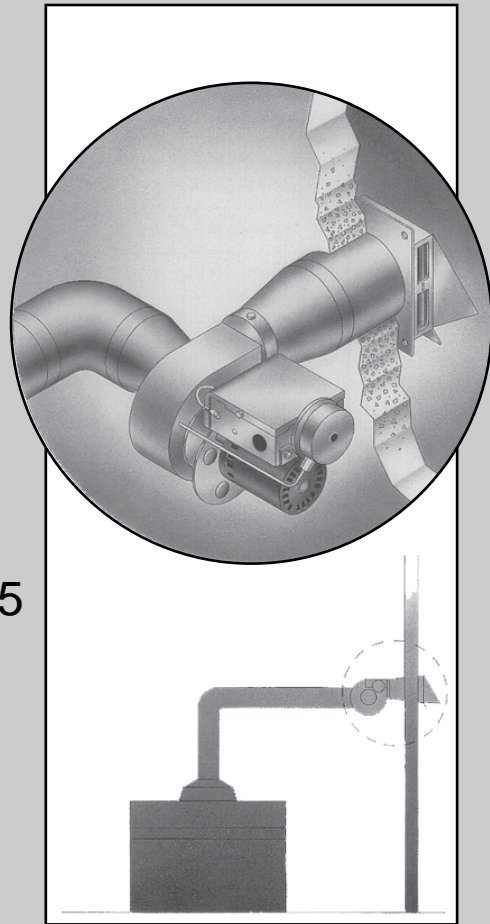


Installation and  
Operation Instructions for

# Mighty Venter Power Vent System

Models MV2, MV3, MV4, and MV5  
for Mighty Therm Sizes 500-1825



**FOR YOUR SAFETY:** This product must be installed and serviced by a professional service technician, qualified in hot water heater installation and maintenance. Improper installation and/or operation could create carbon monoxide gas in flue gases which could cause serious injury, property damage, or death. Improper installation and/or operation will void the warranty.

## **⚠WARNING**

If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

### WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a nearby phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

Installation and service must be performed by a qualified installer, service agency, or gas supplier.

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**SECTION 1.  
General Information**

**⚠WARNING**

The MV2, MV3, MV4 or MV5 Mighty Venter must be installed in accordance with the procedures outlined in these instructions. Warranty applies only if the installation and operating instructions applicable to the model purchased are expressly and completely followed.

The Laars Mighty Venter Models MV2, MV3, MV4, MV5 are designed to side wall vent Laars' Mighty Therm sizes 500 through 1825. All models are supplied with a fan proving switch which will disable the gas valve if the Mighty Venter fails to operate.

**1a. Sizing**

The Mighty Venter is sized for 500-1825 model sizes as shown in Table 1. The vent pipe length shown includes all vent pipe before and after the Mighty Venter. To calculate the equivalent vent pipe length, add the straight pipe plus 10 feet (3.0m) for every 90 degree elbow and 5 feet (1.5m) for every 45 degree elbow.

**1b. Installer Cautions**

- Before beginning this installation, carefully read these instructions and identify where each part is placed in order to safely vent the flue gases to the outdoors. This device must be installed and maintained by a qualified professional installer in accordance with these instructions. Failure to do so may result in a hazardous condition such as an explosion, carbon monoxide poison, bodily injury and property damage. "Qualified Installer" shall mean an individual properly trained and licensed.

- Consult local building and safety codes before proceeding with work. The installation must conform to the requirements of the authority having jurisdiction or in the absence of such requirements, to the latest edition of the National Fuel Gas Code. ANSI Z223.1 or the CAN1-B149 installation Code (Canada), local plumbing and waste water codes, Chimneys, Fireplaces, Vents (NFPA #211), the National Electric Code (NFPA #70) (or the Canadian Electrical Code CSA C22.1) and the Occupational Safety and Health Act (OSHA).
- Any modifications to the Power Venter, motor or wiring may void the warranty. If field conditions require such modifications, consult factory.
- The Mighty Venter may be used with the following Laars hydronic boilers and volume water heaters.  
On/Off or Two Stage Firing Mode  
Models: (HH, PH, VW, PW, IW, AP)  
(500 through 1825)
- Carefully read the installation instructions located in the Side Wall Vent Hood carton.
- The vent pipe necessary for this installation is not provided by Laars. Purchase class "C" type single wall vent pipe of diameter shown in the sizing table (see Table 1). Choose a vent pipe thickness (or gauge) that is in accordance with requirements of the local authority having jurisdiction.
- The Mighty Venter must be as close to the point of termination (*ie*, wall) as possible. This will ensure that the vent pipe between the boiler and Mighty Venter is under negative pressure.

Mighty Venter Model	Boiler/Heater Size	Mighty Venter Order Number	Boiler/Heater Outlet Diameter in. (mm)	Vent Pipe Diameter in. (mm)	Maximum Equivalent Pipe Length feet (m)	Mighty Venter Diameter in. (mm)
MV2	500	20069301	10 (254)	8 (203)	100 (30.5)	6 (152)
MV3	600	20069302	12 (305)	8 (203)	100 (30.5)	8 (203)
	715	20069303	12 (305)	10 (254)	100 (30.5)	8 (203)
MV4	850	20069304	14 (356)	10 (254)	100 (30.5)	8 (203)
	1010	20069305	16 (406)	12 (305)	100 (30.5)	8 (203)
MV5	1200	20069306	16 (406)	10 (254)	100 (30.5)	10 (254)
	1430	20069307	18 (457)	10 (254)	100 (30.5)	10 (254)
	1670	20069308	18 (457)	12 (305)	80 (24.4)	10 (254)
	1825	20069309	18 (457)	14 (356)	100 (30.5)	10 (254)

**NOTES:**

To be used for single boiler/heater installation only. To calculate the equivalent vent pipe length, add the straight pipe plus 10 feet for every 90° elbow and 5 feet for every 45° elbow. Vent pipe reducers will be supplied by Laars. Vent pipe is field supplied. In order to use 100' equivalent length of vent pipe with the size 1670 consult factory. A 14" vent pipe may be used.

**Table 1. Sizing.**

8. Vent pipe between the Mighty Venter and vent hood is acceptable. However, all vent pipe connections after the power venter will be under positive pressure during operation and must be sealed with high-temperature caulk or aluminum vent pipe tape to prevent leakage into the structure.  
All accessible joints under positive pressure must be checked for tightness after installation. The vent connection under positive pressure shall be secured by at least two corrosion-resistant screws or other mechanical locking means. Also, the segment of the vent systems under positive pressure shall be checked once a year by a qualified service person.
9. The vent system must be adequately supported to prevent sagging, but in no case shall the supports be less than every 3 feet (0.9m).
10. The venting system must be sloped upward not less than 1/4" per foot from the boiler or water heater to the vent terminal. The vent system must be installed to prevent collection of condensate (should it occur).
11. Side Wall Vent Hood Location:
  - a) The Vent Hood shall not terminate less than 6 feet (1.8m) from a combustion air inlet of another appliance.
  - b) The vent hood shall not terminate less than 3 feet (0.9m) from any other building opening or any service regulator.
  - c) The vent hood shall not terminate directly above a gas utility meter or service regulator. (Also see the section entitled "Side Wall Vent Hood Location")
12. Laars' vent pipe reducers to be installed as shown in Figure 1.
13. Allow for a minimum of 18" (457mm) vertical rise off the top of the appliance before the vent makes a 90 degree elbow to the horizontal (see Figure 1).
14. Vent pipe shall not be run through an unheated space or interior part of an open chimney unless the vent pipe is insulated.
15. Plan the vent system so that code required clearances are maintained from plumbing and wiring.
16. The Mighty Venter must be mounted so that the shaft of the motor remains **horizontal** to prevent bearing wear and for proper Fan Proving Switch operation.
17. Ambient temperature surrounding Mighty Venter must not exceed 104°F (40°C).
18. To prevent personal injury and equipment damage, disconnect power supply to boiler or heater when working on Mighty Venter.

19. Make certain the power supply is adequate for Mighty Venter motor requirements. Do not add the Mighty Venter to a circuit where the total load is unknown.
20. **IMPORTANT:** The following clearances to combustible materials must be maintained for the Mighty Venter: sides: 6 inches (152mm); back: 8 inches (203mm).

## SECTION 2.

### Side Wall Vent Hood Location

If possible, locate the side wall vent hood on a wall least prone to high winds. This will diminish the possibility of appliance gas valve interruption during periods of winds in excess of 40 MPH (64kmh). The vent hood location must also be in compliance with the following:

1. Vent hood shall be a minimum of 7 feet (2.1m) above grade when located adjacent to a public walkway.
2. Vent hood shall be a minimum of 4 feet (1.2m) below, 4 feet (1.2m) horizontally from or 3 feet (0.9m) above any door, window or gravity air inlet into the building. Vent hood shall not terminate less than 3 feet (0.9m) from any other building opening or any gas service regulator.
3. Vent hood shall be installed no closer than 3 feet (0.9m) from an inside corner of an L-shaped structure.
4. Vent hood shall be installed at least 3 feet (0.9m) above any forced air inlet located within 10 feet (3m). Vent hood shall not terminate less than 6 feet (1.8m) from a combustion air inlet of another appliance.
5. Vent Hood shall not terminate directly above a gas utility meter or service regulator.
6. Do not install the vent hood closer than 2 feet (0.6m) from an adjacent building.

## SECTION 3.

### Installation

#### 3a. Inspection and Unpacking

Immediately after receiving your Mighty Venter kit, inspect the shipment packaging and record any damage on the shipping documents. Unpack the equipment and carefully inspect for obvious damage due to shipment. If any damage has occurred, YOU must file a claim with the transporter, since they will not accept a claim from the shipper (Laars).

Cartons containing the following should be included in the Mighty Venter Kit:

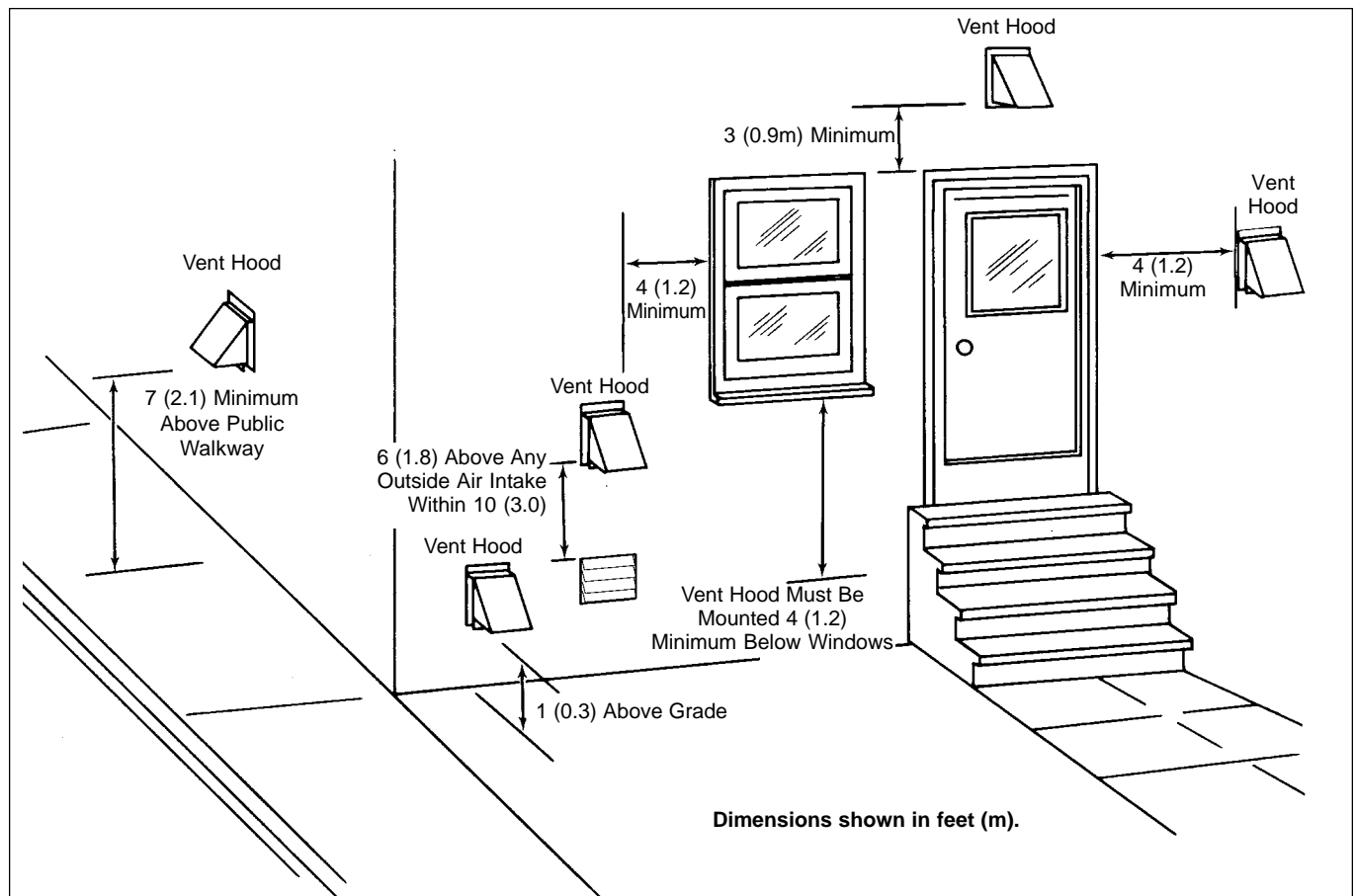
1. Mighty Venter (either MV2, MV3, MV4 or MV5).
2. Vent Hood

3. Vent Pipe Reducers

The applicable Part Numbers for the above are listed in Table 2.

Boiler Model Size	Mighty Venter Kit Order #	Power Vent Model	Carton #1 Mighty Venter Part #	Carton #2 Vent Hood P/N	Carton #3 Vent Pipe Reducer Kit Part #	<b>NOTES:</b> 1. Mighty Venter Kit #20069301 also includes the D2000500 transition ring for connection from Mighty Venter to vent hood. (see note #7 on Figure 2 for more information). 2. Carton #1 includes Installation Instructions. Carton #2 includes one Installation Manual (specific to the Vent Hood). If any items are missing from the package, contact Laars. Be prepared with your purchase order number and the order number on the shipping documents. 3. The contents of the "vent pipe reducer kit" are shown in Table 3.
500	20069301	MV2	20032600	D2000401	20070901	
600	20069302	MV3	20032700	D2000402	20070902	
715	20069303	MV3	20032700	D2000402	20070902	
850	20069304	MV4	20032800	D2000402	20070903	
1010	20069305	MV4	20032800	D2000402	20070904	
1200	20069306	MV5	20032900	D2000403	20070905	
1430	20069307	MV5	20032900	D2000403	20070906	
1670	20069308	MV5	20032900	D2000403	20070907	
1825	20069309	MV5	20032900	D2000403	20070906	

**Table 2. Part Numbers.**



**Figure 1. Vent hood locations.**

Boiler Model	Vent Pipe Reducer Kit Part No.	Qty of Reducers In Box	REDUCERS IN CARTON							
			#1 Size	Part No.	#2 Size	Part No.	#3 Size	Part No.	#4 Size	Part No.
500	20070901	2	10-8	D2000302	8-6	D2000301				
600	20070902	2	12-10	D2000303	10-8	D2000302				
715	20070902	2	12-10	D2000303	10-8	D2000302				
850	20070903	2	14-10	D2000304	10-8	D2000302				
1010	20070904	4	16-14	D2000306	14-12	D2000305	12-10	D2000303	10-8	D20000302
1200	20070905	2	16-14	D2000306	14-10	D2000304				
1430	20070906	2	18-14	D2000307	14-10	D2000304				
1670	20070907	3	18-14	D2000307	14-12	D2000305	12-10	D2000303		
1825	20070906	2	18-14	D2000307	14-10	D2000304				

**Table 3. Vent Pipe Reducer Kit.**

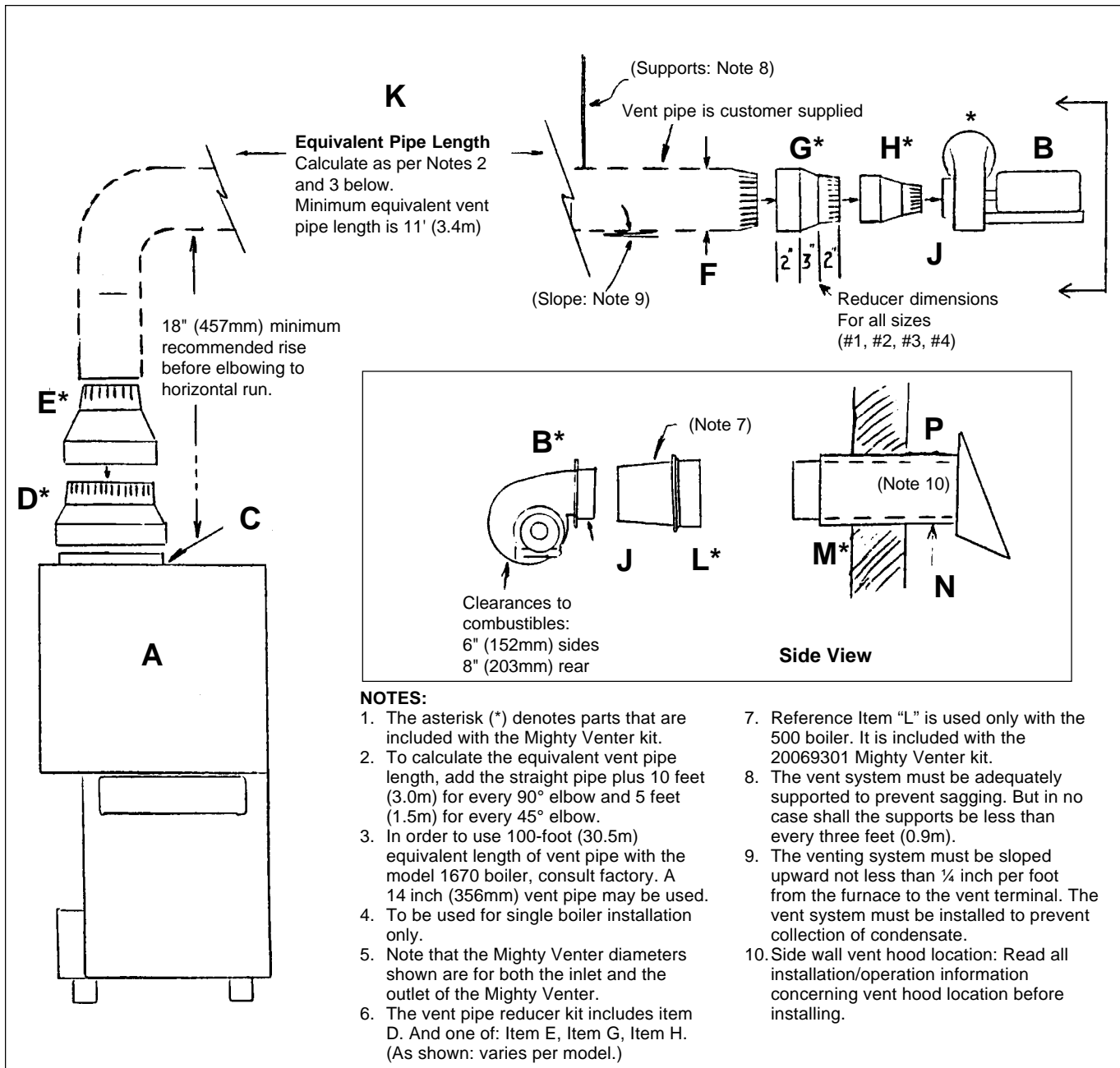


Figure 2. Part identification.

A	NOTE 1	B	C	NOTE 6	D	E	F	G	H	J	K	L, M	N	P
		*		*								*		
Boiler Model Size	Mighty Venter Kit Order No.	Power Venter Model	Ref. Boiler Vent Outlet In. (mm)	Vent Pipe Reducer Kit Part No.	Reducer Sizes Included In Reducer Kit					Mighty Venter Outlet & Inlet In. (mm)	Equivalent Pipe Length (Max) ft. (m)	Vent Hood P/N	Vent Hood Dia. in. (mm)	Rough-In Dimension In. (mm)
					Size #1	Size #2	Ref. Vent Pipe Dia. In. (mm)	Size #3	Size #4					
500	20069301	MV-2	10 (254)	20070901	10-8	--	8 (203)	8-6	--	6 (152)	100 (30.5)	D2000401	8.50 (216)	9.0 (229)
600	20069302	MV-3	12 (305)	20070902	12-18	10-8	8 (203)	--	--	8 (203)	100 (30.5)	D2000402	10.12 (257)	10.62 (270)
715	20069303	MV-3	12 (305)	20070902	12-18	--	10 (254)	10-8	--	8 (203)	100 (30.5)	D2000402	10.12 (257)	10.62 (270)
850	20069304	MV-4	14 (356)	20070903	14-10	--	10 (254)	10-8	--	8 (203)	100 (30.5)	D2000402	10.12 (257)	10.62 (270)
1010	20069305	MV4	16 (406)	20070904	15-14	14-12	12 (254)	12-10	10-8	8 (203)	100 (30.5)	D2000402	10.12 (257)	10.62 (270)
1200	20069306	MV-5	16 (406)	20070905	15-14	14-10	10 (254)	--	--	10 (254)	100 (30.5)	D2000403	13.25 (337)	13.75 (349)
1430	20069307	MV-5	18 (457)	20070906	18-14	14-10	10 (254)	--	--	10 (254)	100 (30.5)	D2000403	13.25 (337)	13.75 (349)
1670	20069308	MV-5	18 (457)	20078907	18-14	14-12	12 (305)	12-10	--	10 (254)	80 (24.4)	D2000403	13.25 (337)	13.75 (349)
1825	20069309	MV-5	18 (457)	20070906	18-14	--	14 (356)	14-10	--	10 (254)	100 (30.5)	D2000403	13.25 (337)	13.75 (349)

Table 4.

**3b. Power Venter Mounting**

The installer must supply plumber's strap or 1/4 threaded rod with nuts and washers for mounting (see Figure 3 for MV3, see Figure 4 for MV4 and MV5). The Mighty Venter may be mounted in any position as long as the shaft of the motor remains horizontal. The

Mighty Venter housing is single wall, 6 inches (152mm) must be maintained from all combustibile materials. It is recommended that the Power Venter be mounted as close as possible to the point of termination.

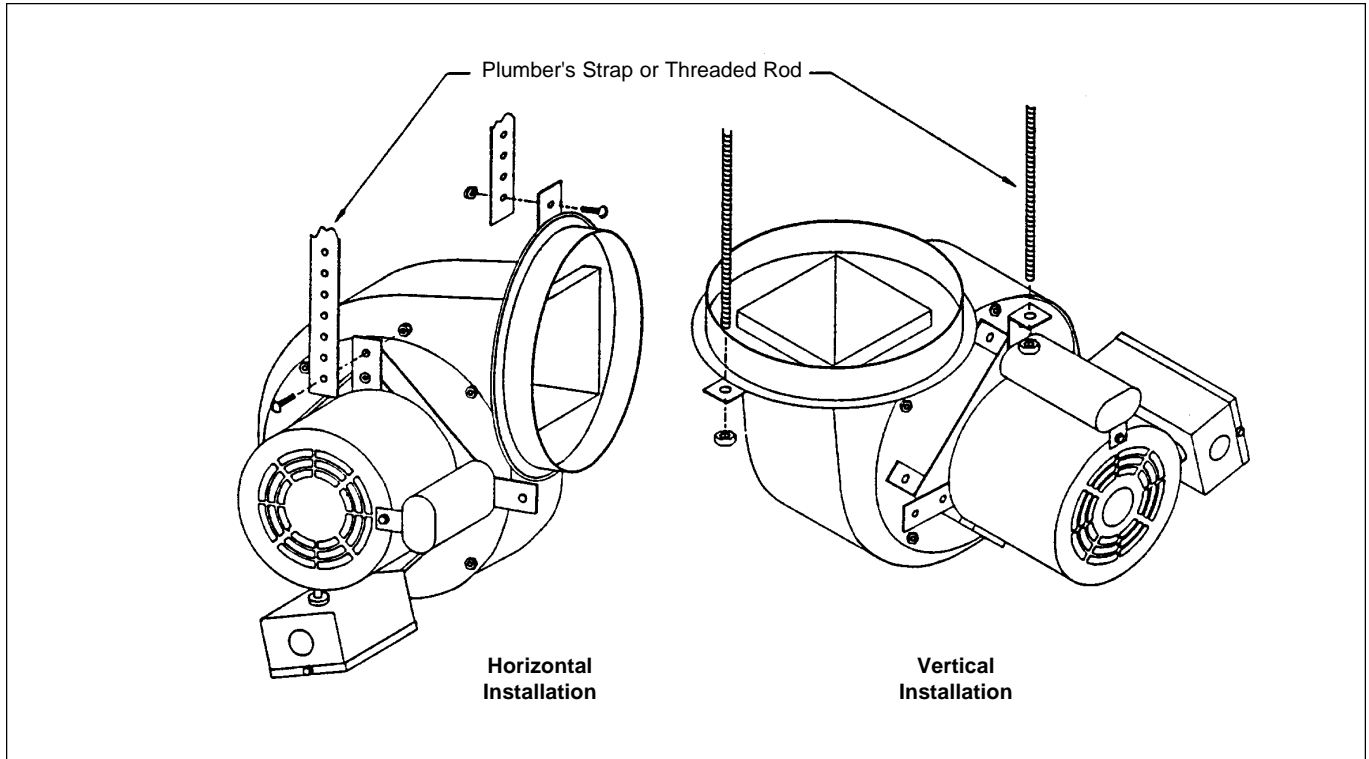


Figure 3. Placement of plumber's strap or threaded rod for MV3.

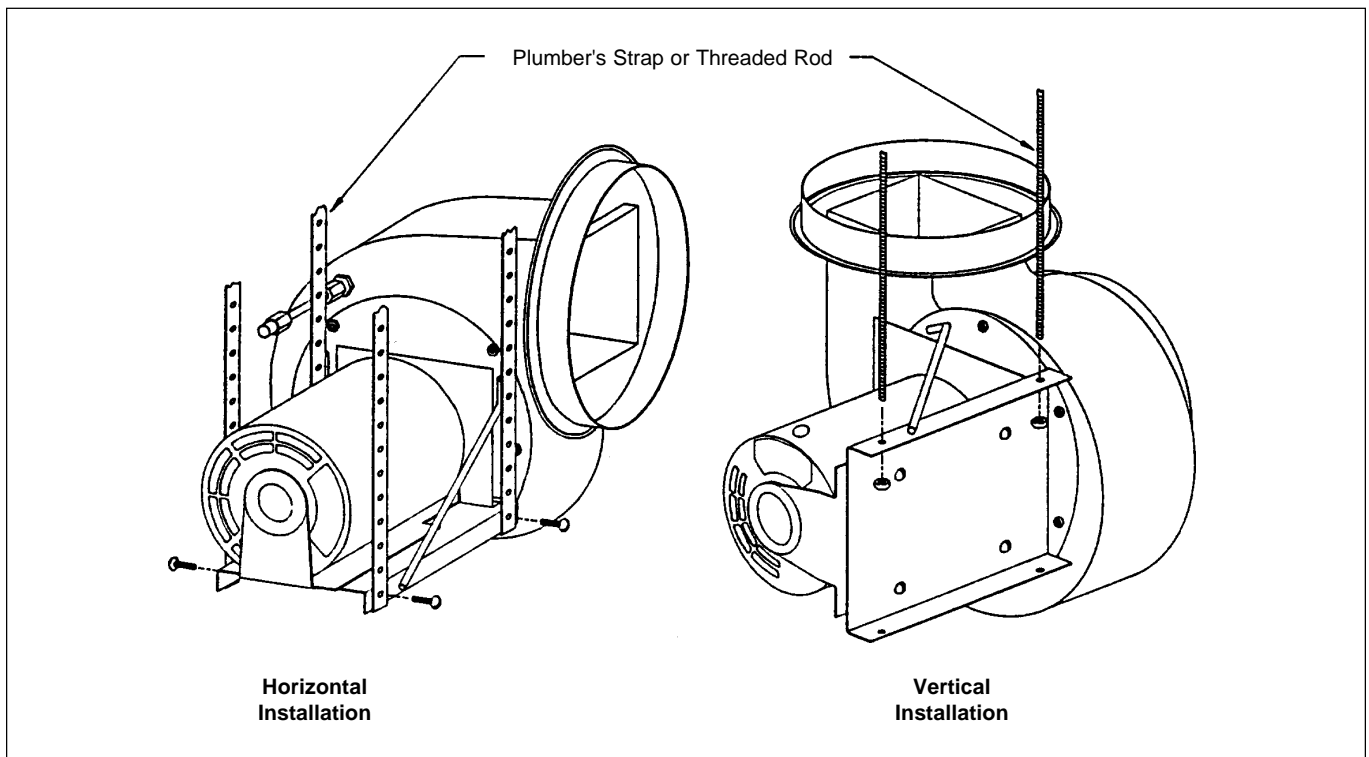


Figure 4. Placement of plumber's strap or threaded rod for MV4 and MV5.

### 3c. Fan Proving Switch Installation

**NOTE:** If installing the MV2, the fan proving switch is factory installed. This section does not apply.

Test Port: the fan proving switch on the MV3, MV4, and MV5 includes a test port which can be used to measure the pressure in the switch. The black plastic cap over this test port must be in place during regular operation of the Mighty Venter.

The fan proving switch installation procedure for the MV3 is as follows:

1. Mount the fan proving switch to a flat surface within 4 feet (1.2m) of the Mighty Venter.  
**NOTE:** It is important that the fan proving switch be mounted in a vertical position.
2. Connect the ¼" aluminum tubing from the fan proving switch to the Mighty Venter housing using provided fittings.

The fan proving switch installation procedure for the MV4 and MV5 is as follows:

1. Mount the supplied electrical box to a flat surface within 4 feet (1.2m) of the Mighty Venter. **NOTE:** It is important that the electrical box is mounted so that the fan proving switch is in a vertical position.
2. Connect the ¼" aluminum tubing from the fan proving switch to the Mighty Venter housing using provided fittings.

### 3d. Wiring

**⚠WARNING**

All wiring from the Mighty Venter to the appliance must be in compliance with local codes or in their absence, the National Electric Code (NFPA #70) in the United States and the CSA C22.1 Electrical Code in Canada

- a) Connect the black and white (120 VAC) leads from the Mighty Venter to the boiler control box. Connect these leads with wire nuts to the boiler circuit as shown in Figure 5. **NOTE:** If correctly wired (as shown in Figure 5), the power to the Mighty Venter will be disconnected if the boiler toggle switch is turned off.
- b) Connect the red, blue and orange (24 VAC) wires to the terminal blocks as shown in Figure 5.
- c) Remove the factory-installed jumper from between boiler terminals 3 and 4.

Ensure that the current capacities of wires, switches, etc., at 120 VAC meet the ratings as indicated in Table 5.

Model	Mighty Venter Motor HP	Equivalent Full Load Currents (Amperes - 120VAC)
MV2	1/8	4.4
MV3	1/4	5.8
MV4	1/3	7.2
MV5	1	16

**Table 5. Electrical Ratings.**



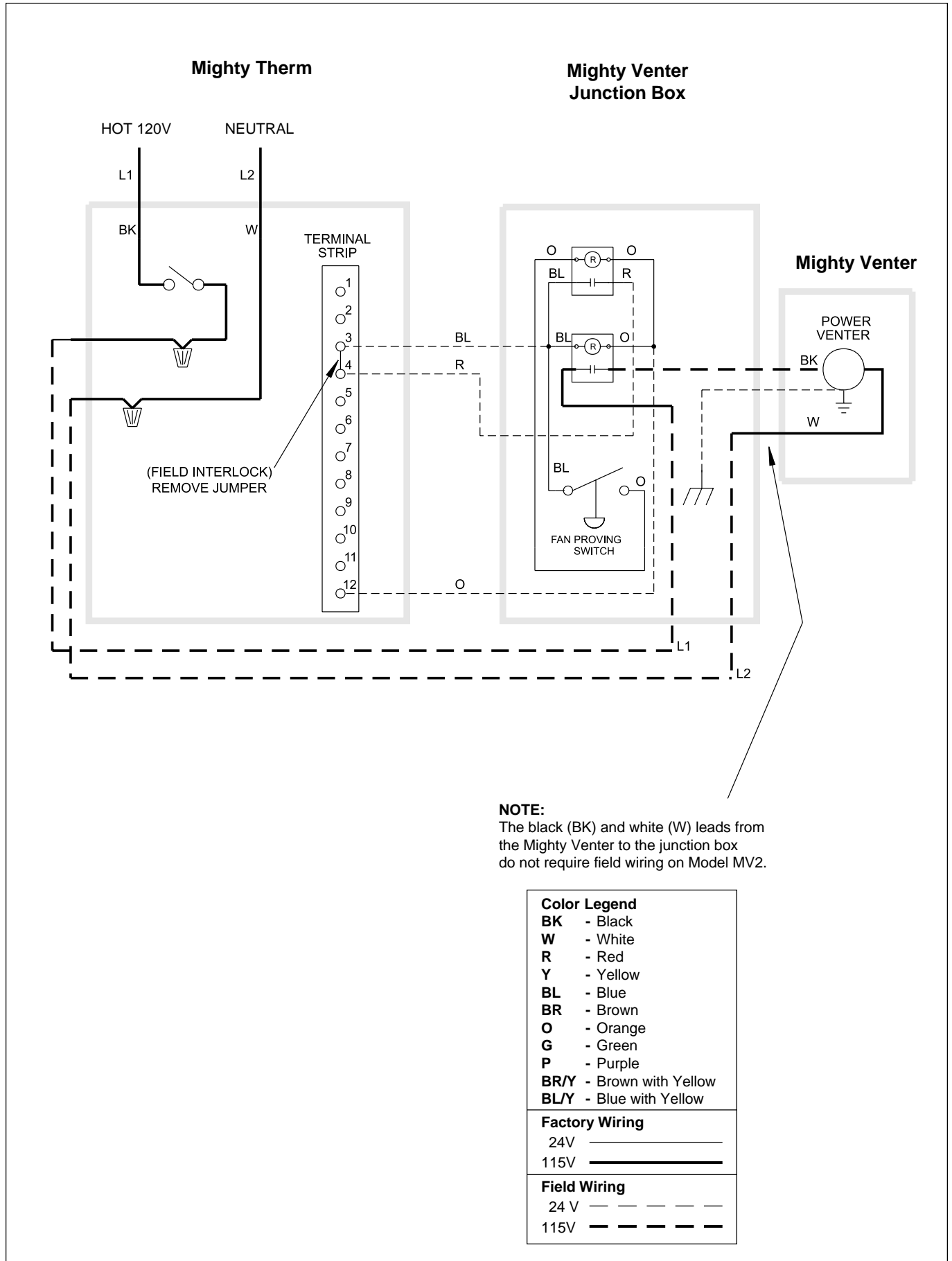


Figure 5. Mighty Therm System 9, 11 or 16, Models 500-1825, wiring with Mighty Venter.





# Laars Warranty

## Mighty Venter Power Vent System

This Laars product is  
backed by this warranty  
to assure your complete satisfaction.

Laars warrants the components of this product either for one year from date of installation or 18 months from date of purchase, whichever comes first. This warranty covers defects in material and workmanship. Products that are tampered with, damaged, or defective due to malfunctioning appliances are not covered under this warranty. This warranty does not cover the complete power vent system, only the defective parts.

The above warranty applies only if the installation and operation instructions applicable to the model are expressly and completely followed. These instructions are furnished with the unit and are also available by writing the Laars factory. The liability of Laars shall not exceed the repair or replacement of defective parts, excluding field labor.

FOB Factory: Rochester, NH or Oakville, Ontario, Canada.

Return Instructions: After faulty component is determined, ship inoperative part with proofs of purchase and installation date, transportation prepaid, directly to one of the addresses listed below, Attention: Service Manager. Please include date code of product with the defective component. The date code is listed on the product nameplate, which is located on the electrical box or on the drip shield surrounding the motor. A copy of the original installation receipt must also be included with returned components.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state and by province. Some states and provinces do not allow the exclusion or limitation of incidental damages, so the above limitation or exclusion may not apply to you.



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