

### G21V "PULSE21®" SERIES UP-FLOW GAS FURNACES – DIRECT VENT

### G21V

Bulletin #210059  
April 1997  
Supersedes  
September 1994

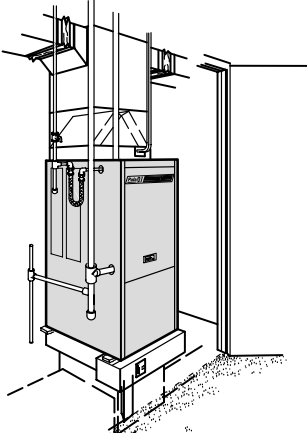
\*93.4% to 94.5% A.F.U.E.

60,000 to 100,000 Btuh (17.6 to 29.3 kW) Input  
1.5 thru 5 (5.3 thru 17.6 kW) Nominal Add-On Cooling

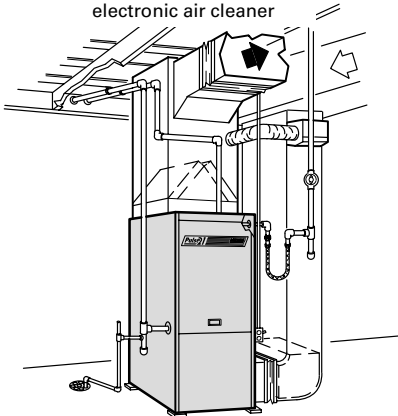
\*Isolated Combustion System Rating for Non-Weatherized Furnaces



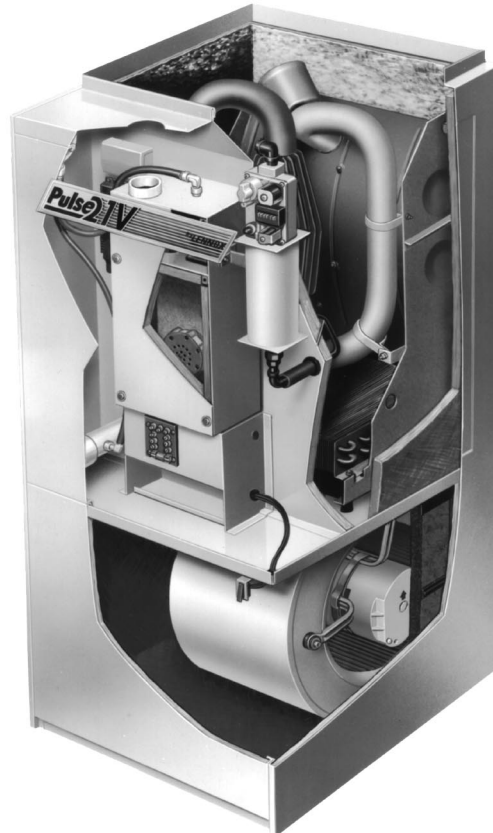
#### Typical Applications



Closet Installation  
With cooling coil and  
electronic air cleaner



Utility Room Installation  
With cooling coil  
and humidifier



**Application** — Lennox G21V series gas furnaces are available in four models (natural gas or LPG/Propane) with input capacities of 60,000, 80,000 and 100,000 Btuh (17.6, 23.4 and 29.3 kW). Units operate on the pulse combustion principle and do not require conventional pilot burner, main burners, flue or chimney. Standard size cabinet with side or bottom return air entry permits installation in a basement, utility room or closet. Lennox add-on evaporator coils, electronic air cleaners and power humidifiers can easily be added for a total comfort all-season system. Replacement of furnaces manufactured by Lennox in the last thirty years can be done with only minor modification to duct work or add-on coils.

Electronically variable speed (VSM) blower motor maintains a specified air volume throughout the entire external static range. G21V furnaces also feature a variable heat output in direct proportion to amount of air delivered by the blower. Burner control is completely automatic. Units are also applicable to the Lennox Harmony II Zone Control System and the Lennox Efficiency Plus Humidity Control System. High efficiency of the G21V series is achieved with a unique heat exchanger design which features: finned cast iron combustion chamber, temperature resistant steel tailpipe, aluminized steel exhaust decoupler section and a finned stainless steel tube condenser coil. Moisture, during the process of combustion, is condensed in the coil, extracting almost all usable heat out of the flue gas. Most of the combustion heat is utilized in the heat transfer from the coil, producing flue vent temperatures as low as 100°F to 130°F (38°C to 54°C) which allows the use of PVC (poly-

vinyl chloride) pipe for venting. Condensate created in the coil (PH ranges from 4.0 to 6.0) is not harmful to standard household plumbing and can be drained into city sewers and septic tanks without damage.

The G21V furnace has no pilot light or burners. An automotive type spark plug is used for ignition on the initial cycle only, saving gas and electrical energy. In the pulse combustion process, the use of atmospheric burners is eliminated, with combustion confined to heat exchanger combustion chamber. Sealed combustion system virtually eliminates the loss of conditioned air due to combustion and stack dilution. Combustion air is piped to the furnace with same type PVC pipe as used for exhaust gases.

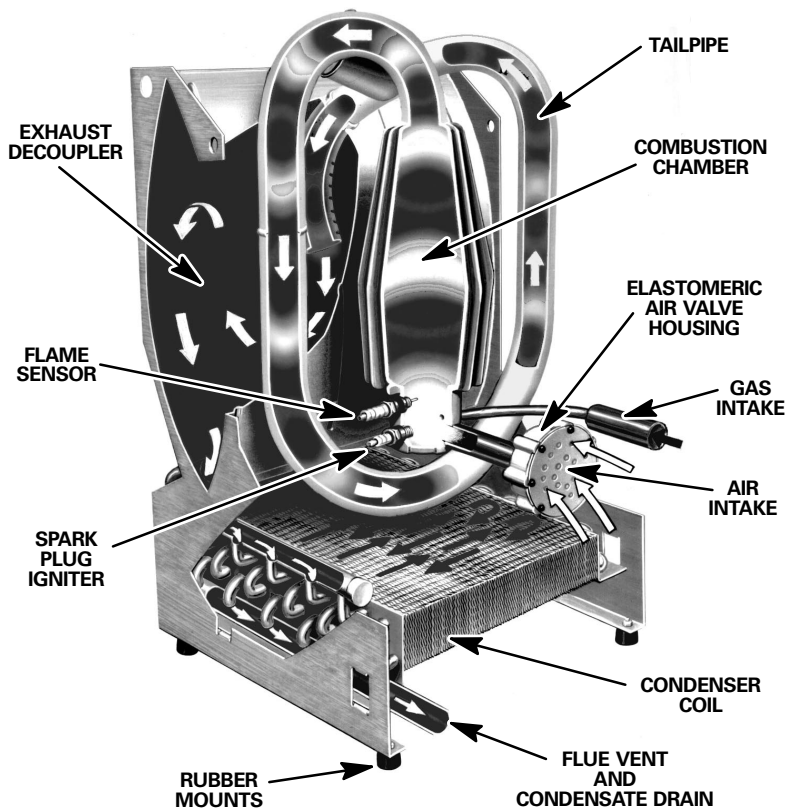
Furnace is equipped with a standard type redundant gas valve in series with a gas expansion tank and gas intake flapper valve. Also factory installed are an air intake flapper valve, purge blower, spark plug igniter, flame sensor with solid-state control, solid-state blower control, limit/modulation control, 50VA transformer, high and low voltage terminal strip and cleanable air filter. Furnished for field installation are a flexible gas line connector, (4) isolation mounting pads, base insulation pad, external side return air filter mounting kit and condensate drip leg.

Optional equipment available are: flue vent/air intake line roof or wall termination installation kits, LPG/Propane conversion kits, mufflers, attenuators and thermostat.

G21V units are shipped completely factory assembled with all controls installed and wired. Units are test fired at the factory before shipment.

♣ The maple leaf symbol in this bulletin denotes Canadian only usage where applicable

NOTE — Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice.



## PROCESS OF COMBUSTION

The process of combustion begins as gas and air are introduced into the sealed combustion chamber with the spark plug igniter. Spark from the plug ignites the gas/air mixture, which in turn causes a positive pressure buildup that closes the gas and air inlets. This pressure relieves itself by forcing the products of combustion out of the combustion chamber through the tailpipe into the heat exchanger exhaust decoupler and on into the heat exchanger coil. As the combustion chamber empties, its pressure becomes negative, drawing in air and gas for the next pulse of combustion. At the same instant, part of the pressure pulse is reflected back from the tailpipe at the top of the combustion chamber. The flame remnants of the previous pulse of combustion ignites the new gas/air mixture in the chamber, continuing the cycle. Once combustion is started, it feeds upon itself allowing the purge blower and spark plug igniter to be turned off. Each pulse of gas/air mixture is ignited at a rate of 60 to 70 times per second. Almost complete combustion occurs with each pulse. The force of these series of ignitions creates great turbulence which forces the products of combustion through the entire heat exchanger assembly resulting in maximum heat transfer.

## FEATURES

**Approvals** — G21V series furnaces are designed certified by A.G.A. and C.G.A. Laboratories and ratings are certified by GAMA. Units meet the California Nitrogen Oxides (NOx) standards and California Seasonal Efficiency requirements. In addition, units have been rated and tested in the Lennox Research Laboratory according to U.S. Department of Energy (DOE) test procedures and Federal Trade Commission (FTC) labeling regulations. Blower data is from unit tests conducted in the Lennox Laboratory air test chamber.

**Equipment Warranty** — G21V "Pulse" heat exchangers have a limited lifetime warranty in residential applications and a limited twenty year warranty in non-residential applications. All other components have a limited warranty for five years in residential applications and one year in non-residential applications. Refer to Lennox Limited Equipment Warranty certificate included with the equipment for details.

**Sequence of Operation** — Room thermostat, on a demand for heat, will initiate purge blower operation for a pre-purge cycle (30 seconds) followed by energizing and opening of the gas valve. As ignition occurs, the flame sensor reacts to proof of ignition and de-energizes the spark plug igniter and purge blower after 8 seconds. Furnace blower operation is initiated 45 seconds after combustion ignition. When thermostat is satisfied, gas valve is closed and purge blower is re-energized for a post-purge cycle (34 seconds). Furnace blower will remain in operation until "fan off" factory setting of 270 seconds (adjustable from 90 to 330 seconds) is reached. Should loss of flame occur before thermostat is satisfied, flame sensor controls will initiate 5 attempts at re-ignition before locking out unit operation. Additionally, loss of either combustion intake air or flue exhaust will automatically terminate system operation. If unit becomes locked out, Watchguard circuit on ignition control automatically resets ignition controls after one hour.

**Heat Exchanger Assembly** — Lennox developed heat exchanger assembly consists of combustion chamber, tailpipe, exhaust decoupler section and condenser coil. Combustion chamber contains the spark plug igniter, flame sensor and combustion air and gas intake manifolds. Cast iron construction provides excellent radiation of heat over entire surface area. Finned "teardrop" shape design permits total air coverage of all surfaces with low resistance. Tailpipe connects the combustion chamber to the exhaust decoupler section. Precisely sized and shaped tailpipe is constructed of combination stainless and aluminized steel for superior resistance to high temperatures. Aluminized steel resonator on tailpipe minimizes combustion sound. Heavy gauge aluminized steel exhaust decoupler section has large surface area for maximum heat transfer. Air foil shape design results in complete air coverage with minimum air resistance. Condenser coil intake header connects to bottom of exhaust decoupler section. Large face area and circuiting of coil provides high heat transfer, minimum air resistance and proper moisture drainage. Coil is constructed of exactly spaced ripple-edged aluminum fins fitted to stainless steel tubes. Flared collars on fins grip tubes for maximum contact area. Flared tubing connections and high temperature brazing provide tight, leak-

proof joints. Combined flue vent and condensate drain outlet is located on the coil. Coil is factory tested for leaks. All components are mounted in a heavy gauge steel frame and installed in the furnace cabinet on resilient rubber mounts assuring quiet, vibration free operation. Heat exchanger has been laboratory life cycle tested.

**Cabinet** — Constructed of heavy gauge cold rolled steel. Cabinet is subject to a 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. Heat exchanger section is completely lined with thick 1-1/2 lb./ft.3 (24 kg/m<sup>3</sup>) density foil faced fiberglass insulation. Blower compartment is completely lined with thick 1-1/2 lb./ft.3 (24 kg/m<sup>3</sup>) density black mat faced fiberglass insulation. This results in quiet and efficient operation due to the excellent acoustical and insulating properties of fiberglass. Complete service access is accomplished by removing heating section and blower access panels. Removable panel is provided in vestibule panel for access to the spark plug and flame sensor. Holes are located in the base for cabinet leveling. Leveling bolts and nuts are not provided and must be ordered extra. Safety interlock switch automatically shuts power off to unit when blower access panel is removed. Blower assembly may be completely removed from unit for servicing. Electrical inlets, gas line inlets and exhaust air outlets are provided in both sides of cabinet. Combustion air inlet opening is located in cabinet cap. Return air duct connection can be made on either side or bottom of cabinet.

**Combustion Air Intake Box** — Contains the purge blower, air intake flapper valve and air valve housing. The 60, and 80 units have a single differential pressure switch mounted inside the unit cabinet. The 100 models have a single differential pressure switch mounted on the vestibule panel. Pressure switches terminate unit operation in case of air intake or flue exhaust blockage. Box is located on vestibule panel. Purge blower is equipped with a permanently lubricated motor. Blower operates only during pre-purge, post-purge and ignition cycles. Air is drawn through the blower during the combustion cycle by negative pressure in the combustion chamber. Flapper valve air housing is constructed of an elastomeric non-metallic polymer which reduces operating sound levels. Flapper valve section of the box is completely lined with 1 inch (25 mm) thick 6 lb./ft.3 (96 kg/m<sup>3</sup>) density duct liner board, black neoprene coated fiberglass. Valve opening and closing is actuated by back pressure and negative pressure in combustion chamber during the heating cycle.

**Blower** — Units are equipped with quiet multi-speed direct drive blowers. Each blower assembly is statically and dynamically balanced. Change in blower speed is easily accomplished by simple jumper change on VSP2-1 blower control.

**Variable Speed (VSM) Blower Motor** — Variable speed motor (VSM) is resiliently mounted. When units are used with Harmony Zone Control System, blower motor operates between low and high speed settings depending on number of zones operating.

## FEATURES

**VSP2-1 Blower Control** — Blower control interfaces the VSM motor with the thermostat and optional CCB1 humidity control. Contains blower timed-on control (45 seconds fixed) and blower timed-off control (90 to 330 seconds adjustable). Blower operation is automatic if limit is tripped. Control board has four diagnostic indicator lights (ON/OFF - HEAT - HI/LOW - CFM) to assist in servicing. Control is factory installed in the unit blower section. The three blower speeds — heating, high speed cooling and low speed (cooling, low heat or continuous fan), timed off blower control and single or two stage heating operation are made by simple jumper pins on the board.

**Wiring Junction Box** — Power supply and thermostat connections are made at the wiring junction box located on the vestibule panel. Box contains 50 VA transformer, high and low voltage terminal strips and accessory relay. Accessory relay terminals provide connections for power humidifiers or electronic air cleaners. Low voltage terminal strip has a fuse to protect the transformer. Terminal strip permits easy connections for optional power humidifiers and electronic air cleaners.

**Automatic Gas Valve, Expansion Tank and Gas Intake Flapper Valve** — 24 volt redundant gas control valve combines gas pressure regulation and manual main shutoff valve into one compact combination control. Dual valve design provides double assurance of 100% close off of gas on each heating cycle. Expansion tank is located downstream from the gas valve and absorbs any pressure pulsations. Gas intake flapper valve is installed in the combustion chamber intake manifold between the orifice and expansion tank. Valve is opened by entering gas pressure and closed by back pressure from combustion pulse during the heating cycle.

**Ignition Control** — Solid-state control provides power for spark plug igniter. Also controls pre-purge and post-purge cycles and re-ignition sequence if loss of flame occurs. Also features Watchguard circuit. Solid-state control provides automatic reset of ignition controls after 1 hour of continuous thermostat demand after unit lockout. Ignition control is factory installed on the vestibule panel.

## OPTIONAL ACCESSORIES (Must Be Ordered Extra)

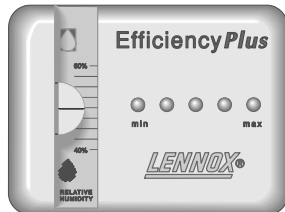
**Thermostat (Optional)** — Heating thermostat is not furnished. See Thermostats bulletin in Accessories Section or Lennox Price Book. For non-zoned applications, a two-stage heating thermostat may be used for dual air volume control. For all-season applications, heating-cooling thermostat is available with the condensing unit.

**LPG/Propane Conversion Kits (Optional)** — For LPG/Propane models a conversion kit is available for field changeover from natural gas. See Specifications tables.

**In-Line Mufflers (Optional)** — Two mufflers LB-52057CA (67F81) are optional. Mufflers field install, vertical or horizontal, one in the intake line and one in the exhaust line. See dimension drawings. Two mufflers are required on -80 & -100 units.

✦ **In-Line Attenuators (Optional)** — Two attenuators field install, vertical or horizontal, one in the intake line and one in the exhaust line. GPA-3030 (12H76) contains two 30 in. (762 mm) long attenuators. GPA-3019 (12H77) contains one 30 in. (762 mm) attenuator and one 19 in. (483 mm) attenuator for reduced clearances. See dimension drawings.

**CCB1 EfficiencyPlus™ Humidity Control (Optional)** — The CCB1 humidity control (35H00) is an electronic control which installs next to the room thermostat and allows the selection of the desired indoor humidity level in the cooling mode. During the heating season the control is inoperable. The CCB1 controls the indoor humidity by altering the indoor blower speed and the compressor speed. Humidity level desired may be accomplished by adjusting a vertical slide to a set point on a scale of 40% thru 60% with 50% recommended as the initial set point. Five indicator lights (MIN — MAX) in a bar graph configuration indicate the difference in the actual relative humidity and the set point. This indicates the demand imposed on the system equipment, the more lights on, the longer the equipment will operate to obtain the desired humidity level. If no lights are on, the humidity is at or below the set point.



**Condensate Drain Heat Cable Kits (Optional)** — Self-limiting wattage heat cable prevents condensate drain from freezing in unconditioned areas. Kit LB-88643C (26K70) has 50 ft. (15.2 m) of heat cable. Kit LB-88643B (26K69) contains 24 ft. (7.3 m) of heat cable. Kit LB-88643A (26K68) contains 6 ft. (1.8 m) of heat cable. Also available:

— Heat Cable Tape 66 ft. (20 m) length, 1/2 in. (13 mm) wide fiberglass (39G04) or 60 ft. (18 m) length, 2 in. (51 mm) wide aluminum foil (39G03).

**Dual Limit/Modulation Controls** — Factory installed and accurately located on vestibule. Fixed limit control provides positive protection from abnormal operating conditions. Automatic reset. Modulation control allows combustion process to cycle on and off to maintain even supply air temperature.

**Cleanable Air Filters** — Washable or vacuum cleanable frame type filter is furnished as standard. Polyurethane media is coated with oil for maximum efficiency. Filter is readily accessible in unit for quick and easy removal for servicing.

**External Side Return Air Filter Cabinet (Furnished)** — External filter cabinet is furnished for installing air filter external to unit cabinet on side return air applications. Heavy gauge cold rolled steel filter rack assembly, with baked-on enamel finish, field installs on either side of unit cabinet with existing screws. Cabinet utilizes existing filter supplied with unit. Rack has flanges for ease of duct connection.

**Installation Recommendations** — Lennox recommends the following installation procedures to minimize any vibration transmitted from furnace during operation. Place (4) neoprene rubber isolation mounting pads (furnished) and/or base insulation pad (furnished), 1 inch (25 mm) thick, 1-1/2 lb./ft.3 (96 kg/m3) density fiberglass, under the unit. Install flexible duct connectors in the supply air plenum and return air plenum or duct connection. Insulate 1 inch (25 mm) thick, 1-1/2 to 3 lb./ft.3 (96 kg/m3) density, mat faced fiberglass supply and return air plenums through take-off or duct elbow. Use flexible gas connector (furnished) in gas supply piping where allowed by local codes. Insulate (refrigerant piping insulation or equivalent) all straps and hangers used in suspending ducts, electrical conduit, gas piping, combustion air intake piping and flue exhaust piping. In addition, use plastic pipe or tubing for drain line from the heat coil condensate drip leg (furnished) to the drain, do not use copper tubing.

**Concentric Vent/Intake Air Roof/Wall Termination Kit (Optional)** — Facilitates installation of combustion air intake pipe and flue exhaust pipe. Kit LB-49107CE (60G77) 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. Kit is A.G.A. and C.G.A. certified. See dimension drawings.

**Vent/Intake Air Roof Termination Kit (Optional)** — Facilitates installation of combustion air intake pipe and flue exhaust pipe. Kit contains two neoprene rubber roof flashings. Kit also contains two 18 inch (457mm) insulation sleeves for sealing and isolating intake and exhaust piping penetration in roof. See Specifications table and optional accessory dimension drawings. Refer to venting tables in this bulletin to determine pipe size needed and proper termination kit required.

**For 2 inch (51 mm) Venting:**—

LB-49107CC (15F75)

**For 3 inch (76 mm) Venting** —

LB-65678A (44J41)

**Vent/Intake Air Wall Termination Kits (Optional)** — 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.

— **Ring Kit (15F74)** 2 inch (51 mm) 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 optional accessory dimension drawings.

— **WTK Close Couple Kits (30G28)** 2 inch (51 mm) or (81J20) 3 inch (76 mm) contains one insulated faceplate, one insulated exhaust pipe, elbow and fittings. See optional accessory dimension drawings.

— **Close Couple Kits (22G44)** 2 inch (51 mm) or (44J40) 3 inch (76 mm) consists of close-couple side-by-side PVC (polyvinyl chloride) 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. A.G.A./C.G.A. certified. See optional accessory dimension drawings.

— **WTKX Close Couple Kit With Extension Riser (30G79)** 2 inch (51 mm) is used where extended grade line clearance is required. Kit includes 3 ft. (1.0m) extension riser containing both vent lines (exhaust vent insulated) and wall securing bracket. See optional accessory dimension drawings.

# SPECIFICATIONS

Model No.		G21V3-60	G21V3-80	G21V5-80	G21V5-100
Input – Btuh (kW)		60,000 (17.6)	80,000 (23.4)	80,000 (23.4)	100,000 (29.3)
Output – Btuh (kW)		57,000 (16.7)	76,000 (22.3)	75,000 (22.0)	95,000 (27.8)
☆A.F.U.E.		94.3%	94.5%	93.4%	94.5%
California Seasonal Efficiency		92.5%	92.4%	90.9%	91.5%
Temperature rise range – °F (°C)		40 – 70 (22 – 39)	45 – 75 (25 – 41)	35 – 65 (19 – 36)	40 – 70 (22 – 39)
High static certified by A.G.A / C.G.A. – in wg. (Pa)		.80 (200)			
Gas Piping Size I.P.S. – in. (mm)		1/2 (13)			
Vent/Intake air pipe size connection – in. (mm)		2 (51)			
Condensate drain connection – in. (mm) SDR11		1/2 (13)			
Blower wheel nom. diameter x width – in. (mm)		10 x 8 (254 x 203)		11-1/2 x 9 (279 x 229)	
Blower motor hp (W)		1/2 (373)		1 (746)	
Blower motor minimum circuit ampacity		12.0		17.4	
Maximum fuse or circuit breaker size (amps)		15.0		20.0	
Electrical characteristics		120 volts – 60 hertz – 1 phase (All models)			
Number and size of filters – in. (mm)		(1) 16 x 25 x 1 (406 x 635 x 25)		(1) 20 x 25 x 1 (508 x 635 x 25)	
External side return air filter cabinet – (furnished) ‡Filter size – in. (mm)					
Nominal cooling that can be added	Tons	1.5, 2, 2.5 or 3	2, 2.5 or 3	3.5, 4 or 5	
	kW	5.3, 7.0, 8.8 or 10.6	7.0, 8.8 or 10.6	12.3, 14.1 or 17.6	
Shipping weight – lbs. (kg) 1 package		250 (113)		297 (135)	
<b>↕ Optional Accessories (Must Be Ordered Extra) ↕</b>					
LPG/Propane kit		LB-65810B (46J46)			LB-65810C (46J47)
In-line Mufflers (↻Attenuators) – 2 required		67F81 (qty. 2) or ↻GPA-3030 (12H76) and ↻GPA3019 (12H77) – 19 lbs. (9 kg)			
Concentric Vent/Intake Air Roof Termination Kit		60G77 2 inch (51 mm) – 12 lbs. (5 kg)			
Vent/Intake Air Roof Termination Kit	2 inch (51 mm)	15F75 – 3 lbs. (1 kg)			
	3 inch (76 mm)	44J41 – 3 lbs. (1 kg)			
Vent/Intake Air Wall Termination Kit	2 inch (51 mm)	Ring Kit (15F74), Close-Couple Kit (22G44), WRKX Close-Coupled w/ 3 ft. (1 m) Extension Riser (30G79), WTK Close-Couple Kit (30G28)			
	3 inch (76 mm)	Close-Couple Kit (44J40), WTK Close-Couple Kit (81J20)			
Condensate Drain Heat Cable		26K68 6 ft. (1.8 m) – 26K69 24 ft. (7.3 m) – 26K70 50 ft. (15.2 m)			
Heat Cable Tape		39G04 – 66 ft. (20 m) x 1/2 in. (38 mm) fiberglass or 39G03 – 60 ft (18 m) x 2 in. (25 mm) aluminum foil (1 roll)			

‡Filter is not furnished with kit. Filter kit utilizes existing filter supplied with G21 unit.

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

## VENTING REQUIREMENTS

Vent Pipe Maximum Equivalent Length – ft. (m)	Minimum Vent Pipe Diameter Required – in. (mm)
5 – 50 (1.5 – 15.2)	2 (51)
51 – 90 (15.5 – 27.4)	2-1/2 (64)
91 – 130 (27.7 – 39.6)	3 (76)

NOTE – One 90° elbow is equivalent to 5 feet (1.5m) of straight vent pipe  
 One 45° elbow is equivalent to 2.5 feet (.75 m) of straight vent pipe.  
 Intake and exhaust pipes MUST be the same diameter.  
 All pipe runs must terminate with 1-1/2" (38 mm) pipe.

## INSTALLATION CLEARANCES – ALL MODELS

Sides	0 inch (0 mm)
Rear	0 inch (0 mm)
Top	1 inch (25 mm)
Front	0 inch (0 mm)
Front (service)	36 inches (914 mm)
Floor	Combustible
Exhaust Pipe	0 inches (0 mm)
Exhaust Pipe Side	6 inches (152mm) (service only)

## BLOWER DATA

### G21V3-60-80 BLOWER PERFORMANCE 0 through 0.80 in. w.g. (0 Through 200 Pa) External Static Pressure Range

#### VSP2-1 Blower Control – Factory Settings

G21V3-60	G21V3-80
Low Speed – 1	Low Speed – 1
High Speed – 4	High Speed – 4
Heat Speed – 1	Heat Speed – 2

"ADJUST" Jumper Setting	BDC2 Jumper Speed Positions																							
	"LOW" Speed (Cool Or Continuous Fan)								"HIGH" Speed (Cool)								"HEAT" Speed							
	1		2		3		4		1		2		3		4		1		2		3		4	
	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
+	540	255	700	330	830	390	1000	470	1150	545	1260	595	1400	660	1410	665	1150	545	1250	590	1350	635	1420	670
NORM	490	230	630	295	740	350	880	415	1040	490	1140	540	1240	585	1265	595	1030	485	1140	540	1220	575	1300	615
–	440	210	560	265	670	315	800	380	940	445	1030	485	1140	540	1160	545	920	435	1020	480	1100	520	1190	560

NOTE – The effect of static pressure and filter resistance is included in the air volumes listed.

### G21V5-80-100 BLOWER PERFORMANCE 0 through 0.80 in. w.g. (0 Through 200 Pa) External Static Pressure Range

#### VSP2-1 Blower Control – Factory Settings

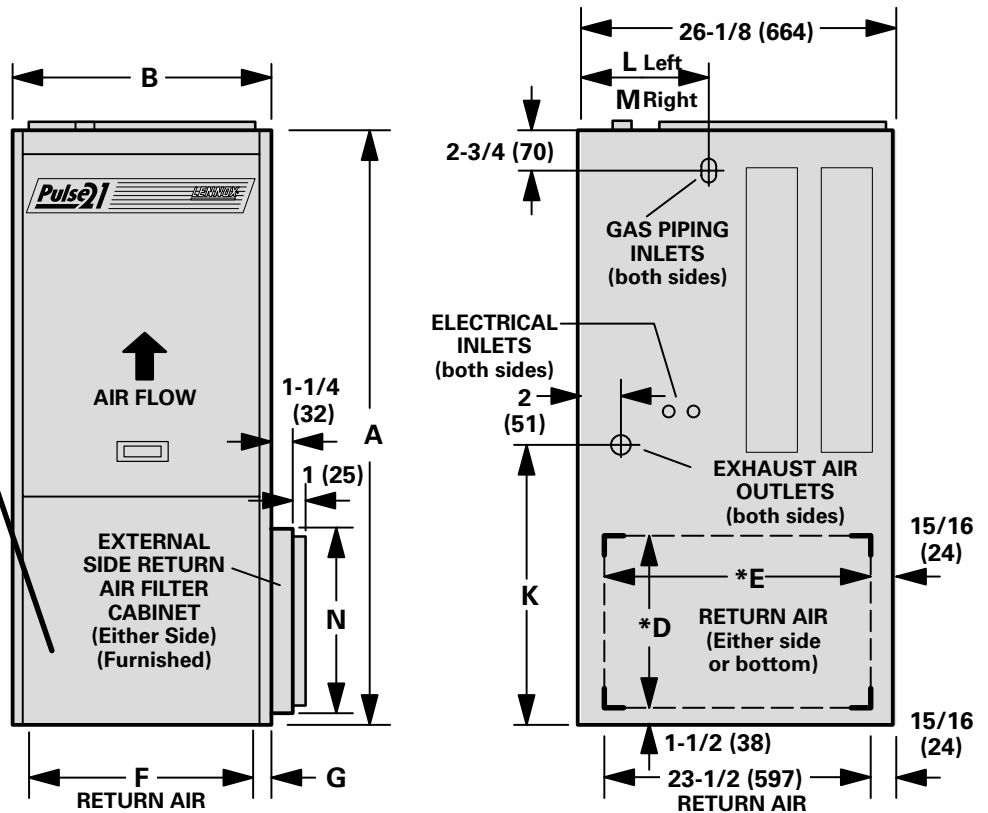
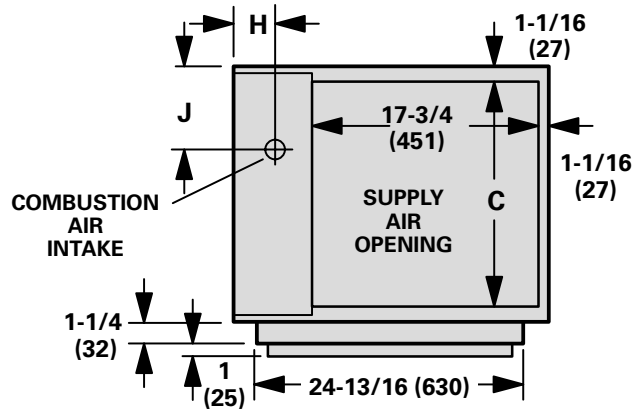
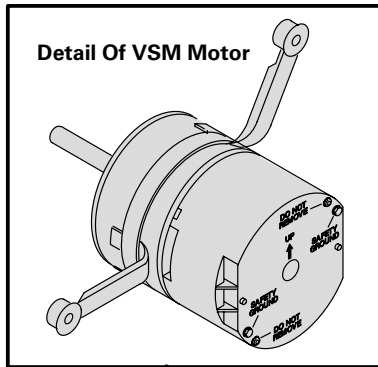
G21V5-80	G21V5-100
Low Speed – 1	Low Speed – 1
High Speed – 4	High Speed – 4
Heat Speed – 1	Heat Speed – 2

"ADJUST" Jumper Setting	BDC2 Jumper Speed Positions																							
	"LOW" Speed (Cool Or Continuous Fan)								"HIGH" Speed (Cool)								"HEAT" Speed							
	1		2		3		4		1		2		3		4		1		2		3		4	
	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
+	800	380	1050	495	1410	665	1620	765	1710	805	2030	960	*2270	*1070	*2270	*1070	1900	895	2140	1010	*2270	*1070	*2270	*1070
NORM	720	340	950	450	1280	605	1500	710	1570	740	1850	875	2100	990	2220	1050	1700	800	1940	915	2080	980	2200	1040
–	620	295	850	400	1120	530	1310	620	1420	670	1650	780	1860	880	1990	940	1520	715	1730	815	1860	880	1940	915

NOTE – The effect of static pressure and filter resistance is included in the air volumes listed.

\* 2300 cfm (1085 L/s) at 0.2 in. w.g. (50 Pa).  
 2100 cfm (990 L/s) at 0.5 in. w.g. (125 Pa).  
 2000 cfm (990 L/s) at 0.8 in. w.g. (200 Pa).

**ELECTRONICALLY VARIABLE SPEED (VSM) MOTOR**



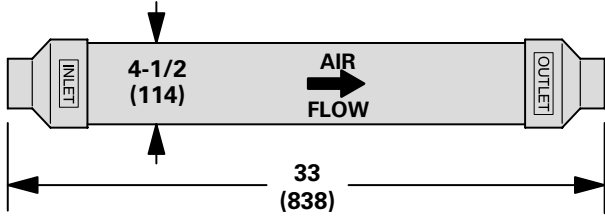
\*Unit or External Side Return Air Filter Cabinet

Model No.		A	B	C	D	E	F	G	H	J	K	L	M	N
G21V3-60 G21V3-80	in.	49	21-1/4	19-1/8	14-1/2	18-1/2	14-1/2	3-3/8	4-1/2	8-1/2	20-1/4	7-1/4	5-1/4	16
	mm	1245	540	486	368	470	368	86	114	216	514	184	133	406
G21V5-80 G21V5-100	in.	53	26-1/4	24-1/8	18-1/2	23-1/2	18-1/2	3-7/8	2-1/2	11	24-1/4	4-5/8	4-5/8	20
	mm	1346	667	613	470	597	470	98	64	279	616	117	117	508

**OPTIONAL ACCESSORY DIMENSIONS – inches (mm)**

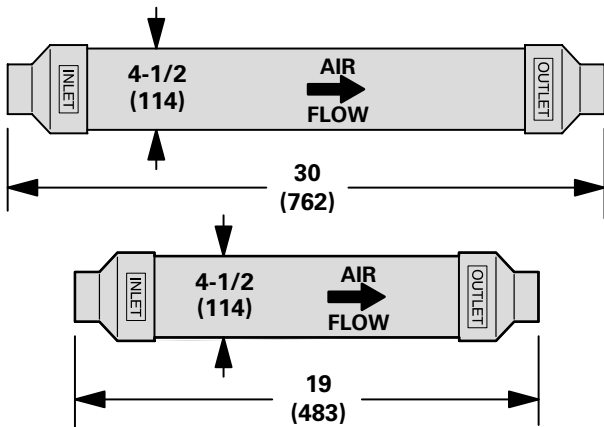
**IN-LINE MUFFLERS  
67F81**

NOTE – Two mufflers are furnished per order.

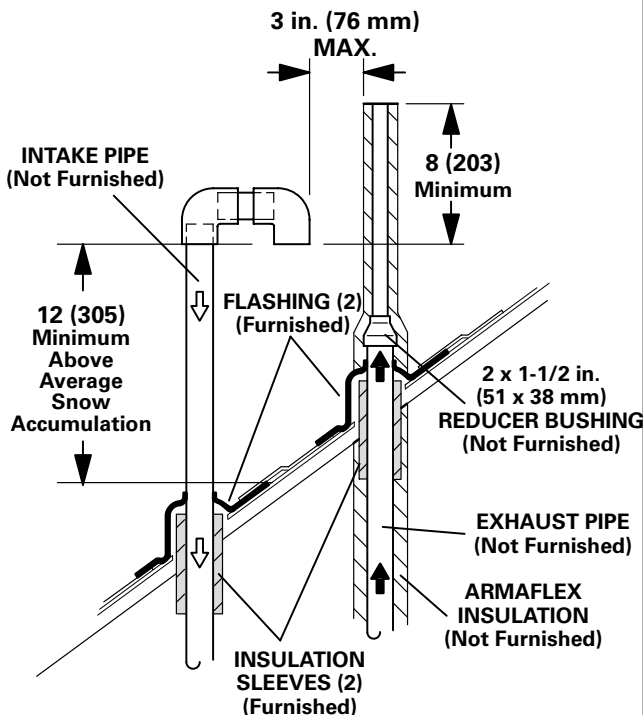


**IN-LINE ATTENUATORS  
GPA-3030 & GPA-3019**

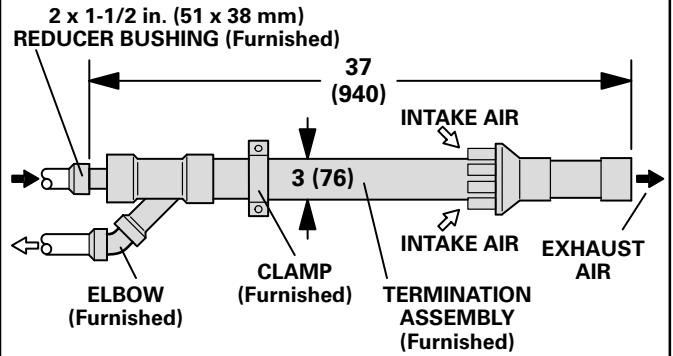
NOTE – GPA-3030 (12H76) contains two 30 in. (762mm) Attenuators. GPA-3019 (12H77) contains one 30 in. (762mm) Attenuator and one 19 in. (483mm) Attenuator.



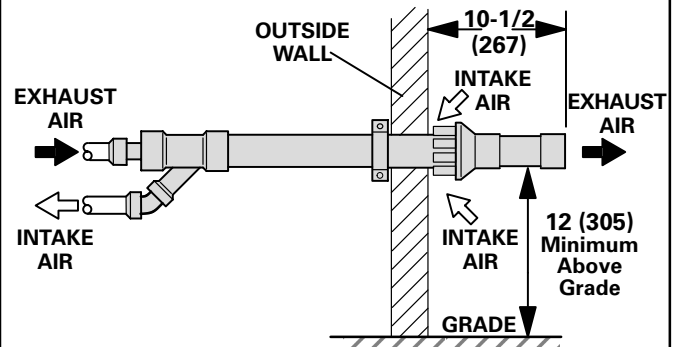
**ROOF TERMINATION KIT  
15F75 for 2 inch (51 mm) Venting  
44J41 for 3 inch (76 mm) Venting**



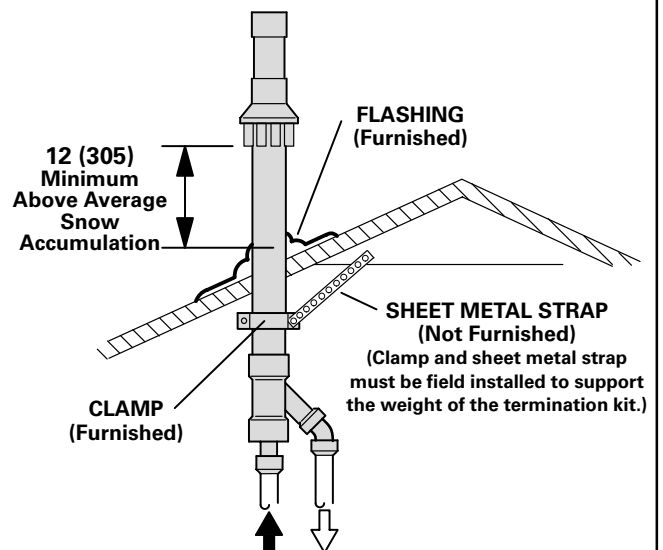
**CONCENTRIC ROOF/WALL  
TERMINATION KIT  
60G77 for 2 inch (51 mm) Venting**

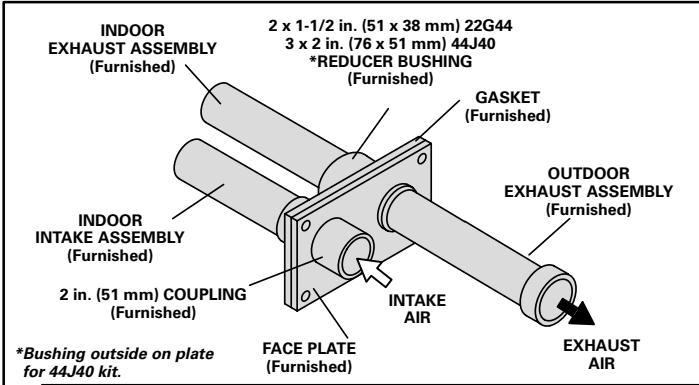


**CONCENTRIC WALL  
TERMINATION APPLICATIONS**



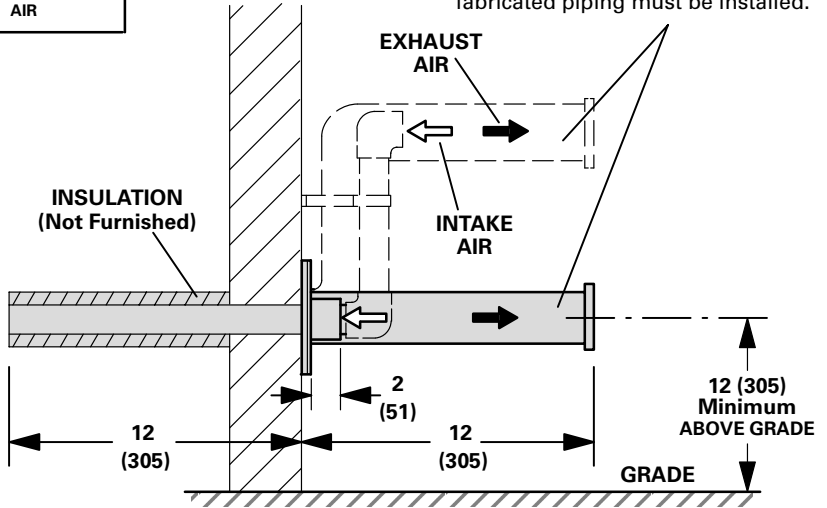
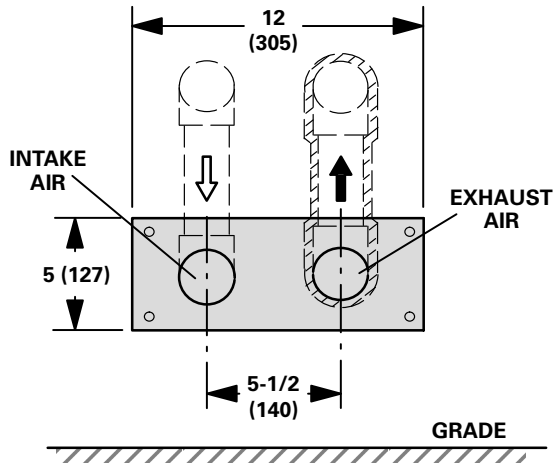
**CONCENTRIC ROOF  
TERMINATION APPLICATIONS**





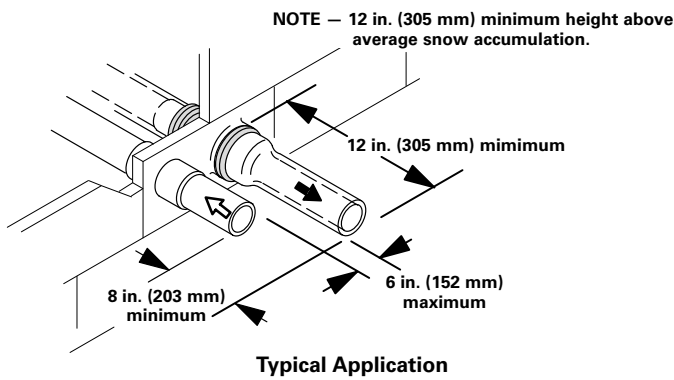
**WALL TERMINATION KITS (CLOSE-COUPLE)**  
**22G44 – for 2 inch (51 mm) Venting**  
**44J40 – for 3 inch (76 mm) Venting**

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



**WALL 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**



**GALVANIZED STEEL INSIDE SEAL CAP**  
 (2 Furnished 1 for intake and 1 for exhaust)

**INSULATION SLEEVE**  
 (2 Furnished 1 for intake and 1 for exhaust)

**STAINLESS STEEL OUTSIDE SEAL CAP**  
 (2 Furnished 1 for intake and 1 for exhaust)

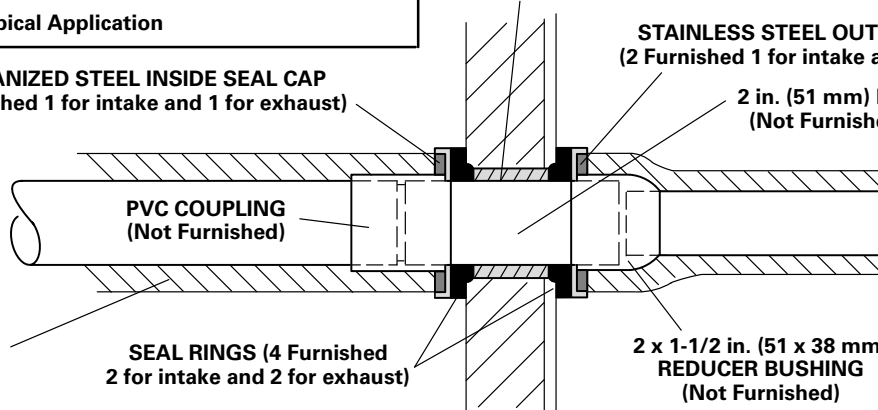
**2 in. (51 mm) PVC**  
 (Not Furnished)

**PVC COUPLING**  
 (Not Furnished)

**ARMAFLEX INSULATION**  
 (Not Furnished)

**SEAL RINGS (4 Furnished)**  
 2 for intake and 2 for exhaust

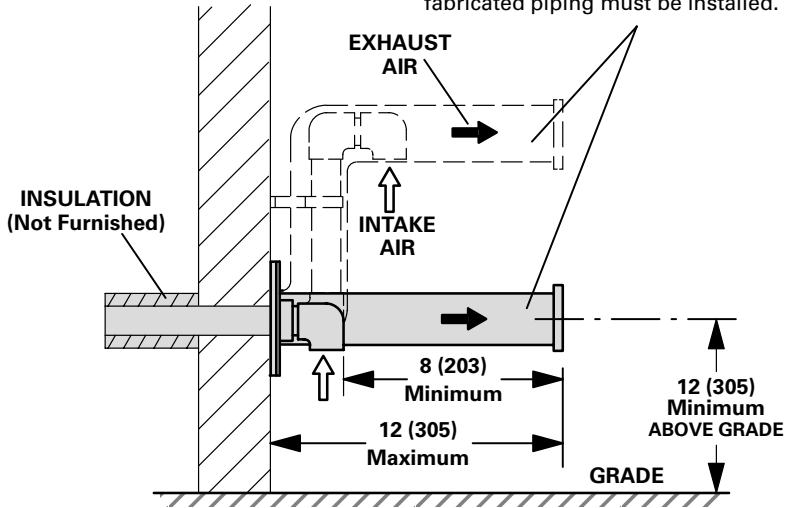
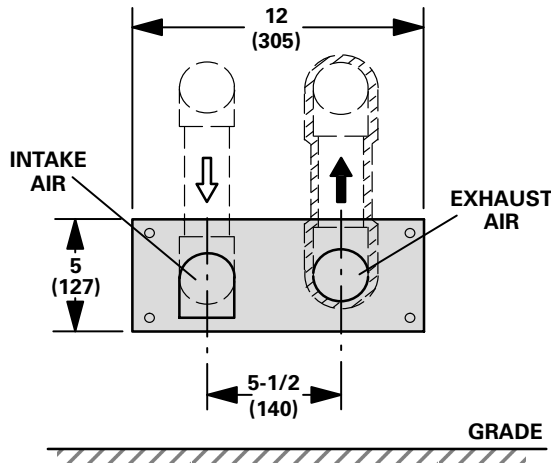
**2 x 1-1/2 in. (51 x 38 mm)**  
**REDUCER BUSHING**  
 (Not Furnished)





**WTK WALL 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 EXTENSION RISER TERMINATION KIT**  
30G79 – For 2 inch (51 mm) Venting  
NOTE – Not for 3 inch (76 mm) Venting

