



INSTALLATION INSTRUCTIONS

DIRECT VENT MULTI-OPEN SERIES

VENTED GAS FIREPLACE HEATERS - DIRECT VENT MODELS
P/N 700,001M REV. H 09/2005

MODELS

Millivolt Models

Electronic Models

CDST-CMN	CDCL-CMN	CDST-CEN	CDCL-CEN
CDST-CMP	CDCL-CMP	CDST-CEP	CDCL-CEP
CDPF-CMN	CDCR-CMN	CDPF-CEN	CDCR-CEN
CDPF-CMP	CDCR-CMP	CDPF-CEP	CDCR-CEP

RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE

This appliance may be installed in an aftermarket permanently located, manufactured home (USA only) or mobile home, where not prohibited by local codes. This appliance is only for use with the type of gas indicated on the rating plate. This appliance is not convertible for use with other gases, unless a certified kit is used.

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.

FOR YOUR SAFETY: Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

FOR YOUR SAFETY: What to do if you smell gas:

- DO NOT light any appliance.
- DO NOT touch any electrical switches.
- DO NOT use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow your gas suppliers instructions.
- If your gas supplier cannot be reached, call the fire department.

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

AVERTISSEMENT: ASSUREZ-VOUS DE BIEN SUIVRE LES INSTRUCTIONS DONNÉ DANS CETTE NOTICE POUR RÉDUIRE AU MINIMUM LE RISQUE D'INCENDIE OU POUR ÉVITER TOUT DOMMAGE MATÉRIEL, TOUTE BLESSURE OU LA MORT.

POUR VOTRE SÉCURITÉ: Ne pas entreposer ni utiliser d'essence ni d'autre vapeurs ou liquides inflammables dans le voisinage de cet appareil ou de tout autre appareil.

POUR VOTRE SÉCURITÉ: Que faire si vous sentez une odeur de gaz:

- Ne pas tenter d'allumer d'appareil.
- Ne touchez à aucun interrupteur. Ne pas vous servir des téléphones se trouvant dans le bâtiment où vous vous trouvez.
- Evacuez la pièce, le bâtiment ou la zone.
- Appelez immédiatement votre fournisseur de gaz depuis un voisin. Suivez les instructions du fournisseur.
- Si vous ne pouvez rejoindre le fournisseur de gaz, appelez le service des incendies.

L'installation et service doit être exécuté par un qualifié installateur, agence de service ou le fournisseur de gaz.



WH Report No. J20006712

A French manual is available upon request. Order Form Number 700,001CF.

Ce manuel d'installation est disponible en français, simplement en faire la demande. Numéro de la pièce 700,001CF.

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This installation manual will help you achieve a safe, efficient and dependable installation for your appliance and vent system. **Please read and understand these instructions before beginning your installation.**

DO NOT ATTEMPT TO ALTER OR MODIFY THE CONSTRUCTION OF THE APPLIANCE OR ITS COMPONENTS. ANY MODIFICATION OR ALTERATION MAY VOID THE WARRANTY, CERTIFICATION AND LISTINGS OF THIS UNIT.



We suggest that our gas hearth products be installed and serviced by professionals who are certified in the U.S. by the National Fireplace Institute® (NFI) as NFI Gas Specialists.

PACKAGING

The assembled vented gas fireplace heater is packaged with:

- 1 - one cartoned log set located in firebox area; decorative volcanic stone and glowing embers (rockwool) located inside the bottom cabinet compartment.
- 2 - one envelope containing the literature package which consists of the homeowner's manual, installation instructions, warranty, and 8 (CDST), 4 (CDPF, CDCR and CDCL) nailing flanges; envelope is located on top of the unit.
- 3 - one vent restrictor to be applied as shown on **page 10**; restrictor is taped to the envelope.
- 4 - two hoods (CDST, CDCR, CDCL), or three hoods (CDPF) taped to the top of the fireplace.

INTRODUCTION

These fireplaces are designed, tested and listed for operation and installation with, and only with, **Secure Vent™** Direct Vent System Components, **Secure Flex™** Flexible Vent Components manufactured by Security Chimneys International and **Z-Flex™** Model GA Venting Systems, listed to UL1777 and ULCS635 manufactured by Flexmaster Canada Limited. These approved vent system components are labeled for identification. DO NOT use any other manufacturer's vent components with these appliances.

The millivolt appliances are designed to operate on either natural or propane gas. A millivolt gas control valve with piezo ignition system provides safe, efficient operation. If any optional accessories which require electrical power are being installed, the electrical power must be provided at the time of appliance installation.

Electronic appliances are designed to operate on natural or propane gas. An electronic intermittent pilot ignition system provides safe, efficient operation. External electrical power is required to operate these units.

These appliances comply with National Safety Standards and are tested and listed by Warnock Hersey (Report No. J20006712) to ANSI Z21.88-2000 (in Canada, CSA-2.33-2000), and CAN/CGA-2.17-M91 in both USA and Canada, as vented gas fireplace heaters.

Both millivolt and electronic versions of these appliances are listed by Warnock Hersey for installation in bedrooms and mobile homes.

Installation must conform to local codes. In the absence of local codes, installation must comply with the current National Fuel Gas Code, ANSI Z223.1. (In Canada, the current CAN-1 B149 installation code.) Electrical wiring must comply with the National Electrical Code ANSI/NFPA 70 - (latest edition). (In Canada, the current CSA C22-1 Canadian Electrical Code.)

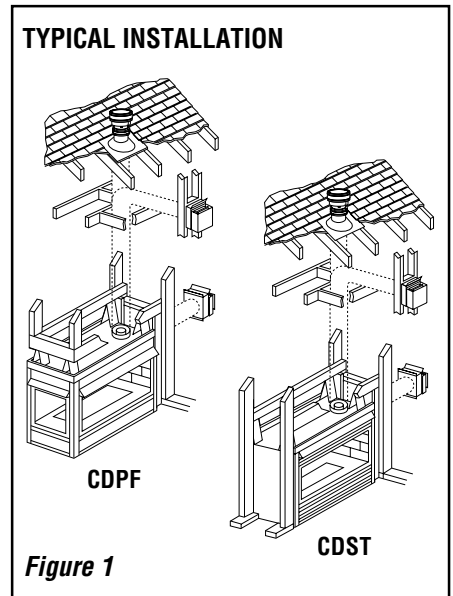
GENERAL INFORMATION

Note: Installation and repair should be performed by a qualified service person. The appliance should be inspected annually by a qualified professional service technician. More frequent inspections and cleanings may be required due to excessive lint from carpeting, bedding material, etc. It is imperative that the control compartment, burners and circulating air passage ways of the appliance be kept clean.

S'assurer que le brûleur et le compartiment des commandes sont propres. Voir les instructions d'installation et d'utilisation qui accompagnent l'appareil.

Provide adequate clearances around air openings and adequate accessibility clearance for service and proper operation. Never obstruct the front, back and/or side viewing surfaces of the appliance.

These appliances are designed to operate on natural or propane gas only.



Millivolt Models - Millivolt models come standard with the manually-modulated gas valve; flame appearance and heat output can be controlled at the gas valve. Input of millivolt models is shown in the following table:

Millivolt Models	
Natural and Propane Gas Models	Input rate (BTU/H) Manually-modulated
CDST-CMN, CDPF-CMN, CDCL-CMN, CDCR-CMN, CDST-CMP, CDPF-CMP, CDCL-CMP, CDCR-CMP	30,000 TO 37,500

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

Electronic Models -

Electronic models have a fixed rate gas valve. Input of electronic models is shown in the following table:

Electronic Models	
Natural and Propane Gas Models	Input rate (BTU/H) Fixed Rate
CDST-CEN, CDPF-CEN, CDCL-CEN, CDCR-CEN, CDST-CEP, CDPF-CEP, CDCL-CEP, CDCR-CEP	37,500

All Models -

Maximum manifold pressure is 3.5 in. w.c. (0.87 kPa) for natural gas and 10 in. w.c. (2.49 kPa) for LP/Propane gas.

Installations at Altitudes of 0 to 4500 ft.- Units are tested and approved for elevations of 0 to 4500 feet (0 to 1372 meters).

Installations at Altitudes above 4500 ft.- For elevations above 4500 feet (1372 meters), install the unit according to the regulations of the local authorities having jurisdiction and, in the USA, the latest edition of the National Fuel Gas Code (ANSI Z223.1) or, in Canada, the latest edition of the CAN1-B149.1 and .2 codes.

Table 1 shows the units' gas orifice size for the elevations indicated.

Model No.	Orifice size*		Elevation Feet (meters)
	Nat.	Prop.	
CDST CDPF CDCR CDCL	#44	#55	0-4500 (0-1370)

* Each model has two burners. Each burner contains one of these orifices.

Table 1

The millivolt appliances are manually controlled and feature a spark ignitor (piezo) that allows the appliance's pilot gas to be lit without the use of matches or batteries. This system will still function in the event of a power outage.

Do not use these appliances if any part has been under water. Immediately call a qualified, professional service technician to inspect the appliance and to replace any parts of the control system and any gas control which have been under water.

Ne pas se servir de cet appareil s'il a été plongé dans l'eau, complètement ou en partie. Appeler un technicien qualifié pour inspecter l'appareil et remplacer toute partie du système de contrôle et toute commande qui ont été plongés dans l'eau.

This appliance may be installed in an aftermarket permanently located, manufactured home (USA only) or mobile home, where not prohibited by local codes. This appliance is only for use with the type of gas indicated on the rating plate. This appliance is not convertible for use with other gases, unless a certified kit is used.

Cet appareil peut être installé dans un maison préfabriquée (É.-U. seulement) ou mobile déjà installée à demeure si les règlements locaux le permettent. Cet appareil doit être utilisé uniquement avec les types de gaz indiqués sur la plaque signalétique. Ne pas l'utiliser avec d'autres gaz sauf si un kit de conversion certifié est installé.

Test gage connections are provided on the front of the millivolt gas control valve (identified IN for the inlet and OUT for the manifold side). A 1/8" NPT test gage connection is provided at the inlet and outlet side of the electronic gas control valve.

Minimum inlet gas pressure to these appliances is 5.0 inches water column (1.24 kPa) for natural gas and 11.0 inches water column (2.74 kPa) for propane for the purpose of input adjustment.

Maximum inlet gas supply pressure to these appliances is 10.5 inches water column (2.61 kPa) for natural gas and 13.0 inches water column (3.23 kPa) for propane.

These appliances must be isolated from the gas supply piping system (by closing their individual manual shut-off valve) during any pressure testing of the gas supply piping system at test pressures equal to or less than 1/2 psig (3.5 kPa).

These appliances and their individual shut-off valves must be disconnected from the gas supply piping system during any pressure testing of that system at pressures in excess of 1/2 psig (3.5 kPa).

These appliances must not be connected to a chimney or flue serving a separate solid fuel burning appliance.

Carbon Monoxide Poisoning: Early signs of carbon monoxide poisoning are similar to the flu with headaches, dizziness and/or nausea. If you have these signs, obtain fresh air immediately. Turn off the gas supply to the appliance and have it serviced by a qualified professional, as it may not be operating correctly.

WARNING: FAILURE TO COMPLY WITH THE INSTALLATION AND OPERATING INSTRUCTIONS PROVIDED IN THIS DOCUMENT WILL RESULT IN AN IMPROPERLY INSTALLED AND OPERATING APPLIANCE, VOIDING ITS WARRANTY. ANY CHANGE TO THIS APPLIANCE AND/OR ITS OPERATING CONTROLS IS DANGEROUS. IMPROPER INSTALLATION OR USE OF THIS APPLIANCE CAN CAUSE SERIOUS INJURY OR DEATH FROM FIRE, BURNS, EXPLOSION OR CARBON MONOXIDE POISONING.

WARNING: CHILDREN AND ADULTS SHOULD BE ALERTED TO THE HAZARDS OF HIGH SURFACE TEMPERATURES. USE CAUTION AROUND THE APPLIANCE TO AVOID BURNS OR CLOTHING IGNITION. YOUNG CHILDREN SHOULD BE CAREFULLY SUPERVISED WHEN THEY ARE IN THE SAME ROOM AS THE APPLIANCE.

WARNING: DO NOT PLACE CLOTHING OR OTHER FLAMMABLE MATERIALS ON OR NEAR THIS APPLIANCE.

AVERTISSEMENT: SURVEILLER LES ENFANTS. GARDER LES VÊTEMENTS, LES MEUBLES, L'ESSENCE OU AUTRES LIQUIDES À VAPEUR INFLAMMABLES À CÔTÉ DE L'APPAREIL.

LOCATION

In selecting the location, the aesthetic and functional use of the appliance are primary concerns. However, vent system routing to the outside atmosphere and access to the fuel supply are also important. Consideration should be given to traffic ways, furniture, draperies, etc., due to high surface temperatures (*Figure 2*). The location should also be free of electrical, plumbing or other heating/air conditioning ducting.

These direct vent appliances are uniquely suited for installations requiring a utility shelf positioned directly above the fireplace. Utility shelves like these are commonly used for locating television sets and decorative plants.

To achieve the lowest possible shelf height, use the alternative rear vent outlet. **Do not insulate the space between the appliance and the area above it. See *Figure 3* on page 4.** The minimum height from the base of the appliance to the underside of combustible materials used to construct a utility shelf in this fashion is shown in the table in *Figure 3* on page 4. The weight of the utility shelf and anything placed upon it may not be supported by the appliance in anyway.

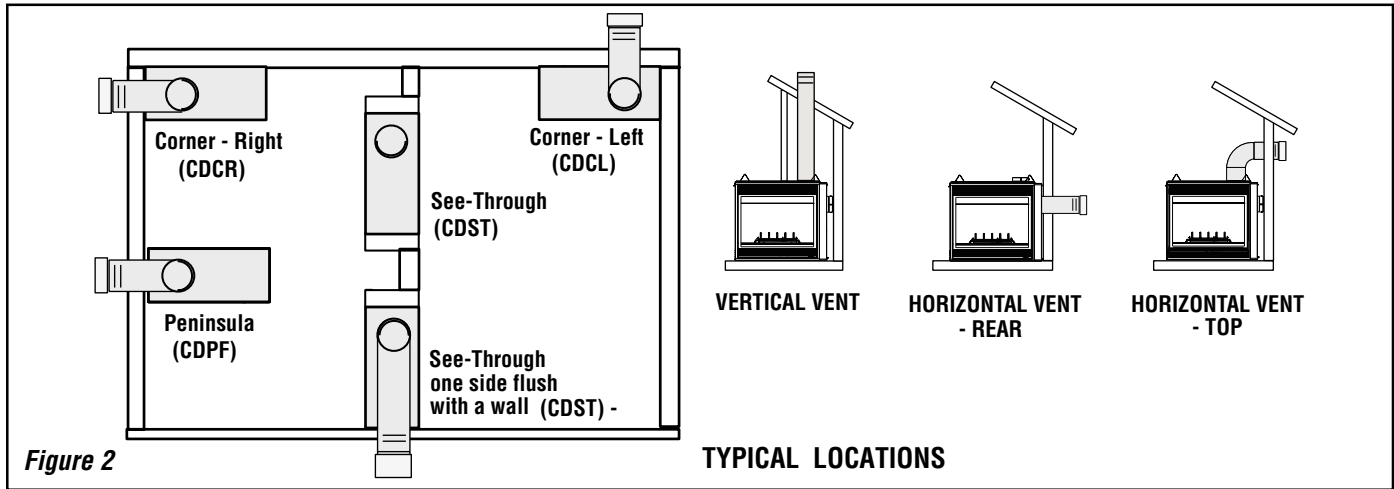


Figure 2

TYPICAL LOCATIONS

The appliance should be mounted on a fully supported base extending the full width and depth of the unit. The appliance may be located on or near conventional construction materials. However, if installed on combustible materials, such as carpeting, vinyl tile, etc., a metal or wood barrier covering the entire bottom surface must be used.

APPLIANCE AND VENT CLEARANCES

The appliance is approved with zero clearance to combustible materials on all sides (as detailed in **Table 2**), with the following exception: When the unit is installed with one side flush with a wall, the wall on the other side of the unit must not extend beyond the front edge of the unit. In addition, when the unit is installed in the middle of a room, the side walls surrounding the unit must not extend beyond the front or rear edge of the unit. See **Figure 2**.

BACK	1/2 in. (13 mm) 0 in. (0 mm) spacers
SIDES	1/2 in. (13 mm) 0 in. (0 mm) spacers
TOP SPACERS	0 in. (0 mm)
FLOOR	0 in. (0 mm)
From Bottom of Unit to Ceiling	64 in. (1626 mm)
VENT	1 in. (25.4 mm)*
SERVICE CLEARANCES	
VIEWING SIDES - (FRONT BACK OR SIDE)	3 Feet. (0.9 meters)

*Note: 3 in. (75 mm) above any horizontal/inclined vent component.

Table 2

Model No.	Shelf Height inches (mm)			
	Top Vent - with One 90 Degree Elbow		Rear Vent - Straight Out the Back	
	Secure Vent	Secure Flex	Secure Vent	Secure Flex
CDST CDPF CDCR CDCL	53 1/2 (1359)	55 1/4 (1403)	41 1/8 (1045)	41 1/8 (1045)

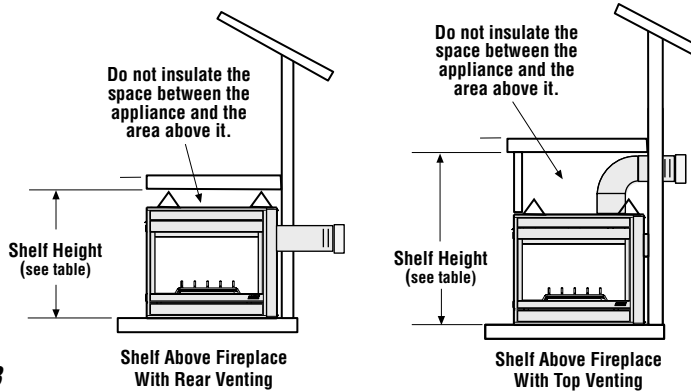


Figure 3

VENT TERMINATION CLEARANCES

These instructions should be used as a guideline and do not supersede local codes in any way. Install vent according to local codes, these instructions, the current National Fuel Gas Code (ANSI-Z223.1) in the USA or the current standards of CAN/CGA-B149.1 and -B149.2 in Canada.

Vertical Vent Termination Clearances
Terminate single vent caps relative to building components according to **Figure 4**.

Terminate multiple vent terminations according to the installation codes listed above.

Horizontal Vent Termination Clearances

See **Figure 5 on page 5** for horizontal vent termination clearances to any overhead combustible projection less than or equal to 2 1/2" (64 mm) and greater than 2 1/2" (64 mm). For additional vent location restrictions refer to **Figure 8 on page 6**.

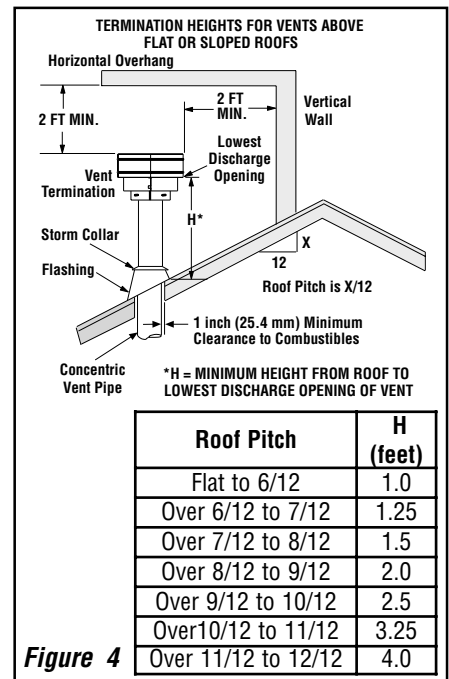


Figure 4

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

TYPICAL INSTALLATION SEQUENCE

The typical sequence of installation follows, however, each installation is unique resulting in variations to those described.

See the page numbers references in the following steps for detailed procedures.

Step 1. (page 5) Construct the appliance framing. Position the appliance within the framing and secure with nailing brackets.

Step 2. (page 10) Route gas supply line to appliance location.

Step 3. (page 10) Install the vent system and exterior termination.

Step 4. (page 22) Field Wiring

A. Millivolt Appliances – The operating control switch is factory installed.

B. Electronic Appliances – Connect 120 Vac electrical power to the appliance receptacle.

Step 5. (page 22) Install blower kit (optional equipment).

Step 6. (page 23) Make connection to gas supply.

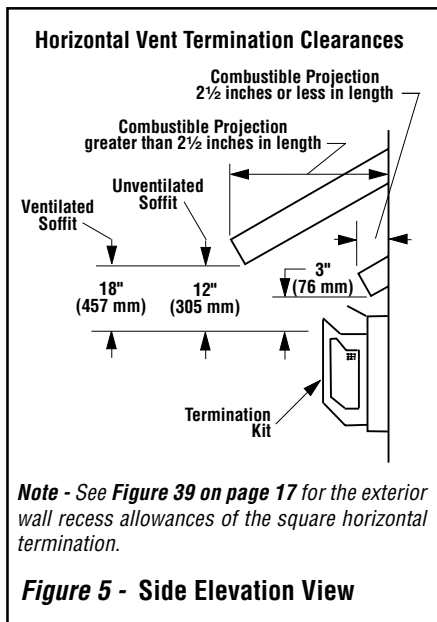
Step 7. (page 23) Install the log set, decorative volcanic stone and glowing embers.

Step 8. (page 23) Checkout appliance operation.

Step 9. (page 24) Install glass enclosure panels.

Step 10. (page 24) Adjust burner primary air shutter to achieve proper flame appearance.

Step 11. (page 25) Install the hoods.



DETAILED INSTALLATION STEPS

The appliance is shipped with all gas controls and components installed and pre-wired.

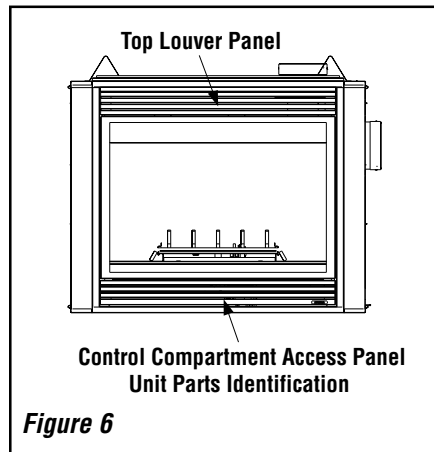
1 - Remove the shipping carton.

2 - Remove the top louver panel (**see Figure 6**).

3 - Lift the pressure relief plates and remove the cardboard from underneath each of them.

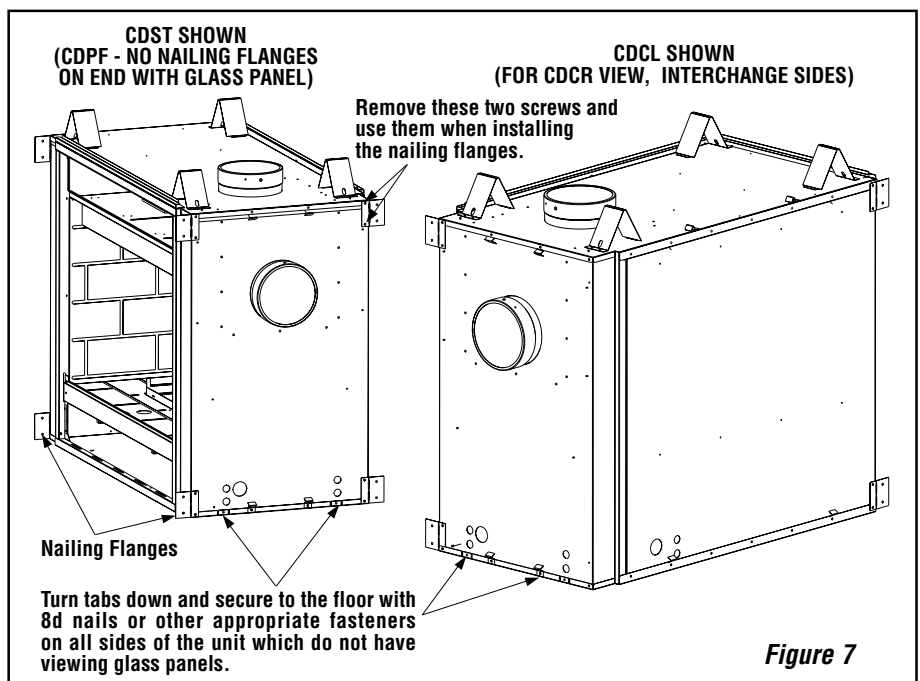
4 - Open the control compartment access panel by actuating the spring loaded magnetic catches securing the panel, gently depressing the outer top corners of the panel until the catches "pop" the panel free, allowing it to swing out and down to open.

5 - Open the two latches (located under the firebox floor) securing the glass enclosure panel. Remove the panel by tilting it outward at the bottom and lifting it up. Set the door aside protecting it from inadvertent damage. **See Figure 57 on page 24.**



Step 1. FRAMING

Frame these appliances as illustrated in **Figures 9 (CDST)**, **10 (CDPF)**, **11 (CDCL)** or **12 (CDCR)**.



NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

All framing details must allow for a minimum clearance to combustible framing members as shown in **Table 2 on page 4**.

Note: The CDST fireplace is installed in the framing by cocking it at an angle, fitting the collar side in first and then twisting and pushing the other side in. To minimize the obstruction, it is helpful to make sure the cap is removed from the rear collar.

If the appliance is to be elevated above floor level, a solid continuous platform must be constructed. Headers may be in direct contact with the appliance top spacers but must not be supported by them or notched to fit around them. All construction above the appliance must be self supporting, **DO NOT** use the appliance for structural support.

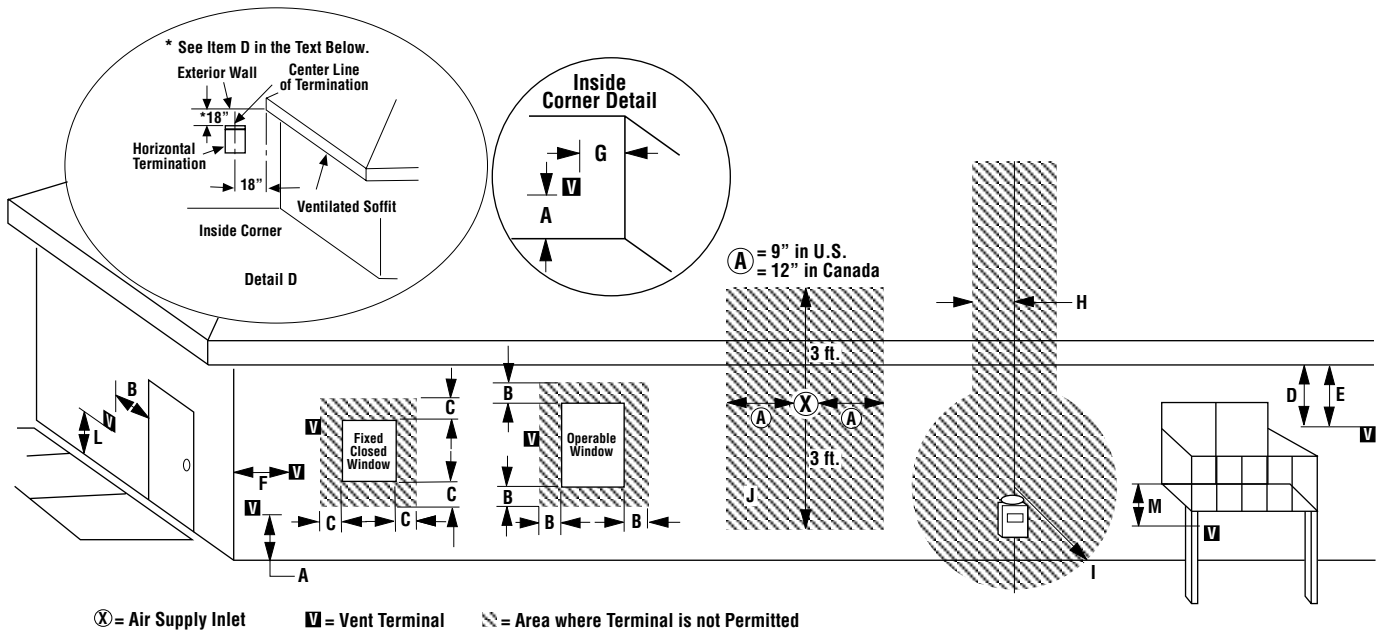
Side Nailing Flanges

The fireplace should be secured to the framing at the side(s) and/or rear of the unit using the factory-provided nailing flanges. Install the nailing flanges - 8 (CDST), 4 (CDPF, CDCL and CDCR) - as shown in **Figure 7** using the existing screws. Position the fireplace within the framing. When required, the flanges may be bent 90 degrees by hand or with the assistance of a hammer. Use wood screws to secure the nailing flanges to the framing. **See Table 2 on page 4** for clearances of framing members to cabinet parts in the nailing flange area. The nailing flange itself is exempt from these clearances.

Floor Nailing Tabs

Secure the fireplace to the floor as shown in **Figure 7**.

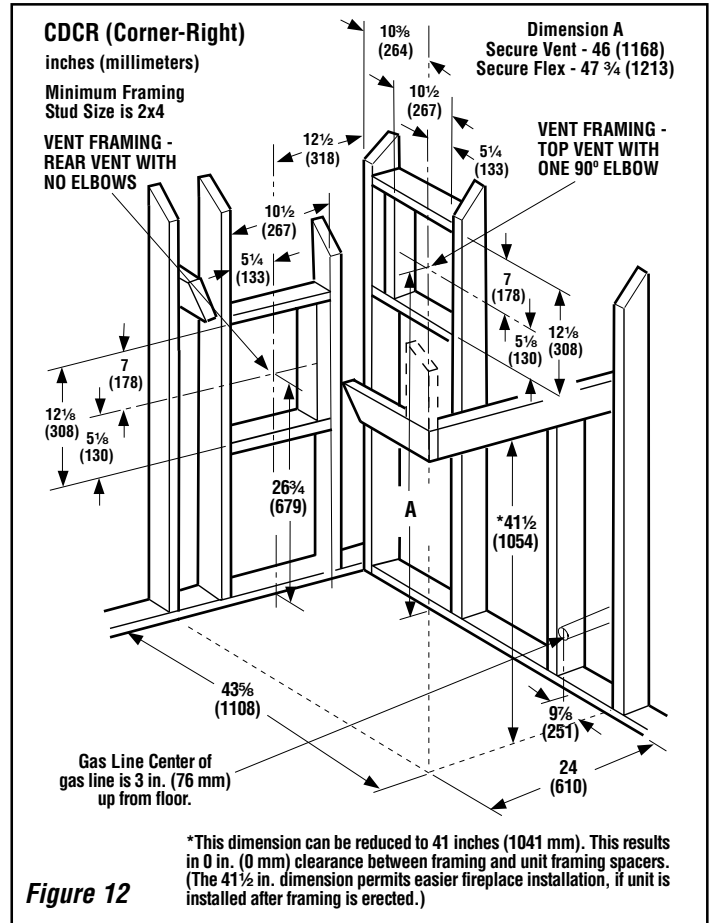
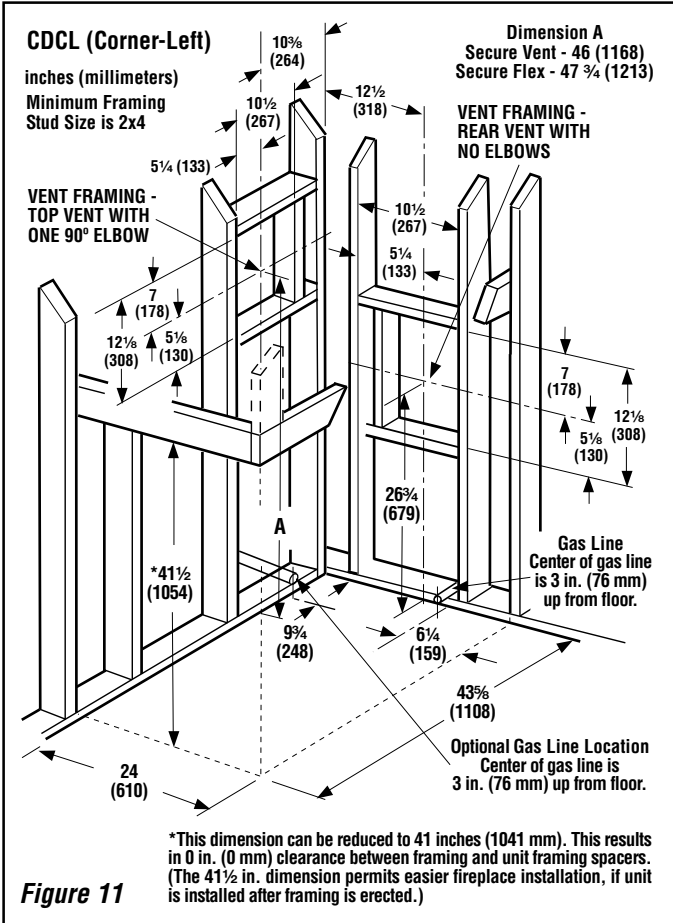
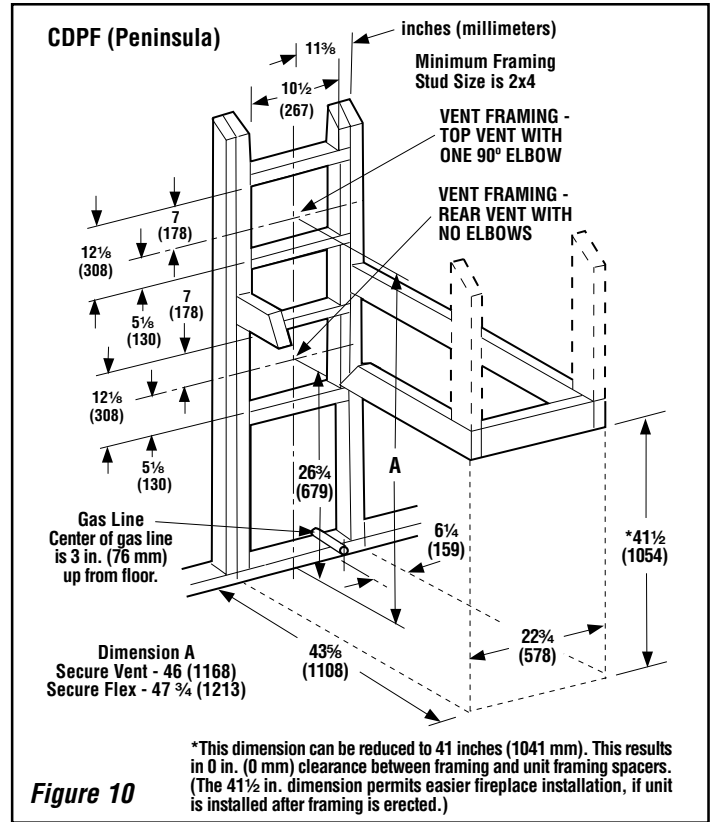
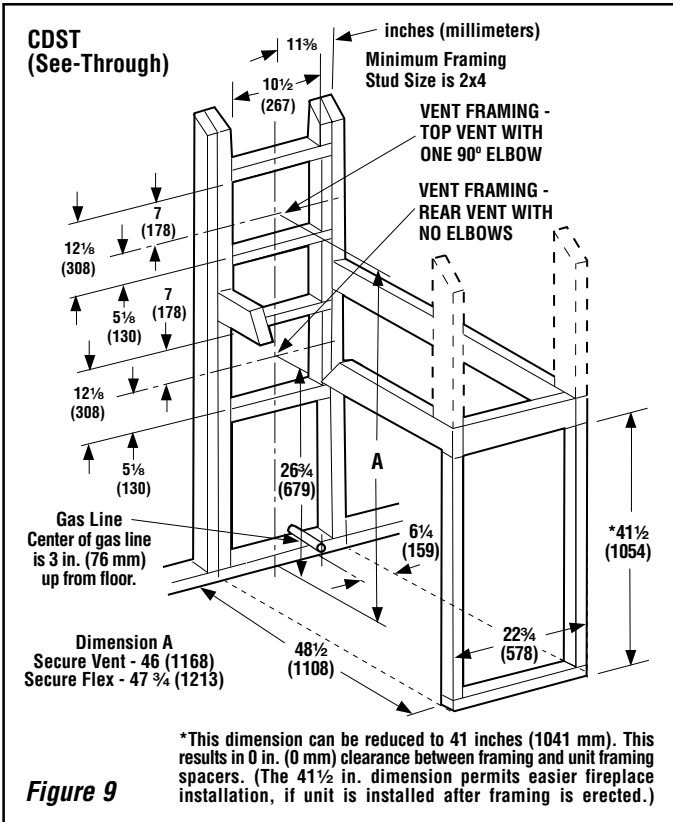
EXTERIOR HORIZONTAL VENT TERMINATION CLEARANCE REQUIREMENTS



	Canadian Installation*	US Installation**
A = Clearance above grade, veranda, porch, deck, or balcony.	12 inches (30cm)*	12 inches (30cm)**
B = Clearance to window or door that may be opened.	6 in (15cm) for appliances < 10,000 Btuh (3kW), 12 in (30cm) for appliances > 10,000 Btuh (3kW) and < 100,000 Btuh (30kW), 36 inches (91cm) for appliances > 100,000 Btuh (30kW)*	6 in (15cm) for appliances < 10,000 Btuh (3kW), 9 in (23cm) for appliances > 10,000 Btuh (3kW) and < 50,000 Btuh (15kW), 12 inches (30cm) for appliances > 50,000 Btuh (15kW)**
C = Clearance to permanently closed window	12" (305mm) minimum to prevent window condensation	9" (229mm) minimum to prevent window condensation
D = Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of 18 inches (458mm) from the center line of the terminal	18" (458mm)	18" (458mm)
E = Clearance to unventilated soffit	12" (305mm)	12" (305mm)
F = Clearance to outside corner	5" (12.7cm) minimum	5" (12.7cm) minimum
G = Clearance to inside corner	6" (15.2cm) minimum	6" (15.2cm) minimum
H = Clearance to each inside of center line extended above meter/regulator assembly	3 feet (91cm) within a height of 15 feet above the meter/regulator assembly*	3 feet (91cm) within a height of 15 feet above the meter/regulator assembly**
I = Clearance to service regulator vent outlet	3 feet (91cm)*	3 feet (91cm)**
J = Clearance to nonmechanical air supply inlet to building or the combustion air inlet to any other appliance	6 in (15cm) for appliances < 10,000 Btuh (3kW), 12 in (30cm) for appliances > 10,000 Btuh (3kW) and < 100,000 Btuh (30kW), 36 inches (91cm) for appliances > 100,000 Btuh (30kW)*	6 in (15cm) for appliances < 10,000 Btuh (3kW), 9 in (23cm) for appliances > 10,000 Btuh (3kW) and < 50,000 Btuh (15kW), 12 inches (30cm) for appliances > 50,000 Btuh (15kW)**
K = Clearance to a mechanical air supply inlet	6 feet (1.83m)*	3 feet (91cm) above if within 10 feet (3m) horizontally**
L = Clearance above paved sidewalk or paved driveway located on public property	7 feet (2.13m)‡	7 feet (2.13m)‡
M = Clearance under veranda, porch, deck or balcony	12 inches (30cm)‡	12 inches (30cm)‡
* In accordance with the current CSA-B149.1 National Gas And Propane Installation Code. ** In accordance with the current ANSI SZ223.1/NFPA 54 National Fuel Gas Codes. ‡ A vent shall not terminate directly above a sidewalk or paved driveway which is located between two single family dwellings and serves both dwellings. *‡ Only permitted if veranda, porch, deck or balcony is fully open on a minimum 2 sides beneath the floor:		

Figure 8

FIREPLACE FRAMING SPECIFICATIONS



NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

FIREPLACE SPECIFICATIONS

CDST (See-Through)

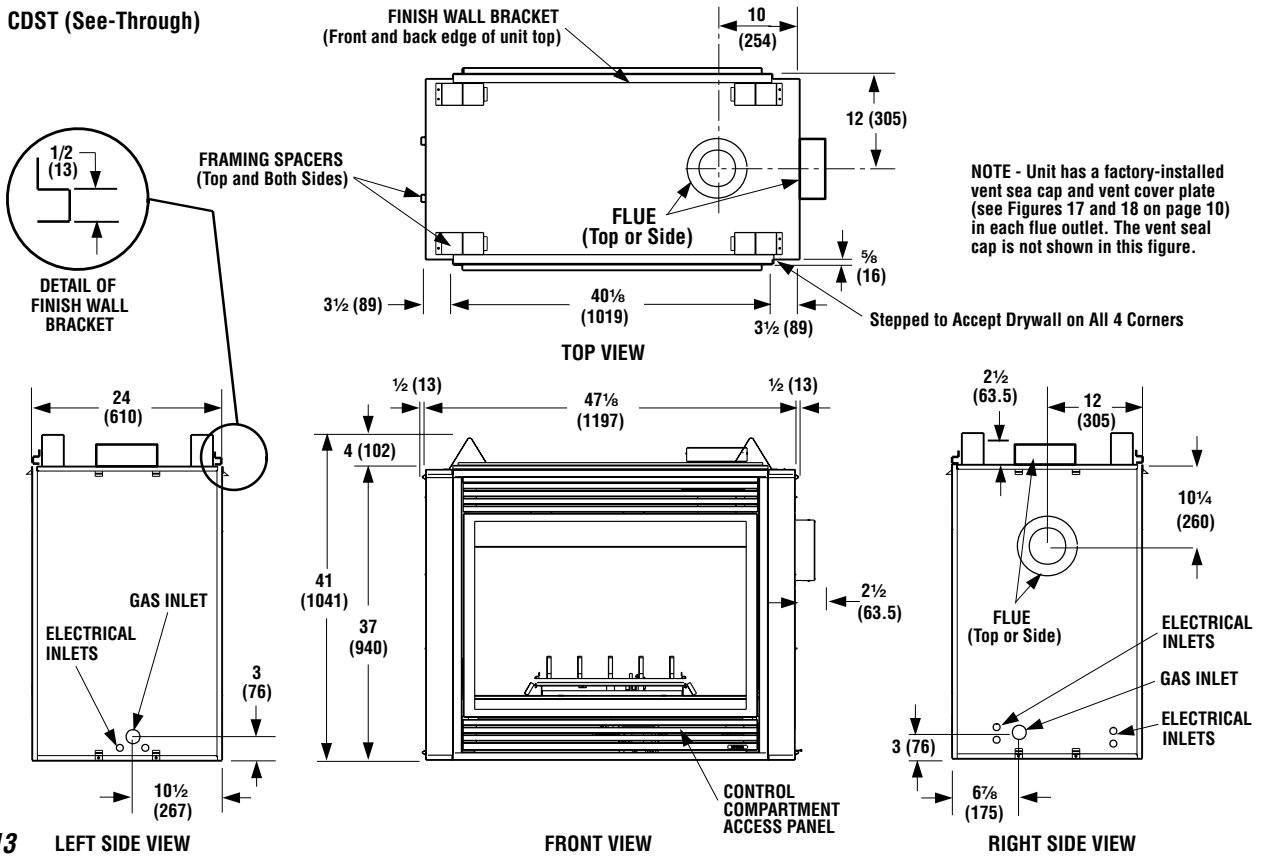


Figure 13 LEFT SIDE VIEW

CDPF (Peninsula)

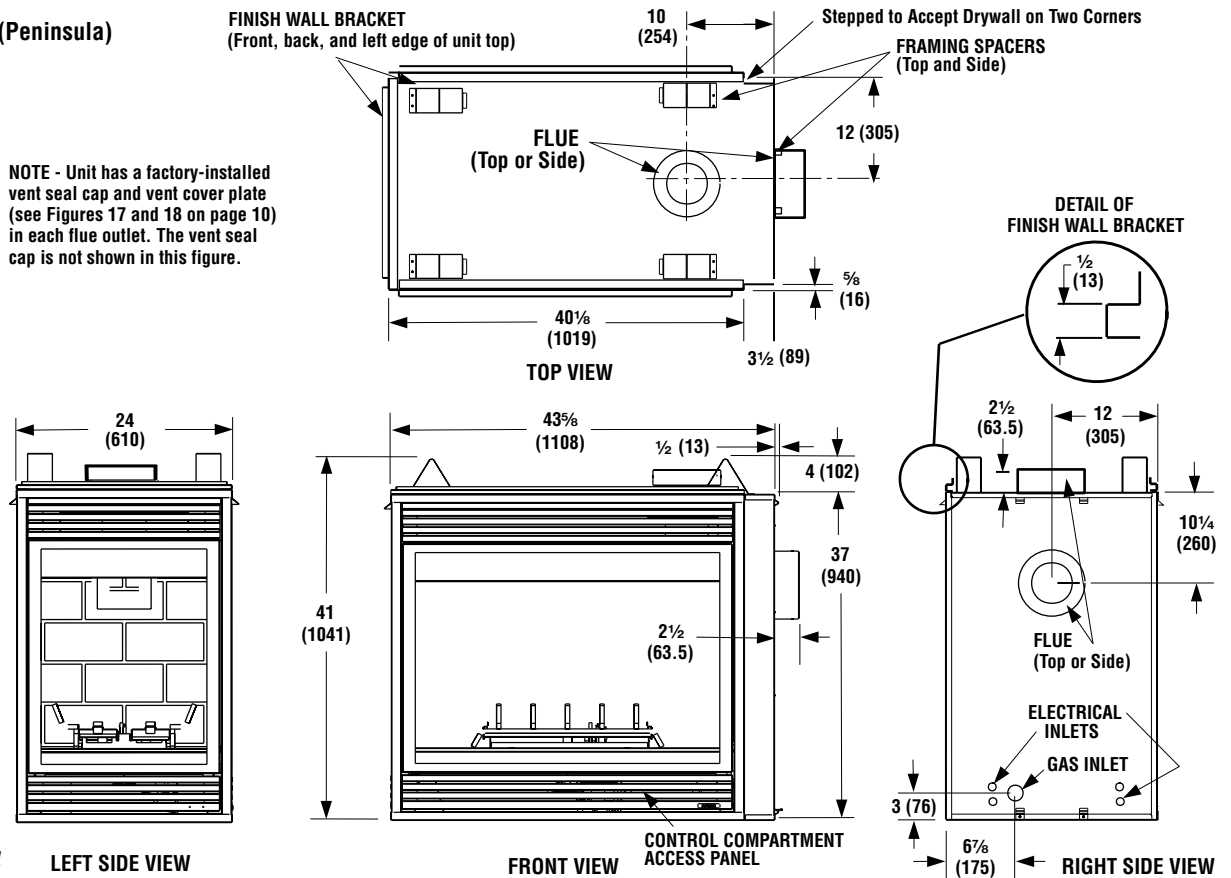


Figure 14 LEFT SIDE VIEW

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

FIREPLACE SPECIFICATIONS CONTINUED

CDCL (Corner-Left)

NOTE - Unit has a factory-installed vent seal cap and vent cover plate (see Figures 17 and 18 on page 10) in each flue outlet. The vent seal cap is not shown in this figure.

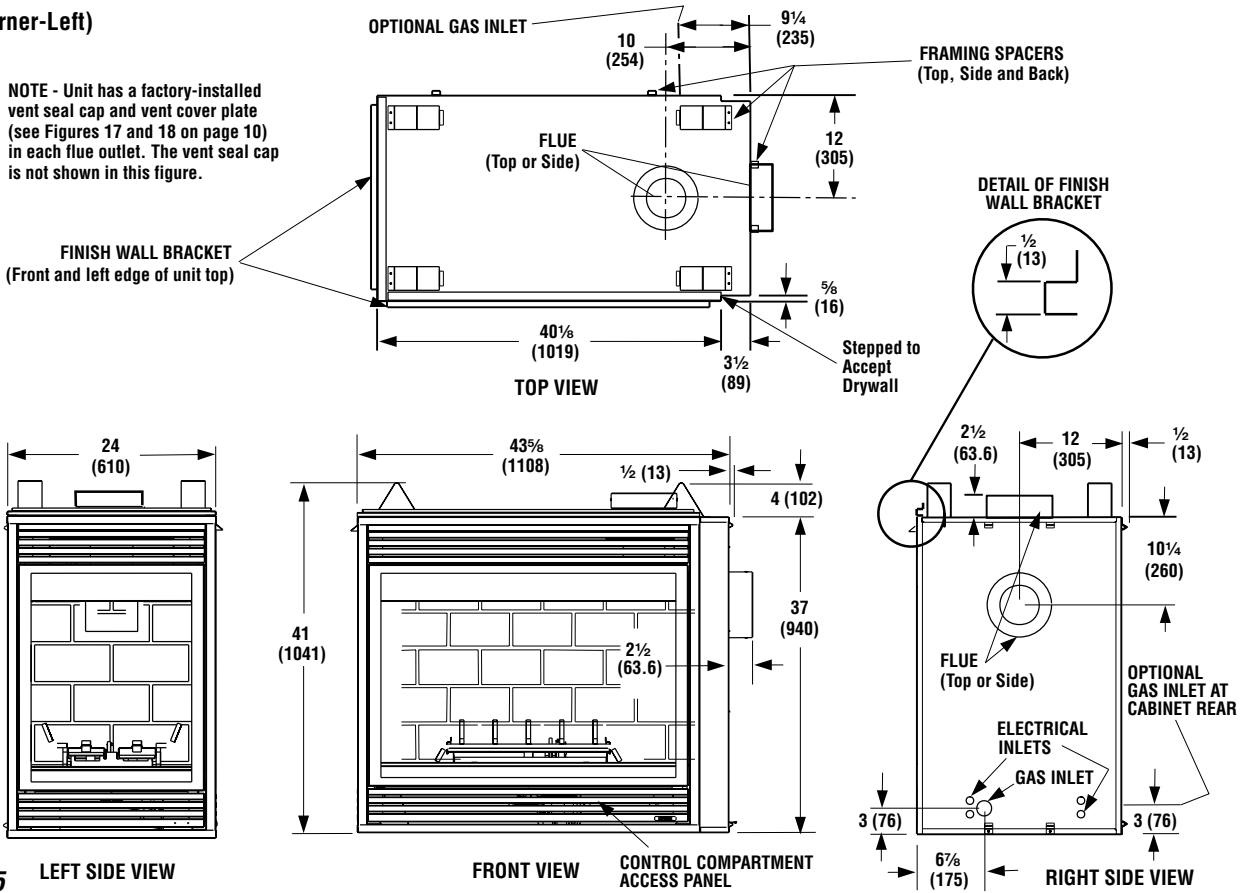


Figure 15 LEFT SIDE VIEW

FRONT VIEW CONTROL COMPARTMENT ACCESS PANEL RIGHT SIDE VIEW

CDCR (Corner-Right)

NOTE - Unit has a factory-installed vent seal cap and vent cover plate (see Figures 17 and 18 on page 10) in each flue outlet. The vent seal cap is not shown in this figure.

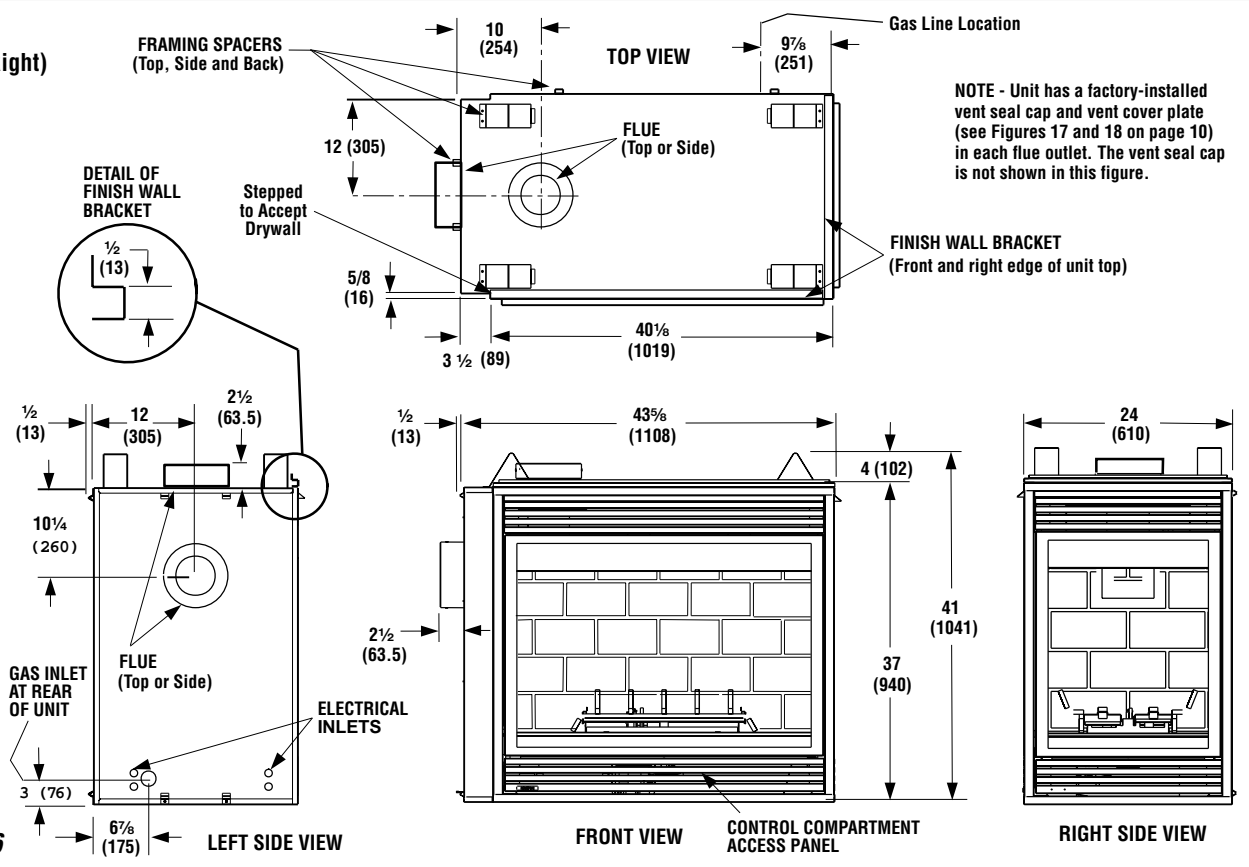


Figure 16 LEFT SIDE VIEW

FRONT VIEW CONTROL COMPARTMENT ACCESS PANEL RIGHT SIDE VIEW

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

Step 2. ROUTING GAS LINE

Route a ½" (13 mm) gas line as shown in **Figure 9 (CDST), 10 (CDPF), 11 (CDCL) or 12 (CDCR) on pages 8 and 9**. Gas lines must be routed, constructed and made of materials that are in strict accordance with local codes and regulations. All appliances are factory-equipped with a flexible gas line connector and ½ inch shutoff valve. (See step 6 on page 23).

Step 3. INSTALL THE VENT SYSTEM

GENERAL INFORMATION

These instructions should be used as a guideline and do not supersede local codes in any way. Install vent according to local codes, these instructions, the current National Fuel Gas Code (ANSI-Z223.1) in the USA or the current standards of CAN/CGA-B149.1 and -B149.2 in Canada.

These fireplaces are designed, tested and listed for operation and installation with, and only with, Secure Vent™ Direct Vent System Components, Secure Flex™ Flexible Vent Components manufactured by Security Chimneys International and Z-FLEX™ Model GA Venting Systems listed to UL1777 and ULCS635 manufactured by Flexmaster Canada Limited. These approved vent system components are labeled for identification. **DO NOT use any other manufacturer's vent components with these appliances.**

These fireplaces must be vented directly to the outside.

The vent system must not service multiple appliances, and must never be connected to a flue serving a solid fuel burning appliance. The vent pipe is tested to be run inside an enclosure (such as a chase). There is no requirement for inspection openings in the enclosure at any of the joints in the vent pipe.

Preparing the Appliance Vent Collar

Each of the unit's two vent collars are sealed with a cover plate and a seal cap. The cover plate and seal cap must be removed from the vent collar being used. Refer to **Figure 17** for top vent usage and **Figure 18** for rear, and the following steps to prepare the appropriate collar for use.

From the vent collar being used, remove the two screws securing the vent cap. Twist the cap counterclockwise. Pull it away from the unit and discard, along with the piece of insulation.

When the top vent collar is being used, from inside the firebox, loosen the two screws in the keyhole slots of the cover plate and remove the remaining two cover plate securing screws. Remove and discard the cover plate. **Reinstall and securely tighten all four screws.**

When the rear vent collar is being used, from inside the firebox, loosen the two screws in the keyhole slots of the cover plate and remove the remaining two cover plate securing screws. Remove and discard the cover plate. **Reinstall and securely tighten all four screws.**

WARNING: FAILURE TO REINSTALL AND SECURELY TIGHTEN COVER PLATE SCREWS COULD RESULT IN LEAKAGE OF FLUE PRODUCTS INTO THE LIVING SPACE. VENT COVER PLATE AND VENT SEAL CAP MUST REMAIN SECURELY INSTALLED ON UNUSED VENT COLLAR. FAILURE TO DO SO COULD RESULT IN LEAKAGE OF FLUE PRODUCTS INTO LIVING SPACE.

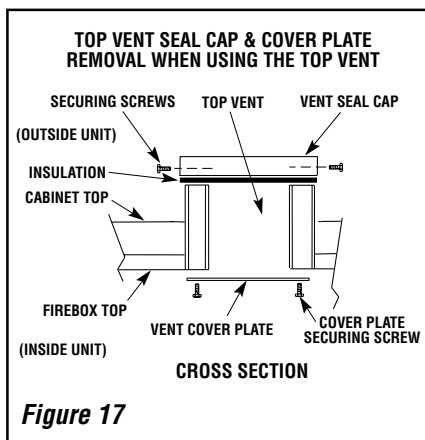


Figure 17

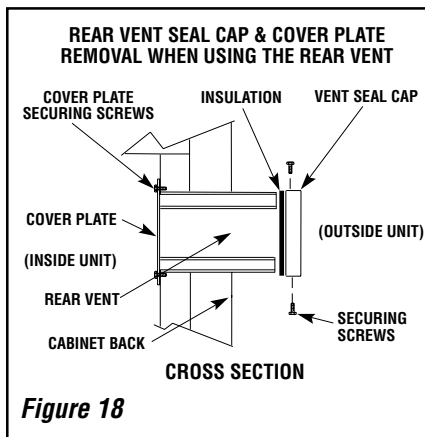


Figure 18

Preparing the Appliance Top or Rear Vent Outlet when vertically terminating the vent system above the roof

A vent restrictor may be needed with this appliance, install a vent restrictor (provided) in the appliance top flue outlet as shown in **Figure 19** or side flue outlet as shown in **Figure 20** when vertically terminating the vent system above the roof. It may be installed either from inside or outside the unit, in the inner fireplace collar. It is press-fitted in place.

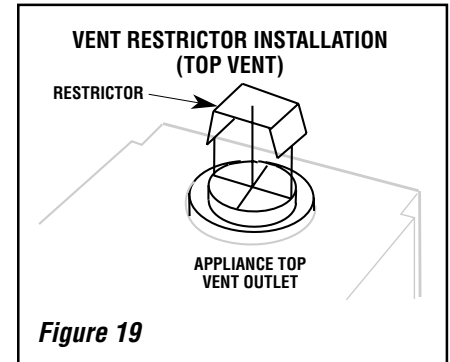


Figure 19

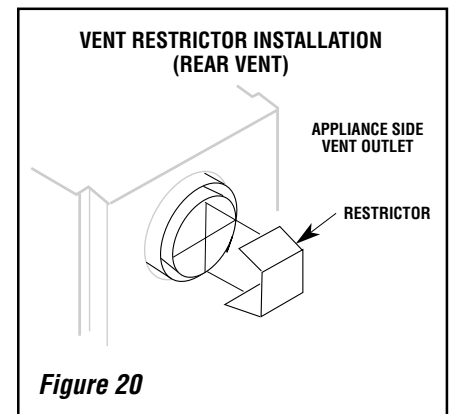


Figure 20

Select Venting System - Horizontal or Vertical

With the appliance secured in framing, determine vent routing and identify the exterior termination location. The following sections describe vertical (roof) and horizontal (exterior wall) vent applications. Refer to the section relating to your installation. **A list of approved venting components is shown in the two tables on page 27.**

VERTICAL TERMINATION SYSTEMS (ROOF)

Figure 21, and Figures 32 through 36 on pages 14 and 15 and their associated Vertical Vent Tables illustrate the vertical venting configurations that are allowed to be used with these appliances. **Secure Vent** pipe applications are shown in these figures; **Secure Flex** pipe may also be used. See page 21. A Vertical Vent Table summarizes each system's minimum and maximum vertical and horizontal length values that can be used to design and install the vent components in a variety of applications.

Both these vertical vent systems terminate through the roof. In the USA, the minimum vent height above the roof and/or adjacent walls is specified in ANSI Z223.1 (latest edition); in Canada, by the current CAN-1 B149 installation code. It is also specified in major building codes. Always consult your local codes for specific requirements. A general guide to follow is the Gas Vent Rule (refer to Figure 4 on page 4).

Vertical (Straight) Installation

Determine the number of straight vent sections required. 4 1/2" (114 mm), 10 1/2" (267 mm), 22 1/2" (572 mm), 34 1/2" (876 mm) and 46 1/2" (1181 mm) net section lengths are available. Plan the vent lengths so that a section joint does not occur within the space defined by ceiling joists or roof rafters. Refer to the Vent Section Length Chart.

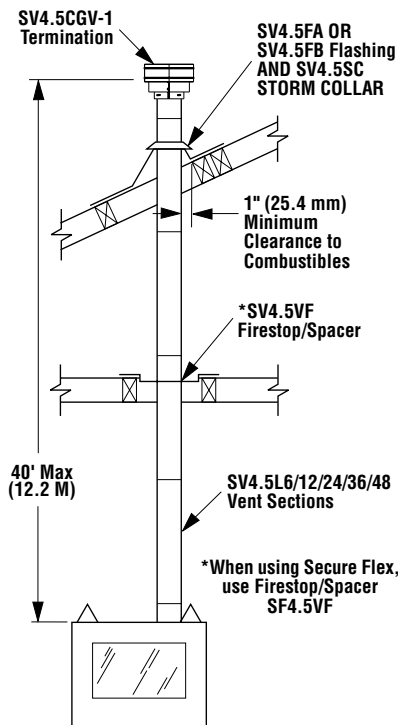


Figure 21

VENT SECTION LENGTH CHART							TOTAL QTY
Nominal Section Length (inches)	6	12	24	36	48	TOTAL	
Net Section Length (inches)	4-1/2	10-1/2	22-1/2	34-1/2	46-1/2		
Height of Vent		Number of Vent Sections					TOTAL QTY
inches	ft						
4.5	0.375	1	0	0	0	0	1
9	0.75	2	0	0	0	0	2
10.5	0.875	0	1	0	0	0	1
15	1.25	1	1	0	0	0	2
19.5	1.625	2	1	0	0	0	3
21	1.75	0	2	0	0	0	2
22.5	1.875	0	0	1	0	0	1
25.5	2.125	1	2	0	0	0	3
31.5	2.625	0	3	0	0	0	3
34.5	2.875	0	0	0	1	0	1
37.5	3.125	1	1	1	0	0	3
43.5	3.625	0	2	1	0	0	3
45	3.75	0	0	2	0	0	2
46.5	3.875	0	0	0	0	1	1
49.5	4.125	1	0	2	0	0	3
51	4.25	1	0	0	0	1	2
55.5	4.625	0	1	2	0	0	3
57	4.75	0	0	1	1	0	2
66	5.25	0	2	2	0	0	4
67.5	5.625	0	0	3	0	0	3
69	5.75	0	0	0	2	0	2
72	6	1	0	3	0	0	4
73.5	6.125	1	0	0	2	0	3
79.5	6.625	0	1	0	2	0	3
81	6.75	0	0	0	1	1	2
90	7.5	0	2	1	0	1	4
91.5	7.625	0	0	2	0	1	3
93	7.75	0	0	0	0	2	2
96	8	1	0	1	2	0	4
97.5	8.125	1	0	0	0	2	3
102	8.5	2	0	0	0	2	4
103.5	8.625	0	0	0	3	0	3
108	9	1	0	0	3	0	4
114	9.5	0	2	0	0	2	4
117	9.75	1	0	5	0	0	6
118.5	9.875	1	1	0	3	0	5
126	10.5	0	0	1	3	0	4
130.5	10.875	1	0	1	3	0	5
135	11.25	0	0	6	0	0	6
138	11.5	0	0	0	4	0	4
139.5	11.625	0	0	0	0	3	3
142.5	11.875	1	0	0	4	0	5

VENT SECTION LENGTH CHART							TOTAL QTY
Nominal Section Length (inches)	6	12	24	36	48	TOTAL	
Net Section Length (inches)	4-1/2	10-1/2	22-1/2	34-1/2	46-1/2		
Height of Vent		Number of Vent Sections					TOTAL QTY
inches	ft						
144	12	1	0	0	0	3	4
150	12.5	0	1	0	0	3	4
154.5	12.875	1	1	0	0	3	5
160.5	13.375	0	2	0	0	3	5
172.5	14.375	0	0	0	5	0	5
177	14.75	1	0	0	5	0	6
183	15.25	0	1	0	5	0	6
186	15.5	0	0	0	0	4	4
190.5	15.875	1	0	0	0	4	5
196.5	16.375	0	1	0	0	4	5
205.5	17.125	0	1	1	5	0	7
207	17.25	0	0	0	6	0	6
211.5	17.625	1	0	0	6	0	7
217.5	18.125	0	1	0	6	0	7
229.5	19.125	0	0	1	6	0	7
232.5	19.375	0	0	0	0	5	5
237	19.75	1	0	0	0	5	6
241.5	20.125	0	0	0	7	0	7
246	20.5	1	0	0	7	0	8
252	21	0	1	0	7	0	8
264	22	0	0	1	7	0	8
276	23	0	0	0	8	0	8
279	23.25	0	0	0	0	6	6
280.5	23.375	1	0	0	8	0	9
283.5	23.625	1	0	0	0	6	7
289.5	24.125	0	1	0	0	6	7
301.5	25.125	0	0	1	0	6	7
310.5	25.875	0	0	0	9	0	9
315	26.5	1	0	0	9	0	10
325.5	27.125	0	0	0	0	7	7
330	27.5	1	0	0	0	7	8
336	28	0	1	0	0	7	8
345	28.75	0	0	0	10	0	10
349.5	29.125	1	0	0	10	0	11
372	31	0	0	0	0	8	8
376.5	31.375	1	0	0	0	8	9
379.5	31.625	0	0	0	11	0	11
418.5	34.875	0	0	0	0	9	9
423	35.25	1	0	0	0	9	10
465	38.75	0	0	0	0	10	10

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

Vertical (Offset) Installation

Analyze the vent routing and determine the number of vent sections and elbows required. Refer to **Vertical Vent Figures and Tables on page 14 and 15** to select the type of vertical installation desired. Vent sections are available in net lengths of 4 1/2" (114 mm), 10 1/2" (267 mm), 22 1/2" (572 mm), 34 1/2" (876 mm) and 46 1/2" (1181 mm). Refer to the **Vent Section Length Chart on page 11** for an aid in selecting length combinations. Elbows are available in 45° and 90° configurations. Refer to **Figure 27** for the SV4.5E45 and SV4.5E90 elbow dimensional specifications.

Where required, a **telescopic vent section (SV4.5LA)** may be used to provide the installer with an option in installing in tight and confined spaces or where the vent run made up of fixed length pieces develops a joint in a undesirable location, or will not build up to the required length. The SV4.5LA Telescopic Vent Section has an effective length of from 1 1/2" (38 mm) to 7 1/2" (191 mm). The SV4.5LA is fitted with a locking inclined channel end (identical to a normal vent section component) and a plain end with 3 pilot holes. Slip the plain end over the locking channel end of a standard SV4.5 vent component the required distance and secure with three screws.

Maintain a minimum 1" (25 mm) clearance to combustible materials for all vertical elements. Clearances for all horizontal elements are 3" (76 mm) on top, 1" (25 mm) on sides and 1" (25 mm) on the bottom.

A. Frame ceiling opening - Use a plumb line from the ceiling above the appliance to locate center of the vertical run. Cut and/or frame an opening, 10 1/2" x 10 1/2" (267mm x 267mm) inside dimensions, about this center mark (**Figure 22**).

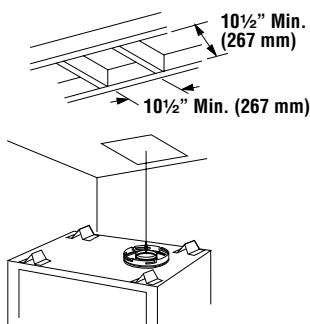


Figure 22

B. Attach vent components to appliance - **Secure Vent SV4.5** direct vent system components are unitized concentric pipe components featuring positive twist lock connections (see **Figure 23**). All of the appliances covered in this document are fitted with collars having locking inclined channels.

The dimpled end of the vent components fit over the appliance collar to create the positive twist lock connection.

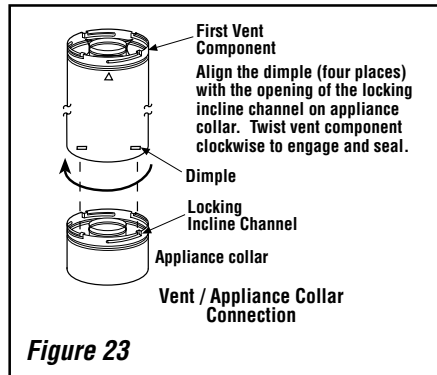


Figure 23

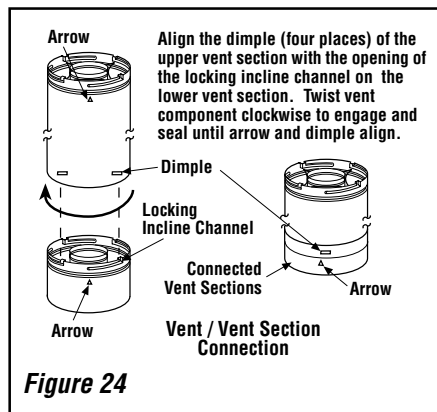


Figure 24

To attach a vent component to the appliance collar, align the dimpled end over the collar, adjusting the radial alignment until the four locking dimples are aligned with the inlet of the four inclined channels on the collar (refer to **Figure 23**). Push the vent component against the collar until it fully engages, then twist the component clockwise, running the dimples down and along the incline channels until they seat at the end of the channels. The unitized design of the **Secure Vent** components will engage and seal both the inner and outer pipe without the need for sealant or screws. If desired, a #6 x 1/2" screw may be used at the joint, but is not required as the pipe will securely lock when twisted.

C. Attach vent components to each other - Other vent sections may be added to the previously installed section in accordance with the requirements of the vertical vent figures and tables. To add another vent component to a length of vent run, align the dimpled end over the inclined channel end of the previously installed section, adjusting the radial alignment until the four locking dimples are aligned with the inlets of the four incline channels of the previous section. Push the vent component against the previous section until it fully engages, then twist the component clockwise running the dimples down and along the incline channels until they seat at the end of the channels.

This seating position is indicated by the alignment of the arrow and dimple as shown in **Figure 24**.

D. Install firestop/spacer at ceiling - When using **Secure Vent**, use SV4.5VF firestop/spacer at ceiling joists; when using **Secure Flex**, use SF4.5VF firestop/spacer. If there is living space above the ceiling level, the firestop/spacer must be installed on the bottom side of the ceiling. If attic space is above the ceiling, the firestop/spacer must be installed on the top side of the joist. Route the vent sections through the framed opening and secure the firestop/spacer with 8d nails or other appropriate fasteners at each corner. **Remember to maintain 1" (25 mm) clearance to combustibles, framing members, and attic or ceiling insulation when running vertical chimney sections. Attic insulation shield (96K94) may be used to obtain the required clearances indicated here. See installation accessories table on page 26.**

E. Support the vertical vent run sections - **Note** - Proper venting support is very important. The weight of the vent must not be supported by the fireplace in any degree.

Support the vertical portion of the venting system every 8 feet (2.4m) above the fireplace vent outlet. One method of support is by utilizing field provided support straps (conventional plumber's tape). Secure the plumber's tape to the framing members with nails or screws. Loop the tape around the vent, securing the ends of the tape to the framing. If desired, sheet metal screws #6 x 1/2" length may be used to secure the support straps to the vent pipe. See **Figure 25**.

Another method, where the vent is not adjacent to a wall, is illustrated in **Figure 26**. Here, support straps (96K93) and support plates (96K92) can be used to support the weight of the vent.

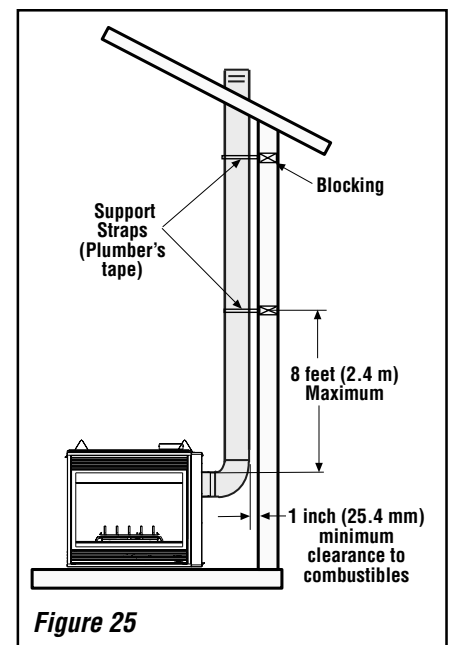


Figure 25

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

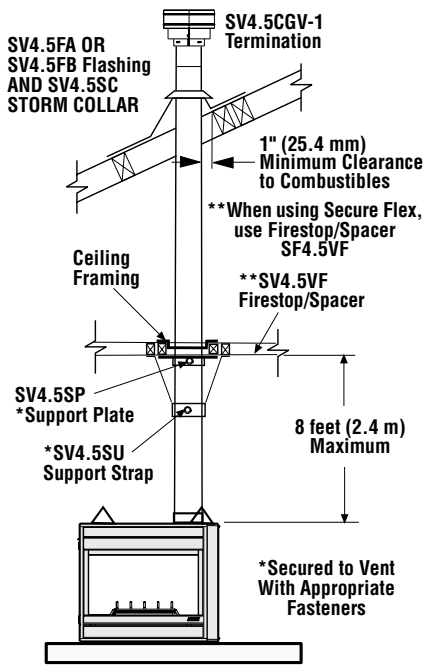


Figure 26

F. Change vent direction to horizontal/inclined run - At transition from or to a horizontal/inclined run, install the SV4.5E45 and SV4.5E90 elbows in the same manner as the straight vent sections. The elbows feature a twist section to allow them to be routed about the center axis of their initial collar section to align with the required direction of the next vent run element. **Twist elbow sections in a clockwise direction only so as to avoid the possibility of unlocking any of the previously connected vent sections.** See Figure 27.

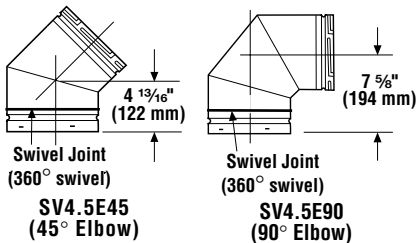


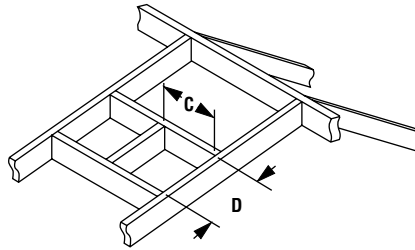
Figure 27

G. Continue installation of horizontal/inclined sections - Continue with the installation of the straight vent sections in horizontal/inclined run as described in Step C. Install support straps every 5 ft. (1.52 m) along horizontal/inclined vent runs using conventional plumber's tape. **See page 16, Figure 37. It is very important that the horizontal/inclined run be maintained in a straight (no dips) and recommended to be in a slightly elevated plane, in a direction away from the fireplace of 1/4\"/>**

Use a carpenter's level to measure from a constant surface and adjust the support straps as necessary.

It is important to maintain the required clearances to combustibles: 1\"/>

H. Frame roof opening - Identify location for vent at the roof. Cut and/or frame opening per Roof Framing Chart and Figure 28.



Framing Dimensions for Roof

Pitch	C	D
0/12	10½ in. (267 mm)	10½ in. (267 mm)
6/12	10½ in. (267 mm)	12 in. (305 mm)
12/12	10½ in. (267 mm)	17¾ in. (451 mm)

Figure 28

I. Install the roof flashing - Extend the vent sections through the roof structure. Install the roof flashing over the vent section and position such that the vent column rises vertically (use carpenter's level) (Figure 29). Nail along perimeter to secure flashing or adjust roofing to overlap the flashing edges at top and sides only and trim where necessary. Seal the top and both sides of the flashing with waterproof caulking.

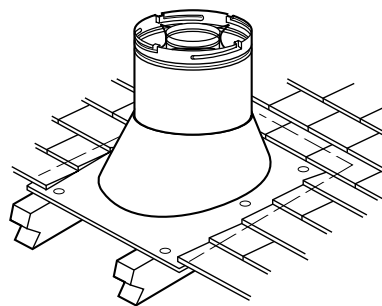


Figure 29

J. Install the storm collar - Install the storm collar, supplied with the flashing, over the vent/flashing joint. See Figure 30. Loosen the storm collar screw. Slide collar down until it meets the top of the flashing. Tighten the adjusting screw. Apply non-combustible caulking or mastic around the circumference of the joint to provide a water tight seal.

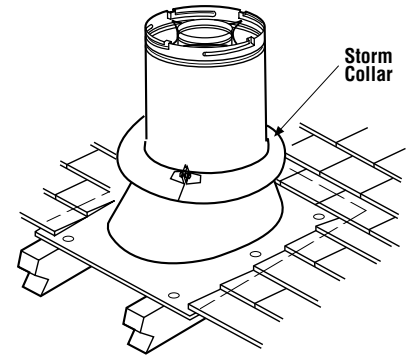


Figure 30

K. Install the vertical termination - The final step involves installation of the SV4.5CGV-1 Vertical Termination. Extend the vent sections to the height as shown in the "Vertical vent termination section" on page 4. The SV4.5CGV-1 Vertical Termination (Figure 31) can be installed in the exact same fashion as any other Secure Vent section. Align the termination over the end of the previously installed section, adjusting the radial alignment until the four locking dimples of the termination are aligned with the inlets of the four incline channels of the last vent section. Push the termination down until it fully engages, then twist the termination clockwise running the dimples down and along the incline channels until they are seated at the end of the channels.

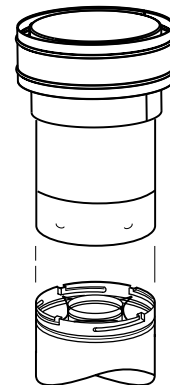


Figure 31

If the vent system extends more than 5' (1.5 m) above the roof flashing, stabilizers may be necessary. Additional screws may be used at section joints for added stability. Guide wires may be attached to the joint for additional support on multiple joint configurations.

VERTICAL VENT FIGURES/TABLES

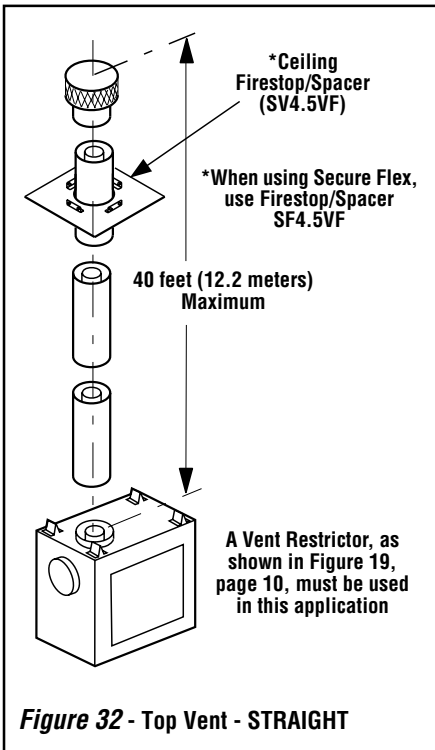
Note: *Secure Vent* (rigid vent pipe) is shown in the figures; *Secure Flex* (flexible vent pipe) may also be used (see page 21).

WARNING: UNDER NO CIRCUMSTANCES MAY SEPARATE SECTIONS OF CONCENTRIC FLEXIBLE VENT PIPE BE JOINED TOGETHER.

Note: It is very important that the horizontal/inclined run be maintained in a straight (no dips) and recommended to be in a slightly elevated plane, in a direction away from the fireplace of 1/4" rise per foot (20 mm per meter) which is ideal, though rise per foot run ratios that are smaller are acceptable all the way down to at or near level.

Note: SV4.5VF (*Secure Vent*), SF4.5VF (*Secure Flex*) firestop/spacer must be used anytime vent pipe passes through a combustible floor or ceiling. SV4.5HF (*Secure Vent*), SF4.5HF (*Secure Flex*) firestop/spacer must be used anytime vent pipe passes through a combustible wall.

Note: Two 45 degree elbows may be used in place of one 90 degree elbow. The same rise to run ratios, as shown in the venting figures for 90 elbows, must be followed if 45 degree elbows are used.



V MINIMUM		H Maximum	
feet	(m)	feet	(m)
1	(0.305)	2	(0.61)
2	(0.61)	4	(1.222)
3	(0.914)	6	(1.86)
4	(1.22)	8	(2.4)
V + H = 40 feet (12.4 m) Max. H = 8 feet (2.4 m) Max.			

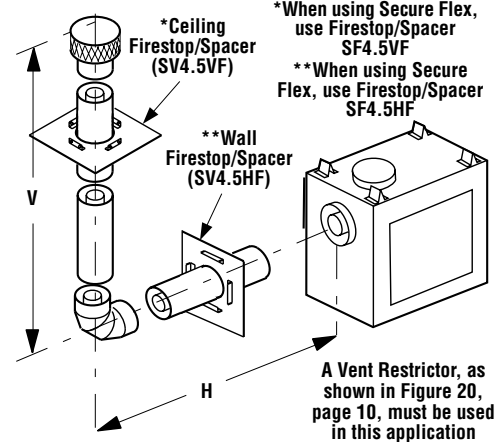


Figure 33 - Rear Vent - ONE 90 DEGREE ELBOW

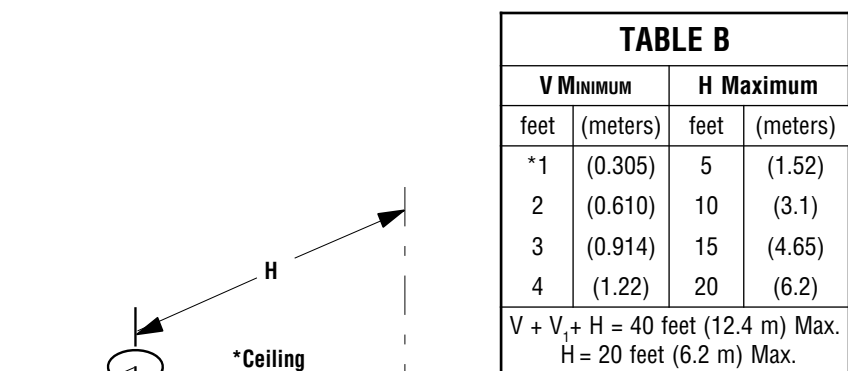


Figure 34 - Top Vent - TWO 90 DEGREE ELBOWS

VERTICAL VENT FIGURES/TABLES
(continued)

V Minimum		H Maximum		H+H ₁ Maximum	
feet	(m)	feet	(m)	feet	(m)
1	(0.305)	2	(0.610)	5	(1.52)
2	(0.610)	4	(1.22)	10	(3.1)
3	(0.914)	6	(1.86)	15	(4.65)
4	(1.22)	8	(2.48)	20	(6.2)

$V+V_1+H+H_1 = 40$ feet (12.4 m) Max.
 $H = 8$ feet (2.48 m) Max.
 $H + H_1 = 20$ feet (6.2 m) Max.

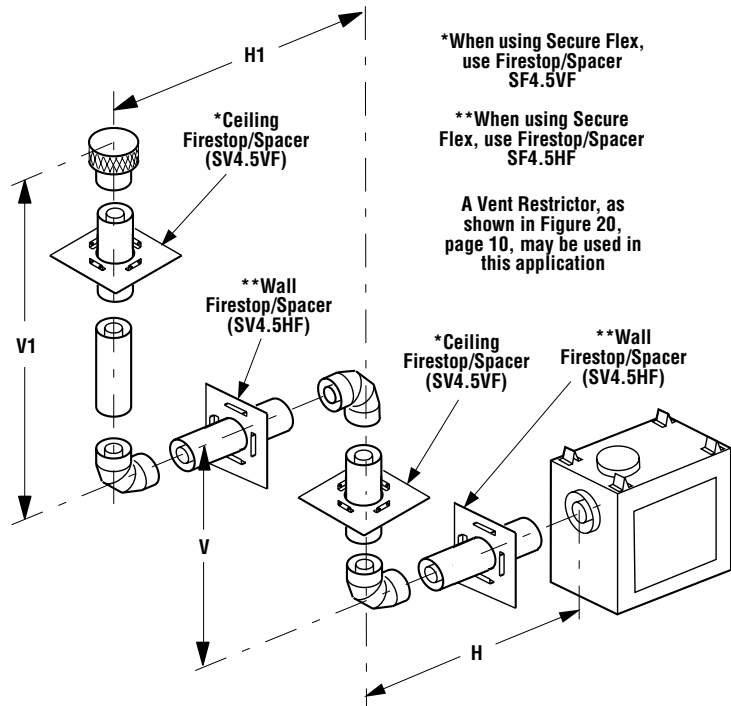


Figure 35 - Rear Vent - THREE ELBOWS

V MINIMUM		H + H ₁ Maximum	
feet	(m)	feet	(m)
1	(0.305)	5	(1.52)
2	(0.610)	10	(3.1)
3	(0.914)	15	(4.65)
4	(1.22)	20	(6.2)

$H + H_1 = 20$ feet (6.2 m) Max.
 $V+V_1+H+H_1 = 40$ feet (12.4 m) Max.

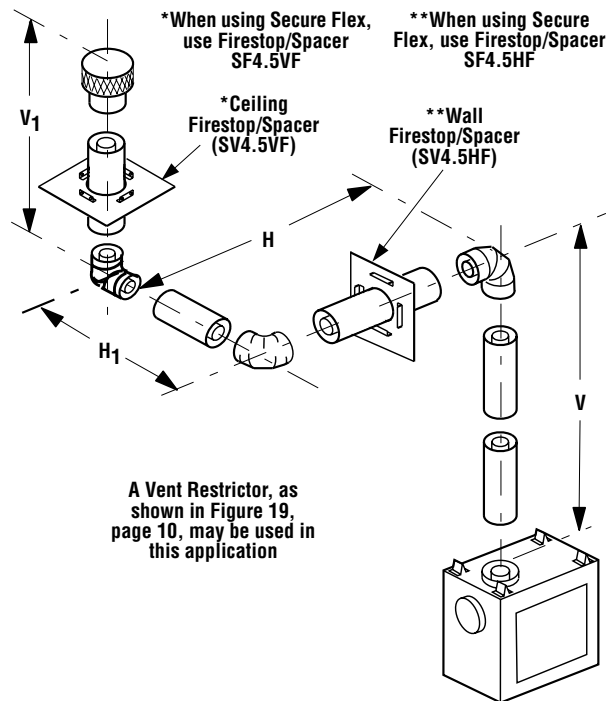


Figure 36- Top Vent - THREE ELBOWS

HORIZONTAL (OUTSIDE WALL) TERMINATION SYSTEM

Figure 37, and Figures 40 to 46 on page 18 to 20 and their associated Horizontal Vent Table illustrate the horizontal venting configurations that are allowed to be used with these appliances. **Secure Vent** pipe applications are shown in these figures; **Secure Flex** pipe may also be used. See **page 21**. A Horizontal Vent Table summarizes each system's minimum and maximum vertical and horizontal length values that can be used to design and install the vent components in a variety of applications.

Both of these horizontal vent systems terminate through an outside wall. Building Codes limit or prohibit terminating in specific areas. Refer to **Figure 8 on page 6** for location guidelines.

Secure Vent SV4.5 direct vent system components are unitized concentric pipe components featuring positive twist lock connection, (refer to **Figure 23 on page 12**). All of the appliances covered in this document are fitted with collars having locking inclined channels. The dimpled end of the vent components fit over the appliance collar to create the positive twist lock connection.

A. Plan the vent run -

Analyze the vent routing and determine the types and quantities of sections required 4 1/2" (114 mm), 10 1/2" (267 mm), 22 1/2" (572 mm), 34 1/2" (876 mm) and 46 1/2" (1181 mm) net section lengths are available. Make allowances for elbows as indicated in **Figure 27 on page 13**.

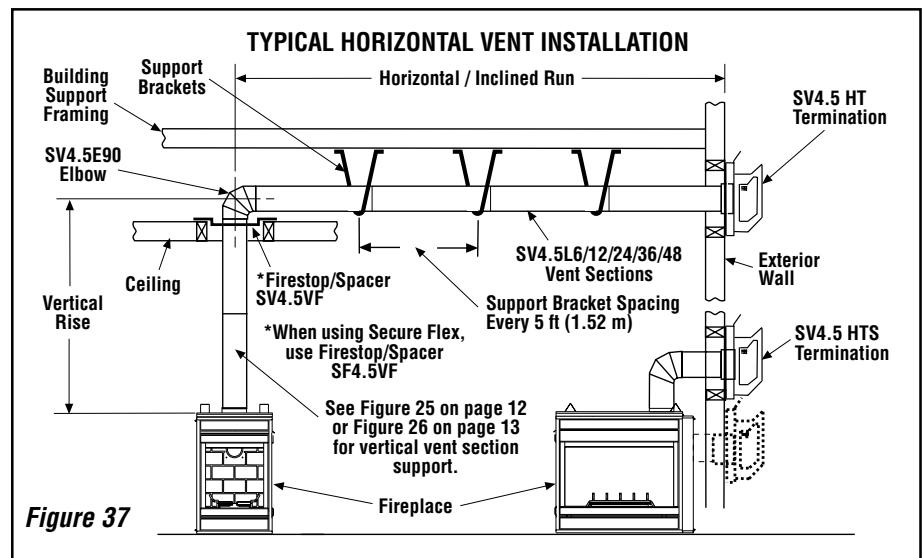
Maintain a minimum 1" (25 mm) clearance to combustibles on the vertical sections. Clearances for the horizontal runs are: 3" (76 mm) on top, 1" (25 mm) on sides, and 1" (25 mm) at the bottom.

B. Frame exterior wall opening -

Locate the center of the vent outlet on the exterior wall according to the dimensions shown in **Figures 9 (CDST), 10 (CDPF), 11 (CDCL), or 12 (CDCR) on page 7**. Cut and/or frame an opening, 10 1/2" x 12 1/8" (267 mm x 308 mm) inside dimensions, about this center.

C. Frame ceiling opening - If the vertical route is to penetrate a ceiling, use plumb line to locate the center above the appliance. Cut and/or frame an opening, 10 1/2" x 10 1/2" (267 mm x 267 mm) inside dimensions, about this center (refer to **Figure 22 on page 12**).

D. Attach vent components to appliance - To attach a vent component to the appliance collar, align the dimpled end over the collar, adjusting the radial alignment until the four locking dimples are aligned with the inlets of the four incline channels on the collar (refer to **Figure 23 on page 12**).



Push the vent component against the collar until it fully engages, then twist the component clockwise, running the dimples down and along the incline channels until they seat at the end of the channels. The unitized design of the **Secure Vent** components will engage and seal both the inner and outer pipe elements with the same procedure. Sealant and securing screws are not required.

E. Attach vent components to each other -

Other vent sections may be added to the previously installed section in accordance with the requirements of the vent tables. To add another vent component to a length of vent run, align the dimpled end of the component over the inclined channel end of the previously installed section, adjusting the radial alignment until the four locking dimples are aligned with the inlets of the four incline channels of the previous section. Push the vent component against the previous section until it fully engages, then twist the component clockwise running the dimples down and along the incline channels until they seat at the end of the channels. **This seating position is indicated by the alignment of the arrow and dimple as shown in Figure 24 on page 12.**

F. Install firestop/spacer at ceiling -

When using **Secure Vent**, use SV4.5VF firestop/spacer at ceiling joists; when using **Secure Flex**, use SF4.5VF firestop/spacer. If there is living space above the ceiling level, the firestop/ spacer must be installed on the bottom side of the ceiling. If attic space is above the ceiling, the firestop/ spacer must be installed on the top side of the joist. Route the vent sections through the framed opening and secure the firestop/spacer with 8d nails or other appropriate fasteners at each corner.

Remember to maintain 1" (25 mm) clearance to combustibles, framing members, and attic or ceiling insulation when running vertical chimney sections. Attic insulation shield (96K94) may be used to obtain the required clearances indicated here. See installation accessories table on page 27.

G. Support the vertical run sections - See section E on page 12.

H. Change vent direction - At transition from or to a horizontal/inclined run, install the SV4.5E45 and SV4.5E90 elbows in the same manner as the straight vent sections. The elbows feature a twist section to allow them to be routed about the center axis of their initial collar section to align with the required direction of the next vent run element. **Twist elbow sections in a clockwise direction only so as to avoid the possibility of unlocking any of the previously connected vent sections.** See **Figure 27 on page 12**.

I. Continue installation of horizontal/inclined sections - Continue with the installation of the straight vent sections in horizontal/inclined run as described in **Step E**. Install support straps every 5 ft. (1.52 m) along horizontal/inclined vent runs using conventional plumber's tape. See **Figure 37**. **It is very important that the horizontal/inclined run be maintained in a straight (no dips) and recommended to be in a slightly elevated plane, in a direction away from the fireplace of 1/4" rise per foot (20 mm per meter) which is ideal, though rise per foot run ratios that are smaller are acceptable all the way down to at or near level. Use a carpenter's level to measure from a constant surface and adjust the support straps as necessary.**

It is important to maintain the required clearances to combustibles: 1" (25 mm) at all sides for all vertical runs; and 3" (76 mm) at the top, 1" (25 mm) at sides, and 1" (25 mm) at the bottom for all horizontal/inclined runs

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

J. Assemble vent run to exterior wall - If not previously measured, locate the center of the vent at the exterior wall. Prepare an opening as described in **Step B**. Assemble the vent system to point where the terminus of the last section is within 7½ in. (191 mm) to 11¾ in. (298 mm) inboard of the exterior surface to which the SV4.5HT termination is to be attached, see **Figure 39**. If the terminus of the last section is not within this distance, use the **telescopic vent section SV4.5LA**, as the last vent section. For wall thicknesses greater than that shown in **Figure 38**, refer to **Table 3 on page 18**. This table lists the additional venting components needed (in addition to the termination and adapter) for a particular range of wall thicknesses.

K. Attach termination adapter - Attach the adapter (adapter - SV4.5RCH - provided with the termination) to the vent section or telescoping vent section, elbow or appliance collar as shown in **Figure 38** in the same manner as any SV4.5 vent component (refer to **Step E**).

L. Install Firestop/Spacer at exterior wall - When using the **square** termination, install SV4.5HF (Secure Vent), SF4.5HF (Secure Flex) Firestop/Spacer over the opening at the exterior side of the framing, long side up, with the 3 inch spacer clearance at the top as shown in **Figure 38**, and nail into place.

(The Firestop/Spacer may also be installed over the opening at the interior side of the framing.) When using the **round** termination, a separate firestop/spacer is not required since this termination has integral spacers which provide the same function as a separate firestop/spacer.

M. Install the termination -

Install the square termination (SV4.5HT)- For the last step, from outside the exterior wall, slide the collars of the termination onto the adapter until the termination seats against the exterior wall surface to which it will be attached. Orient the housing of the termination with the arrow pointed upwards. Secure the termination to the exterior wall. **The horizontal termination must not be recessed into the exterior wall or siding** by more than the 1 ¼" (32 mm) as shown in **Figure 39**.

SFHRK Snorkel Cap -The snorkel cap is designed to be fitted into a basement window box. The SFHRK cap is for use with flex vent pipe. Vertical distance between the inlet and outlet of the cap is 28 in. (711 mm).

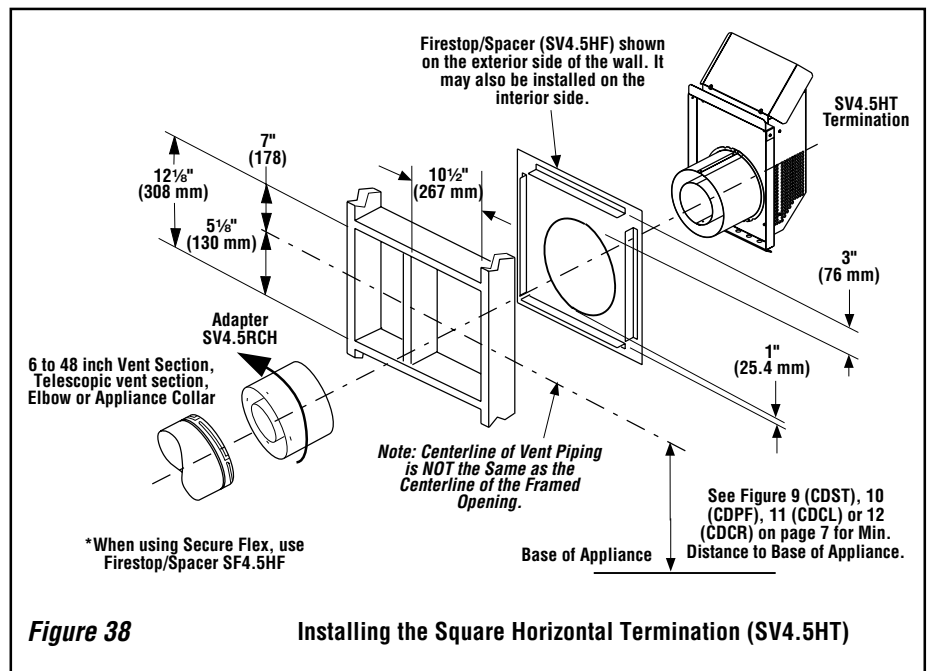


Figure 38

Installing the Square Horizontal Termination (SV4.5HT)

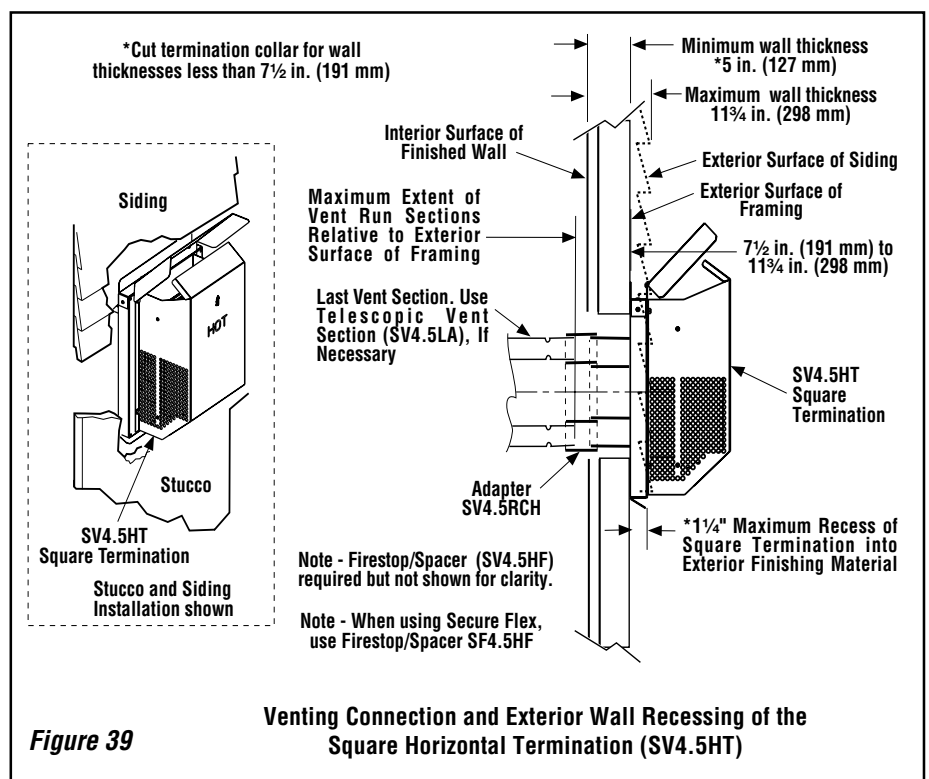


Figure 39

Venting Connection and Exterior Wall Recessing of the Square Horizontal Termination (SV4.5HT)

HORIZONTAL VENT FIGURES/TABLES

Note: **Secure Vent** components (rigid vent pipe and terminal) are shown in the figures; **Secure Flex** components (flexible vent pipe and terminal) may also be used.

Note: Two 45 degree elbows may be used in place of one 90 degree elbow. The same rise to run ratios, as shown in the venting figures for 90 elbows, must be followed if 45 degree elbows are used.

Note: It is very important that the horizontal/inclined run be maintained in a straight (no dips) and recommended to be in a slightly elevated plane, in a direction away from the fireplace of 1/4" rise per foot (20 mm per meter) which is ideal, though rise per foot run ratios that are smaller are acceptable all the way down to at or near level.

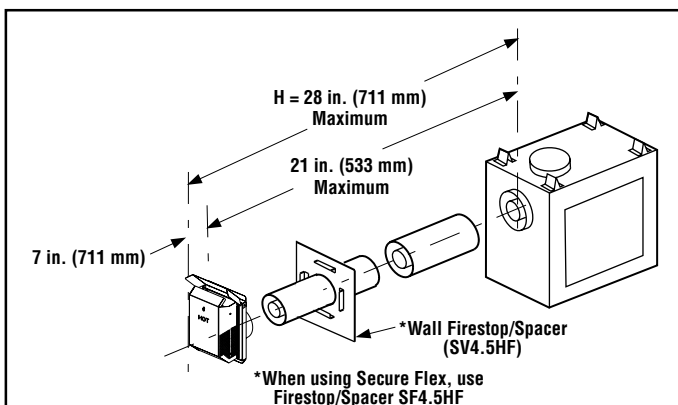
Note: SV4.5VF (Secure Vent), SF4.5VF (Secure Flex) firestop/spacer must be used anytime vent pipe passes through a combustible floor or ceiling. SV4.5HF (Secure Vent), SF4.5HF (Secure Flex) firestop/spacer must be used anytime vent pipe passes through a combustible wall.

WARNING: UNDER NO CIRCUMSTANCES MAY SEPARATE SECTIONS OF CONCENTRIC FLEXIBLE VENT PIPE BE JOINED TOGETHER.

TABLE 3 - Venting Components Required for Various Exterior Wall Thicknesses, When Using The Square Termination (SV4.5HT)

Venting Components Required	Exterior Wall Thicknesses inches (mm)
Termination Kit Only	7 1/2 to 11 3/4 (191 to 298)
Termination Kit and 6 in. vent section (SV4.5L6)	11 3/4 to 16 1/2 (298 to 419)
Termination Kit and 12 in. vent section (SV4.5L12)	18 1/4 to *22 1/4 (464 to *565)
Termination Kit and Telescopic section (SV4.5LA) and 6 in. vent section (SV4.5L6)	13 to *23 1/4 (330 to *591)

***Note:** See Figure 39 for wall thickness range reductions when using SV4.5HT termination.



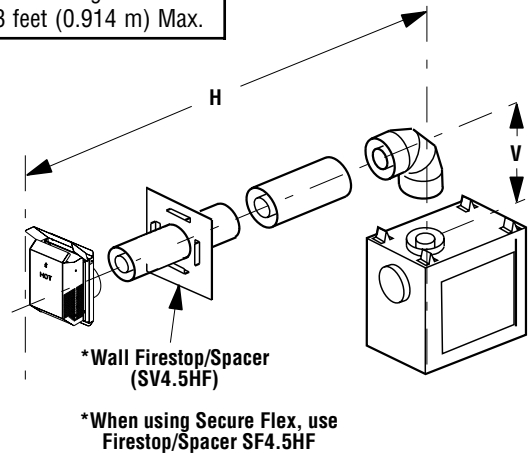
Only the square termination (SV4.5HT) may be used.

See Table 3 as an aid in venting component selection for a particular range of exterior wall thicknesses.

Figure 40 - Rear Vent - NO ELBOWS

TABLE E

V = One 90 degree elbow
H = 3 feet (0.914 m) Max.



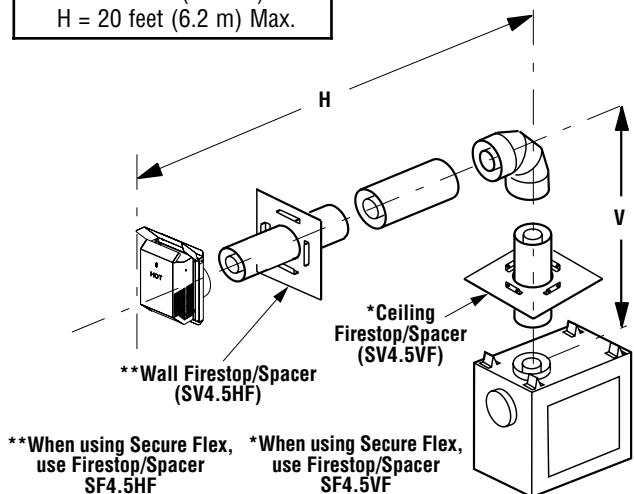
Square termination (SV4.5HT) shown.

Figure 41 - Top Vent - ONE 90 DEGREE ELBOW - ELBOW CONNECTION AT APPLIANCE

TABLE F

V Minimum		H Maximum	
feet	(m)	feet	(m)
1	(0.305)	5	(1.52)
2	(0.61)	10	(3.1)
3	(0.914)	15	(4.65)
4	(1.22)	20	(6.2)

V + H = 40 feet (12.4 m) Max.
H = 20 feet (6.2 m) Max.



Square termination (SV4.5HT) shown.

Figure 42 - Top Vent - ONE 90 DEGREE ELBOW - ELBOW CONNECTION NOT DIRECTLY AT APPLIANCE

HORIZONTAL VENT FIGURES/TABLES
(continued)

V Minimum		H Maximum		H+H ₁ Maximum	
feet	(m)	feet	(m)	feet	(m)
1	(0.305)	2	(0.610)	5	(1.52)
2	(0.610)	4	(1.22)	10	(3.1)
3	(0.914)	6	(1.86)	15	(4.65)
4	(1.22)	8	(2.48)	20	(6.2)

V+H+H₁ = 40 feet (12.4 m) Max.
H = 8 feet (2.48 m) Max.
H + H₁ = 20 feet (6.2 m) Max.

See **Table 3** as an aid in venting component selection for a particular range of exterior wall thicknesses.

Square termination (SV4.5HT) shown.

Figure 43 - Rear Vent - TWO 90 DEGREE ELBOWS

V MINIMUM		H + H ₁ Maximum	
feet	(m)	feet	(m)
1	(0.305)	5	(1.52)
2	(0.610)	10	(3.1)
3	(0.914)	15	(4.65)
4	(1.22)	20	(6.2)

V + H + H₁ = 40 feet (12.4 m) Max.
H + H₁ = 20 feet (6.2 m) Max.

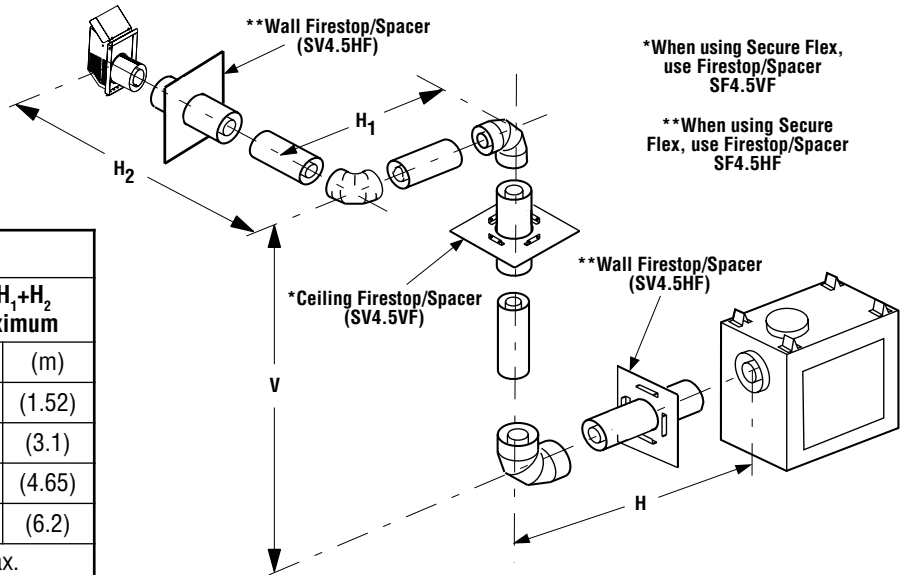
See **Table 3** as an aid in venting component selection for a particular range of exterior wall thicknesses.

Square termination (SV4.5HT) shown.

Figure 44 - Top Vent - TWO 90 DEGREE ELBOWS

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

HORIZONTAL VENT FIGURES/TABLES
(continued)



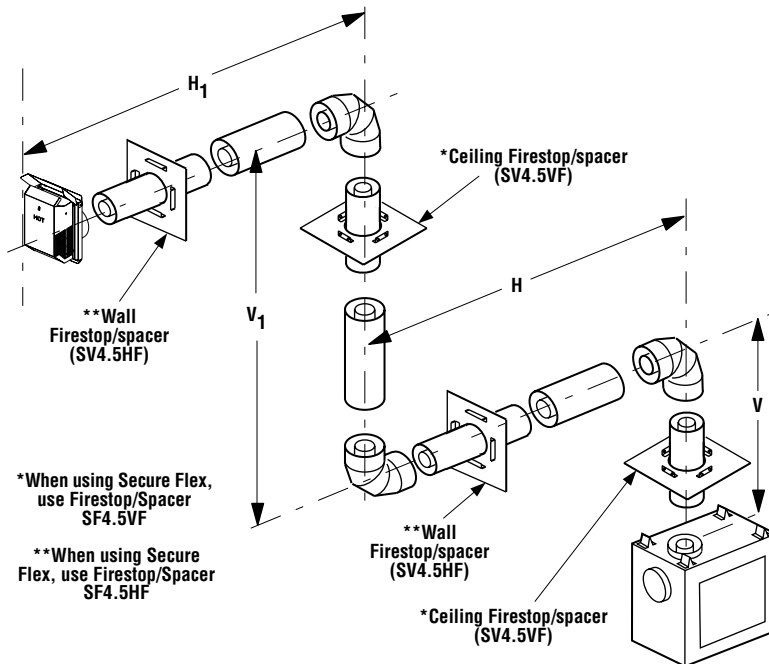
V Minimum		H Maximum		H+H ₁ +H ₂ Maximum	
feet	(m)	feet	(m)	feet	(m)
1	(0.305)	2	(0.610)	5	(1.52)
2	(0.610)	4	(1.22)	10	(3.1)
3	(0.914)	6	(1.86)	15	(4.65)
4	(1.22)	8	(2.48)	20	(6.2)

V+H+H₁+H₂ = 40 feet (12.4 m) Max.
H = 8 feet (2.48 m) Max.
H+H₁+H₂ = 20 feet (6.2 m) Max.

See **Table 3** as an aid in venting component selection for a particular range of exterior wall thicknesses.

Square termination (SV4.5HT) shown.

Figure 45 - Rear Vent - THREE 90 DEGREE ELBOWS



V MINIMUM		H MAXIMUM	
feet	(m)	feet	(m)
1	(0.305)	5	(1.52)
2	(0.610)	10	(3.1)
3	(0.914)	15	(4.65)
4	(1.22)	20	(6.2)

H + H₁ = 20 feet (6.2 m) Max.
V+V₁+H+H₁ = 40 feet (12.4 m) Max.

Square termination (SV4.5HT) shown.

Figure 46 - Top Vent - THREE 90 DEGREE ELBOWS

See **Table 3** as an aid in venting component selection for a particular range of exterior wall thicknesses.

VERTICAL OR HORIZONTAL VENTING USING SECURE FLEX KITS AND COMPONENTS

Secure Flex venting kits and components may be used in any venting application in place of rigid **Secure Vent** (SV4.5) direct vent components. All restrictions, clearances and allowances that pertain to the rigid piping apply to the flexible venting. **Secure Flex kits may not be modified; also, under no circumstances may separate sections of flex pipe be joined together.**

Using adapter (SV4.5RF), **Secure Flex** kits may be added to the end of a vent run made up of rigid **Secure Vent** (SV4.5) vent sections provided that doing so does not violate any of the venting length, height, routing, horizontal to vertical ratio requirements or clearance considerations detailed in this manual.

Secure Flex kits come with an adapter that can be fitted to the inclined channel end of the last **Secure Vent** (SV4.5) vent section in a rigid system in the exact same fashion as any other **Secure Vent** section.

Align the dimpled end of the adapter over the previously installed section or appliance collar, adjusting the radial alignment until the four locking dimples of the adapter are aligned with the inlets of the four incline channels of the last vent section or collar. Push on the adapter until it fully engages, then twist the adapter clockwise running the dimples down and along the incline channels until they seat at the end of the channels.

Attach the flexible vent to the adapter as follows (also see Figure 47):

A. Install the Inner Flex Pipe -

1. Install the small gear clamp loosely around the inner flexible vent pipe, push it back out of the way.
2. Apply a bead of **Mill-Pac Black (700°F) high temperature sealant - Catalog No. 10K81** to the inner adapter collar, approximately ½ inch from the end.
3. Pull and extend the inner flexible vent pipe.
4. Slide the inner flex pipe over the adapter collar. Ensure the flexible vent pipe completely engages the adapter collar to a distance of 1¾ inches from the end, and that it is free from damage or tears.
5. Slide the gear clamp down and tighten it fully to secure the flexible vent to the adapter inner collar approximately ¾ inch from the end of the flex.
6. Install **three screws 120 degrees apart** through the flexible vent pipe and into the adapter collar just below the gear clamp to provide additional security to the connection.

B. Install the Outer Flex Pipe -

1. Install the large gear clamp loosely around the outer flexible vent pipe, push it back out of the way.

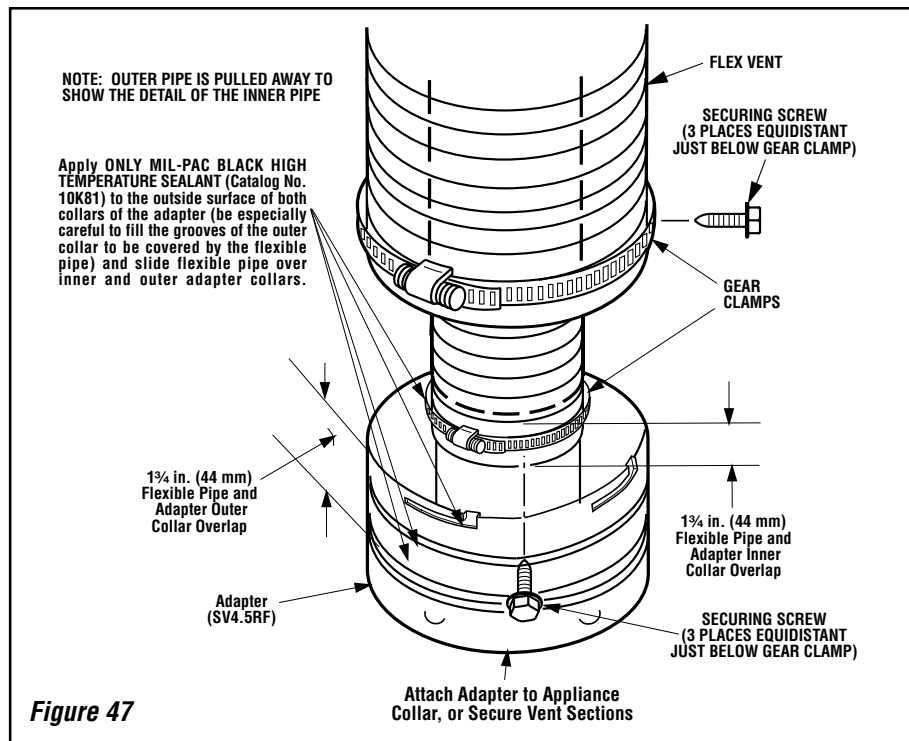


Figure 47

2. Apply a bead of **Mill-Pac Black (700°F) high temperature sealant - Catalog No. 10K81** to the outer adapter collar; to the grooves of the collar which extend approximately 1 inch from the end and to the flat surface, approximately 1¾ inches from the end.

3. Pull and extend the outer flexible vent pipe.

4. Slide the outer flex pipe over the adapter collar. Ensure the flexible vent pipe completely engages the adapter collar to a distance of 1¾ inches from the end, and that it is free from damage or tears.

5. Slide the gear clamp down and tighten it fully to secure the flexible vent to the adapter outer collar approximately ¾ inch from the end of the flex.

6. Install **three screws 120 degrees apart** through the flexible vent pipe and into the adapter collar just below the gear clamp to provide additional security to the connection.

C. Route Flex Vent -

Ensure that the flex vent is properly routed to provide the required clearance. **Do not** allow the flexible vent to bend in a radius tighter than 5" (127 mm). Refer to **Figure 48**. Space out the internal flex vent spacers evenly - approximately every 6 inches - and avoid kinking of inner pipe. Support horizontal sections of flex with metal straps at 2 foot (0.61m) intervals.

D. Install Firestop/Spacers at ceilings and walls -

When **Secure Flex** penetrates a wall or ceiling, a firestop/spacer is required: use the SF4.5 VF firestop/spacer for ceilings and the SF4.5 HF firestop/spacer for walls.

See the appropriate sections and figures shown throughout the venting section for their installation requirements.

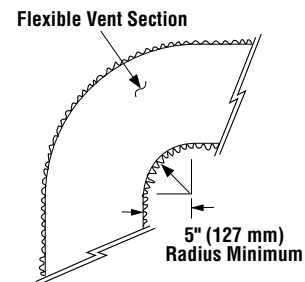


Figure 48

E. Attach Flex Vent to Termination -

Secure Flex components can be purchased separately and attached to bulk lengths of **Secure Flex** flexible tubing cut to size at the job site. Secure the flexible vent to the **Secure Flex** terminations in the same manner (see **Figure 47**) as it was attached to the adapter.

Note: Secure Flex vent must be attached to Secure Flex terminations only. DO NOT substitute Secure Vent terminations or the Secure Vent adapter for Secure Flex components. The collars of Secure Flex terminations and adapters have a different diameter than that used with the Secure Vent pipe. Additionally, Secure Flex components have an extended length center tube for use in attaching the flexible vent.

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

Step 4. FIELD WIRING

Refer to Section A for millivolt appliances and Section B for electronic appliances. The gas valve is set in place and pre-wired at the factory on both models.

A. Millivolt Wiring (See Figure 49) –

1. Select any of the following optional controls: appliance-mounted (rocker switch) or wall-mounted switch, thermostat, or one of the optional remote control kits. If appliance-mounted ON/OFF control is selected mount it in the gas valve mounting bracket.
2. If wall-mounted ON/OFF control or thermostat is selected mount it in a convenient location on a wall near the fireplace.
3. Wire the control switch within the millivolt control circuit using the 15 feet of 2 conductor wire supplied with the unit.

Caution: do not connect the optional wall switch to a 120V power supply.

4. Alternatively, the appliance may be operated without the use of the controls indicated in step 1, solely by manipulating the gas valve control knob. In order to use this method, twist the free ends of the two conductor wire (located in the bottom compartment of the unit) together as shown in **Figure 49**.

Note: The supplied 15 feet of 2 conductor wire has one end of each conductor connected to the gas valve circuit and the other end of each conductor placed loose inside the bottom compartment of the unit.

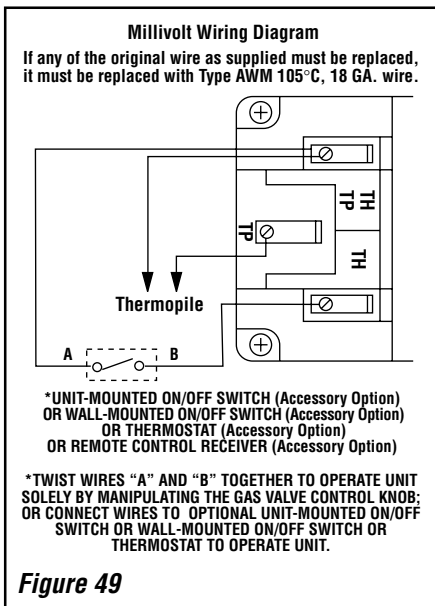


Figure 49

B. Electronic Wiring

(See either Figure 51, or 52 on page 23)

Note: The electronic appliance must be connected to the main power supply.

1. Route a 3-wire 120Vac 60Hz 1ph power supply to the appliance junction box.

2. Open the control compartment access panel by actuating the spring-loaded magnetic catches securing the panel, gently depressing the outer top corners of the panel until the catches "pop" the panel free, allowing it to swing out and down to open.

3. Remove the junction box/outlet receptacle assembly by removing the securing screw at the front right corner of the unit. See **Figure 50**. (The left and right designations used here are reversed in CDCR applications.)

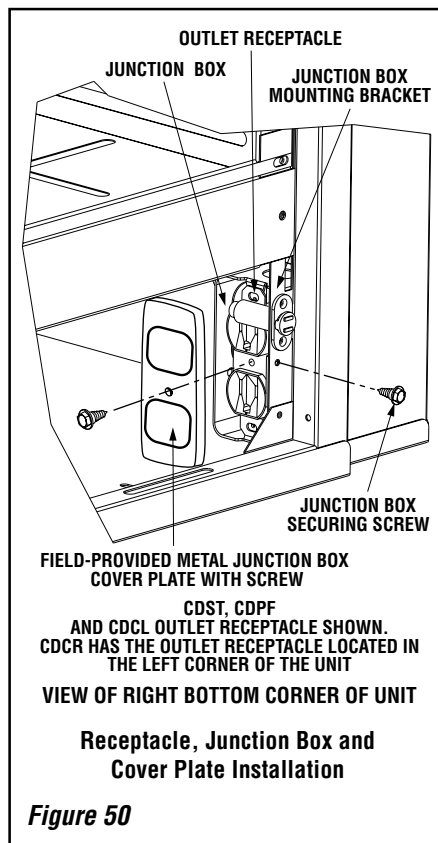


Figure 50

4. Remove the outlet receptacle from the junction box by removing the two securing screws.
5. Install a field-provided strain relief in the cabinet knockout opening for the protection of the power supply wires.
6. Connect the power supply wires to the receptacle as shown in **Figure 51, or 52 on page 23**.
7. Connect the ground supply wire to the green wire attached to the outlet receptacle's green ground screw.
8. Install a wall-mounted ON/OFF switch or thermostat (not supplied) in a convenient location near the fireplace.
9. Wire the wall-mounted ON/OFF switch or thermostat to the low voltage circuit as shown in **Figure 51, or 52 on page 23**.

Note: The supplied 15 feet of 2 conductor wire has one end of each conductor connected to the gas valve circuit and the other end of each conductor placed loose inside the bottom compartment of the unit.

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

10. After wiring is complete, reinstall the outlet receptacle, junction box/outlet receptacle assembly; install the field-provided the metal junction box cover plate.

Note: The gas valve ON/OFF switch is shown in **Figure 51, or 52 on page 23**. It is integral with the gas valve and should be set to the **ON** position.

IMPORTANT: Ground supply lead must be connected to the wire attached to the green ground screw located on the outlet receptacle. See **Figures 51, and 52 on page 23**. Failure to do so will result in a potential safety hazard. The appliance must be electrically grounded in accordance with local codes or, in the absence of local codes, the National Electrical Code, ANSI/NFPA 70-(latest edition). (In Canada, the current CSA C22-1 Canadian Electrical Code.)

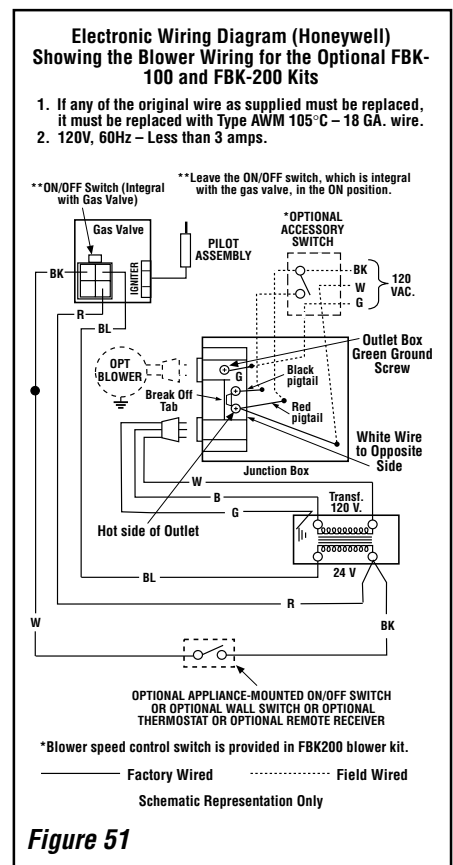


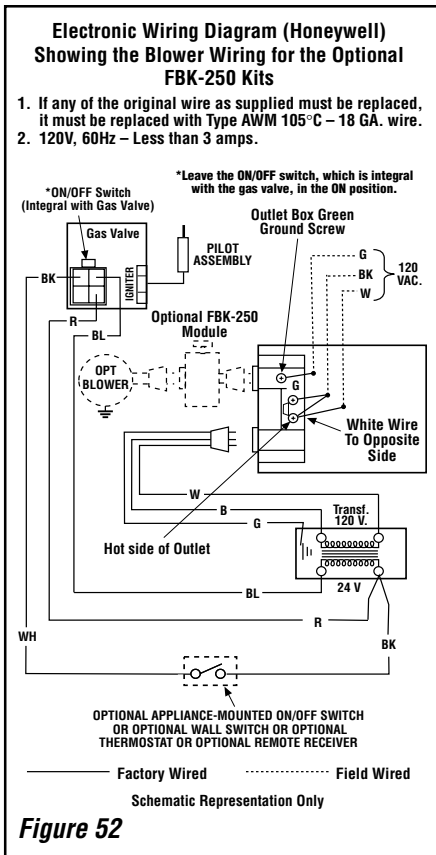
Figure 51

Step 5. WIRING - OPTIONAL FORCED AIR BLOWER KIT

FBK-100, FBK-200 and FBK250 Kits

(See **Figure 51 for FBK-100, FBK-200 and Figure 52 on page 23 for FBK-250 wiring**) -

An electrical receptacle is provided for the installation of the FBK-100, FBK-200 and FBK-250 forced air blower kits. Electrical power must be connected to this receptacle in order to operate these blowers. Install the blower kits according to the installation instructions provided with the kits.



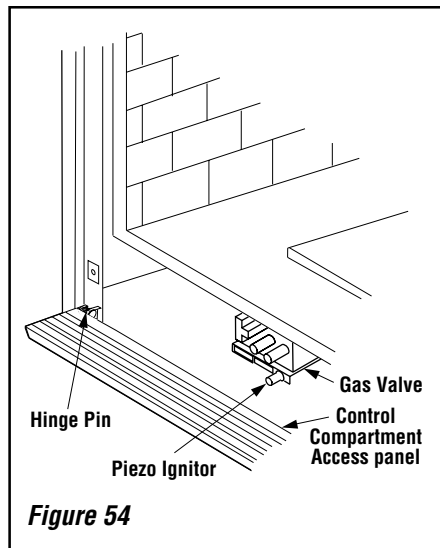
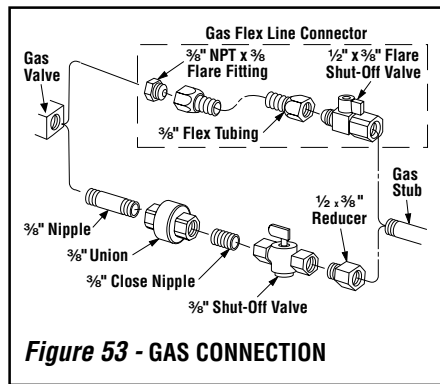
Step 6. CONNECTING GAS LINE

Make gas line connections. All codes require a shut-off valve mounted in the supply line. **Figure 53** illustrates two methods for connecting the gas supply. The flex-line method is acceptable in the U.S., however, Canadian requirements vary depending on locality. Installation must be in compliance with local codes.

These appliances are equipped with a gas flex line for use (where permitted) in connecting the unit to the gas line. A gas flex line is provided to aid in attaching the direct vent appliance to the gas supply. The gas flex line can only be used where local codes permit. See **Figure 53** for flex line description. The flex line is rated for both natural and propane gas. A manual shut off valve is also provided with the flex line.

The gas control valve is located in the lower control compartment. To access the valve proceed as follows: Open the control compartment access panel (**Figure 54**) by actuating the spring-loaded magnetic catches securing the panel, gently depressing the outer top corners of the panel until the catches "pop" the panel free, allowing it to swing out and down to open.

The millivolt control valve has a $\frac{3}{8}$ " (10 mm) NPT thread inlet port. The electronic control valve has a $\frac{1}{2}$ " (13 mm) NPT thread inlet port and is fitted with a $\frac{1}{2}$ " x $\frac{3}{8}$ " (13 mm x 10 mm) NPT fitting.



Secure all joints tightly using appropriate tools and sealing compounds (ensure propane resistant compounds are used in propane applications).

Turn on gas supply and test for gas leaks using a soapy water solution. **Never use an open flame to check for leaks.**

- A. Mix a 50% dish soap, 50% water solution.
- B. Light the appliance (refer to the lighting instructions provided in the Homeowner's Care and Operation Instructions).
- C. Brush all joints and connections with the soapy water solution to check for leaks. If bubbles are formed, or gas odor is detected, turn the gas control knob to the "OFF" position. Either tighten or refasten the leaking connection and retest as described above.
- D. When the gas lines are tested and leak free, observe the individual tongues of flame on the burner. Make sure all ports are open and producing flame evenly across the burner. If any ports are blocked, or partially blocked, clean out the ports.

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

Step 7. INSTALLING LOG SET, VERMICULITE AND CERAMIC FIBER CHUNKS

The log set, a bag of decorative volcanic stone and a bag of glowing embers (rockwool) is supplied in the unit. Refer to the Homeowner's Care and Operating Instructions for detailed placement instructions for the logs, decorative volcanic stone and glowing embers.

Step 8. CHECKING APPLIANCE OPERATION

With gas line installed, run initial system checkout before closing up the front of the unit. Follow the pilot lighting instructions provided in the Homeowner's Care and Operation Instructions. For piezo ignitor location see **Figure 54** (millivolt appliances only).

Note: Lighting instructions may also be found on the pull out lighting instruction labels attached to the gas control valve. To access the label, see the procedure on the previous page described for accessing the gas control valve.

When first lighting the appliance, it will take a few minutes for the line to purge itself of air. Once purging is complete, the pilot and burner will light and operate as indicated in the instruction manual. Subsequent lightings of the appliance will not require such purging. Inspect the pilot flame (remove logs, if necessary, handling carefully).

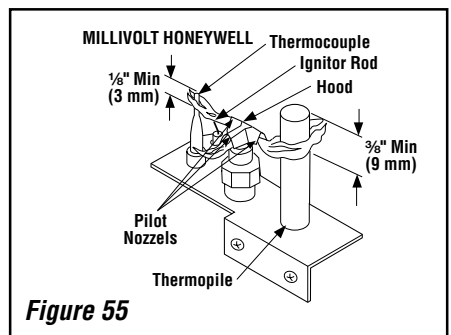
Millivolt Appliance Checkout

The pilot flame should be steady and, not lifting or floating. Flame should be blue in color with traces of orange at the outer edge.

The top $\frac{3}{8}$ " (10 mm) at the pilot generator (thermopile) and the top $\frac{1}{8}$ " min (tip) of the quick drop out thermocouple should be engulfed in the pilot flame. The flame should project 1" (25 mm) beyond the hood at all three ports (**Figure 55**).

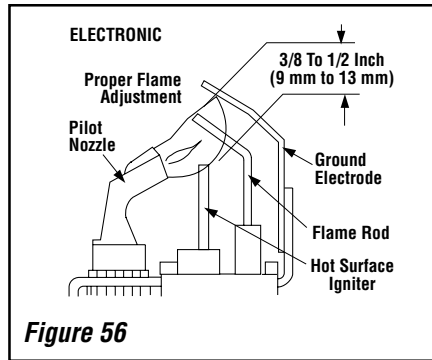
Replace logs after pilot inspection.

To light the burner: turn "ON" the unit-mounted ON/OFF switch or the wall-mounted ON/OFF switch or the thermostat (depending on the type of control installed), and rotate the gas valve control knob counterclockwise to the "ON" position.



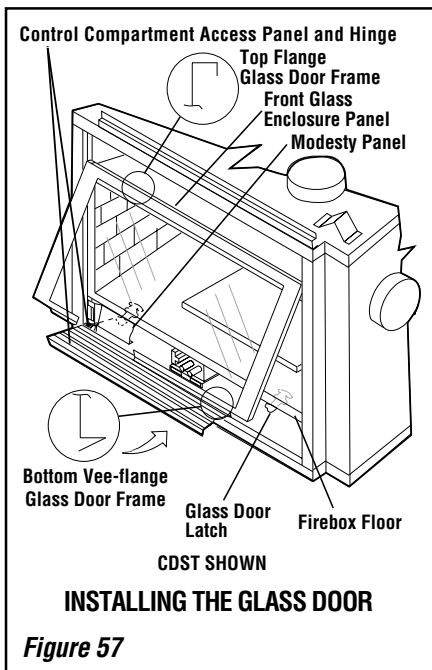
Electronic Appliance Checkout

To light the burner, turn 'ON' the the wall-mounted ON/OFF switch or the thermostat (depending on the type of control installed), and turn the gas control switch to the "ON" position. Ensure the ignitor lights the pilot. The pilot flame should engulf the flame rod as shown in **Figure 56**.



Step 9. INSTALLING GLASS ENCLOSURE PANELS

1. Visually inspect the gasket on the backside of the panels. The gasket surface must be clean, free of irregularities and seated firmly.
2. Position the glass enclosure panel in front of the firebox opening at a 45 degree angle and engage the top flange over the lip at the top of the firebox opening. *See Figure 57.*
3. Swing the glass enclosure panel down and back. Ensure the gasket seats evenly as the panel draws shut. Engage the Vee-flange at the bottom of the panel with the latches and close the latches to secure the panel.



WARNING: HANDLE THE GLASS WITH EXTREME CARE! TEMPERED GLASS IS SUSCEPTIBLE TO DAMAGE (SCRATCHES, FOR EXAMPLE) – HANDLE GLASS DOORS (GLASS ENCLOSURE PANELS) GENTLY WHILE REINSTALLING THEM.

WARNING: NEVER OPERATE THE APPLIANCE WITHOUT THE GLASS ENCLOSURE PANELS IN PLACE AND SECURE.

Step 10. BURNER ADJUSTMENTS

Flame Appearance and sooting

Proper flame appearance is a matter of taste. Generally, most people prefer the warm glow of a yellow to orange flame. Appliances operated with air shutter openings that are too large will exhibit flames that are blue and transparent. These weak, blue and transparent flames are termed anemic. If the air shutter opening is too small sooting may occur.

Sooting is indicated by black puffs developing at the tips of very long orange flames. Sooting results in black deposits forming on the logs, appliance inside surfaces and on exterior surfaces adjacent to the vent termination. Sooting is caused by incomplete combustion in the flames and lack of combustion air entering the air shutter opening. To achieve a warm yellow to orange flame with an orange body that does not soot, the shutter opening must be adjusted between these two extremes.

No smoke or soot should be present. Reposition the log set if flames impinge on any part of it. If the log set is properly positioned and sooting conditions exist, the air shutter opening on the main burner tube should be adjusted. Normally, the more offsets in the vent system, the greater the need for the air shutter to be opened further.

Burner Adjustment

WARNING: AIR SHUTTER ADJUSTMENT SHOULD ONLY BE PERFORMED BY A QUALIFIED PROFESSIONAL SERVICE TECHNICIAN.

IMPORTANT: ENSURE THAT THE GLASS ENCLOSURE PANELS ARE IN PLACE AND SEALED DURING ADJUSTMENT.

CAUTION: THE AIR SHUTTER DOOR AND NEARBY APPLIANCE SURFACES ARE HOT. EXERCISE CAUTION TO AVOID INJURY WHILE ADJUSTING FLAME APPEARANCE.

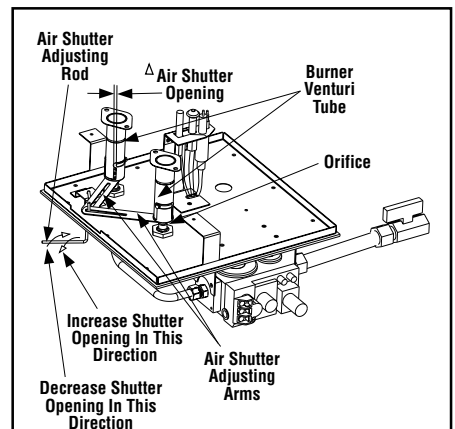
To adjust the flame, rotate the adjustment rod (located in the lower control area) counterclockwise to increase or clockwise to reduce the air shutter opening. **Adjust the air shutter to the recommended setting as shown in Figure 58.**

Allow the burner to operate for at least 15 minutes. Observe the flame continuously. If it appears weak or sooty as previously described, adjust the air shutter by rotating the adjustment rod until the flame appearance is as desired.

The adjustment rod and associated adjustable air shutter is patented technology. Flame adjustments can be made quickly and accurately to taste without the need of disassembling the appliance and waiting for 15 minutes after each adjustment.

Propane models may exhibit a flame pattern that may candle or appear stringy. If this is problematic or persists as the appliance is continually operated, adjust the air shutter closed as described in the previous paragraphs. Operate the appliance for a period of time as the effect diminishes, ensuring that the appliance does not develop sooty flames.

When satisfied that the appliance operates properly, proceed to finish the installation. Leave the control knob in the ON position and the remote switch OFF. Close the lower control compartment door.



△ Note - Both air shutters open and close simultaneously when the air shutter adjusting rod is moved.

Note - Burners are omitted in this view for clarity.

***MAIN BURNER FACTORY SHUTTER SETTING		
Models	Natural Gas inches (mm)	Propane Gas inches (mm)
CDST	*TWO	**TWO
CDPF	1/8 (3)	11/16 (17)
CDCR	SLOTS	SLOTS
CDCL		

Adjustment Rod Positions (when viewed from above):

*Natural Gas - **fully clockwise**

Propane - **fully counter clockwise

*** Settings are shown for each burner.

Figure 58

Step 11. HOOD INSTALLATION

All of these appliances must have hoods installed on all sides with glass enclosure panels prior to operating.

On all clean face units, slide the hoods into the slots on the lower edges of the radiant panels (Figure 59).

On louvered face units, slide the hoods into the slots on the lower edges of the cabinet top. (Figure 60).

FINISHING REQUIREMENTS

Wall Details

Complete finished interior wall. To install the appliance facing flush with the finished wall, position framework to accommodate the thickness of the finished wall (Figures 59 and 60)

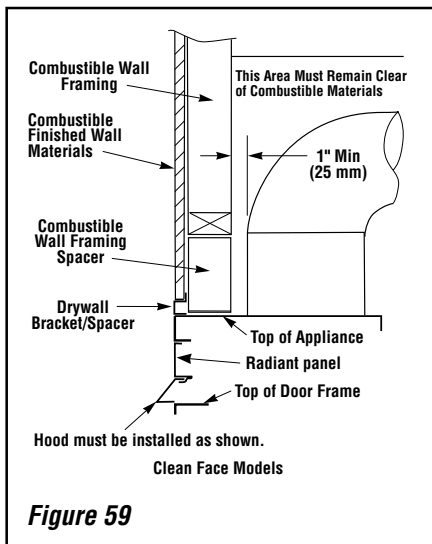


Figure 59

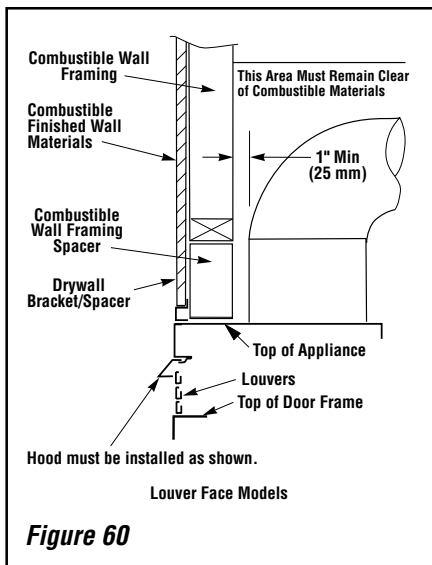


Figure 60

Combustible materials may project beyond the sides of the fireplace opening as long as they are kept within the shaded areas illustrated in Figure 61.

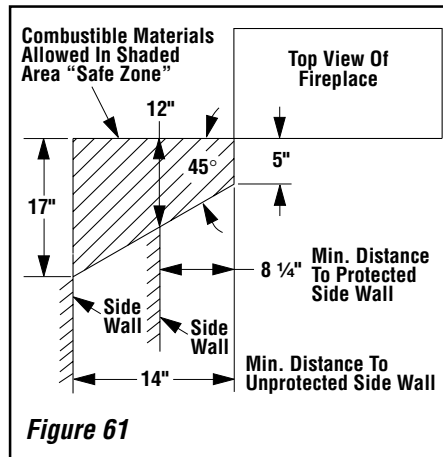


Figure 61

A hearth extension is not required with this appliance. If a hearth extension is used, do not block the control compartment access panel. Any hearth extension used is for appearance only and does not have to conform to standard hearth extension installation requirements.

Note: Combustible wall finish materials and/or surround materials must not be allowed to encroach the area defined by the appliance front face (black sheet metal). Never allow combustible materials to be positioned in front of or overlapping the appliance front face. See Figures 59 or 60.

Non-combustible materials, such as surrounds and other appliance trim, may be installed on the appliance front face with these exceptions: they must not cover any portion of the glass or louvers; they may cover any portion of the top radiant panel or the air gaps surrounding the top radiant panel up to the installed hood.

Vertical installation clearances to combustible mantels vary according to the depth of the mantel. See Figure 62. Mantels constructed of non-combustible materials may be installed at any height above the appliance opening; however, do not allow anything to hang below the hood.

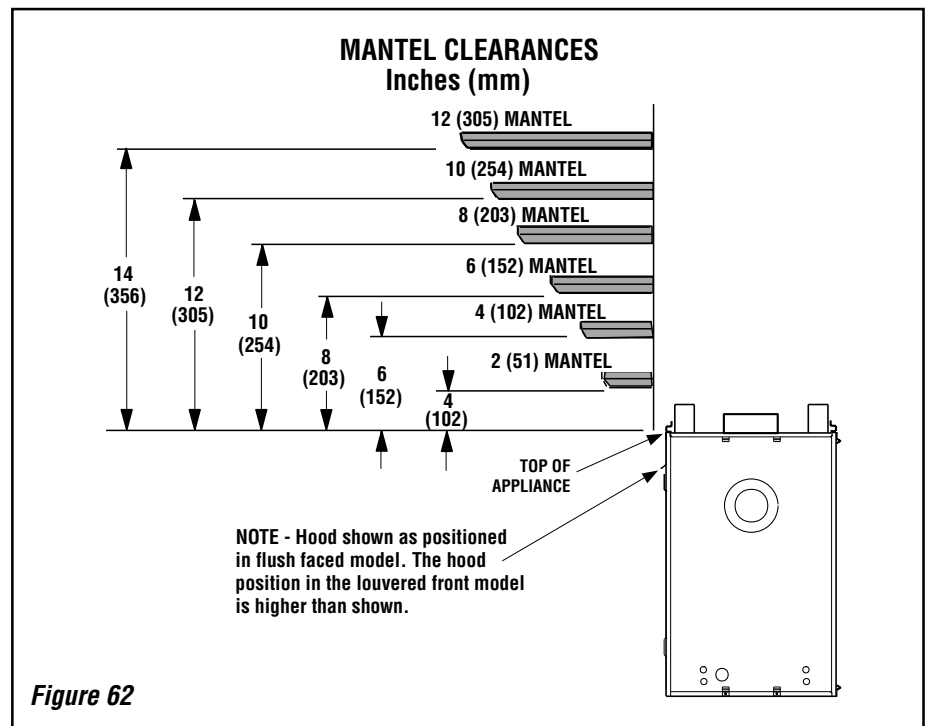
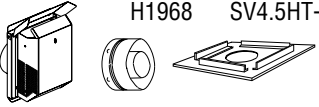




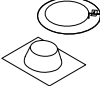








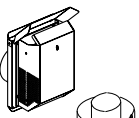
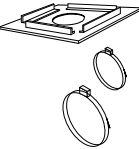
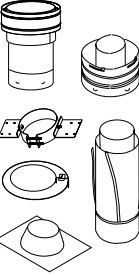

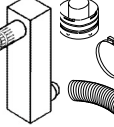


Figure 62

COLD CLIMATE INSULATION

If you live in a cold climate, seal all cracks around your appliance with noncombustible material and wherever cold air could enter the room. It is especially important to insulate outside chase cavity between studs and under floor on which appliance rests, if floor is above ground level.

INSTALLATION ACCESSORIES

Listed Secure Vent™ Components			
	Cat. No.	Model No.	Description
	H1968	SV4.5HT-2	Horizontal Square Termination with Firestop/Spacer (96K80) and Adapter (74L61)
	H2152	SV4.5CGV-1	Vertical Termination
	77L70	SV4.5L6	6 inch (152 mm) Vent Section
	77L71	SV4.5L12	12 inch (305 mm) Vent Section
	77L72	SV4.5L24	24 inch (610 mm) Vent Section
	77L73	SV4.5L36	36 inch (914 mm) Vent Section
	77L74	SV4.5L48	48 inch (1219 mm) Vent Section
	77L75	SV4.5LA	Telescopic Section
	77L76	SV4.5E45	45 Degree Elbow
	77L77	SV4.5E90	90 Degree Elbow
The following flashings come packaged with a storm collar.			
	77L78	SV4.5F	Flat Roof Flashing
	77L79	SV4.5FA	1/12 to 7/12 Adjust. Flashing
	77L80	SV4.5FB	7/12 to 12/12 Adjust. Flashing
	77L81	SV4.5SC6	Storm Collars (6 collars/box)
	96K80	SV4.5HF	Firestop/Spacer - Horizontal (3-1-1 spacing)
	96K87	SV4.5VF	Firestop/Spacer - Vertical (1-1-1 spacing)
	96K93	SV4.5SU	Support Strap
	96K94	SV4.5RSA	Attic Insulation Shield
	96K92	SV4.5SP	Support Plate
	17M52	SV4.5 HGS-1	Heat Guard Square (1 - Pack)
	17M53	SV4.5 HGS-12	Heat Guard Square (12 - Pack)

Listed Secure Flex™ Components			
	Cat. No.	Model No.	Description
These termination kits include firestop/spacer, gear clamps and flex adapter.			
	H1969	SF4.5HT-2	Horizontal Square Termination without Flex
	77L87	SFKIT12	Flex Square Term. with 12 in. (305 mm) of *compressed Flex
	77L88	SFKIT18	Flex Square Term. with 18 in. (457 mm) of *compressed Flex
	77L89	SFKIT24	Flex Square Term. with 24 in. (610 mm) of *compressed Flex
	77L90	SFKIT36	Flex Square Term. with 36 in. (914 mm) of *compressed Flex
	77L91	SFKIT48	Flex Square Term. with 48 in. (1219 mm) of *compressed Flex
	56L74	SFVT30	Vertical Termin. for Flex (flat to 6/12) with Flex Adapter, section of rigid vent, roof support collar assembly, roof flashing and storm collar.
	56L75	SFVT45	Vertical Termin. for Flex (6/12 to 12/12) with Flex Adapter section of rigid vent, roof support collar assembly, roof flashing and storm collar.
	60L10	SF-18	18 ft. (5.49 m) *compressed Flex
	98K03	SF-12	12 ft. (3.66 m) *compressed Flex
	87L01	SFHRK	Snorkel Riser Kit with Flex Adapter, a section of Flex, and Gear Clamps
	10K81	SFMP	Mil Pac Black Hi-Temperature Sealant
	91L66	SF-GC4-6	Gear Clamp 4.5in. (114 mm) for Flex (6 pieces)
	91L67	SF-GC7-6	Gear Clamp 7.5 in. (190.5 mm) for Flex (6 pieces)
	19M40	SF4.5HF	Firestop/Spacer - Horizontal (3-1-1 spacing)
	19M41	SF4.5BF	Firestop/Spacer - Vertical (1-1-1 spacing)

* All compressed flex vents can be expanded up to two times.

GAS CONVERSION KITS

WARNING: THIS CONVERSION KIT SHALL BE INSTALLED BY A QUALIFIED SERVICE AGENCY IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND ALL APPLICABLE CODES AND REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. IF THE INFORMATION IN THESE INSTRUCTIONS IS NOT FOLLOWED EXACTLY, A FIRE, EXPLOSION OR PRODUCTION OF CARBON MONOXIDE MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE. THE INSTALLATION IS NOT PROPER AND COMPLETE UNTIL THE OPERATION OF THE CONVERTED APPLIANCE IS CHECKED AS SPECIFIED IN THE OWNER INSTRUCTIONS SUPPLIED WITH THE KIT. THE QUALIFIED SERVICE AGENCY PERFORMING THIS INSTALLATION ASSUMES RESPONSIBILITY FOR THIS CONVERSION.

AVERTISSEMENT: CET ÉQUIPEMENT DE CONVERSION SERA INSTALLÉ PAR UNE AGENCE QUALIFIÉE DE SERVICE CONFORMÉMENT AUX INSTRUCTIONS DU FABRICANT ET TOUTES EXIGENCES ET CODES APPLICABLES DE L'AUTORISÉS AVOIR LA JURIDICTION. SI L'INFORMATION DANS CETTE INSTRUCTION N'EST PAS SUIVIE EXACTEMENT, UN FEU, EXPLOSION OU PRODUCTION DE PROTOXYDE DE CARBONE PEUT RÉSULTER LE DOMMAGES CAUSER DE PROPRIÉTÉ, PERTE OU BLESSURE PERSONNELLE DE VIE. L'AGENCE QUALIFIÉE DE SERVICE EST ESPONSABLE DE L'INSTALLATION PROPRE DE CET ÉQUIPMENT. L'INSTALLATION N'EST PAS PROPRE ET COMPLÈTE JUSQU'À L'OPÉRATION DE L'APPAREIL CONVERTI EST CHÉQUE SUIVANT LES CRITÈRES ÉTABLIS DANS LES INSTRUCTIONS DE PROPRIÉTAIRE PROVISIONNÉES AVEC L'ÉQUIPEMENT.

In Canada:

THE CONVERSION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROVINCIAL AUTHORITIES HAVING JURISDICTION AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE CAN1-B149.1 AND .2 INSTALLATION CODE.

LA CONVERSION DEVRA ÊTRE EFFECTUÉE CONFORMÉMENT AUX RECOMMANDATIONS DES AUTORITÉS PROVINCIALES AYANT JURIDICTION ET CONFORMÉMENT AUX EXIGENCES DU CODE D'INSTALLATION CAN1-B149.1 ET.2.

Gas conversion kits are available to convert your appliance from the use of one type of gas to the use of another. These kits contain all the necessary components needed to complete the task including labeling that must be affixed to ensure safe operation.

Kit part numbers are listed here and the following steps detail the conversion procedure.

Natural To Propane Gas Conversion Kit		
Models No.	Unit Type	Catalog No.
CDST CDPF CDCR CDCL	millivolt	85L65
	electronic	85L79

Propane to Natural Gas Conversion Kit		
Model No.	Unit Type	Catalog No.
CDST CDPF CDCR CDCL	millivolt	85L72
	electronic	85L86

Step 1. Turn off the gas supply to the appliance.

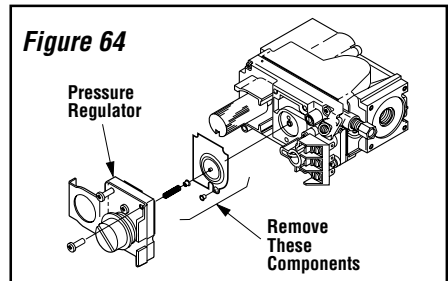
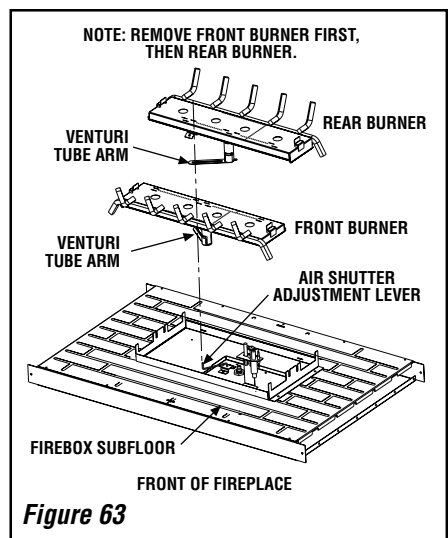
- Open the control compartment access panel, by actuating the spring-loaded magnetic catches securing the panel, gently depressing the outer top corners of the panel until the catches "pop" the panel free and allowing it to swing out and down to open.
- Locate the two (2) latches at the top of the control compartment. To disengage the two latches from the bottom vee-flange of the glass enclosure panel, reach for the handles located towards the back of the latches and pull the handles down toward the front of the unit.
- Swing the bottom of the door out and raise it slightly to lift the top flange of the door frame away from the appliance.

Step 2. Carefully remove the log set. Exercise care as not to break the log set.

Step 3. Referring to *Figure 63*, remove the front burner and then the rear burner.

Millivolt Appliances

Step 4. Refer to *Figure 64* and the instructions provided with the kit. Using a Torx T20, remove and discard the three pressure regulator mounting screws. Remove the pressure regulator, spring, poppet, diaphragm and bushing. **Discard all removed components.** Ensure the rubber gasket installed on the back of the replacement pressure regulator is properly positioned and install the new pressure regulator using the new screws supplied with the kit. Tighten screws to 25 In. lb. torque.



Step 5. Attach manometer to the manifold side pressure test fitting and verify manifold pressure reads 3.5 inches water column (0.87 kPa) for natural gas, and 10.0 inches water column (2.49 kPa) for propane gas.

Step 6. Refer to *Figure 65 on page 28* and remove the pilot hood assembly to access the hexed pilot orifice. Remove and replace the orifice with the one provided with the kit.

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

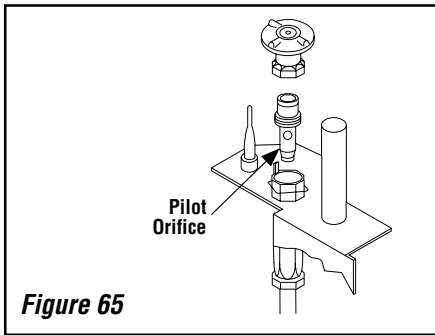
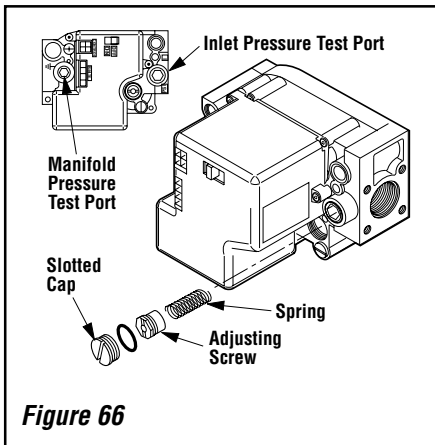


Figure 65

Electronic Appliances

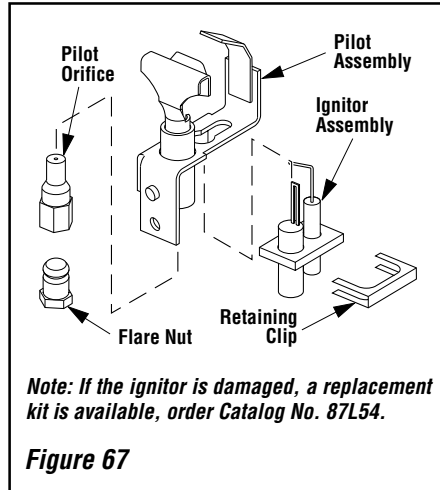
Step 7. Honeywell Electronic Valves - See **Figure 66** and the instructions provided with the kit. Remove the slotted cap screw, o-ring, pressure-regulating adjusting screw and spring. Retain all parts for possible later use. Install new components from the kit. Black cap and red spring for propane gas units. Silver cap and stainless steel spring for natural gas units. Before installing the cap, attach manometer to the manifold side pressure test fitting and adjust screw until pressure reads 3.5 inches water column (0.87 kPa) for natural gas, and 10.0 inches water column (2.49 kPa) for propane gas.



See **Figure 67** and replace the pilot orifice as follows: Remove the ignitor assembly retainer clip, and carefully remove the ignitor assembly. **Exercise extreme care to prevent damage to or breakage of the ignitor assembly.**

Remove the screw securing the pilot assembly to its mounting bracket. Back off the flare nut at the end of the pilot gas line to free the pilot assembly from the gas line. Remove the pilot orifice and replace it with the one provided with the conversion kit. Reinstall the pilot assembly by reversing the **steps** detailed here.

When reinstalling the ignitor assembly, use extreme care to prevent damage and breakage. Do not apply any leverage to the ignitor assembly while restoring the retainer clip to its original position.



All Models

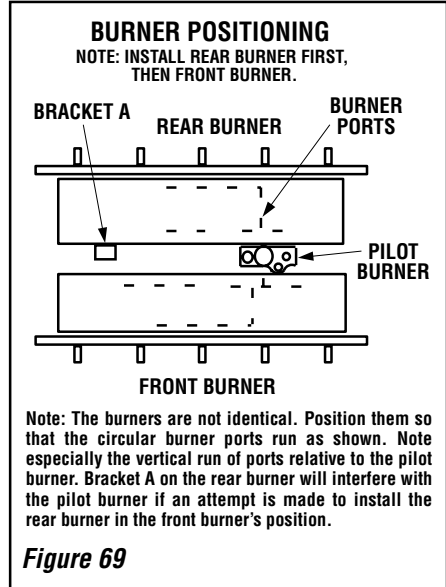
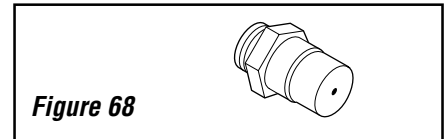
Step 8. (Refer to **Figure 63** on page 27)

A. Remove the two orifices from the manifold and replace them with the ones provided in the kit. The following table shows the orifice sizes for natural and propane models. **Figure 68** illustrates the orifice.

B. Install rear burner first, followed by front burner, as shown in **Figure 69**. Ensure that the arm of the venturi of each burner is hooked onto the air shutter adjustment lever (refer to **Figure 63** on page 27). The primary air opening can be adjusted by rotating the adjustment lever from beneath the firebox floor. Refer to **Figure 58** on page 23 for the recommended minimum primary air opening setting.

Model No.	Orifice size*	
	Nat.	Prop.
CDST CDPF CDCR CDCL	#44	#55

* Each model has two burners. Each burner contains one of these orifices.



Step 9. Reassemble the remaining components by reversing the procedures outlined in the preceding steps. Use pipe joint compound or Teflon tape on all pipe fittings before installing (ensure propane resistant compounds are used in propane applications, do not use pipe joint compounds on flare fittings).

Step 10. Attach the conversion label provided in the conversion kit to the rating plate on the appliance.

Step 11. Turn on gas supply and test for gas leaks.

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

The manufacturer reserves the right to make changes at any time, without notice, in design, materials, specifications, prices and also to discontinue colors, styles and products. Consult your local distributor for fireplace code information.

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