REZNOR®

Installation Instructions for Power Venter, Options CA1, CA2, and CA3

APPLIES TO: Model F and B Unit Heaters

Option Description

An Option CA Power Venter is a motorized vent exhauster that is designed to permit the operation of Reznor® gravity-vented Model F and Model B unit heaters in areas of negative pressure up to 0.15" w.c. or where horizontal venting is required. Before beginning installation:

- ☐ Read these entire installation instructions.
- ☐ Check your option kit to be sure that it is the appropriate option for your heater.
- ☐ Note that the size of the vent pipe changes with the addition of this venter (See Paragraph 7).

When installation of the power venter is completed, place this instruction booklet in the instruction envelope supplied with the heater. **It is important that this booklet be kept for future reference.**

WARNING: This venter and flue adapter are designed FOR USE WITH REZNOR® MODEL F or MODEL B unit heaters *ONLY.* This venter is not applicable to other Reznor brand products or to appliances not manufactured as Reznor products.

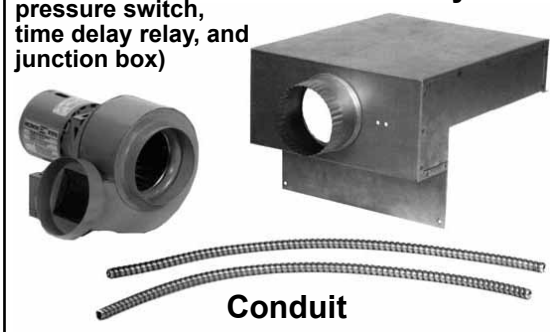
Components

Models F and B Size		**25-100**	**125**			**130-200**			**250-400**		
Option Package by Option Designation, Model Size, Voltage, and P/N		**CA1 115V 98467**	**CA1 115V 136862**	**CA2 208V 135441**	**CA3 230V 135442**	**CA1 115V 98468**	**CA2 208V 98469**	**CA3 230V 98470**	**CA1 115V 98471**	**CA2 208V 98472**	**CA3 230V 98473**
Components	Qty	P/N	P/N	P/N	P/N	P/N	P/N	P/N	P/N	P/N	P/N
Venter Sub-assembly	1	97976	97976	97977	97978	97976	97977	97978	97955	97956	97957
Flue Adapter Assembly	1	97823	146094			97824			97825		
Flexible Conduit 3/8" x 24"	2	19680									
Parts Bag (see list below)	1	97966									

P/N 97966 includes: The parts bag is standardized for all option kits. It contains all items required for any installation and may include parts that do not apply to your particular installation. **The parts highlighted should always be used.**

Qty	P/N	Description
2	96386	Hanger Assembly
1	97943	Restrictor, 1" Wide
1	97944	Restrictor, 1-1/2" Wide
1	98664	Restrictor, 2" Wide
1	99665	Restrictor, 2-3/4" Wide
11	**11813**	**Sheetmetal Screw, #10 x 1/2"**
2	**97941**	**Conduit Connector, Tinnerman #C54882-017**
13	**16354**	**Twist-on Wire Connector (orange), Ideal #3-0273**
2	16355	Twist-on Wire Connector (yellow) (used for field connection on Model B)
1	**16199**	**Box Connector, T&B #253**
1	**1417**	**90° Box Connector**
2	**16358**	**Anti-Short Bushing (red)**
1	**98364**	**Brown Wire Assembly**
1	**38462**	**Blue Wire, 18 Gauge x 60", 105°C**
1	**91453**	**Orange Wire, 18 Gauge x 60", 105°C**
1	**38463**	**Yellow Wire, 18 Gauge x 60", 105°C**
1	**38464**	**Brown Wire, 18 Gauge x 60", 105°C**
1	**3841**	**Black Wire, 18 Gauge x 36", 105°C**
1	**87880**	**White Wire, 18 Gauge x 36", 105°C**
2	**148086**	**Open/Closed Bushing, Heyco #OCB-625 (black)**
1	**103171**	**Warning Label**

FIGURE 1 - Power Venter Option



*** Flue Adapter Assembly for Size 125 is not the same as illustrated. Size 125 adapter assembly is a flat plate with flanges and a 4" collar (See FIGURE 4B, page 4).**

Venter Operation

When the thermostat calls for heat, the thermostat contacts close the circuit which, after a delay of approximately 30 seconds, starts the venter. When the venter starts, air from the venter blower closes the pressure switch that is built into the venter. The closing of the pressure switch completes the electric circuit to the burner controls, opening the gas valve. When the thermostat is satisfied, the thermostat closes the gas valve and de-energizes the time delay relay. Approximately 45 seconds after the thermostat is satisfied, the venter blower stops and the pressure switch resets to the open position.

Installation Instructions

HAZARD INTENSITY LEVELS used in these instructions:

1. **DANGER: Failure to comply will result in severe personal injury or death and/or property damage.**
2. **WARNING: Failure to comply could result in severe personal injury or death and/or property damage.**
3. **CAUTION: Failure to comply could result in minor personal injury and/or property damage.**

WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury, or death. Read the installation, operation, and maintenance instructions thoroughly before installing or servicing this equipment.

DANGER: This power venter is to be installed by a qualified service agency in accordance with these instructions and in compliance with all codes and requirements of authorities having jurisdiction. Failure to follow instructions could result in death, serious injury, and/or property damage. The agency performing this work assumes responsibility for this installation.

If the heater is installed, **turn off the gas** and **turn off the electric power.**

If the heater is a fan model with standard two-point suspension, the two hanger brackets in the option package will have to be installed to convert the heater to four-point suspension. Remove both of the outer side panels of the heater and follow the instructions in Step 1.

If the heater is a fan model with factory-equipped optional four-point suspension or a blower model, remove only the left outer side panel (left when facing the rear of the heater) and proceed to Step 2. (This panel must be removed to make wiring connections.)

WARNING: Four-point suspension is required to balance and level the heater. See Hazard Levels, above.

1. Install Hanger Brackets - <u>Applies to fan model with two-point suspension only</u>

Since the power venter adds weight to the back of the heater, additional suspension points must be used to maintain the unit in a level position without placing a load on the gas valve and piping. With the outer side panel removed, the factory-installed hanger bracket is visible.

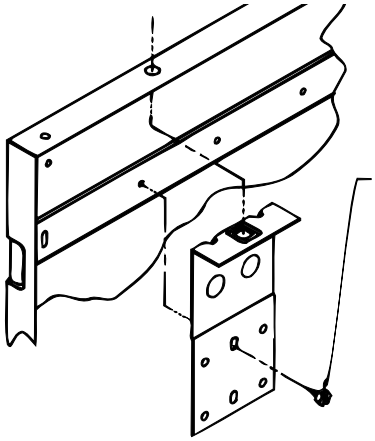
On the side of the heater, position a hanger bracket from the option kit between the rear of the heater and the factory-installed hanger bracket. Remove the screw from the inner side panel at this location. Attach the hanger bracket to the heater by putting the screw through the slotted hole in the hanger bracket and re-inserting it into the inner side panel (See **FIGURE 2**). Slide the hanger bracket up against the top of the inner side panel and tighten the screw..

Install the other hanger bracket on the opposite side of the heater.

If the heater is installed, suspend it from the two new suspension points. Be sure that the heater is level and that the hanger rods are locked to the heater as shown in **FIGURE 3**.

FIGURE 2 - Hanger Bracket Location

Align Clearance Hole and Cage Nut



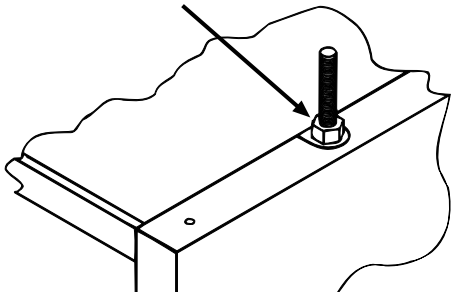
Use Sheetmetal Screw Removed from Heater

Position bracket, push upward, insert screw in slotted hole and tighten. (Models 25 - 125 use upper slotted hole; Models 130 - 400, use lower slotted hole.)

FIGURE 3 - Suspend the Heater from the Two New Suspension Points

Add Nut to Lock to Inner Panel.

NOTE: Do not lock to outer panel. This may prevent the outer side panel from being removable for future service.



2. Prepare and Install the Flue Adapter Assembly

(a) Select and Attach the Flue Restrictor

WARNING: For proper and safe operation, the correct restrictor must be installed where required. Measure the restrictor before installing to be certain of the correct size.

There are four restrictors (rectangular pieces of sheetmetal from 1" to 2-3/4" wide and 6" to 7-3/4" long) included in your option package. The flue restrictor which controls the volume of dilution airflow through the drafthood and vent pipe **must be installed** on units where required to maintain safe and efficient operation.

Using the chart on the right, determine whether or not a restrictor is required, and if so, which one to use. Select the appropriate restrictor from the option kit. On the **inside** of the adapter assembly (See **FIGURE 4A or 4B**), position the restrictor across the flue opening. Attach the restrictor using two sheetmetal screws.

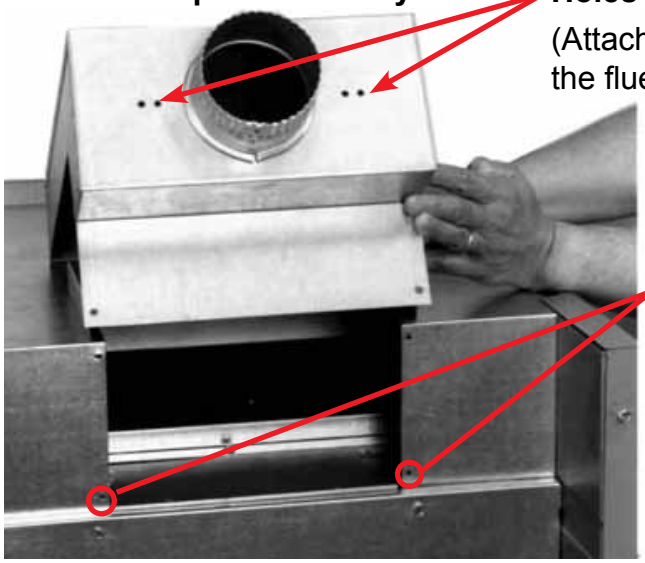
Heater Size	Restrictor Size	P/N
25 - 50	2-3/4" x 6"	98665
75 - 100	2" x 6"	98664
125	1" x 7"	97943
130	1-1/2" x 7-3/4"	97944
165	1" x 7"	97943
200	None	
250 - 300	1-1/2" x 7-3/4"	97944
400	None	

FIGURE 4A - Installing a Flue Adapter Assy
(Applies to all sizes except Size 125; see **FIGURE 4B**.)

Flue Adapter Assembly

Holes for attaching restrictor

(Attach the restrictor on the inside **before** installing the flue adapter assembly.)



Line adapter up with these two holes when marking for holes to drill.
(See instructions on page 4.)

NOTES:

- The flue adapter assembly for a Size 125 is not the same as illustrated here; see **FIGURE 4B**, page 4.
- Heaters manufactured prior to 10/89 have a fixed vertical vent outlet. If the heater being serviced has a fixed vertical vent outlet, install the adapter assembly with restrictor attached over the fixed vent outlet.

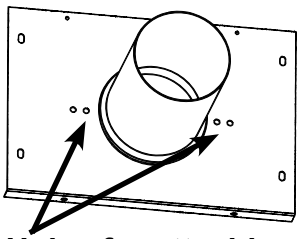
Installation Instructions (cont'd)

2. Prepare and Install the Flue Adapter Assembly (cont'd)

(b) Install the Flue Adapter Assembly - applies to Sizes 25, 50, 75, 100, 130, 165, and 200 (See FIGURE 4A, page 3.)

1) Remove the factory-installed flue collar assembly and discard. (**NOTE:** If the heater was manufactured prior to 10/89, it has a fixed vertical vent outlet so there is nothing to remove. Position the adapter assembly with restrictor attached over the fixed vent outlet.)
2) Position the flue adapter assembly on the top of the heater (over the flue outlet support) and center. Line up with the two holes on the back of the heater. Mark the three new screw holes on the top of the heater.
3) Remove the adapter assembly and drill the holes with a 1/8" bit.
4) Attach the flue adapter assembly with sheetmetal screws.

FIGURE 4B - Power Venter Flue Adapter for a Size 125 (plate with a 4" flue collar)



Holes for attaching 1" x 7" restrictor on the inside of the assembly

(c) Install the Flue Adapter Assembly (FIGURE 4B) - applies to Size 125

If the heater is installed, remove and discard the flue collar plate with the 7" collar. Replace it with the venter flue adapter from the kit **with the restrictor attached in Step 2.(a)**.

If the heater has not been installed, the flue outlet of a Size 125 heater requires field assembly. To adapt the heater for power venting, the following pieces are used:

- Flue Collar Support provided with the heater
- Flue Adapter Assembly provided in the optional power vent kit with the restrictor attached in Step 2.(a) (See **FIGURE 4B**.)
- Flat Cover provided with the heater

NOTE: The flue collar assembly with the 7" oval collar provided with the heater will not be used.

Refer to the instructions in the heater installation manual or Instruction **Form I-F/B-HV125** in the standard vent outlet hardware bag. Attach the flue collar support as instructed. Instead of attaching the standard flue collar assembly with the 7" oval flue collar, attach the flue adapter assembly from the optional venter kit (the flat plate with 4" collar and attached restrictor).

Attach the flat cover plate.

(d) Install the Flue Adapter Assembly - applies to Sizes 250, 300 and 400 (See FIGURE 4A, page 3.)

If the heater is installed, remove and discard the flue collar assembly and the cover plate. Follow the instructions below to replace them with the venter flue adapter from the kit **with the restrictor attached**.

1) Position the flue adapter assembly from the option kit on the top of the heater and center. Line up with the two holes on the back of the heater (See **FIGURE 4A**, page 3). Mark the three new screw holes on the top of the heater.
2) Remove the adapter assembly and drill the holes with a 1/8" bit.
3) Attach the flue adapter assembly with five sheetmetal screws.

If the heater has not been installed, the flue outlet of Sizes 250, 300, and 400 heaters requires field assembly. But when adding the optional power venter, none of the flue outlet pieces shipped with the heater are used. Remove the two center screws (one of each side) that are holding the flue outlet pieces in place for shipping. **Discard all three pieces and the parts bag.**

1) Position the flue adapter assembly from the option kit on the top of the heater and center. Line up with the two holes on the back of the heater

(See **FIGURE 4A**, page 3). Mark the three new screw holes on the top of the heater.

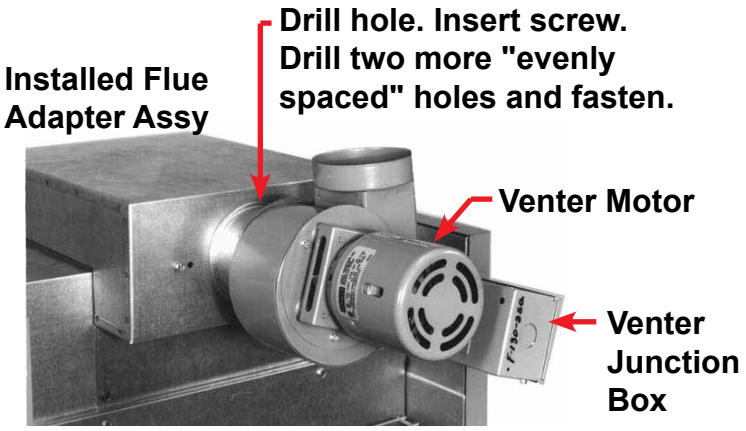
2) Remove the adapter assembly and drill the holes with a 1/8" bit.

3) Attach the flue adapter assembly with five sheetmetal screws.

3. Install Venter Sub-assembly

The venter sub-assembly is assembled and wired at the factory. It includes the venter wheel and housing, the motor, a junction box, an airflow switch, a time delay relay, and a capacitor (Sizes 300 and 400 only). Position the venter sub-assembly on the flue adapter assembly. (See **FIGURE 6**.) Rotate the venter to a position that best suits your vent pipe direction. To ensure continued proper operation of the sail switch, DO NOT position the venter with the vent opening in a direction below horizontal.

FIGURE 6 - Attaching the Venter Sub-Assembly



Instructions:

1) Holding the venter sub-assembly in position with the desired vent direction (never below horizontal), drill a hole through the connecting overlap in the top portion of the venter sub-assembly and the adapter assembly.

2) Insert a sheetmetal screw.

3) Drill two more holes approximately 120° apart and insert sheetmetal screws.

4. Install Power Venter Wiring

All electric wiring and connections, including electrical grounding MUST be in accordance with the National Electric Code ANSI/NFPA No. 70 (latest edition) or, in Canada, with the Canadian Electrical Code, Part I-C.S.A., Standard C22.1. In addition, the installation must comply with local ordinances and applicable gas company requirements.

The electrical supply wiring connects to your heater on the upper rear of the left side of the unit (facing the back of the heater). Locate the two black hole plugs in the wiring connection holes. Carefully pinch and remove these two plugs; do not pry. (See **FIGURE 7**; location of holes will be either to the side or below the access panel.)

Installation Instructions (cont'd)

FIGURE 7 - Entrances for Wiring Connections

NOTE: If a fan model has an optional unit-mounted disconnect switch, the on/off switch is at the electrical supply box.

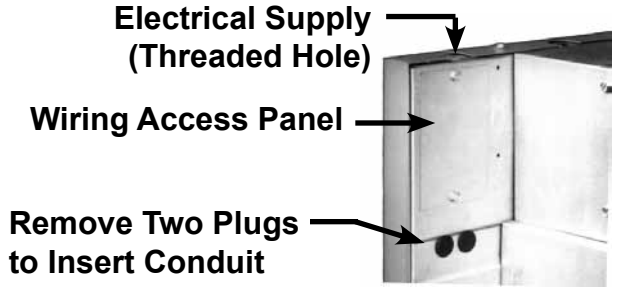
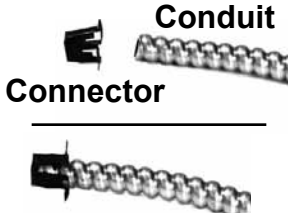


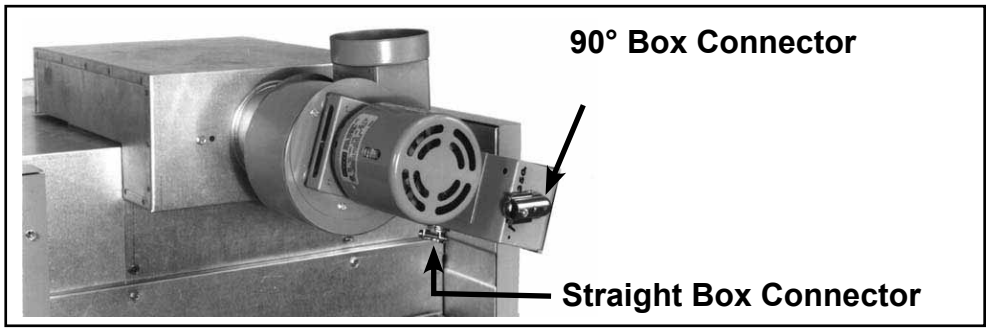
FIGURE 8 - Assemble Wire Conduit and Connectors



1) Attach the Wire Conduit - Screw one of the conduit connectors to one end of each piece of flexible conduit (See **FIGURE 8**). Insert the end of the conduit with the connector into one of the holes from which you removed the black plugs (**FIGURE 7**). Push until the connector snaps into place. Repeat with the other assembled conduit and connector.

2) Position the Wires and the Box Connectors (See FIGURES 9 and 10.) - Using a 1/4" socket or a screwdriver, remove the cover from the power venter junction box. Depending on the direction of the vent, position the straight box connector and the 90° box connector at the knockouts in the junction box. Be sure that the straight connector is positioned so that it will be possible to tighten the holding screw. Attach the box connectors using their locknuts. Tighten with pliers.

FIGURE 9 - Attach Box Connectors to Venter Junction Box



Route the conduit pieces to the connectors. (The conduit in the hole closest to the rear of the heater will attach to the 90° connector; the conduit in the hole toward the front of the heater will attach to the straight connector.) Depending on the size of the unit and the direction of the vent, you may have to shorten the lengths of the conduit pieces. The conduit must not interfere with fan operation or contact the hot surfaces of the flue gas collection box or vent pipe. To shorten, bend the conduit until it breaks. Using a pair of wire snips, finish cutting and deburr the end.

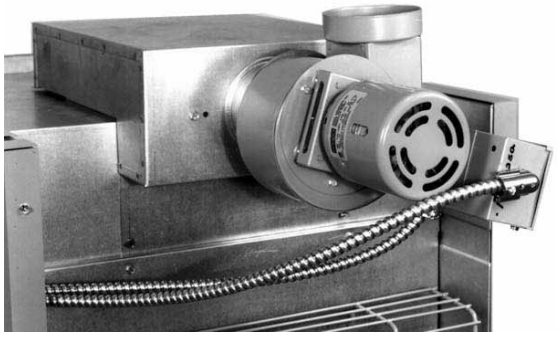
Line Voltage Wires (black and white) and the Conduit in the Hole Closest to the **Rear** of the Heater - Feed the two line voltage wires (black and white) through the piece of conduit attached to the hole **closest to the rear of the heater.** Insert a red plastic anti-short bushing in the end of the conduit.

Low Voltage Wires (brown, yellow, blue, and orange) and the Conduit in the Hole Closest to the **Front** of the Heater -- Feed the four low voltage (brown, yellow, blue, and orange) wires through the piece of conduit attached to the hole **closest to the front of the heater**. Insert a red plastic anti-short bushing in the end of the conduit.

WARNING: Do not omit the anti-short bushings.

FIGURE 10 - Conduit Placement

Conduit must not interfere with fan operation or contact hot surfaces of the flue collection box or vent pipe.



Feed the line voltage wires (black and white) through the 90° connector. Tighten the cover on the connector being careful not to punch a hole in the conduit.

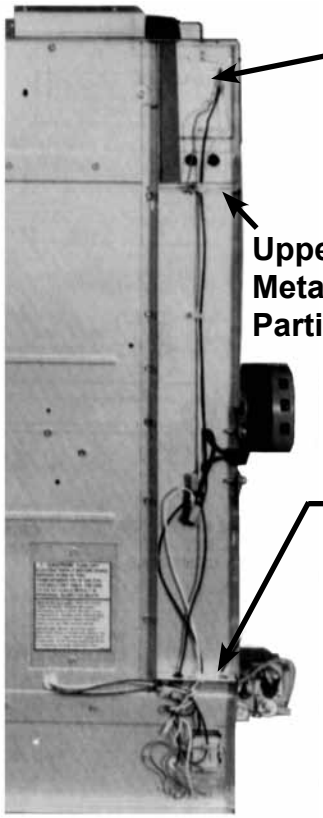
Feed the four low voltage wires (brown, yellow, blue, and orange) through the straight box connector. Tighten the holding screw.

3) Connect the Wires in the Venter Junction Box -- Using the twist-on wire connectors provided and following the wiring diagram in **FIGURE 14**, page 9, make the six connections. Either replace the junction box cover now or after you have tested the venter operation (Paragraph 9).

5. Connect Power Venter and Heater Wiring

If the outer side panel (left when facing the rear of the heater) has not been removed, remove it to wire the heater for venter operation. See **FIGURE 11.**

FIGURE 11 - Wiring on the Inner Side Panel of a Standard Fan Model (without the power venter installed)



Electrical box for line voltage connection.

If the unit has an optional unit-mounted disconnect switch (Option AI1), connect the supply wires to the venter wires in series after the on/off switch. When the switch is off, the venter should not have power. (See wiring diagram on page 9.)

Either plastic cable holders or metal partition (illustrated)

Heaters manufactured prior to 6/92 have two horizontal metal partitions and require installation of both the open/closed bushings in the kit. Heaters manufactured beginning 6/92 have only an upper metal partition and plastic cable holders in the lower position. Only one of the open/closed black bushings in the kit is used.

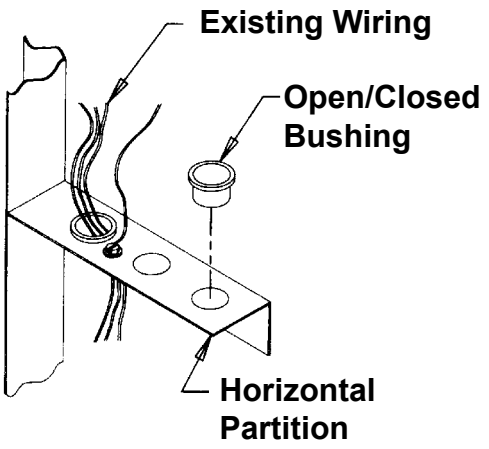
Line Voltage Wiring (black and white) - Connect the line voltage wires in the electrical supply box on the inner side panel. Follow the wiring diagram in **FIGURE 14**, page 9.

On a blower unit, use the two large (yellow) twist-on wire connectors in the option package to make the line voltage connections.

On a fan unit equipped with an optional disconnect switch (Option AI1), the on/off switch in located at the electrical supply box (See **FIGURE 7**, page 6). Connect the black supply wire in series after the disconnect switch. When the disconnect switch is off, power should be disconnected to the venter.

5. Connect Power Venter and Heater Wiring (cont'd)

FIGURE 12 - Install Bushing(s) in Horizontal Metal Partition(s)



Low Voltage Wiring (orange, brown, blue, and yellow) - Route the low voltage wires down the side of the heater and make connections to the heater wiring. Refer to the wiring diagram in **FIGURE 14**, page 9.

To be routed down the side of the heater, the wires must pass through the horizontal partitions or be attached to cable holders. Locate the upper horizontal partition in the inner side panel (See **FIGURE 11**). In the vacant hole, insert the black open/closed bushing (See **FIGURE 12**). If the heater has a lower metal partition, insert the second bushing.

Run the four low voltage wires down the side of the heater, through the new bushing(s) and wire cables. Connect the wires according to the wiring diagram in **FIGURE 14**, page 9. **Be sure to connect the brown ground wire.**

Either replace the heater side panel(s) now or after you have tested the venter operation (Paragraph 8).

Blocked Vent Switch -- Model F and B heaters manufactured beginning April 1991 are equipped with a blocked vent switch. The optional power venter is designed to function with the blocked vent switch. **Do not disable the blocked vent switch when installing the power venter.** The blocked vent switch is an important safety device.

6. Adhere Warning Label

Remove the self-adhesive warning label from the parts bag.

FIGURE 13 - Warning Label

WARNING

This heater has been converted for operation with a power exhauster.
Do not operate as a gravity-vented heater.
To do so could result in property damage, personal injury, and/or death.

Select a place on the fan back panel or the blower adapter back to adhere the label. Do not put the label on a hot surface. Wipe the area with a clean, dry cloth. Peel the adhesive backing from the label and adhere it to the selected heater surface.

IMPORTANT INSTALLATION NOTES: If the heater is not installed, be sure to support the bottom with plywood or other appropriate material. The bottom access panel could be damaged if the bottom is not supported. Install the heater in accordance with the installation instructions supplied with the heater and the venting, testing, and warning instructions in this booklet.

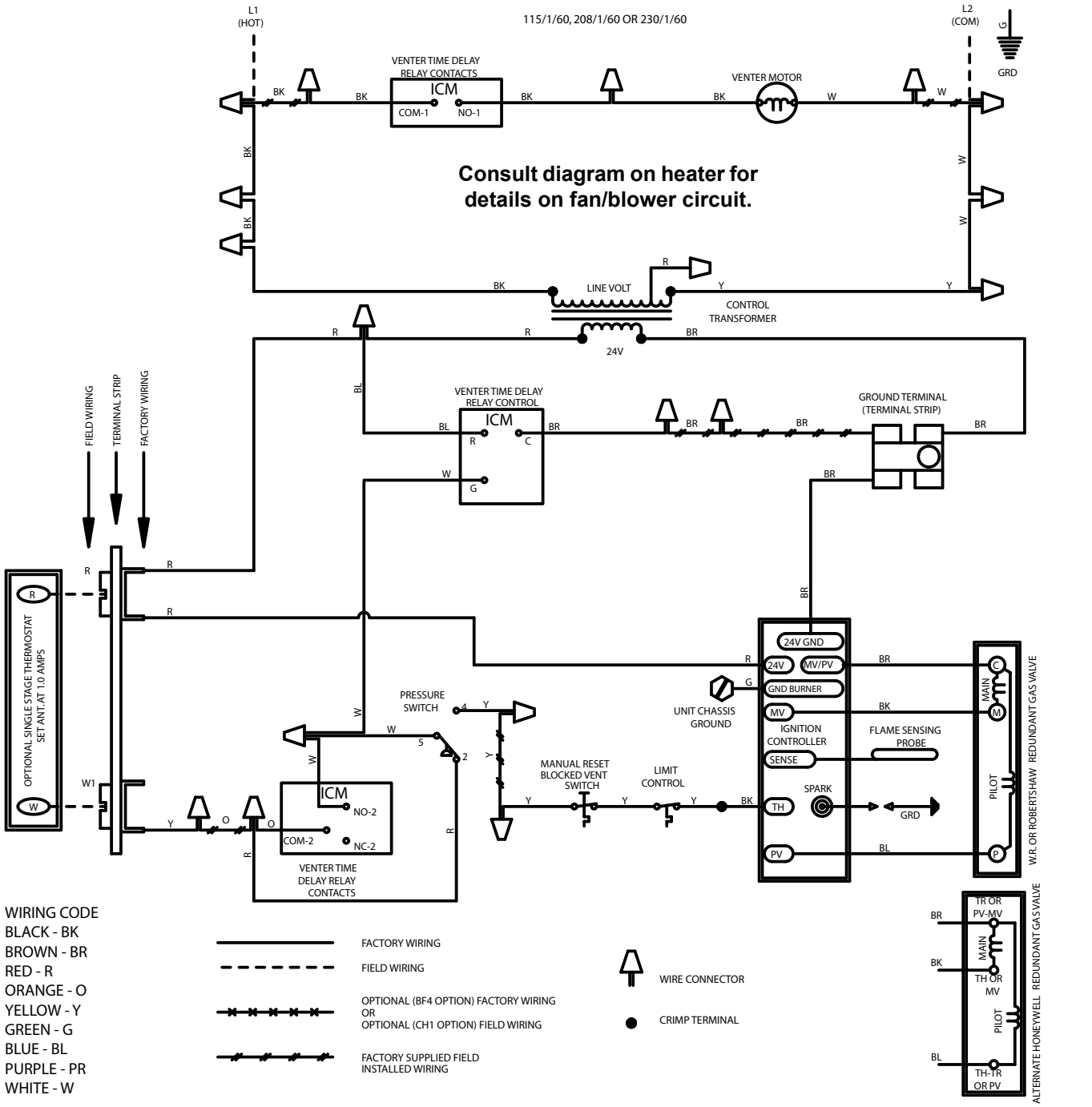
FIGURE 14 - Wiring Diagram of Model F or Model B with Optional Power Venter

OPERATING SEQUENCE

- SET THERMOSTAT AT LOWEST SETTING.
- TURN ON MAIN AND PILOT MANUAL GAS VALVES.
- TURN ON POWER TO UNIT.
- SET THERMOSTAT AT DESIRED SETTING.
- THERMOSTAT CALLS FOR HEAT ENERGIZING THE VENTER MOTOR AFTER A TIME DELAY OF APPROX. 30 SECONDS.
- PRESSURE SWITCH CLOSES FIRING UNIT AT FULL RATE AFTER PILOT PROVING SEQUENCE.
- FAN CONTROL SENSES HEAT EXCHANGER TEMPERATURE, ENERGIZING THE FAN MOTOR.
- WHEN THE THERMOSTAT IS SATISFIED, THE GAS VALVE CLOSES AND THE VENTER MOTOR RUNS FOR APPROX. 45 SEC.
- IF THE FLAME IS EXTINGUISHED DURING MAIN BURNER OPERATION, THE SAFETY SWITCH CLOSES THE MAIN VALVE. IF THE PILOT IS NOT ESTABLISHED WITHIN 120 SEC. THE UNIT LOCKS OUT FOR ONE HOUR, UNLESS IT IS RESET BY INTERRUPTING POWER TO THE CONTROL CIRCUIT. (SEE LIGHTING INSTRUCTIONS)
- SET THERMOSTAT AT LOWEST SETTING FOR SHUTDOWN.

NOTES

- THE FOLLOWING CONTROLS ARE FIELD INSTALLED OPTIONS: THERMOSTAT AND S/W SWITCH
- THE FOLLOWING CONTROLS ARE FACTORY INSTALLED OPTIONS: NONE
- DOTTED WIRING INSTALLED BY OTHERS.
- CAUTION: IF ANY OF THE ORIGINAL WIRE AS SUPPLIED WITH THE APPLIANCE MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105 DEGREES C., EXCEPT FOR SENSOR LEAD WIRE WHICH MUST BE 150 DEGREES C.
- USE #18 GA WIRE FOR ALL WIRING ON UNIT.
- LINE AND BLOWER MOTOR BRANCH WIRE SIZES SHOULD BE OF A SIZE TO PREVENT VOLTAGE DROPS BEYOND 5% OF SUPPLY LINE VOLTAGE.
- ON 230V. UNITS THE CONTROL TRANSFORMER HAS A DUAL VOLTAGE PRIMARY. FOR 230V. UNITS USE BLACK AND YELLOW LEADS (CAP RED). FOR 208V. UNITS USE BLACK AND RED LEADS (CAP YELLOW). ON 115V. UNITS THE CONTROL TRANSFORMER IS A SINGLE VOLTAGE PRIMARY. FOR 115V. UNITS USE BLACK AND YELLOW LEADS.
- SEE INSTALLATION INSTRUCTIONS FOR GREATER DETAIL.



Installation Instructions (cont'd)

DANGER: All gas-fired units must be vented to the atmosphere. See Hazard Levels, page 2.

7. Venting the Heater

Venter Outlet - The addition of the power venter changes the vent system requirements. It is recommended that a 12-18" piece of straight pipe be connected to the venter before attaching an elbow. Venter outlet sizes and vent system length requirements are listed in the following tables.

Vent Outlet Diameters with Option CA Power Venter		
Models	Size	Outlet Diameter
F (Fan) or B (Blower)	25 - 200	4" Round
	250 - 400	6" Round

Size	Maximum Vent Lengths *					
	(without condensation)			(possible condensation**)		
	Diameter	Maximum Length		Diameter	Maximum Length	
		ft	M		ft	M
25	3" ***	30	9	3" ***	50	15.2
	4"	30	9	4"	50	15.2
50	3" ***	30	9	4"	75	22.9
	4"	40	12.2			
75	4"	50	15.2	5" ***	75	22.9
100	4"	50	15.2	5" ***	75	22.9
125	4"	75	22.9	8"***	100	30.5
130	4"	75	22.9	5" ***	100	30.5
165	4"	75	22.9	5" ***	100	30.5
200	4"	50	15.2	6" ***	100	30.5
250	4" ***	15	4.6	6"	100	30.5
	5" ***	40	12.2			
	6"	75	22.9			
300	6"	100	30.5	7" ***	125	38.1
400	6"	100	30.5	N/A	N/A	N/A
	7" ***	125	38.1			

* Deduct 15 feet (4.6M) for each 90° elbow and 7 feet (2.1M) for each 45° elbow. Elbow deduction does not apply to condensation determination.

** 65°F surrounding vent pipe and heater on cycle time of three minutes or greater.

*** Connect a taper-type "enlarger" or "reducer" to the venter outlet. Vent cap must be the same diameter as the vent system.

Vent Run - Use either vent pipe approved for a Category III heater or appropriately sealed 26-gauge galvanized steel or equivalent single-wall pipe.

Use only one of the flue pipe diameters listed in the Vent Length Table for the size of heater being installed.

If the vent pipe passes through a combustible roof, ceiling, side wall, or floor, provide standard wall thimble as made by the vent pipe manufacturer. When venting through a roof, provide adequate height to clear possible snow level. Refer to the illustrations in **FIGURE 15**.

Vent System Joints - Vent system joints depend on the installation and the type of pipe being used.

- If using single-wall, 26-gauge or heavier galvanized pipe, secure slip-fit connections using sheetmetal screws or rivets. Seal pipe joints either with tape suitable for 550°F or high temperature silicone sealant.
- If using Category III vent pipe, follow the pipe manufacturer's instructions for joining pipe sections. When attaching Category III pipe to the venter outlet or the vent cap, make secure sealed joints following a procedure that best suits the style of Category III pipe being used. (See instructions on top of page 11.)

Vent System Support - Support lateral runs every six feet, using a noncombustible material such as strap steel or chain. Do not rely on the heater for support of either horizontal or vertical vent pipe.

Vent Terminal (Pipe and Vent Cap) - The vent system must be terminated with a suitable vent cap. The vent terminal and vent cap must be the same diameter as the vent run. Any commercially available cap listed for use as a vent cap for fuel burning appliances is acceptable. For optimum stability under wind conditions, a Reznor Option CC1 vent cap is recommended.

See the illustrations in **FIGURE 15** for requirements of both vertical and horizontal vent termination. Using either single or double wall vent terminals is illustrated. Many local codes require the use of double-wall (Type B) vent for the portion of vent pipe (terminal) on the outside of the building.

Instructions for attaching double-wall (Type B) vent pipe to single-wall pipe and to the vent cap

1) Look for the "flow" arrow on the vent pipe; attach according to the arrow. Slide the pipe so that the single-wall pipe or the vent cap is inside the double-wall pipe.

2) Drill a hole through the pipe into the single-wall pipe or the vent cap. (Hole should be slightly smaller than the sheet metal screw being used.) Using a 3/4" long sheet metal screw, attach the pipe. Do not over-tighten. Repeat, drilling and inserting two additional screws evenly spaced (120° a part) around the pipe.

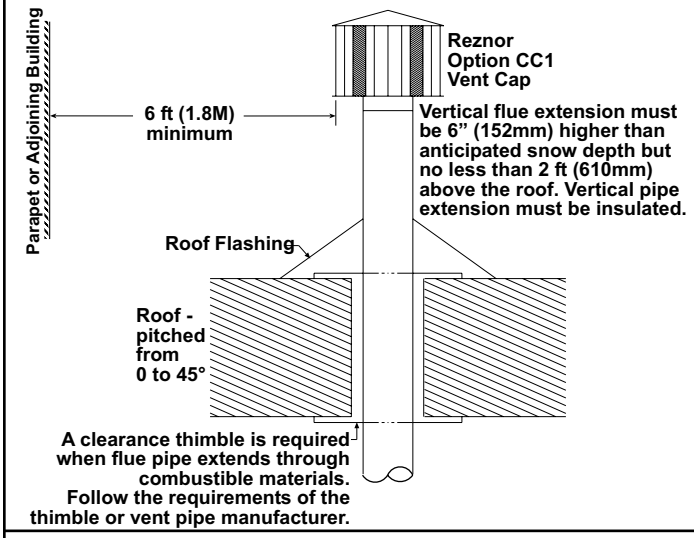
3) Use silicone sealant to seal any gaps. If there is an annular opening, run a large bead of sealant in the opening. The bead of sealant must be large enough to seal the opening, but it is not necessary to fill the full volume of the annular area.

DANGER: Vent terminal arrangements illustrated are applicable only to units with a power venter. Horizontal vent termination requires a power venter. DO NOT use a horizontal vent with a gravity-vented heater.

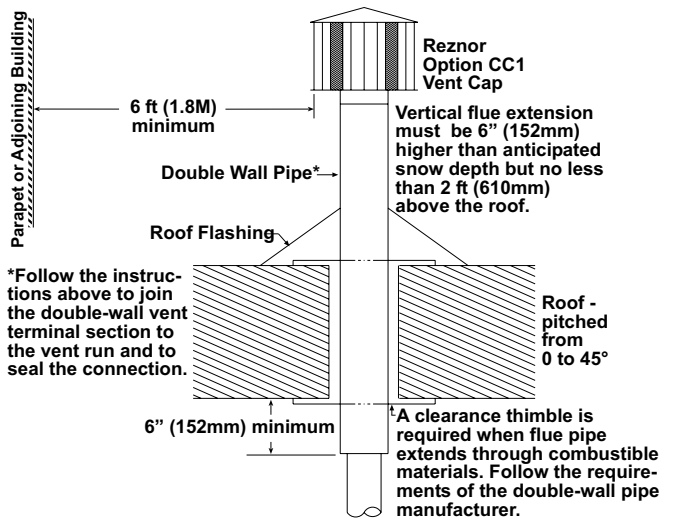
FIGURE 15 - Vent Terminal Arrangements

VERTICAL Vent Terminal

Single-wall vent run and single-wall terminal end

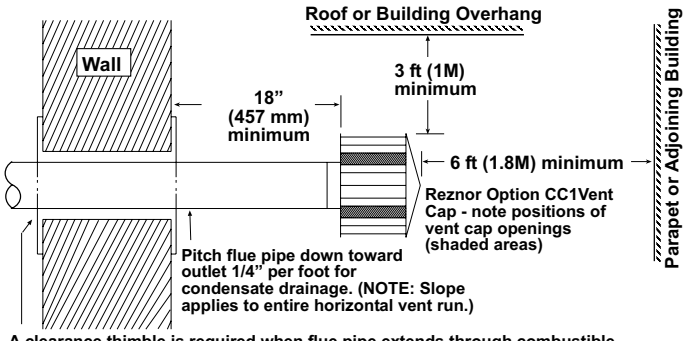


Single-wall vent run and double-wall terminal end

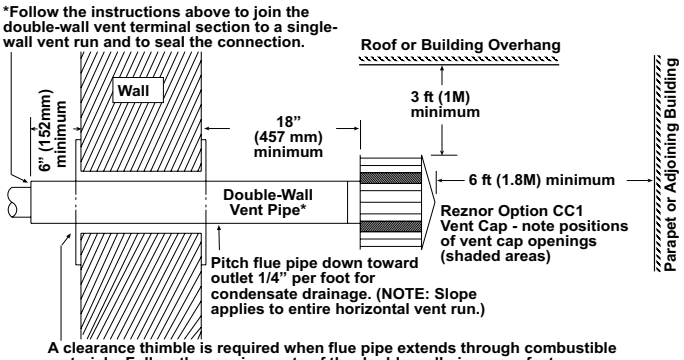


HORIZONTAL Vent Terminal

Single-wall vent run and single-wall terminal end



Single-wall vent run and double-wall terminal end



HORIZONTAL VENT TERMINAL CLEARANCES:

The location of the termination of the horizontal vent system must be in accordance with National Fuel Gas Code Z223.1. Required minimum clearances are listed on the right.

Products of combustion can cause discoloration of some building finishes and deterioration of masonry materials. Applying a clear silicone sealant that is normally used to protect concrete driveways can protect masonry materials. If discoloration is an esthetic problem, relocate the vent or install a vertical vent.

Structure	Minimum Clearances for Vent Termination Location (all directions unless specified)
Forced air inlet within 10 ft (3.1m)	3 ft (0.9M) above
Combustion air inlet of another appliance	6 ft (1.8M)
Door, window, or gravity air inlet (any building opening)	4 ft (1.2M) horizontally; 4 ft (1.2M) below; 1 ft (.3M) above
Electric meter, gas meter * and relief equipment	4 ft (1.2M) horizontally
Gas regulator *	3 ft (0.9M)
Adjoining building or parapet	6 ft (1.8M)
Grade (ground level)	7 ft (2.1M) above
*Do not terminate the vent directly above a gas meter or service regulator.	

Installation Instructions (cont'd)

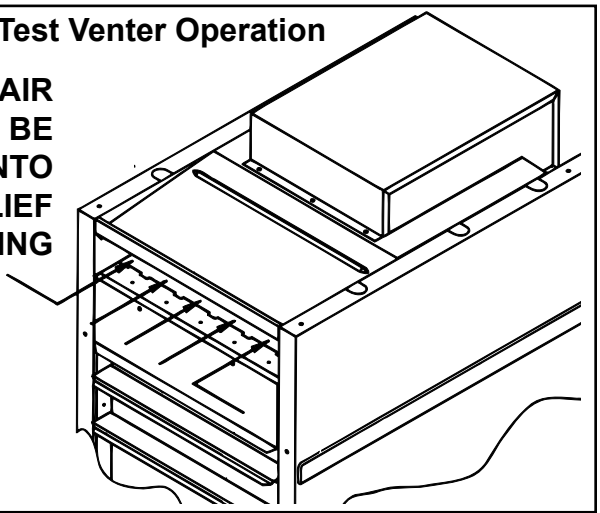
8. Test Venter Operation

Turn on the electric and the gas. Following the lighting instructions, light the heater. Test the unit for proper venting. With the building at the maximum negative pressure, operate the heater at the normal input. Check the airflow direction at the relief opening of the drafthood. Room air should be flowing into the relief opening. See **FIGURE 16**.

DANGER: Do not put a heater into service that does not properly exhaust flue gases to the outside atmosphere. See Hazard Levels, page 2.

WARNING: This optional venter must be installed and wired in accordance with these installation instructions. Pressure switch MUST be wired in series with the thermostat to interrupt main gas valve circuit. Pressure switch must be checked for proper operation before and after installation of the vent. See Hazard Levels, page 2.

FIGURE 16 - Test Venter Operation



DANGER: The gas burner in all Reznor gas-fired equipment is designed and equipped to provide safe, complete combustion. However, if the installation does not permit the burner to receive the proper supply of combustion air, complete combustion may not occur. The result is incomplete combustion which produces carbon monoxide, a poisonous gas that can cause death. Safe operation of indirect-fired gas burning equipment requires a properly operating vent system which vents all flue products to the outside atmosphere. FAILURE TO PROVIDE PROPER VENTING WILL RESULT IN A HEALTH HAZARD WHICH COULD CAUSE SERIOUS PERSONAL INJURY OR DEATH.

Always comply with the combustion air requirements in the installation codes and instructions. Combustion air at the burner should be regulated only by manufacturer-provided equipment. NEVER RESTRICT OR OTHERWISE ALTER THE SUPPLY OF COMBUSTION AIR TO ANY HEATER. Indoor units installed in a confined space must be supplied with air for combustion as required by Codes and in the heater installation manual. MAINTAIN THE VENT SYSTEM IN STRUCTURALLY SOUND AND PROPERLY OPERATING CONDITION.

KEEP THIS BOOKLET FOR FUTURE REFERENCE.

www.ReznorHVAC.com;1-800-695-1901

0615 Form I-F/B-PV (06-15)