

OWNER'S GUIDE

COMMERCIAL POWER VENTER KITS USED IN CONJUNCTION WITH FLUE DAMPERED COMMERCIAL WATER HEATERS

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CERTIFIED FOR USE ONLY ON COMMERCIAL GAS WATER HEATERS.

KIT COMPONENTS

BTU	Capacity (Gallons)	Vent Kit #	Vent Outlet	Power Venter	Vent Termination	Vent Size	Vent Adaptor	outlet Transition	Instruction Manual	40 FT 18/4 Wire	Wiring Label
98,000	50	PV Kit 4	5"	HSUL-1B	VH1-4	4"	4 x 5	—	X	X	X
114,000	67	PV Kit 4	5"	HSUL-1B	VH1-4	4"	4 x 5	—	X	X	X
156,000	82	PV Kit 4	6"	HSUL-1B	VH1-4	4"	4 x 6	—	X	X	X
160,000	37	PV Kit 4	6"	HSUL-1B	VH1-4	4"	4 x 6	—	X	X	X
180,000	76	PV Kit 4	6"	HSUL-1B	VH1-4	4"	4 x 6	—	X	X	X
180,000	97	PV Kit 4	6"	HSUL-1B	VH1-4	4"	4 x 6	—	X	X	X
199,900	76	PV Kit 5	6"	HSUL-2B	VH1-6	6"	—	X	X	X	X
199,900	91	PV Kit 5	6"	HSUL-2B	VH1-6	6"	—	X	X	X	X
199,900	100	PV Kit 5	6"	HSUL-2B	VH1-6	6"	—	X	X	X	X
250,000	72	PV Kit 5	6"	HSUL-2B	VH1-6	6"	—	X	X	X	X
250,000	86	PV Kit 5	6"	HSUL-2B	VH1-6	6"	—	X	X	X	X
250,000	100	PV Kit 5	6"	HSUL-2B	VH1-6	6"	—	X	X	X	X
270,000(NAT)	100	PV Kit 5	6"	HSUL-2B	VH1-6	6"	—	X	X	X	X
270,000 (LP)	100	PV Kit 5	7"	HSUL-2B	VH1-6	6"	6 x 7	X	X	X	X
300,000	72	PV Kit 5	8"	HSUL-2B	VH1-6	6"	6 x 8	X	X	X	X
300,000	91	PV Kit 5	8"	HSUL-2B	VH1-6	6"	6 x 8	X	X	X	X
360,000	65	PV Kit 5	8"	HSUL-2B	VH1-6	6"	6 x 8	X	X	X	X
399,900	65	PV Kit 5	8"	HSUL-2B	VH1-6	6"	6 x 8	X	X	X	X
399,900	85	PV Kit 5	10"	HSUL-2B	VH1-6	6"	6 x 10	X	X	X	X

* Note: Vent Pipe and Vent Adapter are NOT included

**OWNER'S INSTRUCTIONS
THESE INSTRUCTIONS MUST REMAIN
WITH EQUIPMENT
DO NOT DESTROY**



NOTE TO INSTALLER:
PLEASE READ AND FOLLOW THESE INSTRUCTIONS
CAREFULLY. YOUR INSTALLATION TIME WILL BE
SHORTENED AND PROPER SYSTEM PERFORMANCE
AND SAFETY WILL BE ENHANCED.

A WARNING

The Venter and Vent Hood must be installed in **strict** compliance with these instructions and all applicable national and local codes and ordinances. Before attempting installation, you must read and fully understand these instructions. Call your distributor or the manufacturer of the Power Venter (800-255-4208) if you have any questions regarding proper installation.

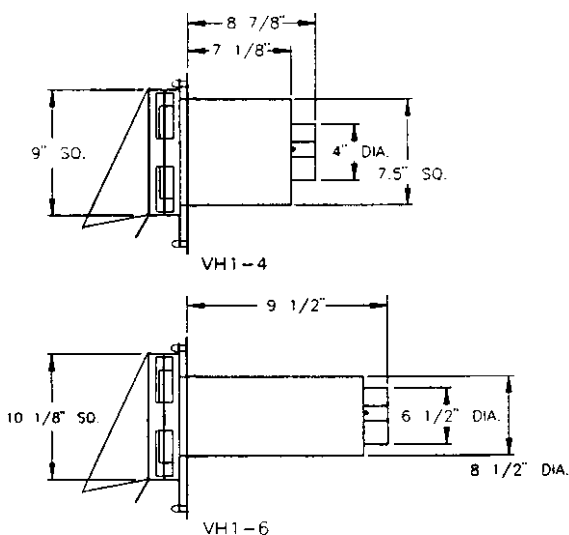
Installation

A CAUTION

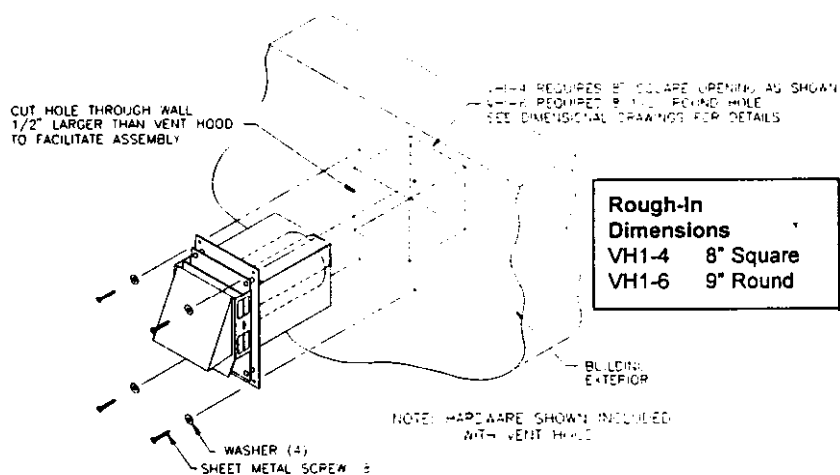
Failure to follow these installation instructions may violate applicable national and/or local codes.

1. Check vent pipe system for leakage. All vent system leaks must be sealed prior to installation of a power venter.
2. The vent system must terminate so that proper clearances are maintained as specified in NFGC, Sec. 7.3.4. and 7.8. (See section titled "Termination of Vent" in these instructions.)
3. A vent system incorporating a VH1 Series Vent Hood should not exceed 550°F.
4. Termination of a sidewall vent system with a device other than the VH1 Series Vent Hood could affect system performance and result in a **possible safety hazard**.
5. Plan the vent system layout to avoid the possibility of accidental contact with concealed wiring or plumbing inside walls.
6. Installation must be done according to national and local codes.
7. The setting of the venting proving switch is factory set and should not be adjusted.
8. The venter should be mounted as close to the vent terminal as is practical.

1 - DIMENSIONS



VENT TERMINAL INSTALLATION



2 - TERMINATION OF VENT PIPE

The **Vent Terminal Should Be Located;**

1. Twelve (12) inches above grade level and above normal snow levels.
2. Four (4) feet below, four (4) feet horizontally from any door, window, or gravity air inlet to the building or other appliances, or from gas or electric meters. **DO NOT** locate **above** walkways, doors, **windows**, air inlets, gas or electrical meters.
3. Ten (10) feet from any forced air inlet to the building. Any fresh **or make-up** air inlet such as for a dryer or furnace area is considered to be a forced air inlet.
4. Six (6) feet from an inside corner formed by **two exterior walls**.
5. Four (4) feet horizontally from any soffit or under-eave vent.

3 - INSTALLATION OF SIDEWALL VENT TERMINATION THROUGH COMBUSTIBLE WALL **(see diagram page 2)**

A CAUTION

Termination of a sidewall vent system with a device other than the appropriate **VH1 Series Vent Terminal** could affect system performance and result in a possible safety hazard.

A WARNING

Removal of outer safety pipe on combustible wall installations is extremely hazardous and may result in fire or personal injury or property damage.

For Power Vent Kit 4:

- a) Attach the enclosed template on Page 6 to interior of the wall the Vent Hood will be penetrating. Using a **1/2"** drill bit, drill two pilot holes where noted on the template. The drill bit must be long enough to penetrate to the building exterior.
- b) Attach template to the building exterior aligning the pilot holes noted on the template with the holes drilled in step A.
- c) Using a reciprocating saw, cut a hole through the building siding, wall board, etc., following the appropriate lines of the template.
- d) Slide the Vent Hood through the opening and fasten to exterior wall using screws provided.
- e) Once Power Venter and vent pipe are completely installed and secured, apply a bead of caulk between the Vent Hood flange and exterior of building.

For Power Vent Kit 5:

- a) Use inside wall cover plate as a template to mark a hole at termination point on the wall. Cut hole **1/2"** larger than cover plate to facilitate installation.
- b) Slide Vent Hood through opening. Fasten to exterior wall using screws provided.
- c) Install cover plate and fasten to the inside wall with four screws.
- d) Once Power Venter and vent pipe are completely installed and secured, apply a bead of caulk between the Vent Hood flange and exterior of building.

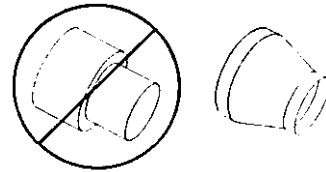
4 - POWER VENTER INSTALLATION PROCEDURE

A CAUTION

1. Disconnect power supply before making wiring connection to prevent electrical shock and equipment damage.
2. All wiring must comply with applicable national and local codes and ordinances.
3. When wiring is completed check all components by running system through at least three heating cycles.
4. Flue temperature must not exceed **550°F** at power venter inlet.
5. Power Venter damper must be adjusted to assure appliance efficiency is not affected. See heading "Damper Adjustment".
6. Failure to install, maintain and/or operate the power venter in accordance with the manufacturer's instructions may result in a safety hazard or conditions which can produce personal injury and/or property damage.
7. Maintain **6"** clearance to combustibles from power vent housing.
 - a. Use only single wall metal or type 'B' vent.
9. If you have any questions regarding proper installation of the Power Venter or safety precautions, call the manufacturer of the Power Venter (**800-255-4208**).
 - a) Verify Power Venter model selection from chart on page 1.
 - b) Connect outlet of Power Venter to vent terminal, suspending the Power Venter to joists, or other adequate support means, as shown in following diagram. NOTE: Venter outlet may be horizontal or vertical as long as the oil holes are level or point upward.

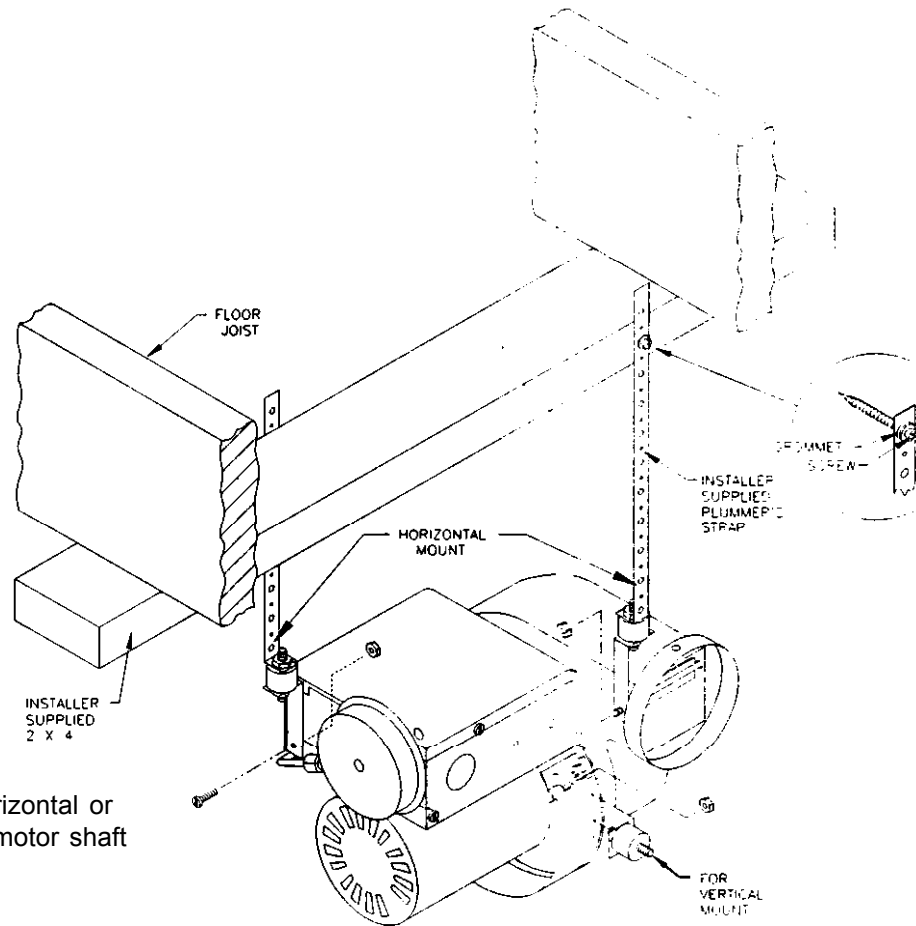
VENTER MUST BE MOUNTED WITH MOTOR SHAFT HORIZONTAL.

NOTE: Vent pipe transitions, where necessary, must be gradually tapered.



To facilitate installation and reduce vibration, the vent kit includes 2 mounting brackets, 2 rubber isolators and 2 rubber grommets. One of the brackets may be used temporarily as a “third hand” to support the venter while positioning it for permanent installation.

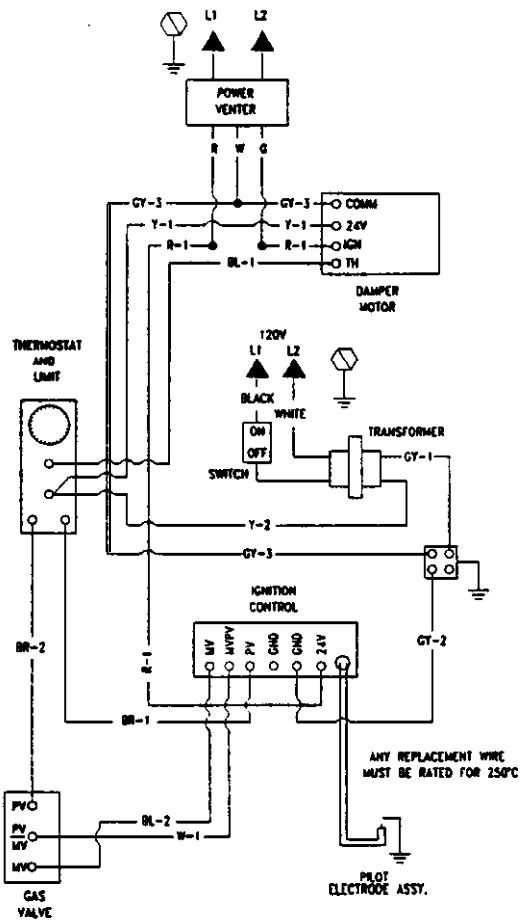
When installing the Power Venter for horizontal mount, install one of the brackets to the electrical box using the nut/screw provided, install the other bracket to the damper rod as shown below. When installing the Power Venter for vertical mount, only one bracket is needed. This bracket should be mounted to the motor mount as shown below.



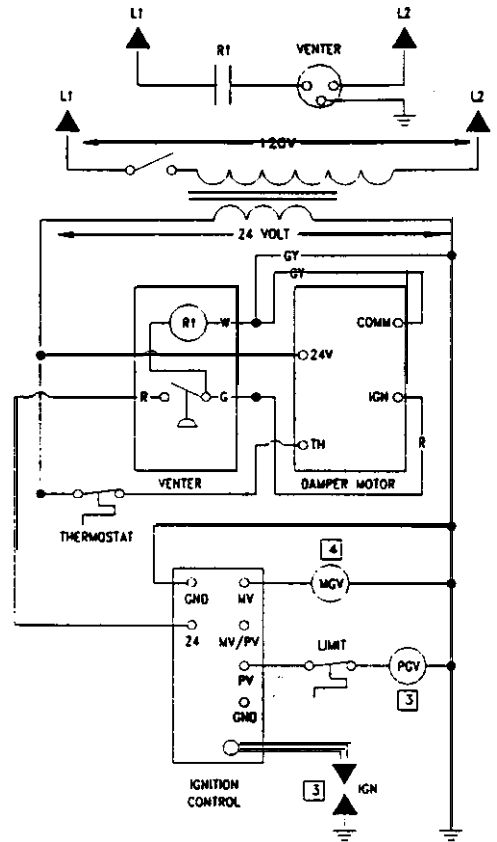
NOTE: Whether horizontal or vertical mount, the motor shaft must be horizontal.

- c) Connect the inlet of the Power Venter to the Draft Hood of the appliance outlet using suitable vent piping and adapter if required (not supplied in the vent kit). This Power Venter can be installed with a maximum of 50 linear feet of single wall vent pipe including the vent terminal. Deduct 10 feet of vent pipe for each 90 degree elbow and 8 feet for each 45 degree elbow to determine the total amount of linear vent pipe allowed for the installation.
- d) It is recommended all vent connections should be sealed to prevent leaks after installation using high temperature silicone sealant.
- e) **Wire** Power Venter according to appropriate circuit appearing below. Unit must be grounded, all wiring is to comply with applicable electrical codes. Wiring must be protected by overcurrent protection (fuses or circuit breakers) rated 15 amperes or less. **Extreme caution** must be exercised to ensure that wiring does not come into contact with any heat source.

Wire the Power Venter to the circuit appearing below. Venter must be grounded. All wiring is to comply with applicable electrical codes. Wiring must be protected by fuses or circuit breaker rated **15 amps** or less. Extreme caution must be exercised to ensure that **wiring** does not contact any heat source.

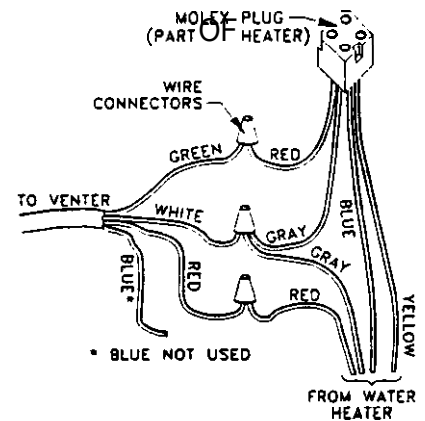


CONNECTION DIAGRAM



SCHEMATIC

HONEYWELL S8600 IGNITION CONTROL



THE FOLLOWING INSTRUCTIONS APPLY TO ALL MODELS

1. Supply **115/60/1** power to the venter supply connections.
2. Locate the wire harness that connects to the flue damper motor. This consists of a red, gray, yellow and blue wire connected to a Molex 4 pin plug.
3. Cut the red and gray wires approximately 3' before the plug and strip **3/8"** insulation **from** all wire ends created by cuts.
4. Connect the red wire from the water heater to the red wire on the venter cable.
5. Connect the red wire from the Molex plug to the green wire on the venter cable.
6. Join the gray wire from the water heater to both the gray wire from the Molex plug and the white wire on the venter cable.
7. Affix new wiring label over existing wiring label on heater.

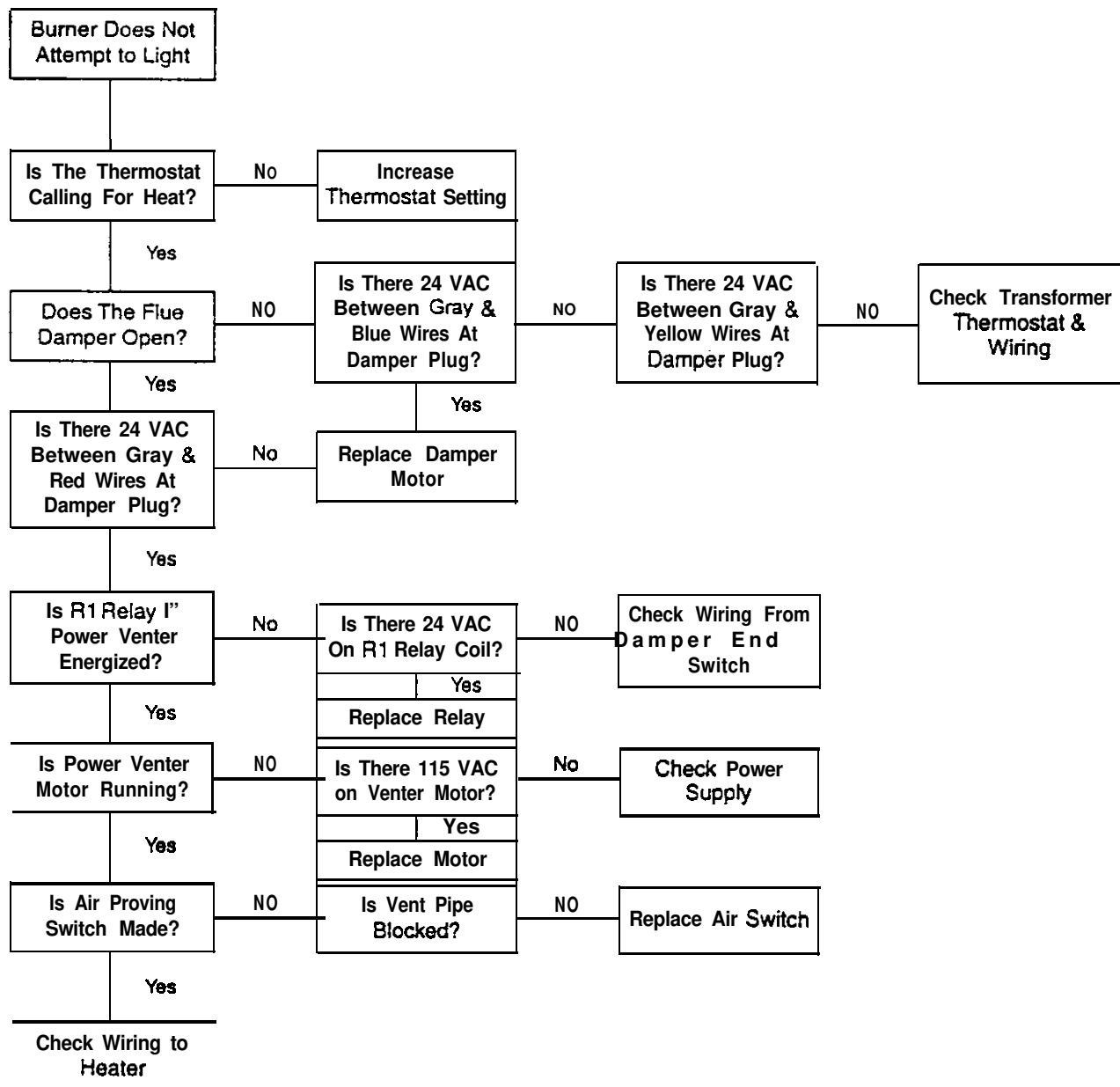
BALANCING DAMPER ADJUSTMENT

Slowly close damper on venter discharge until flue gas spillage is detected **at the draft hood**. Open damper just enough to eliminate spillage. Lock damper in place by means of locknut on opposite side of housing.

Operation

1. On a call for heat from the control thermostat, 24 volts is applied to the actuating terminal of the damper motor.
2. When the damper motor is fully open, power is applied to the 24 volt relay of the venter.
3. When the venter motor has started, the air proving switch allows the main gas valve to open.
4. When the thermostat is satisfied, power is removed from the actuating terminal of the damper motor.
5. As the damper begins to close, power is removed from the venter relay, the venter shuts down, the air proving switch opens, and the gas valve closes.

Trouble Shooting Guide



Maintenance

1. Motor should be lubricated every six months with 4 drops of SAE 20 oil, non detergent type.
2. Vent **termination** screen should be kept clean and free of debris.
3. Venter wheel must be clear of any coating which inhibits either rotation or air flow. Remove all foreign material before operating.

Replacement Parts

Replacement parts are available from your Tjernlund distributor. For more information contact Tjernlund Products, Inc. at 1-800-255-4208.

For Power Vent Kit 4:	Tjernlund Part #	For Power Vent Kit 5:	Tjernlund Part #
Motor Kit	950-I 020	Motor W/ Wheel Kit	950-I 021
Fan Proving Switch Kit	950-I 030	Fan Proving Switch Kit	950-I 031
Relay Kit	950-I 040	Relay Kit	950-I 040
Wheel Kit	950-1011	Wheel Kit 3/8" Bore	950-1012

Warranty

TJERNLUND LIMITED ONE YEAR WARRANTY

Tjernlund Products, Inc. warrants to the original purchaser of this product that the product will be free from defects due to faulty material or workmanship for a period of (1) year from the date of original purchase or delivery to the original purchaser, whichever is earlier. Remedies under this warranty are limited to repairing or replacing, at our option, any product which shall, within the above stated warranty period, be returned to Tjernlund Products, Inc. at the address listed below, postage prepaid. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, AND TJERNLUND PRODUCTS, INC. EXPRESSLY DISCLAIMS LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF THIS PRODUCT. THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES AND NO AGENT IS AUTHORIZED TO ASSUME FOR US ANY LIABILITY ADDITIONAL TO THOSE SET FORTH IN THIS LIMITED WARRANTY. IMPLIED WARRANTIES ARE LIMITED TO THE STATED DURATION OF THIS LIMITED WARRANTY. Some states do not allow limitation on how long an implied warranty lasts, so that limitation may not apply to you. In addition, some states do not allow the exclusion or limitation of incidental or consequential damages, so that above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from State to State. Send all inquiries regarding warranty work to Tjernlund Products, Inc. 1601 9th Street, White Bear Lake, MN 55110-8794. Phone (612) 426-2993 • (800) 255-4208 • Fax (612) 426-9547.

How to Obtain Service Assistance

1. Should you have any questions about your new Power Venter or if it requires adjustment, repair, or routine maintenance, it is suggested that you first contact your installer, plumbing contractor or previously agreed upon service agency. In the event that the firm has moved, or is unavailable, refer to the telephone directory commercial listings or local utility for qualified service assistance.
2. Should your problem not be solved to your complete satisfaction, you should then contact the Manufacturer at 1-800-255-4208.

When contacting the manufacturer of the Power Venter, the following information should be made available:

1. Model number of the Power Venter as shown on the label attached to the Power Venter.
2. Address where Power Venter is located and can be seen.
3. Name and address of installer and any service **agency** who performed service on the Power Venter.
4. Date of original installation and dates any service work was performed.
5. Details of the problem as you can best describe them.
6. List of people, with dates, who have been contacted regarding your problem.

VH1- 4 Vent Hood Mounting Template for Power Vent Kit # 4

This template is to be used in Vent Hood installation section of the installation instructions.

1. Attach this template to the interior of the wall the vent hood will be penetrating. Using a 1/2" drill bit, drill two pilot holes where noted on the template. The drill bit must be long enough to penetrate the building exterior.
2. Attach this template to the building exterior aligning the pilot holes on the template with the pilot holes drilled in step 1.
3. Using a reciprocating saw, cut a hole through the building siding, wall board, etc., following the appropriate lines of this template.
4. Slide the vent hood through the opening and fasten to exterior wall using provided screws,

CUT OUT THIS SQUARE WHEN INSTALLING THE VH1-4

