



**NOTICE:**

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References to any other company affiliations are no longer valid.

## Installation of Combustion Air Inlet Kit, Option DE2

Applies to: **Tubular Infrared Model VR (60 Hz or 50 Hz) and Model GVR (50 Hz)**

### Application and Kit Components

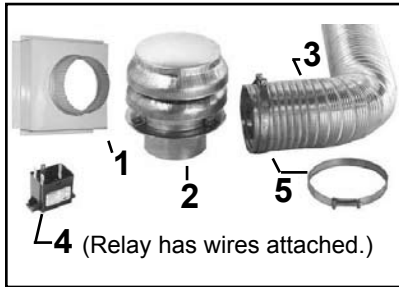
An optional combustion air inlet kit is required when the application requires combustion air from outside the building. Outside combustion air should be supplied (1) if the building atmosphere has negative pressure; (2) if the building atmosphere is dirty or dusty; (3) if the building atmosphere contains any substance that will cause toxic gas when passed through a flame; or (4) if the heater is being installed in a tightly closed room that does not provide required air for combustion.

Do not install outside combustion air inlet on an unvented heater.

The kit includes components listed below. The air inlet cover and flexible section of pipe connect directly to the burner/control box and extend a maximum of three feet (.9M). The pipe between the expandable pipe and the terminal cap is field-supplied.

### Components

**FIGURE 1 - Outside Air Kit, Option DE2**



Kit P/N			204785	204786
Application/BTUH Size (VR is available in 60 Hz or 50 Hz; GVR is 50 Hz only.)			50, 75, 100, & 125 (all 50 or 60 Hz); 150 (60 Hz only)	150 and 175 (50 Hz only); 175 and 200 (60 Hz only)
Item	Components	Qty	P/N	P/N
1	Combustion Air Inlet Cover	1	204783	204784
2	Inlet Air Cap	1	120726	204782
3	Flex Pipe, 40" (1016mm) long	1	120729, 4" diameter	204956, 5" diameter
4	Relay Assembly	1	205540 (Relay P/N 103319 w/ three 6" wires w/ terminals)	
<b>Hardware Bag:</b>				
5	1/2" Wide Worm Drive Clamp, stainless	2	102716, 3-5/8" to 4-1/2" diameter range	155320, 4-5/8" to 5-1/2" diameter range
(Not illustrated)	Drill Fixture	1	204615	204617
	#8-32x1/2" long screw	2	195638 (for attaching combustion air inlet cover)	
	#6x5/8" long round head phillips Rolox	2	110076 (for attaching relay)	
	Orange Wire Nut	1	16354	
	Yellow Wire Nut	1	16355	
	Wiring Diagram Label	1	205526	

### Maximum Length

Select a location for the outside air terminal so that the maximum length including the equivalent length for elbows is not exceeded.

Maximum Length of Outside Combustion Air Inlet Pipe					
Type of Inlet Air Pipe	BTUH Size	Hz	Maximum Length	Equivalent Length for	
				90° Elbow	45° Elbow
* 4" Smooth Wall	50, 75, 100	50 or 60	80 ft (24.3M)	10 ft (3M)	5 ft (1.5M)
	125				
	150	60			
5" Smooth Wall	150	50	60 ft (18.3M)	10 ft (3M)	5 ft (1.5M)
	175	50 or 60			
	200	60			
* 4" Corrugated or Flexible	50, 75, 100	50 or 60	40 ft (12.2M)	N/A	N/A
	125				
	150	60			
5" Corrugated or Flexible	150	50	30 ft (9.1M)	N/A	N/A
	175	50 or 60			
	200	60			

\*Assumes the use of three feet (.9M) of flexible pipe at the combustion air inlet on the burner/control box

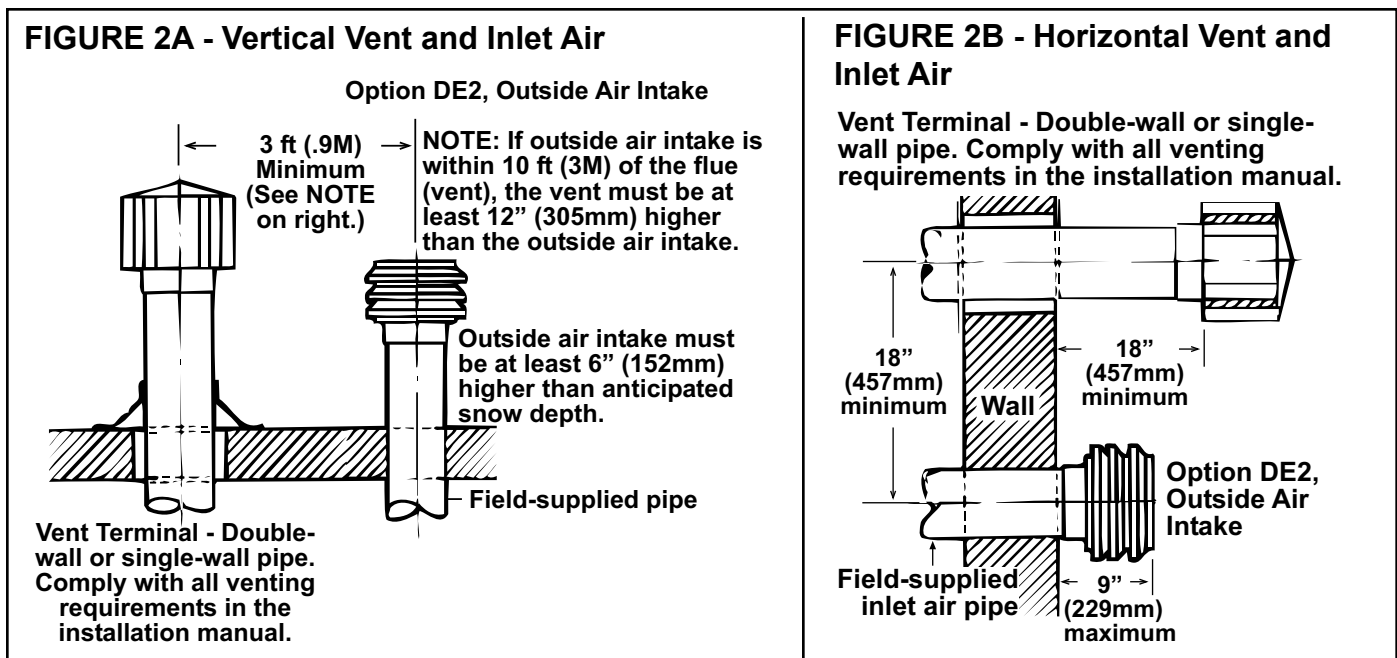
# Installation Instructions

**WARNING:** If the heater is installed, turn off the gas and disconnect the electric before installing the optional combustion air inlet kit.

**WARNING:** This outside air kit is to be installed by a qualified service person in accordance with these instructions and in compliance with all codes and requirements of authorities having jurisdiction. The qualified agency performing this work assumes responsibility for this installation.

Read all instructions before proceeding; do steps in the order that best suits the installation.

- 1) **Install Air Inlet Terminal** - Install outside terminal portion of the air inlet. See requirements for a vertical vent in the illustration in **FIGURE 2A** or horizontal vent in **FIGURE 2B**. Use only the inlet cap included in the option kit. A different combustion air inlet cap could cause nuisance problems and/or unsafe operating conditions.



**FIGURE 3 - Position template and mark holes on side of burner box. Drill holes and attach the combustion air inlet cover.**



If the inlet cap is located adjacent to the exhaust terminal, the terminals must be separated by a minimum distance of three feet (.9M). The only exception is when the air inlet is located directly below a horizontal vent cap. The required clearance between an air inlet terminal located directly below the vent cap is 18" (457mm). **NOTE:** The vent and the fresh air intake may be installed in different pressure zones.

- 2) **Install the Inlet Air Pipe (field supplied)** - Install the inlet air pipe from the outside terminal to within a maximum of three feet (.9M) of the burner/control box. If the inlet air pipe passes through moisture-laden air, insulation or double-wall tubing may be needed to prevent condensation on the outside of the pipe. Provide adequate support.
- 3) **Attach the Combustion Air Inlet Cover (FIGURE 3)** - Align the hex nuts on the combustion air inlet side of the burner/control box with the holes in the sheetmetal drill template. Using the outer four holes in the template, mark and drill four 7/64" diameter holes for attaching the air inlet cover. Attach the air inlet cover using the screws provided.
- 4) **Install Expandable Pipe** - Use one clamp to attach the expandable pipe to the air inlet cover. Use the other to attach the expandable pipe to the field-

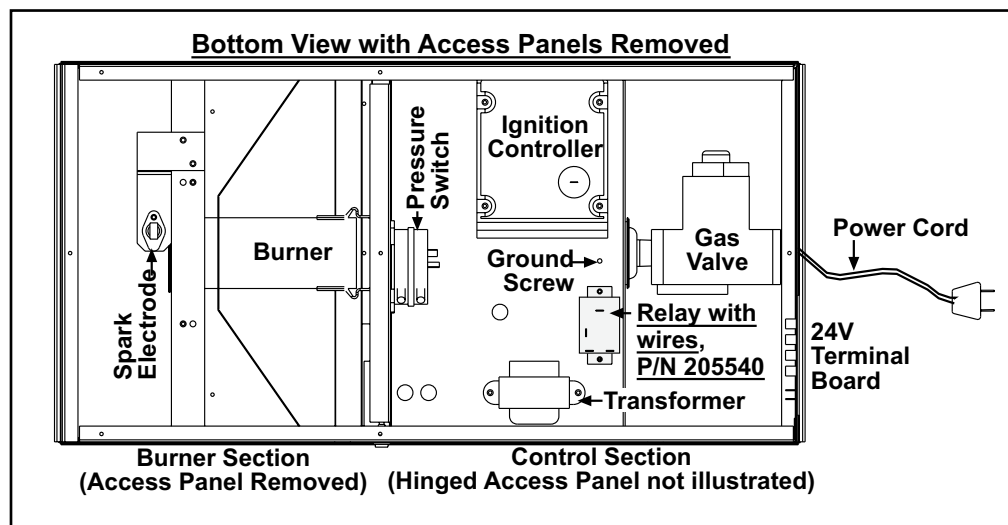
supplied piping that extends to the outside air inlet terminal. Do not extend the flexible pipe more than three feet (.9M) as it must be able to expand and contract with the heater.

- 5) **Install the Relay** - Open the control access door on the burner/control box. Locate the two holes between the transformer and the ignition controller (See **FIGURE 4**). Install the relay using the screws provided.

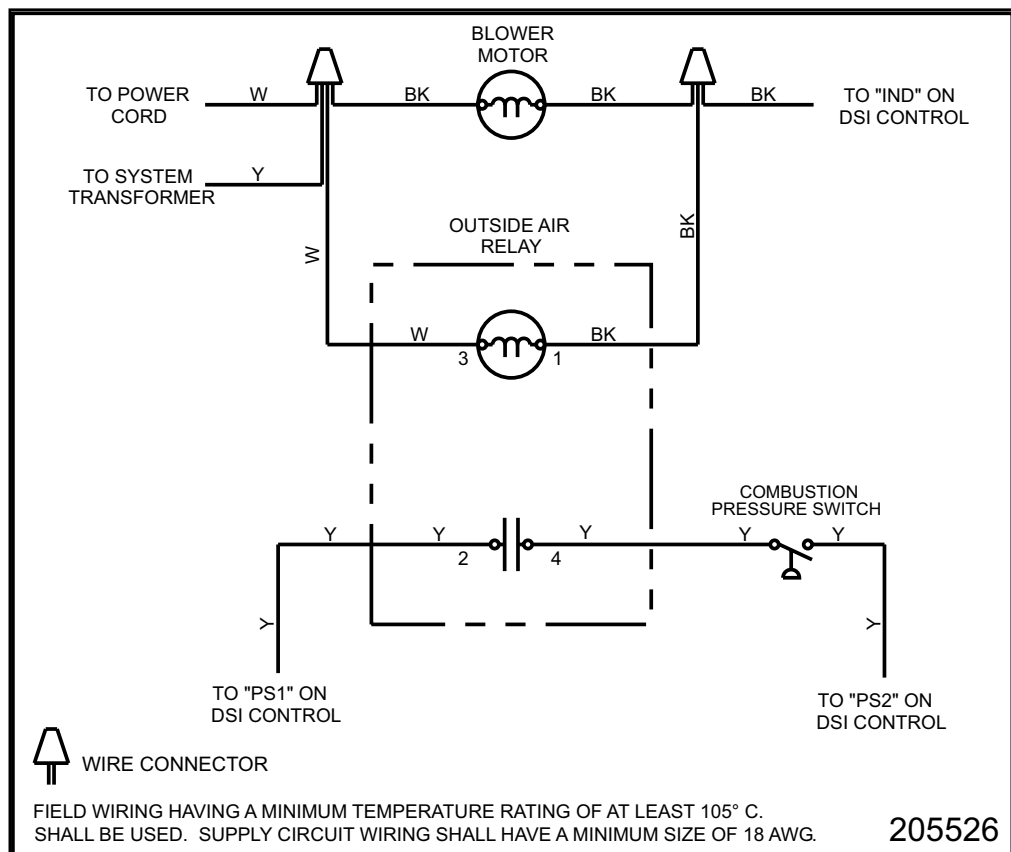
**FIGURE 4 - Attach relay in location shown and connect wires according to the wiring diagram in FIGURE 5.**

**NOTE:** When using outside air, the pressure switch will sense high outdoor wind, and the pressure switch contacts will close. **The relay permits a “call for heat” during high wind conditions and prevents a nuisance problem of the DSI control going into lockout.**

**FIGURE 5 - Wiring diagram for installing relay.**



Wire the relay according to the wiring diagram in **FIGURE 5** or the label in the kit.



- 6) Close the control access door and adhere the wiring diagram label to the rear of the burner box.  
During unit startup, check for proper operation.

