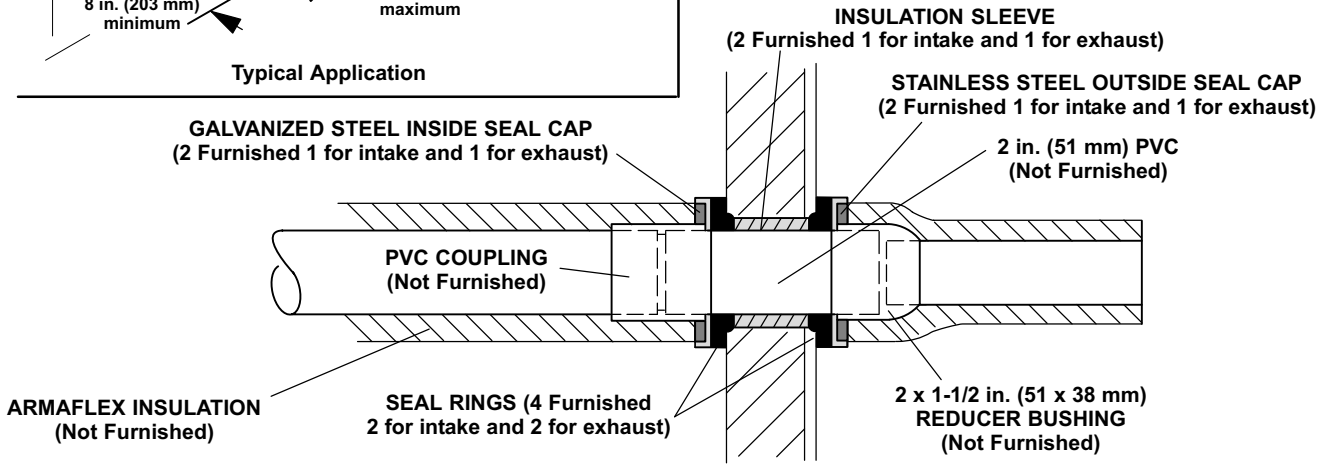




Typical Application

WALL ASSEMBLY TERMINATION KIT (RING KIT)
15F74 — For 2 inch (51 mm) Venting
NOTE — Not for use with 3 inch (76 mm) Venting

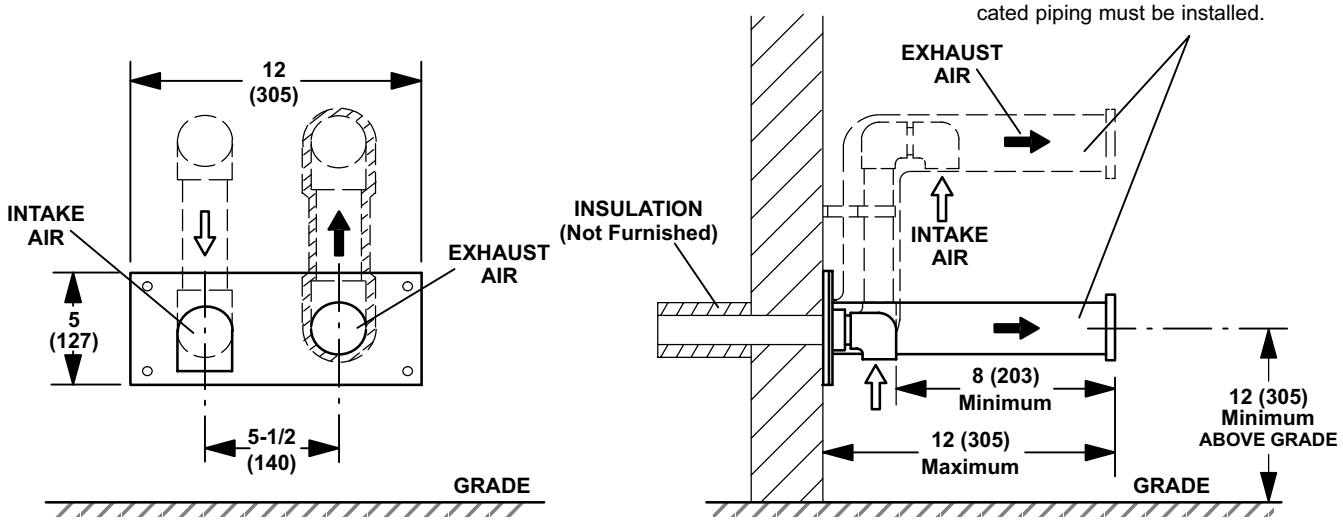
NOTE — EXHAUST PIPE SHOWN



OPTIONAL ACCESSORY DIMENSIONS - INCHES (MM)

WTK WALL ASSEMBLY TERMINATION KIT
WITH FIELD FABRICATION ABOVE GRADE EXTENDED CLEARANCE
30G28 — For 2 inch (51 mm) Venting
81J20 — For 3 inch (76 mm) Venting

If Intake and Exhaust Pipe is less than 12 in. (305 mm) above snow accumulation or other obstructions, field fabricated piping must be installed.



WTKX WALL ASSEMBLY EXTENSION RISER TERMINATION KIT
30G79 — For 2 inch (51 mm) Venting
NOTE — Not for 3 inch (76 mm) Venting