### SUPPLEMENTAL INSTRUCTIONS FOR OPTIONAL VENT-AIR INTAKE KIT INSTALLATION

### VENTING INSTALLATION FOR HIGH INPUT DIRECT VENT MODELS

These instructions are for the installation of optional vent-air intake kit(s) for a Direct Vent Gas Water Heater. A Direct Vent Gas Water Heater uses all air for combustion from the outside atmosphere and all flue gases are discharged to the outside atmosphere.

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The vent-air intake system must be properly installed. Failure to properly install the vent-air intake system could result in property damage, personal injury or death.

DO NOT install any damaged vent-air intake system components. Contact the manufacturer of the water heater for replacement parts.

## IMPORTANT

Maintain proper clearances for installation, plumbing, operation and service as detailed in the instruction and operation manual supplied with the water heater.

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# **OPTIONAL VENT-AIR INTAKE SYSTEM INSTALLATIONS**

- Measure the vertical height "Y" required in your installation. (See Figure 1). Reference the appropriate Table A to determine number of vent-air intake kits required in your installation.
- Measure the horizontal length "X" required in your installation (See Figure 1). Reference Table A to determine number of vent-air intake kits required in your installation.

The following components are found in the standard vent and air intake kit, P/N 239-42979-00 (kit H). This kit, as well as all optional vent and air intake kits must be ordered separately from the manufacturer shown on the rating plate.

- 4" Vent Tube\*
- 6" Air Intake Tube\*
- Vent Terminal
- Inner Wall Term. Mounting Flange
- Outer Wall Term. Mounting Flange
- Vent Terminal Hardware
- RTV Silicone Sealant
- 4" Vent Elbow
- 6" Air Intake Elbow

\* The vent and air intake telescopes from 13 3/4" to 23 11/16".

		Horizontal "X"						
		16 1/4 17 3/16	18 20 11/16	25 1/4 35 3/16	37 3/4 57 7/8	61 5/16 107 5/16		
Vertical "Y"	11 9/16	order kit F	order kit G	no add'l kit req'd	order kit H	order kit I		
	16 5/16 17 1/4	*order kit F (2)	order kit G & F	order kit F	order kit H & F	order kit F & I		
	18 1/16 20 3/4	order kit F & G	*order kit G (2)	order kit G	order kit G & H	order kit G & I		
	25 5/16 35 1/4	order kit F	order kit G	order kit H	*order kit H (2)	order kit I		
	38 1/16 57 15/16	order kit H & F	order kit H & G	*order kit H (2)	*order kit H (3)	order kit H & I		
	61 3/8 107 3/8	order kit I & F	order kit I & G	order kit l	order kit I & H	*order kit I (2)		

### Table A

\* (2) = Order two of the kits referenced.

\* (3) = Order three of the kits referenced.

The bold text above show what kit(s) are needed in addition to the standard vent and air intake tubes. If the standard vent and air intake tubes are not used in the venting system (those that do not have bold text) they can be discarded or saved.

#### Installation (Horizontal and Vertical Vent-Air Intake Lengths) continued-



Figure 1

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The vent-air intake system must be properly installed. Failure to properly install the vent-air intake system could result in property damage, personal injury or death.

Do not install any damaged vent-air intake system components. Contact the manufacturer of the water heater for replacement parts.

## IMPORTANT

The water heater must be located close enough to the outside wall to keep the venting distance within the maximum distance described in this supplemental instruction manual. Note: The direct vent-air intake terminal must be installed on a vertical wall. Read the following instructions before installing the water heater.

### **Tools Required For Optional Vent-Air Intake System Installations**

The following minimum tools are required to properly install the vent-air intake system. *Note: Wall construction will determine tool usage.* 

- Tape Measure
- Drill
- 3/16 inch (4.75 mm) Drill Bit(s)
- 1/8 inch (3.2 mm) Drill Bit(s)
- Masonry Drill Bit(s) (For Poured Concrete, Concrete Block and Brick Wall Construction)
- Reciprocating Saw w/appropriate Blade(s) (Dependent on Wall Construction)
- Chisel (For Poured Concrete, Concrete Block and Brick Wall Construction)
- Hammer (For Poured Concrete, Concrete Block and Brick Wall Construction)
- 1/4 & 5/16 inch Nut Drivers (Preferred) or Slotted Head Screwdriver
- Phillips Head Screwdriver

# IMPORTANT

When the following instructions specify, to seal a vent-air intake joint, use only Permatex Ultra Blue RTV Silicone sealant. A tube Permatex Ultra Blue RTV Silicone sealant is supplied with every direct vent water heater and each optional vent-air intake kit. Make sure that all joints are completely sealed. When drilling pilot holes for the #8 sheet metal screws through the six (6) inch (15.2 cm) diameter components, be careful <u>not</u> to drill into the inner four (4) inch (10.2 cm) diameter components.

## IMPORTANT

If your installation does not require optional vertical extension(s), then continue in this manual to the section titled "Installation of Horizontal Extensions" and follow the instructions.

## Installation of Vertical Extensions

 If applicable, cut a 6-1/2 inch (16.5 cm) diameter minimum clearance hole in the ceiling where the telescopic vent-air intake tube(s) will pass through. (See Figure 2).



Figure 2

#### Optional Vent-Air Intake System Installations continued-

2. Use one of the following formulas below to calculate the required length of the four (4) inch (10.2 cm) diameter telescopic tube(s). (See Figure 3).

50 & 75 Gallon Models (189.3 and 283.9 Liter Models) V = Z - (75-¼ inches) V = Z - (191.1 cm) 65 Gallon Models (246.1 Liter Models) V = Z - (78-1/2 inches)V = Z - (199.4 cm)

Where: V = The required length of the four (4) inch (10.2 cm) diameter telescopic tube(s).

Z = Height from the ground to the horizontal centerline of the ventair intake system.



3. For a Single Telescopic Tube

Adjust the length of the four (4) inch (10.2 cm) telescopic tube to dimension "V" calculated in the above formula. With a 1/8 inch (3.2 mm) drill bit (not supplied), drill three (3) holes, 120° apart, through the four (4) inch (10.2 cm) diameter telescopic tube where the small and large sections overlap. Fasten with three (3) #8 sheet metal screws (supplied). (See Figure 4a).

#### For Multiple Telescopic Tubes

Join the four (4) inch (10.2 cm) diameter telescopic tubes by inserting the small end of a tube into the large end of another, one (1) inch (2.5 cm) (or *until seated*). With a 1/8 inch (3.2 mm) diameter drill bit (not supplied), drill three (3) holes, 120° apart, through each joint where the four (4) inch (10.2 cm) diameter telescopic tubes are joined. Adjust the length of the joined four (4) inch (10.2 cm) diameter telescopic tubes to dimension "V" calculated in the above formula. Drill three (3) 1/8 inch (3.2 mm) diameter telescopic tubes where the small and large sections overlap. Fasten each joint with three (3) #8 sheet metal screws (supplied).

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For ease of installation, inspection, and servicing, it is recommended that none of the joint(s) in the vent-air intake system be located inside a solid ceiling. In reference to section 7.10.14 of the National Fuel Gas Code, the entire length of the venting system must be accessible for inspection, cleaning, and servicing. Do not install inside a solid ceiling without provisions for removable panels for inspecting or servicing the venting system. However, if a joint does end up inside a ceiling, conduct the following steps before installing the four (4) inch (10.2 cm) diameter telescopic tube(s) into the flue reducer. Drill three (3) 1/8 inch (3.2mm) diameter holes, 120° apart, through the four (4) inch (10.2 cm) diameter telescopic tube at the joint that will be located inside the ceiling. Fasten the joint with three (3) #8 sheet metal screws (supplied). Apply a sufficient amount of the supplied RTV silicone sealant to seal the joint.

Figure 4a Single Telescopic Tube

Figure 4b Multiple Telescopic Tubes



4. Place the large end of the four (4) inch (10.2 cm) diameter telescopic tube(s) through the hole in the ceiling (if applicable). Insert the small end of the four (4) inch (10.2 cm) diameter telescopic tube(s) into the flue reducer until seated. With a 1/8 inch (3.2 mm) diameter drill bit (not supplied), drill three (3) holes, 120° apart, through the flue reducer into the four (4) inch (10.2 cm) diameter telescopic tube(s). Fasten with three (3) #8 sheet metal screws (supplied). Using the supplied RTV silicone sealant, apply a sufficient amount to seal all joints. (See Figure 5a or 5b).



#### 5. For a Single Telescopic Tube

Compress the six (6) inch (15.2 cm) diameter telescopic tube to minimum length. Place the large end of the six (6) inch (15.2 cm) diameter telescopic tube through the hole in the ceiling (if applicable). Insert the small end of the six (6) inch (15.2 cm) diameter telescopic tube over the four (4) inch (10.2 cm) diameter telescopic tube and plenum collar until seated on top of the plenum box. Drill three (3) 1/8 inch (3.2 mm) diameter holes,  $120^{\circ}$  apart, through the six (6) inch (15.2 cm) diameter telescopic tube into the plenum collar. Fasten with three (3) #8 sheet metal screws (supplied). (See Figure 6a).

#### For Multiple Telescopic Tubes

Join the six (6) inch (15.2 cm) diameter telescopic tubes by inserting the small end of a tube into the large end of another, one (1) inch (2.5 cm) (or until seated). Drill three (3) 1/8 inch (3.2 mm) diameter holes, 120° apart, through each joint where the six (6) inch (15.2 cm) diameter telescopic tubes are joined. At this time, DO NOT drill holes where the small and large sections of the six (6) inch (15.2 cm) diameter telescopic tubes overlap. Fasten each joint with three (3) #8 sheet metal screws (supplied). Compress the joined six (6) inch (15.2 cm) diameter telescopic tubes to minimum length. Place the large end of the joined six (6) inch (15.2 cm) diameter telescopic tubes through the hole in the ceiling (if applicable). Place the small end of the joined six (6) inch (15.2 cm) diameter telescopic tubes over the joined four (4) inch (10.2 cm) diameter telescopic tubes and plenum collar until seated on top of the plenum box. Drill three (3) 1/8 inch (3.2 mm) diameter holes, 120° apart, through the joined six (6) inch (15.2 cm) diameter telescopic tubes into the plenum collar. Fasten with three (3) #8 sheet metal screws (supplied). (See Figure 6b).





Figure 6b

Extend the six (6) inch (15.2 cm) diameter telescopic tube(s) until it is one (1) inch (2.5 cm) below the top of the four (4) inch (10.2 cm) diameter telescopic tube(s). Drill three (3) 1/8 inch (3.2 mm) diameter holes, 120° apart, through the six (6) inch (15.2 cm) diameter telescopic tube(s) at the joint(s) where the small and large sections overlap. Fasten with three (3) #8 sheet metal screws (supplied). (See Figure 7a or 7b).

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For ease of installation, inspection, and servicing, it is recommended that none of the joint(s) in the vent-air intake system be located inside a solid ceiling. In reference to section 7.10.14 of the National Fuel Gas Code, the entire length of the venting system must be accessible for inspection, cleaning, and servicing. Do not install inside a solid ceiling without provisions for removable panels for inspecting or servicing the venting system. However, if a joint does end up inside a ceiling, conduct the following steps before installing the four (4) inch (10.2 cm) diameter telescopic tube(s) into the flue reducer. Drill three (3) 1/8 inch (3.2mm) diameter holes, 120° apart, through the four (4) inch (10.2 cm) diameter telescopic tube at the joint that will be located inside the ceiling. Fasten the joint with three (3) #8 sheet metal screws (supplied). Apply a sufficient amount of the supplied RTV silicone sealant to seal the joint.



7. Insert the straight end of the four (4) inch (10.2 cm) diameter elbow one (1) inch (2.5 cm) (or until seated), into the end of the four (4) inch (10.2 cm) diameter telescopic tube(s). Make sure the four (4) inch (10.2 cm) diameter elbow is oriented in the correct direction. Drill three (3) 1/8 inch (3.2 mm) diameter holes, 120° apart, through the four (4) inch (10.2 cm) diameter telescopic tube(s) into the four (4) inch (10.2 cm) diameter elbow. Fasten with three (3) #8 sheet metal screws (supplied). Using the supplied RTV silicone sealant, apply a sufficient amount to seal the joint. (See Figure 8).





8. Place the straight end of the six (6) inch (15.2 cm) diameter elbow over the four (4) inch (10.2 cm) diameter elbow into the end of the six (6) inch (15.2 cm) diameter telescopic tube(s), one (1) inch (2.5 cm) *(or until seated)*. Make certain that the six (6) inch (15.2 cm) diameter elbow is oriented in the same direction as the four (4) inch (10.2 cm) diameter elbow and both are oriented in the correct direction. Drill three (3) 1/8 inch (3.2 mm) diameter holes, 120° apart, through the six (6) inch (15.2 cm) diameter elbow. Fasten with three (3) #8 sheet metal screws (supplied). (See Figure 9).



Figure 9

## Installation of Horizontal Extensions

1. Cut a 6-1/2 inch (16.5 cm) diameter minimum clearance hole in the wall at the point where the vent-air intake tubes will pass through the outside wall and connect with the direct vent-air intake terminal. (See Figure 10).



2. From outside the building, position the outer wall mount plate and direct vent-air intake terminal over the center of the opening. Mark the mounting screw hole locations. With a 3/16 inch (4.75 mm) diameter drill bit (not supplied), drill holes for the wall anchors (supplied). Install the wall anchors but DO NOT affix the outer wall mount plate and direct vent-air intake terminal to the wall at this time. (See Figure 11). Note: Certain construction of walls may require the use of a different type of wall anchoring means than supplied. DO NOT modify the direct vent-air intake terminal or outer wall mount plate.



Figure 11

3. <u>For water heaters where the four (4) inch (10.2 cm) diameter elbow is not</u> <u>yet installed:</u>

Insert the straight end of the four (4) inch (10.2 cm) diameter elbow into the flue reducer until firmly seated and oriented in the correct direction. With a 1/8 inch (3.2 mm) diameter drill bit (not supplied), drill three (3) holes,  $120^{\circ}$  apart, through the flue reducer into the four (4) inch (10.2 cm) diameter elbow. Fasten with three (3) #8 sheet metal screws (supplied). Using the supplied RTV silicone sealant, apply a sufficient amount



Figure 13

4. For water heaters where the six (6) inch (15.2 cm) diameter elbow is not yet installed:

Place the straight end of the six (6) inch (15.2 cm) diameter elbow over the four (4) inch (10.2 cm) diameter elbow and plenum collar until seated on top of the plenum box. Make certain that the six (6) inch (15.2 cm) diameter elbow is oriented in the same direction as the four (4) inch (10.2 cm) diameter elbow and both are oriented in the correct direction. Drill three (3) 1/8 inch (3.2 mm) diameter holes, 120° apart, through the six (6) inch (15.2 cm) diameter elbow into the plenum collar. Fasten with three (3) #8 sheet metal screws (supplied). (See Figure 13).

#### 5. For a Single Telescopic Tube

Extend the four (4) inch (10.2 cm) diameter telescopic tube to its maximum length and slide the backing plate over it. Place the large end of the four (4) inch (10.2 cm) diameter telescopic tube through the hole in the outside wall. Insert the smaller end of the four (4) inch diameter (10.2 cm) telescopic tube into the flared end of the four (4) inch (10.2 cm) diameter elbow, one (1) inch (2.5 cm) (or until seated). Drill three (3) 1/8 (3.2 mm) inch diameter holes, 120° apart, through the four (4) inch (10.2 cm) diameter elbow into the four (4) inch (10.2 cm) diameter telescopic tube. Fasten with three (3) #8 sheet metal screws (supplied). Adjust the overall length of the four (4) inch (10.2 cm) diameter telescopic tube so that 2-1/2 inches (6.4 cm) extends beyond the outside wall. Drill three (3) 1/8 inch (3.2 mm) diameter holes, 120° apart, through the four (4) inch (10.2 cm) diameter telescopic tubes where the small and large sections overlap. Fasten with three (3) #8 sheet metal screws (supplied). Using the supplied RTV silicone sealant, apply a sufficient amount to seal all joints. (See Figure 14a).

#### For Multiple Telescopic Tubes

Extend the four (4) inch (10.2 cm) diameter telescopic tubes to their maximum lengths. Join the tubes by inserting the small end of a tube into the large end of another, one (1) inch (2.5 cm) (or until seated). With a 1/8 inch (3.2 mm) diameter drill bit (not supplied), drill three (3) holes,  $120^{\circ}$  apart, through each joint where the four (4) inch (10.2 cm) diameter telescopic tubes are joined. At this time, DO NOT drill holes where the small and large sections of the four (4) inch (10.2 cm) telescopic tubes overlap. Fasten each joint with three (3) #8 sheet metal screws (supplied). (See Figure 15b). Slide the backing plate over the joined four (4) inch (10.2 cm) diameter telescopic tubes. Place the large end of the joined four (4) inch (10.2 cm) diameter telescopic tubes through the hole in the outside wall. Insert the smaller end of the joined four (4) inch diameter (10.2 cm) telescopic tubes into the flared end of the four (4) inch (10.2 cm) diameter elbow, one (1) inch (2.5 cm) (or until seated). Drill three (3) 1/8 inch (3.2 mm) diameter holes, 120° apart, through the four (4) inch (10.2 cm) diameter elbow into the joined four (4) inch (10.2 cm) diameter telescopic tube(s). Fasten with three (3) #8 sheet metal screws (supplied). Adjust the overall length of the joined four (4) inch (10.2 cm) diameter telescopic tubes so that 2-1/2 inches (6.4 cm) extends beyond the outside wall. Drill three (3) 1/8 inch (3.2 mm) diameter holes,  $120^{\circ}$ apart, through the joined four (4) inch (10.2 cm) diameter telescopic tubes where the small and large sections overlap. Fasten with three (3) #8 sheet metal screws (supplied). Using the supplied RTV silicone sealant, apply a sufficient amount to seal all joints. (See Figure 14c).

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For ease of installation, inspection, and servicing, it is recommended that none of the joint(s) in the vent-air intake system be located inside a solid ceiling. In reference to section 7.10.14 of the National Fuel Gas Code, the entire length of the venting system must be accessible for inspection, cleaning, and servicing. Do not install inside a solid ceiling without provisions for removable panels for inspecting or servicing the venting system. However, if a joint does end up inside a ceiling, conduct the following steps before installing the four (4) inch (10.2 cm) diameter telescopic tube(s) into the flue reducer. Drill three (3) 1/8 inch (3.2mm) diameter holes,  $120^{\circ}$  apart, through the four (4) inch (10.2 cm) diameter telescopic tube at the joint that will be located inside the ceiling. Fasten the joint with three (3) #8 sheet metal screws (supplied). Apply a sufficient amount of the supplied RTV silicone sealant to seal the joint.





Figure 14c

6. For a Single Telescopic Tube

Extend the six (6) inch (15.2 cm) diameter telescopic tube to its maximum length. Place the large end of the six (6) inch (15.2 cm) diameter telescopic tube over the collar on the outer wall mount plate. Drill three (3) 1/8 inch (3.2 mm) diameter holes, 120° apart, through the six (6) inch (15.2 cm) diameter telescopic tube into the collar on the outer wall mount plate. Fasten with three (3) #8 sheet metal screws (supplied). Using the supplied RTV silicone sealant, apply a sufficient amount to seal the joint. (See Figure 16a).

#### For Multiple Telescopic Tubes

Join the six (6) inch (15.2 cm) diameter telescopic tubes by inserting the small end of a tube into the large end of another, one (1) inch (2.5 cm) (or *until seated*). Drill three (3) 1/8 inch (3.2 mm) diameter holes,  $120^{\circ}$  apart, through each joint where the six (6) inch (15.2 cm) diameter telescopic tubes are joined. At this time, DO NOT drill holes where the small and large sections of the six (6) inch (15.2 cm) diameter telescopic tubes overlap. Fasten each joint with three (3) #8 sheet metal screws (supplied). Extend the joined six (6) inch (15.2 cm) diameter telescopic tubes to their maximum length. Place the large end of the joined six (6) inch (15.2 cm) diameter holes,  $120^{\circ}$  apart, through the joined six (6) inch (3.2 mm) diameter holes,  $120^{\circ}$  apart, through the joined six (6) inch (15.2 cm) diameter telescopic tubes into the collar on the outer wall mount plate. Drill three (3) 1/8 inch (3.2 mm) diameter telescopic tubes into the collar on the outer wall mount plate. Fasten with three (3) #8 sheet metal screws (supplied). Using the supplied RTV Silicone sealant, apply a sufficient amount to seal the joint. (See Figure 16b).

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For ease of installation, inspection, and servicing, it is recommended that none of the joint(s) in the vent-air intake system be located inside a solid ceiling. In reference to section 7.10.14 of the National Fuel Gas Code, the entire length of the venting system must be accessible for inspection, cleaning, and servicing. Do not install inside a solid ceiling without provisions for removable panels for inspecting or servicing the venting system. However, if a joint does end up inside a ceiling, conduct the following steps before installing the four (4) inch (10.2 cm) diameter telescopic tube(s) into the flue reducer. Drill three (3) 1/8 inch (3.2mm) diameter holes, 120° apart, through the four (4) inch (10.2 cm) diameter telescopic tube at the joint that will be located inside the ceiling. Fasten the joint with three (3) #8 sheet metal screws (supplied). Apply a sufficient amount of the supplied RTV silicone sealant to seal the joint.



Figure 15a



Figure 15b

7. From outside the building, slide the six (6) inch (15.2 cm) diameter telescopic tube(s) through the opening in the wall until the outer wall mount plate is flush with the wall. (See Figure 16).



Figure 16

8. Using the supplied RTV silicone sealant, apply a bead one (1) inch (2.5 cm) from the end of the four (4) inch (10.2 cm) diameter tube that is part of the vent-air intake terminal. Slide the direct vent-air intake terminal into the four (4) inch (10.2 cm) diameter telescopic tube that extends through the wall and position it so it is flush with the outer wall mount plate. Make sure that the rain guard and the word "HOT" on the end of the direct vent-air intake terminal are oriented properly. Secure the direct vent-air intake terminal to the outer wall mount plate and wall with four (4) #10 x 1 inch screws (supplied). (See Figure 17). Note: Certain construction of walls may require the use of different type of anchoring means than supplied. DO NOT modify the direct vent-air intake terminal or outer wall mount plate



9. From inside the building, slide the backing plate over the six (6) inch (15.2 cm) diameter telescopic tube(s) until it is flush with the wall. Adjust the length of the six (6) inch (15.2 cm) diameter telescopic tube(s) and insert the end into the flared end of the six (6) inch (15.2 cm) diameter elbow one (1) inch (2.5 cm) (or until seated). Drill three (3) 1/8 inch (3.2 mm) diameter holes, 120° apart, through the six (6) inch (15.2 cm) diameter elbow into the six (6) inch (15.2 cm) diameter telescopic tube(s) and through the tubes where the small and large sections overlap. Fasten with three (3) #8 sheet metal screws (supplied). Using the supplied RTV silicone sealant, apply a sufficient amount to seal all joints. (See Figure 18).



Figure 18

10. Mark the mounting screw hole locations for the backing plate. Rotate the backing plate in order to gain access to the markings. With a 3/16 (4.75 mm) inch diameter drill bit (not supplied), drill holes for the supplied wall anchors. Install the wall anchors and secure the backing plate to the wall with four (4) #10 x 1 inch screws (supplied). (See Figure 19). Note: Certain construction of walls may require the use of a different type of anchoring means than supplied.



Figure 19

## IMPORTANT

When the installation is complete, visually inspect the air intake system to insure that all joints are completely sealed.

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THIS INSTRUCTION MANUAL IS ONLY A SUPPLEMENT TO THE INSTALLATION & OPERATING INSTRUCTION MANUAL SUPPLIED WITH THE WATER HEATER. REFER TO THE INSTALLATION & OPERATING INSTRUCTIONS SUPPLIED WITH THE WATER HEATER FOR COMPLETE INSTALLATION AND OPERATING PROCEDURES.

# VENT-AIR INTAKE KITS

