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# LENNOX HEARTH LSS-40CN Owner's Manual

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THERMOPILE LENNOX FIRE PLACE



P/N 850016M Rev. N 02/2013

This manual is one of a set of two supporting this product. Refer to P/N 875020M for Care and Operation Instructions.

Ce manuel est disponible en français, simplement en faire la demande. Numéro de la pièce 850016CF.

# INSTALLATION INSTRUCTIONS

## DIRECT VENT SPECTRA SERIES



### MODELS

LSS-35CN  
LSS-35CP

LSS-40CN  
LSS-40CP



OTL Report No. 116-F-02b-5

**INSTALLER:** Leave this manual with the appliance.  
**CONSUMER:** Retain this manual for future reference.  
**INSTALLATEUR :** Laissez cette notice avec l'appareil.  
**CONSOMMATEUR :** Conservez cette notice pour consultation ultérieure.

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 / AVERTISSEMENT / AVISO

- HOT GLASS WILL CAUSE BURNS.
- DO NOT TOUCH GLASS UNTIL COOLED.
- NEVER ALLOW CHILDREN TO TOUCH GLASS.



- UNE SURFACE VITRÉE CHAUDE PEUT CAUSER DES BRÛLURES.
- LAISSER REFROIDIR LA SURFACE VITRÉE AVANT D'Y TOUCHER.
- NE PERMETTEZ JAMAIS À UN ENFANT DE TOUCHER LA SURFACE VITRÉE.

- EL VIDRIO CALIENTE CAUSARÁ QUEMADURAS.
- USTED DEBE NUNCA TOCAR EL VIDRIO CALIENTE.
- LOS NIÑOS DEBEN NUNCA TOCAR EL VIDRIO.

**WARNING:** If the information in these instructions is not followed exactly, a fire or explosion may result, causing property damage, personal injury, or death.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- **WHAT TO DO IF YOU SMELL GAS:**
  - Do not try to light any appliance.
  - Do not touch any electrical switch; do not use any phone in your building.
  - Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
  - If you cannot reach your gas supplier, call the fire department.
- Installation and service must be performed by a qualified installer, service agency or the gas supplier.

**AVERTISSEMENT :** Assurez-vous de bien suivre les instructions données dans cette notice pour réduire au minimum le risque d'incendie ou d'explosion ou pour éviter tout dommage matériel, toute blessure ou la mort.

- Ne pas entreposer ni utiliser d'essence ni d'autres vapeurs ou liquides inflammables dans le voisinage de cet appareil ou de tout autre appareil.
- **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 trouvez.
  - 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 l'entretien doivent être assurés par un installateur ou un service d'entretien qualifié ou par le fournisseur de gaz.

## TABLE OF CONTENTS

Packaging .....	page 2
Introduction .....	page 2
General Information .....	page 2
Location .....	page 4
Appliance and Vent Clearances .....	page 4
Framing Specifications.....	page 5
Facing Requirements .....	page 6
Hearth Requirements .....	page 7
Fireplace Specifications.....	page 8
Vent Termination Clearances .....	page 9
Typical Installation Sequence .....	page 9
Detailed Installation Steps.....	page 9
Step 1. Framing.....	page 9
Step 2. Routing Gas Line .....	page 11
Step 3. Install the Venting System ..	page 11
Vertical Termination Systems.....	page 11
Vent Section Length Chart .....	page 12
Vertical Vent Tables and Figures.....	page 15
Horizontal Termination System .....	page 16
Horizontal Vent Tables and Figures ...	page 18
Venting Using Flexible Vent Pipe.....	page 20
Step 4. Field Wiring.....	page 21
Step 5. Connecting Gas Line .....	page 21
Comfort Control Valve.....	page 22
Step 6. Installing Ceramic Panels And Logs .....	page 24
Step 7. Checking Unit Operation .....	page 24
Step 8. Installing Glass Door .....	page 24
Step 9. Burner Adjustments .....	page 25
Finishing Requirements .....	page 26
Cold Climate Insulation .....	page 26
<b>Step 10. Attaching Safety-in-</b>	
<b>Operation Warnings .....</b>	<b>Page 28</b>
Installation Accessories .....	page 29
<b>Gas Conversion Kits .....</b>	<b>page 30</b>

**Please read and understand these instructions before beginning your installation.**



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

## PACKAGING

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

- 1 - one log set, located in the firebox.
- 2 - one envelope containing the literature package (homeowner's manual, installation instructions, log set supplement, warning labels, and warranty), located in the control compartment.
- 3 - one bag of glowing embers, located in the control compartment.
- 4 - one ceramic panel set, located on top of unit.
- 5 - one hand-held remote control, located in the control compartment.
- 6 - one cast iron surround (classic arch).
- 7 - one surround grill (black or nickel finish).

Each kit comes with an individual set of installation instructions.

## INTRODUCTION

These appliances are designed to operate on natural or propane gas. An electronic intermittent pilot ignition system provides safe, efficient operation. External electrical power (110 vac) is recommended to operate these units. If the system operates on line voltage with 6V fan control module, four (4) "AA" batteries can be used as a backup in case of a power outage. The electronic appliance can be operated without a fan, solely with four (4) "AA" batteries.

These vented gas fireplace heaters are sealed combustion, air-circulating gas fireplaces designed for residential applications.

**Approved Vent Components** - These fireplaces are designed, tested and listed for operation and installation with, the following vent components only:

- **Secure Vent™** Direct-Vent System Components manufactured by Security Chimneys International,
- **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.

Use only the correct size venting, 4 1/2 in. (114 mm) inner and 7 1/2 in. (191 mm) outer.

These approved vent system components are labeled for identification. DO NOT use any other manufacturer's vent components with these appliances.

## GENERAL INFORMATION

### WARNING

**Young children should be carefully supervised when they are in the same room as the appliance. Toddlers, young children and others may be susceptible to accidental contact burns. A physical barrier is recommended if there are at risk individuals in the house. To restrict access to a fireplace or stove, install an adjustable safety gate to keep toddlers, young children and other at risk individuals out of the room and away from hot surfaces.**

### AVERTISSEMENT

**Les jeunes enfants devraient être surveillés étroitement lorsqu'ils se trouvent dans la même pièce que l'appareil. Les tout petits, les jeunes enfants ou les adultes peuvent subir des brûlures s'ils viennent en contact avec la surface chaude. Il est recommandé d'installer une barrière physique si des personnes à risques habitent la maison. Pour empêcher l'accès à un foyer ou à un poêle, installez une barrière de sécurité; cette mesure empêchera les tout petits, les jeunes enfants et toute autre personne à risque d'avoir accès à la pièce et aux surfaces chaudes.**

*Children and adults should be alerted to the hazards of high surface temperature and should stay away to avoid burns or clothing ignition.*

*Les enfants et les adultes devraient être informés des dangers que posent les températures de surface élevées et se tenir à distance afin d'éviter des brûlures ou que leurs vêtements ne s'enflamment.*

**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.**

**! WARNING**

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified installer, service agency or the gas supplier.

**! WARNING**

Failure to comply with these installation instructions will result in an improperly installed and operating appliance, voiding its warranty. Any change to this appliance and/or its operating controls is dangerous.

**! WARNING**

Clothing or other flammable material should not be placed on or near the appliance.

**! AVERTISSEMENT**

On ne devrait pas placer de vêtements ni d'autres matières inflammables sur l'appareil ni à proximité.

**! WARNING**

Any safety screen or guard removed for servicing the appliance must be replaced prior to operating the appliance.

**! AVERTISSEMENT**

Tout écran ou protecteur retiré pour permettre l'entretien de l'appareil doit être remis en place avant de mettre l'appareil en marche.

*Note: Installation and repair should be done by a qualified service person. The appliance should be inspected before use and at least annually by a professional service person. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, etcetera. It is imperative that control compartments, burners and circulating air passageways of the appliance be kept clean.*

*Remarque : L'installation et la réparation devrait être confiées à un technicien qualifié. L'appareil devrait faire l'objet d'une inspection par un technicien professionnel avant d'être utilisé et au moins une fois l'an par la suite. Des nettoyages plus fréquents peuvent être nécessaires si les tapis, la literie, et cetera produisent une quantité importante de poussière. Il est essentiel que les compartiments abritant les commandes, les brûleurs et les conduits de circulation d'air de l'appareil soient tenus propres.*

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 utiliser cet appareil s'il a été plongé, même partiellement, dans l'eau. Appeler un technicien qualifié pour inspecter l'appareil et remplacer toute partie du système de commande et toute commande qui a été plongée dans l'eau.

**! WARNING**

**Improper installation or use of this appliance can cause serious injury or death from fire, burns, explosions or carbon monoxide poisoning.**

*Only trim kit(s) supplied by the manufacturer shall be used in the installation of this appliance.*

*Seules les trousse de garniture fournies par le fabricant doivent être utilisées pour l'installation de cet appareil.*

These appliances comply with National Safety Standards and are tested and listed by OMNI-Test Laboratories, Inc. (Report No. 116-F-02b-5) to ANSI Z21.88-2009/CSA 2.33-2009, and CGA-2.17-M91 (R2009) in both USA and Canada, as vented gas fireplace heaters.

Both millivolt and electronic versions of these appliances are listed by OMNI-Test Laboratories for installation in bedrooms and Manufactured Homes.

**Misc. Codes / Standards -**

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 - latest edition* (In Canada, the current CAN/CSA-B149.1 installation code).

The appliance, when installed, must be electrically grounded and wired in accordance with local codes or, in the absence of local codes, with the *National Electrical Code, ANSI/NFPA 70 - latest edition*, or the *Canadian Electrical Code, CSA C22.1 - latest edition*.

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

**These appliances are designed to operate on natural or propane gas only. The use of other fuels or combination of fuels will degrade the performance of this system and may be dangerous.**

These fireplaces are designed as supplemental heaters. Therefore, it is advisable to have an alternate primary heat source when installed in a dwelling. Refer to **Table 1** for efficiencies.

Models	Efficiencies %					
	Natural Gas			Propane		
	P4*	Steady State	AFUE **	P4*	Steady State	AFUE **
LSS-35	51.6	73	70	53.6	73	71
LSS-40	58.8	73	70	61.7	73	71

**Table 1**

\*Canadian Energuide Rating

\*\*Annual Fuel Utilization Efficiency (AFUE) is the recognized U.S. rating system for the total efficiency of heating products.

These electronic models come standard with a modulating gas valve; flame appearance and heat output can be controlled with the remote. The BTU Input for these appliances is shown in **Table 2**.

Model	Fuel	Maximum Input (BTU/hr)	Minimum Input (BTU/hr)
LSS-35CN	Natural Gas	33,000	23,500
LSS-35CP	Propane	30,000	23,500
LSS-40CN	Natural Gas	41,500	28,400
LSS-40CP	Propane	37,000	30,700

**Table 2**

## Gas Pressure - All Models

Tables 3 and 4 show the appliances' inlet and manifold gas pressure requirements:

Inlet Gas Supply Pressure (all models)		
Fuel #	Minimum	Maximum
Natural Gas	4.5 in. (114 mm) WC (1.12 kPa)	10.5 in. (267 mm) WC (2.61 kPa)
Propane	11.0 in. (279 mm) WC (2.74 kPa)	13.0 in. (330 mm) WC (3.23 kPa)

**Table 3**

Manifold Gas Supply Pressure (all models)		
Fuel #	Low	High
Natural Gas	1.6 in. (41 mm) WC (0.40 kPa)	3.5 in. (89 mm) WC (0.87 kPa)
Propane	6.3 in. (160 mm) WC (1.57 kPa)	10.0 in. (254 mm) WC (2.49 kPa)

**Table 4**

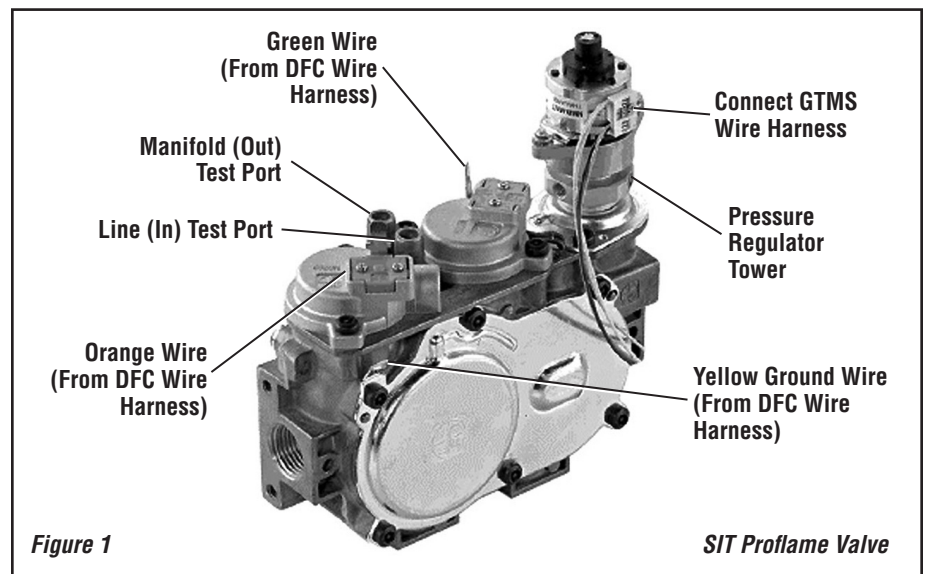
Test gauge connections are provided on the front of the gas control valve (identified IN for the inlet and OUT for the manifold side). The control valves have a 3/8" (10mm) NPT thread inlet and outlet side of the valve (see **Figure 1**).

Propane tanks are at pressures that will cause damage to valve components. Verify that the tanks have step down regulators to reduce the pressure to safe levels.

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 **greater than** 1/2 psig (3.5 kPa).

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



## Gas Valve

Refer to **Figure 1** for key gas valve features.

## Orifice Sizes - Sea Level to High Altitude (All Models)

These appliances are tested and approved for installation at elevations of 0-4500 feet (0-1372 meters) above sea level using the standard burner orifice sizes (marked with an "\*" in **Table 5**).

For elevations above 4500 feet, contact your gas supplier or qualified service technician.

**Deration** - At higher elevations, the amount of BTU fuel value delivered must be reduced by either:

- Using gas that has been derated by the gas company.
- By changing the burner orifice to a smaller size as regulated by the local authorities having jurisdiction and by the (USA) National Fuel Gas Code NFPA 54/ANSI Z223.1 - latest edition or, in Canada, the CAN/CSA-B149.1 codes - latest edition.

Install the appliance according to the regulations of the local authorities having jurisdiction and, in the USA, the National Fuel Gas Code NFPA 54 / ANSI Z223.1 - latest edition or, in Canada, the CAN/CSA-B149.1 - latest edition.

Flame breadth, height and width will diminish 4% for every 1,000 feet of altitude.

Burner Orifice Sizes Elevation 0-4500 feet ( 0-1372 meters)		
Model Series	Nat. Gas drill size (inches)	Propane drill size (inches)
LSS-35 Rear Burner	#44 (0.086 in. 2.2 mm)* 60J80•	#55 (0.052 in. 1.3 mm)* 19L52•
LSS-35 Front Burner	#50 (0.070 in. 1.8 mm)* H4873•	#61 (0.039 in. 1.0 mm)* 35M91•
LSS-40 Rear Burner	#42 (0.094 in. 2.4 mm)* H3721•	(0.054 in. 1.4 mm)* 88J59•
LSS-40 Front Burner	#45 (0.082 in. 2.1 mm)* 39L66•	#56 (0.047 in. 1.2 mm)* 62L37•

**Table 5** \* Standard size installed at factory  
• Part /Cat. Number

## REQUIREMENTS FOR THE COMMONWEALTH OF MASSACHUSETTS

These fireplaces are approved for installation in the US state of Massachusetts if the following additional requirements are met:

- Install this appliance in accordance with Massachusetts Rules and Regulations 248 C.M.R.
- 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.

## 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:

NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE.

- 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 8 ft (2.4 m) above grade and be directly in line with the horizontal termination. The sign must read, in print size no less than 1/2 in. (13 mm) in size, GAS VENT DIRECTLY BELOW. KEEP CLEAR OF ALL OBSTRUCTIONS.

## NEW YORK CITY, NEW YORK (MEA)

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

## 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.

If the fireplace is being installed on a cement slab in cold climates, a sheet of plywood or other raised platform can be placed underneath to prevent conduction of cold transferring to the fireplace and into the room. It also helps to sheetrock inside surfaces and tape for maximum air tightness and caulk firestops.

## MANUFACTURED HOME REQUIREMENTS

This appliance may be installed in an aftermarket permanently located, manufactured home and must be installed in accordance with the manufacturer's instructions and the Manufactured Home Construction and Safety Standard, Title 24 CFR, Part 3280, in the United States, or the Standard for Installation in Mobile Homes, CAN/CSA Z240 MH Series, in Canada.

Cet appareil peut être installé comme du matériel d'origine dans une maison préfabriquée (É.U. seulement) ou mobile et doit être installé selon les instructions du fabricant et conformément à la norme Manufactured Home Constructions and Safety, Title 24 CFR, Part 3200 aux Unis ou à la norme Can/CSA-Z240 Série MM, Maisons mobiles au Canada.

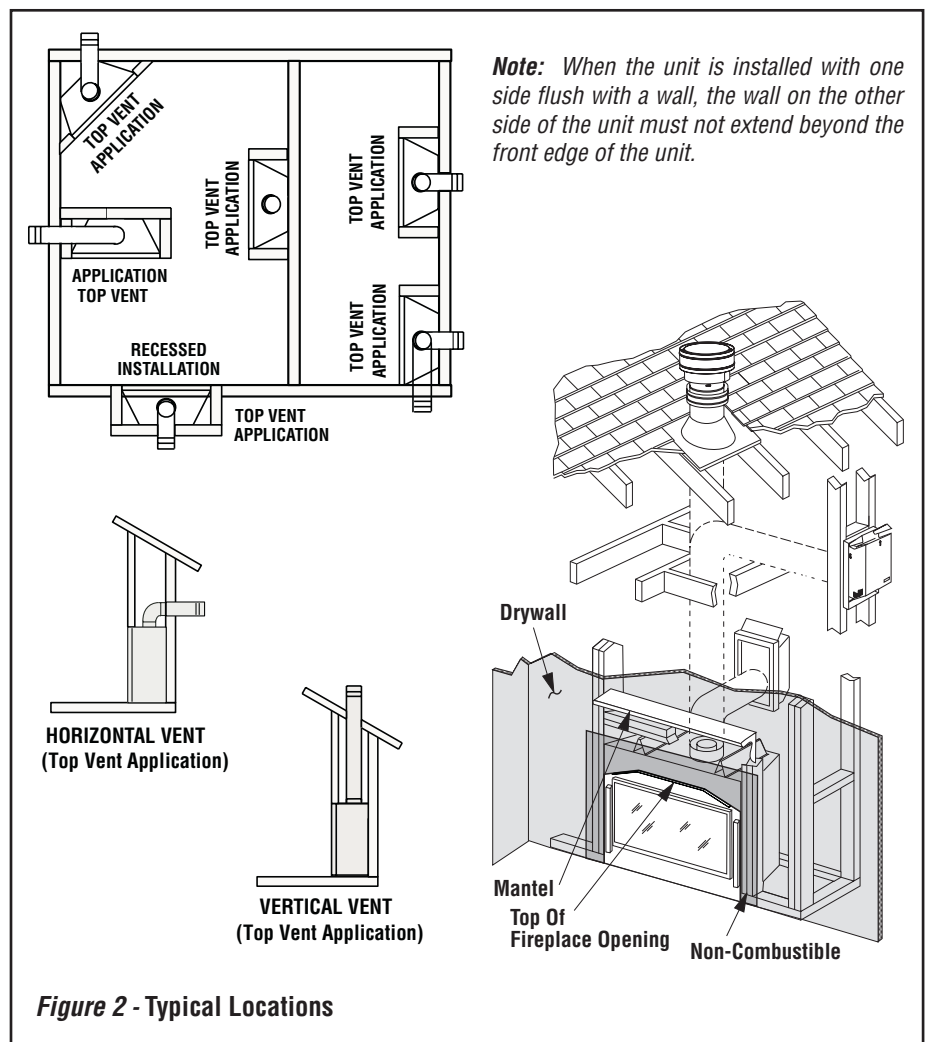


Figure 2 - Typical Locations

This appliance is only for use with the type of gas indicated on the rating plate. This appliance is not convertible for use with other gases, unless a certified kit is used.

Cet appareil doit être utilisé uniquement avec le type de gaz indiqué sur la plaque signalétique. Cet appareil ne peut être converti à d'autres gaz, sauf si une trousse de conversion est utilisée.

**CAUTION: Ensure that the cross members are not cut or weakened during installation. The structural integrity of the manufactured home floor, wall, and ceiling / roof must be maintained.**

**CAUTION: This appliance must be grounded to the chassis of the manufactured home in accordance with local codes or in the absence of local codes, with the National Electrical Code ANSI / NFPA 70 - latest edition or the Canadian Electrical Code CSA C22.1 - latest edition.**

## 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.

**Due to high temperatures, the appliance should be located out of traffic and away from furniture and draperies (Figure 2).**

**En raison des températures élevées, l'appareil devrait être installé dans un endroit où il y a peu de circulation et loin du mobilier et des tentures (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.

Be aware that this is a heat producing appliance. Objects placed above the unit are exposed to elevated temperatures.

Do not insulate the space between the appliance and the area above it (see Figure 7).

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 Figure 7.

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.

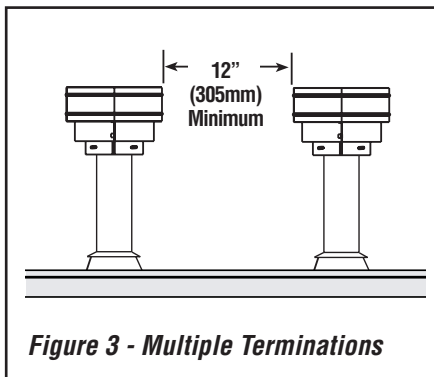
### VENT TERMINATION CLEARANCES

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

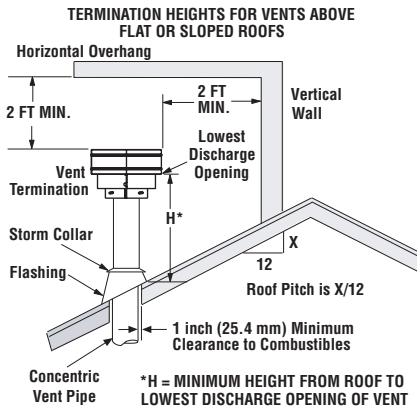
#### Vertical Vent Termination Clearances

Terminate multiple vent terminations according to the installation codes listed above. Also see Figure 3.

Terminate single vent caps relative to building components according to Figure 4.



#### Vertical Vent Termination Clearances

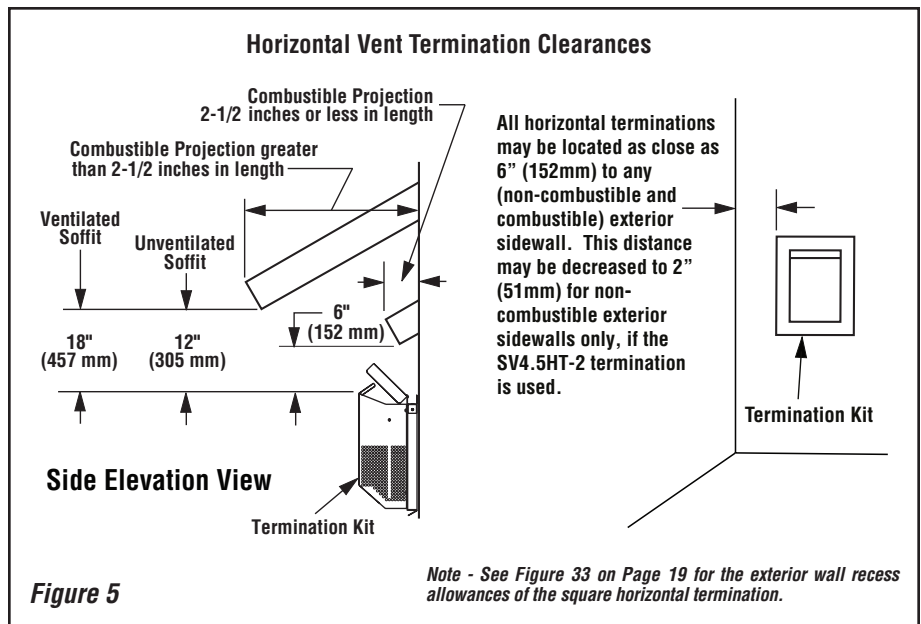


The vent / air intake termination clearances above the high side of an angled roof is as shown in the following chart:

Termination Heights For Vents Above Flat Or Sloped Roofs Ref. NFPA 54 / ANSI Z223.1		
Roof Pitch	* Feet	* Meters
Flat to 6/12	1.0	0.3
6/12 to 7/12	1.25	0.38
7/12 to 8/12	1.5	0.46
8/12 to 9/12	2.0	0.61
9/12 to 10/12	2.5	0.76
10/12 to 11/12	3.25	0.99
11/12 to 12/12	4.0	1.22
12/12 to 14/12	5.0	1.52
14/12 to 16/12	6.0	1.83
16/12 to 18/12	7.0	2.13
18/12 to 20/12	7.5	2.29
20/12 to 21/12	8.0	2.44

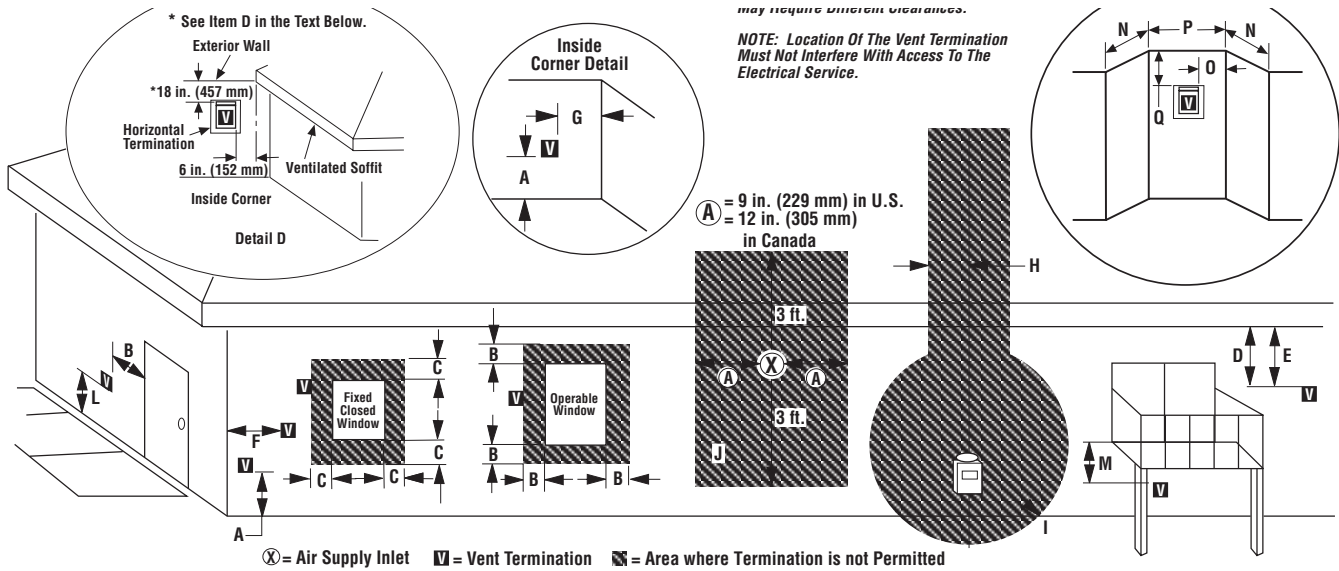
#### Horizontal Vent Termination Clearances

The horizontal vent termination must have a minimum of 6" (152 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. For additional vent location restrictions refer to Figure 6 on Page 7.



Note - See Figure 33 on Page 19 for the exterior wall recess allowances of the square horizontal termination.

# 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 inches (15cm) for appliances < 10,000 Btuh (3kW), 12 inches (30cm) for appliances > 10,000 Btuh (3kW)	6 inches (15cm) for appliances < 10,000 Btuh (3kW), 9 inches (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 inches (305mm) recommended to prevent window condensation	9 inches (229mm) recommended to prevent window condensation
D = Vertical clearance to ventilated soffit located above the termination within a horizontal distance of 18 inches (458mm) from the center line of the termination	18 inches (458mm)	18 inches (458mm)
E = Clearance to unventilated soffit***	12 inches (305mm)	12 inches (305mm)
F = Clearance to outside corner	5 inches (12.7cm) minimum	5 inches (12.7cm) minimum
G = Clearance to inside corner	2 inches (5.08cm) minimum - SV4.5HT-2	2 inches (5.08cm) minimum - SV4.5HT-2
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 inches (15cm) for appliances < 10,000 Btuh (3kW), 12 inches (30cm) for appliances > 10,000 Btuh (3kW)	6 inches (15cm) for appliances < 10,000 Btuh (3kW), 9 inches (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)‡
N = Depth of Alcove (Maximum)	6 feet (1.83m)*	6 feet (1.83m)**
O = Clearance to Termination (Alcove)	6 inches (15.2mm)*	6 inches (15.2mm)**
P = Width of Alcove (Minimum)	3 feet (91cm)*	3 feet (91cm)*
Q = Clearance to Combustible Above (Alcove)	18 inches (457mm)*	18 inches (457mm)**

\* In accordance with the current CSA-B149.1 National Gas And Propane Installation Code.

\*\* In accordance with the current ANSI SZ223.1/NFPA 54 National Fuel Gas Codes.

\*\*\* Clearance required to vinyl soffit material - 30 inches (76cm) minimum.

‡ A vent shall not terminate directly above a sidewalk or paved driveway which is located between two single family dwellings and serves both dwellings.

\*‡ Only permitted if veranda, porch, deck or balcony is fully open on a minimum 2 sides beneath the floor.

NOTE: Clearances are in accordance with local installation codes and the requirements of the gas supplier.

Figure 6

NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE.

## MINIMUM CLEARANCES TO COMBUSTIBLES

### Appliance And Vent Clearances

The appliance is approved with zero clearance to combustible materials on all sides (as detailed in **Table 6**), with the following exception: **When the unit is installed with one side flush with a wall, the wall on the other side of the unit must not extend beyond the front edge of the unit.** In addition, when the unit is recessed, the side walls surrounding the unit must not extend beyond the front edge of the unit (see **Figure 2**).

MINIMUM CLEARANCES*		Inches (millimeters)
Back	1/2 in. (13) to wrapper 0 (0) to Spacers	
Sides	1/2 in. (13) to wrapper 0 (0) to Spacers **	
Top Spacers	0 (0)	
Floor	0 (0)	
From Bottom of Unit To Ceiling	64 (1626)	
Vent	3 (76) Top* / 1 (25.4) Sides & Bottom	
SERVICE CLEARANCES Feet (meters)		
Front	3 feet (0.9 meters)	

**Table 6**

\*Note: 3 in. (76 mm) above any horizontal/inclined vent component.

\*\*Note: See Page 9, Step 1 for clearance requirements to the nailing flange located at each side of the unit and any screw heads adjacent to it.

**Hearth Extension** - A hearth extension is not required with this appliance. If a hearth extension is used, do not block the lower control compartment door. Any hearth extension used is for appearance only and does not have to conform to standard hearth extension installation requirements.

**Shelf Height** - To provide for the lowest possible shelf surface, the venting attached to the top vent should be routed in a way to minimize obstructions to the space above the appliance. Do not insulate the space between the appliance and the area above it (see **Figure 7**). 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 **Figure 7**.

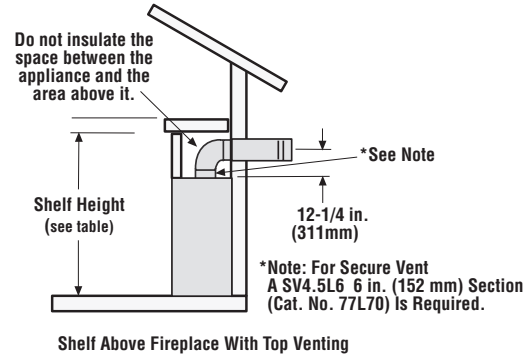
### Wall Finishes / Surrounds / Mantels

**Note:** Combustible wall finish materials and/or surround materials must not be allowed to en-croach the area defined by the appliance front face (black sheet metal). **Never allow combustible materials to be positioned in front of or overlapping the appliance face** (see **Figure 9** and **Figure 50** on **Page 34**).

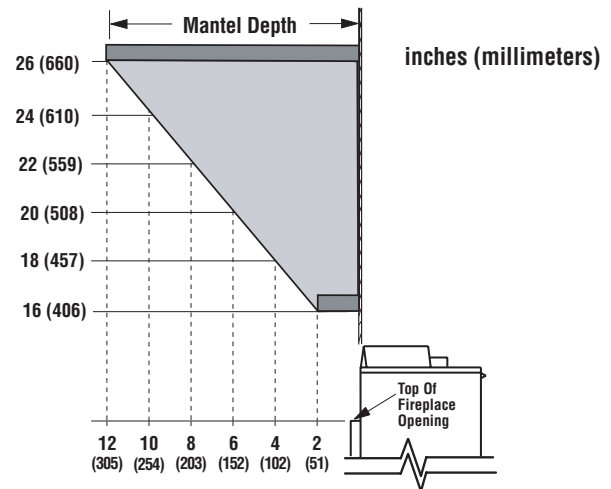
Non-combustible materials, such as surrounds and other appliance trim, may be installed on the appliance face with these exceptions: they must not cover any portion of the removable glass panel.

Vertical installation clearances to combustible mantels vary according to the depth of the mantel. See **Figure 8**. Mantels constructed of non-combustible materials may be installed at any height above the appliance opening; however, do not allow anything to hang below the fireplace hood.

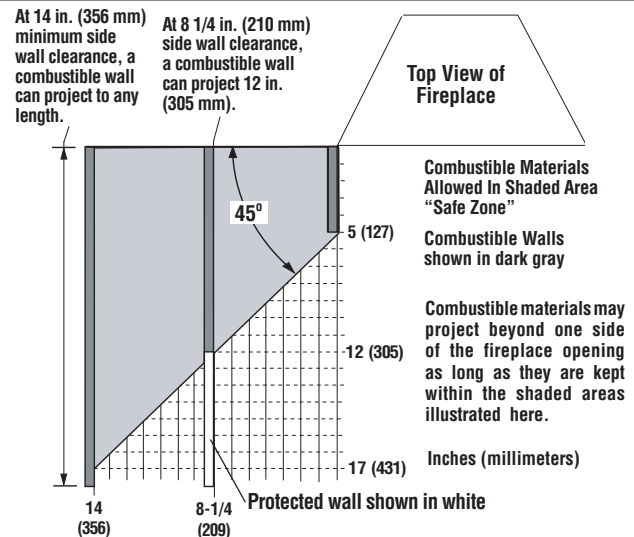
Model No.	Shelf Height inches (mm)	
	Top Vent - with One 90 Degree Elbow	
	Secure Vent	Secure Flex
LSS-35	57 1/2 (1461)	59 1/4 (1505)
LSS-40	59 (1499)	60 3/4 (1543)



**Figure 7 - Shelf Height Minimum Clearances With Top Venting**



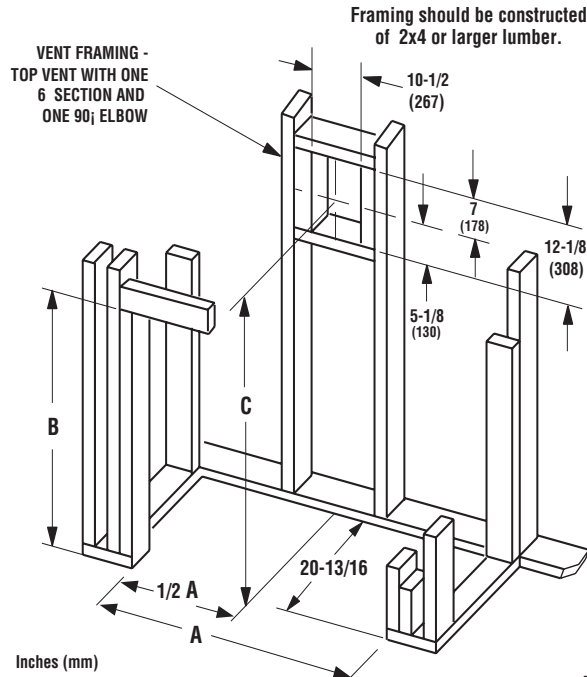
**Figure 8 - Minimum Mantel Clearances**



**Figure 9 - Minimum Distance to Unprotected Side Wall**

# FIREPLACE FRAMING SPECIFICATIONS

## \*\*FRAMING WITH SQUARE HORIZONTAL TERMINATIONS (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

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

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

Figure 10

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

Note - Venting requirements for corner installations -

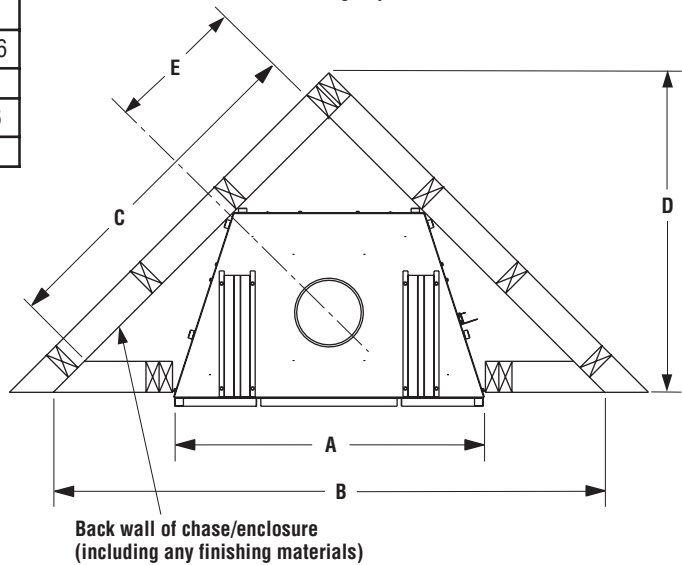


Figure 11 Corner Framing with Square Termination (SV4.5HT)

## FACING REQUIREMENTS

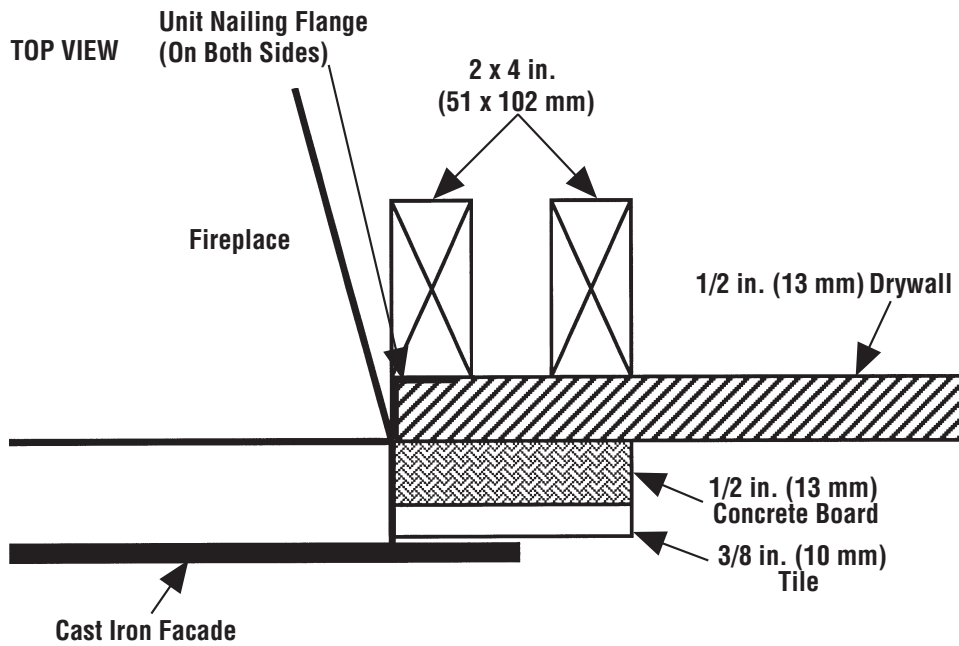


Figure 12

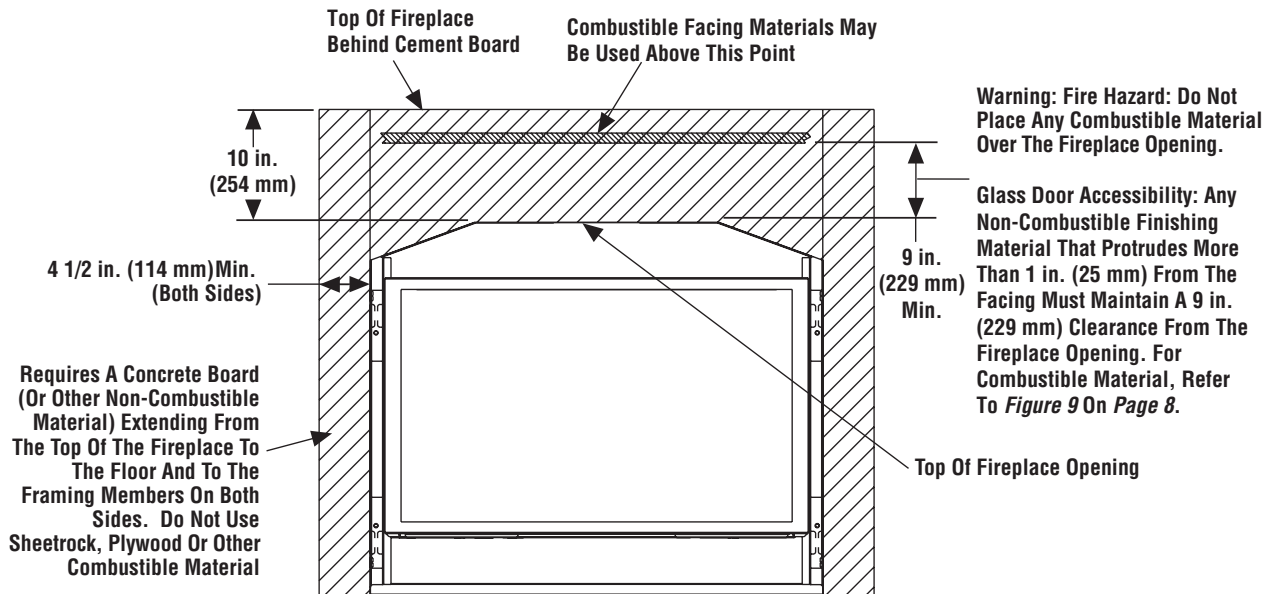
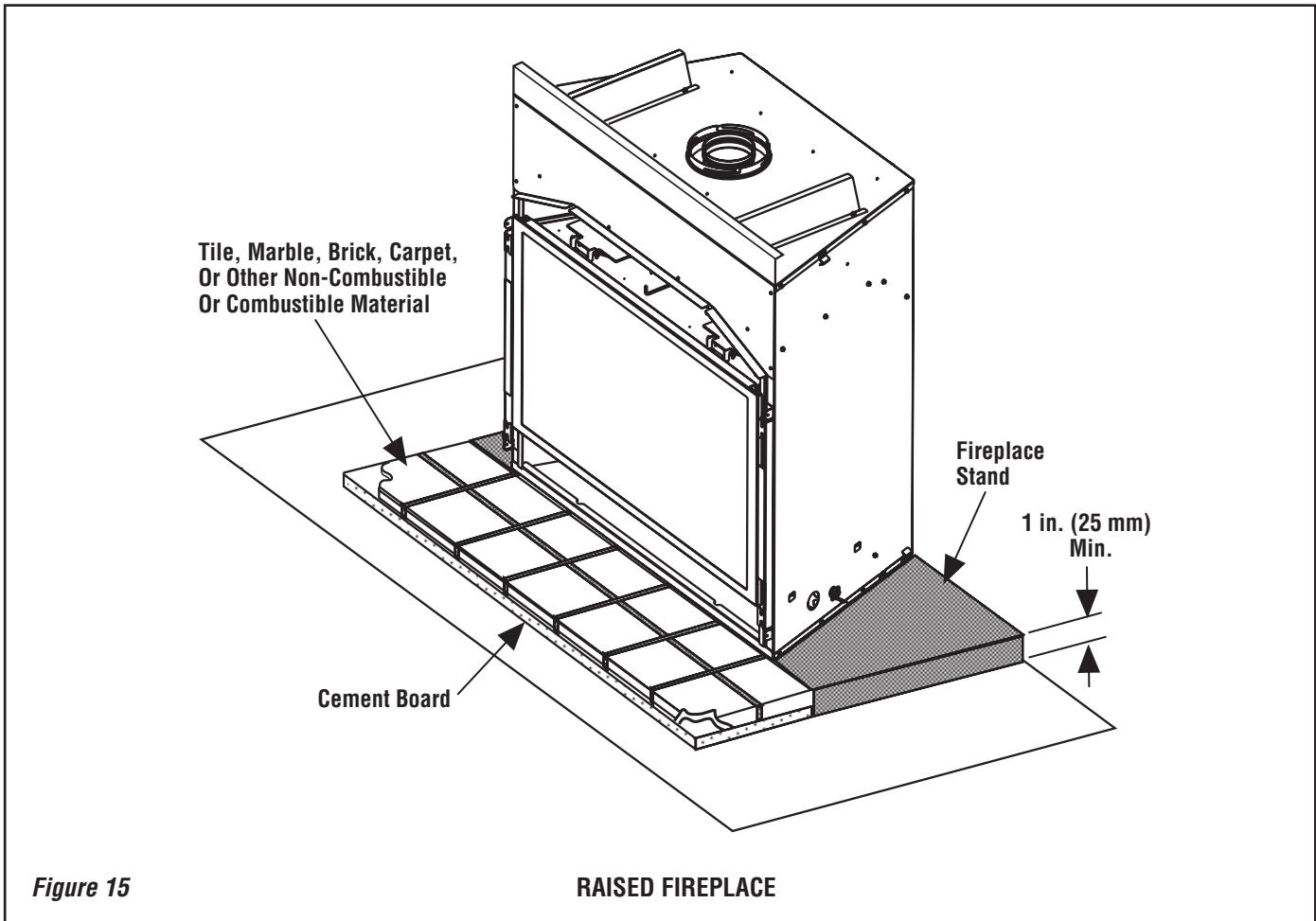
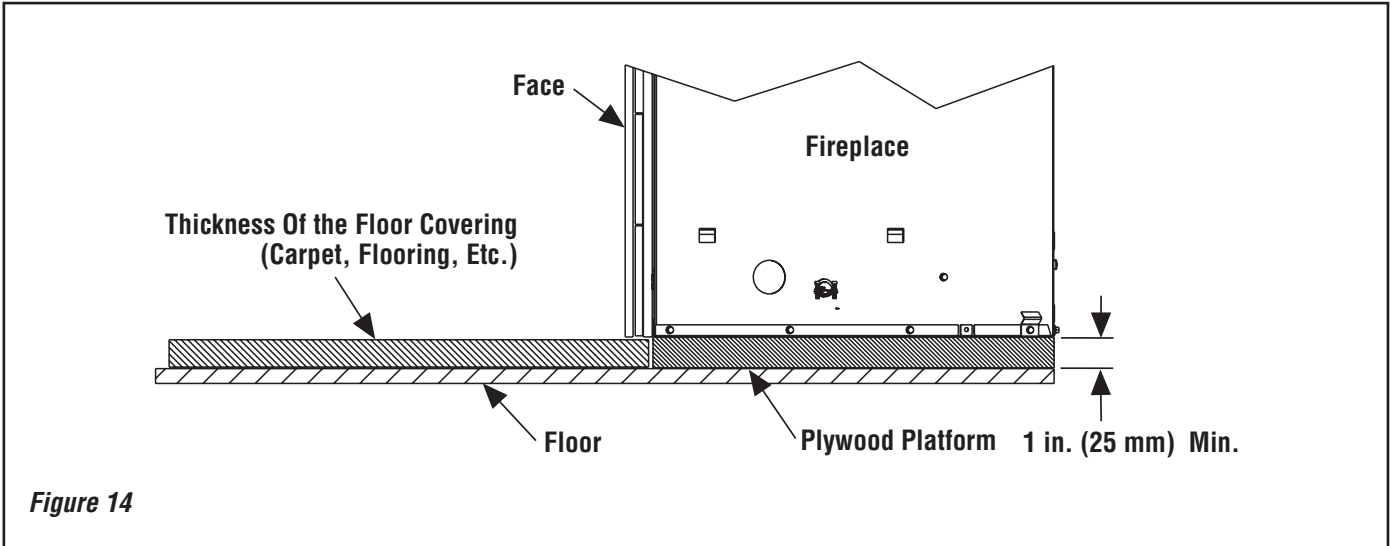


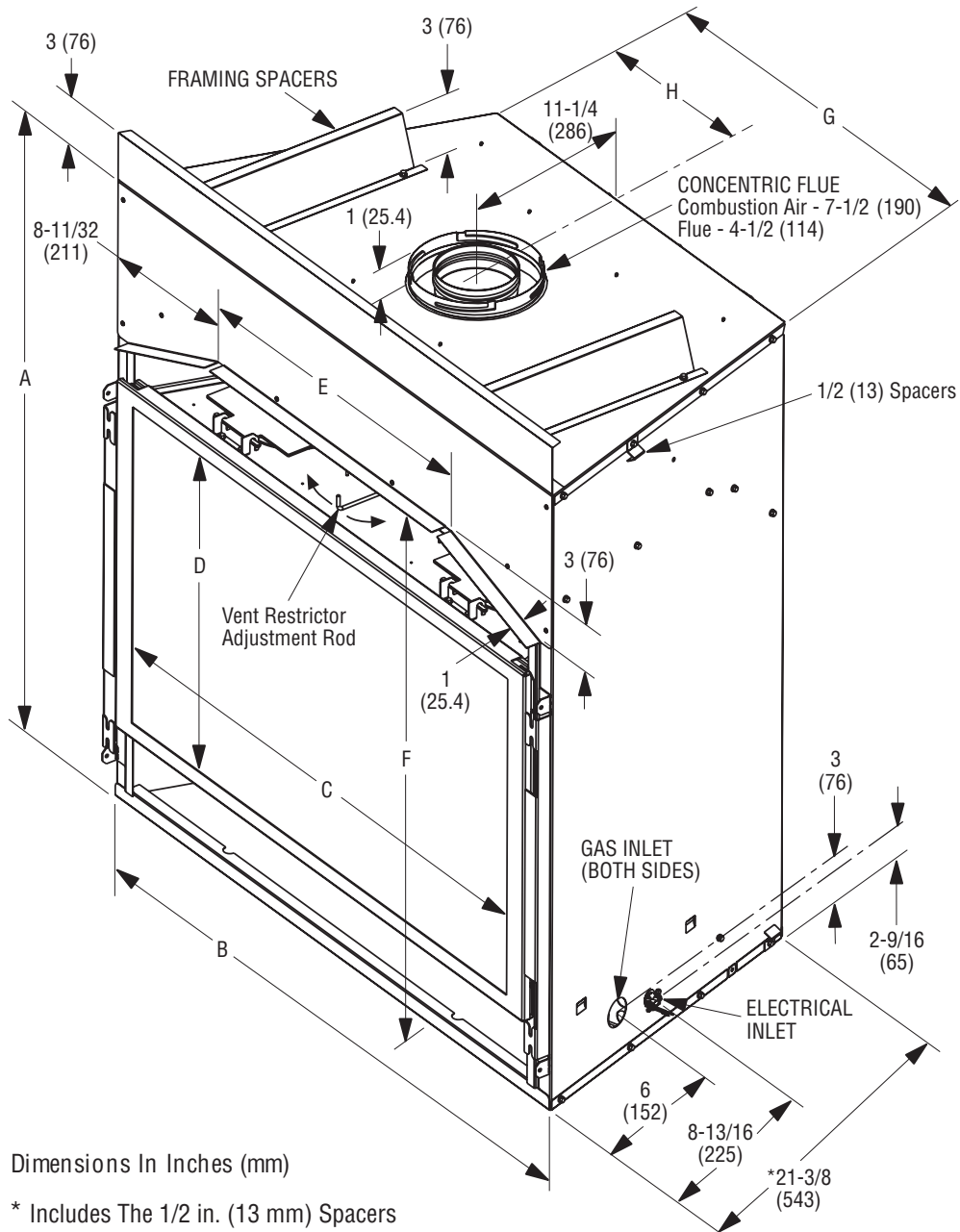
Figure 13

### Non-Combustible 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 16

## 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 48 on page 27.**

## 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 13) Construct the appliance framing. Position the appliance within the framing and secure with nailing brackets.

**Step 2.** (page 13) Route gas supply line to appliance location.

**Step 3.** (page 13) Install the vent system and exterior termination.

**Step 4.** (page 23) Field Wiring  
Install the operating control switch (not factory provided) and bring in electrical service line for forced air circulating blower.

**Step 5.** (page 23) Make connection to gas supply.

**Step 6.** (page 26) Install the ceramic panel, logs, and glowing embers.

**Step 7.** (page 26) Checkout appliance operation.

**Step 8.** (page 26) Install glass door frame assembly.

**Step 9.** (page 27) Adjust burner to ensure proper flame appearance.

**Step 10.** (page 28) Affix warning labels.

### Step 1. FRAMING

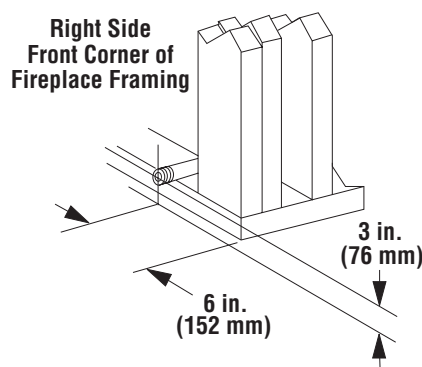
Frame these appliances as illustrated in **Figure 10 on page 9**, unless the appliance is to be installed in a corner. See **Figure 11 on page 9** for corner framing installations. All framing details must allow for a minimum clearance to combustible framing members as shown in **Table 6 on page 8.**

See **Figure 12 on page 10** for the facing detail. See **Figure 13 on page 10** for the Non-Combustible requirements. See **Figures 14 and 15 on page 11** for Hearth Requirements.

### Step 2. ROUTING GAS LINE

Route a 1/2 in. (13 mm) gas line along the inside of the right side framing as shown in **Figure 17.** 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 in. (13 mm) shutoff valve. (**See step 5 on page 23.**)



**Figure 17**

### 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.**

**NOTE: The flow of combustion and ventilation air must not be obstructed.**

**These approved vent system components are labeled for identification. DO NOT use any other manufacturer's vent components with these appliances.**

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 29.**

#### VERTICAL TERMINATION SYSTEMS (ROOF)

**Figure 18, and Figures 28 through 30 on pages 14 and 17** 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 4 on page 6.**)

VENT SECTION LENGTH CHART							TOTAL QUANTITY
Nominal Section Length (inches)	6	12	24	36	48	TOTAL	
Net Section Length (inches)	4-1/2	10-1/2	22-1/2	34-1/2	46-1/2		
Height of Vent	Number of Vent Sections						
inches	ft						
4.5	0.375	1	0	0	0	0	1
9	0.75	2	0	0	0	0	2
10.5	0.875	0	1	0	0	0	1
15	1.25	1	1	0	0	0	2
22.5	1.875	0	0	1	0	0	1
31.5	2.625	0	3	0	0	0	3
34.5	2.875	0	0	0	1	0	1
37.5	3.125	1	1	1	0	0	3
43.5	3.625	0	2	1	0	0	3
45	3.75	0	0	2	0	0	2
46.5	3.875	0	0	0	0	1	1
51	4.25	1	0	0	0	1	2
55.5	4.625	0	1	2	0	0	3
57	4.75	0	0	1	1	0	2
67.5	5.625	0	0	3	0	0	3
69	5.75	0	0	0	2	0	2
73.5	6.125	1	0	0	2	0	3
79.5	6.625	0	1	0	2	0	3
81	6.75	0	0	0	1	1	2
91.5	7.625	0	0	2	0	1	3
93	7.75	0	0	0	0	2	2
97.5	8.125	1	0	0	0	2	3
103.5	8.625	0	0	0	3	0	3
108	9	1	0	0	3	0	4
117	9.75	1	0	5	0	0	6
118.5	9.875	1	1	0	3	0	5
126	10.5	0	0	1	3	0	4
130.5	10.875	1	0	1	3	0	5
135	11.25	0	0	6	0	0	6
139.5	11.625	0	0	0	0	3	3
142.5	11.875	1	0	0	4	0	5
144	12	1	0	0	0	3	4
154.5	12.875	1	1	0	0	3	5
160.5	13.375	0	2	0	0	3	5
172.5	14.375	0	0	0	5	0	5
177	14.75	1	0	0	5	0	6
186	15.5	0	0	0	0	4	4
196.5	16.375	0	1	0	0	4	5
207	17.25	0	0	0	6	0	6
211.5	17.625	1	0	0	6	0	7
217.5	18.125	0	1	0	6	0	7
229.5	19.125	0	0	1	6	0	7
232.5	19.375	0	0	0	0	5	5
241.5	20.125	0	0	0	7	0	7
246	20.5	1	0	0	7	0	8
252	21	0	1	0	7	0	8

VENT SECTION LENGTH CHART							TOTAL QUANTITY
Nominal Section Length (inches)	6	12	24	36	48	TOTAL	
Net Section Length (inches)	4-1/2	10-1/2	22-1/2	34-1/2	46-1/2		
Height of Vent	Number of Vent Sections						
inches	ft						
276	23	0	0	0	8	0	8
279	23.25	0	0	0	0	6	6
280.5	23.375	1	0	0	8	0	9
289.5	24.125	0	1	0	0	6	7
301.5	25.125	0	0	1	0	6	7
310.5	25.875	0	0	0	9	0	9
325.5	27.125	0	0	0	0	7	7
330	27.5	1	0	0	0	7	8
345	28.75	0	0	0	10	0	10
349.5	29.125	1	0	0	10	0	11
372	31	0	0	0	0	8	8
379.5	31.625	0	0	0	11	0	11
418.5	34.875	0	0	0	0	9	9
465	38.75	0	0	0	0	10	10
475.5	39.625	0	1	0	0	10	11
480	40	1	1	0	0	10	11
492	41	1	0	1	0	10	12
499.5	41.625	0	0	0	1	10	11
504	42	1	0	0	1	10	12
511.5	42.625	0	0	0	0	11	11
520.5	43.375	0	2	0	1	11	14
531	44.25	0	2	2	0	11	15
538.5	44.875	1	0	0	2	11	14
549	45.75	1	0	2	1	11	15
558	46.5	0	0	0	0	12	12
562.5	46.875	1	0	0	0	12	13
568.5	47.375	0	1	0	0	12	13
573	47.75	1	1	0	0	12	14
580.5	48.375	0	0	1	0	12	13
589.5	49.125	0	1	2	2	10	15
595.5	49.625	1	1	1	0	12	15
604.5	50.375	0	0	0	0	13	13
615	51.25	0	1	0	0	13	14
625.5	52.125	0	2	0	0	13	15
631.5	52.625	1	0	1	0	13	15
637.5	53.125	0	1	1	0	13	15
651	54.25	0	0	0	0	14	14
655.5	54.625	1	0	0	0	14	15
672	56	0	2	0	0	14	16
678	56.5	1	0	1	0	14	16
688.5	57.375	1	1	1	0	14	17
697.5	58.125	0	0	0	0	15	15
702	58.5	1	0	0	0	15	16
712.5	59.375	1	1	0	0	15	17
720	60	0	0	1	0	15	16

Note: Convert inches into metric equivalent measurement, as follows:

- Millimeters (mm) = Inches x 25.4
- Centimeters (cm) = Inches x 2.54
- Meters (M) = Inches x .0254

### 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.

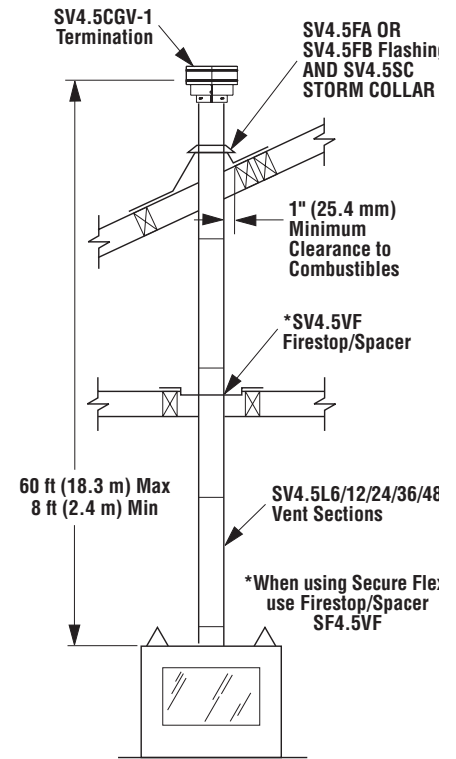


Figure 18

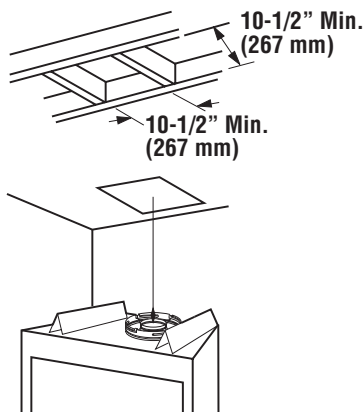
### Vertical (Offset) Installation

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 17** 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 23** 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.**

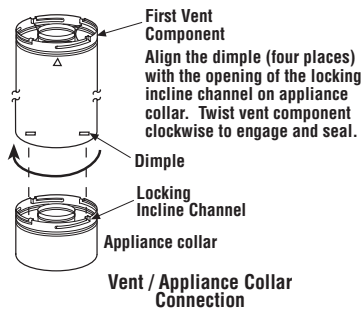
**A. Frame ceiling opening** - Use a plumb line from the ceiling above the appliance to locate center of the vertical run. Cut and/or frame an opening, 10-1/2" x 10-1/2" (267mm x 267mm) inside dimensions, about this center mark (*Figure 19*).



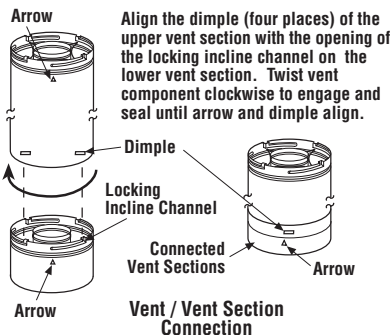
**Figure 19**

**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 20*).

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 20**



**Figure 21**

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 20*). 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 in. (13 mm) 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.

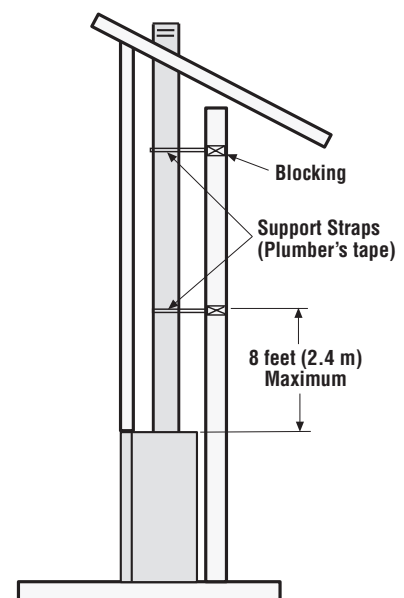
Push the vent component against the previous section until it fully engages, then twist the component clockwise running the dimples down and along the incline channels until they seat at the end of the channels. **This seating position is indicated by the alignment of the arrow and dimple as shown in Figure 21.**

**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.**

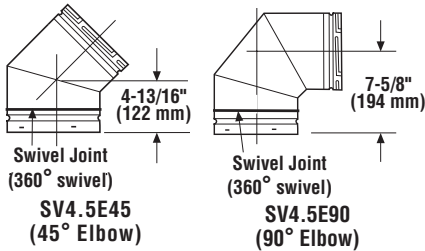
**E. Support the vertical vent run sections** - Support the vertical portion of the venting system every 8 feet (2.4m) above the fireplace vent outlet using field provided support straps (conventional plumber's tape). Secure the plumber's tape to the framing members with nails or screws.

Loop the tape around the vent, securing the ends of the tape to the framing. If desired, sheet metal screws #6 x 1/2 in. (13 mm) length may be used to secure the support straps to the vent pipe. See *Figure 22*.



**Figure 22**

**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 23*.

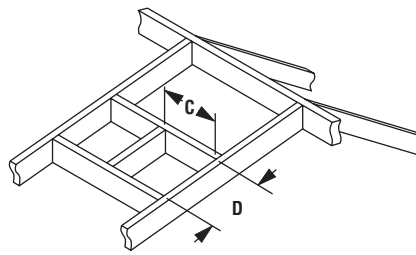


*Figure 23*

**G. Continue installation of horizontal/inclined sections** - Continue with the installation of the straight vent sections in horizontal/inclined run as described in **Step C**. Install support straps every 5 ft (1.52 m) along horizontal/inclined vent runs using conventional plumber's tape. **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 in. 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 24*.

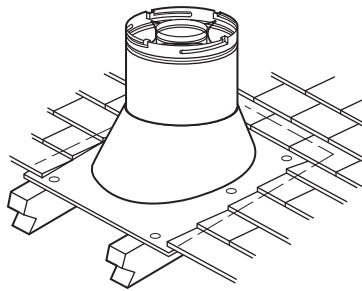


**Framing Dimensions for Roof**

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)

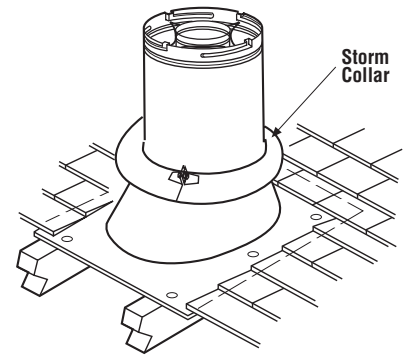
*Figure 24*

**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 25*). 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.



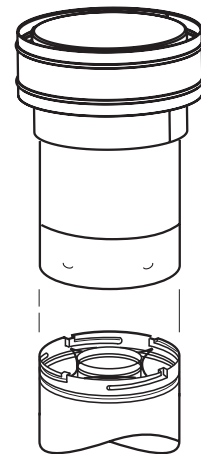
*Figure 25*

**J. Install the storm collar** - Install the storm collar, supplied with the flashing, over the vent/flashing joint. See *Figure 26*. 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 26*

**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" in *Figure 4 on page 6*. The SV4.5CGV-1 Vertical Termination (*Figure 27*) 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 27*

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**

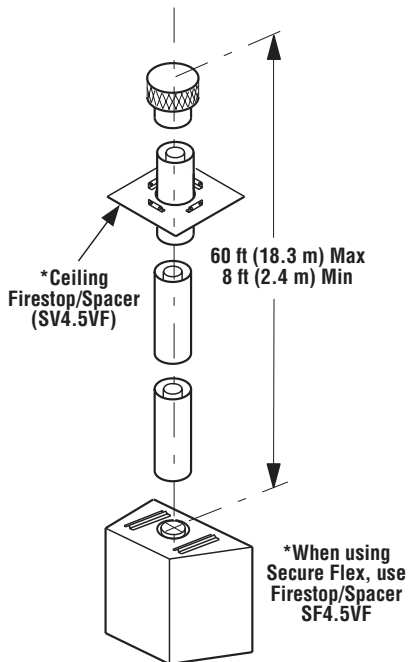
*Note: Secure Vent (rigid vent pipe) is shown in the figures; Secure Flex (flexible vent pipe) may also be used.*

**⚠ 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 in. 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 28 - Top Vent - STRAIGHT**

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)

$V + V_1 + H = 60 \text{ feet (18.3 m) Max.}$   
 $H = 20 \text{ feet (6.2 m) Max.}$

*\*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 29 - Top Vent - TWO 90 DEGREE ELBOWS**

V MINIMUM		H + H <sub>1</sub> 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)

$H + H_1 = 20 \text{ feet (6.2 m) Max.}$   
 $V + V_1 + H + H_1 = 60 \text{ feet (18.3 m) Max.}$

**Figure 30 - Top Vent - THREE ELBOWS**

## HORIZONTAL (OUTSIDE WALL) TERMINATION SYSTEM

**Figure 31, and Figures 34 to 36 on pages 20 and 21** 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 6 on page 7** for location guidelines.

**Secure Vent** SV4.5 direct vent system components are unitized concentric pipe components featuring positive twist lock connection, (refer to **Figure 21 on page 15**). 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 -

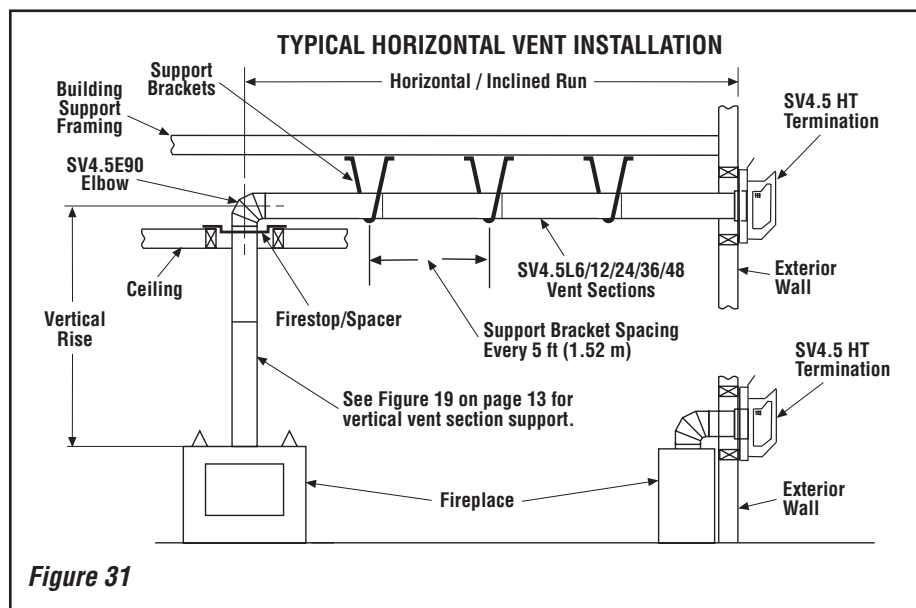
Analyze the vent routing and determine the types and quantities of sections required 4-1/2" (114 mm), 10-1/2" (267 mm), 22-1/2" (572 mm), 34-1/2" (876 mm) and 46-1/2" (1181 mm) net section lengths are available. Plan the vent lengths so that a joint does not occur at the intersection of ceiling or roof joists. Make allowances for elbows as indicated in **Figure 23 on page 16**. **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 10 on page 9**. 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 19 on page 15**).

**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 20 on page 15**).



**Figure 31**

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 21 on page 15.**

### 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 15.

**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 23**.

### 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 31**. **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 33**. 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 33**, refer to **Table 7 on page 20**. 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 32** in the same manner as any SV4.5 vent component (refer to **Step E**).

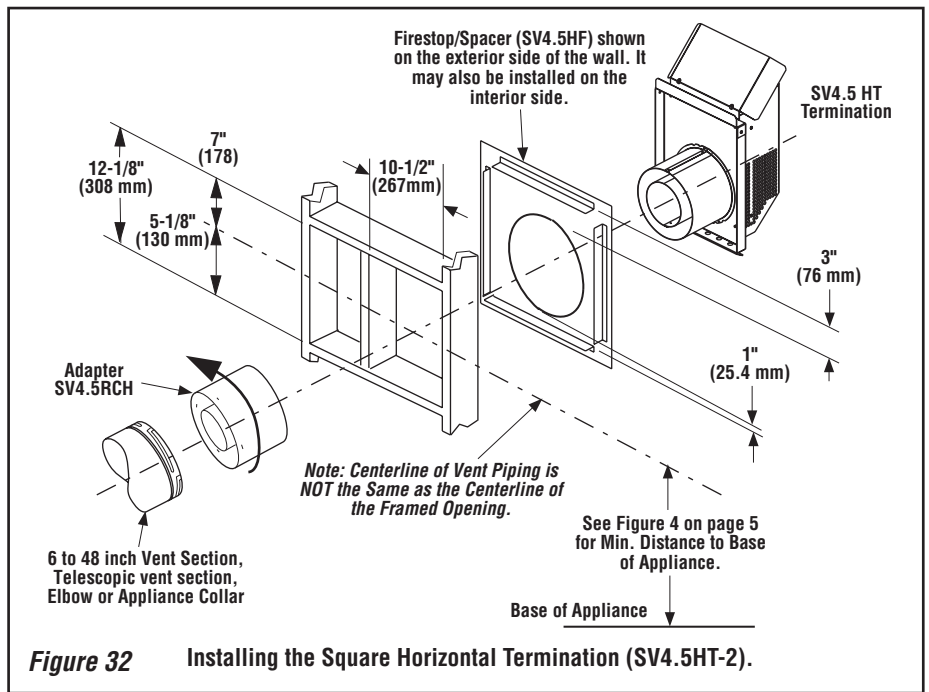
**L. Install Firestop/Spacer at exterior wall** - When using the **square** termination, install SV4.5HF (Secure Vent), SF4.5HF (Secure Flex) Firestop/Spacer over the opening at the exterior side of the framing, long side up, with the 3 inch spacer clearance at the top as shown in **Figure 32**, and 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.

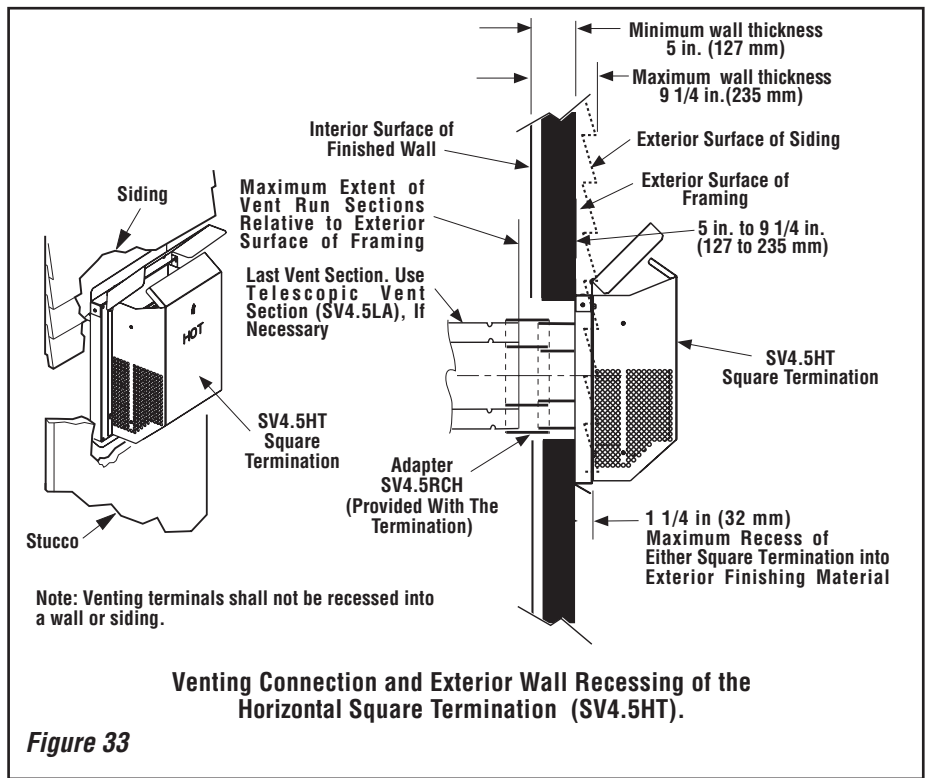
Orient the housing of the termination with the arrow pointed upwards. Secure the termination to the exterior wall.

**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 32** Installing the Square Horizontal Termination (SV4.5HT-2).



**Figure 33**

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.

NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE.

## 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 in. 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.

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)

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 = 60 feet (18.3 m) Max.			
H = 20 feet (6.2 m) Max.			

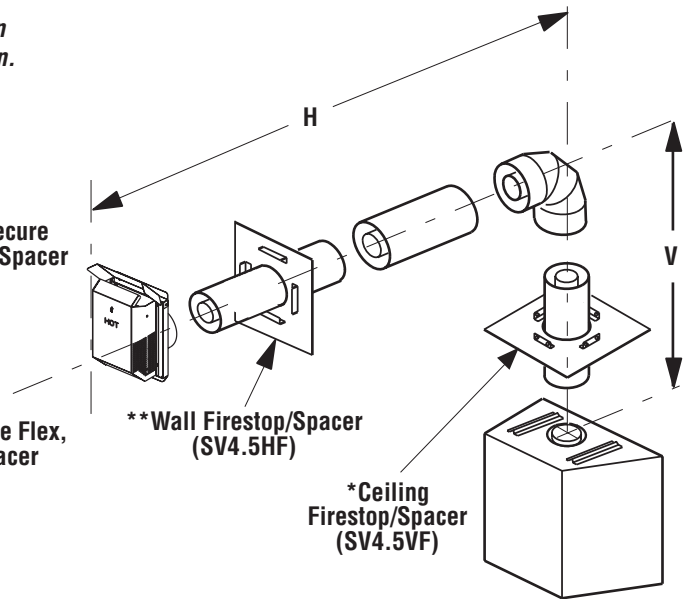
**Square termination (SV4.5HT-2) shown.**

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

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

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

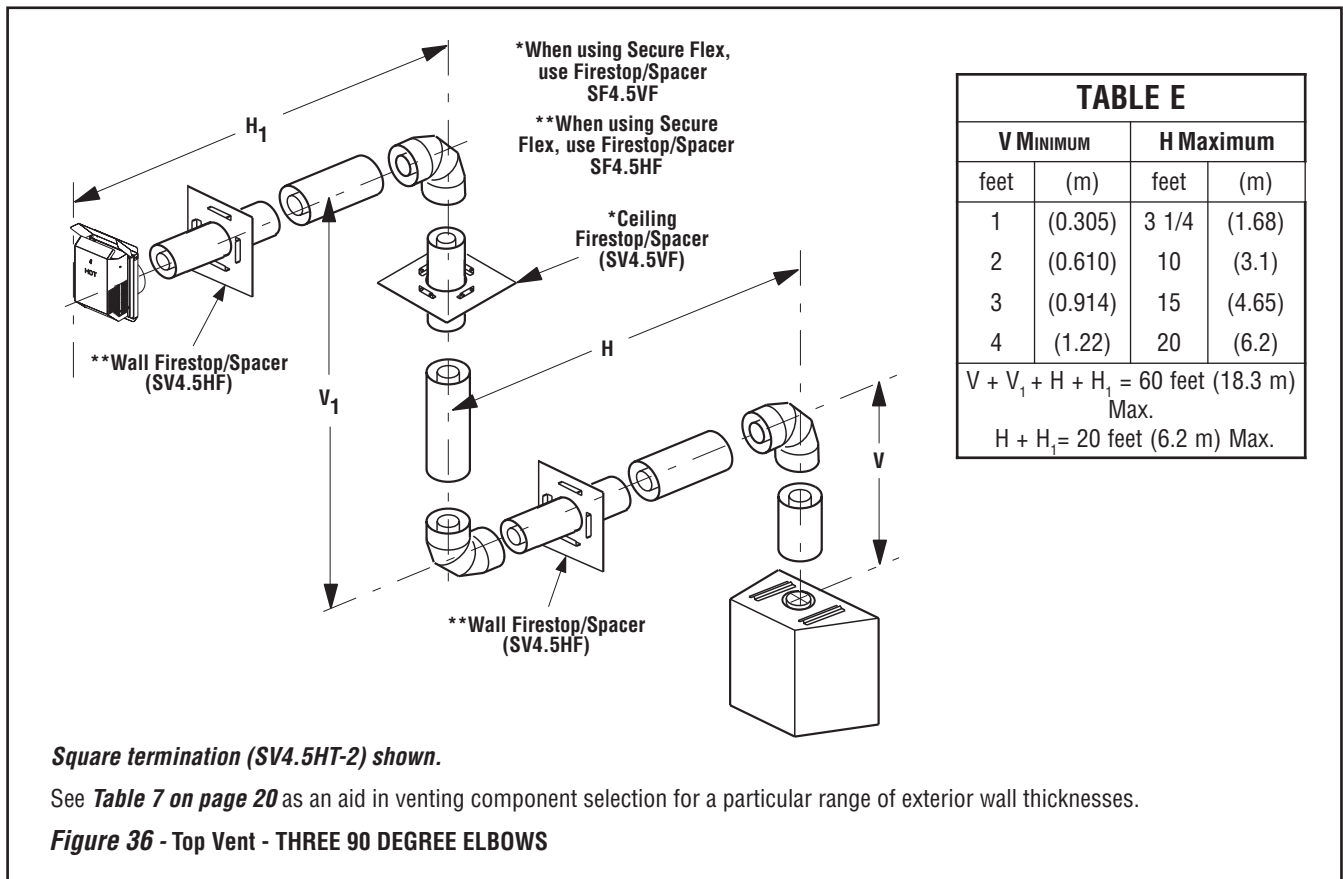
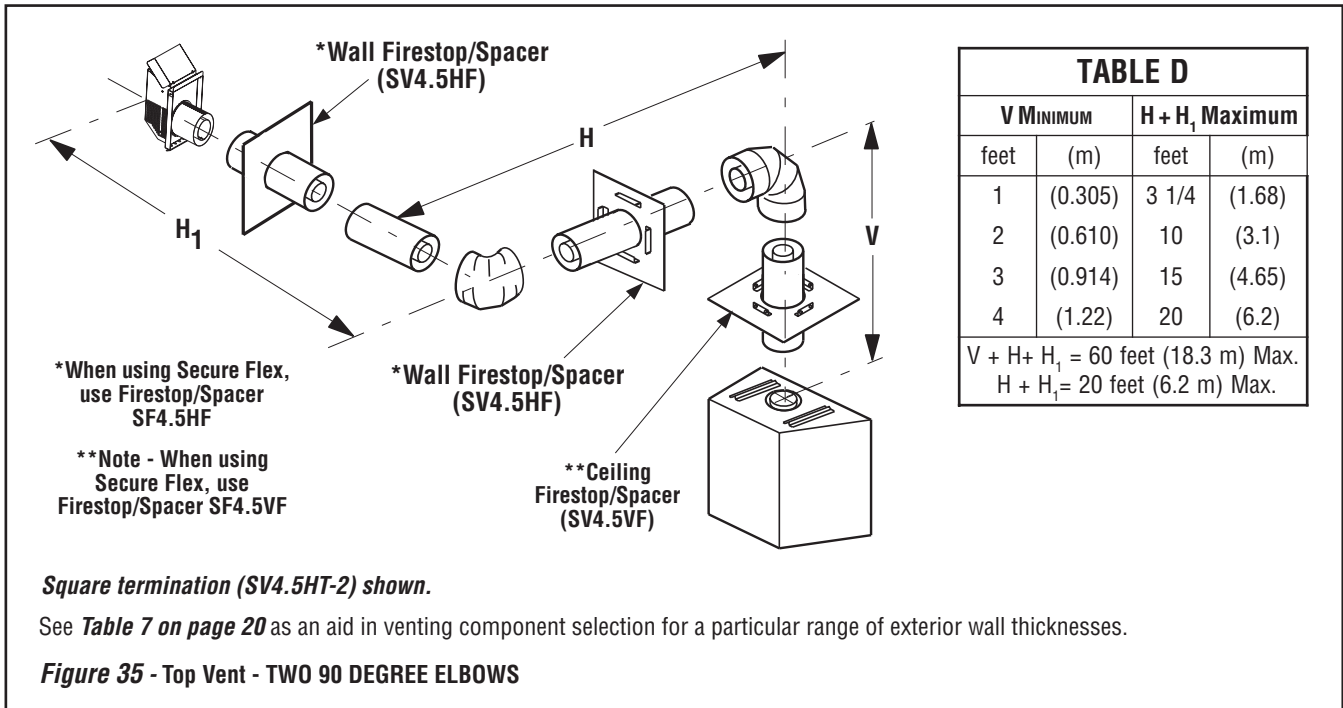
**\*Ceiling Firestop/Spacer (SV4.5VF)**



See **Table 7** as an aid in venting component selection for a particular range of exterior wall thicknesses.

**Figure 34 - Top Vent - ONE 90 DEGREE ELBOW - ELBOW CONNECTION NOT DIRECTLY AT APPLIANCE**

**HORIZONTAL VENT FIGURES/TABLES**  
(continued)



## 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 37):**

### 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 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.

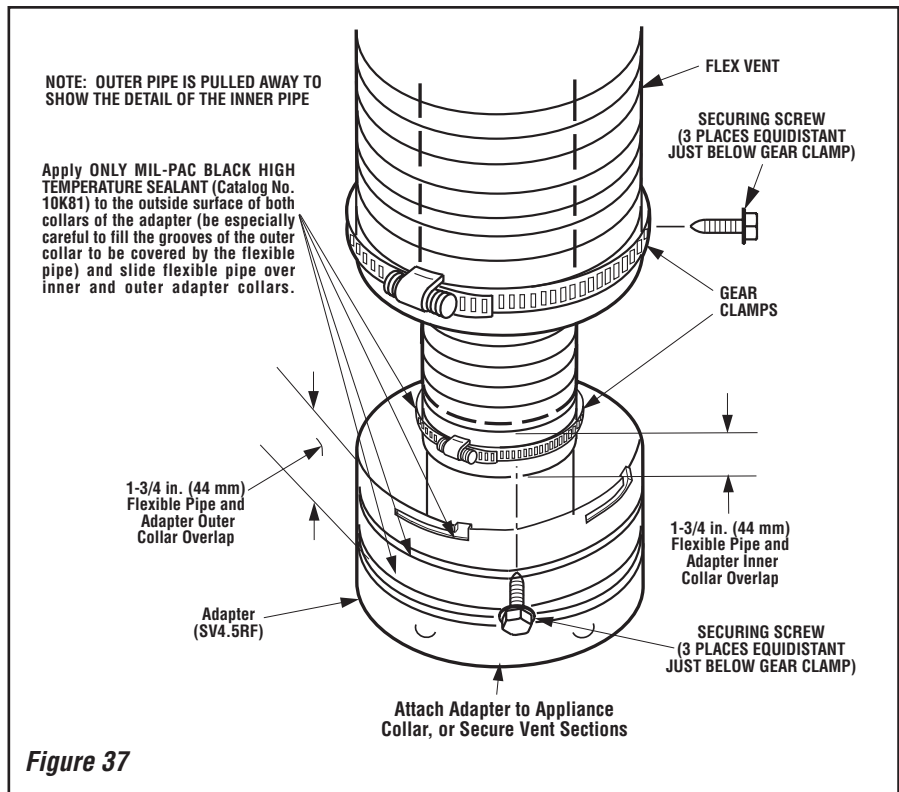


Figure 37

### 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 38**. Support horizontal sections of flex with metal straps at 2 foot (0.61 m) intervals.

### SF-12 or SF-18 Flexible Vent Section

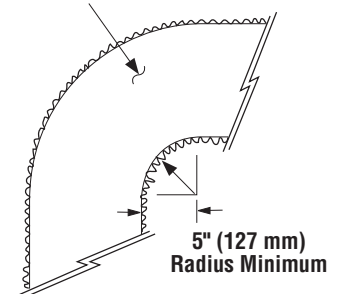


Figure 38

### 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 37**) 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.**

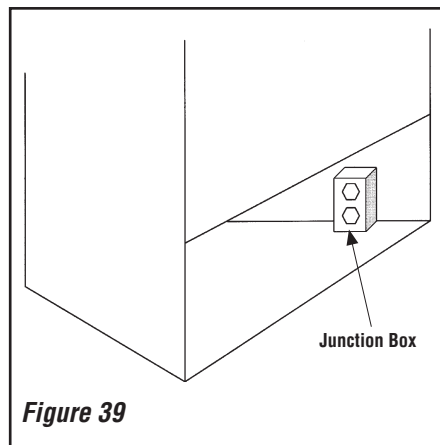
NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE.

## Step 4. FIELD WIRING

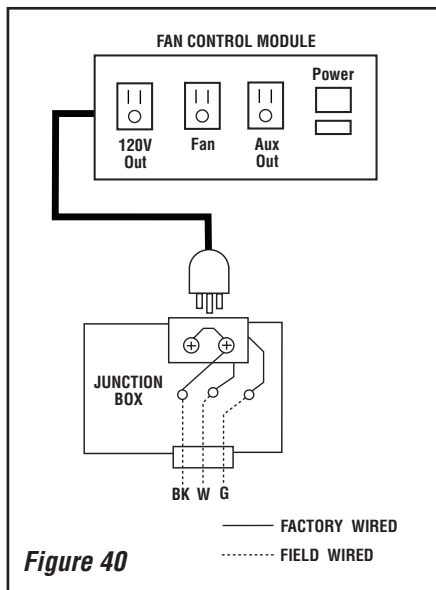
**Note:** This appliance must be connected to the main power supply.

The junction box assembly is located inside the control compartment close to the front right side corner (see **Figure 39**). 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 1ph power supply to the appliance.
2. Remove the metal cover plate and the duplex receptacle from the junction box assembly (unplug fan control power cord from receptacle).
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 40**.
5. Reassemble duplex receptacle and cover plate on junction box. Tighten conduit fitting clamp screws to secure supply wires.
6. Insert the fan control power cord into the duplex receptacle.



**Figure 39**



**Figure 40**

These appliances are equipped with a gas flex line for use (where permitted) in connecting the unit to the gas line. A gas flex line is provided to aid in attaching the direct vent appliance to the gas supply. The gas flex line can only be used where local codes permit.

See **Figure 41** 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 48 on page 27**). 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.

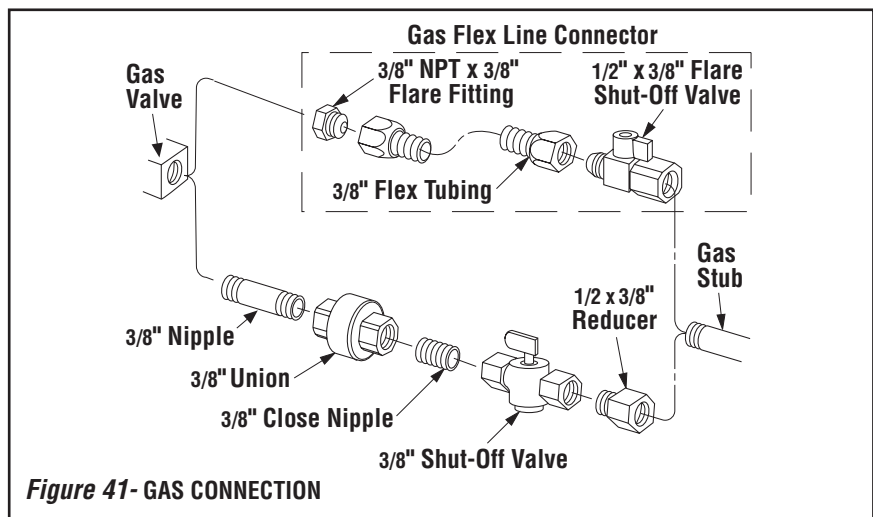
**D.** When the gas lines are tested and leak free, observe the individual tongues of flame on the burner. Make sure all ports are open and producing flame evenly across the burner. If any ports are blocked, or partially blocked, clean out the ports.

## **⚠ 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 41** 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.



**Figure 41- GAS CONNECTION**

## Remote Control System

The Remote and Receiver allows you to command the functions of your fireplace from the comfort of your chair and is configured to control the On/Off primary burner operation, its flame levels (through six levels) and provides On/Off and Smart thermostatic control.

The system controls fan speed through six (6) levels and has a constantly powered 110V/60Hz power outlet.

The Receiver connects directly to the gas valve, stepper motor and the Fan Control Module with an umbilical cord wiring harness. The Receiver is powered by 4 AA type batteries, located within.

The Receiver accepts commands via radio frequency from the Transmitter and does not require line-of-sight operation.

The Receiver three position slider switch can be set to one of three positions: ON (Manual Override), REMOTE (Remote Control) or OFF.

### Initializing The System For The First Time

Install the 4 AA batteries into the receiver battery bay (behind the wall switch plate).

**Note:** The polarity of the battery and insert into the battery bay as indicated on the Battery cover (+/-).

Place the 3 position slider switch in the "Remote" position (see **Figure 42**). Using the end of a paper clip, or other similar object, insert the end of the paper clip into the hole marked "PRG" on the Receiver front cover. The Receiver will "beep" three (3) times to indicate that it is ready to synchronize with a Transmitter.

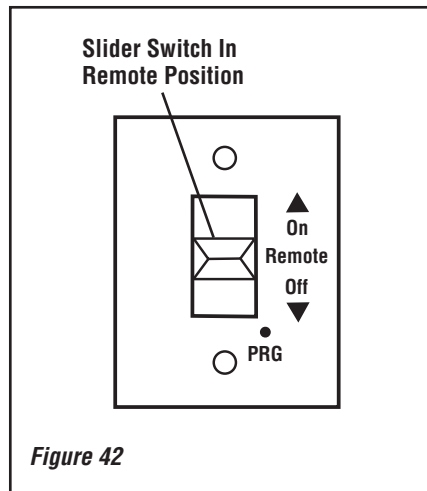


Figure 42

Install the 3 AAA type batteries in the Transmitter battery bay, located on the base of the Transmitter. With the batteries already installed in the Transmitter, push the ON button. The Receiver will "beep" four times to indicate the Transmitter's command is accepted and sets to the particular code of that Transmitter. The system is now initialized.

### Low Battery Power Detection

The life span of the Receiver batteries depends on various factors: quality of the batteries used, the number of ignitions of the appliance, the number of changes to the room thermostat set point, etc.

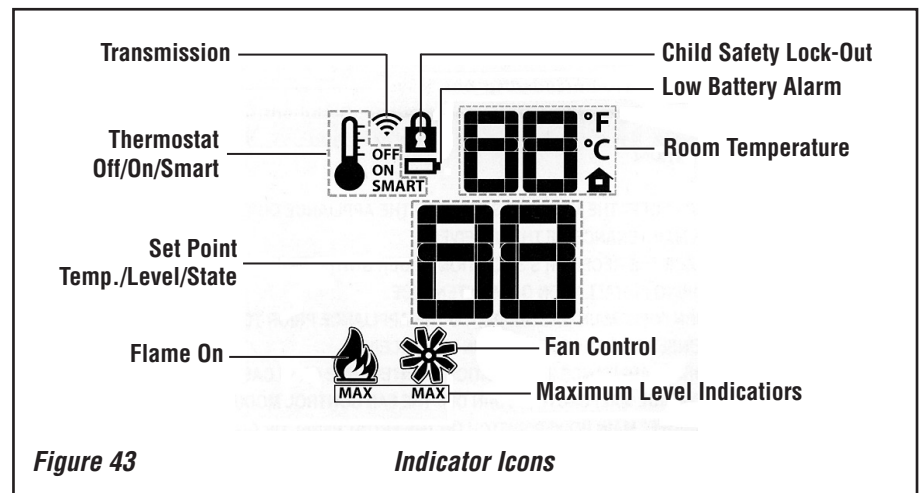


Figure 43

Indicator Icons

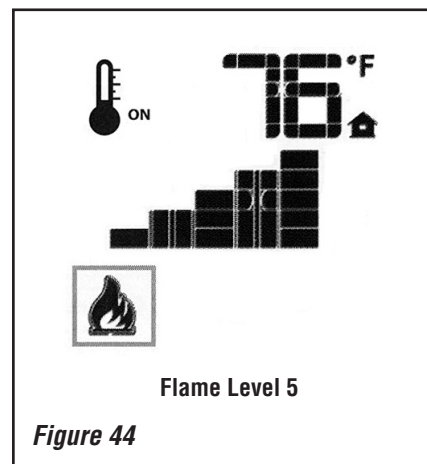


Figure 44

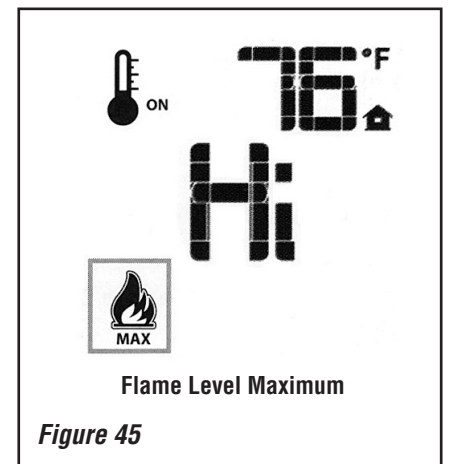


Figure 45

When the Receiver batteries are low, two "beeps" will be emitted from the Receiver when it receives and ON/OFF command from the Transmitter. This is an alert for a low battery condition for the Receiver. When the batteries are replaced the "beep" will be emitted from the Receiver when the ON/OFF key is pressed (See Initializing The System)

### **! WARNING**

**Fire hazard. Can cause severe injury or death. The receiver causes ignition of the appliance. The appliance can turn on suddenly. Keep away from the appliance burner when operating the remote system or activating manual bypass of the remote system.**

### **⚡ CAUTION**

**Property damage hazard. Excessive heat can cause property damage. The appliance can stay lit for many hours. Turn off the appliance if it is not going to be attended for any length of time. Always place the Transmitter where children can not reach it.**

#### **Temperature Indicator Display**

With the system in the "OFF" position, press the Thermostat Key and the Mode Key at the same time (see *Figure 46*). Look at the LCD screen on the Transmitter to verify that a C or F is visible to the right of the Room Temperature display (see *Figure 43*).

#### **Turn On The Appliance**

Press the ON/OFF Key on the Transmitter. The Transmitter display will show all active Icons on the screen. At the same time, the Receiver connects the flame sensor to the gas valve millivolt coil and the appliance main burner turns on. A single "beep" from the Receiver will confirm reception of the command.

#### **Turn Off The Appliance**

Press the ON/OFF Key on the Transmitter. The Transmitter LCD display will only show the room temperature and Icon. At the same time, the Receiver disconnects the flame sensor from the gas valve millivolt coil and the appliance burner turns off. A single "beep" from the Receiver confirms reception of the command.

#### **Remote Flame Control**

The system has six (6) flame levels. See *Figure 44* for an example. With the system on, and the flame level at the maximum in the appliance, pressing the Down Arrow Key once will reduce the flame height by one step until the flame is turned off.

The Up Arrow Key will increase the flame height each time it is pressed. If the Up Arrow Key is pressed while the system is on but the flame is off, the flame will come on in the high position (see *Figure 45*). A single "beep" will confirm reception of the command.

#### **Room Thermostat (Transmitter Operation)**

The Remote Control can operate as a room thermostat. The thermostat can be set to a desired temperature to control the comfort level in a room. To activate this function, press the Thermostat Key. The LCD display on the Transmitter will change to show that the room temperature is "ON" and the set temperature is now displayed (see *Figure 46*).

To adjust the set temperature, press the Up or Down Arrow Keys until the desired set temperature is displayed on the LCD screen of the Transmitter.

#### **Smart Thermostat (Transmitter Operation)**

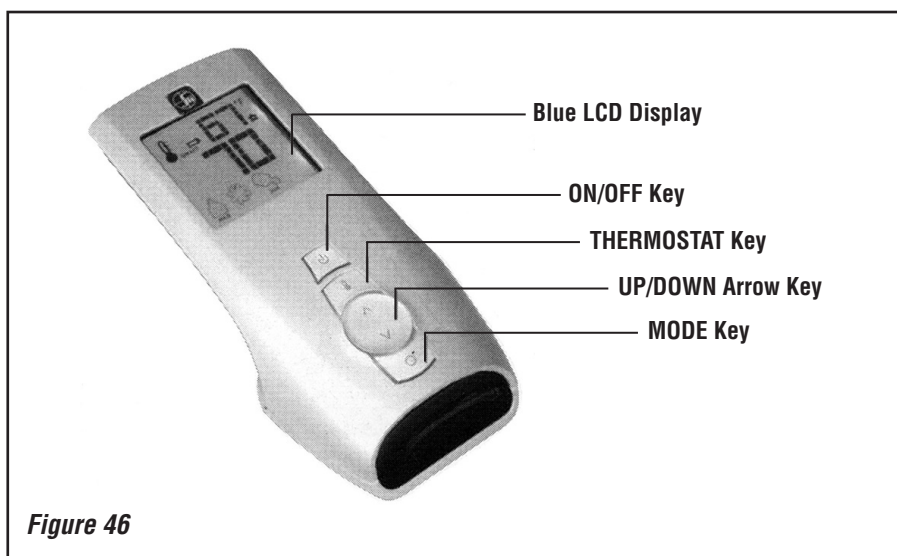
The smart Thermostat function adjusts the flame height in accordance to the difference between the set point temperature and the actual room temperatures. As the room temperature gets closer to the set point, the Smart Function will modulate the flame down.

To activate this function, press the Thermostat Key until the word "SMART" appears to the right of the temperature bulb graphic. To adjust the set temperature, press the Up or Down Arrow Keys until the desired set temperature is displayed on the LCD screen of the Transmitter (see *Figure 46*).

#### **Fan Speed Control**

This appliance is equipped with a hot air circulating fan. The speed of the fan is controlled by the Remote. The fan speed can be adjusted through six (6) speeds.

To activate this function use the Mode Key to index to the fan control icon (see *Figure 43*). Use the Up/Down Arrow keys to turn on, off or adjust the fan speed. A single "beep" will confirm reception of the command.



**Figure 46**

**Note:** The fan can be controlled only by the remote. Turning the fireplace off with the wall mounted three position slider switch will NOT turn off the fan. To turn off the fan, use the remote in lieu of or prior to shutting the fireplace off at the wall.

Fan speed will be indicated by either an Off, Level Bar, or HI shown in the Set Point/Temp/Level/State indicator area.

### Key Lock

This function will lock the keys to avoid unsupervised operation. To activate this function, press the MODE and UP keys at the same time. To de-activate this function, press MODE and UP Keys at the same time.

### Intermittent/Standing Pilot Mode

This fireplace can be switched from intermittent ignition to a standing pilot simply by toggling the switch located in the lower control compartment. To save energy, switch to intermittent mode. To have a standing pilot which will help startup in the winter by warming the flue and the glass, switch to standing pilot. The standing pilot mode is indicated by a pilot that comes on and remains lit when the fireplace is off.

### Manual Bypass Of The Remote System

If the batteries of the Receiver or Transmitter are low or depleted, the appliance can be turned on manually by sliding the three position slider switch to the ON position. This will bypass the remote control feature of the system and the appliance main burner will come on if the gas valve is in the "On" position.

## 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 **Care And Operation Instructions (875,020M)** for detailed placement instructions for ceramic panel, logs and glowing embers (rockwool).

## Step 7. CHECKING APPLIANCE OPERATION

With gas line installed run initial system checkout before closing up the front of the unit. Follow the lighting instructions provided in the **Care And Operation Instructions (875,020M)**.

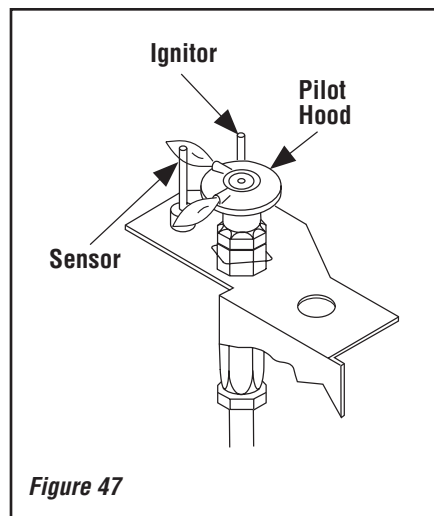
**Note:** Instructions are also found on the literature tag attached to the gas valve train.

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.

### Appliance Checkout

Ensure the ignitor lights the pilot. The pilot flame should engulf the flame sensor as shown in **Figure 47**.

With proper care and maintenance, your appliance will provide many years of enjoyment. If you should experience any problem, first refer to the trouble shooting guide in this manual. If problem persists, contact your Lennox distributor.

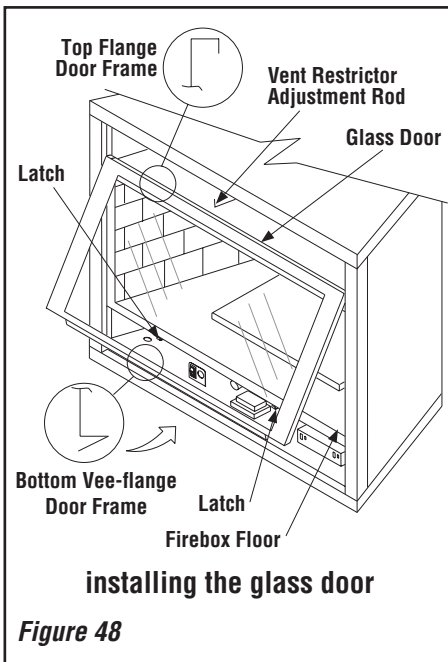


## Step 8. INSTALLING THE GLASS DOOR

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 48**). 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.



**! WARNING**  
Handle this glass with extreme care! The glass panel is susceptible to damage - Do not scratch while handling or while reinstalling 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

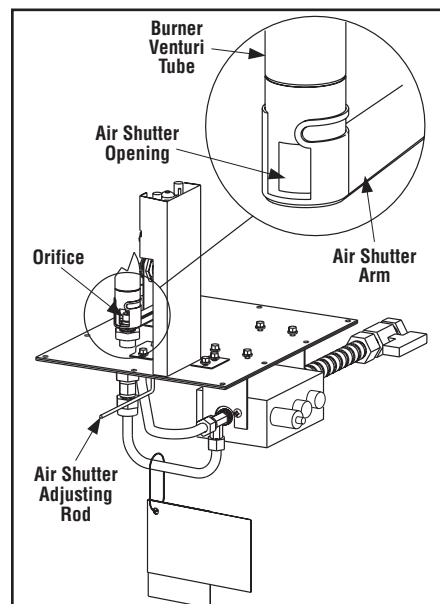
### **! CAUTION**

**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 49*. 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 49**

### Vent Restrictor

The appliance has a built-in vent restrictor, refer to *Figure 49* for location of the adjustment rod, 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.**

NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE.

### Venting Configuration Adjustment Rod Position

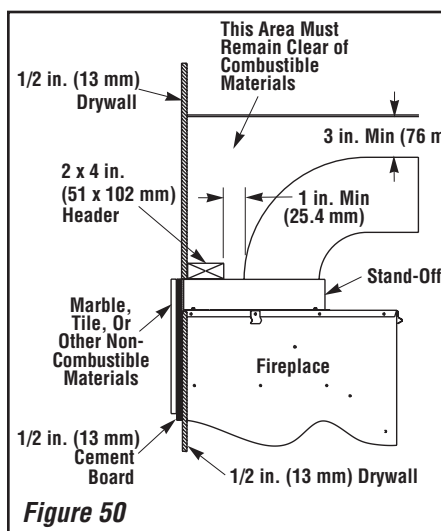
1. Horizontal Venting with 6 in. (152 mm) vent section and one 90° elbow.	* Pointed toward the front.
2. Vertical venting.	* Pointed toward the left.
3. Combination of vertical and horizontal venting.	* Adjust accordingly for best result.

\* Adjustment to the air shutter may be required to get the desired flame appearance, (refer to *Figure 49*).

## FINISHING REQUIREMENTS

### Wall Details

Complete finished interior wall. To install the appliance facing flush with the finished wall, position the framework to accommodate the thickness of the finished wall (*Figure 50*).



**Figure 50**

Spectra fireplaces require the use of a cast iron surround:

- 35 in. — P/N H0378, model LSS-CA35, or
- 40 in. — P/N H0398, model LSS-CA40.

Non-combustible facing materials with a total installed thickness of less than 1 in. (slab marble, tile, non-combustible cement board, etc.) may be installed up to the circulation air opening flange, above the glass door, and against the surround mounting brackets at the sides of the fireplace.

If non-combustible facing materials thicker than 1 in. (25 mm) are used, they may be installed only up to the outside edges of the cast iron surround at the sides of the fireplace, and must allow a 1/2 in. (13 mm) clearance at the top of the surround to allow its removal.

Use a Spectra Template Kit to help ensure proper placement of facing materials:

- 35 in. — LSS35-FPT, or
- 40 in. — LSS40-FPT.

## STEP 10. ATTACHING SAFETY-IN-OPERATION WARNINGS

It is the installers responsibility to ensure these warnings are properly affixed during installation. These warning labels are a critical step in informing consumers of safe operation of this appliance.

### ATTACHING SAFETY-IN-OPERATION WARNINGS

Your fireplace has been furnished with safety instruction labels that are to be affixed to the operation and control points of the fireplace. A safety instruction label should be affixed to the receiver wall switch plate where the fireplace is turned on and off (*See Figure A*) and the remote control handheld transmitter (*Figure B*). The warnings should already have been put in place when the fireplace initial set-up was completed. If they are not affixed at these spots, locate the multi-lingual adhesive labels provided with these instructions and proceed as follows:

1. Locate the wall receiver that controls the fireplace (verify the switch operates the fireplace by turning it on and off). Clean the wall receiver plate thoroughly to remove any dust and oils. Affix the label to the surface of the plate of the wall receiver that controls the fireplace (*Figure A*). Choose the language primarily spoken in the home.
2. Locate the remote control transmitter and clean it thoroughly to remove any dust and oils. Affix the label to the surface of handheld transmitter (*Figure B*). Choose the language primarily spoken in the home.
3. If you are unable to locate the labels, please call Lennox Hearth Products or your nearest Lennox Hearth Products dealer to receive additional safety instruction labels free of charge.

Cat. No. H8024 Replacement Label Kit

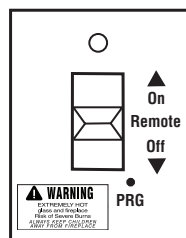
**LENNOX HEARTH PRODUCTS**  
1-800-9-LENNOX

*Note: English is red text on clear label. French and Spanish are white text on black label.*

### SAFETY LABEL DIAGRAMS



*Figure A*



### APPOSITION DES MISES EN GARDE RELATIVES À LA SÉCURITÉ D'UTILISATION

Votre foyer a été livré avec des étiquettes de sécurité qui doivent être collées à côté des dispositifs de contrôle du foyer. Une étiquette de sécurité devrait être collée sur la plaque du récepteur mural contrôlant l'allumage du foyer (*voir Figure A*) et sur le boîtier de la télécommande (*Figure B*). Les mises en garde auraient dû être collées au moment de l'installation initiale du foyer. Si ce n'est pas le cas, prenez les étiquettes adhésives multilingues fournies avec ces instructions et procédez comme suit:

1. Repérez le récepteur mural qui contrôle le foyer (vérifiez que l'interrupteur contrôle le fonctionnement du foyer en le faisant basculer de Marche à Arrêt, et vice-versa). Nettoyez soigneusement la plaque du récepteur mural pour éliminer la poussière et les traces de graisse ou d'huile. Collez l'étiquette sur la surface de la plaque du récepteur mural qui contrôle le foyer (*Figure A*). Choisissez la langue qui est principalement parlée dans la résidence du propriétaire.
2. Repérez la télécommande et nettoyez-la soigneusement pour éliminer la poussière et les traces de graisse ou d'huile. Collez l'étiquette sur le boîtier de la télécommande (*Figure B*). Choisissez la langue qui est principalement parlée dans la résidence du propriétaire.
3. Si vous ne trouvez pas les étiquettes, veuillez appeler Lennox Hearth Products ou votre distributeur Lennox Hearth Products local pour recevoir gratuitement des étiquettes supplémentaires.

Étiquettes de remplacement, n° cat. H8024

**LENNOX HEARTH PRODUCTS**  
1-800-9-LENNOX

*Remarque : Le texte anglais est rouge sur un support transparent. Le texte français et espagnol est blanc sur un support noir.*

### DIAGRAMMES DES ÉTIQUETTES DE SÉCURITÉ



*Figure B*



### COLOCACIÓN DE ADVERTENCIAS DE SEGURIDAD EN OPERACIÓN

Su chimenea incluye etiquetas de instrucciones de seguridad que deben colocarse en los puntos de operación y control de la chimenea. Se debe colocar una etiqueta de instrucciones de seguridad en la placa del interruptor de pared del receptor desde el cual se enciende y se apaga la chimenea (*ver la Figura A*) y en el transmisor de control remoto (*Figura B*). Las advertencias ya deben haberse colocado cuando se completó la instalación inicial de la chimenea. Si no están colocadas en estos lugares, encuentre las etiquetas adhesivas multilingües proporcionadas con estas instrucciones y prosiga de la siguiente manera:

1. Identifique el receptor de pared que controla la chimenea (verifique que el interruptor opera la chimenea encendiéndola y apagándola). Limpie bien la placa del receptor de pared para quitar el polvo y aceite. Pegue la etiqueta en la superficie de la placa del receptor de pared que controla la chimenea (*Figura A*). Seleccione el idioma que más se habla en la casa.
2. Identifique el transmisor de control remoto y límpielo bien para quitar el polvo y aceite. Pegue la etiqueta en la superficie del transmisor (*Figura B*). Seleccione el idioma que más se habla en la casa.
3. Si no puede encontrar las etiquetas, sírvase llamar a Lennox Hearth Products o al distribuidor de Lennox Hearth Products más cercano para recibir etiquetas de instrucciones de seguridad adicionales gratuitas.

Juego de etiquetas de repuesto - N° de cat. H8024





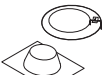

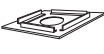



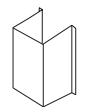
**LENNOX HEARTH PRODUCTS**  
1-800-9-LENNOX

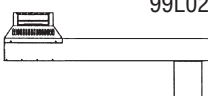
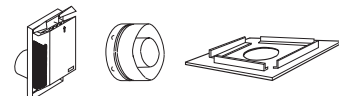
*Nota: La etiqueta en inglés es transparente con texto rojo. Las etiquetas en francés y español son negras con texto blanco.*

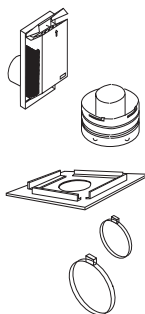
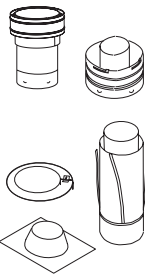
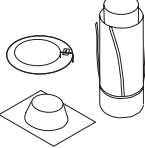


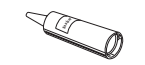
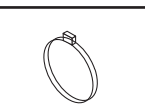
### DIAGRAMAS DE ETIQUETAS DE SEGURIDAD



## INSTALLATION ACCESSORIES

Listed <b>Secure Vent™</b> Components			
	Cat. No.	Model No.	Description
	H2152	SV4.5CGV-1	Vertical Termination
	77L70	SV4.5L6	6 inch (152 mm) Vent Section
	77L71	SV4.5L12	12 inch (305 mm) Vent Section
	77L72	SV4.5L24	24 inch (610 mm) Vent Section
	77L73	SV4.5L36	36 inch (914 mm) Vent Section
	77L74	SV4.5L48	48 inch (1219 mm) Vent Section
	77L75	SV4.5LA	Telescopic Section
	77L76	SV4.5E45	45 Degree Elbow
	77L77	SV4.5E90	90 Degree Elbow
The following flashings come packaged with a storm collar.			
	77L78	SV4.5F	Flat Roof Flashing
	77L79	SV4.5FA	1/12 to 7/12 Adjust. Flashing
	77L80	SV4.5FB	7/12 to 12/12 Adjust. Flashing
	77L81	SV4.5SC6	Storm Collars (6 collars/box)
	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	
	17M52	SV4.5 HGS-1	Heat Guard Square (1 - Pack)
	17M53	SV4.5 HGS-12	Heat Guard Square (12 - Pack)

Listed <b>Secure Vent™</b> Components			
	Cat. No.	Model No.	Description
	99L03	SV4.5HRK36	Horizontal Riser Kit 36 in. (914 mm)
	99L02	SV4.5HRK14	Horizontal Riser Kit 14 in. (356 mm)
	H1968	SV4.5HT-2	Horizontal Square Termination with Firestop/Spacer (96K80) and Adapter (74L61)

Listed <b>Secure Flex™</b> Components			
	Cat. No.	Model No.	Description
These termination kits include firestop/spacer, gear clamps and flex adapter.			
	H1969	SF4.5HT-2	Horizontal Square Termination without Flex
	77L87	SFKIT12	Flex Square Term. with 12 in. (305 mm) of *compressed Flex
	77L88	SFKIT18	Flex Square Term. with 18 in. (457 mm) of *compressed Flex
	77L89	SFKIT24	Flex Square Term. with 24 in. (610 mm) of *compressed Flex
	77L90	SFKIT36	Flex Square Term. with 36 in. (914 mm) of *compressed Flex
	77L91	SFKIT48	Flex Square Term. with 48 in. (1219 mm) of *compressed Flex
	56L74	SFVT30	Vertical Termin. for Flex (flat to 6/12) with Flex Adapter, section of rigid vent, roof support collar assembly, roof flashing and storm collar.
	56L75	SFVT45	Vertical Termin. for Flex (6/12 to 12/12) with Flex Adapter section of rigid vent, roof support collar assembly, roof flashing and storm collar.
	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)
(not illustrated)	H7748	FVK36	36 in. (914 mm) Flex Connector Kit

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

## GAS CONVERSION KITS

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

**AVERTISSEMENT: CET ÉQUIPEMENT DE CONVERSION SERA INSTALLÉ PAR UNE AGENCE QUALIFIÉE DE SERVICE CONFORMÉMENT AUX INSTRUCTIONS DU FABRICANT ET TOUTES EXIGENCES ET CODES APPLICABLES DE L'AUTORISÉS AVOIR LA JURIDICTION. SI L'INFORMATION DANS CETTE INSTRUCTION N'EST PAS SUIVIE EXACTEMENT, UN FEU, EXPLOSION OU PRODUCTION DE PROTOXYDE DE CARBONE PEUT RÉSULTER LE DOMMAGES CAUSER DE PROPRIÉTÉ, PERTE OU BLESSURE PERSONNELLE DE VIE. L'AGENCE QUALIFIÉE DE SERVICE EST ESPONSABLE DE L'INSTALLATION PROPRE DE CET 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 BY A MANUFACTURER'S AUTHORIZED REPRESENTATIVE, IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURER, PROVINCIAL OR TERRITORIAL AUTHORITIES HAVING JURISDICTION AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE CAN/CGA-B149.1 OR CAN/CGA-B149.2 INSTALLATION CODES.

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

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 CARE AND OPERATION DOCUMENTS BEFORE COMPLETING A CONVERSION. ALL WARNINGS, CAUTIONS AND DETAILED INSTRUCTIONS CONTAINED THEREIN ARE APPLICABLE HERE.**

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

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

Natural To Propane Gas Conversion Kits	
Models	Catalog No.
LSS-35	H7852
LSS-40	H7853

Propane To Natural Gas Conversion Kit	
Models	Catalog No.
LSS-35	H7854
LSS-40	H7855

**CAUTION: The gas supply shall be shut off prior to disconnecting the electrical power, before proceeding with the conversion.**

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

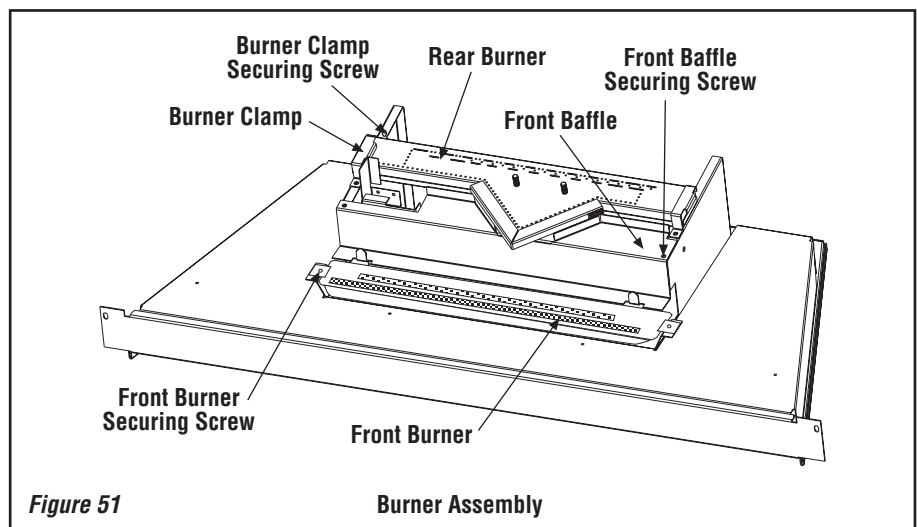
**Step 2.** Carefully remove the logs. Exercise care as not to break the logs.

**Step 3.** Remove the grate.

See **Figure 51** for Step 4 part removal details.

### Step 4

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



**Figure 51**

**Burner Assembly**

NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE.

## Electronic Appliances

**Step 5. SIT Systems** - Refer to *Figure 52* and the instructions provided with the kit. **Discard all removed components.**

**Step 6.** Shut off the gas supply to the valve and shut down the electric supply.

**Step 7.** See *Figure 52*. Using a Torx T20, or slotted screwdriver, remove and discard the two (2) pressure regulator mounting screws, pressure regulator tower, the diaphragm assembly (A) (if applicable) and the spring (B).

**Step 8.** Ensure the rubber gasket (C), which is pre-fitted as part of the assembly, is properly positioned (see *Figure 52*).

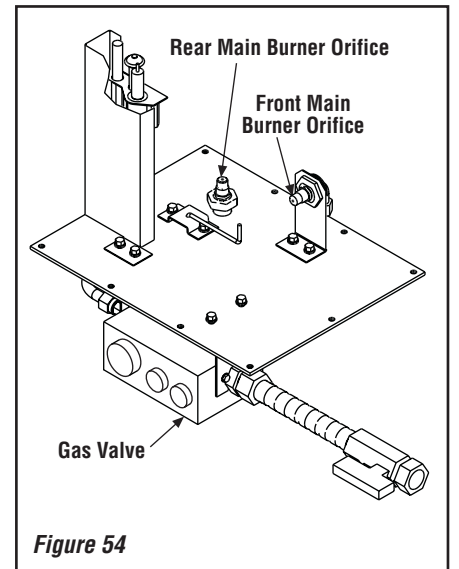
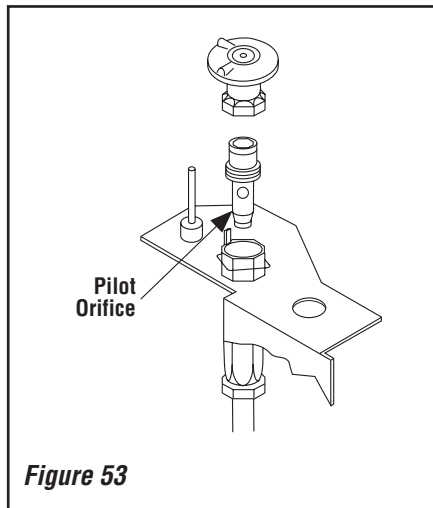
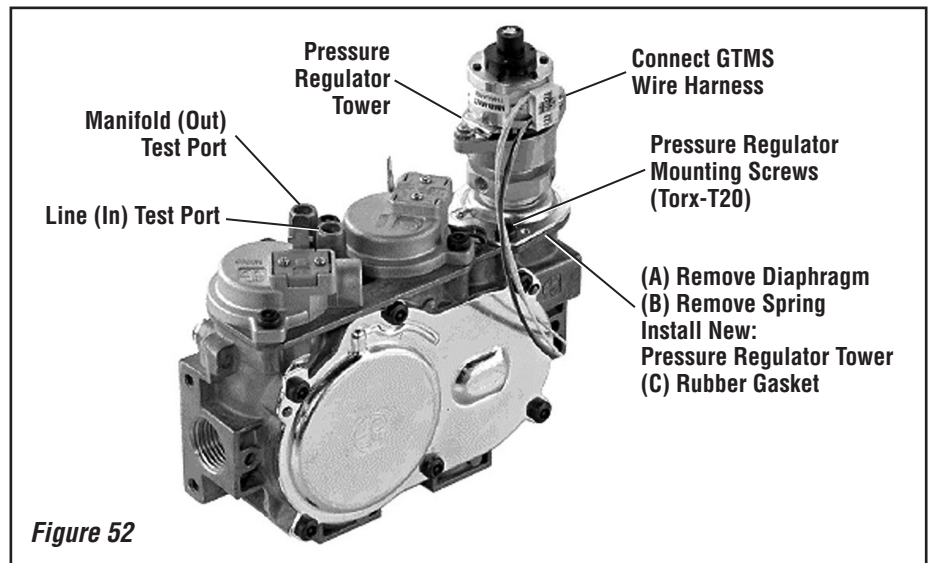
**Step 9.** Install the new Stepper Motor pressure regulator assembly using the supplied screws as shown in *Figure 44*. Tighten screws securely (reference torque = 25 lb. in.).

**Step 10.** Install the enclosed identification label to the valve body where it can be easily seen.

**Step 11.** Make Stepper Motor and valve electrical connections.

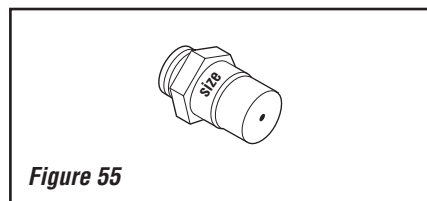
**Step 12.** Attach manometer to the manifold side pressure test fitting and verify manifold pressure reads 3.5 inches water column (0.87 kPa) for natural gas, and 10.0 inches water column (2.49 kPa) for propane gas (see *Figure 52*).

**Step 13.** See *Figure 53* and replace the pilot orifice as follows: Remove the pilot hood assembly to access the hexed pilot orifice. Remove and replace the orifice with the one provided with the kit. **Exercise extreme care to prevent damage to or breakage of the ignitor assembly.**



**Step 14.** Unscrew the rear and front main burner orifices (*refer to Figure 54*) 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 55*.

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 55**

**! 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 15.** 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 *Figure 49* on **page 27**.

**Step 16.** Attach the conversion kit label (*Figure 56*) to the rating plate on the appliance.

THIS APPLIANCE HAS BEEN CONVERTED TO:

**NATURAL GAS**

INPUT BTU/HR -

MANIFOLD PRESSURE -

ORIFICE SIZE -

THIS APPLIANCE HAS BEEN CONVERTED TO:

**PROPANE/LPG**

INPUT BTU/HR -

MANIFOLD PRESSURE -

ORIFICE SIZE -

**Example Labels**  
(Each Kit Contains Only One Label)

*Figure 56*

**Step 17.** 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.

**Step 18.** Apply gas to the system and relight appliance. With the main burner "ON", test the new pressure regulator assembly for leaks using a leak test solution.

**Step 19.** Relight the main burner and verify proper burner ignition and operation.

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

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