

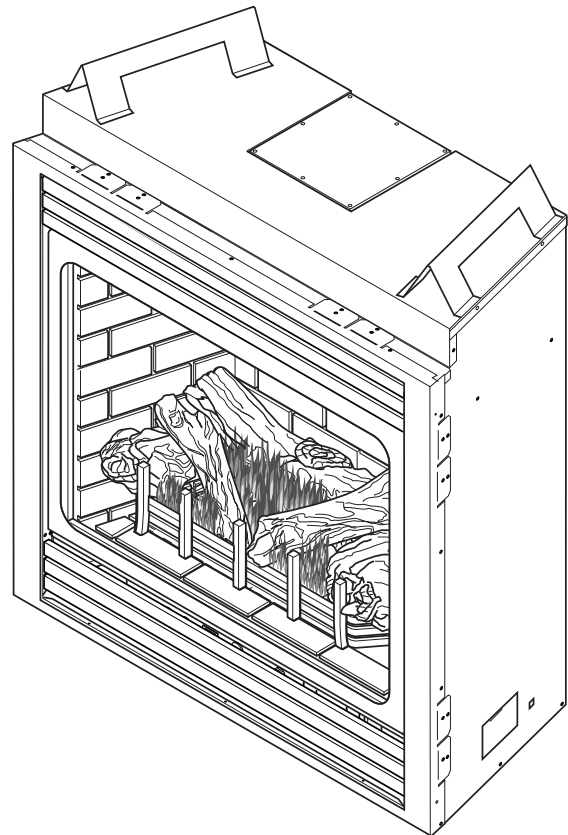
# BDV SERIES

## DIRECT VENT GAS FIREPLACE

### INSTALLATION AND OPERATING INSTRUCTIONS



**MODELS:**  
BDV300, BDV400,  
BDV500, BDV600



## WARNINGS

**IF THE INFORMATION IN THESE INSTRUCTIONS ARE NOT FOLLOWED EXACTLY, A FIRE OR EXPLOSION MAY RESULT CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR LOSS OF LIFE.**

- 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.

**WARNING:** Improper installation, adjustment, alteration, services 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.

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.

This appliance may be installed in an aftermarket\*, permanently located, manufactured home, where not prohibited by local codes.

\*Aftermarket: Completion of sale, not for purpose of resale, from the manufacturer.

**DUE TO HIGH TEMPERATURES, THE APPLIANCE SHOULD BE LOCATED OUT OF TRAFFIC AND AWAY FROM FURNITURE AND DRAPERIES.**

**CHILDREN AND ADULTS SHOULD BE ALERTED TO THE HAZARDS OF HIGH SURFACE TEMPERATURE AND SHOULD STAY AWAY TO AVOID BURNS OR CLOTHING IGNITION.**

**YOUNG CHILDREN SHOULD BE SUPERVISED WHEN THEY ARE IN THE SAME ROOM AS THE APPLIANCE.**

**CLOTHING OR OTHER FLAMMABLE MATERIAL SHOULD NOT BE PLACED ON OR NEAR THE APPLIANCE.**

**KEEP THE ROOM AREA CLEAR AND FREE FROM COMBUSTIBLE MATERIALS, GASOLINE, AND OTHER FLAMMABLE VAPORS AND LIQUIDS.**

**READ BEFORE INSTALLING. SAVE THESE INSTRUCTIONS**

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# CONTENTS

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<b>Important Safety Information .....</b>	<b>3</b>	<b>Electrical Installation .....</b>	<b>29</b>
<b>Product Features .....</b>	<b>5</b>	Electrical Wiring .....	29
<b>Code Approval .....</b>	<b>5</b>	Remote Wall Switch .....	29
<b>Pre-Installation Information</b>		<b>Glass Removal.....</b>	<b>30</b>
Installing Above 2000 Feet.....	6	<b>Final Installation .....</b>	<b>31</b>
Orifice Sizes, Pressures and BTUs.....	6	Rockwool Placement .....	31
Before You Install .....	6	Log Placement .....	31
Fireplace Framing .....	7	Lava rock and Embers Placement.....	31
Fireplace Dimensions .....	8	<b>Operating Instructions .....</b>	<b>32</b>
Fireplace Location.....	9	What To Do If You Smell Gas.....	31
<b>Clearances .....</b>	<b>10</b>	Lighting Pilot for the First Time .....	32
<b>Securing Fireplace to Floor or Framing .....</b>	<b>11</b>	Lighting Pilot .....	33
<b>Installation Information.....</b>	<b>12</b>	Lighting Burner.....	34
<b>Vent Installation .....</b>	<b>12</b>	To Turn Off Gas.....	34
Installation Precautions .....	12	<b>Cleaning and Maintenance .....</b>	<b>35</b>
Optional Top Vent Application .....	14	Burner, Pilot and Control Compartment .....	35
Installation Planning.....	15	Pilot Flame .....	35
Installation for Vertical Termination .....	15	Burner Flame .....	36
Rear Wall Vent Installation .....	18	Vent System.....	36
Horizontal Termination Configuration .....	20	Glass Door .....	36
Below Grade Installation .....	22	Logs .....	36
Vertical Through-the-Roof Installation.....	23	Rock Wool .....	36
Cathedral Ceiling Installation .....	24	<b>Replacement Parts .....</b>	<b>37</b>
<b>Fireplace Installation.....</b>	<b>26</b>	Vent Components .....	37
Check Gas Type.....	26	Firebox Components.....	38
Installing Gas Piping to Fireplace/Burner		Standing Pilot - Millivolt Control .....	40
System Location .....	26	Logs .....	42
<b>Checking Gas Pressure .....</b>	<b>28</b>	<b>Troubleshooting .....</b>	<b>42</b>
		<b>Warranty .....</b>	<b>Back Cover</b>

**INSTALLER**

Please leave these instructions with the owner.

**OWNER**

Please retain these instructions for future reference.

**WARNING**

- **Read this owner's manual carefully and completely before trying to assemble, operate, or service this fireplace.**
- **Any change to this fireplace or its controls can be dangerous.**
- **Improper installation or use of this fireplace can cause serious injury or death from fire, burns, explosions, electrical shock and carbon monoxide poisoning.**

This fireplace is a vented product. This fireplace must be properly installed by a qualified service person. The glass door must be properly seated and sealed. If this unit is not properly installed by a qualified service person with glass door properly seated and sealed, combustion leakage can occur.

**CARBON MONOXIDE POISONING:** Early signs of carbon monoxide poisoning are similar to the flu with headaches, dizziness and/or nausea. If you have these signs, the fireplace may not have been installed properly. Get fresh air at once! Have the fireplace inspected and serviced by a qualified service person. Some people are more affected by carbon monoxide than others. These include pregnant women, people with heart or lung disease or anemia, those under the influence of alcohol, and those at high altitudes.

Propane/LP gas and natural gas are both odorless. An odor-making agent is added to each of these gases. The odor helps you detect a gas leak. However, the odor added to these gases can fade. Gas may be present even though no odor exists.

Make certain you read and understand all warnings. Keep this manual for reference. It is your guide to safe and proper operation of this fireplace.

1. 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.
2. For propane/LP fireplace, do not place propane/LP supply tank(s) inside any structure. Locate propane/LP supply tank(s) outdoors. To prevent performance problems, do not use propane/LP fuel tank of less than 100 lbs. capacity.
3. If you smell gas
  - shut off gas supply.
  - 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.
4. Never install the fireplace
  - in a recreational vehicle
  - where curtains, furniture, clothing, or other flammable objects are less than 42" from the front, top, or sides of the fireplace
  - in high traffic areas
  - in windy or drafty areas
5. This fireplace reaches high temperatures. Keep children and adults away from hot surfaces to avoid burns or clothing ignition. Fireplace will remain hot for a time after shutdown. Allow surfaces to cool before touching.
6. Carefully supervise young children when they are in the room with fireplace.
7. Do not modify fireplace under any circumstances. Any parts removed for servicing must be replaced prior to operating fireplace.
8. Turn fireplace off and let cool before servicing, installing, or repairing. Only a qualified service person should install, service, or repair the fireplace. Have burner system inspected annually by a qualified service person.
9. You must keep control compartments, burners, and circulating air passages clean. More frequent cleaning may be needed due to excessive lint and dust from carpeting, bedding material, pet hair, etc. Turn off the gas valve and pilot light before cleaning fireplace.
10. Have venting system inspected annually by a qualified service person. If needed, have venting system cleaned or repaired. See *Cleaning and Maintenance*, page 32.
11. Keep the area around your fireplace clear of combustible materials, gasoline, and other flammable vapor and liquids. Do not run fireplace where these are used or stored. Do not place items such as clothing or decorations on or around fireplace.

*Continued on page 4*

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## IMPORTANT SAFETY INFORMATION

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Continued from page 3

12. Do not use this fireplace to cook food or burn paper or other objects.
13. Never place anything on top of fireplace.
14. Do not use any solid fuels (wood, coal, paper, cardboard, etc.) in this fireplace. Use only the gas type indicated on rating plate.
15. This appliance, when installed, must be electrically grounded in accordance with local codes or in the absence of local codes, with the *National Electrical Code, ANSI/NFPA 70*, or the *Canadian Electrical Code, CSA C22.1*.
16. Do not obstruct the flow of combustion and ventilation air in any way. Provide adequate clearances around air openings into the combustion chamber along with adequate accessibility clearance for servicing and proper operation.
17. When the appliance is installed directly on carpeting, tile or other combustible material other than wood flooring, you must set appliance on a metal or wood panel or hearth pad extending the full width and depth of the appliance.
18. Do not use fireplace if any part has been exposed to or has been under water. Immediately call a qualified service person to arrange for replacement of the unit.
19. Do not operate fireplace if any log is broken.
20. Do not use a blower insert, heat exchanger insert, or any other accessory not approved for use with this fireplace.
21. Do not operate the fireplace with glass door removed, cracked, or broken.

**IMPORTANT:**

**PLEASE READ THE FOLLOWING CAREFULLY**

It is normal for fireplaces fabricated of steel to give off some expansion and/or contraction noises during the start up or cool down cycle. Similar noises are found with your furnace heat exchanger or car engine.

**IMPORTANT:**

**PLEASE READ THE FOLLOWING CAREFULLY**

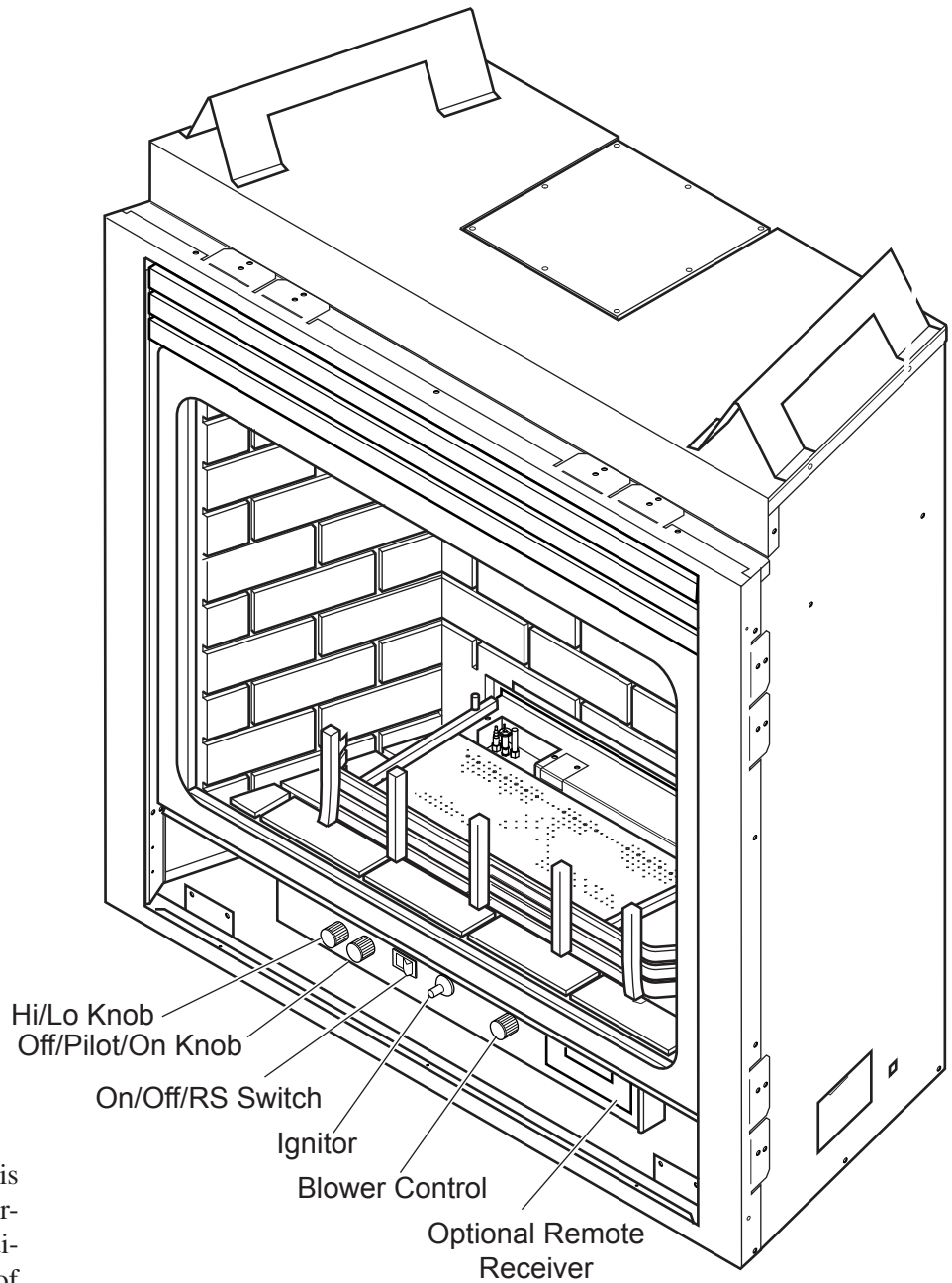
It is not unusual for gas fireplace to give off some odor the first time it is burned. This is due to the manufacturing process.

**Please ensure that your room is well ventilated during burn off — open all windows.**

It is recommended that you burn your fireplace for at least ten (10) hours the first time you use it. Place the fan switch in the "OFF" position during this time.

**PRODUCT SPECIFICATIONS**

- This appliance has been certified for use with either natural or propane gas. See appropriate data plates.
- This appliance is not for use with solid fuels.
- The appliance is approved for bedroom or bed sitting room installations.
- The appliance must be installed in accordance with local codes if any. If none exist use the current installation code. ANSI Z223.1/ NFPA 54 in the USA, CAN/CGA B149 in Canada.
- This appliance is mobile home approved.
- The appliance must be properly connected to a venting system.
- The appliance is not approved for closet or recessed installations.



The efficiency rating of this appliance is a product thermal efficiency rating determined under continuous operating conditions and was determined independently of any installed system.

Thermal Efficiency = up to 80%

**Figure 1 - BDV300, 400, 500, 600 Fireplace**

**CODE APPROVAL**

Direct Vent type appliances draw all combustion air from outside of the dwelling through the vent pipe.

These appliances have been tested by CSA and found to comply with the established standards for DIRECT VENT GAS FIREPLACE HEATERS in the USA and Canada as follows:

**LISTED VENTED GAS FIREPLACE HEATER**  
TESTED TO: ANSI Z21.88-2002/CSA 2.33-2002 STANDARDS

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## PRE-INSTALLATION INFORMATION

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### INSTALLING ABOVE 2000 FEET

- In the USA, the appliance must be derated 4% for every 1,000 ft above 2,000 ft elevations.
- In Canada, these appliances are certified for altitudes of 0 – 2000 ft, and must be de-rated by 10 percent for installations between 2000 and 4,500 ft. (derate an additional 4% for every 1,000 ft. above 4,500 ft. elevations).

### ORIFICE SIZES, PRESSURES AND BTUs

#### NATURAL GAS

Manifold Press: (W.C.) 3.5"  
Maximum Supply Pressure 10.5"  
Minimum Supply Pressure 4.5"

#### PROPANE GAS

Manifold Press: (W.C.) 10"  
Maximum Supply Pressure 13"  
Minimum Supply Pressure 11"

Model Number	BDV300		BDV400		BDV500		BDV600	
	Natural	Propane	Natural	Propane	Natural	Propane	Natural	Propane
Max. Btu/hr Input	21,000	21,000	24,000	24,000	26,000	26,000	26,000	26,000
Min. Btu/hr Input	15,000	15,000	17,000	17,000	20,000	20,000	20,000	20,000
Orifice size (as shipped)	#44	#55	#42	#54	#41	1.50mm	#41	1.50mm

### BEFORE YOU START

Read this homeowner manual thoroughly and follow all instructions carefully. Inspect all contents for shipping damage and immediately inform your dealer if any damage is found. Do not install any unit with damaged, incomplete, or substitute parts. Check your packing list to verify that all listed parts have been received. You should have the following:

- Fireplace (Firebox and Burner System)
- Rock Wool
- Log Set

### ITEMS REQUIRED FOR INSTALLATION

#### Tools:

- Phillips Screwdriver
- Hammer
- Saw and/or saber saw
- Level
- Measuring Tape
- Electric Drill and Bits
- Pliers
- Square
- Pipe Wrench

#### Building Supplies:

- Framing Materials
- Wall Finishing Materials
- Caulking Material (Noncombustible)
- Fireplace Surround Material (Noncombustible)
- Piping Complying with Local Codes
- Tee Joint
- Pipe Sealant Approved for use with Propane/LPG (Resistant to Sulfur Compounds)



# FIREPLACE FRAMING

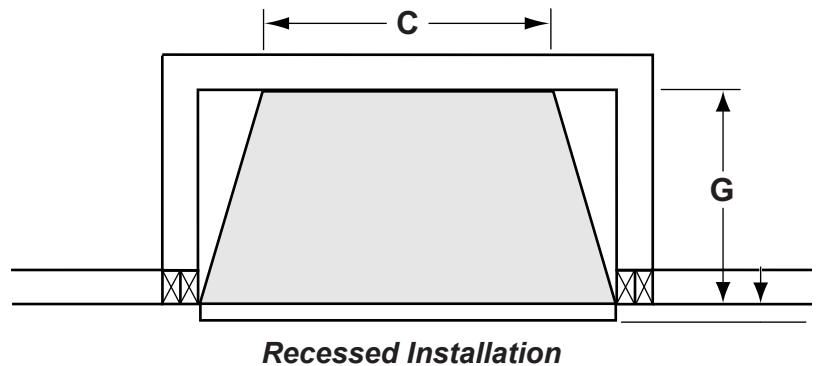
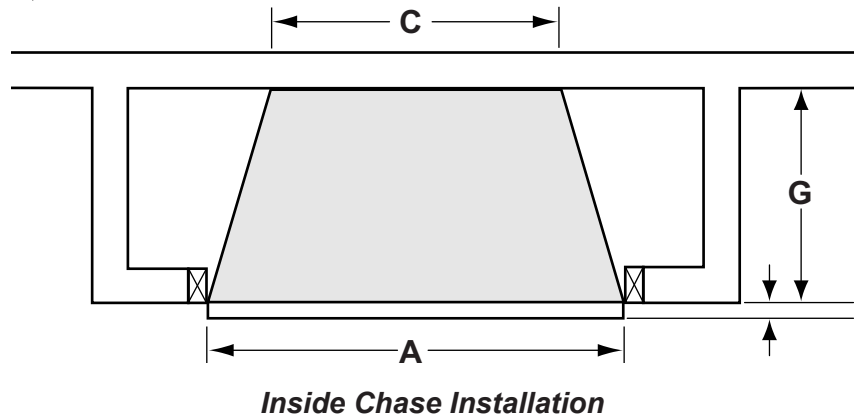
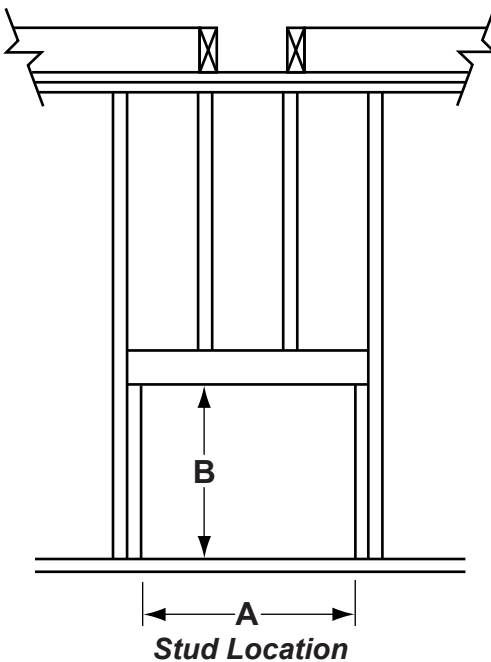
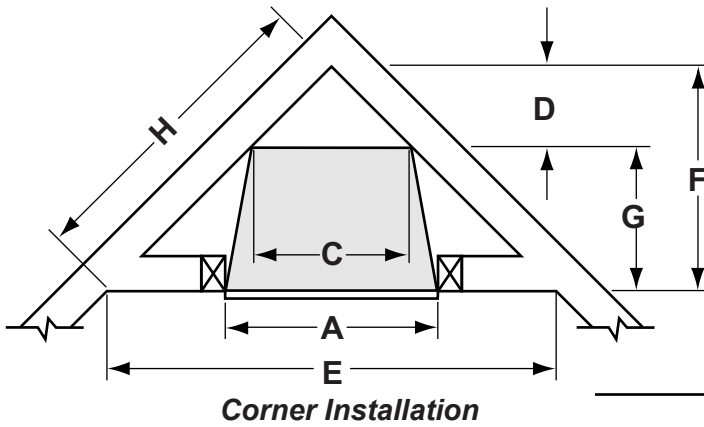
Firebox framing can be built before or after the appliance is set in place. Construct firebox framing following *Figure 2* and the chart below for your specific installation requirements. See *Figure 3 on Page 8* for firebox dimensions. The framing headers may rest on the top of the firebox standoffs.

The firebox may be installed directly on a combustible floor or raised on a platform of an appropriate height. When the firebox is installed directly on carpeting, tile, or other combustible material, other than wood flooring, the firebox shall be installed on a metal or wood panel extending the full width and depth of the enclosure.

**WARNING**

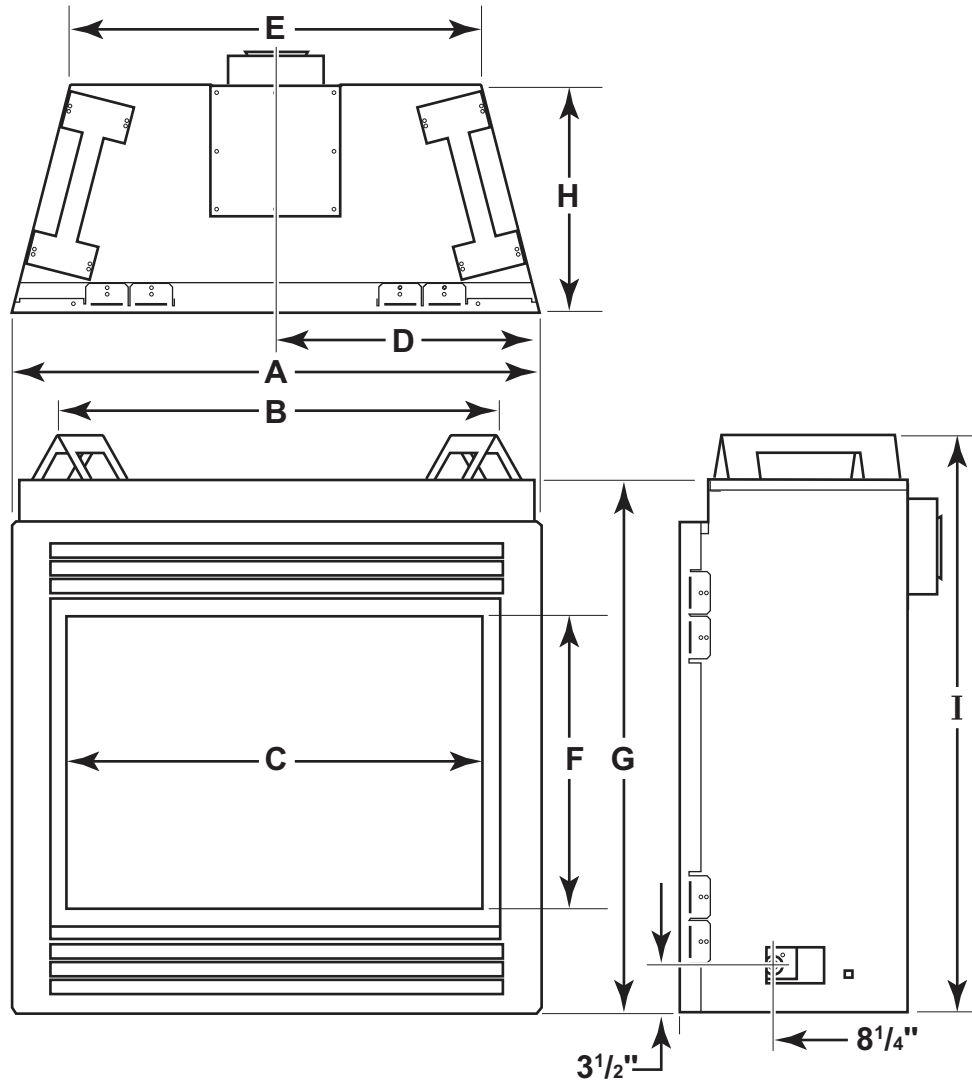
**Do not fill spaces around firebox with insulation or other materials. This could cause a fire.**

	300	400	500	600
A	33 <sup>1</sup> / <sub>2</sub> "	37 <sup>1</sup> / <sub>2</sub> "	41 <sup>1</sup> / <sub>2</sub> "	47 <sup>1</sup> / <sub>2</sub> "
B	37 <sup>1</sup> / <sub>4</sub> "	40 <sup>7</sup> / <sub>8</sub> "	40 <sup>7</sup> / <sub>8</sub> "	40 <sup>7</sup> / <sub>8</sub> "
C	28 <sup>1</sup> / <sub>4</sub> "	29 <sup>1</sup> / <sub>4</sub> "	33 <sup>1</sup> / <sub>4</sub> "	39 <sup>1</sup> / <sub>4</sub> "
D	14 <sup>1</sup> / <sub>8</sub> "	14 <sup>5</sup> / <sub>8</sub> "	16 <sup>5</sup> / <sub>8</sub> "	19 <sup>5</sup> / <sub>8</sub> "
E	55 <sup>11</sup> / <sub>16</sub> "	60 <sup>7</sup> / <sub>8</sub> "	64 <sup>7</sup> / <sub>8</sub> "	70 <sup>7</sup> / <sub>8</sub> "
F	27 <sup>13</sup> / <sub>16</sub> "	30 <sup>7</sup> / <sub>16</sub> "	32 <sup>7</sup> / <sub>16</sub> "	35 <sup>7</sup> / <sub>16</sub> "
G	13 <sup>3</sup> / <sub>4</sub> "	15 <sup>3</sup> / <sub>4</sub> "	15 <sup>3</sup> / <sub>4</sub> "	15 <sup>3</sup> / <sub>4</sub> "
H	39 <sup>3</sup> / <sub>8</sub> "	43 <sup>1</sup> / <sub>16</sub> "	45 <sup>7</sup> / <sub>8</sub> "	50 <sup>1</sup> / <sub>8</sub> "



**Figure 2 - Framing Dimensions**

# PRE-INSTALLATION INFORMATION



**Figure 3 - Fireplace Dimensions**

DESCRIPTION	Key Letter	BDV300	BDV400	BDV500	BDV600
Overall Front Width	A	33 <sup>1</sup> / <sub>16</sub> "	37 <sup>1</sup> / <sub>16</sub> "	41 <sup>1</sup> / <sub>16</sub> "	47 <sup>1</sup> / <sub>16</sub> "
Inside Width	B	29 <sup>7</sup> / <sub>8</sub> "	32"	36"	42"
Glass Width	C	27"	29"	33"	39"
CTR Pipe	D	16 <sup>1</sup> / <sub>2</sub> "	18 <sup>1</sup> / <sub>2</sub> "	20 <sup>1</sup> / <sub>2</sub> "	23 <sup>1</sup> / <sub>2</sub> "
Rear Width	E	28"	29"	33"	39"
Glass Height	F	18"	20 <sup>3</sup> / <sub>8</sub> "	20 <sup>3</sup> / <sub>8</sub> "	20 <sup>3</sup> / <sub>8</sub> "
Front Height	G	31 <sup>5</sup> / <sub>8</sub> "	34 <sup>1</sup> / <sub>2</sub> "	34 <sup>1</sup> / <sub>2</sub> "	34 <sup>1</sup> / <sub>2</sub> "
Depth	H	14"	16"	16"	16"
Height to Standoffs	I	37"	40 <sup>1</sup> / <sub>2</sub> "	40 <sup>1</sup> / <sub>2</sub> "	40 <sup>1</sup> / <sub>2</sub> "



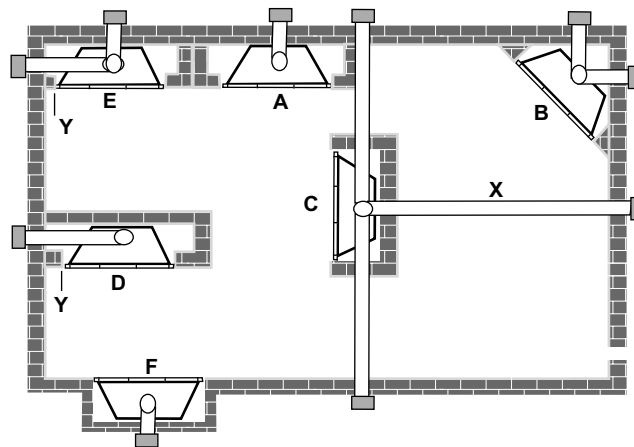
**FIREPLACE LOCATION**

Plan for the installation of your appliance. This includes determining where the unit is to be installed, the vent configuration to be used, framing and finishing details, and whether any optional accessories (i.e. blower, wall switch, or remote control) are desired. Consult your local building code agency to ensure compliance with local codes, including permits and inspections.

The following factors should be taken into consideration:

- Clearance to side-wall, ceiling, woodwork, and windows. Minimum clearances to combustibles **must be maintained**.
- This fireplace may be installed along a wall, across a corner, or use an exterior chase. See Figure 4 for suggested locations.
- Location should be out of high traffic areas and away from furniture and draperies due to heat from appliance.
- Never obstruct the front opening of the fireplace.
- Do **not** install in the vicinity where gasoline or other flammable liquids may be stored.
- Vent pipe routing. See *Venting* section found in this manual for allowable venting configurations.
- These units can be installed in a bedroom. See National Fuel Gas Code ANSI Z233.1/NFPA 54 — (current edition), the Uniform Mechanical Code — (current edition), and Local Building Codes for specific installation requirements.

A	Flat on Wall
B	Cross Corner
C	Island**
D	Room Divider*
E	Flat on Wall Corner*
F	Chase Installation
Y	4" Minimum



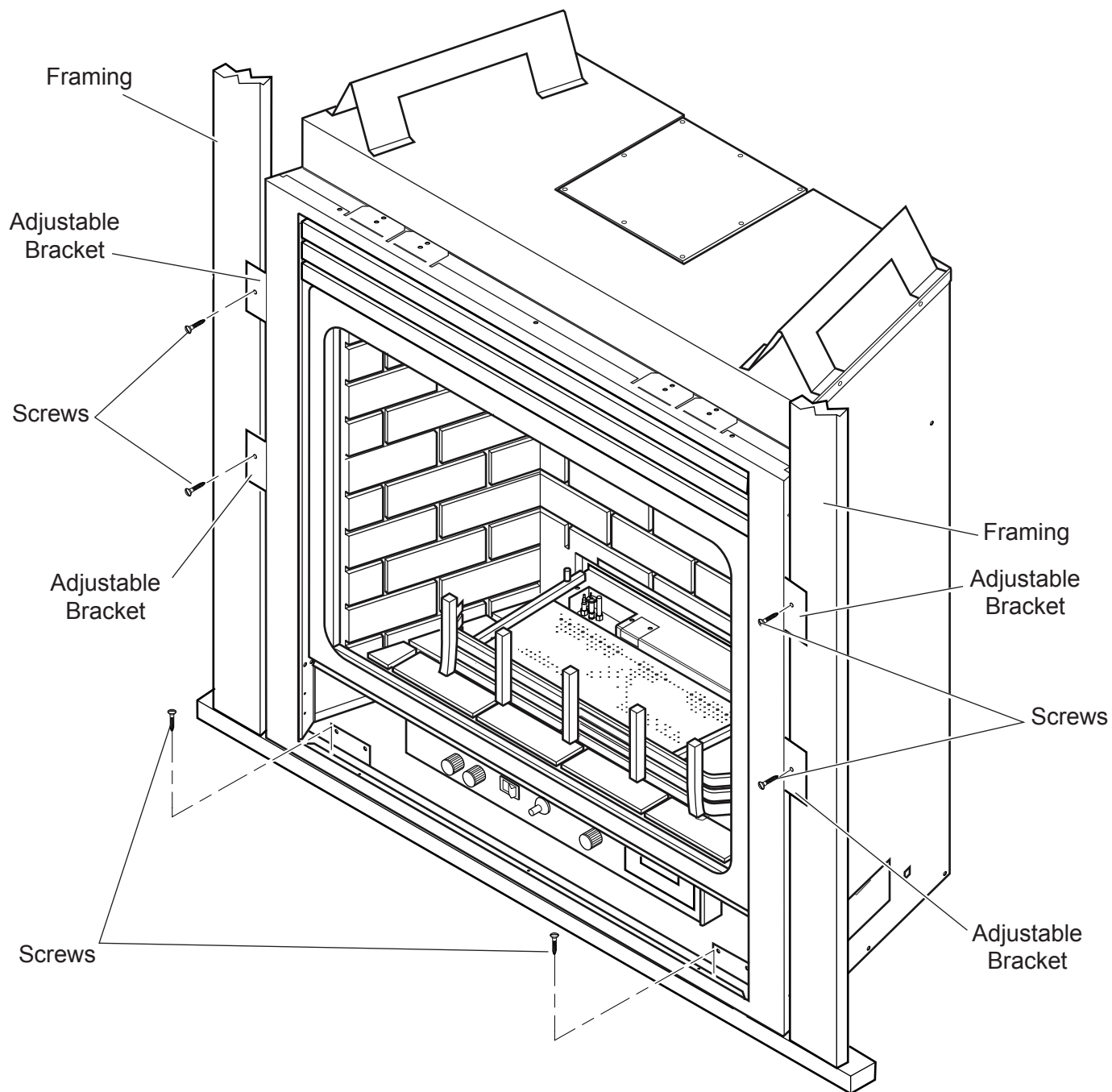
**Figure 4 - Locating Gas Fireplace**

\*\* Island (C) and room divider (D) installation is possible as long as the horizontal portion of vent system (X) does not exceed 20'. See *Installing Horizontal Termination Configuration* on pages 18 and 19.

\* When you install your fireplace in (D) room divider or (E) flat on wall corner positions (Y), a minimum of 6" clearance must be maintained from perpendicular wall and front of fireplace.

## SECURING FIREPLACE TO FLOOR OR FRAMING

The fireplace must be secured to the floor and/or to framing studs as shown in *Figure 5*. Use two (2) wood screws or masonry/concrete screws to secure fireplace to the floor. Use four (4) screws to attach fireplace to framing. The side brackets are adjustable from 1/2" to 5/8" to accommodate different thickness of material.



**Figure 5 - Securing Fireplace to Floor and Framing Studs**

CLEARANCES TO COMBUSTIBLES

**WARNING**

Follow these instructions carefully to ensure safe installation. Failure to follow instructions exactly can create a fire hazard.

The appliance cannot be installed on a carpet, tile or other combustible material other than wood flooring. If installed on carpet or vinyl flooring, the appliance shall be installed on a metal, wood or noncombustible material panel extending full width and depth of the appliance.

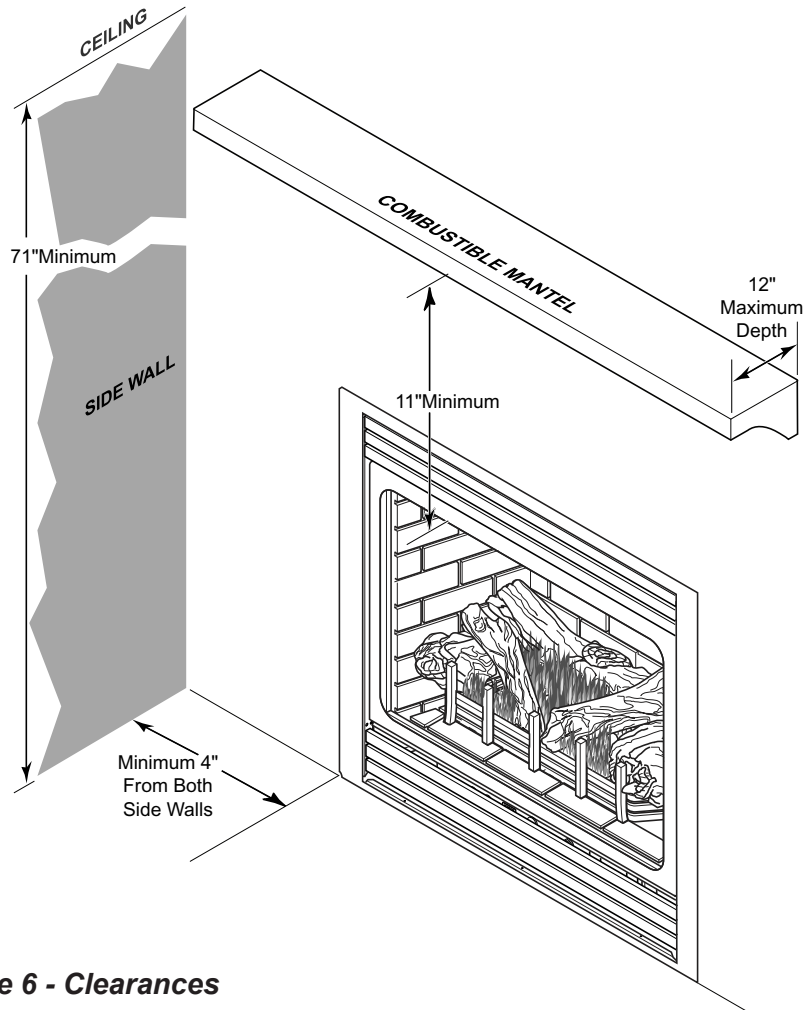


Figure 6 - Clearances

MANTEL CLEARANCES

**NOTE:** The combustible area above the facing must not protrude more than  $\frac{3}{4}$ " from the facing. If it does, it is considered a mantel and must meet the mantel requirements listed in this manual.

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## INSTALLATION INFORMATION

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### FINISHING MATERIAL

**NOTE:** Any remote wiring (i.e. remote control, wall switch, and optional fan) must be done prior to final finishing to avoid costly reconstruction.

**WARNING** Never obstruct or modify the air inlet or outlet grills (louvers). This may create a fire hazard.

Only noncombustible materials (i.e. brick, tile, slate, steel, or other materials with a UL fire rating of Zero) may be used to cover the black surface of the appliance. A 300°F minimum adhesive may be used to attach facing materials to the black surface. If joints between the finished wall and the fireplace surround are sealed, a 300°F minimum sealant material (General Electric RTV103 or equivalent) must be used.

### VENT INSTALLATION

**WARNING** Read all instructions completely and thoroughly before attempting installation. Failure to do so could result in serious injury, property damage or loss of life. Operation of improperly installed and maintained venting system could result in serious injury, property damage or loss of life.

**NOTICE** Failure to follow these instructions will void the warranty.

### INSTALLATION PRECAUTIONS

Consult local building codes before beginning the installation. The installer must make sure to select the proper vent system for installation. Before installing vent kit, the installer must read this fireplace manual and vent kit instructions.

Only a qualified installer/service person should install venting system. The installer must follow these safety rules:

- Wear gloves and safety glasses for protection.
- Use extreme caution when using ladders or when on rooftops.
- Be aware of electrical wiring locations in walls and ceilings.

The following actions will void the warranty on your venting system:

- Installation of any damaged venting component.
- Unauthorized modification of the venting system.
- Installation of any component part not manufactured or approved by Lexington Forge.
- Installation other than permitted by these instructions.

## WARNING

This fireplace must be vented to the outside. The venting system must **NEVER** be attached to a chimney serving a separate solid fuel burning appliance. Each gas appliance must use a separate vent system. Do not use common vent systems.

## WARNING

Horizontal sections of this vent system require a minimum clearance of 3" from the top of the pipe and 1" minimum to the sides and bottom. Vertical sections of this system require a minimum of 1" clearance to combustible materials on all sides of the pipe.

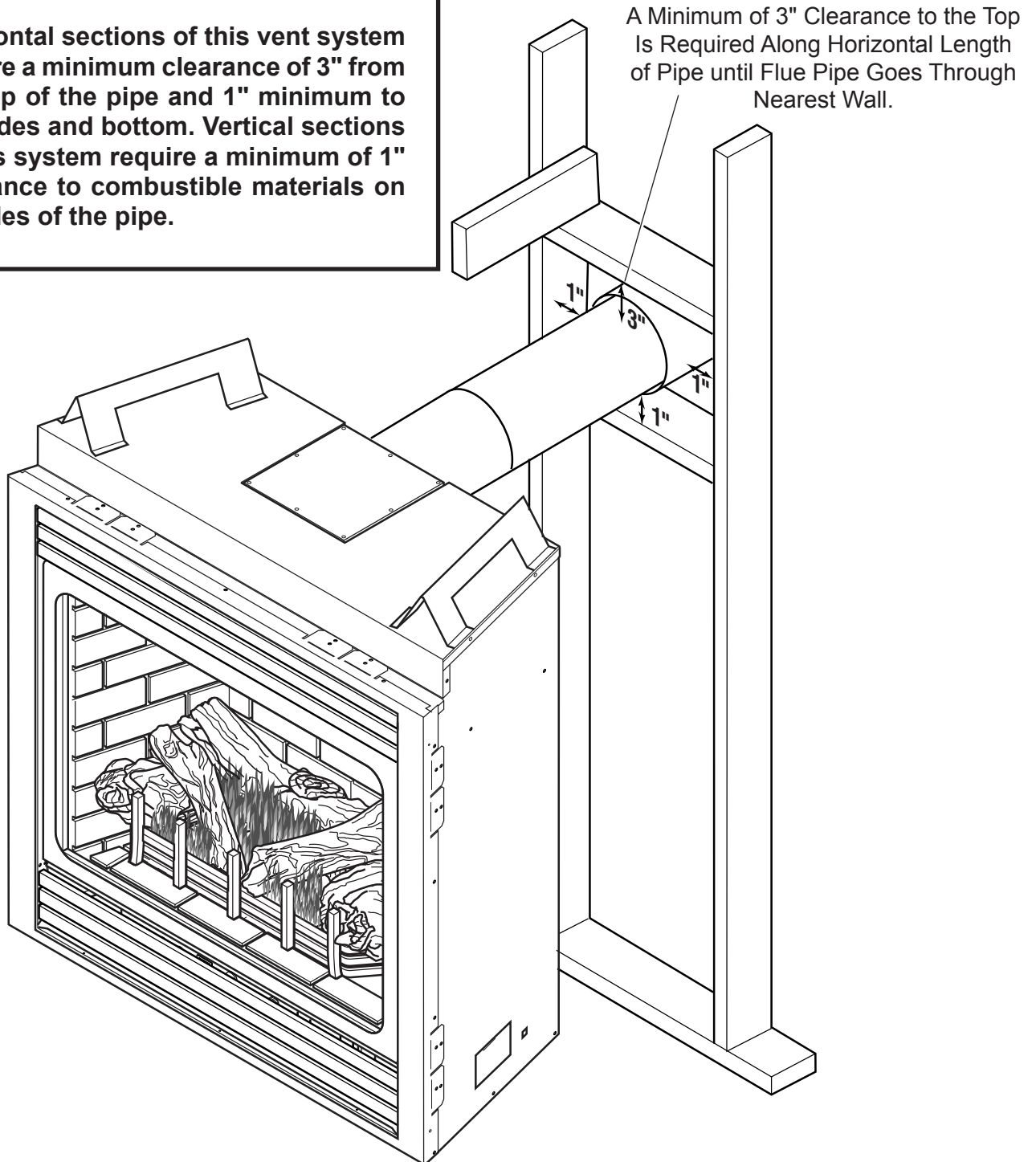


Figure 7 - Combustible Clearances for Vent Pipe

# VENT INSTALLATION

## OPTIONAL TOP VENT APPLICATION

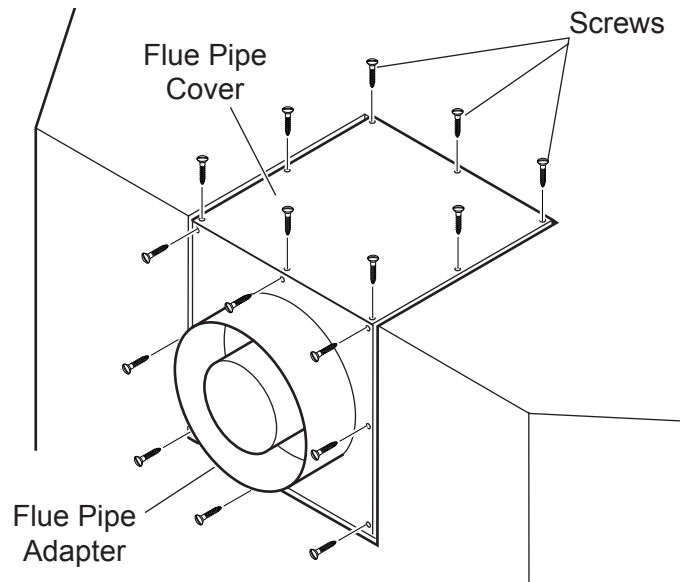
The appliance is shipped as a rear vent unit. If the installation layout requires the unit to be a top vent configuration the appliance can be converted by following the steps below.

When removing and refitting the plates and adapter be sure the associated gaskets are undamaged and refitted as required.

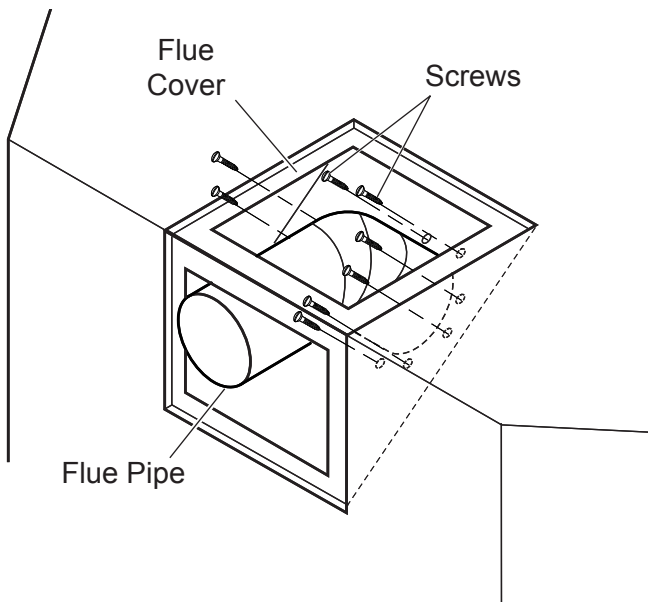
1. Remove the eight (8) screws securing the flue pipe adapter to the fireplace body. *See Figure 8.*
2. Set the flue pipe adapter aside, complete with the gasket. Do not damage the gaskets as the adapter and gasket must be refitted.
3. Remove the eight (8) screws securing the flue pipe cover to the top of the intake box and remove the cover and gasket. *See Figure 8.*
4. Remove eight (8) screws securing the flue pipe to the back of the intake box and remove the pipe and gasket. *See Figure 9.*
5. Replace flue pipe to top of firebox. Ensure the gasket is in place and undamaged. Secure with eight (8) screws. *See Figure 9.*
6. Place the flue pipe cover and gasket removed in step 3 over the flue opening in bottom of the intake box.
7. Refit the flue pipe adapter and gasket to the top of fireplace. Secure the adapter with eight (8) screws removed in step 1.

**WARNING**

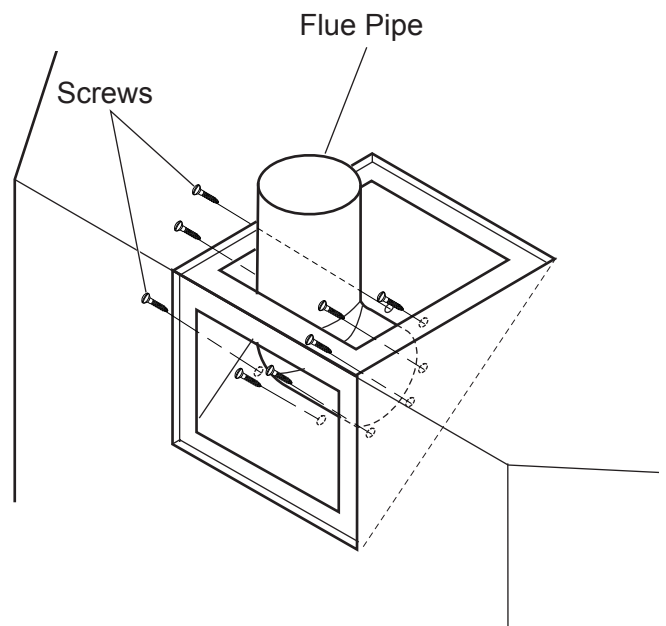
After conversion to top vent configuration the 4" (100mm) flue pipe should be concentric within the 6<sup>5</sup>/<sub>8</sub>" (175mm) outer collar (within 1/4").



**Figure 8 - Removing sixteen (16) Screws from Flue Pipe Adapter and Flue Pipe Cover**



**Figure 9 - Removing Flue Pipe**



**Figure 10 - Attaching Flue Pipe to Top Vent Configurations**

## INSTALLATION PLANNING

There are two basic types of direct-vent installation:

- Horizontal Termination
- Vertical Termination

It is important to select the proper length of vent pipe for the type of termination you choose. It is also important to note the wall thickness.

### FOR HORIZONTAL TERMINATION

Select the amount of vertical rise desired. All horizontal run of venting must have  $\frac{1}{4}$ " rise for every 12" of run towards the termination.

You may use up to three 90° elbows in this vent configuration. See *Horizontal Termination Configurations* on pages 20 and 21.

**WARNING**

**Never run the vent pipe level or downward. This may cause excessive temperatures which could cause a fire.**

### FOR VERTICAL TERMINATION

Measure the distance from the fireplace floor to the ceiling. Add the ceiling thickness, the vertical rise in an attic or second story, and allow for sufficient vent height above the roof line.

**NOTE: You may use two 45° elbows in place of a 90° elbow. You must follow rise to run ratios when using 45° elbows. The appliance is approved for use with three 90° elbows maximum or a combination of 90° and 45° elbows up to a maximum of 270°.**

For two-story applications, firestops are required at each floor level. If an offset is needed in the attic, additional pipe and elbows will be required.

You may use a chase with a vent termination with exposed pipe on the exterior of the house. See *Installing Vent System in a Chase* below. If pipe is enclosed in chase, it is not exposed.

It is very important that the venting system maintain its balance between the combustion air intake and the flue gas exhaust. Certain limitations apply to vent configurations and must be strictly followed.

### INSTALLING A VENT SYSTEM IN AN OUTSIDE CHASE

A chase is a vertical boxlike structure built to enclose venting that runs along the outside of a building. A chase is required for such venting.

**NOTICE**

**Treatment of firestops and construction of the chase may vary from building type to building type. These instructions are not substitutes for the requirements of local building codes. You must follow all local building codes.**

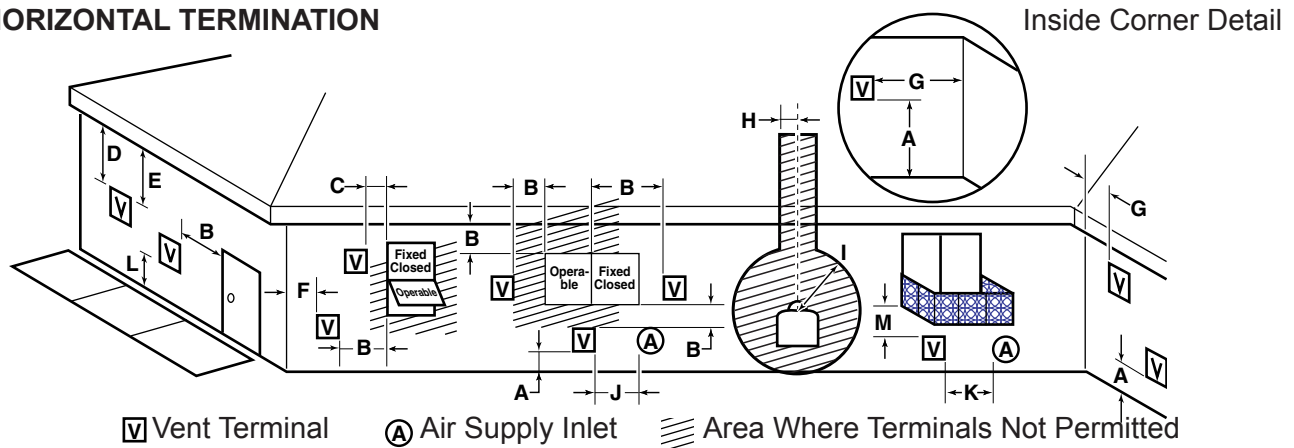
**NOTICE**

**When installing in a chase, you should insulate the chase as you would the outside walls of your home. This is especially important in cold climates. Insulation should be considered a combustible material. Maintain proper clearances to all combustible materials.**



# VENT INSTALLATION

## FOR HORIZONTAL TERMINATION



**Figure 11 - Horizontal Vent Termination Location**

### MINIMUM DISTANCES

- A = Clearance above the grade, a veranda, porch, deck, or balcony [\*12" (305mm) minimum].
  - B = Clearance to window or door that may be opened [\*12" (305mm) minimum].
  - C = Clearance to permanently closed window [\*minimum 12" (305mm) recommended to prevent condensation on window]
  - D = Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of two (2) feet (610mm) from the centerline of the terminal [18" (457mm) minimum].
  - E = Clearance to unventilated soffits [12" (305mm) minimum]. **Clearance to vinyl soffit [30" (762mm)].**
  - F = Clearance to an outside corner. See page 12.
  - G = Clearance to an inside corner. See page 12.
  - H = \*Not to be installed above a gas meter/regulator assembly within three (3) feet (914mm) horizontally from the centerline of the regulator.
  - I = Clearance to service regulator vent outlet [\*3' (914mm) minimum].
  - J = Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other appliance [\*12" (305mm) minimum].
  - K = Clearance to a mechanical air supply inlet [\*6' (1829mm) minimum].
  - L = Clearance above a paved sidewalk or paved driveway located on public property [\*7' (2133mm) minimum].
  - M = Clearance under veranda, porch, deck, or balcony [\*12" (305mm) minimum \*\*\*].
  - N = Clearance above a roof shall extend a minimum of 24" (610mm) above the highest point when it passes through the roof surface and any other obstruction within a horizontal distance of 18" (457mm).
- \* As specified in CAN/CGA B149 Installation Codes. Note: Local codes or regulations may require different clearances.
- \*\* A vent must 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 of two sides beneath the floor.

## WARNING

**Always maintain minimum clearances around vent systems. The minimum clearances to combustibles for horizontal vent pipe are 3" at the top and 1" at the sides and bottom of the vent system until the pipe penetrates the nearest vertical wall. A 1" minimum clearance all around the pipe must be maintained. Do not pack the open air spaces with insulation or other materials. This could cause high temperatures and may present a fire hazard.**

## TERMINATION CLEARANCES FOR BUILDINGS WITH COMBUSTIBLE AND NONCOMBUSTIBLE EXTERIORS

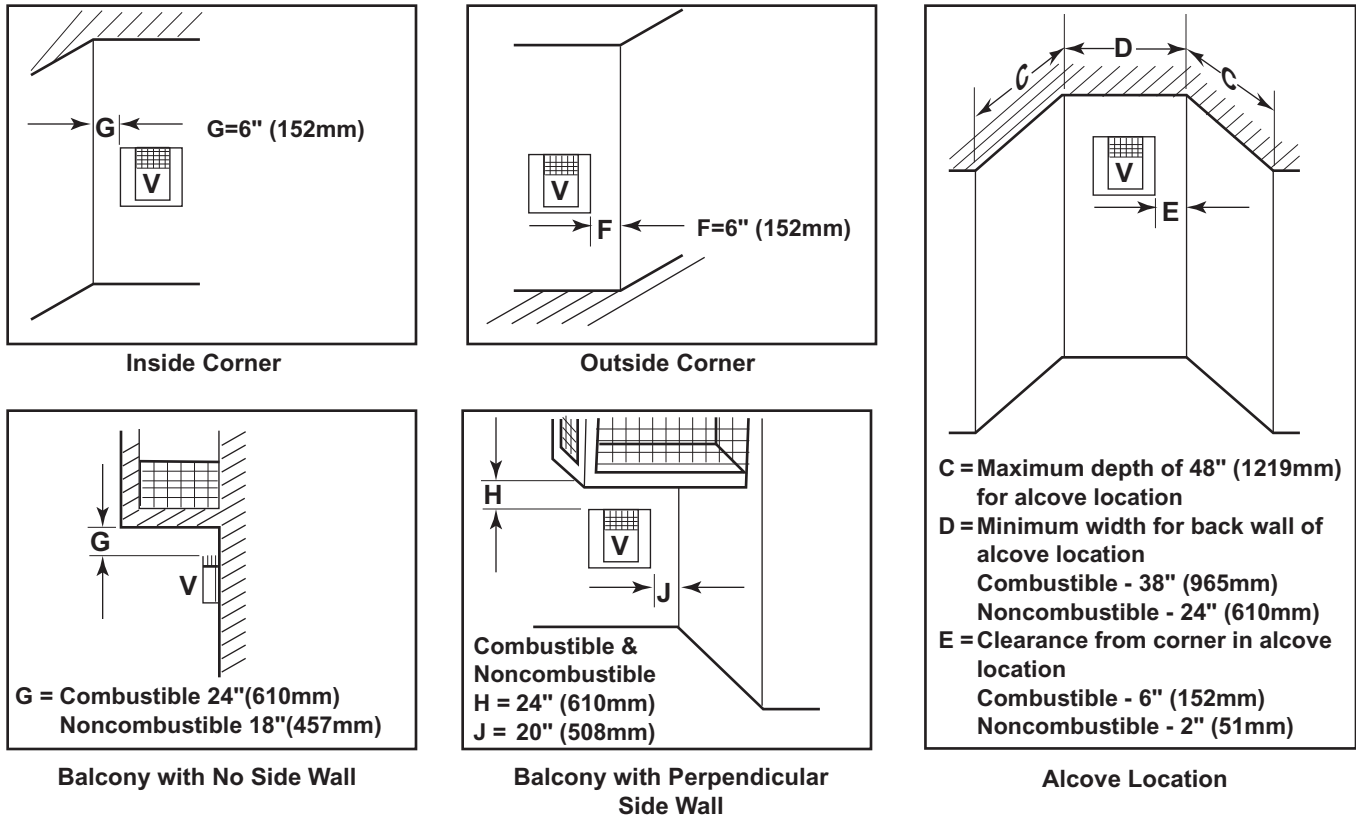


Figure 12 - Allowable Venting Chart

### HOW TO USE THE VENT GRAPH

The Vent Graph should be read in conjunction with the following vent installation instructions to determine the relationship between the vertical and horizontal dimensions of the vent system.

1. Determine the height of the center of the horizontal vent pipe exiting through the outer wall. Using this dimension on the Sidewall Vent Graph below, locate the point intersecting with the slanted graph line.
2. From the point of this intersection, draw a vertical line to the bottom of the graph.
3. Select the indicated dimension, and position the fireplace in accordance with same.

*Example: If the vertical dimension from the floor of the fireplace is 11' (3.4m) the horizontal run to the face of the outer wall must not exceed 14' (4.3m).*

*Example: If the vertical dimension from the floor of the unit is 7' (2.14m), the horizontal run to the face of the outer wall must not exceed 8 1/2' (2.6m).*

Sidewall Vent Graph showing the relationship between vertical and horizontal dimensions for a Direct Vent flue system.

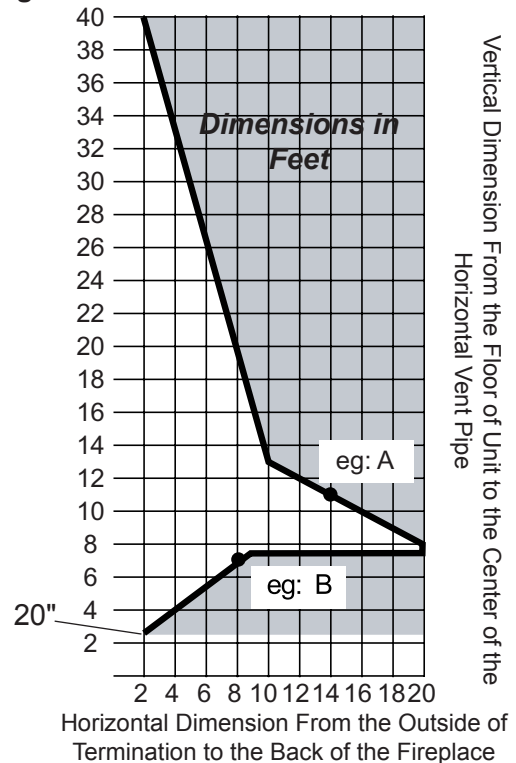


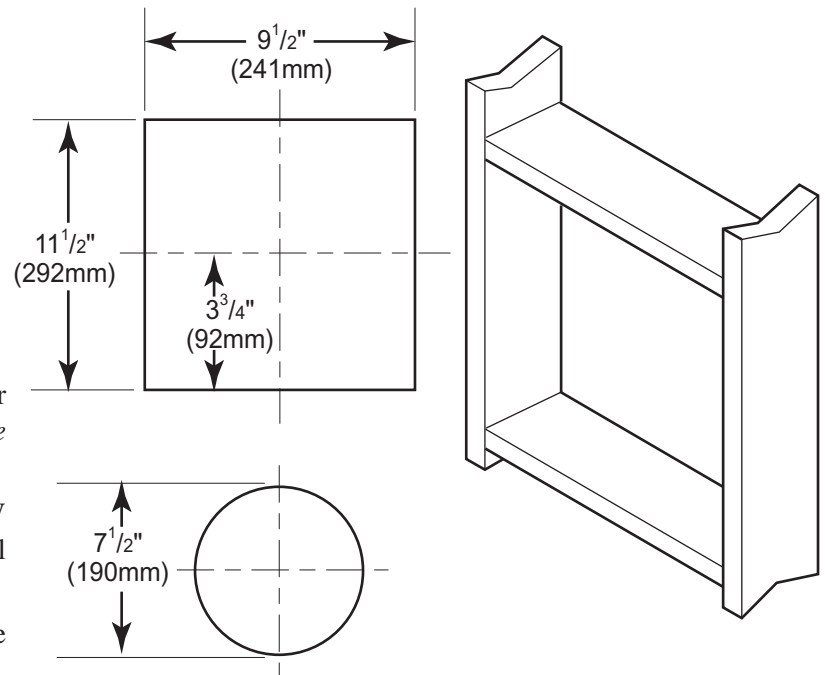
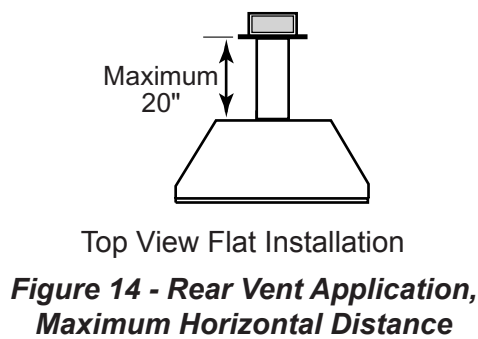
Figure 13 - Rear Wall Venting Graph

# VENTING INSTALLATION

## REAR WALL VENT INSTALLATION

When installed as a rear vent unit this appliance may be vented directly to a termination located on the rear wall behind the appliance

- The maximum horizontal distance between the rear of the appliance and the outside of termination is 20" (508 m). See *Figure 14*.
- Only one 45° elbow is allowed in these installations.



1. Locate and cut the vent opening in the wall. For combustible walls first frame in opening. See *Figure 14*.

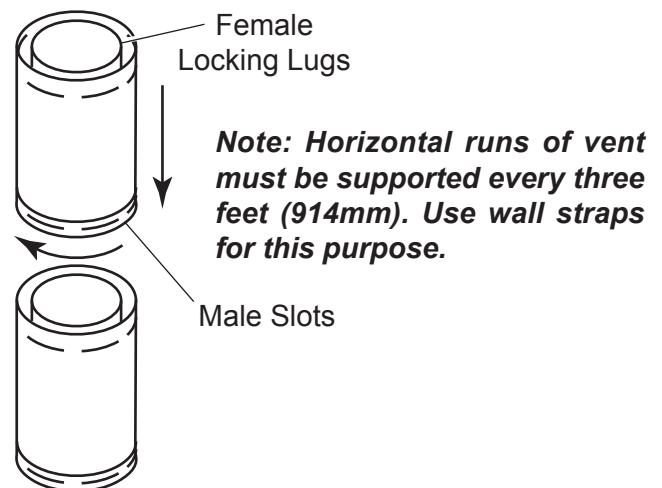
**Combustible Walls:** Cut a 11½"H x 9½" W (292mm x 24mm) hole through the exterior wall and frame as shown. See *Figure 15*.

**Noncombustible Walls:** Hole opening should be 7½" (190mm) in diameter.

2. Rigid vent pipes and fittings have special twist-lock connections. Assemble the desired combination of pipe and elbows to the appliance adaptor with pipe seams oriented towards the wall or floor.

**Twist-lock Procedure:** The female ends of the pipes and fittings have three locking lugs (indentations). These lugs will slide straight into matching slots on the male end of adjacent pipes and fittings. Push the pipe sections together and twist one section clockwise approximately one-quarter turn until the sections are fully locked. See *Figure 16*.

3. Attach vent pipe assembly to the fireplace. Set fireplace in front of its permanent location to insure minimum clearances. Mark the wall for a 11½"H x 9½"W (292mm x 24mm) rectangle hole (for noncombustible material such as masonry block or concrete, a 7½" [190mm] diameter hole is acceptable). See *Figure 15*. The center of the hole should line up with the center line of the horizontal rigid vent pipe end. Be sure to allow for minimum rise. Cut a 11½"x9½" (292mm X 241mm) rectangle hole through combustible exterior wall (7½" [190mm] diameter hole if noncombustible). Frame as necessary. Allow ¼" minimum rise per foot. See *Figure 15*.



## REAR WALL VENT INSTALLATION (continued)

4. Apply a bead of non-hardening mastic around the outside edge of vent cap. Position the vent cap in the center of hole on the exterior wall with the word "UP" on the vent cap facing up. Insure proper clearance of 1" to combustibles is maintained. Attach the vent cap with four wood screws supplied. See Figure 17.

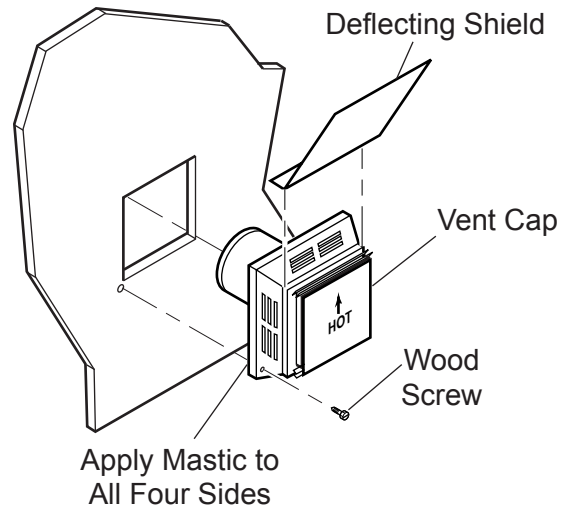
### WARNING

**Do not recess vent termination into any wall. This will cause a fire hazard.**

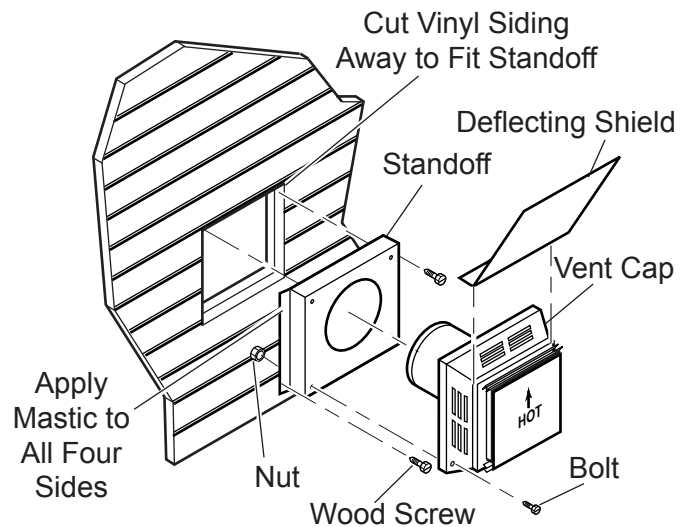
**NOTE:** Replace the wood screws with appropriate fasteners for stucco, brick, concrete, or other types of siding.

For vinyl siding, stucco, or wood exterior use vinyl siding standoffs between vent cap and exterior wall. The vinyl siding standoff prevents excessive heat from melting the vinyl siding material. Bolt the vent cap to the standoff. Apply non-hardening mastic around outside edge of the standoff instead of the vent cap assembly. Use wood screws provided to attach the standoff. See Figure 18.

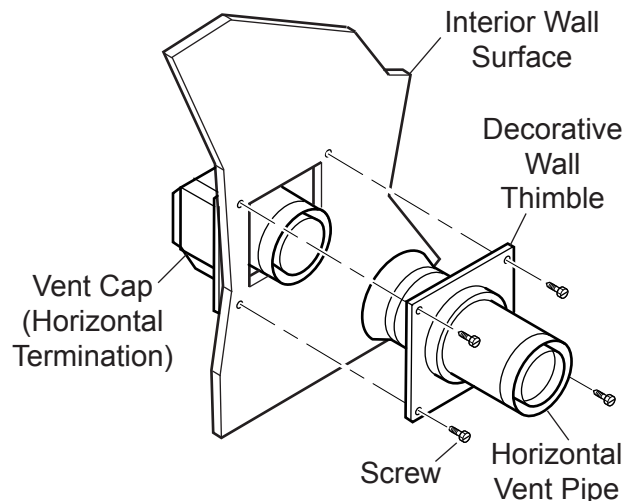
5. Slide the wall thimble over the vent pipe before connecting the horizontal run to the vent cap. See Figure 19.
6. Carefully move the fireplace with vent assembly attached toward the wall and insert the vent pipe into the horizontal termination. The pipe overlap should be a minimum of 1<sup>1</sup>/<sub>4</sub>". Apply silicone to the outer pipe connection. Fasten all vent connections with screws provided.
7. Slide the wall thimble against the interior wall surface and attach with screws. See Figure 19.



**Figure 17 - Installing Horizontal Vent Cap**



**Figure 18 - Installing Vinyl Siding Standoff**



**Figure 19 - Connecting Vent Cap with Horizontal Vent Pipe**

# VENT INSTALLATION

## HORIZONTAL TERMINATION CONFIGURATIONS

Since it is very important that the venting system maintain its balance between the combustion air intake and the flue gas exhaust, certain limitations as to vent configurations apply and must be strictly adhered to.

The Vent Graph, showing the relationship between vertical and horizontal side wall venting, will help to determine the various dimensions allowable. *See page 17.*

**Minimum clearance between vent pipes and combustible materials is 3" on top and 1" from bottom and sides unless otherwise noted.**

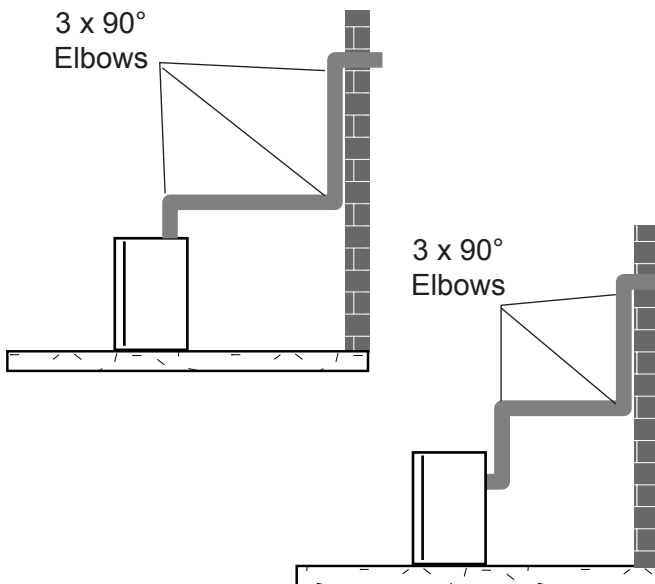
When vent termination exits through foundations less than 20" below siding outcrop, the vent pipe must flush up with the siding.

It is best to locate the fireplace in such a way that minimizes the number of offsets and horizontal vent length.

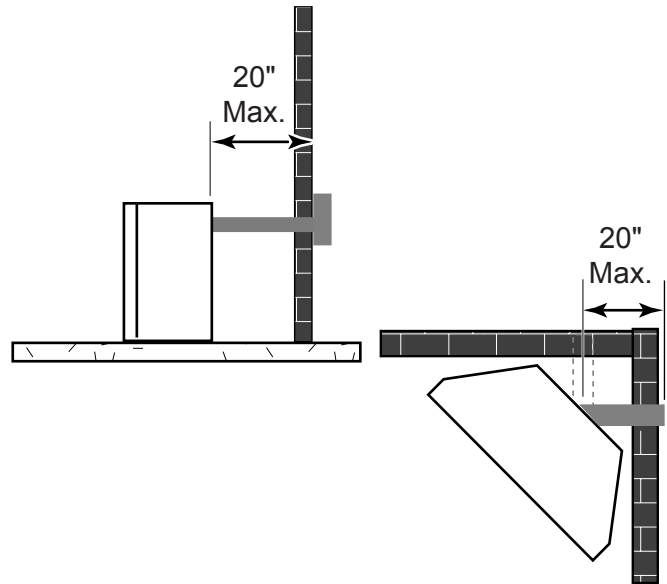
The horizontal vent run refers to the total length of vent pipe from the flue collar of the fireplace (or the top of the Transition Elbow) to the face of the outer wall.

**WARNING** When installing the appliance as a rear vent unit, the 90° or 45° transition elbow attached directly to the rear of the unit is NOT INCLUDED in the following criteria and calculations, and unless specifically mentioned should be ignored when calculating venting layouts.

- The maximum number of 90° elbows per side wall installation is three (3). *See Figure 20.*
- If a 90° elbow is fitted directly on top of the fireplace flange the maximum horizontal vent run before the termination or a vertical rise is 36" (914 mm). *See Figure 21.*



**Figure 20 - Maximum Three (3) 90° Elbows Per Installation**



**Figure 21 - Maximum Horizontal Run with No Rise**

**HORIZONTAL TERMINATION CONFIGURATION**

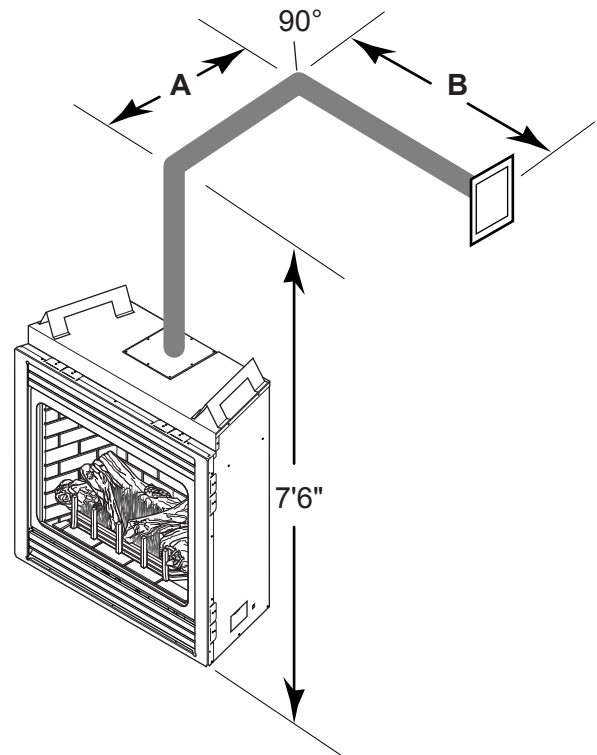
*(Continued)*

- If a 90° elbow is used in the horizontal vent run (level height maintained) the horizontal vent length is reduced by 36" (914 mm) (Fig. 21 A and B) This does not apply if the 90° elbows are used to increase or redirect a vertical rise. See Figure 23.

*Example: According to the vent graph (page 16) the maximum horizontal vent length in a system with a 7.5' vertical rise is 20' (6m) and if a 90° elbow is required in the horizontal vent it must be reduced to 17' (5.2 m).*

*In Figures 22 and 23, Dimension A plus B must not be greater than 17' (5.2m).*

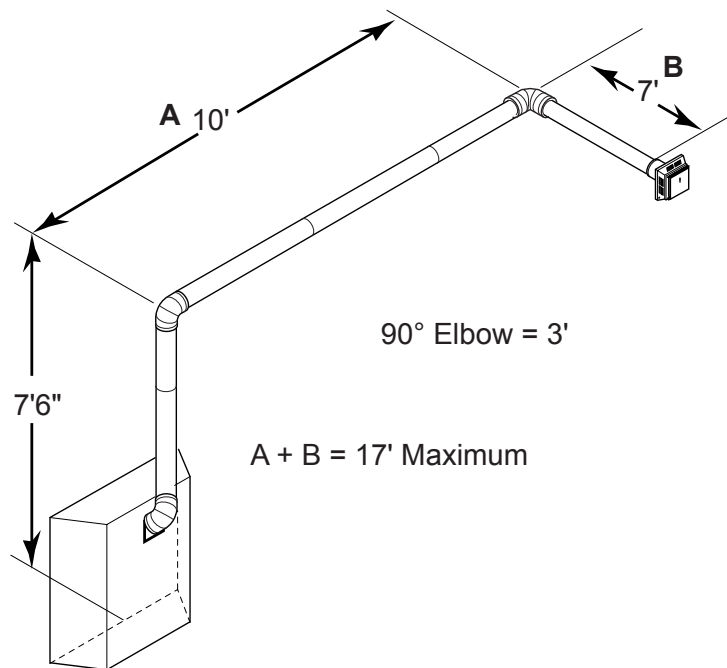
- The maximum number of 45° elbows permitted per side wall installation is two (2). These elbows can be installed in either the vertical or horizontal run.
- For each 45° elbow installed in the horizontal run, the length of the horizontal run MUST be reduced by 18" (45cm). This does not apply if the 45° elbows are installed on the vertical part of the vent system.
- The maximum number of elbow degrees in a system is 270°. See Figure 24.



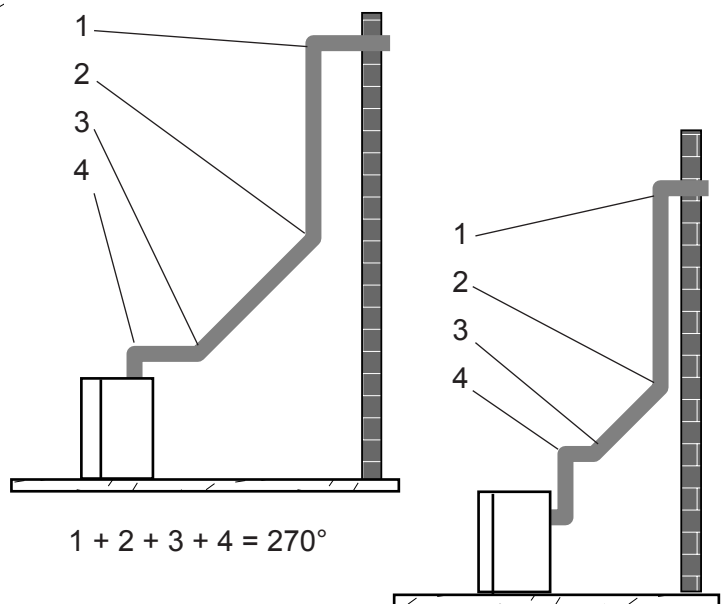
**Figure 22 - Horizontal Run Reduction**

*Example:*

Elbow 1 =	90°
Elbow 2 =	45°
Elbow 3 =	45°
Elbow 4 =	90°
<hr/>	
Total Angular Variation =	270°



**Figure 23 - Maximum Vent Run with Elbows**



**Figure 24 - Maximum Elbow Usage**



# VENT INSTALLATION

## BELOW GRADE INSTALLATIONS

When it is not possible to meet the required vent terminal clearances of 12" above grade level, a snorkel kit is recommended. It allows installation depth down to 7" (178mm) below grade level. The 7" (178mm) is measured from the center of the horizontal vent pipe as it penetrates through the wall.

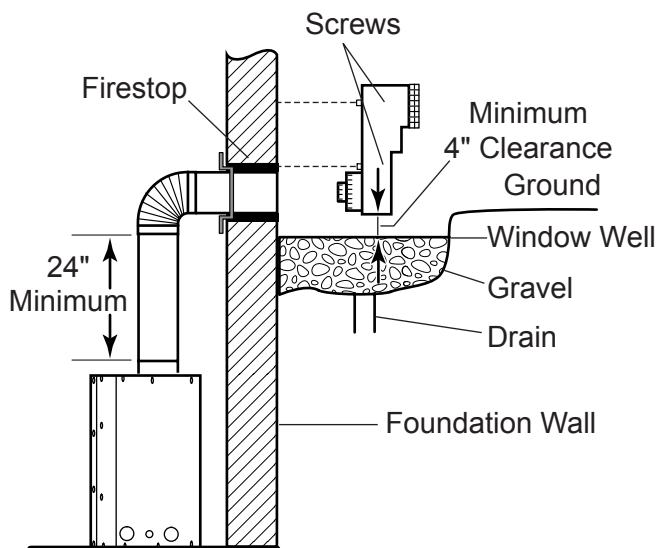
**Ensure that sidewall venting clearances are observed. If venting system is installed below ground, we recommend a window well with adequate and proper drainage to be installed around the termination area.**

If installing a snorkel, a minimum 24" vertical rise is necessary. The maximum horizontal run with the 24" vertical pipe is 36". This measurement is taken from the collar of the fireplace (or transition elbow) to the face of the exterior wall. See the Sidewall Venting Graph for extended horizontal run if the vertical exceeds 24".

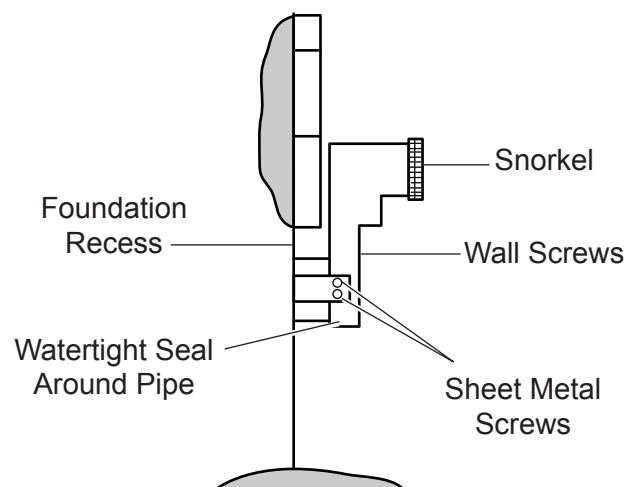
1. Establish vent hole through the wall. *See Figure 18, page 19.*
2. Remove soil to a depth of approximately 16" below base of snorkel. Install drain pipe. Install window well (not supplied). Refill hole with 12" of coarse gravel leaving a clearance of approximately 4" below snorkel. *See Figure 25.*
3. Install vent system.
4. Ensure a watertight seal is made around the vent pipe coming through the wall.
5. Apply high temperature sealant caulking (supplied) around the 4" and 7" snorkel collars.
6. Slide the snorkel into the vent pipes and secure to the wall.
7. Level the soil so as to maintain a 4" clearance below snorkel. *See Figure 25.*

<b>WARNING</b>	• Do not back fill around snorkel.
	• A clearance of at least 4" must be maintained between the snorkel and the soil.

If the foundation is recessed, use recess brackets (not supplied) for securing lower portion of the snorkel. Fasten brackets to wall first, then secure to snorkel with self drilling #8x<sup>1</sup>/<sub>2</sub> sheet metal screws. It will be necessary to extend vent pipes out as far as the protruding wall face. *See Figure 26.*



**Figure 25 - Below Grade Installation**



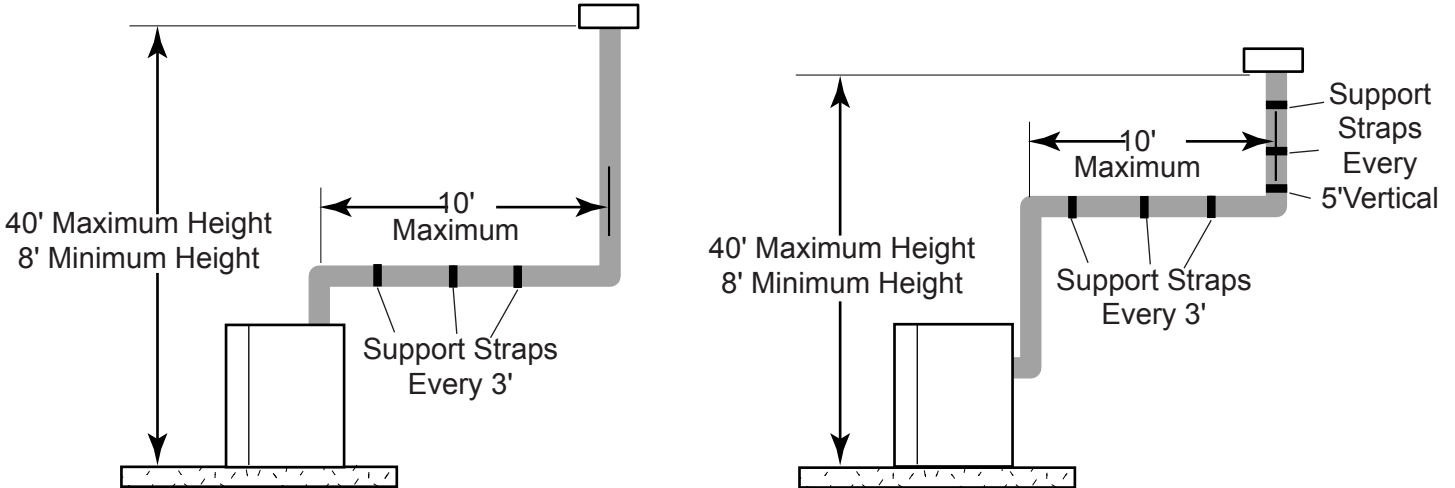
**Figure 26 - Snorkel Installation, Recessed Foundation**



**VERTICAL THROUGH-THE-ROOF APPLICATIONS**

This Gas Fireplace has been approved for,

- Vertical installations up to 40' (12m) in height. Up to a 10' (3m) horizontal vent run can be installed within the vent system using a maximum of two 90° elbows. See Figure 27.



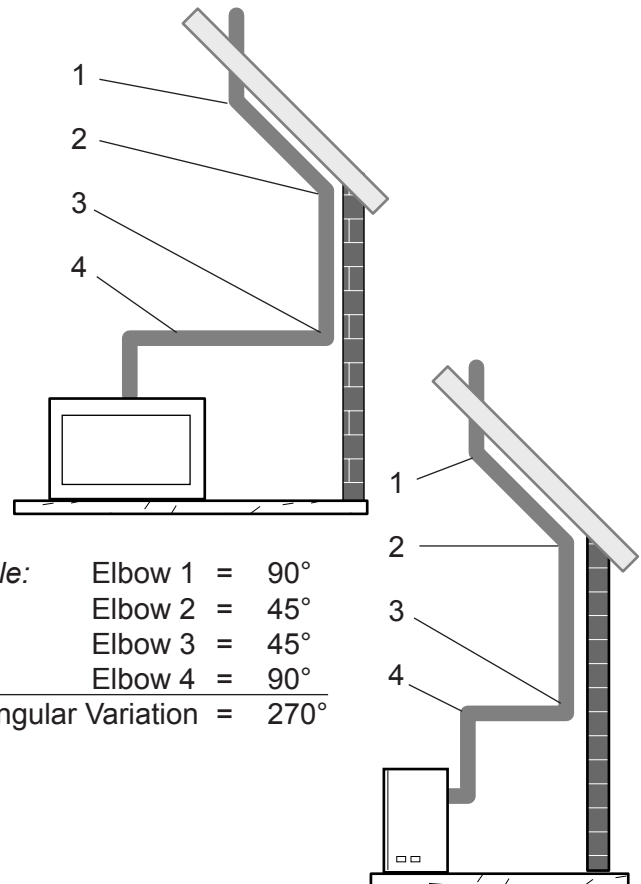
**Figure 27 - Support Straps for Horizontal Runs**

- Up to two 45° elbows may be used within the horizontal run. For each 45° elbow used on the horizontal plane, the maximum horizontal length must be reduced by 18" (450mm).

**Example:** Maximum horizontal length

- No elbows = 10' (3m)
- 1x45° elbows = 8.5' (2.6m)
- 2x45° elbows = 7' (2.1m)

- A minimum of an 8' (2.5m) vertical rise is required.
- Two sets of 45°elbows offsets may be used within the vertical sections. From 0 to a maximum of 8' (2.5 m) of vent pipe can be used between elbows. See Figure 28.
- BDV Series fireplaces allow for offsets. This application will require that you first determine the roof pitch and use the appropriate starter kit.
- The maximum angular variation allowed in the system is 270°. See Figure 28.
- The minimum height of the vent above the highest point of penetration through the roof is 2' (610mm).



**Example:**

Elbow 1 =	90°
Elbow 2 =	45°
Elbow 3 =	45°
Elbow 4 =	90°
<hr/>	
Total Angular Variation =	270°

**Figure 28 - Maximum elbow Usage**

# VENT INSTALLATION

## INSTALLATION FOR VERTICAL TERMINATION

1. Determine the route your vertical venting will take. If ceiling joist, roof rafters or other framing will obstruct the venting system, consider an offset. See Figure 29 to avoid cutting load bearing members.

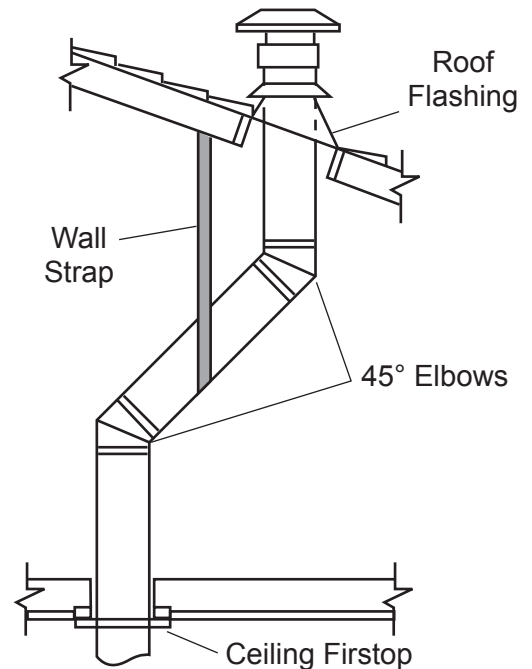
**NOTE: Payspecial attention to these installation instructions for required clearances (air space) to combustibles when passing through ceilings, walls, roofs, enclosures, attic rafters, etc. Do not pack air spaces with insulation. Also note maximum vertical rise of the venting system and any maximum horizontal offset limitations. Offsets must fall within the parameters shows in Figure 12, page 16.**

2. Set fireplace in desired location. Drop a line plumb down from the ceiling to the position of the flue exit. Mark the center point where the vent will penetrate the ceiling. Drill a small locating hole at this point.

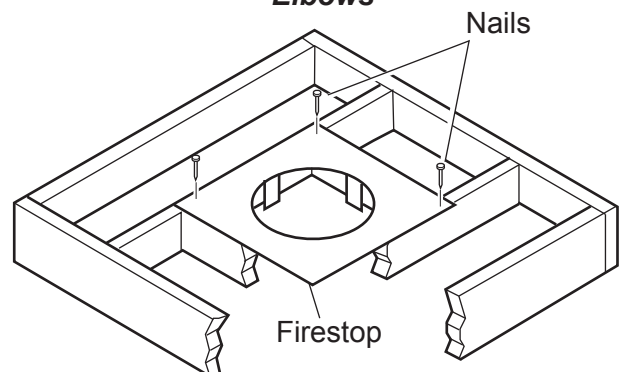
Drop a plumb line from the inside of the roof to the ceiling locating hole in the ceiling. Mark the center point where the vent will penetrate the roof. Drill a small locating hole at this point.

## FLAT CEILING INSTALLATION

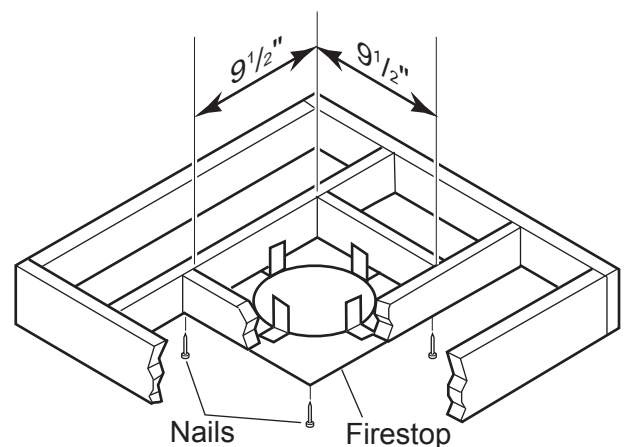
1. Cut a 9 $\frac{1}{2}$ " (241 mm) square hole in the ceiling using the locating hole as a center point. The opening should be framed to 9 $\frac{1}{2}$ "x9 $\frac{1}{2}$ " (241 mm x 241 mm) inside dimensions as shown in Figure 31 using framing lumber the same size as the ceiling joist. If the area above the ceiling is an insulated ceiling or a room, nail firestop from the top side. This prevents loose insulation from falling into the required clearance space. See Figure 30. Otherwise, install firestop below the framed hole. The firestop should be installed with no less than three nails per side. See Figure 31.
2. Assemble the desired lengths of pipe and elbows necessary to reach from the burner system flue up through the firestop. Be sure pipe and elbow connections are fully twist-locked. See Figure 15, page 18.
3. Cut a hole in the roof using the locating hole as a center point. (Cover any exposed open vent pipes before cutting hole in roof). The 9 $\frac{1}{2}$ "x9 $\frac{1}{2}$ " (241 mm x 241 mm) hole must be measured on the horizontal. Actual length may be larger depending on the pitch of the roof. There must be a 1" minimum clearance from the vent pipe to combustible materials. (Insulation should be considered a combustible material) Frame the opening as shown in Figure 15 on page 18.



**Figure 29 - Offset with Wall Strap and 45° Elbows**



**Figure 30 - If area above is a room, install firestop above framed hole as shown**



**Figure 31 - If area above is not a room, install firestop below framed hole as shown**

*Continued on next page*

4. Connect a section of pipe and extend up through the hole.

**NOTE: If an offset is needed to avoid obstructions, you must support the vent pipe every three (3) feet. Use wall straps for this purpose. See Figure 27, page 23. Whenever possible, use 45° elbows instead of 90° elbows. The 45° elbow offers less restriction to the flow of the flue gases and intake air.**

5. Place the flashing over the pipe section(s) extending through the roof. Secure the base of the flashing to the roof and framing with roofing nails. Be sure roofing material overlaps the top edge of the flashing. There must be a 1" clearance from the vent pipe to combustible materials.

6. Continue to add pipe sections until the height of the vent cap meets the minimum building code requirements.

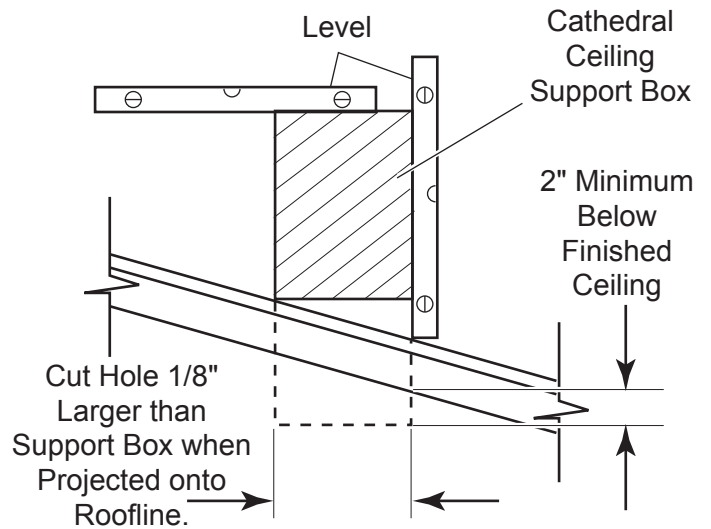
**NOTE: You must increase vent height for steep roof pitches. Nearby trees, adjoining roof lines, steep pitched roofs, and other similar factors may cause poor draft or down-drafting in high winds. Increasing the vent height may solve this problem.**

**NOTE: If the vent pipe passes through any occupied areas above the first floor, including storage spaces and closets, you must enclose pipe. You may frame and sheetrock the enclosure with standard construction material. Make sure to meet the minimum allowable clearances to combustibles. Do not fill any of the required clearance spaces with insulation.**

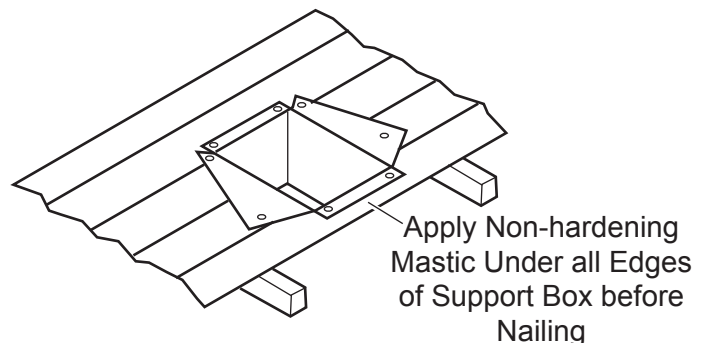
## CATHEDRAL CEILING INSTALLATION

**IMPORTANT: Review all information on previous page before planning this installation. Cathedral ceiling installations can be very tricky.**

1. Remove shingles or other roof covering as necessary to cut the rectangular hole for the support box. Mark the outline of the cathedral ceiling support box on the roof sheathing using the locating hole as a center point.
2. Cut the hole 1/8" larger than the support box outline. See Figure 32.
3. Lower the support box through the hole in the roof until the bottom of the box extends at least 2" ( mm) below the ceiling. See Figure 32. Align the support box vertically and horizontally using a level. Temporarily tack the support box in place through the inside walls and into the roof sheathing.
4. Using tin snips, cut the support box from the top corners down to the roofline and fold the resulting flaps over the roof sheathing. See Figure 33. Apply a bead of non-hardening mastic around the top edges of the support box to make a seal between the box and the roof. Nail in place with roofing nails. Remove any combustible material that might be inside the support box.
5. Complete the cathedral ceiling installation by following the same procedures outlines in steps 2 through 6 for *Flat Ceiling Installation*, page 24 and above.



**Figure 32 - Cathedral Ceiling Support Box Installation**



**Figure 33 - Installed Cathedral Ceiling Support Box**

# FIREPLACE INSTALLATION

## CHECK GAS TYPE

Use proper gas type for the fireplace you are installing. If you have conflicting gas type, do not install fireplace. See dealer where you purchased the fireplace for proper fireplace for your gas type or conversion kit.

## INSTALLING GAS PIPING TO FIREPLACE / BURNER SYSTEM LOCATION

**WARNING**

A qualified installer or service person must connect appliance to gas supply. Follow all local codes.

**CAUTION**

For propane/LP units, never connect fireplace directly to the propane/LP supply. This burner system requires an external regulator (not supplied). Install the external regulator between the burner system and propane/LP supply.

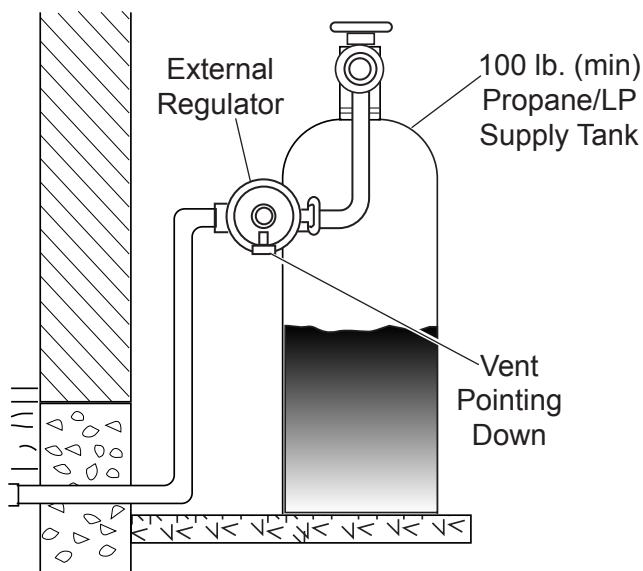
## INSTALLATION ITEMS NEEDED

Before installing fireplace and burner system, make sure you have the items listed below.

- External regulator (supplied by installer)
- Piping (check local codes)
- Sealant (resistant to propane/LP gas)
- Equipment shutoff valve\*
- Test gauge connection\*
- Sediment trap (recommended)
- Tee joint
- Pipe wrench
- approved flexible gas line with gas connector (if allowed by local codes — not provided)

\* A CSA design-certified equipment shutoff valve with  $\frac{1}{8}$ " NPT tap is an acceptable alternative to test gauge connection. Purchase the CSA design-certified equipment shutoff valve from your dealer.

For propane/LP connections only, the installer must supply an external regulator. The external regulator will reduce incoming gas pressure. You must reduce incoming gas pressure to between 11 and 13 inches of water. If you do not reduce incoming gas pressure, burner system regulator damage could occur. Install external regulator with the vent pointing down as shown in *Figure 34*. Pointing the vent down protects it from freezing rain or sleet.



**Figure 34 - External Regulator with Vent Pointing Down (Propane/LP Only)**

**CAUTION**

Use only new black iron or steel pipe. Internally tinned copper or copper tubing can be used per National Fuel Code, section 2.6.3, providing gas meets hydrogen sulfide limits, and where permitted by local codes. Gas piping system must be sized to provide minimum inlet pressure (listed on data plate) at the maximum flow rate (BTU/hr). Undue pressure loss will occur if the pipe is too small.

When using copper or flex connectors use only fittings approved for gas connections. The gas control inlet is  $\frac{3}{8}$ " NPT.

**WARNING**

Only persons licensed to work with gas piping may make the necessary gas connections to this appliance.

**CAUTION**

A manual shutoff valve must be installed upstream of the appliance. Union tee and plugged  $\frac{1}{8}$ " NPT pressure tapping point should be installed upstream of the appliance. See Figure 35.

**NOTE :** The gas line connection may be made using  $\frac{1}{2}$ " rigid tubing or an approved flex connector. Since some municipalities have additional local codes it is always best to consult your local authorities and the current edition of the National Fuel Gas Code ANSI.Z223.1, NFPA54. In Canada CAN/CGA-B149 (1 or 2) Installation Code.

A listed manual shutoff valve must be installed upstream of the appliance. Union tee and plugged  $\frac{1}{8}$ " NPT pressure tapping point should be installed upstream of the appliance. See Figure 35.

**IMPORTANT:** Install main gas valve (equipment shutoff valve) in an accessible location. The main gas valve is for turning on or shutting off the gas to the fireplace.

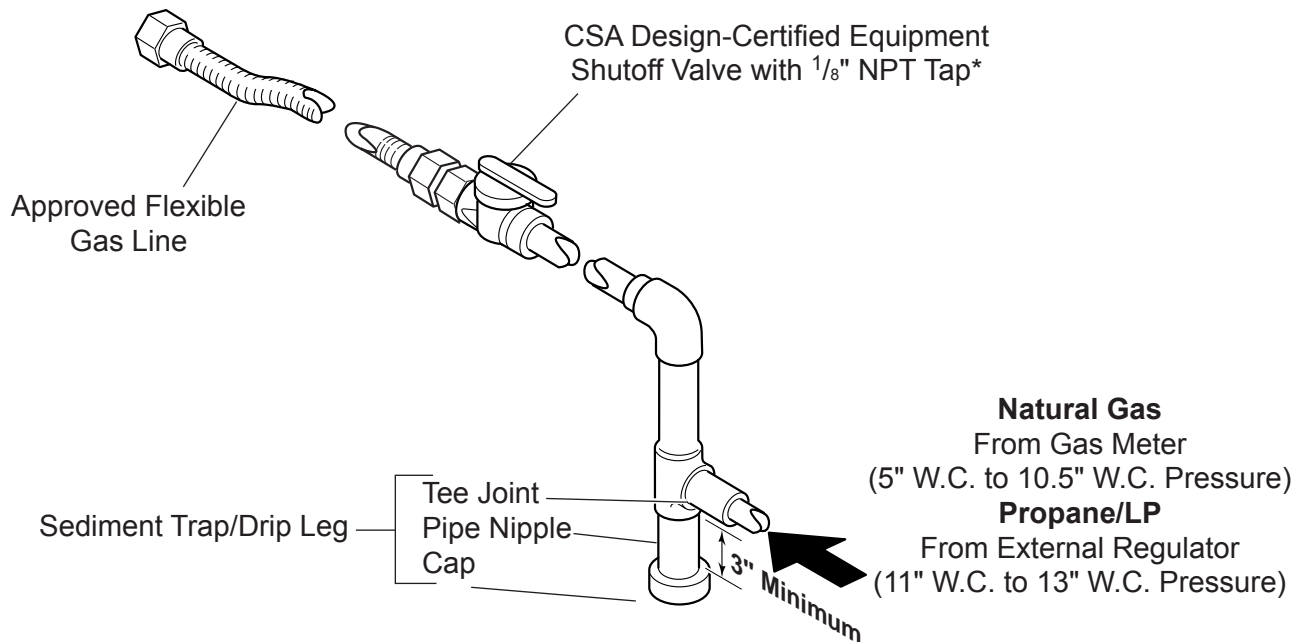
Check your building codes for any special requirements for locating equipment shutoff valve to fireplaces.

Apply pipe joint sealant lightly to male threads. This will prevent excess sealant from going into pipe. Excess sealant in pipe could result in clogged burner system valves.

**CAUTION**

Use pipe joint sealant that is resistant to liquid petroleum (LP) gas.

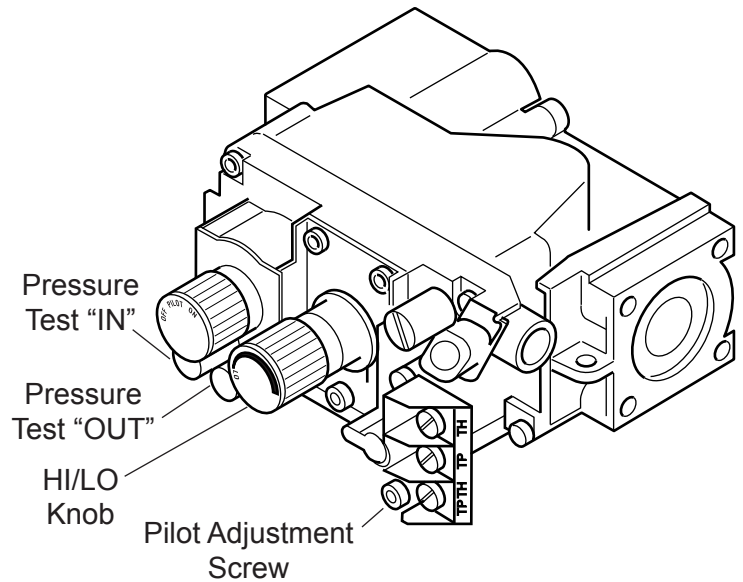
We recommend that you install a sediment trap/drip leg in supply line as shown in Figure 35. Locate sediment trap/drip leg where it is within reach for cleaning. Install in piping system between fuel supply and burner system. Locate sediment trap/drip leg where trapped matter is not likely to freeze. A sediment trap traps moisture and contaminants. This keeps them from going into the burner system gas controls. If sediment trap/drip leg is not installed or is installed wrong, burner system may not run properly.



**Figure 35 - Gas Connection**

## CHECKING GAS PRESSURE

1. Check gas type. The gas supply must be the same as stated on the appliance's rating decal. If the gas supply is different from the fireplace, STOP! Do not install the appliance. Contact your dealer immediately.
2. To ease installation, a 30" (mm) flex line with manual shut-off valve has been provided with on this appliance. Install and attach 1/2" gas line onto shut-off valve.
3. After completing gas line connection, purge air from gas line and test all gas joints from the gas meter to the fireplace for leaks. Use a solution of 50/40 water and soap or a gas sniffer.
4. To adjust flame height, turn HI/LO knob to HI to get maximum pressure to burner. Turn HI/LO knob to LO to get minimum pressure.
5. To check gas pressures at valve, turn captured screw counter clockwise 2 or 3 turns and then place tubing to pressure gauge over test point. Turn unit to high. *See Figure 36.* After taking pressure reading, be sure and turn captured screw clockwise firmly to reseal. Do not over torque. Check test points for gas leaks.



**Figure 36 - Gas Pressure Check at Gas Valve**

**WARNING**

**Do not use open flame to check for gas leaks.**



**ELECTRICAL WIRING**

This fireplace will work without any electrical supply. Electricity is only needed to operate blower.

**NOTE:** *If installed in mobile home, fireplace must be bolted securely to floor.*

**WARNING**

Electrical connections should only be performed by a qualified, licensed electrician. Main power must be off when connecting to main electrical power supply or performing service. All wiring shall be in compliance with all local, city, and state codes. The appliance, when installed, must be electrically grounded in accordance with local codes, or in the absence of local codes, with the *National Electrical Code ANSI/ NFPA 70 (latest edition)* and *Canadian Electrical Code, CSA C22.1*.

**CAUTION**

Label all wires before disconnecting when servicing controls. Wiring errors can cause improper and dangerous operation.

Verify proper operation after servicing.

**REMOTE WALL MOUNTED SWITCH**

A remote wall switch and up to fifteen (15) feet of 18 Ga. wire may be used with this appliance. Attach the wall switch in a junction box at the desired location on the wall. *See Figure 37.* Do not extend beyond the wall switch wire length provided.

**NOTE:** *Extended lengths of wire may cause the fireplace not to function properly. Longer length of wire is permitted if the wire is made out of larger gauge (diameter) wire. Always check with local code.*

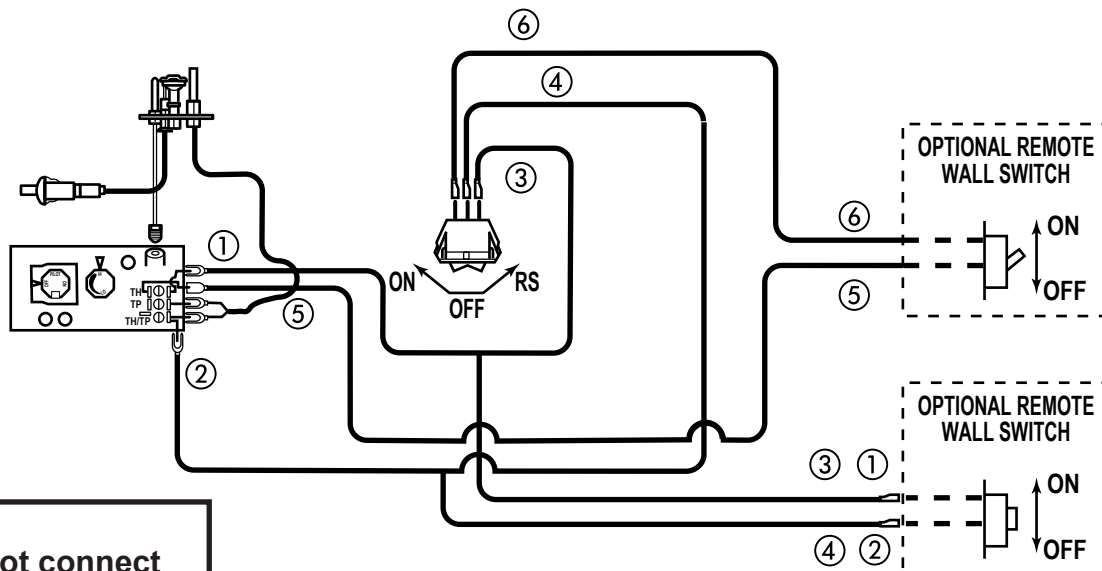


Figure 37 - Wiring Diagram for Wall Switch

**WARNING**

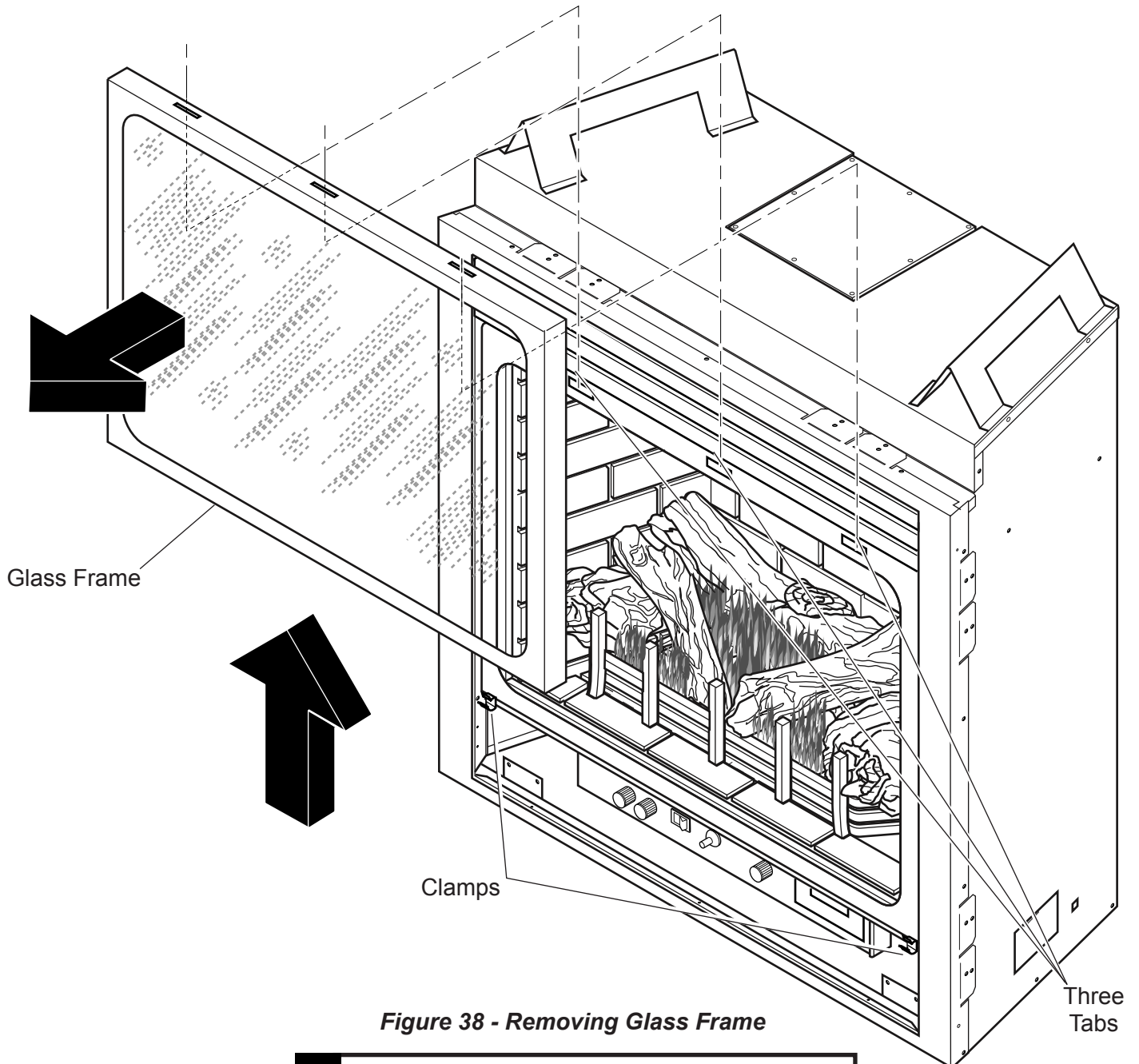
Do not connect wall switch to heater (110V) circuit.



## GLASS REMOVAL

### GLASS FRAME REMOVAL

1. Release two clamps on bottom of fireplace. See *Figure 38*.
2. Tilt glass frame out and lift glass frame up until it clears three tabs on top of fireplace.
3. Set glass frame aside.



*Figure 38 - Removing Glass Frame*

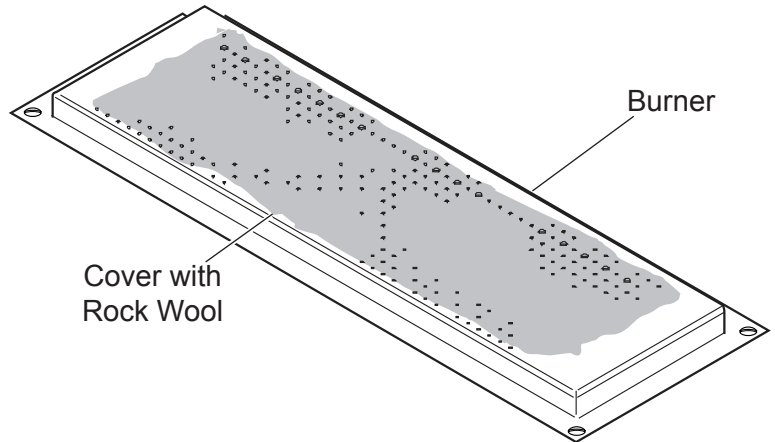
**CAUTION**

Each clamp has a quick spring force. When reinstalling clamps, keep fingers clear.

## ROCK WOOL PLACEMENT

1. Place rock wool on burner to provide glowing embers. For best results, pull the rock wool apart into pieces the size of a nickel or smaller.
2. Distribute one layer of rock wool to cover the entire burner. Fill front gap between grate and burner. See *Figure 39*.
3. Place the logs on the burner. See *Log Placement* below. Light unit and after 15 minutes, check burner flame and glow. See *Burner Flame*, page 35.

If the flame is blue and only in the center, turn off unit and let cool. After unit cools, remove logs. If the back holes are clear, add more rock wool to the center of the burner. Replace logs and check flame again. Save left over rock wool to refresh when cleaning later. Too much rock wool can disturb the flame and cause sooting on the glass or logs.



**Figure 39 - Placement of Rock Wool on Burner**

**WARNING**

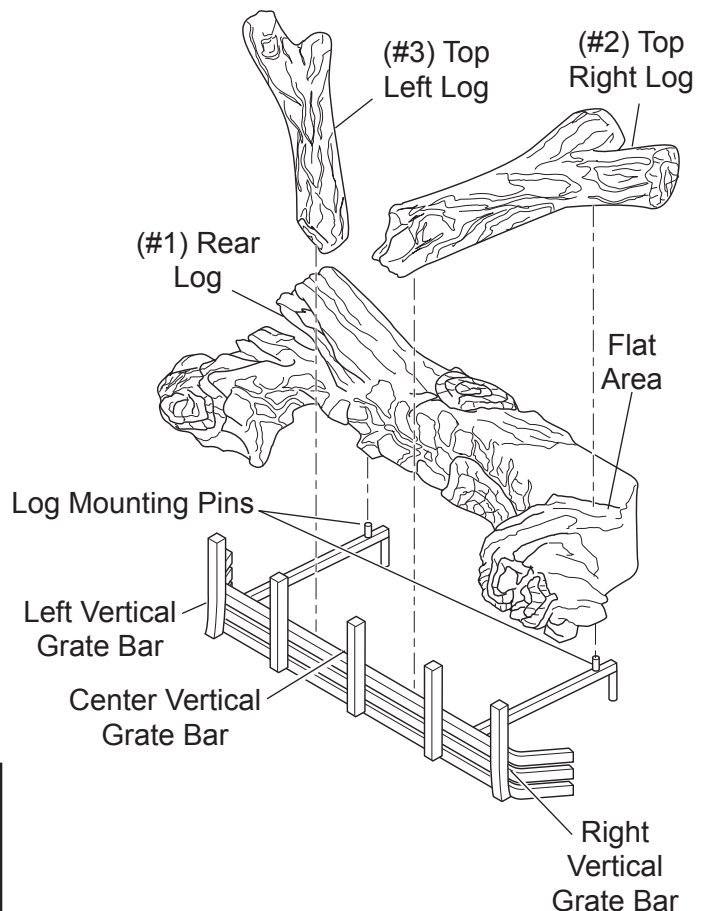
Do not use the entire bag of rock wool to cover the burner. This could cause the flame to burn poorly and may lead to sooting.

## LOG PLACEMENT

1. Place rear log (#1) on grate assembly. Log should rest firmly on the two log mounting pins on the horizontal bars. See *Figure 40*.
2. Place top right log (#2) on the rear log. Rest the right back side of the log in the flat area of the rear log. Place the narrow front end of the log next to the center vertical grate bar. See *Figure 40*.
3. Place the top left log (#3) on the rear log. Nest the forked end of the top left log into the fork or the rear log. Rest the narrow end of the top left log behind the center vertical grate bar. See *Figure 40*.

## LAVA ROCK AND EMBERS PLACEMENT

Sprinkle lava rock on the floor of the inner combustion chamber. Evenly distribute the rock. Do not pile the lava rock up in front of grate. Do not place lava rock on the burner. If desired, purchase optional embers to decorate the floor of the fireplace.



**Figure 40 - Log Placement (BDV300, 400 shown)**

**WARNING**

Do not sprinkle the lava rock or ember chunks on top of the burner. This may cause potential sooting, glass breakage and a fire hazard.

## OPERATING INSTRUCTIONS

### FOR YOUR SAFETY READ BEFORE LIGHTING

**WARNING**

If you do not follow these instructions exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- A. This appliance is equipped with a pilot which must be lit with built-in battery ignitor while following these instructions exactly.
- B. BEFORE OPERATING smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

#### WHAT TO DO IF YOU SMELL GAS:

- Turn off all gas to the appliance.
  - Open windows.
  - Do not attempt to light any appliance.
  - Do not touch any electric 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.
- C. Use only your hand to push in, or turn the gas control knob. Never use tools. If the knob will not push in or turn by hand, don't try to repair it. Call a qualified service technician. Force or attempted repair may result in a fire or explosion.
  - D. Do not use this appliance if any part of it has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control that has been under water.

### LIGHTING PILOT FOR THE FIRST TIME

#### INITIAL LIGHTING

Purge air from the supply line as follows:

- Open main shutoff valve.
- Unscrew main pressure test point.
- Leave inlet test screw open until gas comes in.
- When gas is flowing, tighten inlet screw immediately.

**WARNING**

Never use an open flame to check for gas leak.

#### LEAK TESTING

1. Follow the pipe from the gas supply line connection to the gas valve. Check connection for leaks with soap and water mixture.
2. Next check for gas leaks at the burner with soap and water mixture.
3. Check the pilot for gas leaks with soap and water mixture.

## LIGHTING PILOT FOR THE FIRST TIME

### APPROVED LEAK TESTING METHOD

You may check for gas leaks with the following methods only:

- Soap and water solution
- An approved leak testing spray
- Electronic sniffer

**DANGER**

**Never check for gas leak with open flame!**

**WARNING**

If using a soap and water solution to test for leaks, **DO NOT** spray solution onto control body.

*NOTE: Remove any excessive pipe compound from the connections. Excessive pipe compound can set off electronic sniffers.*

Check for gas leaks in each of the following locations:


- Pipe from the gas supply line connection to the gas valve
- Burner connections
- Pilot
- Each joint or connection
- Field made joints / gas shutoff valve
- Factory made joints
- All joints on valve and control body

## LIGHTING PILOT

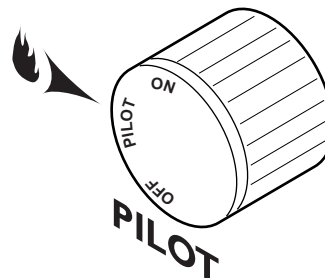
**WARNING**

The control has an interlock device that does not allow the lighting of the fireplace up to the moment the safety device of the flame has not interrupted the gas flow. After that period of time (when the magnet is closed), it is possible to start the lighting operation.

The gas control knob is designed to be operated by hand. **DO NOT** use any tools during this operation. Damaged knobs may result in serious injury.

1. Depress and turn knob counterclockwise  to pilot position.
2. Depress fully and hold pilot gas knob. The electronic ignitor will automatically ignite the pilot. Keep knob fully depressed for a few seconds. Release and check that pilot continues to burn.

If the pilot does not stay lit, repeat steps 1 and 2.



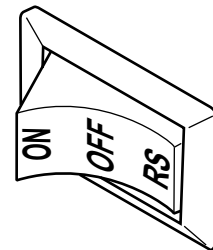
**Figure 41 - Pilot Position**

*Continued on next page*

## LIGHTING BURNER


### MAIN BURNER SWITCH

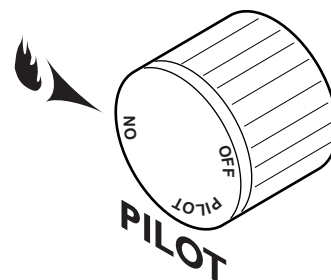
The “ON/OFF/RS” switch for the main burner can be found behind door of the fireplace. This switch allows you to turn on and to turn off the main burner without using the gas valve knob. Make sure the button is in the “ON” position to light the main burner. *See Figure 42.*



**Figure 42 -  
On/Off/RS Switch**

### LIGHTING THE BURNER

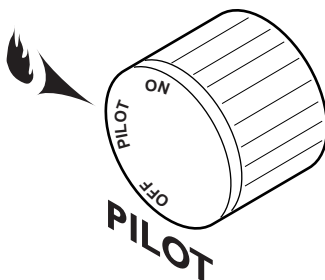
Depress and turn the knob counterclockwise  to the “ON” position. *See Figure 43.* It will take less than four (4) seconds for the burner to ignite.



**Figure 43 - On Position**

### PILOT POSITION

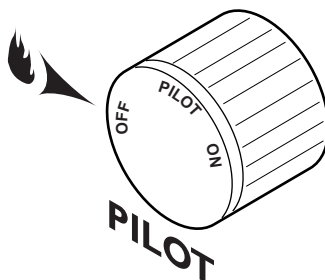
Depress and turn knob to pilot position to keep burner off while maintaining the pilot light. *See Figure 44.*



**Figure 44 - Pilot Position**

## TO TURN OFF GAS

Depress and turn knob clockwise  to “OFF” position. *See Figure 45.*



**Figure 45 - Off Position**

**WARNING**

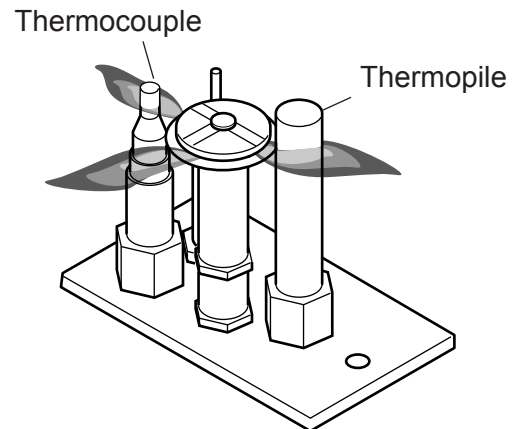
Turn off gas before servicing fireplace. It is recommended that a qualified service technician perform these check-ups at the beginning of each heating season

**BURNER, PILOT AND CONTROL COMPARTMENT**

Keep the control compartment, logs, and burner areas surrounding the logs clean by vacuuming or brushing at least twice a year. Make sure the burner porting, pilot air opening and burner air opening are free of obstructions at all times.

**PILOT FLAME**

The flames from the pilot should be visually checked as soon as the heater is installed and periodically during normal operation. **The pilot flame must always be present when the fireplace is in operation.** See Figure 46. The pilot flame has three distinct flames, one engulfing the thermopile, one engulfing the thermocouple, and the other reaching to the main burner.



**Figure 46 - Pilot Flame**

**BURNER**

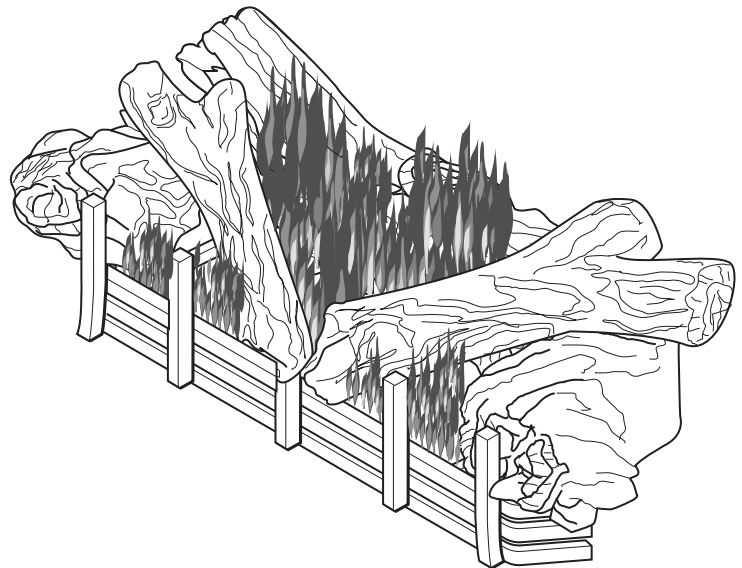
Inspect area around the injector. Remove any lint or foreign material with a brush or vacuum.

**BURNER FLAME**

The flames from the burner should be visually checked as soon as the heater is installed and periodically during normal operation. In normal operation, at full rate, and after operating for about 15 to 30 minutes, the flame should be yellow and slightly taller than the rear log. See Figure 47.

If the flame is blue and only in the center, turn off unit and let cool. After unit is cool, remove logs and check to make sure the back holes in the burner are not covered with rock wool. If the back holes are clear, add more rock wool to the center of the burner. Replace logs.

**NOTE:** The type of installation, vent system configuration, and wind effects may cause the flame patterns to vary.



**Figure 47 - Burner Flame Appearance**

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## CLEANING AND MAINTENANCE

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### VENT SYSTEM

The fireplace and venting system should be inspected before initial use and at least annually by a qualified field service person. Inspect the external vent cap on a regular basis to make sure that no debris is interfering with the airflow. Inspect entire venting system to ensure proper function.

### GLASS DOOR

Thoroughly clean the inside of the glass door after using the fireplace for ten hours. Periodically clean the glass door as necessary.

When cleaning the glass, remember:

- **Do not remove the glass when hot.** Allow glass to cool before removal.
- NEVER use abrasive materials.
- Keep children and pets a safe distance away.
- Never operate the fireplace without the glass door properly secured.
- Never operate the fireplace if the glass is broken.
- Replace any glass that is chipped, cracked, or broken. Replacement glass door assemblies **MUST** be supplied by the fireplace manufacturer – **No substitute materials may be used.**
- Handle glass door with care to avoid striking or scratching it on hard objects.

To clean glass door, follow “Glass Removal” procedure outlined in the *Final Installation* section. Film deposit on the inside of the glass should be cleaned off using a nontoxic, non-corrosive, non-abrasive, mild-cleaning solution. Simply apply an adequate amount to the glass and wipe off with a damp cloth. After all maintenance has been completed, re-install glass door.

### LOGS

Leave logs installed in the fireplace for cleaning. Vacuum surface of the logs with a brush attachment. If logs must be removed for cleaning, handle carefully by holding gently at each end. Gloves are recommended to prevent skin irritation from ceramic fibers. If skin becomes irritated, wash gently with soap and water. Vacuum surface of logs with brush attachment or brush logs with a soft bristle brush (i.e. clean, dry paintbrush). To place logs back in the fireplace, see “Log Placement” found in the *Final Installation* section.

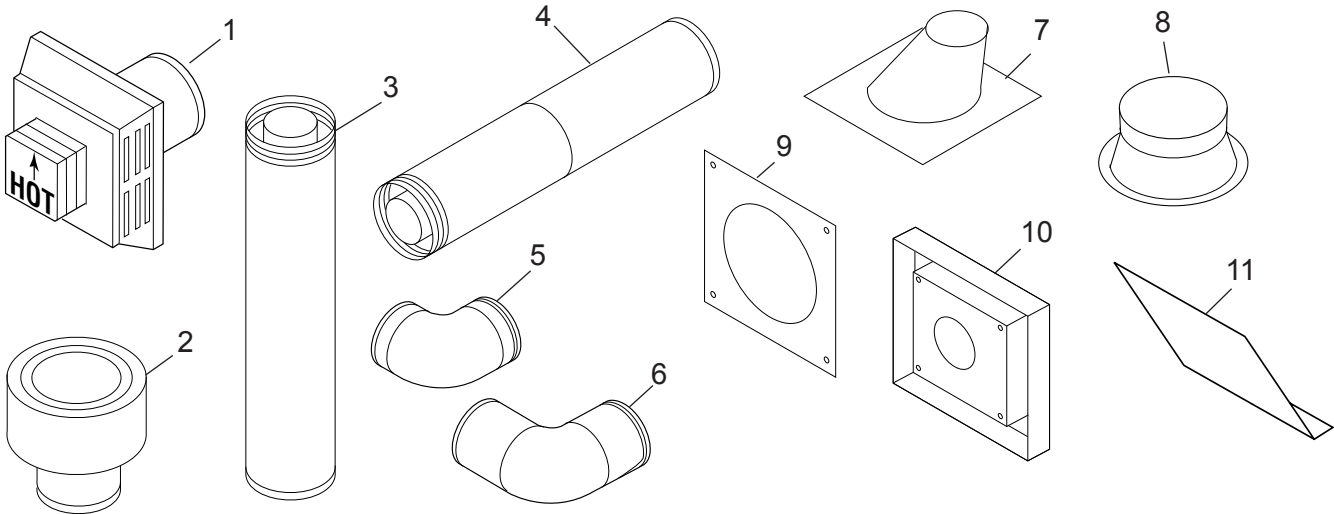
**NOTE: Do not use cleaning fluid to clean logs.**

### ROCK WOOL

Replace or add rock wool as required following installation instructions in the *Final Installation* section of this manual.



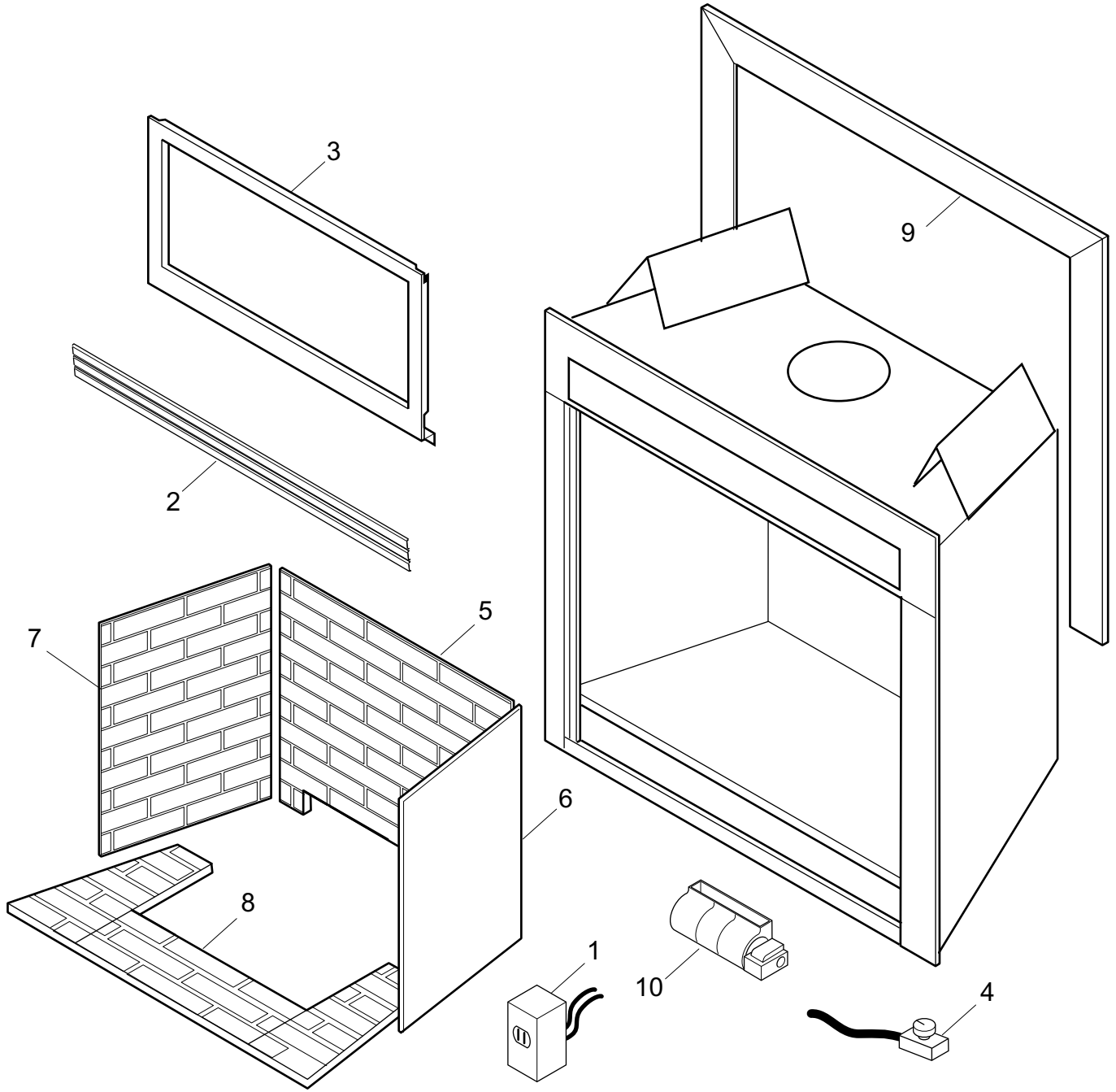
VENT COMPONENTS



Item	Qty/Box	Description	Simpson Duravent or Monessen P/N
1	1	Simpson Horizontal High Wind Termination Cap	985
1	1	Horizontal Square Termination Cap with Built-In Vinyl Siding Standoff, Heat Deflector and Firestop	BHRTK
1	1	Horizontal Rigid Pipe Termination Kit with Horizontal Termination Cap with Built-In Vinyl Siding Standoff, Heat Deflector, Firestop, 90° Elbow and 11"x14 <sup>5</sup> / <sub>8</sub> " Adjustable Pipe	BHSTK
1	1	Horizontal Flexible Pipe Termination Kit with Horizontal Termination Cap with Built-In Vinyl Siding Standoff, Heat Deflector, Firestop, 20" to 40" Flexible Pipe Adapter	BHSFTK
2	1	Vertical Termination	980
3	6	6" Pipe Length	908
3	6	9" Pipe Length	907
3	6	12" Pipe Length	906
3	6	24" Pipe Length	904
3	6	36" Pipe Length	903
3	6	48" Pipe Length	902
4	6	11" To 14 5/8" Pipe, Adjustable	911
4	6	17" To 24" Pipe, Adjustable	917
5	6	45° Elbow	945
5	6	45° Swivel Elbow	945G
6	6	90° Elbow	990
6	6	90° Swivel Elbow	990G
7	6	Flashing, 0/12 To 6/12 Roof Pitch	943
8	6	Storm Collar	953
9	6	Firestop	963
10	1	Vinyl Siding Standoff	950
11	1	Deflector Shield	37D0115 (Monessen)

# ILLUSTRATED PARTS LISTS

## FIREBOX COMPONENTS

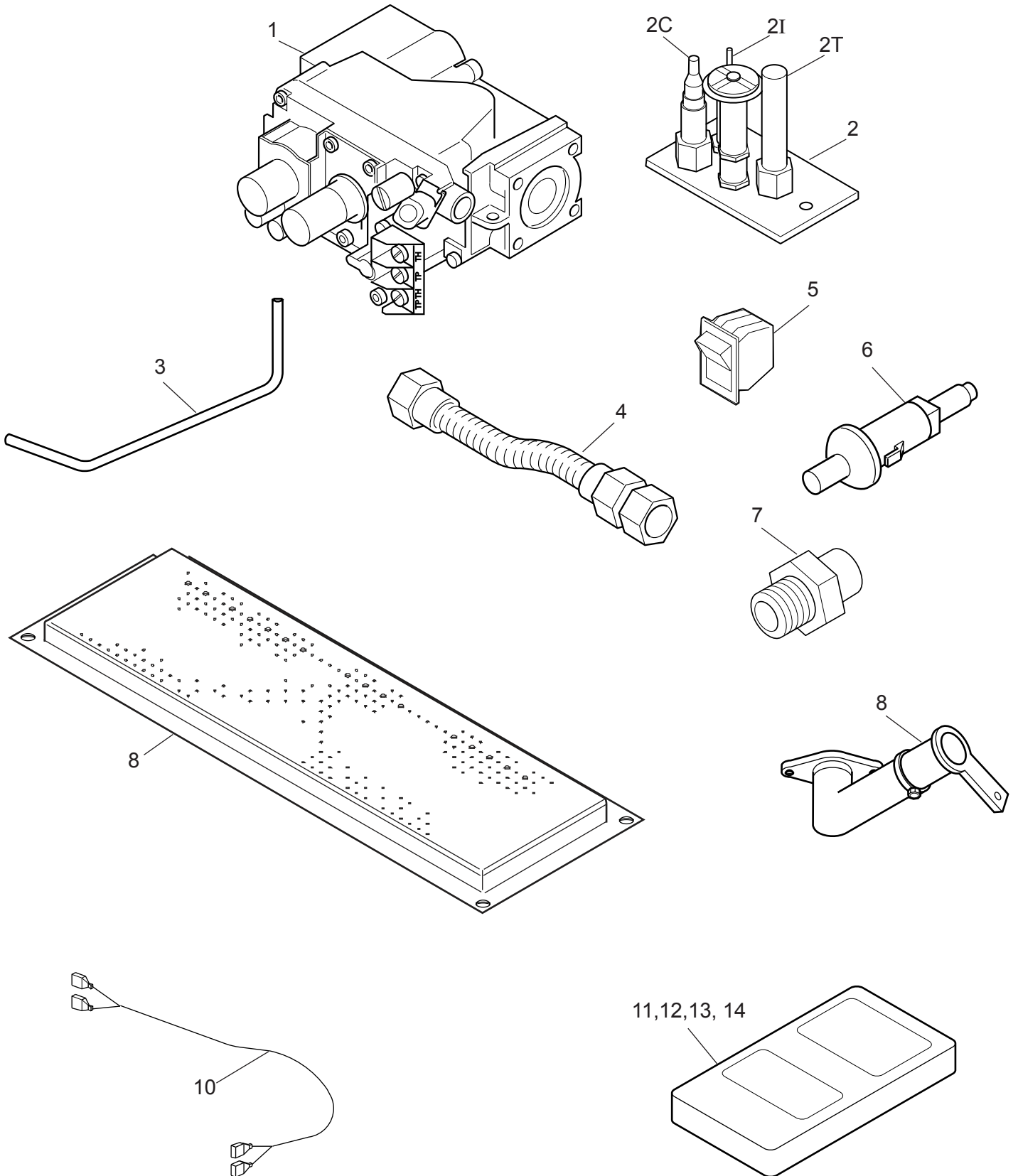


**FIREBOX COMPONENTS**

Item	Description	Qty	BDV300	BDV400	BDV500	BDV600
<b>Standard Features</b>						
1	Junction Box Assembly	1	26D2128K	26D2128K	26D2128K	26D2128K
2	Black Louver	6	54D0246	26D0695	26D0697	26D0699
3	Glass Frame Assembly	1	54D0294	54D0195	54D0340	54D0443
<b>Factory Installed Options</b>						
2	Brass Louver	6	54D0249K	26D0701K	26D0703K	26D0705K
4	Thermostat Sensor	1	26D2870	26D2870	26D2870	26D2870
5	Standard Firebrick Center	1	54D0244	37D1070	37D1071	54D0440
6	Standard Firebrick Right	1	54D0245	54D0103	54D0103	54D0103
7	Standard Firebrick Left	1	54D0245	54D0102	54D0102	54D0102
8	Blower Motor	1	54D0281	26D0748	26D0748	26D0748
<b>Accessories/Field Installed Options</b>						
2	Brass Louver	1	L30BR	L32BR	L36BR	L42BR
2	Chrome Louver	1	L30CH	L32CH	L36CH	L42CH
2	Filigree	1	BRFK30	BRFK32	BRFK36	BRFK42
5,6,7	Weathered Firebrick Walls	1	FB300W10B	FB400W10B	FB500W10B	FB600W10B
8	Weathered Firebrick Floors	1	FB300W10FB	FB400W10FB	FB500W10FB	FB600W10FB
9	Curved Design - Brass	1	BRTK30C	BRTK32C	BRTK36C	BRTK42C
9	Curved Design – Chrome	1	CHTK30C	CHTK32C	CHTK36C	CHTK42C
9	4" Wide Brass Wall Trim	1	BRWT30	BRWT32	BRWT36	BRWT42
10	T-stat Blower with Speed Control	1	BLOT300	BLOT400	BLOT400	BLOT400

# ILLUSTRATED PARTS LISTS

## STANDING PILOT — MILLIVOLT CONTROL



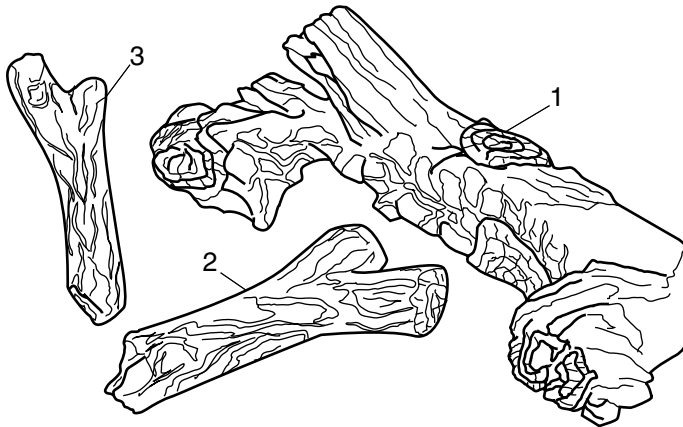
STANDING PILOT – MILLIVOLT CONTROL

Item	Description	Qty	BDV300NV	BDV300PV	BDV400NV	BDV400PV	BDV500NV	BDV500PV	BDV600NV	BDV600PV
1	Gas Valve Assembly	1	37D0117	37D0118	37D0117	37D0118	37D0117	37D0118	37D0117	37D0118
2	Pilot Assembly	1	37D0018	37D0019	37D0018	37D0019	37D0018	37D0019	37D0018	37D0019
2C	Replacement Thermocouple	1	37D1067	37D1067	37D1067	37D1067	37D1067	37D1067	37D1067	37D1067
2I	Replacement Igniter and Wire	1	37D1069	37D1069	37D1069	37D1069	37D1069	37D1069	37D1069	37D1069
2T	Replacement Thermopile	1	37D1068	37D1068	37D1068	37D1068	37D1068	37D1068	37D1068	37D1068
3	Burner Tube	1	54D0288	54D0288	54D0194	54D0194	54D0194	54D0194	54D0194	54D0194
4	Flexhose with Shutoff Valve	1	23D6046	23D6046	23D6046	23D6046	23D6046	23D6046	23D6046	23D6046
5	Rocker Switch	1	41D0048	41D0048	41D0048	41D0048	41D0048	41D0048	41D0048	41D0048
6	Piezo Igniter	1	14D0503	14D0503	14D0503	14D0503	14D0503	14D0503	14D0503	14D0503
7	Injector	1	48D0154	48D0156	54D0140	54D0141	54D0142	54D0143	54D0142	54D0143
8	Burner Assembly	1	54D0200	54D0200	54D0001	54D0001	54D0329	54D0329	54D0329	54D0329
9	Venturi	1	45D0059	45D0059	45D0059	45D0059	45D0059	45D0059	45D0059	45D0059
10	Wire Assembly	1	44D0500	44D0500	44D0500	44D0500	44D0500	44D0500	44D0500	44D0500
10	Wire Assembly	1	44D0501	44D0501	44D0501	44D0501	44D0501	44D0501	44D0501	44D0501
<b>Accessories</b>										
11	Thermostatic Remote Control	1	RCT/TRC	RCT/TRC	RCT/TRC	RCT/TRC	RCT/TRC	RCT/TRC	RCT/TRC	RCT/TRC
12	Remote Control On/Off	1	RCM/MRC	RCM/MRC	RCM/MRC	RCM/MRC	RCM/MRC	RCM/MRC	RCM/MRC	RCM/MRC
13	Wall Switch Kit	1	MVWS	MVWS	MVWS	MVWS	MVWS	MVWS	MVWS	MVWS
14	Wall Thermostat Kit	1	MVWTS	MVWTS	MVWTS	MVWTS	MVWTS	MVWTS	MVWTS	MVWTS
<b>Conversion Kit (Not Shown)</b>										
	300 Conversion NG to LPG	1	BCK300CKP	—	—	—	—	—	—	—
	300 Conversion LPG to NG	1	—	BCK300CKN	—	—	—	—	—	—
	400 Conversion NG to LPG	1	—	—	BCK400CKP	—	—	—	—	—
	400 Conversion LPG to NG	1	—	—	—	BCK400CKN	—	—	—	—
	500 Conversion NG to LPG	1	—	—	—	—	BCK500CKP	—	—	—
	500 Conversion LPG to NG	1	—	—	—	—	—	BCK500CKN	—	—
	600 Conversion NG to LP	1	—	—	—	—	—	—	BCK500CKP	—
	600 Conversion LP to NG	1	—	—	—	—	—	—	—	BCK500CKN

# ILLUSTRATED PARTS LISTS

## LOGS

Item	Description	Qty	BDV300	BDV400	BDV500	BDV600
1	Rear Log	1	54D0121	54D0181	54D0339	54D0039
2	Right Log	1	54D0147	54D0116	54D0361	54D0361
3	Left Log	1	54D0146	54D0115	54D0360	54D0360



## TROUBLESHOOTING

### STANDING PILOT IGNITION

SYMPTOM	POSSIBLE CAUSE	ACTION
1. Spark ignitor will not light pilot after repeated triggering of piezo.	A. Wire disconnected.	A. Open door and check to make sure wire is connected to ignitor.
	B. Defective ignitor.	B. Check for spark at electrode and pilot. If no spark and electrode wire is properly connected, replace pilot assembly.
	C. No gas or low gas pressure.	C. Check remote/manual shut off valve from fireplace. Low pressure can be caused by bent lines, restricted lines, low pressure line pressure. Consult with plumber or gas supplier.
	D. No Propane/LPG in tank	D. Check Propane/LPG tank. Refill tank.
2. Pilot will not stay lit after carefully following lighting instructions.	A. Defective thermocouple	A. Check that thermocouple flame impinges on thermocouple. Clean and/or adjust pilot for maximum flame impingement. Ensure that the thermocouple connection at the gas valve is fully inserted and tight. Disconnect the thermocouple from the valve, place one millivolt lead wire on the tip of the thermocouple and the other meter lead wire on the thermocouple copper lead. Start the pilot and hold the valve knob in. If the millivolt reading is less than 15 mV, replace pilot assembly.
	B. Defective valve	B. If thermocouple is producing more than 15 mV, replace faulty valve.

**STANDING PILOT IGNITION**

<b>SYMPTOM</b>	<b>POSSIBLE CAUSE</b>	<b>ACTION</b>
3. Pilot burning, valve knob turned to "ON", switch is turned to "ON" or "RS", but burner will not ignite.	A. Defective switch, wall switch, remote control or wire	A. Check switch and wire for proper connection. Place jumper wires across terminals of switch. If burner comes on, replace defective switch. If the switch is OK, repeat the same procedure on remote control. If burner comes on, replace remote control. Place jumper wire across wire at gas valves (terminals marked TH and TP/TH). If burner comes on, wires are faulty or connections are bad. Replace wire.
	B. Pilot flame too small	B. If pilot flame is not close enough to the thermopile, adjust pilot flame.
	C. Defective or malfunctioning thermopile	C. Check thermopile wire connections to make sure all are tight and that the thermopile is fully inserted into pilot assembly. Check thermopile with a millivolt meter. Connect leads to TP and TP/TH terminals on the control valve. If meter reading is below 325 mV, replace pilot assembly.
	D. Defective valve	D. Turn valve knob to "On" and switch to "ON." Take a reading at the thermopile leads (TP & TP/TH) on the valve. If the meter reads greater than 175 mV and the burner does not light, replace defective valve.
4. Frequent pilot outage problem.	A. Pilot flame may be too high or too low, causing pilot safety to drop out	A. Clean and adjust the pilot flame for maximum flame impingement on thermocouple.
5. The pilot and main burner extinguish while in operation	A. Inner vent pipe leaking exhaust gases back into system	A. Check for flue product leak. Replace defective pipe section.
	B. Horizontal vent improperly pitched	B. Check horizontal-venting piping is running upward 1/4" per foot. Do not run the pipe level or downward.
	C. Improper vent cap installation	C. Check for proper installation and freedom from debris or blockage.
6. Glass Soots	A. Flame impingement on logs	A. Install log set per the instructions Inspect the injector and air intake area. Make sure this area does not have any blockage from debris and clean. Check gas supply.
7. Flame burn blue and lifts off burner (ghosting)	A. Insufficient oxygen being supplied	A. Ensure that the vent cap is installed properly and free of debris. Ensure that the vent system joints are tight and have no leaks. Ensure that no debris has been blocking the inner air intake at the bottom back of the combustion chamber. Ensure that the glass is properly secure and latch.



# LIMITED LIFETIME WARRANTY POLICY

## LIFETIME WARRANTY

The following components are warranted for life to the original owner, subject to proof of purchase: Firebox, Combustion Chamber, Heat Exchanger, Grate and Stainless Steel Burners.

## FIVE YEAR WARRANTY

The following components are warranted five (5) years to the original owner, subject of proof of purchase: Ceramic Fiber Logs.

## BASIC WARRANTY

Monessen Hearth Systems (MHS) warrants the components and materials in your gas appliance to be free from manufacturing and material defects for a period of two years from date of installation. After installation, if any of the components manufactured by MHS in the appliance are found to be defective in materials or workmanship, MHS will, at its option, replace or repair the defective components at no charge to the original owner. MHS will also pay for reasonable labor costs incurred in replacing or repairing such components for a period of two years from date of installation. Any products presented for warranty repair must be accompanied by a dated proof of purchase.

This Limited Lifetime Warranty will be void if the appliance is not installed by a qualified installer in accordance with the installation instructions. The Limited Lifetime Warranty will also be void if the appliance is not operated and maintained according to the operating instructions supplied with the appliance, and does not extend to (1) firebox/burner assembly damage by accident, neglect, misuse, abuse, alterations, negligence of others, including the installation thereof by unqualified installers, (2) the costs of removal, reinstallation or transportation of defective parts on the appliance, or (3) incidental or consequential damage. All service work must be performed by an authorized service representative.

This warranty is expressly in lieu of other warranties, express or implied, including the warranty of merchantability of fitness for purpose and of all other obligations or liabilities. MHS does not assume for it any other obligations or liabilities in connection with sale or use of the appliance. It states that do not allow limitations on how long an implied warranty lasts, or do not allow exclusion of indirect damage, those limitations of exclusions may not apply to you. You may also have additional rights not covered in the Limited Lifetime Warranty.

MHS reserves the right to investigate any and all the claims against the Limited Lifetime Warranty and decide upon method of settlement.

For information about this warranty, contact:

**Technical Services  
Monessen Hearth Systems  
149 Cleveland Drive  
Paris, Kentucky 40361**