



LENNOX HEARTH PRODUCTS

INSTALLER: Leave this manual with the appliance.
CONSUMER: Retain this manual 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.



OMNI-Test Laboratories, Inc.

OTL Report No. 116-F-02-05

INSTALLATION INSTRUCTIONS

DIRECT VENT SPECTRA SERIES

VENTED GAS FIREPLACE HEATERS - DIRECT VENT MODELS
P/N 850,016M REV. H 08/2007

MODELS

LSS-35CN
LSS-35CP

LSS-40CN
LSS-40CP

A French manual is available upon request. Order Form Number 850,016CF.

Ce manuel d'installation est disponible en français, simplement en faire la demande. Numéro de la pièce 850,016CF.

AVERTISSEMENT: ASSUREZ-VOUS DE BIEN SUIVRE LES INSTRUCTIONS DONNÉES 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.

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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.

This installation manual will help you obtain a safe, efficient, dependable installation for your appliance and vent system.

Please read and understand these instructions before beginning your installation.

PACKAGING

The assembled Spectra direct vent gas fireplace heater is packaged with:

- 1 - one log set located in firebox area.
- 2 - one envelope containing the literature package which consists of the homeowner's manual, installation instructions, log set supplement and warranty; envelope is located in the control area.
- 3 - one bag of glowing embers located in the control area.
- 4 - one ceramic panel set, located on top of unit.
- 5 - one hand held remote control, located in the control area.
- 6 - an additional one of the following items required:
 - 1: Cast Iron Face (Classic Arch) and Grillwork (Black, Gold or Nickel) or
 - 2: Arched Face (Black, Gold or Nickel) or
 - 3: Rectangular Face (Black, Gold or Brushed Stainless)

Each kit comes with an individual set of installation instructions.

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.

These appliances comply with National Safety Standards and are tested and listed by Omni-Test Laboratories (Report No. 116-F-02-5) to ANSI Z21.88 (in Canada, CSA-2.33), and CAN/CGA-2.17-M91 in both USA and Canada, as vented gas fireplace heaters.

These appliances are listed by Omni-Test Laboratories for installation in bedrooms and mobile homes.

The Installation must conform to local codes or, in the absence of local codes, with the *National Fuel Gas Code, ANSI Z223.1/NFPA 54*, or the *Natural Gas and Propane Installation Code, CSA B149.1*. The appliance, when installed, must be electrically grounded in accordance with local codes or, in the absence of local codes, with the *National Electrical Code, ANSI/NFPA 70*, or the *Canadian Electrical Code, CSA C22.1*.

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.

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 openings of the appliance.

WARNING: 1) FIRE HAZARD: DO NOT PLACE ANY COMBUSTIBLE MATERIAL OVER THE FIREPLACE OPENING. 2) DOOR FRONT ACCESSIBILITY: ANY NON-COMBUSTIBLE FINISHING MATERIAL AREAS THAT PROTRUDE MORE THAN 1" FROM THE FACING SHOULD MAINTAIN A 9" CLEARANCE TO THE FIREPLACE OPENING. SEE FIGURE 7, PAGE 6 FOR DETAILS.

***Note:** For combustible material refer to Figure 48 on page 26.*

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

TYPICAL INSTALLATION

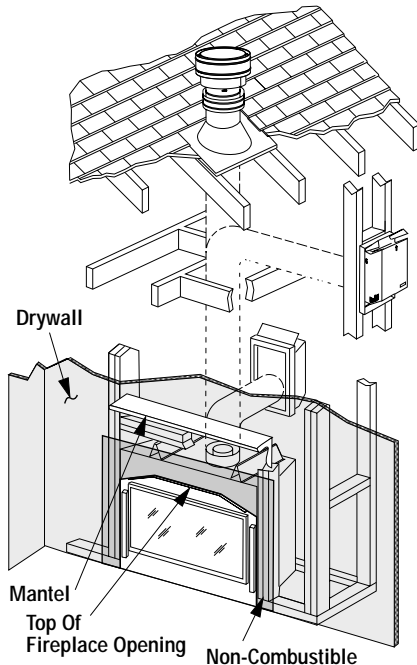


Figure 1

Gas Specifications

Model	Fuel	Maximum Input (BTU/H)	Minimum Input (BTU/H)
LSS-35CN	Nat. Gas	33,000	23,500
LSS-35CP	LP Gas	31,000	23,500
LSS-40CN	Nat. Gas	41,500	28,400
LSS-40CP	LP Gas	39,000	30,700

Gas Inlet And Manifold Pressures

	Natural	LP (Propane)
Minimum Inlet Pressure	5.0" w.c.	11.0" w.c.
Maximum Inlet Pressure	14.0" w.c.	14.0" w.c.
Manifold Pressure	3.5" w.c.	10.0" w.c.

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	Fuel	Rear Burner	Front Burner
LSS-35CN	Nat. Gas	#44	#50
LSS-35CP	LP Gas	#55	#61
LSS-40CN	Nat. Gas	#42	#45
LSS-40CP	LP Gas	0.054"	#56

Table 1

These appliances feature a comfort control valve which allows remote control of temperature, fan and flame appearance. These appliances also use a spark ignitor (piezo) that allows the appliance's pilot gas to be lit without the use of matches. This system provides continued service in the event of a power outage.

The external electrical power (120V) is required to operate the provided circulating blower.

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.

Test gage connections are provided on the front of the gas control valve (identified IN for the inlet and OUT for the manifold side).

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.

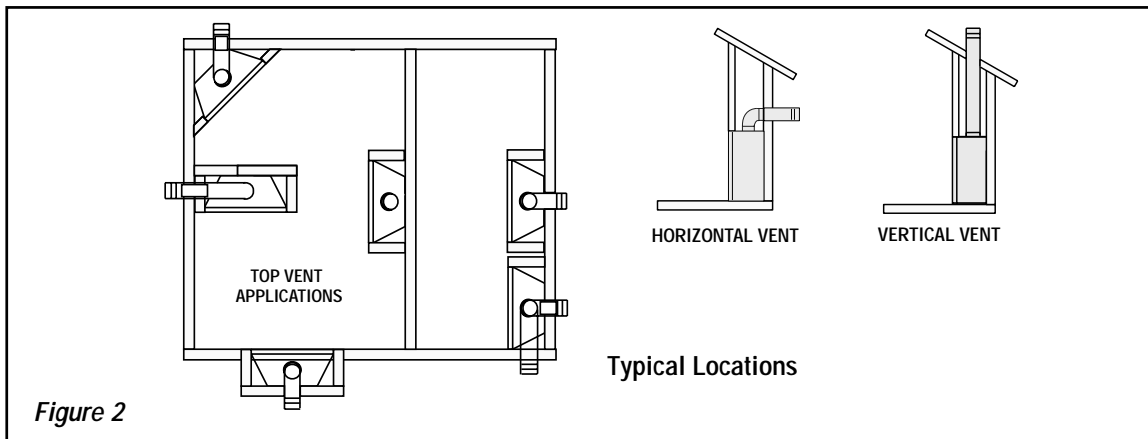
WARNING: CHILDREN AND ADULTS SHOULD BE ALERTED TO THE HAZARDS OF HIGH SURFACE TEMPERATURES. USE CAUTION AROUND THE APPLIANCE TO AVOID BURNS OR CLOTHING IGNITION. YOUNG CHILDREN SHOULD BE CAREFULLY SUPERVISED WHEN THEY ARE IN THE SAME ROOM AS THE APPLIANCE.

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 exterior and access to the fuel supply are also important. Consideration should be given to traffic ways, furniture, draperies, etc., due to elevated surface temperatures (*see Figure 2*).



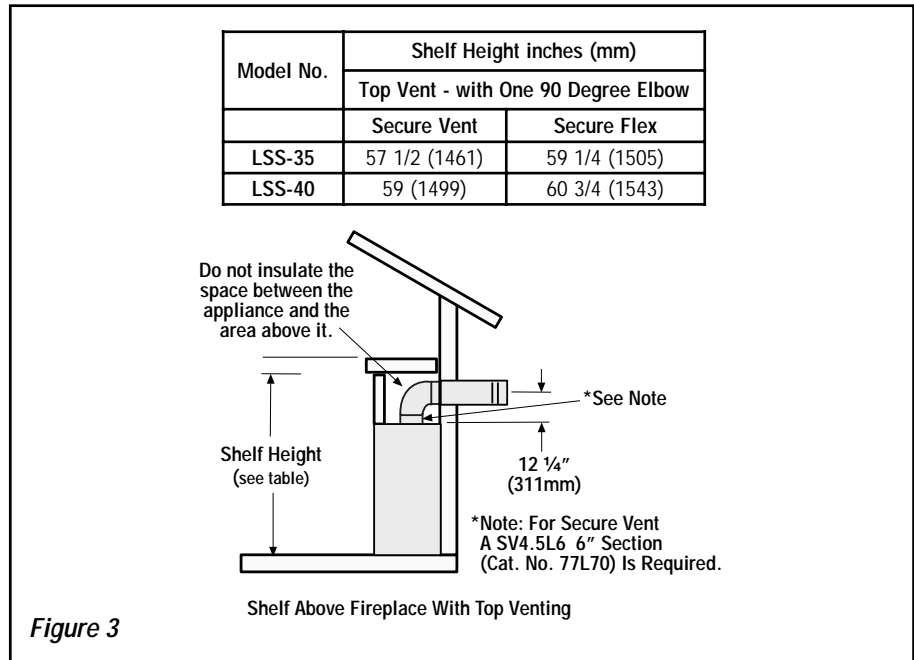
The location should also be free of electrical, plumbing or other heating/air conditioning ducting. These direct vent appliances are uniquely suited for installations requiring a utility shelf positioned directly above the fireplace. Utility shelves like these are commonly used for locating television sets and decorative plants.

Do not insulate the space between the appliance and the area above it. See **Figure 3**. 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**.

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

These appliances are approved with zero clearance from spacers 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 perpendicular side wall, the wall perpendicular to the opposite side of the appliance front face must not extend more than five inches beyond the front edge of the unit. In addition, when the unit is recessed, the side walls surrounding the unit must not extend more than five inches beyond the front edge of the unit. Refer to **Figure 2**.

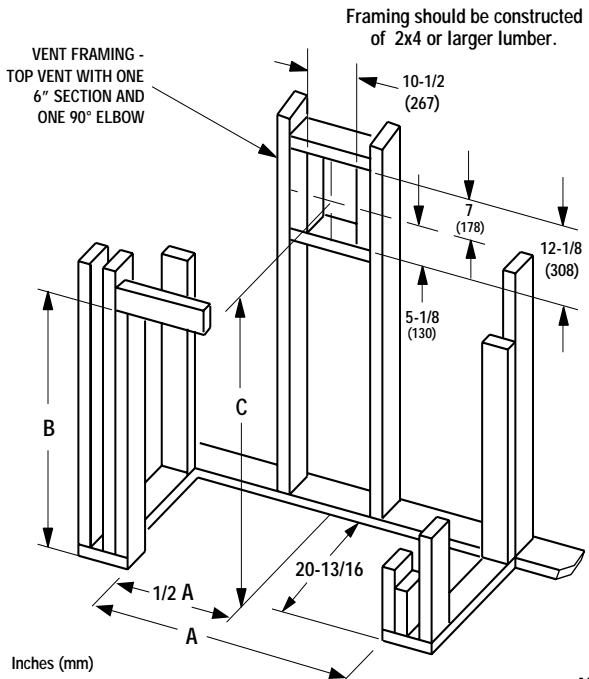


BACK	1/2 in. (13 mm) 0 in. (0 mm) spacers	*Note: 3 in. (75 mm) above any horizontal/ inclined vent component.
SIDES	1/2 in. (13 mm) 0 in. (0 mm) spacers	
TOP SPACERS	0 in. (0 mm)	
FLOOR	0 in. (0 mm)	
From Bottom of Unit to Ceiling	64 in. (1626 mm)	Note: The nailing flange and the cabinet surfaces directly adjacent to the framing member attached to the nailing flange, are exempt from the 1/2" clearance to combus- tibles defined for the rest of the cabinet sides and back.
VENT	1 in. (25.4 mm)*	
SERVICE CLEARANCES		
FRONT	3 Feet. (0.9 meters)	

Table 2

FIREPLACE FRAMING SPECIFICATIONS

**FRAMING WITH SQUARE HORIZONTAL TERMINATIONS (SV4.5HT)



** See the horizontal venting Figures 29 and 30 on page 17 for restrictions on the use of the square termination (SV4.5HT).

Framing Dimensions				
Model No.		A	B	C
LSS-35	in.	35 1/8	42 5/8	51 1/8
	mm	892	1083	1299
LSS-40	in.	40 1/8	44 1/8	52 5/8
	mm	1022	1121	1337

NOTE: For Secure Vent A 6" Section SV4.5L6 (Cat. No. 77L70) Is Required Before Installing The 90 Degree Elbow.

Figure 4

Model No.		A	B	C	D	E
LSS-35	in.	35 1/8	62 5/16	39 1/8	36 1/8	15 11/16
	mm	892	1583	994	918	400
LSS-40	in.	40 1/8	67 5/16	47 5/8	38 5/8	17 7/16
	mm	1022	1710	1210	981	443

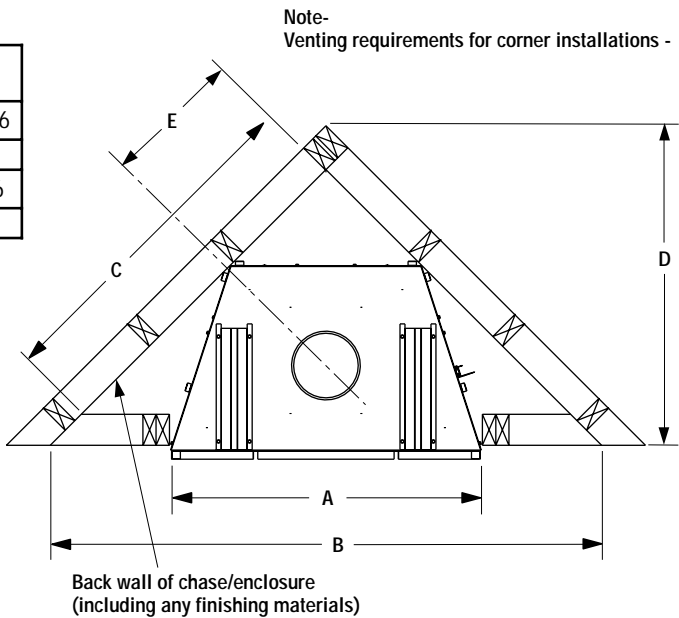
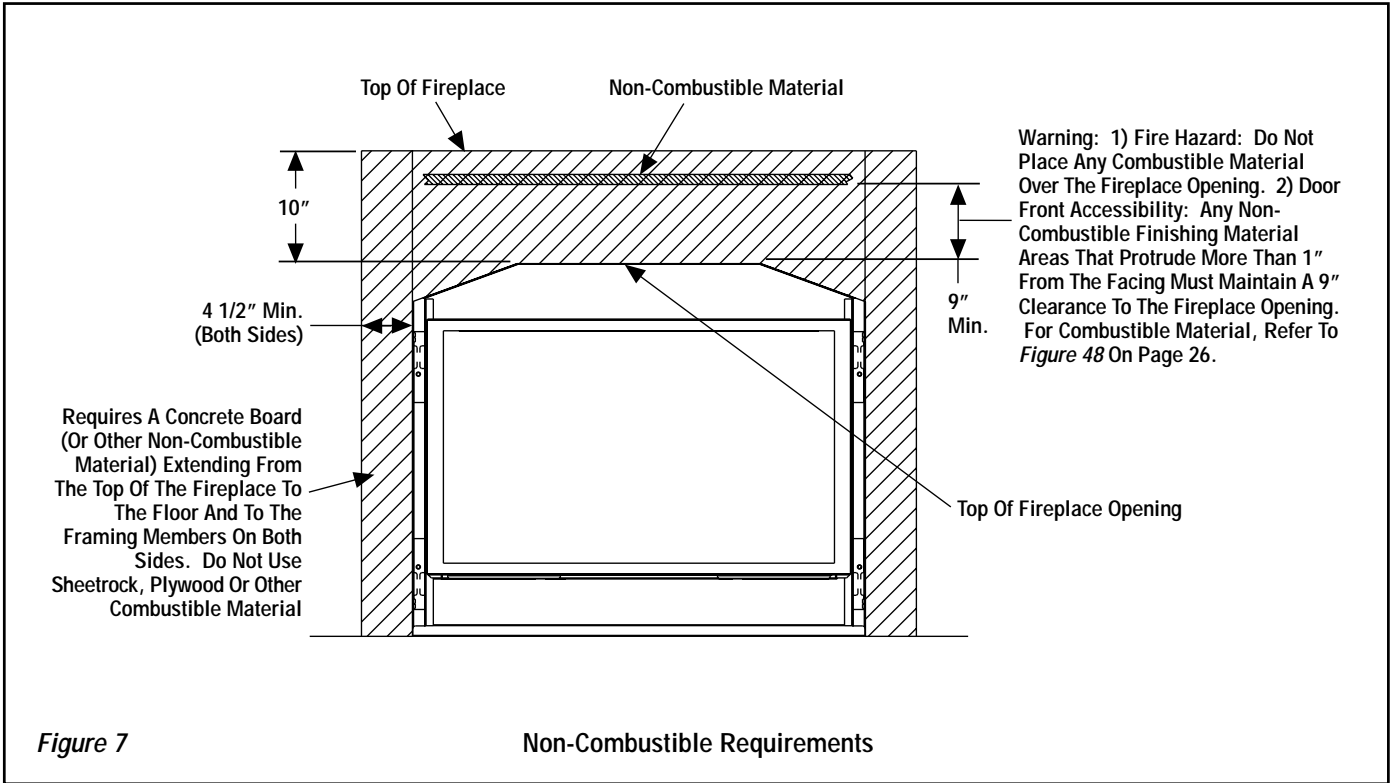
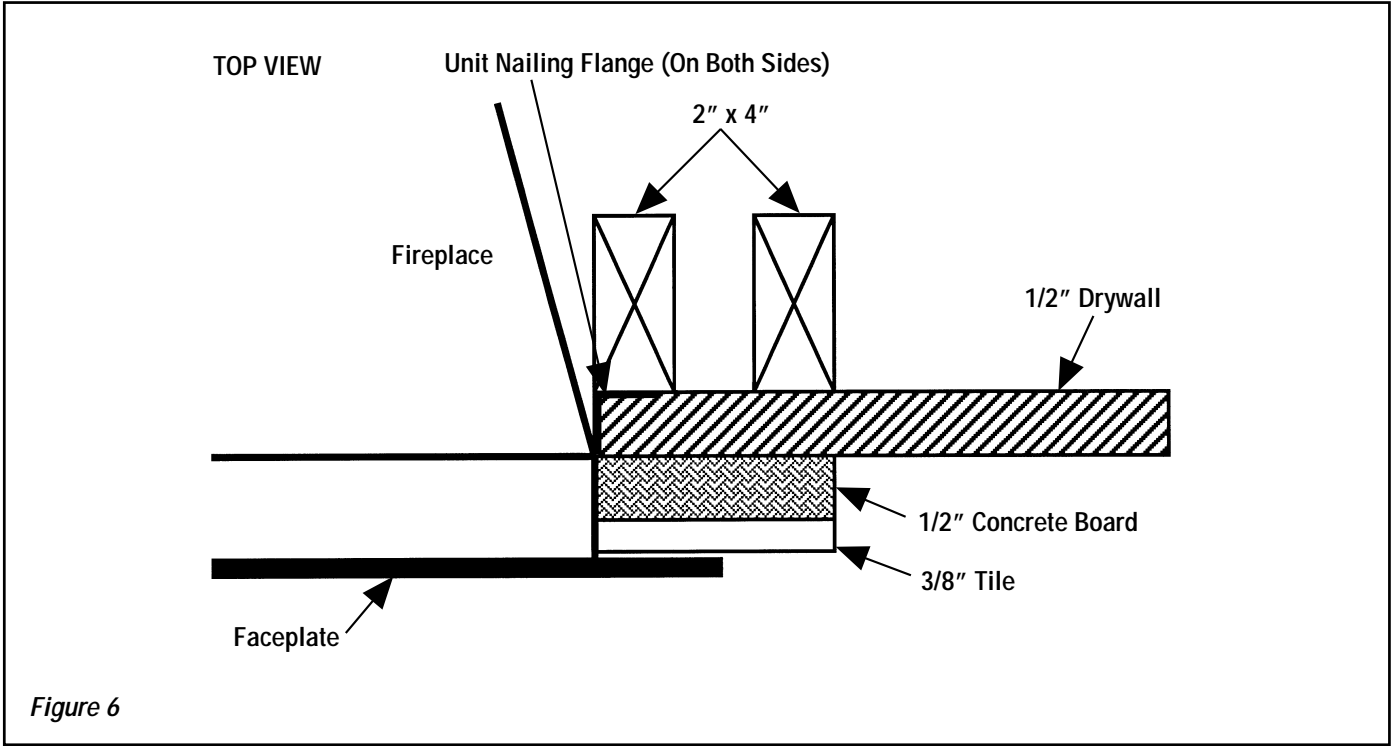
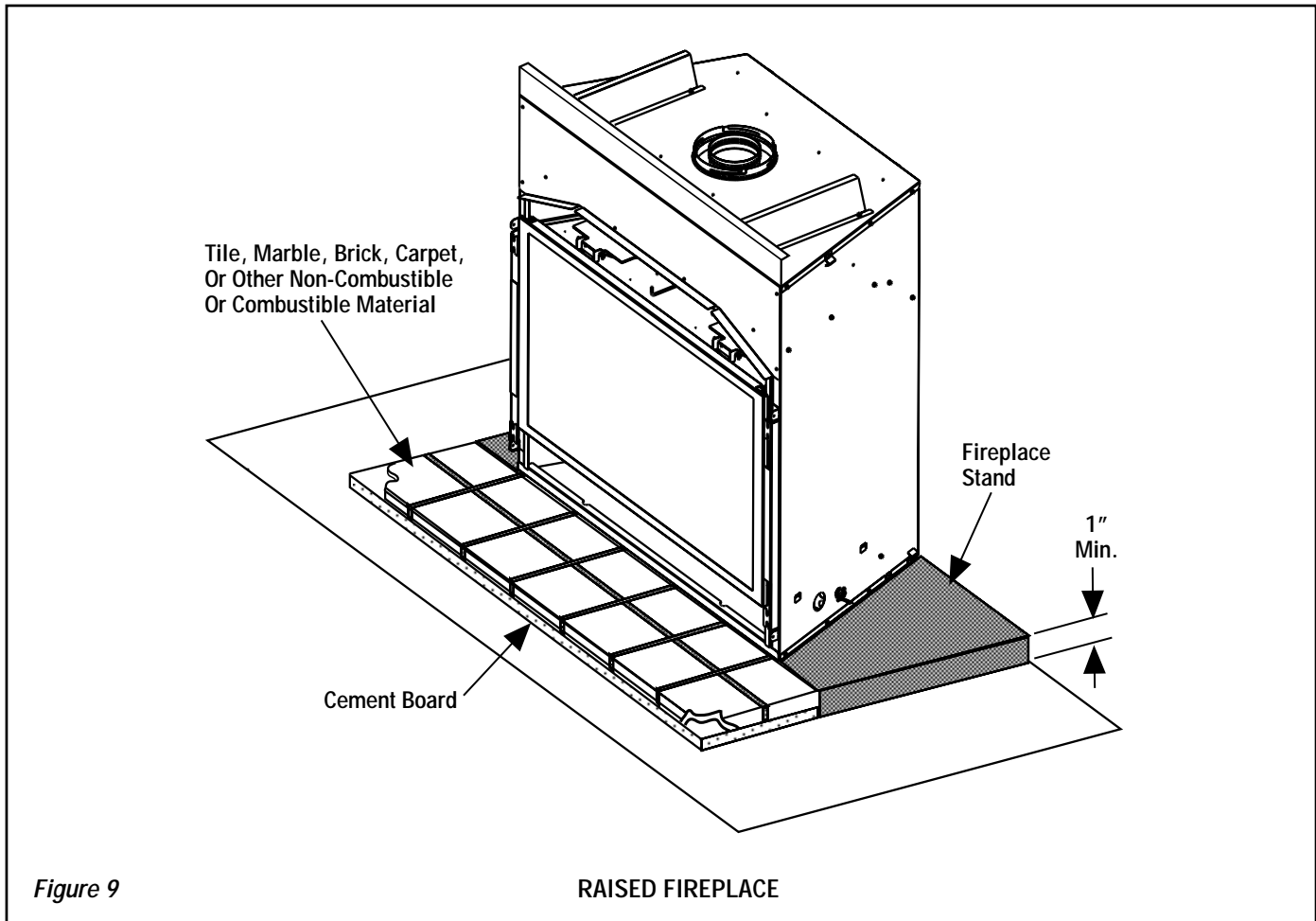
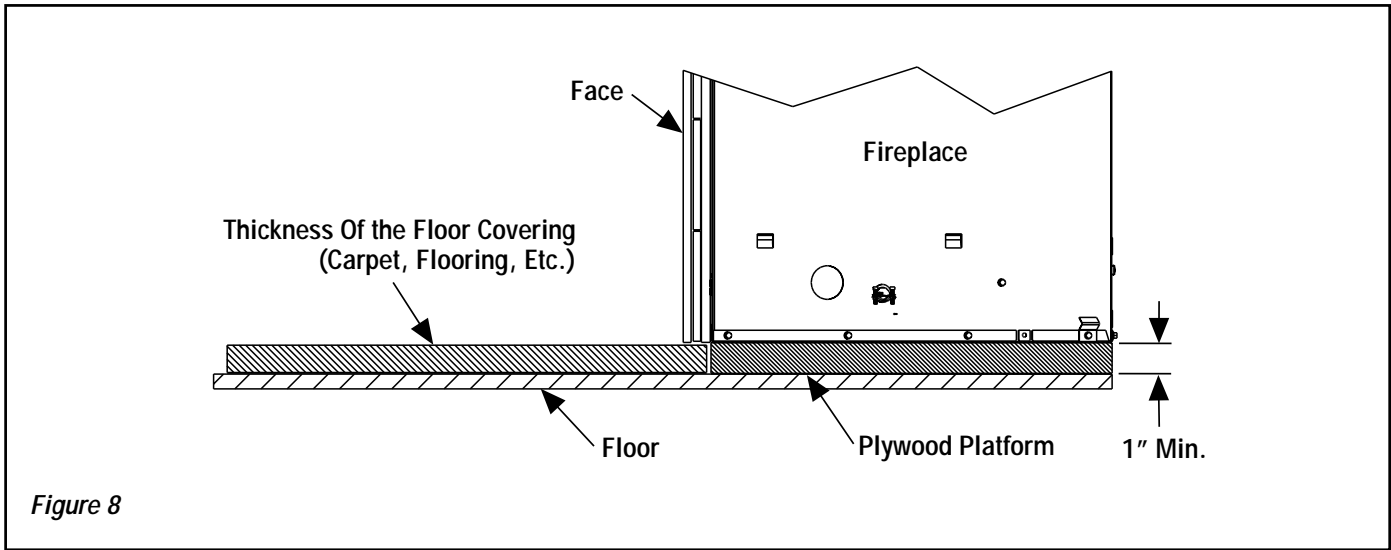


Figure 5 Corner Framing with Square Termination (SV4.5HT)

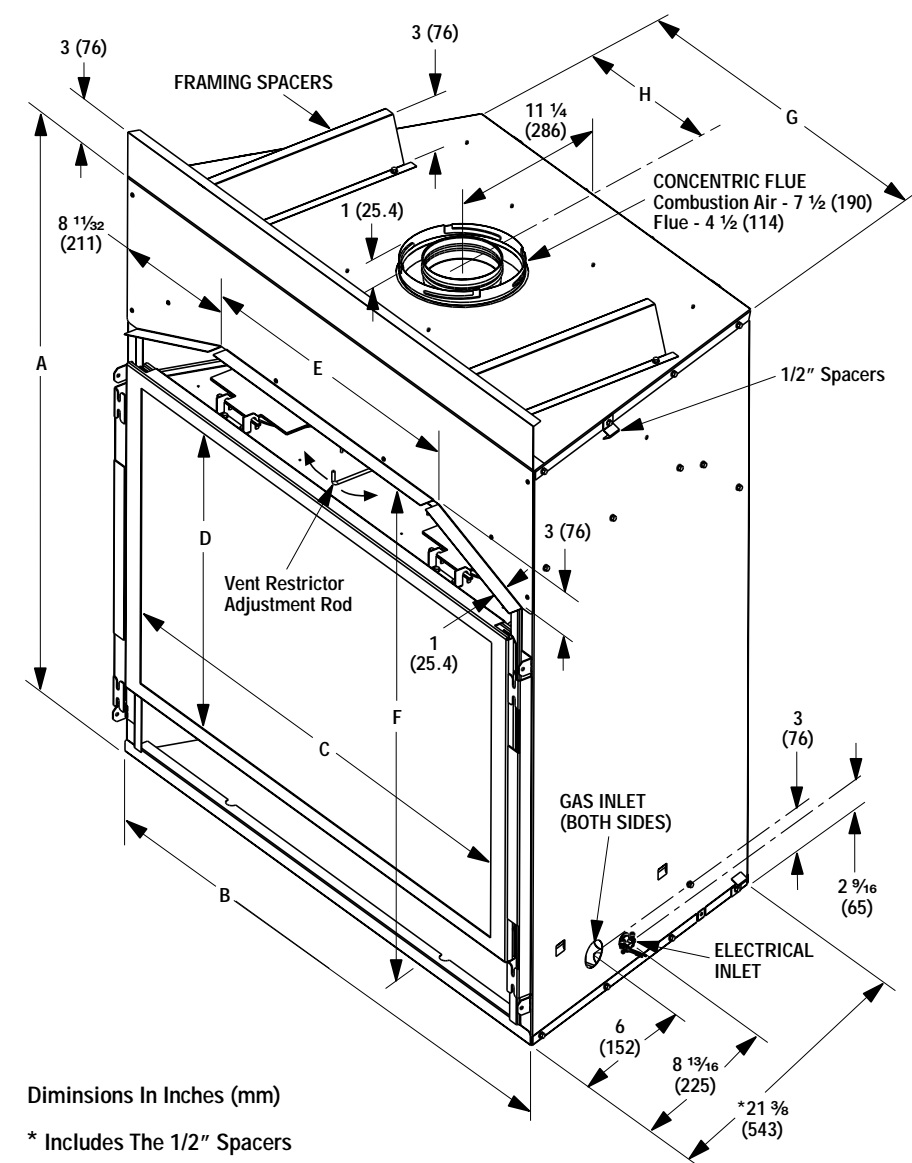
FACING REQUIREMENTS



HEARTH REQUIREMENTS



FIREPLACE SPECIFICATIONS



Model No.		A	B	C	D	E	F	G	H
LSS-35	in.	38 3/8	35 1/16	29 1/2	19	16 3/16	31 3/8	21 1/2	10 3/4
	mm	975	891	749	483	411	797	546	273
LSS-40	in.	39 7/8	40 1/16	34 1/2	20 1/2	21 3/16	32 7/8	26 1/2	13 1/4
	mm	1013	1018	876	521	538	835	673	337

Figure 10

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 11*.

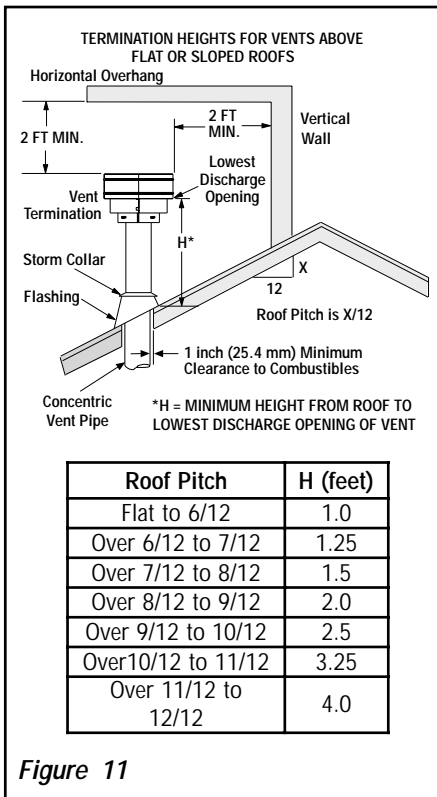
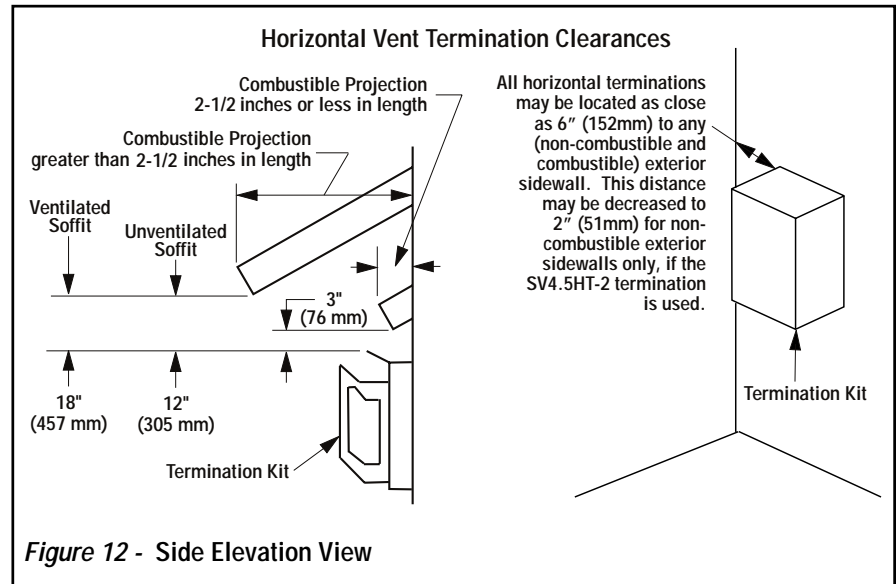


Figure 11

Terminate multiple vent terminations according to the installation codes listed at the top of this page.

Horizontal Vent Termination Clearances

The horizontal vent termination must have a minimum of 3" (76 mm) clearance to any overhead combustible projection of 2-1/2" (64 mm) or less. See *Figure 5*. For projections exceeding 2-1/2" (64 mm), see *Figure 5*. All horizontal terminations may be located as close as 6" (152mm) to any (non-combustible and combustible) exterior sidewall. This distance may be decreased to 2" (51mm) for non-combustible exterior sidewalls only, if the SV4.5HT-2 termination is used. For projections exceeding 2 1/2" (64 mm), see *Figure 12*.



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 9) Construct the appliance framing. Position the appliance within the framing and secure with nailing brackets.
- Step 2.** (page 11) Route gas supply line to appliance location.
- Step 3.** (page 11) Install the vent system and exterior termination.
- Step 4.** (page 21) Field Wiring. Install the operating control switch (not factory provided) and bring in electrical service line for forced air circulating blower.
- Step 5.** (page 21) Make connection to gas supply.
- Step 6.** (page 24) Install the ceramic panel, logs, and glowing embers.
- Step 7.** (page 24) Checkout appliance operation.
- Step 8.** (page 25) Install glass door frame assembly.
- Step 9.** (page 25) Adjust burner to ensure proper flame appearance.

DETAILED INSTALLATION STEPS

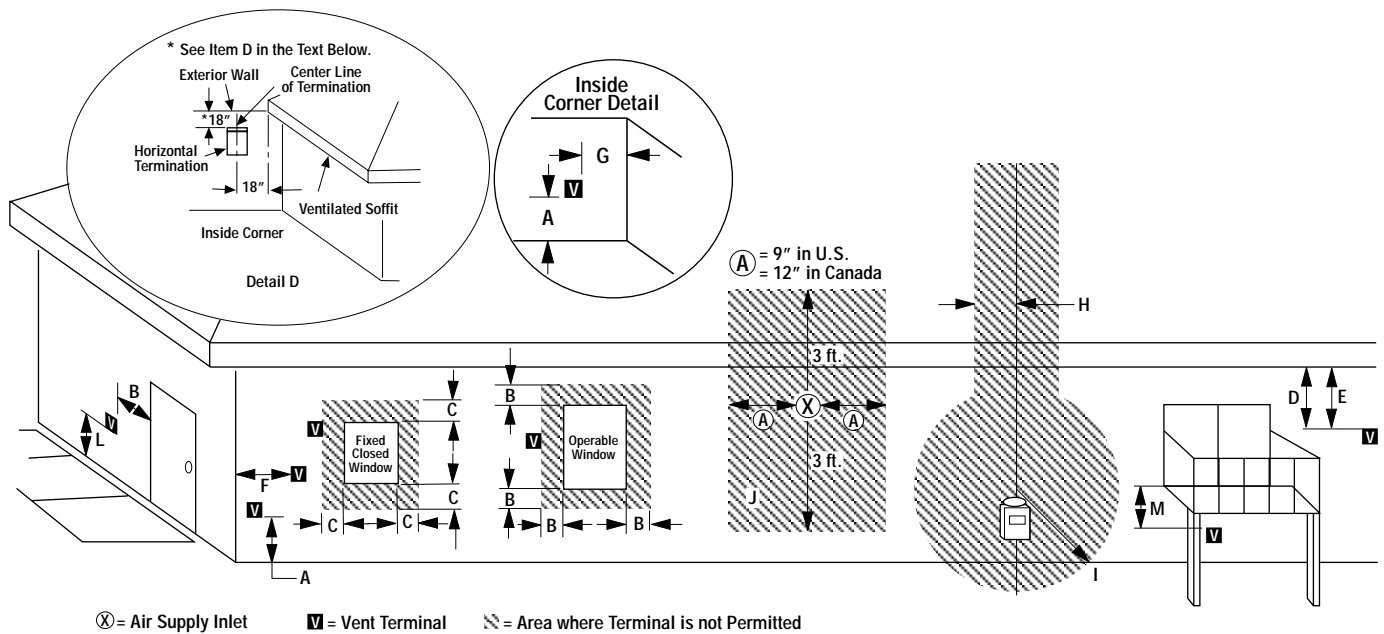
The appliance is shipped with all gas controls and components installed and pre-wired. Remove the shipping carton, exposing the front glass door. Remove ceramic panel kit from the top of the fireplace and set it aside with care. **Remove the cardboard from underneath the pressure relief plates.** Open the two latches (located under the firebox floor) securing the glass door. Remove the door by tilting it outward at the bottom and lifting it up. Set the door aside protecting it from inadvertent damage. See *Figure 46 on page 25*.

Step 1. FRAMING

Frame these appliances as illustrated in *Figure 4 on page 5*, unless the appliance is to be installed in a corner. See *Figure 5 on page 5* for corner framing installations. All framing details must allow for a minimum clearance to combustible framing members as shown in *Table 2 on page 4*. See *Figure 6 on page 6* for the facing detail.

See *Figure 7 on page 6* for the Non-Combustible requirements. See *Figures 8 and 9 on page 7* for Hearth Requirements.

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) recommended to prevent window condensation	9" (229mm) recommended 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	2" (5.08cm) minimum - SV4.5HT-2 • 6" (15.2cm) minimum - SV4.5HTSS	2" (5.08cm) minimum - SV4.5HT-2 • 6" (15.2cm) minimum - SV4.5HTSS
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)‡
<p>* In accordance with the current CSA-B149.1 National Gas And Propane Installation Code.</p> <p>** In accordance with the current ANSI SZ223.1/NFPA 54 National Fuel Gas Codes.</p> <p>‡ A vent shall not terminate directly above a sidewalk or paved driveway which is located between two single family dwellings and serves both dwellings.</p> <p>*‡ Only permitted if veranda, porch, deck or balcony is fully open on a minimum 2 sides beneath the floor:</p> <p>• 2" Clearance to Non-Combustibles for SV4.5HT-2 Only.</p>		

Figure 14

Step 2. ROUTING GAS LINE

Route a 1/2" (13 mm) gas line along the inside of the right side framing as shown in **Figure 13**. 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 1/2" inch shutoff valve. (See step 5 on page 21).

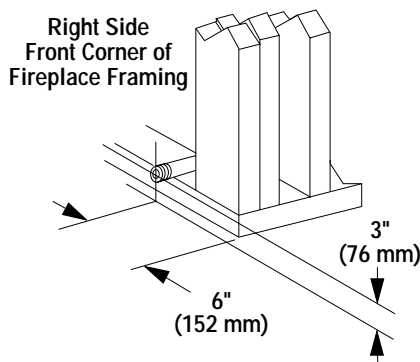


Figure 13

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.

Massachusetts And New York City, NY Requirements

These appliances are approved for installation in the following USA locations listed in the following:

Massachusetts:

Installation of these fireplaces are approved for installation in the US state of Massachusetts if the following additional requirements are met-

- Installation and repair must be done by a plumber or gas fitter licensed in the Commonwealth of Massachusetts.
- The flexible gas line connector used shall not exceed 36 inches (92 centimeters) in length.
- The individual manual shut-off must be a T-handle type valve.

New York City, NY:

Installation of these fireplaces are approved for installation in New York City in the US state of New York.

Massachusetts Horizontal Vent Requirements

In the Commonwealth of Massachusetts, horizontal terminations installed less than seven (7) feet above the finished grade must comply with the following additional requirements:

- A hard wired carbon monoxide detector with an alarm and battery back-up must be installed on the floor level where the gas fireplace is installed. The carbon monoxide detector must comply with NFPA 720, be ANSI/UL 2034 listed and be ISA certified.
- A metal or plastic identification plate must be permanently mounted to the exterior of the building at a minimum height of eight (8) feet above grade and be directly in line with the horizontal termination. The sign must read, in print size no less than one-half (1/2) inch in size, GAS VENT DIRECTLY BELOW. KEEP CLEAR OF ALL OBSTRUCTIONS.

These fireplaces must be vented directly to the outside.

Some local jurisdictions may require the gap between the outer wall of the vent system and the firestop penetration opening to be sealed. This is not a requirement of the listing of this product, however this gap may be sealed using aluminized tape or similar non-combustible material.

The vent system may 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 enclosing wall (such as a chase). There is no requirement for inspection openings in the enclosing wall at any of the joints in the vent pipe.

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 15, and Figures 25 through 27 on pages 12 and 15 and their associated Vertical Vent Tables illustrate the various vertical venting configurations that are possible for use with these appliances. **Secure Vent** pipe applications are shown in these figures; **Secure Flex** pipe may also be used. 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. The minimum vent height above the roof and/or adjacent walls is specified in ANSI Z223.1-(latest edition) (In Canada, the current CAN-1 B149 installation code) by major building codes. Always consult your local codes for specific requirements. A general guide to follow is the Gas Vent Rule (refer to **Figure 11** on page 9).

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

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

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 joint does not occur at the intersection of ceiling or roof joists. Refer to the Vent Section Length Chart on this page.

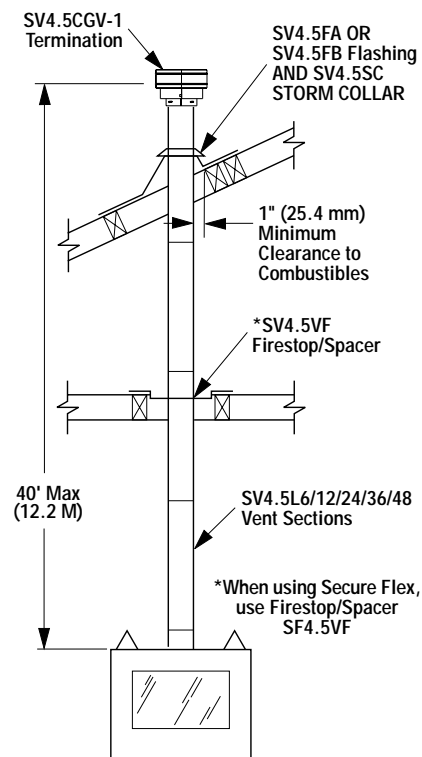


Figure 15

Vertical (Offset) Installation

Analyze the vent routing and determine the quantities of vent sections and number of elbows required. Refer to **Vertical Vent Figures and Tables on page 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 this page** for an aid in selecting length combinations. Elbows are available in 90° and 45° configurations. Refer to **Figure 20** 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 16*).

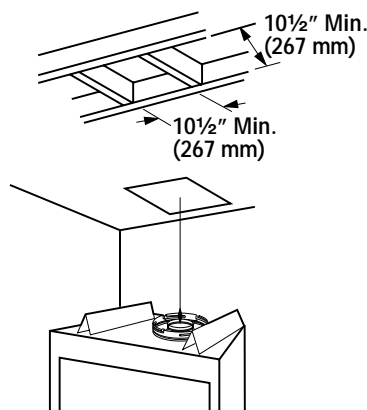


Figure 16

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 17*).

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.

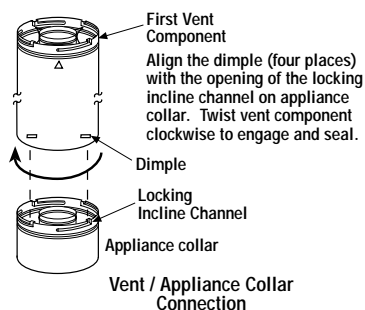


Figure 17

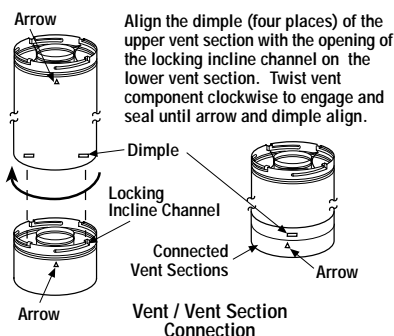


Figure 18

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 17*). 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 18*.**

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.

E. Support the vertical vent run sections - Support the vertical portion of the venting system every 8 feet (2.4m) above the fireplace vent outlet using 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 19*.

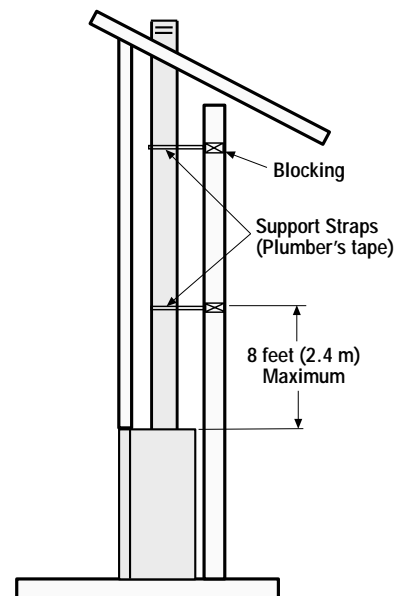


Figure 19

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 20*.

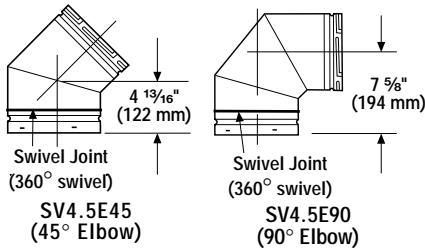
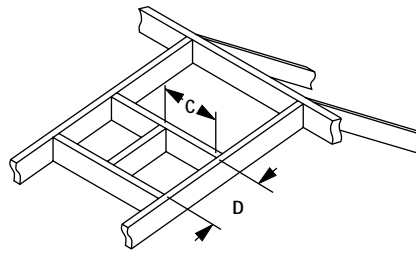


Figure 20

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' (1.52 m) along horizontal/inclined vent runs using conventional plumber's tape. **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.

H. Frame roof opening - Identify location for vent at the roof. Cut and/or frame opening per Roof Framing Chart and *Figure 21*.



Framing Dimensions for Roof

Pitch	C	D
0/12	10-1/2 in. (267 mm)	10-1/2 in. (267 mm)
6/12	10-1/2 in. (267 mm)	12 in. (305 mm)
12/12	10-1/2 in. (267 mm)	17-3/4 in. (451 mm)

Figure 21

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 22*). 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.

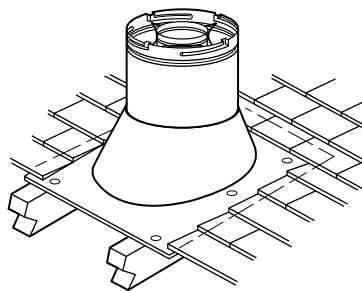


Figure 22

J. Install the storm collar - Install the storm collar, supplied with the flashing, over the vent/flashing joint. See *Figure 23*. 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.

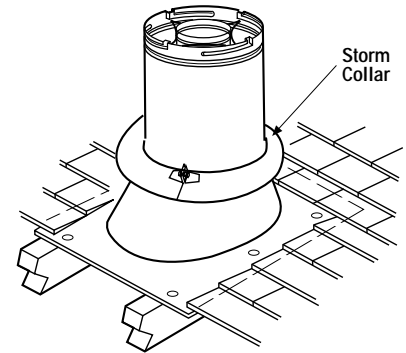


Figure 23

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 9**. The SV4.5CGV-1 Vertical Termination (*Figure 24*) installs 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 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 seat at the end of the channels.

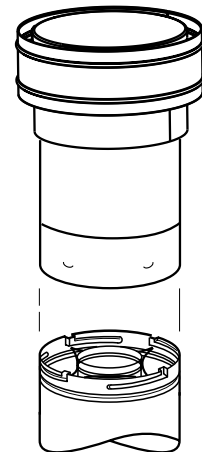


Figure 24

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.

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.

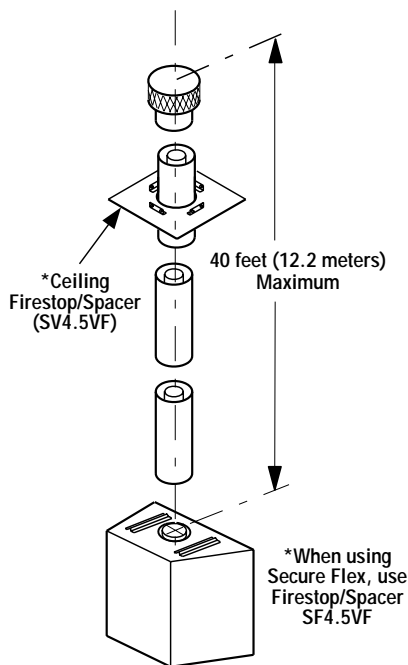


Figure 25 - Top Vent - STRAIGHT

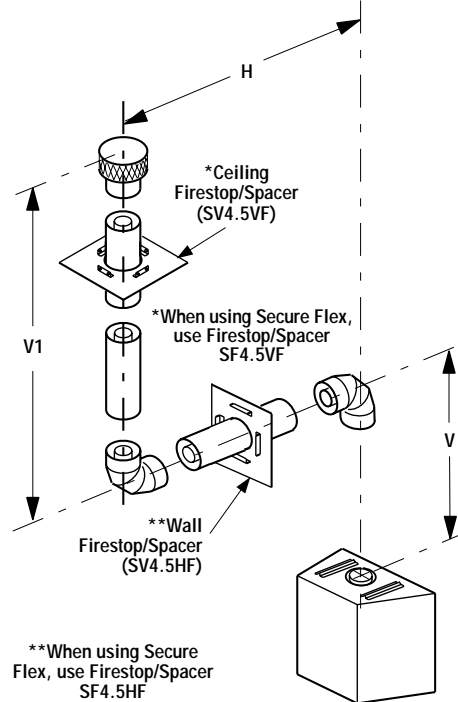


Figure 26 - Top Vent - TWO 90 DEGREE ELBOWS

TABLE A			
V MINIMUM		H Maximum	
feet	(meters)	feet	(meters)
*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 + V ₁ + H = 40 feet (12.4 m) Max. H = 20 feet (6.2 m) Max.			

*When developing chimney systems with horizontal runs (H) that end with a vertical run (V1), it is allowable to use an elbow attached directly to the top collar. Count the elbow attached to the collar as 1 foot of (V) run.

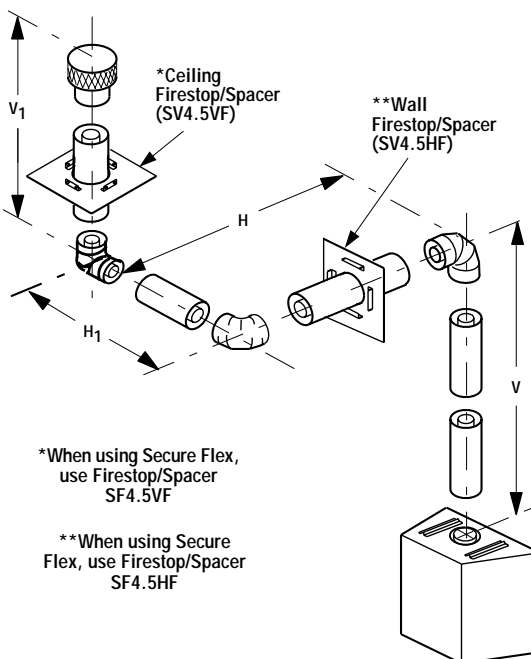


Figure 27 - Top Vent - THREE ELBOWS

TABLE B			
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.			

HORIZONTAL (OUTSIDE WALL) TERMINATION SYSTEM

Figure 28, and Figures 31 to 33 on pages 16, 18 and 19 and their associated Horizontal Vent Table illustrate the various horizontal venting configurations that are possible for use with these appliances. **Secure Vent** pipe applications are shown in these figures; **Secure Flex** pipe may also be used. 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 14 on page 10** for location guidelines.

Secure Vent SV4.5 direct vent system components are unitized concentric pipe components featuring positive twist lock connection, (refer to **Figure 17 on page 13**). 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. Plan the vent lengths so that a joint does not occur at the intersection of ceiling or roof joists. Make allowances for elbows as indicated in **Figure 20 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 **Figure 4 on page 5**. Cut and/or frame an opening, 10-1/2" x 12-1/8" (267 mm x 267 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 16 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 17 on page 13**).

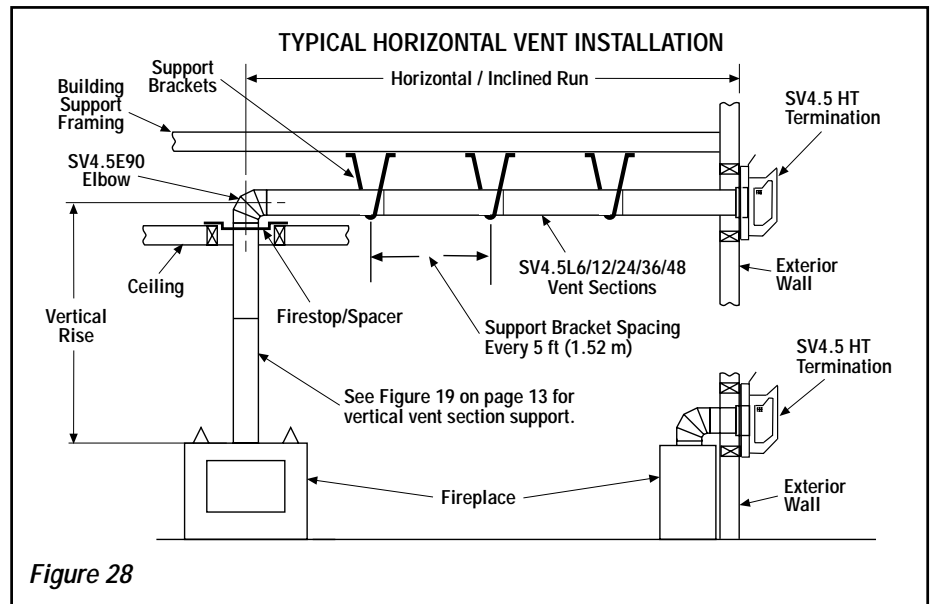


Figure 28

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 18 on page 13.**

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.

G. Support the vertical run sections - See Section E on page 13.

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 20.**

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 28**. **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

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 5 in. (127 mm) to 9-1/4 in. (235 mm) inboard of the exterior surface to which the termination is to be attached, see **Figure 30**. 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 30**, 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 29** 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 29**, and nail into place. (The Firestop/Spacer may also be installed over the opening at the interior side of the framing).

1. Install the square termination (SV4.5HT-2) - For the last step, from outside the exterior wall, slide the collars of the termination onto the adapter (the outer over the outer and the inner inside the inner) 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.

Orient the housing of the termination with the arrow pointed upwards. Secure the termination to the exterior wall.

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. The SV4.5HRK14 and SV4.5HRK36 are for rigid vent pipe.

IMPORTANT: The vent termination is hot while in operation and for a period of time following use of the fireplace. To prevent contact with hot surfaces, we recommend the use of a Termination Guard. This can be purchased at your local dealer.

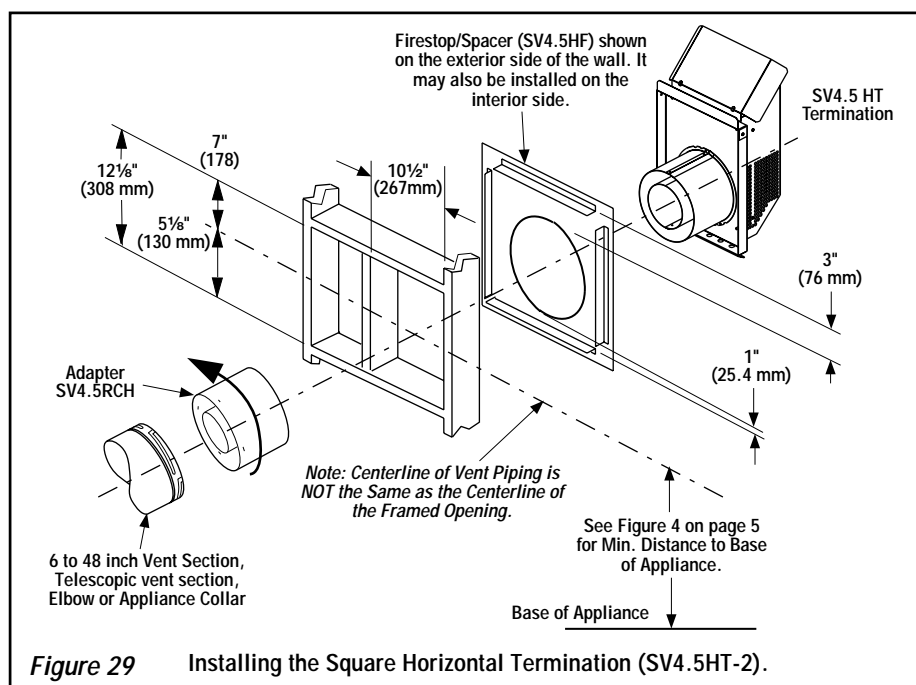


Figure 29 Installing the Square Horizontal Termination (SV4.5HT-2).

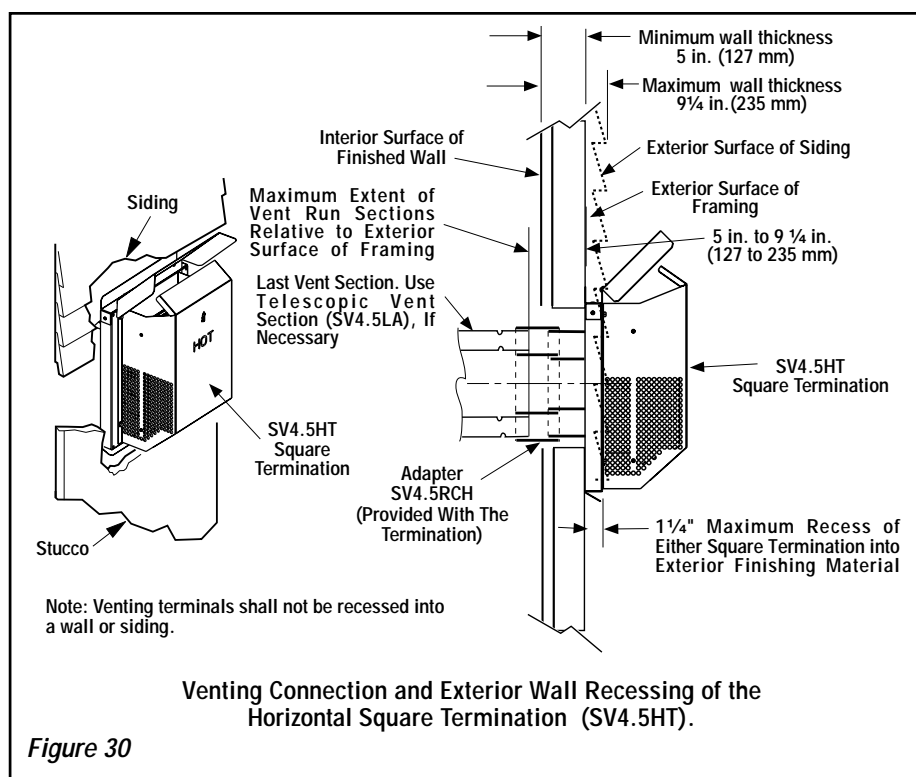


Figure 30

Horizontal terminations have been designed to perform in a wide range of weather conditions. Our terminations meet or exceed industry standards.

When selecting the locations of your horizontal terminations, do not place the termination where water from eaves and adjoining rooflines may create a heavy flow of cascading water onto the termination cap. If the cap must be placed where the possibility of cascading water exists, it is the responsibility of the builder to direct the water away from the termination cap by using gutters or other means.

Take care to carefully follow the installation instructions for the termination, including the use of silicone caulking where required.

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: 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.

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.

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

Venting Components Required	Exterior Wall Thicknesses inches (mm)
Termination Kit Only	5 to 9 1/4 (127 to 235)
Termination Kit and 6 in. vent section (SV4.5L6)	9 1/4 to 13 3/4 (235 to 349)
Termination Kit and 12 in. vent section (SV4.5L12)	15 3/4 to 19 3/4 (400 to 502)
Termination Kit and Telescopic section (SV4.5LA) and 6 in. vent section (SV4.5L6)	10 3/4 to 20 3/4 (273 to 527)

TABLE C			
V Minimum		H Maximum	
feet	(m)	feet	(m)
1	(0.305)	3 1/4	(1.68)
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-2) shown.

**When using Secure Flex, use Firestop/Spacer SF4.5VF

*When using Secure Flex, use Firestop/Spacer SF4.5HF

**Wall Firestop/Spacer (SV4.5HF)

*Ceiling Firestop/Spacer (SV4.5VF)

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

Figure 31 - Top Vent - ONE 90 DEGREE ELBOW - ELBOW CONNECTION NOT DIRECTLY AT APPLIANCE

HORIZONTAL VENT FIGURES/TABLES (continued)

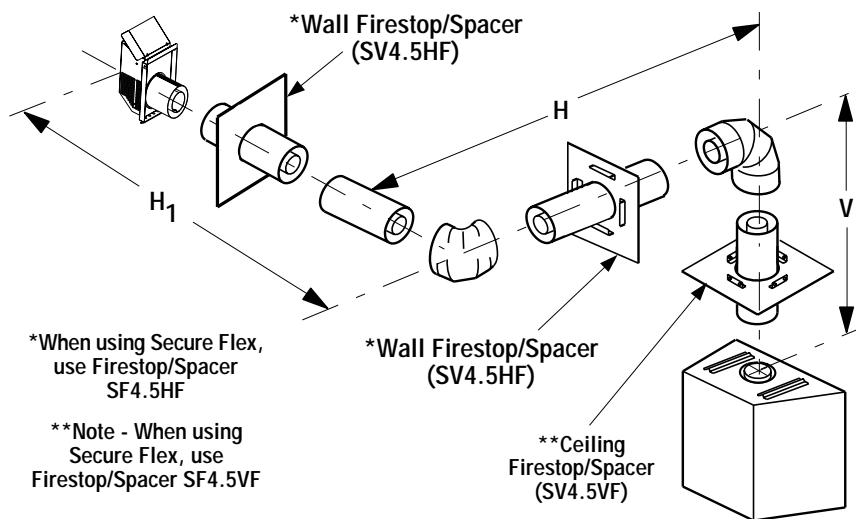


TABLE D			
V MINIMUM		H + H ₁ Maximum	
feet	(m)	feet	(m)
1	(0.305)	3 1/4	(1.68)
2	(0.610)	10	(3.1)
3	(0.914)	15	(4.65)
4	(1.22)	20	(6.2)
V + H + H ₁ = 40 feet (12.4 m) Max. H + H ₁ = 20 feet (6.2 m) Max.			

Square termination (SV4.5HT-2) shown.

See Table 3 on page 18 as an aid in venting component selection for a particular range of exterior wall thicknesses.

Figure 32 - Top Vent - TWO 90 DEGREE ELBOWS

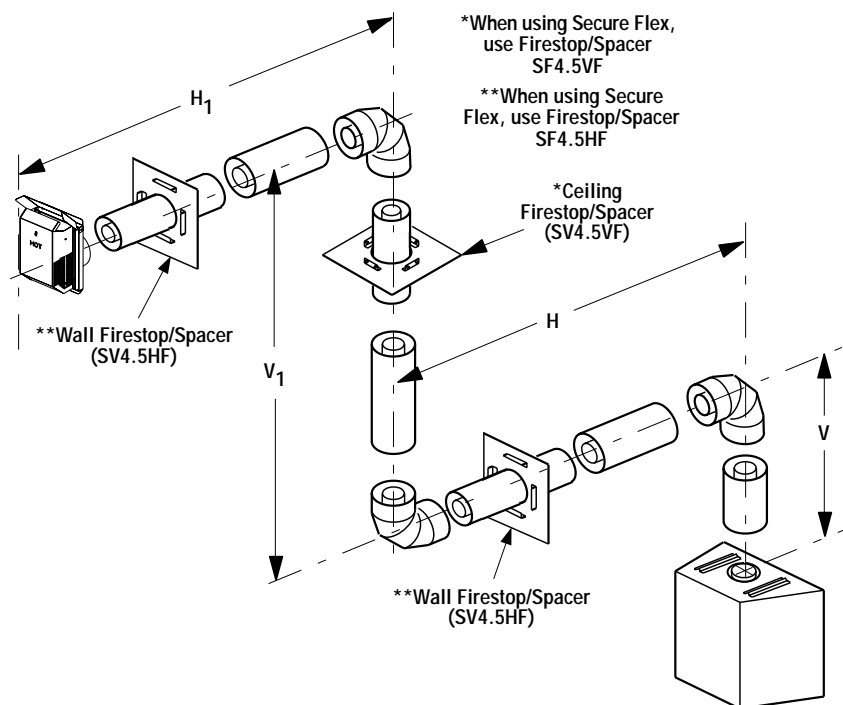


TABLE E			
V MINIMUM		H Maximum	
feet	(m)	feet	(m)
1	(0.305)	3 1/4	(1.68)
2	(0.610)	10	(3.1)
3	(0.914)	15	(4.65)
4	(1.22)	20	(6.2)
V + V ₁ + H + H ₁ = 40 feet (12.4 m) Max. H + H ₁ = 20 feet (6.2 m) Max.			

Square termination (SV4.5HT-2) shown.

See Table 3 on page 18 as an aid in venting component selection for a particular range of exterior wall thicknesses.

Figure 33 - Top Vent - THREE 90 DEGREE ELBOWS

VERTICAL OR HORIZONTAL VENTING USING **SECURE FLEX** KITS AND COMPONENTS

Secure Flex venting kits and components may be used in any venting application where rigid **Secure Vent** (SV4.5) direct vent components can be used. 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. **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 included adapter that can be fitted to the appliance collar or 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 34*):

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 1/2 inches 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 1 3/4 inch 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 3/4 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.

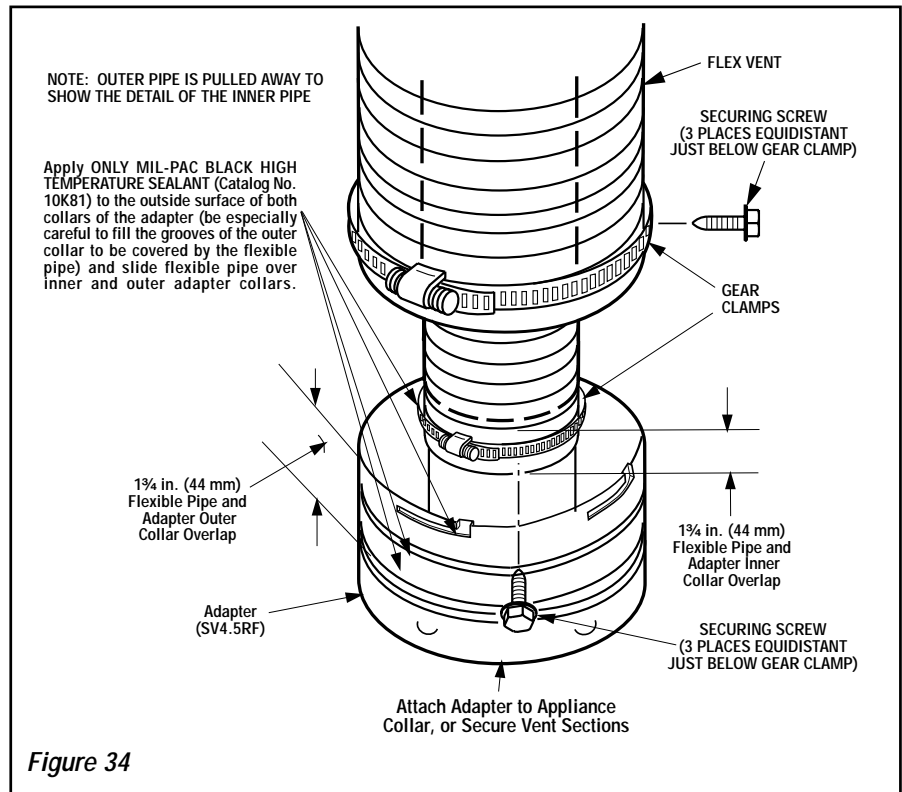


Figure 34

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.
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 1 3/8 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 1 3/4 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 3/4 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 35*. Support horizontal sections of flex with metal straps at 2 foot (0.61 m) intervals.

SF-12 or SF-18 Flexible Vent Section

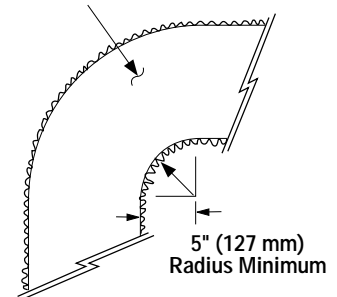


Figure 35

D. 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. When using this method connect the flex vent only to **Flex Vent** terminations, not **Secure Vent** terminations. Secure the flexible vent to the **Secure Flex** terminations in the same manner (see *Figure 34*) 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 circumference 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.

Step 4. FIELD WIRING

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

The junction box assembly is located inside the control compartment close to the front right side corner (see **Figure 36**). This junction box contains a standard electrical junction box, pre-wired duplex receptacle, a cover plate and a conduit fitting (clamp connector). If desired, the whole junction box assembly may be moved to the left hand side of the control compartment. A knock-out is provided on the cabinet wrapper for positioning.

1. Route a 3-wire 120Vac 60Hz 1 ph power supply to the appliance.
2. Remove the metal cover plate and the duplex receptacle from the junction box assembly.
3. From the outside of the fireplace, loosen clamp screws on the conduit fitting. Run power supply wires (including the ground supply wire) through conduit fitting. Tighten mounting nut of conduit fitting.
4. Connect the power supply wires to the duplex receptacle as shown in **Figure 37**.
5. Reassemble duplex receptacle and cover plate on junction box. Tighten conduit fitting clamp screws to secure supply wires.
6. Insert the control circuit plug from the gas valve into the duplex receptacle.

WARNING: THIS APPLIANCE IS EQUIPPED WITH A THREE-PRONG (GROUNDING) PLUG FOR YOUR PROTECTION AGAINST SHOCK HAZARD AND SHOULD BE PLUGGED DIRECTLY INTO A PROPERLY GROUNDED THREE-PRONGED RECEPTACLE. DO NOT CUT OR REMOVE THE GROUNDING PRONG FROM THIS PLUG.

Step 5. CONNECTING GAS LINE

Make gas line connections. All codes require a shut-off valve mounted in the supply line. **Figure 38** 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.

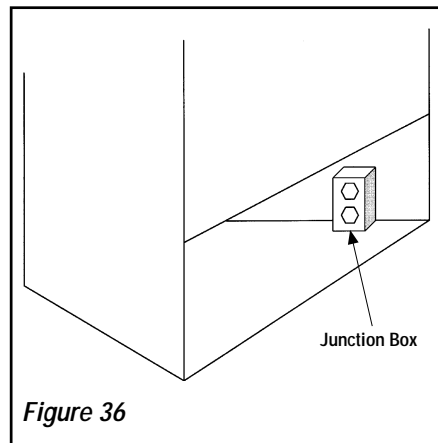


Figure 36

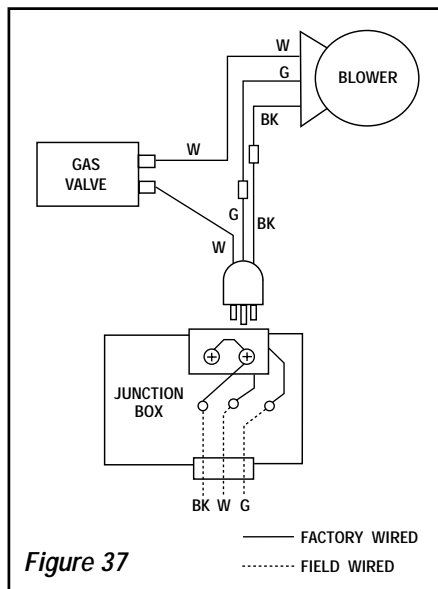


Figure 37

The gas flex line can only be used where local codes permit. See **Figure 38** 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 (refer to **Figure 44**). The RF control millivolt valve has a 1/2" (13 mm) NPT thread inlet port.

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 gas leak test solution (also referred to as bubble leak solution).

Note: Using a soapy water solution (50% dish soap, 50% water) is an effective leak test solution but it is not recommended, because the soap residue that is left on the pipes/fittings can result in corrosion over time. **Never use an open flame to check for leaks.**

A. Light the appliance (refer to the lighting instructions label in the control compartment or in the Homeowner's Care and Operation Instructions).

B. Brush all joints and connections with the gas leak test 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.

C. When the gas lines are tested and leak free, be sure to rinse off the leak testing solution.

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.

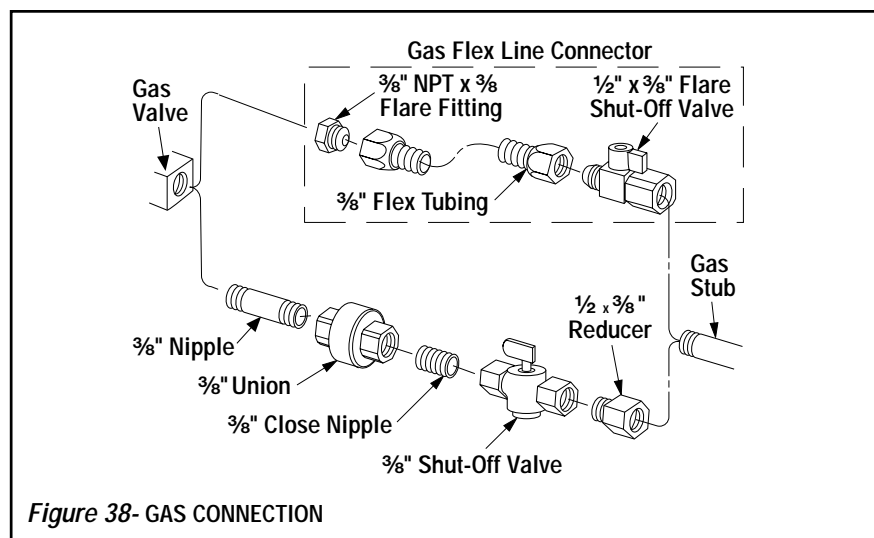


Figure 38- GAS CONNECTION

INSTRUCTIONS FOR RF COMFORT CONTROL VALVE

The Comfort Control Valve allows remote control of temperature, fan and flame appearance.

Note: The antenna should hang in free air and away from any grounded metal.

Operation (refer to Figure 39)

Step 1. If the manual switch is in the remote position, switch it to LOCAL.

Step 2. Turn the Pilotstat knob counterclockwise from OFF to the PILOT position, push the knob down and hold it in position. The pilot valve will open and allow gas to flow to the pilot burner.

Step 3. Actuate the plunger on the piezo (several times if necessary) until the pilot burner is lit. When the pilot burner is lit, the LED on the control will come on after approximately 40 seconds. The receiver/valve is fully powered.

Step 4. Release the knob. The shaft will move forward. The pilot burner should now stay burning. If the pilot burner goes out, repeat Steps 2 and 3.

Step 5. Turn the knob counterclockwise to the ON position. If the manual switch is in the LOCAL position, the main burner will turn on immediately.

Step 6. ON the initial use of a transmitter, a recognition operation is required between the receiver/valve and transmitter. Change the switch from LOCAL to REMOTE. Press the fan or flame button on the transmitter within 30 seconds. The LED will blink indicating the transmitter will now work with the receiver/valve. If the switch continues in the REMOTE position, the transmitter will now control the main valve, flame modulation level and fan control.

Step 7. If the manual switch is in the LOCAL position, the valve will be at the highest fixed pressure setting. The transmitter will control the fan only.

Shut Off Procedure

If the manual switch is in the REMOTE position, the transmitter can shut off the main burner and fan. However, the control is still on and a command from the transmitter can turn on the main burner or fan.

To shut off the system, turn the pilotstat knob clockwise to the OFF position. This action closes the main gas and safety valves. The transmitter now cannot turn on the main burner or fan.

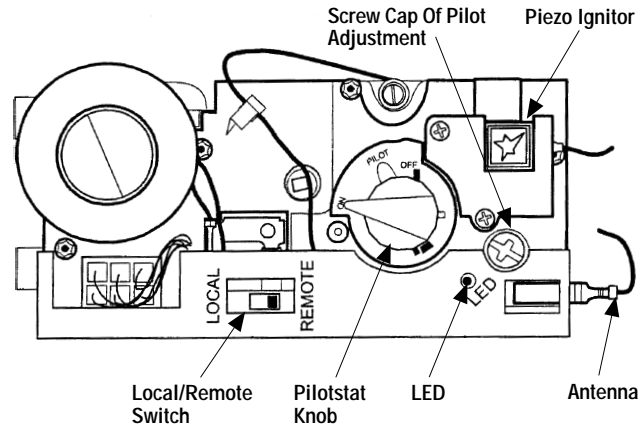


Figure 39

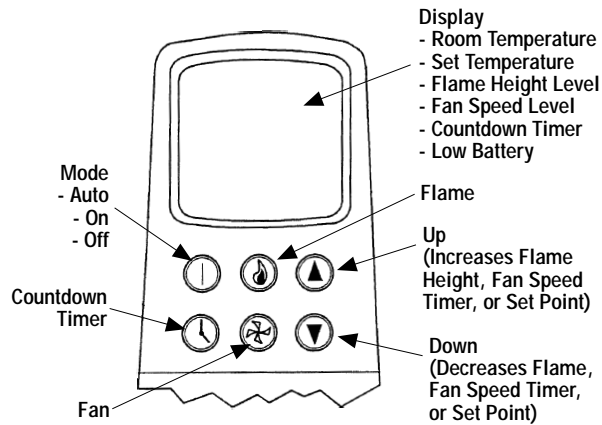


Figure 40

TRANSMITTER OPERATION - (refer to Figure 40)

Off Mode

In the OFF mode, the fireplace flame and fan are off, the display will show OFF and displays the room temperature. If the receiver is in REMOTE mode, the fireplace will shut off.

On (Manual) Mode

In the ON mode, the room temperature, flame and fan levels will be shown. MANUAL will appear next to both the flame and fan icons.

When the control is in the ON mode, the flame and fan levels, and the delay timer are changed with the up and down buttons. To change the flame level, press the flame button followed by an arrow key. To change the fan level, press the fan key followed by an arrow key. Pushing the arrow key once will change the level by one unit.

Delay Timer Mode

The shut off delay timer has a maximum of 2 (two) hours and a minimum of 0 (zero) minutes. To change the timer level, press the time key followed by an arrow key. Pushing the key once will change the timer by 10 (ten) minutes.

Auto Mode

In the AUTO mode, the room temperature, set temperature, flame and fan levels will be shown. AUTO will appear next to both the flame and fan icons.

When the control is in the AUTO mode, the main burner will turn on/off or modulate based on the heat needed to maintain the set temperature. The flame level will change automatically to optimize the heat output needed to maintain the set temperature. To change the set temperature, press the up or down key. Pushing a key once will change the temperature by 1 (one) degree. The setting temperature range from 40° F (4.5° C) to 90° F (32.0° C).

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

In the AUTO mode, the fan speed will increase with increasing flame height or decrease with decreasing flame height. "AUTO" is displayed next to the flame and fan icons.

Fan Override During Auto Mode

If a lower or higher fan speed is desired when operating in the AUTO mode, the fan speed can be overridden by pushing the fan button followed by the up or down key.

Pushing a key once will change the fan level by one unit. In this mode "AUTO" is displayed next to the flame icon and "MANUAL" is displayed next to the fan icon.

Change Between F/C Temperature Units

Push the up and down arrow keys simultaneously for at least 3 seconds to toggle between Fahrenheit and Celsius units.

Disable Thermostat Function

To disable the thermostat function in the AUTO mode, push the time and down key simultaneously for at least 3 seconds.

To Change Batteries

1. Remove cover on the backside of the transmitter. Install 3 AAA batteries as shown inside the cover and reattach the cover.

2. Once steps 1 thru 3 in OPERATION are completed, receiver/valve and transmitter are now ready. Press any button on transmitter for recognition process to occur between the receiver/valve and transmitter.

3. Use functions as described in TRANSMITTER section.

Troubleshooting

Step 1. Locate LED light on valve.

Step 2. LED will blink after every valid command received by the transmitter; this is not an error.

Step 3. Failure codes may occur anytime after pilot burner is lit.

Step 4. Sequence is failure code followed by light not blinking for 4 seconds.

Step 5. In the event of multiple failure codes, next failure code follows previous failure code by approximately 3 seconds

If an Error Code 3 is observed while performing the testing, complete the following:

Step 1. Make sure the spade connectors are pushed all the way on. If the Error Code 3 is still showing, then go to the next step.

Step 2. Switch the front two thermopile leads with the back two. Be sure the lead is connected to the spade with the white dot next to it (see **Figure 41**). If the Error Code 3 is still showing, replace the thermopiles.

If an Error Code 8 is observed while performing the testing, complete the following:

Step 1. Confirm that the valve is not in REMOTE mode.

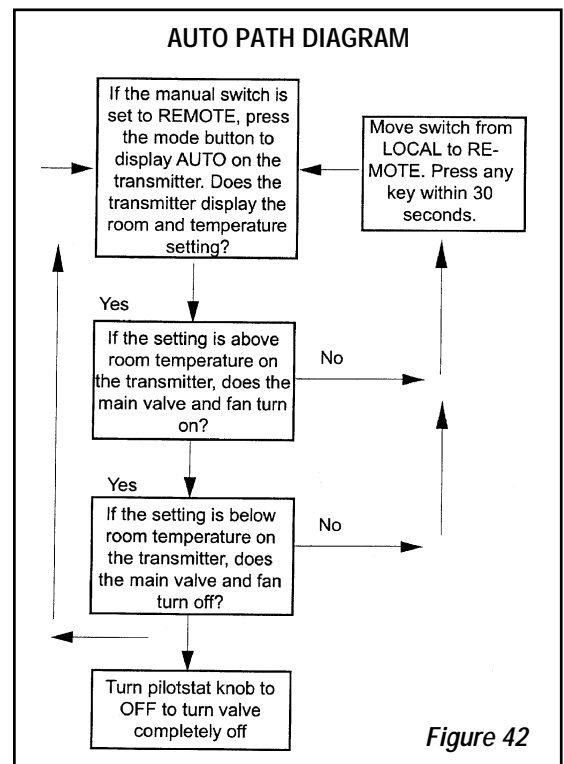
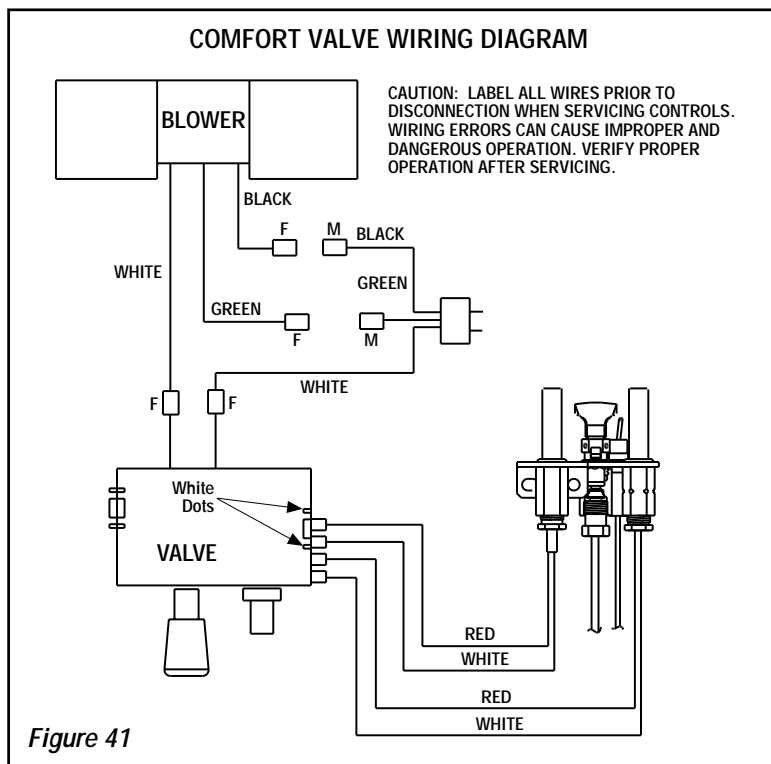
- If the valve is producing Error Code 8 and in REMOTE mode, the valve is defective and should be replaced.

- If the valve is in LOCAL mode and producing Error Code 8, then go to the next step.

Step 2. Slide the Remote/Local switch to REMOTE and reprogram valve recognition (refer to in **Operation** section). The Error Code will clear itself after approximately 1 1/2 minutes and return to normal operation.

LED Failure Code (Number Of Blinks)	Service Action
8	Replace valve
7	Confirm stepper motor connection exists
5	Confirm fan connection exists and works
4	Confirm gas type; jumper in place
3	Replace thermopiles
2	Turn fan ON
1	No action required

NOTE: Some keys are not active. This is normal.



Comfort Valve System Control Sequence Of Operation With Transmitter

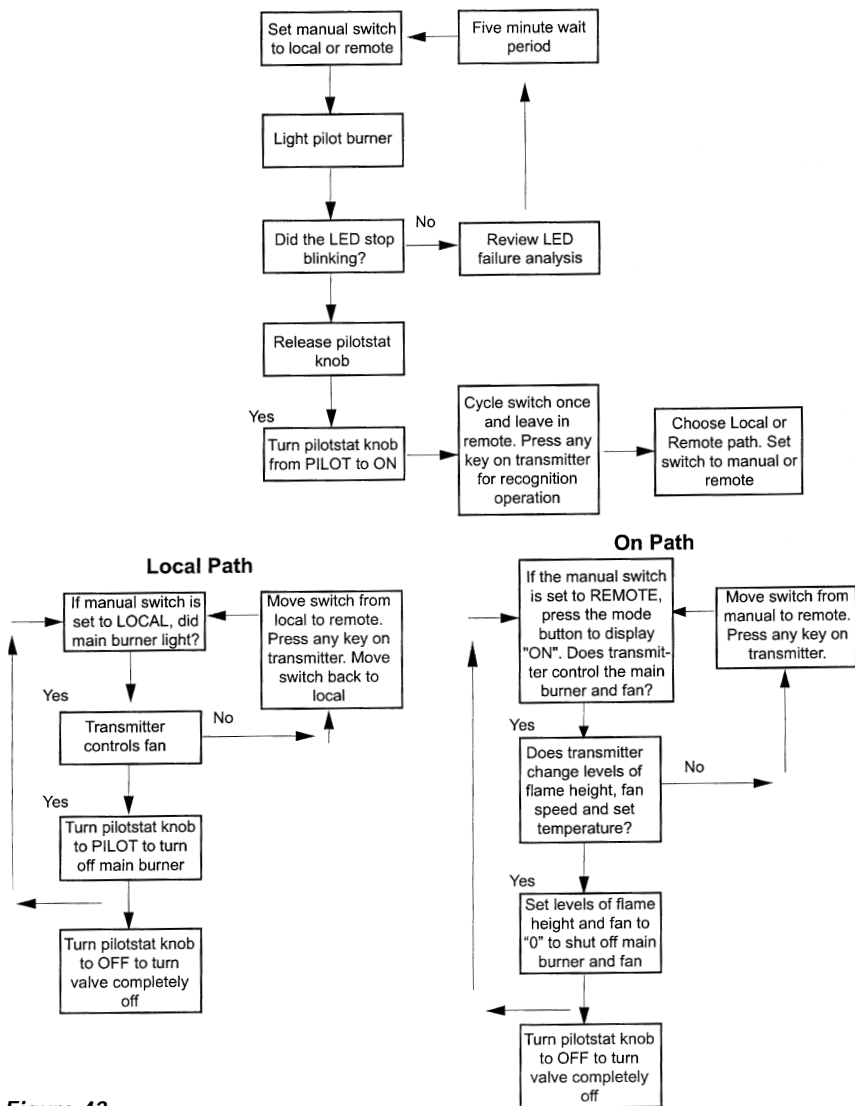


Figure 43

Step 6. INSTALLING CERAMIC PANEL, LOGS AND GLOWING EMBERS

The packaged logs are located within the firebox. The glowing embers are packaged separately in plastic bags located in the control area of the fireplace. Refer to the **Log Placement Guide** for detailed placement instructions for ceramic panel, logs and glowing embers (rockwool).

Step 7. CHECKING APPLIANCE OPERATION

With gas line installed run initial system check-out 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 44**.

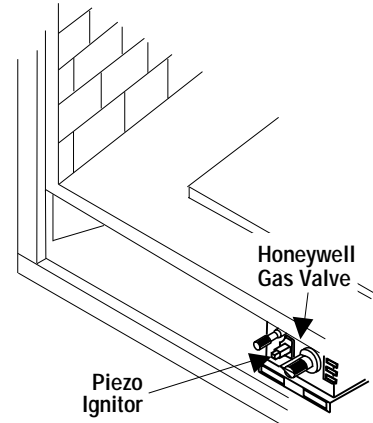
Note: Instructions are also found on the literature tag attached to the gas valve train.

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).

Honeywell RF Control Millivolt Appliance Pilot Checkout

Pilot Inspection

To obtain proper operation, it is imperative that the pilot and burner's flame characteristics are steady, not lifting or floating (see **Figure 45**).



Honeywell RF Control Millivolt Gas Valve Showing Piezo Ignitor Location

Figure 44

Typically, the top 3/8" of the thermopile should be engulfed in the pilot flame (**Figure 45**).

To adjust pilot burner; (by a qualified service technician), refer to **Figure 39**.

1. Remove pilot adjustment screw cap.
2. Adjust pilot screw to provide properly sized flame.
3. Replace pilot adjustment screw cap.

The primary air shutter is set at the factory and should only be adjusted, if necessary, by a qualified service technician.

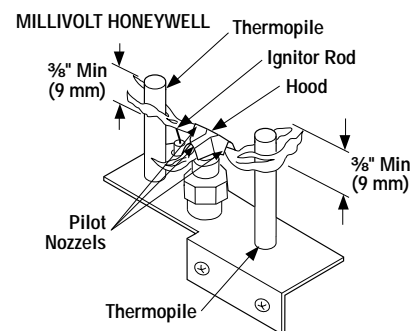


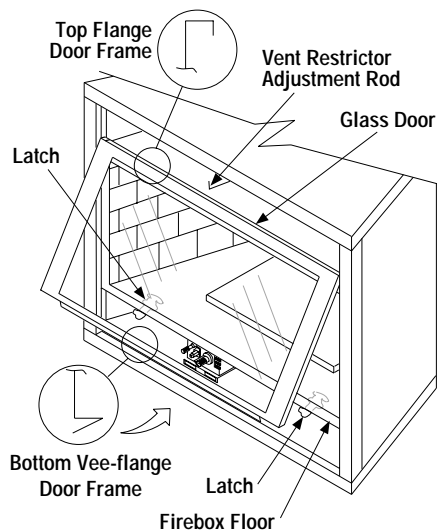
Figure 45

Step 8. INSTALLING THE GLASS DOOR

Retrieve the glass door. Visually inspect the gasket on the backside of the frame. Gasket surface must be clean, free of irregularities and seated firmly.

Position the door in front of the firebox opening with the bottom of the door held away from the fireplace (**Figure 46**). Hook the top flange of the door frame over the top of the firebox frame.

Let the bottom of the door frame swing gently in towards the fireplace ensuring that the gasket seats evenly as the door frame draws shut. Fasten the two latches located underneath the firebox floor to the door's vee-flange. Close both the latches securely.



INSTALLING THE GLASS DOOR

Figure 46

WARNING: HANDLE THIS GLASS WITH EXTREME CARE! THE GLASS PANEL IS SUSCEPTIBLE TO DAMAGE—DO NOT SCRATCH WHILE HANDLING OR WHILE RE-INSTALLING THE GLASS DOOR FRAME.

WARNING: DO NOT OPERATE APPLIANCE WITH THE GLASS FRONT REMOVED, CRACKED OR BROKEN. REPLACEMENT OF THE GLASS SHOULD BE DONE BY A LICENSED OR QUALIFIED SERVICE PERSON.

Step 9. 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 develop.

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 logs if flames impinge on any of them. If the logs are 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.

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

IMPORTANT: ENSURE THAT THE FRONT GLASS PANEL IS IN PLACE AND SEALED DURING ADJUSTMENT.

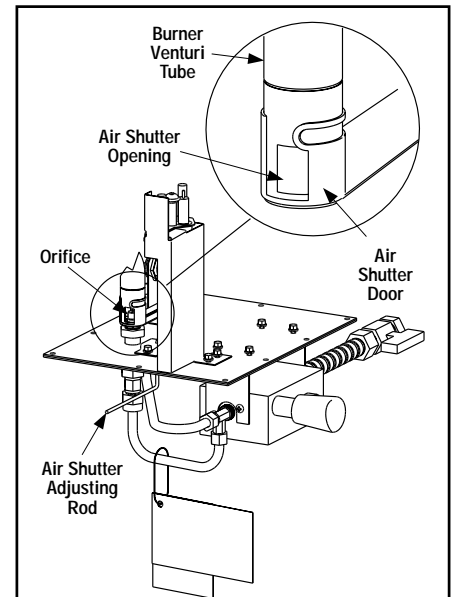
Burner Adjustment

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

To adjust the flame, rotate the air shutter adjustment rod toward the back or toward the front of the fireplace (rod located in the lower control area). Position the air shutter to the factory setting as shown in the Table of **Figure 47**. 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 pushing or pulling on the adjustment rod until the flame appearance is as desired.

The air shutter 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 30 minutes after each adjustment.

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.



Models	Gas Type	FACTORY AIR SHUTTER SETTING OPENING inches (mm)
LSS-35	Nat.	1/2 (13.0)
	Prop.	5/8 (15.8)
LSS-40	Nat.	1/2 (13.0)
	Prop.	5/8 (15.8)

Figure 47

Vent Restrictor

The appliance has a built-in vent restrictor, refer to **Figure 46** for location, to adjust the flow of exhaust gases. This ensures proper combustion for all vent configurations. Depending on the vent configuration, you may be required to adjust the restriction position. See below for guidelines.

CAUTION: THE FIREPLACE NEEDS TO BE ON DURING THE ADJUSTMENT OF THE VENT RESTRICTOR. USE A GLOVE TO PROTECT YOUR HAND FROM BURNS.

Venting Configuration	Adjustment Rod Position
1. Horizontal Venting with 6" vent section and one 90° elbow.	* Pointed toward the front.
2. Vertical venting.	* Pointed toward the left.
3. Combination of vertical and horizontal venting.	* Adjust accordingly for best result.

* Adjustment to the air shutter may be required to get the desired flame appearance, (refer to **Figure 47**).

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 (*Figure 48*).

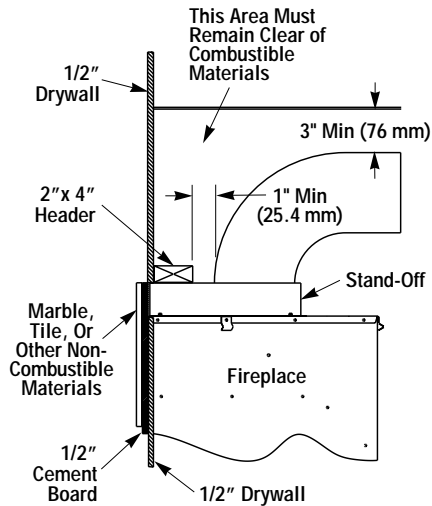


Figure 48

Combustible materials may project beyond the sides of the fireplace opening as long as they are kept within the shaded areas illustrated in *Figure 49*.

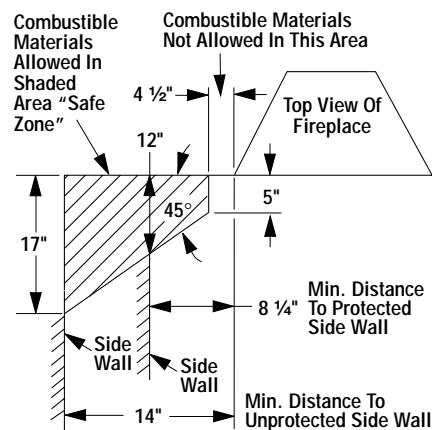


Figure 49

Note: Never allow combustible materials to be positioned in front of or overlapping the appliance front face. See *Figure 48* and refer to *Figure 7* on page 6.

MANTEL CLEARANCES

Inches (mm)

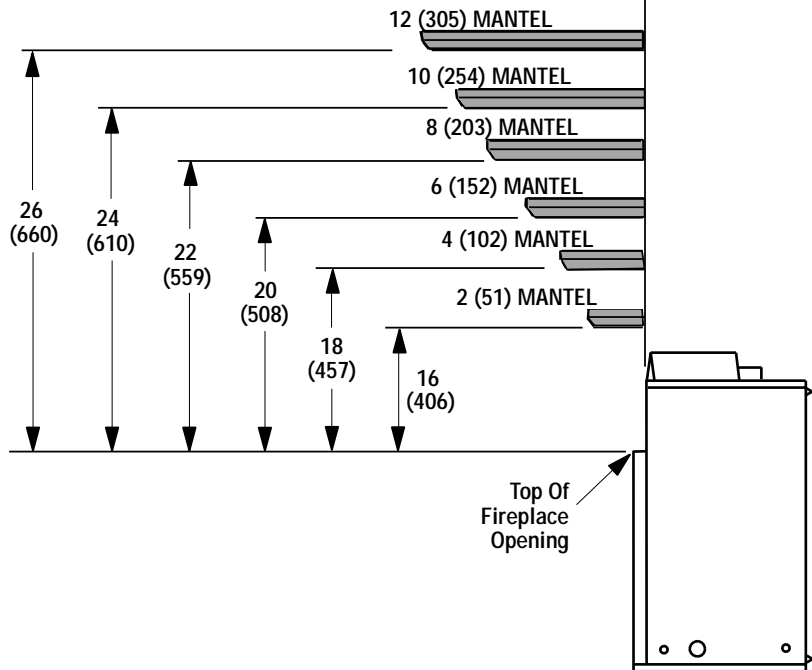


Figure 50

Non-combustible materials, such as facades and cast iron kits, may be installed on the appliance front face.


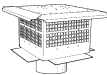



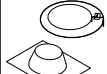






Vertical installation clearances to combustible mantels vary according to the depth of the mantel. See *Figure 50*.

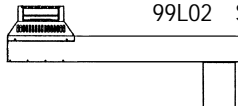
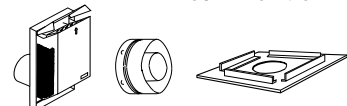
Mantels constructed of non-combustible materials may be installed above the appliance opening; however, do not allow anything to hang below the openings on the facade and cast iron kits. Refer to *Figure 7* on page 6 for clearance requirements.

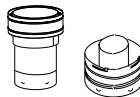
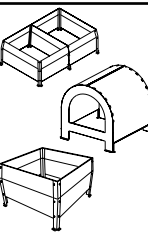



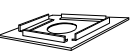
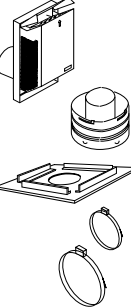
COLD CLIMATE INSULATION

For cold climate installations, 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. Gas line holes and other openings should be caulked or stuffed with unfaced fiberglass insulation. In cold climates, if the fireplace is being installed on a cement slab, a sheet of plywood or other raised platform can be placed underneath to prevent conducting cold up into the room. It also helps to sheetrock inside surfaces and tape for maximum air tightness and caulk firestops.

INSTALLATION ACCESSORIES

Listed Secure Vent™ Components			
	Cat. No.	Model No.	Description
	H2152	SV4.5CGV-1	Vertical Termination
	H4687	SV4.5CTS	Chase Top Term. Square
	H4716	SV4.5CTS-B	Chase Top Term. Square, Blk.
	H4717	SV4.5CTS-TC	Terra Cotta 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)
	H2246	SV4.5HF	Firestop/Spacer - 10 Pack Horizontal (3-1-1 spacing)
	H2247	SV4.5VF	Firestop/Spacer - 10 Pack 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 Vent™ Components			
	Cat. No.	Model No.	Description
	99L03	SV4.5HRK36	Horizontal Riser Kit 36"
	99L02	SV4.5HRK14	Horizontal Riser Kit 14"
	H1968	SV4.5HT-2	Horizontal Square Termination with Firestop/Spacer (96K80) and Adapter (74L61)

Listed Secure Flex™ Components			
	Cat. No.	Model No.	Description
	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.
	H1988	CTSA-33	Chase Top Shroud Kit, Arch Top - 3 X 3
	H1985	CTSO-33	Chase Top Shroud Kit, Open Top - 3 X 3
	H1987	CTSO-44	Chase Top Shroud Kit, Open Top - 4 X 4
	H1986	CTSO-46	Chase Top Shroud Kit, Open Top - 4 X 6
	60L10	SF-18	18 ft. (5.49 m) *compressed Flex
	98K03	SF-12	12 ft. (3.66 m) *compressed Flex
	10K81	SFMP	Mil Pac Black Hi-Temperature Sealant
	89L40	SFMP-12	Mil Pac Black Hi-Temperature Sealant - Bulk Pack 12
	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)
	H2248	SF4.5HF	Firestop/Spacer - 10 Pack Horizontal (3-1-1 spacing)
	H2249	SF4.5VF	Firestop/Spacer - 10 Pack Vertical (1-1-1 spacing)
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

* 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'AUTORISÉ AVOIR LA JURISDICTION. 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 ÉQUIPEMENT. 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 JURISDICTION ET CONFORMÉMENT AUX EXIGENCES DU CODE D'INSTALLATION CAN1-B149.1 ET .2.

This Gas Conversion Kit contains all of the necessary components needed to complete the conversion of an appliance from the use of one type of gas to the use of another, including labeling that must be affixed to ensure safe operation.

ALWAYS REFER TO THE APPLIANCE INSTALLATION AND HOMEOWNERS CARE AND OPERATION DOCUMENTS BEFORE COMPLETING A CONVERSION. ALL WARNINGS, CAUTIONS AND DETAILED INSTRUCTIONS CONTAINED THEREIN ARE APPLICABLE TO THIS DOCUMENT.

To complete the conversion proceed as follows:

Note: After converting the valve and gas components, refer to the appliance installation and homeowners care and operation instructions to adjust the air shutter opening for the gas type used.

Step 1. Turn off the gas supply to the appliance. Remove the front frame and glass door from the appliance. Access the control compartment.

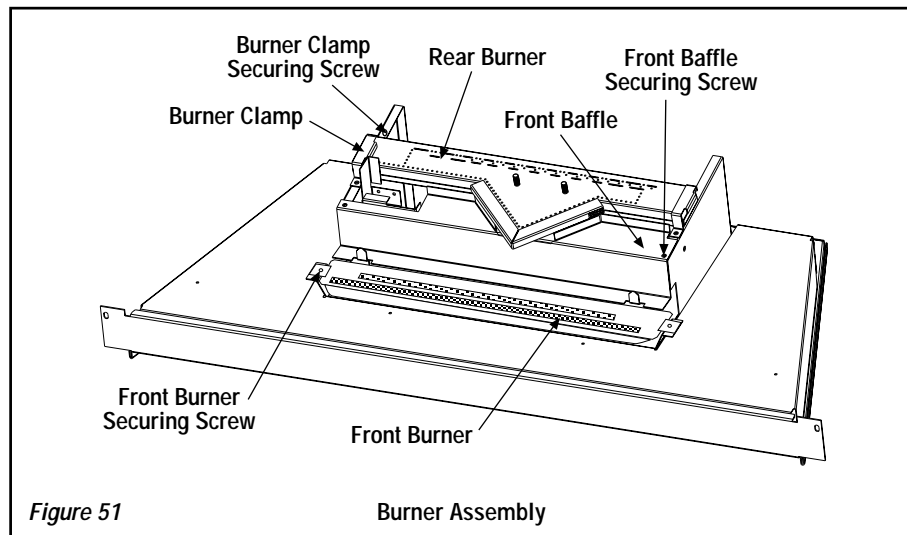
Step 2. Carefully remove the logs. Exercise care as not to break the logs.

Step 3. Remove the grate.

See **Figure 51** for step 4 part removal details:

Step 4

- Remove the front baffle by removing the two securing screws.
- Remove the two screws securing the end tabs of the front burner. Remove the front burner.
- Remove the two screws securing each of the rear burner clamps. Remove the rear burner.



NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

Step 5.

Convert the Honeywell RF Comfort Control Valve as follows:

- a. Access the gas selector by removing the motor cover. Refer to **Figure 52**.
- b. Using a slot-type screwdriver, push the gas selector down and rotate until the arrows on it point to the correctly colored screw: **red for LP/propane gas usage or blue for natural gas**. Refer to **Figure 52**.
- c. Insert the conversion plug for the fuel being used as shown in **Figure 53**. Use the **red plug for LP/propane gas usage or the blue one for natural gas**.
- d. Attach the correct gas conversion label to the gas valve (see **Figure 52**).
- e. Replace the motor cover.

Step 6.

- a. Convert the pilot orifice as follows (see **Figures 54, 55 and 56 on page 30**):

Note - Use extra care not to engage the orifice strip with the 7/16" open end wrench (contacting the orifice strip could cause strip distortion rendering the pilot inoperative). Also avoid wrench contact to any of the other pilot parts.

Use a 7/16" open end wrench and turn the pilot hex fitting counter-clockwise 1/4 turn. (See **Figure 54 on page 30**).

Note - The orifice strip tab may be randomly located on any side of the hex fitting.

- b. Push the orifice strip tab all the way against the hex fitting to align the appropriate gas type orifice (see **Figures 55 and 56 on page 30**). The type of gas for which the pilot is set, is, the gas type shown on the tab.

- c. Retighten, clockwise, the pilot hex fitting until the pilot hood aligns with the thermopiles as indicated by the arrows shown in **Figure 54 on page 30**.

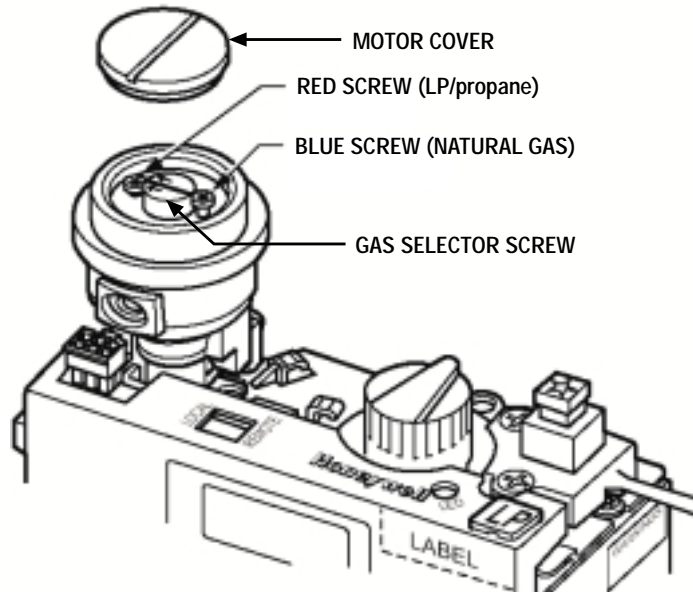


Figure 52

Adjusting the Fuel Selector on the Honeywell RF Comfort Control Valve

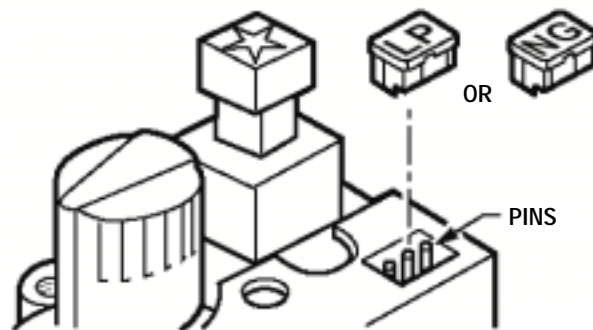
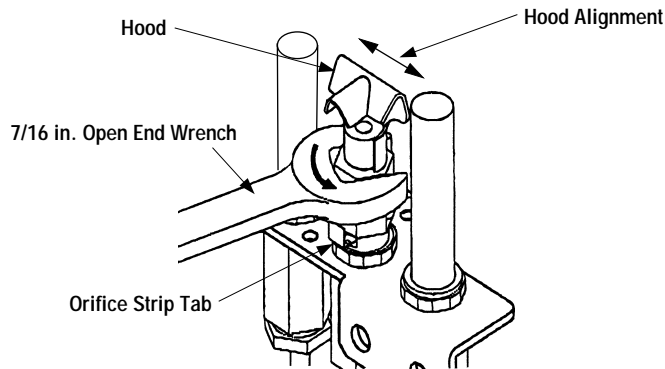


Figure 53

Insertion of the LP/propane or Natural Gas Conversion Plug on the Honeywell RF Comfort Control Valve

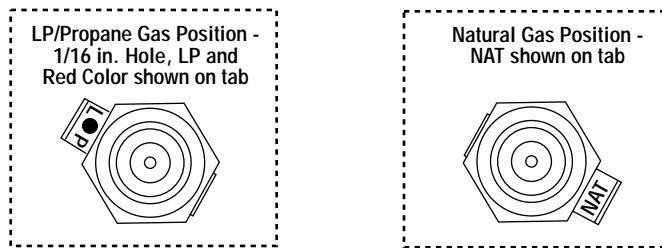
Pilot for the Honeywell RF Comfort Control Valve
(Loosening of Hex Fitting For Orifice Strip Tab Positioning)



Take Care Not to Contact the Orifice Strip Tab with the Hex Fitting Wrench - Distortion of the Tab May Render the Pilot Inoperative.

Figure 54

Pilot for the Honeywell RF Comfort Control Valve
Orifice Strip Tab Position Identification
For LP/Propane and Natural Gas



Top View of Hex Fitting and Orifice Strip Tab

Figure 55

Pilot for the Honeywell RF Comfort Control Valve
Orifice Strip Tab Positioning

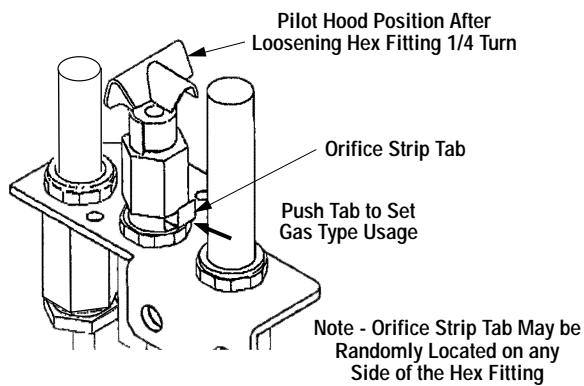


Figure 56

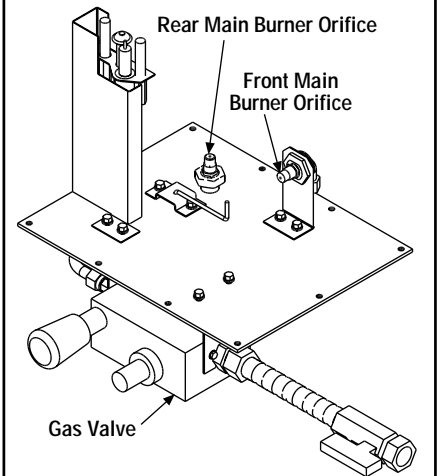


Figure 57

Step 7. Unscrew the rear and front main burner orifices (see Figure 57) from their respective manifolds and replace them with the ones provided in this kit. There are two main burner orifices provided in this gas conversion kit. Refer to **Table** below for the correct front and rear main burner orifice sizes for the gas being used. The orifice size is stamped on the orifice. See Figure 58.

Model	Fuel	Rear Burner	Front Burner
LSS-35CN	Nat. Gas	#44	#50
LSS-35CP	LP Gas	#55	#61
LSS-40CN	Nat. Gas	#42	#45
LSS-40CP	LP Gas	0.054"	#56

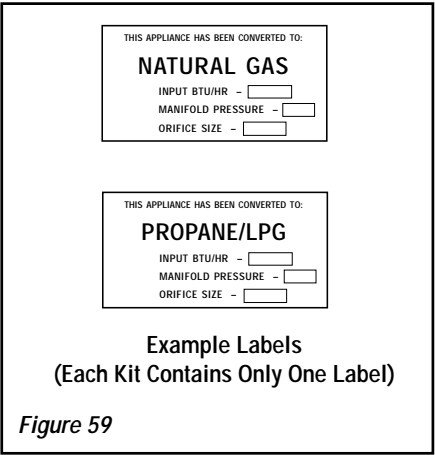


Figure 58

WARNING: INCORRECT ORIFICE SIZE INSTALLATION ON EITHER BURNER MAY RESULT IN POOR COMBUSTION WHICH MAY LEAD TO THE PRODUCTION OF CARBON MONOXIDE. IT MAY ALSO CAUSE SOOTING WITHIN THE FIREPLACE/VENTING SYSTEM.

Step 8. Reassemble all removed 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). Adjust the air shutter opening on the burner tube, referring to the *Note* on *page 28*.

Step 9. Attach the conversion kit label (*Figure 59*) to the rating plate on the appliance.



Step 10. Turn on gas supply and test for gas leaks, using a gas leak test solution.

Step 11. Attach a 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.

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