c. Vent Lengths for Rear Vent

1) No Elbows

The maximum horizontal run, with no vertical sections of vent, is 18" from the back of the appliance to the base of the cap. See Figure 14.

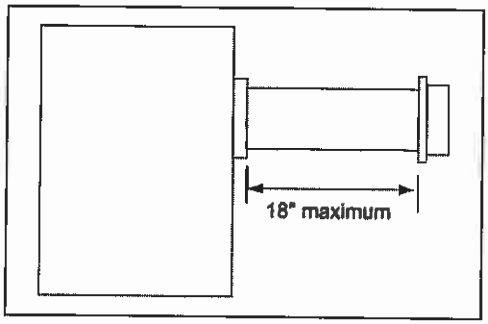


Figure 14
No Elbows

2) A 45° Elbow

For corner installations with horizontal venting, a maximum of one 45° elbow may be used. The maximum horizontal run following the elbow is 18" to the base of the cap and will include a 45° elbow, and a termination cap. See Figure 15.

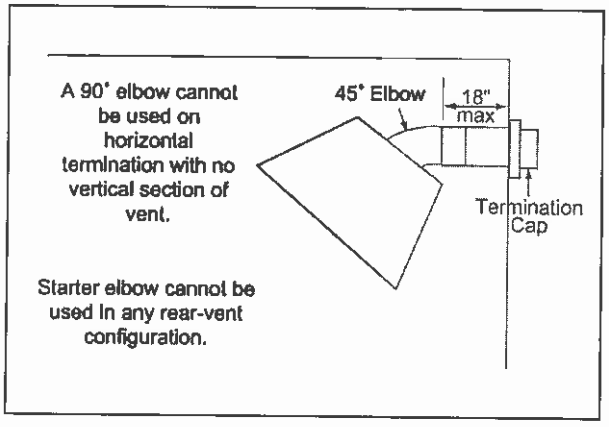
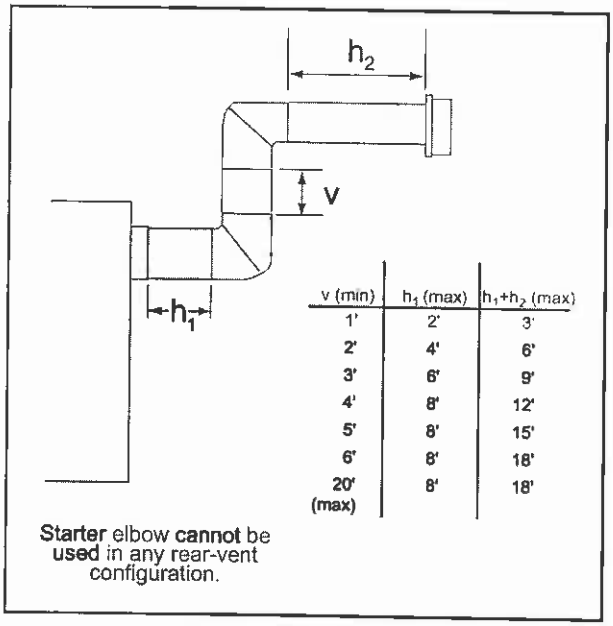


Figure 15
One 45° Elbow

3) Two Elbows

Elbows used on rear vented configurations should be either a 90° elbow or a 45° elbow. **Starter elbows cannot be used in any rear vent configuration.** Figure 16 shows various venting configurations using two elbows to terminate horizontally.



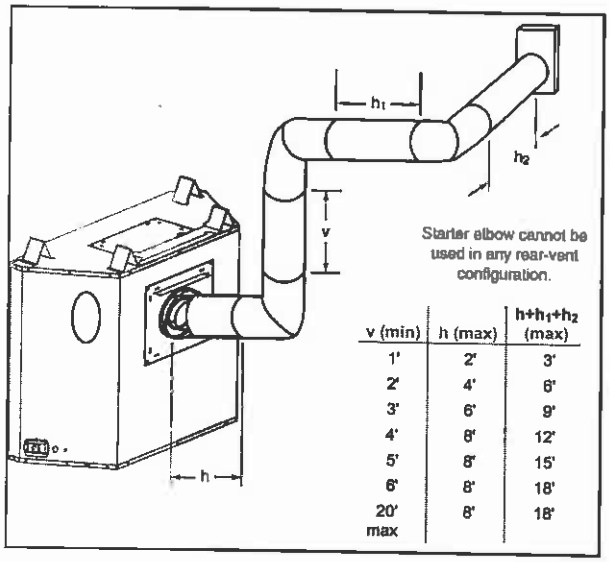
v (min)	h_1 (max)	h_1+h_2 (max)
1'	2'	3'
2'	4'	6'
3'	6'	9'
4'	8'	12'
5'	8'	15'
6'	8'	18'
20' (max)	8'	18'

Figure 16
Two Elbows

4) Three Elbows

Elbows used on rear vented configurations should be either a 90° elbow or a 45° elbow. **Starter elbows cannot be used in any rear vent configuration.**

Figure 17 shows various venting configurations using three elbows to terminate horizontally.



v (min)	h (max)	$h+h_1+h_2$ (max)
1'	2'	3'
2'	4'	6'
3'	6'	9'
4'	8'	12'
5'	8'	15'
6'	8'	18'
20' max	8'	18'

Figure 17
Three Elbows

d. Assembling Vent Sections

Attach either a straight section from the rear vent kit or a 45° or 90° elbow depending on your specific installation.

CAUTION:

Maintain minimum clearances or greater around the vent system.

Do not pack air spaces with insulation or other material.

See Section F "ASSEMBLING THE VENT SECTIONS" on page 18 for specific instructions on each type of venting.

Figures 18 and 19 show how to install a typic vent system. Use only pipe supplied and listed for use with this appliance. See page 4 for a description of listed components.

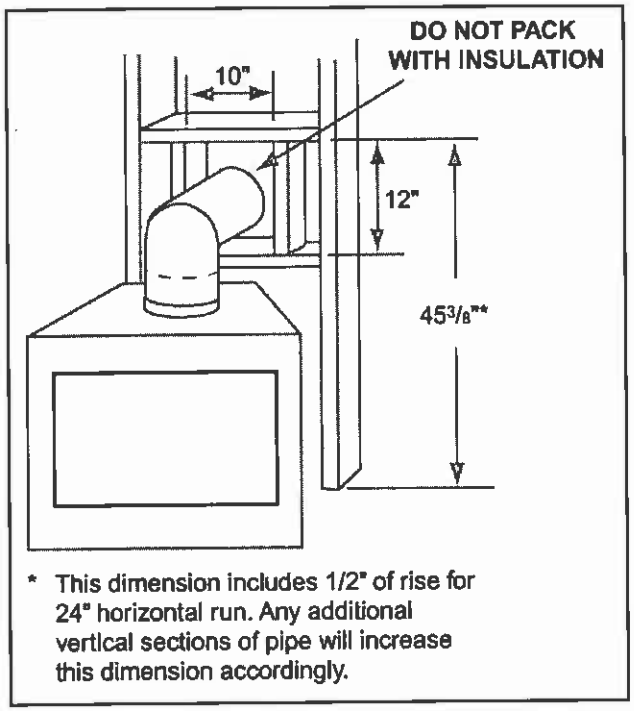
If the wall being penetrated is of noncombustible materials, a 9" diameter hole is acceptable.

e. Installing the Interior Wall Shield

Whenever a combustible wall is penetrated, the hole must be framed with an interior wall shield as shown in Figures 20 and 21 on page 13. This shield maintains minimum clearances and restricts cold air infiltration.

Note: Horizontal runs will require the use of one vent support (or metal plumber's strap) for every 3' of vent.

Note: Exterior wall thickness must be a minimum of 4" to a maximum of 23½".



* This dimension includes 1/2" of rise for 24" horizontal run. Any additional vertical sections of pipe will increase this dimension accordingly.

Figure 18
Exterior Wall Hole
(Top Vent)

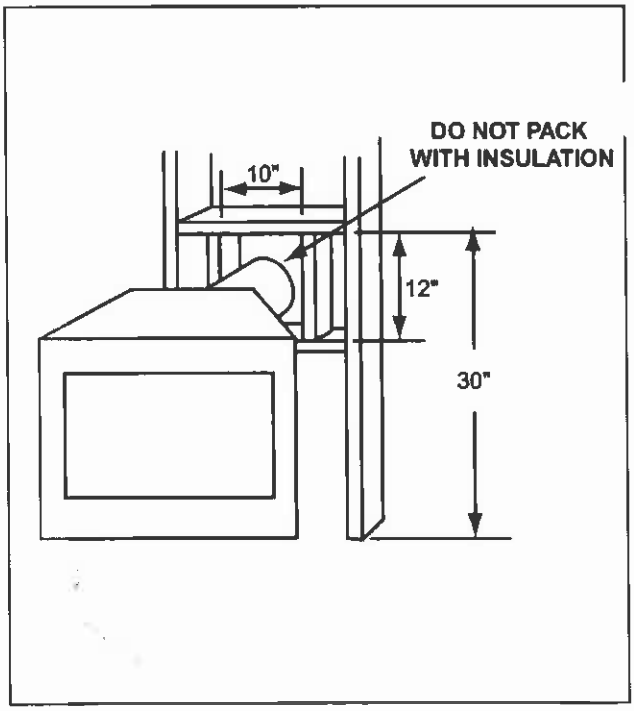


Figure 19
Exterior Wall Hole
(Rear Vent)

Secure the shield to the framing as shown in Figure 20.

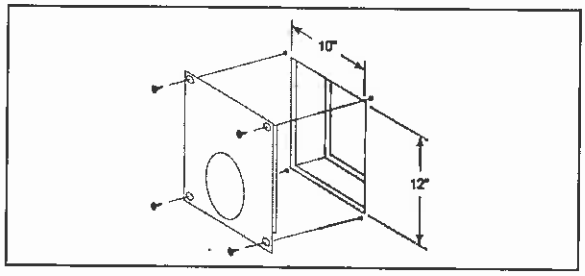


Figure 20
Interior Wall Shield

The cap should overlap the vent sections by at least 1½". See Figure 21.

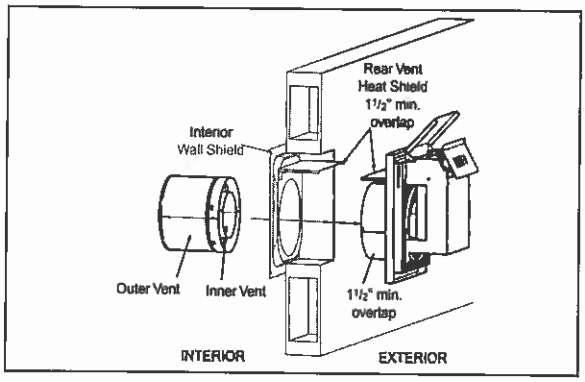


Figure 21
Venting Through the Wall

WARNING - RISK OF FIRE!
Always maintain minimum air space clearances or greater around the appliance and vent system.

f. Installing the Rear Vent Heat Shield

For rear vented appliances, a heat shield MUST be placed one inch above the top of the vent between the wall shield and the base of the termination cap. There are two sections of the heat shield. One section attaches to the wall shield with two screws. The remaining section is attached to the cap in the same manner. The sections of the heat shield will overlap to match the wall thickness (depth). The small leg on the shield should rest on the top of the vent to properly space it from the pipe section (this heat shield is not necessary on top vented appliances). See Figures 21 and 22.

Figure 22
Vent Heat Shield and Termination Cap

g. Termination

Vent termination must not be recessed in the wall. Siding may be brought to the edge of the cap base.

Install the cap as shown in Figures 21-22. Cap pipe sections should overlap the vent pipe by 1-1/2 inches. Caulk outside edges of cap.

Local codes may require the installation of a shield (CS) which prevents anything or anyone from touching the hot cap.

Figure 23 on page 14 illustrates cap locations as prescribed by current ANSI Z223.1 and CAN/CGA-B149 Installation Codes.

The termination cap height must meet all local and national codes and not be easily blocked or obstructed.

CAUTION:
A vinyl soffit shield (VSS2) should be installed if a cap is within 30" of a vinyl soffit.

WARNING - RISK OF FIRE!
Be sure there are no present (nor future) obstructions to the termination cap such as trees, bushes, snow drifts, etc.

b. Rear Vent Vertical Termination

1) Clearances

See Figure 28 for clearance information.

2) Vent Lengths

Various venting configurations are shown in Figure 29 from which maximum vent runs can be determined.

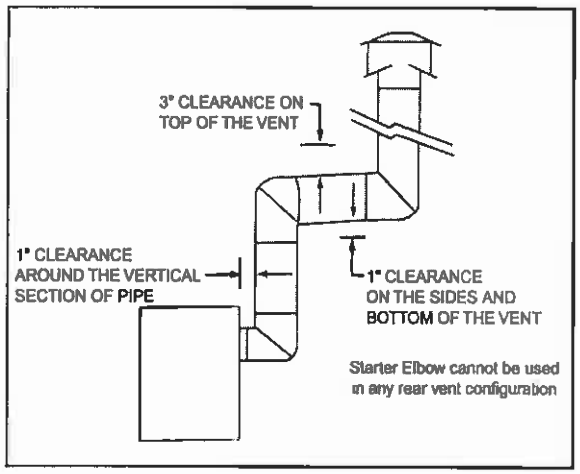


Figure 28 - Vertical Termination Clearances

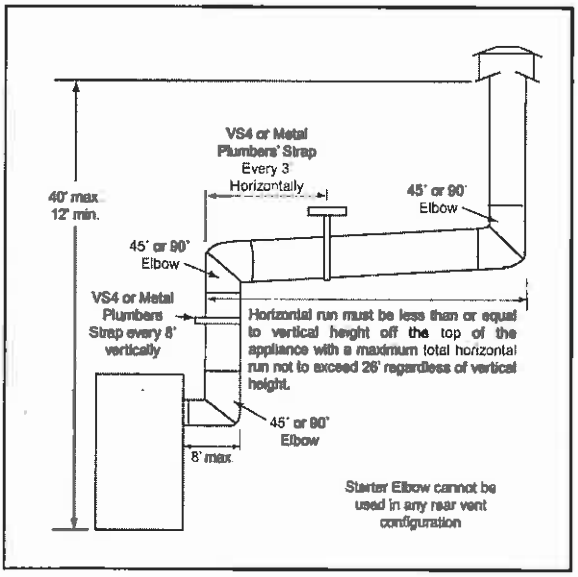


Figure 29 - Vertical Termination Vent Lengths

WARNING - RISK OF FIRE!

Always maintain minimum clearances or greater around the vent system. Do not pack air spaces with insulation or other material.

WARNING!

The horizontal run of vent must have a 1/4" rise for every 1 ft. of run towards the termination. Never allow the vent to run downward. This could cause high temperatures and may create a fire hazard.

6. FIRESTOP SPACER/VENT INSTALLATION

Frame an opening and install an FS6 Firestop Spacer whenever the vent penetrates a ceiling/floor area, as shown in Figure 30. Frame the opening with the same sized lumber as used in the ceiling/floor joists. Unless the flue is offset, the hole should be directly above the appliance. DO NOT pack insulation around the vent.

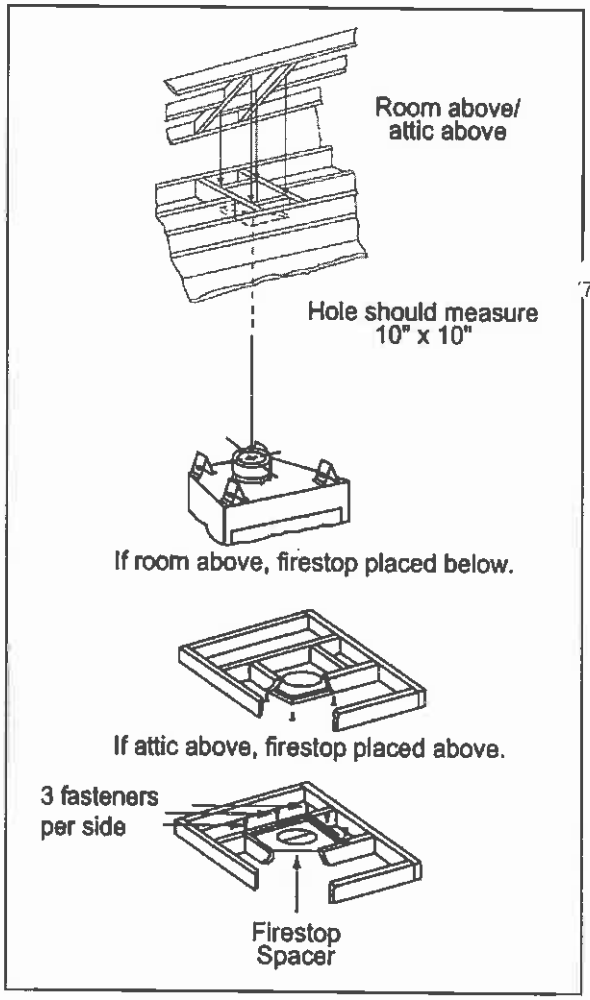


Figure 30
Installing the Firestop Spacer

CHASE/TERMINATION INSTALLATION

Figures 31 and 32, and Table 1 specifies minimum vent heights for various pitched roofs.

These vent heights are necessary for safety and do not ensure draft-free operation. Trees, buildings, adjoining roof lines, adverse conditions, etc. may create a need for a taller vent should down drafting occur.

Note: To ensure proper operation, verify all venting and the termination is unobstructed.

Roof Pitch	H (Min.) Ft.
Flat to 6/12	1.0
6/12 to 7/12	1.25
Over 7/12 to 8/12	1.5
Over 8/12 to 9/12	2.0
Over 9/12 to 10/12	2.5
Over 10/12 to 11/12	3.25
Over 11/12 to 12/12	4.0
Over 12/12 to 14/12	5.0
Over 14/12 to 16/12	6.0
Over 16/12 to 18/12	7.0
Over 18/12 to 20/12	7.5
Over 20/12 to 21/12	8.0

Table 1
Vent Height

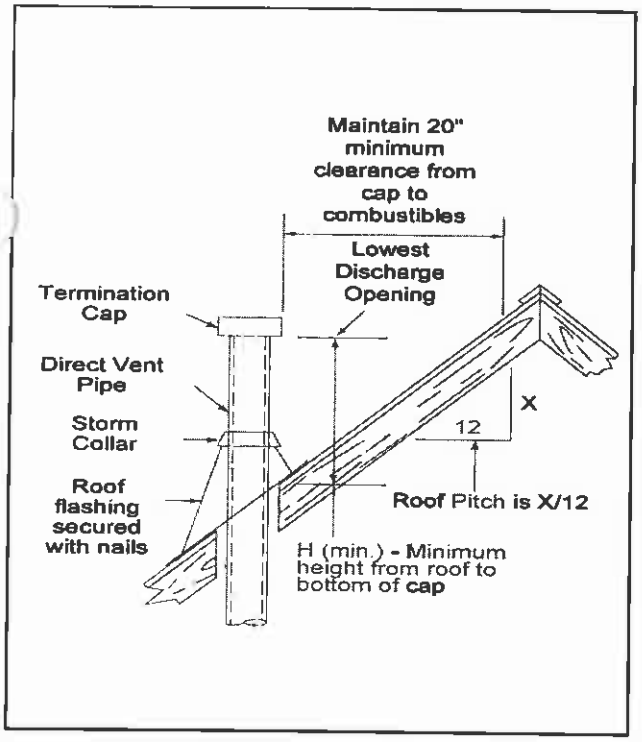
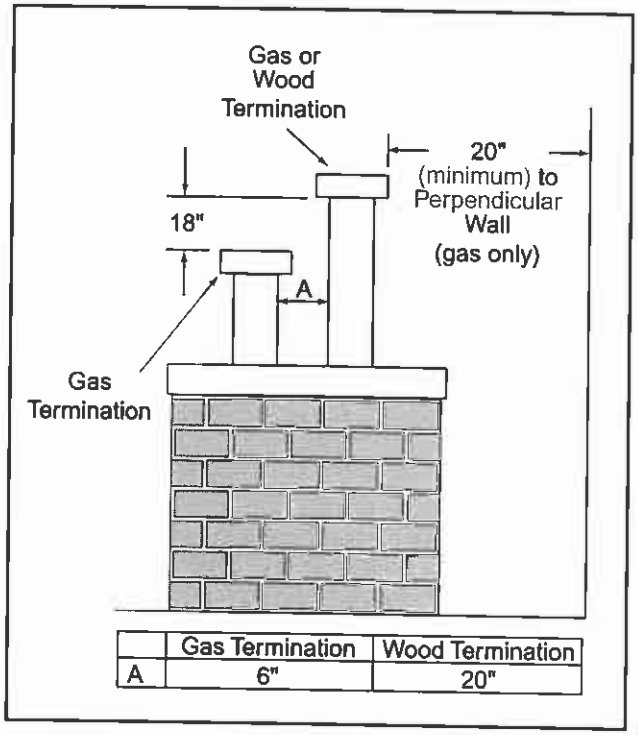


Figure 31
Vent Height for Vertical Termination



	Gas Termination	Wood Termination
A	6"	20"

Figure 32
Multiple Vertical Termination Heights

F. ASSEMBLING THE VENT SECTIONS

1. ATTACHING THE VENTING TO THE APPLIANCE

To attach the first VP section to the appliance collars, simply slide the flared end of the inner flue of the VP section over the inner collar on the appliance. At the same time, insert the outer flue into the outer collar on the appliance. Push the vent section into the appliance collar until all the lances have snapped into place. Tug slightly on the vent to confirm it has completely locked in place.

2. ASSEMBLING VENT SECTIONS

a. Start the flared inner flue of Section "A" over the inner flue of Section "B".

b. Insert the outer flue of Section "A" into the outer flue of Section "B". See Figure 33.

Note: Squeezing the pipe slightly to fit may be necessary.

Once both inner and outer flues are started, press Section "A" into Section "B" firmly until all lances have snapped into place. Tug slightly on Section "A" to confirm it has completely locked into place. See Figure 34.

3. ASSEMBLING MINIMUM INSTALLATION (MI) SECTIONS

Note: Make sure that the seams are NOT aligned in order to prevent unintentional disconnection.

MI sections are non-unitized so that they can be cut to a certain length. To use these sections, they must be cut to length from the non-expanded end. See Figure 35. They can then be attached by first connecting the expanded end of the MI inner flue with the inner flue from the adjacent vent section and securing with three screws. The expanded portion of the MI inner flue must overlap completely with the untreated end of the adjacent vent section. The outer flue can then be inserted into the adjacent outer flue expanded end and attached to the next vent section with three screws. The other end of the MI vent section can then be attached by fitting a snap lock section to it and snapping it together as normal.

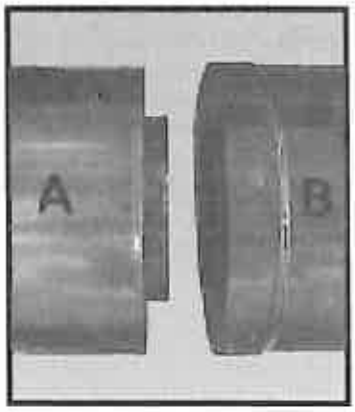


Figure 33

Figure 34

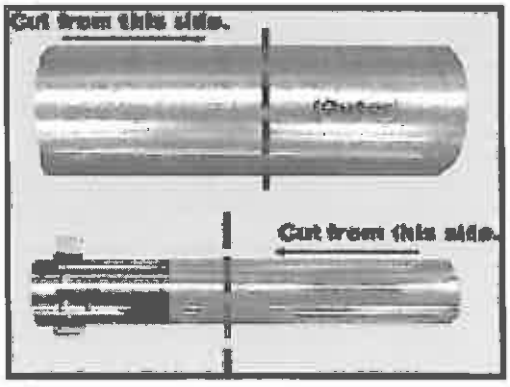


Figure 35

4. ASSEMBLING THE SLIP SECTIONS

Slip sections should be snapped into the first mating piece, then expanded to their desired length, making sure that a 1.5" overlap is maintained between the two sections of the slip section. The two sections of the slip section then need to be secured by driving two screws through the overlapping portions of the vent. See Figure 36. This will secure the slip section to the desired length and prevent it from separating. The slip section can then be attached to the next section of vent.

5. DISASSEMBLING VENT SECTIONS (only if necessary)

To disassemble any two pieces of pipe, rotate either section so that the seams on both pipe sections are aligned as shown in Figure 37. They can then be carefully pulled apart.

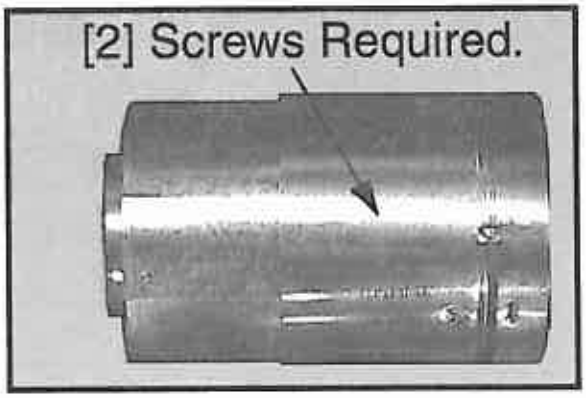


Figure 36

Figure 37

G. UTILITIES

1. HIGH ALTITUDE INSTALLATION

For U.S. installation, appliances are tested and approved for elevations from 0-2000 feet. When installing this appliance at an elevation above 2000 feet, National Fuel Gas Codes require a decrease of the input rating by changing the existing burner orifice to a smaller size. Input should be reduced 4% for each 1000 feet above sea level. Check with the local gas utility for proper orifice size identification. The correct orifice is available from your Heatilator distributor.

For Canada, appliances are certified for elevations from 0-4500 feet. When installing this appliance at an elevation between 0-4500 feet in Canada, the input rating does not need to be reduced. When installing this appliance at an elevation above 4500 feet in Canada, check with local authorities.

2. GAS LINE CONNECTION

Open the control access panel (Figure 38) and remove by releasing the spring latch on the left hand side (Figure 39). The appliance is provided with a stainless steel flexible connector and manual shutoff valve. The incoming gas line should be piped into the valve compartment and connected to the 1/2" FIP connection provided on the manual shutoff valve. See Figure 40 for gas line connection.

All connections must be tightened and checked for leaks with a soap and water solution or a leak detector.

Bleed the gas line to extract any air that may have been trapped inside the pipe.

Optional: Seal around the gas line to prevent cold air leakage.

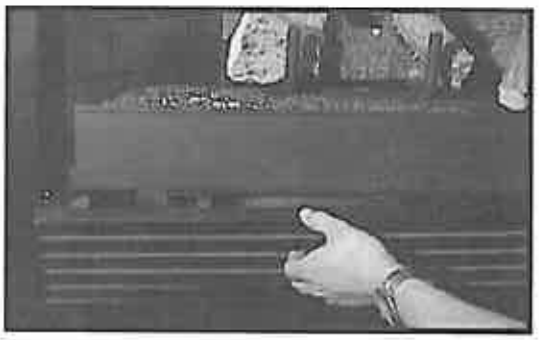


Figure 38 - Control Access Panel Removal

Figure 39 - Spring Latch

Note: This appliance and its manual shutoff valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi (3.5 kPa). The appliance must be isolated from the gas supply piping system by closing its manual shutoff valve during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psi (3.5 kPa).

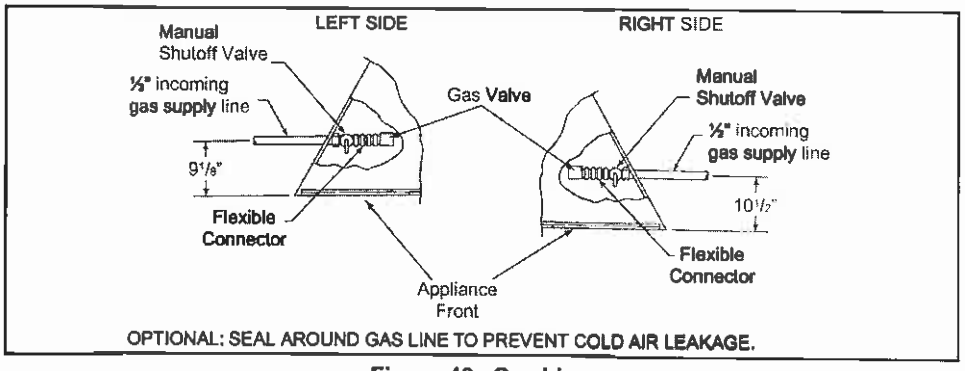


Figure 40 - Gas Line