

Installation Manual

Installation and Appliance Setup

INSTALLER: Leave this manual with party responsible for use and operation.

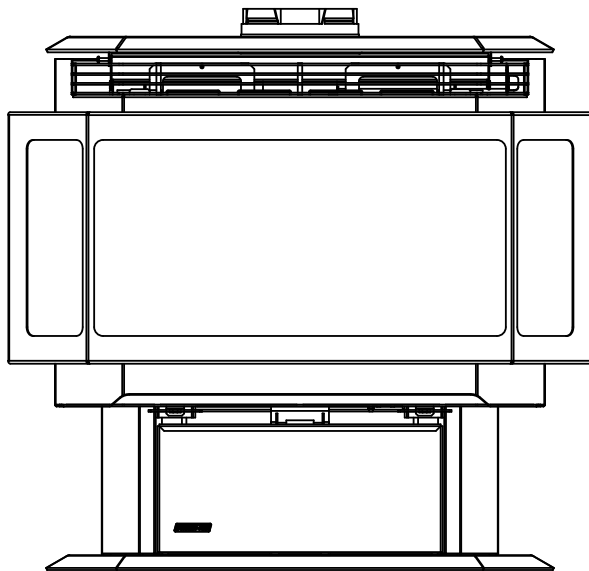
OWNER: Retain this manual for future reference.

Contact your dealer with questions regarding installation, operation or service.

NOTICE: DO NOT discard this manual!

QUADRA-FIRE®

Model:
HUDBAY-FS



This unit has been retired.



This appliance may be installed as an OEM installation in manufactured home (USA only) or mobile 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* or *Standard for Installation in Mobile Homes, CAN/CSA Z240MH*, in Canada.

This appliance is only for use with the type(s) of gas indicated on the rating plate.

⚠ WARNING:

FIRE OR EXPLOSION HAZARD

Failure to follow safety warnings exactly could result in serious injury, death, or property damage.

- 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.
 - Leave the building immediately.
 - 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.



DANGER



**HOT GLASS WILL
CAUSE BURNS.**

**DO NOT TOUCH GLASS
UNTIL COOLED.**

**NEVER ALLOW CHILDREN
TO TOUCH GLASS.**

A barrier designed to reduce the risk of burns from the hot viewing glass is provided with this appliance and must be installed.

In the Commonwealth of Massachusetts:

- Installation must be performed by a licensed plumber or gas fitter.

See Table of Contents for additional Commonwealth of Massachusetts requirements.

NOTE

To obtain a French translation of this manual, please contact your dealer or visit www.quadrafire.com

Pour obtenir une traduction française de ce manuel, s'il vous plaît contacter votre revendeur ou visitez www.quadrafire.com

TABLE OF CONTENTS

Installation Standard Work Checklist.....	3
1 Product Specific and Important Safety Information	
A. Appliance Certifications	4
B. Glass Specifications	4
C. BTU Specifications	4
D. High Altitude Installations	4
E. Non-Combustible Materials	4
F. Combustible Materials	4
G. Electrical Codes.....	4
H. Requirements for the	
Commonwealth of Massachusetts.....	5
I. California Safety Information	5
2 Getting Started	
A. Design and Installation Considerations	6
B. Tools and Supplies Needed	6
C. Inspect Appliance and Components.....	6
3 Framing and Clearances	
A. Appliance Dimensions Diagram	7
B. Clearances to Combustibles.....	8
C. Hearth Extensions/Floor Protection.....	8
4 Termination Location and Vent Information	
A. Vent Termination Minimum Clearances	9
B. Chimney Diagram.....	10
5 Vent Information	
A. Venting Components	11
B. Use of Elbows.....	11
C. Measuring Standards	11
D. Venting Guidelines	12
E. Horizontal Termination	13
F. Vertical Termination.....	16
1. Direct Vent Pipe.....	16
2. Cathedral Ceilings	19
3. Class A Metal Chimney	20
4. Existing Masonry Chimney	21
6 Gas Information	
A. Fuel Conversions.....	22
B. Gas Pressures	24
C. Gas Connection.....	25

7 Electrical Information

A. Recommendation for Wire	27
B. Connecting to the Appliance.....	27
C. Standing Pilot Ignition System Wiring.....	27

8 Appliance Setup

A. Remove Shipping Materials.....	29
B. Accessories	29
C. Front Door Removal / Installation	29
D. Door Crown Installation	30
E. Grille Installation	30
F. Brick Installation	31
G. Positioning the Logs	32
H. Mineral Wool.....	33
I. Blower Installation	34
J. Damper Adjustment.....	35
K. Shutter Adjustment.....	35
L. Glass Replacement	35
M. Safety Barrier Installation	36

➔ = Contains updated information.


Installation Standard Work Checklist

ATTENTION INSTALLER: Follow this Standard Work Checklist

This standard work checklist is to be used by the installer in conjunction with, not instead of, the instructions contained in this installation manual.

Customer: _____
Lot/Address: _____

Date Installed: _____
Location of Stove: _____
Installer: _____
Dealer/Distributor Phone # _____
Serial #: _____

 **WARNING! Risk of Fire or Explosion!** Failure to install appliance according to these instructions can lead to a fire or explosion.

Appliance Install - Section 3

	YES	If NO, WHY?
Verified combustible or non-combustible clearances to walls. (Pg. 7)	<input type="checkbox"/>	_____
Stove is installed level	<input type="checkbox"/>	_____

Venting/Chimney - Section 5 (Pg 10-21)

Venting configuration complies with allowable vent requirements.	<input type="checkbox"/>	_____
Venting installed, locked and secured in place with proper clearance.	<input type="checkbox"/>	_____
Interior/Exterior firestops installed and sealed.	<input type="checkbox"/>	_____
Attic insulation shield installed.	<input type="checkbox"/>	_____
Exterior wall/Roof flashing installed and sealed.	<input type="checkbox"/>	_____
Terminations/Roof flashing installed and sealed.	<input type="checkbox"/>	_____

Gas - Section 6 (Pg 22-26)

Appliance configuration matches fuel type.	<input type="checkbox"/>	_____
Was a conversion performed?	<input type="checkbox"/>	_____
Leak check performed and inlet/outlet pressure verified.	<input type="checkbox"/>	_____
Set air shutter for optimal flame appearance.	<input type="checkbox"/>	_____

Electrical - Section 7 (Pg 26-27)

Unswitched power (110-120 VAC) provided for the appliance.	<input type="checkbox"/>	_____
Switch wires properly installed.	<input type="checkbox"/>	_____

Appliance Setup - Section 8 (Pg 28-35)

All packaging and protective materials are from removed inside/under/on the appliance).	<input type="checkbox"/>	_____
Refractories, logs, and mineral wool installed correctly.	<input type="checkbox"/>	_____
Glass assembly installed and secured.	<input type="checkbox"/>	_____
Accessories installed properly.	<input type="checkbox"/>	_____
Door properly installed. Firescreen properly installed (if equipped).	<input type="checkbox"/>	_____
Manual bag and all of its contents are removed from inside/under the appliance and given to party responsible for use and operation.	<input type="checkbox"/>	_____
Started appliance and verified no gas leaks exist.	<input type="checkbox"/>	_____

Hearth & Home Technologies recommends the following:

- Photographing the installation and copying this checklist for your file.
- That this checklist remain visible at all times on the appliance until the installation is complete.

Comments: Further description of the issues, who is responsible (Installer/ Builder/ Other Trades, etc) and corrective action needed: _____

Comments Communicated to party responsible _____ by _____ on _____
 (Builder / Gen. Contractor/) (Installer) (Date)

➔ = Contains updated information

Hudbay-FS 07/17

1 Product Specific and Important Safety Information

A. Appliance Certification

MODEL:	Quadra-Fire Hudson Bay
LABORATORY:	OMNI Test Laboratories, Inc.
REPORT #	0061GS029S
TYPE:	Direct Vent Gas Heater
STANDARD:	ANSI Z21.88-2014, CSA 2.33-2014, CAN/CSA 2.17-M91 (R2009)

The product is listed to ANSI standards for "Vented Gas Appliance Heaters" and applicable sections of "Gas Burning Heating Appliances for Manufactured Homes and Recreational Vehicles" and "Gas Fired Appliances for use at High Altitudes".

Manufactured Home or Mobile Home installation may occur only after the home is site located and must conform with the Manufactured Home Construction and Safety Standard, Title 24 CFR, Part 3280, or, when such a standard is not applicable, the Standard for Manufactured Home Installations, ANSI/NCSBCS A225.1, or Standard for Gas Equipped Recreational Vehicles and Mobile Housing, CSA Z240.4.

When installed, the appliance 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.

B. Glass Specifications

This appliance is equipped with 5mm ceramic glass. Replace glass only with 5mm ceramic glass. Please contact your dealer for replacement glass.

Installation and service of this appliance should be performed by qualified personnel. Hearth & Home Technologies recommends HHT Factory Trained or NFI certified professionals.



NOTE: This installation must conform with local codes. In the absence of local codes you must comply with the **National Fuel Gas Code, ANSI Z223.1-latest edition** in the U.S.A. and the **CAN/CGA B149 Installation Codes** in Canada.

WARNING

Do NOT use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the unit and to replace any part of the control system and any gas control which has been under water.

C. BTU Specifications

Model <i>(US or Canada)</i>	Maximum Input BTU	Minimum Input BTU	Orifice Size (DMS)	*Steady State Efficiency %	**P.4 %
Hudson Bay (NG)	42,000	28,000	.125	84.02	64.03
Hudson Bay (LP)	40,500	31,000	.076	85.71	65.43

* Thermal efficiency maximum pipe with blower on.

** Canada minimum pipe.

D. High Altitude Installations

Omni-Test Laboratories listed gas appliances are tested and approved without requiring changes for elevations from 0 to 2000 feet in the U.S.A. and 0 to 4500 feet in Canada.

When installing this appliance at an elevation above 2000 feet, it may be necessary to decrease the input rating by changing the existing burner orifice to a smaller size. Input rate should be reduced by 4% for each 1000 feet above a 2000 foot elevation in the U.S.A. If the heating value of the gas has been reduced, these rules do not apply. To identify the proper orifice size, check with the local gas utility.

If installing this appliance at an elevation above 4500 feet (in Canada), check with local authorities.

E. Non-Combustible Materials

Materials that are reported as passing ASTM E 136, Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C, shall be considered non-combustible materials.

F. Combustible Materials

Materials made of or surfaced with wood, compressed paper, plant fibers, plastics, or other materials that can ignite and burn, whether flame proofed or not, or whether plastered or un-plastered shall be considered combustible materials.

G. Electrical Codes

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

- A 110-120 VAC circuit for this product must be protected with ground-fault circuit-interrupter protection, in compliance with the applicable electrical codes, when it is installed in locations such as in bathrooms or near sinks.

NOTE: The following requirements reference various Massachusetts and national codes not contained in this document.

H. Requirements for the Commonwealth of Massachusetts

For all side wall horizontally vented gas fueled equipment installed in every dwelling, building or structure used in whole or in part for residential purposes, including those owned or operated by the Commonwealth and where the side wall exhaust vent termination is less than seven (7) feet above finished grade in the area of the venting, including but not limited to decks and porches, the following requirements shall be satisfied:

Installation of Carbon Monoxide Detectors

At the time of installation of the side wall horizontal vented gas fueled equipment, the installing plumber or gas fitter shall observe that a hard wired carbon monoxide detector with an alarm and battery back-up is installed on the floor level where the gas equipment is to be installed. In addition, the installing plumber or gas fitter shall observe that a battery operated or hard wired carbon monoxide detector with an alarm is installed on each additional level of the dwelling, building or structure served by the side wall horizontal vented gas fueled equipment. It shall be the responsibility of the property owner to secure the services of qualified licensed professionals for the installation of hard wired carbon monoxide detectors.

In the event that the side wall horizontally vented gas fueled equipment is installed in a crawl space or an attic, the hard wired carbon monoxide detector with alarm and battery back-up may be installed on the next adjacent floor level.

In the event that the requirements of this subdivision can not be met at the time of completion of installation, the owner shall have a period of thirty (30) days to comply with the above requirements; provided, however, that during said thirty (30) day period, a battery operated carbon monoxide detector with an alarm shall be installed.

Approved Carbon Monoxide Detectors

Each carbon monoxide detector as required in accordance with the above provisions shall comply with NFPA 720 and be ANSI/UL 2034 listed and IAS certified.

Signage

A metal or plastic identification plate shall be permanently mounted to the exterior of the building at a minimum height of eight (8) feet above grade directly in line with the exhaust vent terminal for the horizontally vented gas fueled heating appliance or equipment. The sign shall read, in print size no less than one-half (1/2) inch in size, **“GAS VENT DIRECTLY BELOW. KEEP CLEAR OF ALL OBSTRUCTIONS.”**

Inspection

The state or local gas inspector of the side wall horizontally vented gas fueled equipment shall not approve the installation unless, upon inspection, the inspector observes carbon monoxide detectors and signage installed in accordance with the provisions of 248 CMR 5.08(2)(a) 1 through 4.

Exemptions

The following equipment is exempt from 248 CMR 5.08(2) (a) 1 through 4:

- The equipment listed in Chapter 10 entitled “Equipment Not Required To Be Vented” in the most current edition of NFPA 54 as adopted by the Board; and
- Product Approved side wall horizontally vented gas fueled equipment installed in a room or structure separated from the dwelling, building or structure used in whole or in part for residential purposes.

MANUFACTURER REQUIREMENTS

Gas Equipment Venting System Provided

When the manufacturer of Product Approved side wall horizontally vented gas fueled equipment provides a venting system design or venting system components with the equipment, the instructions provided by the manufacturer for installation of the equipment and the venting system shall include:

- Detailed instructions for the installation of the venting system design or the venting system components; and
- A complete parts list for the venting system design or venting system.

Gas Equipment Venting System NOT Provided

When the manufacturer of a Product Approved side wall horizontally vented gas fueled equipment does not provide the parts for venting the flue gases, but identifies “special venting systems”, the following requirements shall be satisfied by the manufacturer:

- The referenced “special venting system” instructions shall be included with the appliance or equipment installation instructions; and
- The “special venting system” shall be Product Approved by the Board, and the instructions for that system shall include a parts list and detailed installation instructions.

A copy of all installation instructions for all Product Approved side wall horizontally vented gas fueled equipment, all venting instructions, all parts lists for venting instructions, and/or all venting design instructions shall remain with the appliance or equipment at the completion of the installation.

See Gas Connection section for additional Commonwealth of Massachusetts requirements.

I. California Safety Information



WARNING

This product and the fuels used to operate this product (liquid propane or natural gas), and the products of combustion of such fuels, can expose you to chemicals including benzene, which is known to the State of California to cause cancer and reproductive harm. For more information go to: www.P65Warnings.ca.gov.

2 Getting Started

A. Design and Installation Considerations

Quadra-Fire direct vent gas appliances are designed to operate with all combustion air siphoned from outside of the building and all exhaust gases expelled to the outside. No additional air source is required.

CAUTION

Check building codes prior to installation.

- Installation **MUST** comply with local, regional, state and national codes and regulations.
- Consult local building, fire officials or authorities having jurisdiction about restrictions, installation inspection, and permits.

When planning an installation, it is necessary to determine the following information before installing:

- Where the appliance is to be installed.
- The vent system configuration to be used.
- Gas supply piping.
- Electrical wiring.
- Whether optional accessories - devices such as a blower, thermostat or remote control - are desired.

WARNING



- Keep appliance dry.
- Mold or rust may cause odors.
 - Water may damage controls.



B. Tools and Supplies Needed

Before beginning the installation be sure that the following tools and building supplies are available. **Note: Not all tools will apply to every installation.**

Reciprocating saw	Variable Speed Drill/Driver
Pliers	Wrench Set
Hammer	Framing Square
Phillips Screwdriver	Framing Material
Flat Blade Screwdriver	Voltmeter
Plumb Line	Gloves
Level	Safety Glasses
Manometer	Non-corrosive Leak Check Solution or combustible gas detector
Tape Measure	Caulking material (300° F minimum continuous exposure rating)

C. Inspect Appliance and Components

WARNING



Inspect appliance and components for damage. Damaged parts may impair safe operation.



- Do NOT install damaged components.
 - Do NOT install incomplete components.
 - Do NOT install substitute components.
- Report damaged parts to dealer.

- Carefully remove the appliance and components from the packaging.
- Remove Front door and glass door, and set aside on protective surface.
- Remove log set and component pack from firebox.
- Report to your dealer any parts damaged in shipment, particularly the condition of the glass.
- **Read all of the instructions before starting the installation. Follow these instructions carefully during the installation to ensure maximum safety and benefit.**

WARNING



Hearth & Home Technologies disclaims any responsibility for, and the **warranty will be voided** by, the following actions:

- Installation and use of any damaged appliance or vent system component.
- Modification of the appliance or vent system.
- Installation other than as instructed by Hearth & Home Technologies.
- Improper positioning of the gas logs or the glass door.
- Installation and/or use of any component part not approved by Hearth & Home Technologies.

Any such action may cause a fire hazard.

3 Framing and Clearances

A. Appliance Dimension Diagram

Dimensions are actual appliance dimensions. Use for reference only.

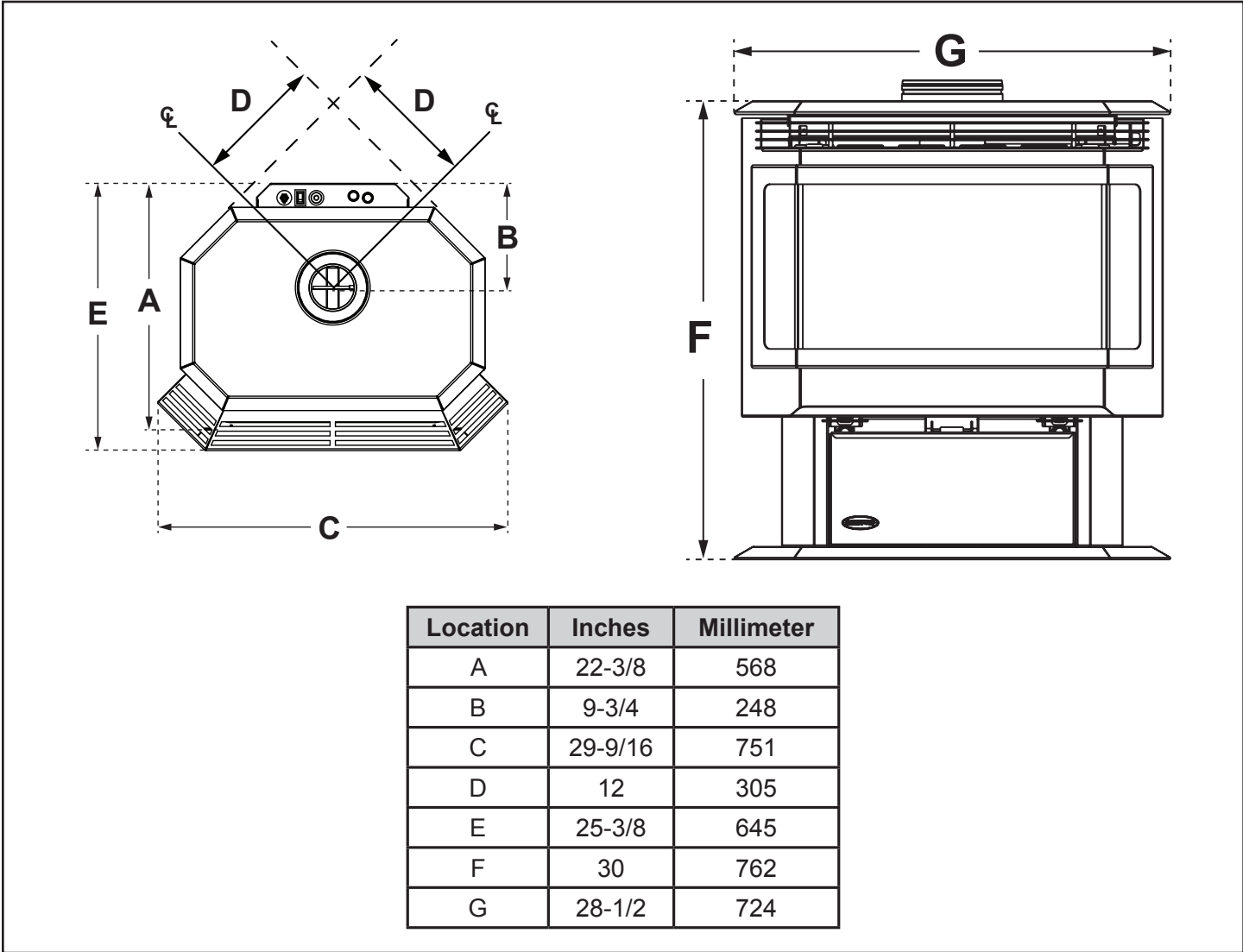


Figure 3.1 - Appliance Dimensions

B. Clearances to Combustibles

When selecting a location for the appliance it is important to consider the required clearances to walls (see Figure 3.2).



WARNING

RISK OF FIRE OR BURNS! Provide adequate clearance around air openings and for service access. Due to high temperatures, the appliance should be located out of traffic and away from furniture and draperies.

NOTICE: Illustrations reflect typical installations and are FOR DESIGN PURPOSES ONLY. Illustrations/diagrams are not drawn to scale. Actual installation may vary due to individual design preference.

NOTICE: Some carpet materials may be sensitive to radiant heat from the appliance causing discoloration or odor.

C. Hearth Extension/Floor Protection



CAUTION

RISK OF FIRE OR INJURY! Install appliance on a stable, level, platform or floor strong enough to support appliance without tipping.

A non-combustible hearth pad is not required. However, the floor beneath the appliance must be stable, level, and strong enough to support the appliance without a tipping hazard. It is permissible to place the appliance on carpet.

NOTE: Flooring beneath appliance may reach 90 degrees plus room ambient temperature. Check with flooring manufacturer for maximum temperature allowed on flooring surfaces.

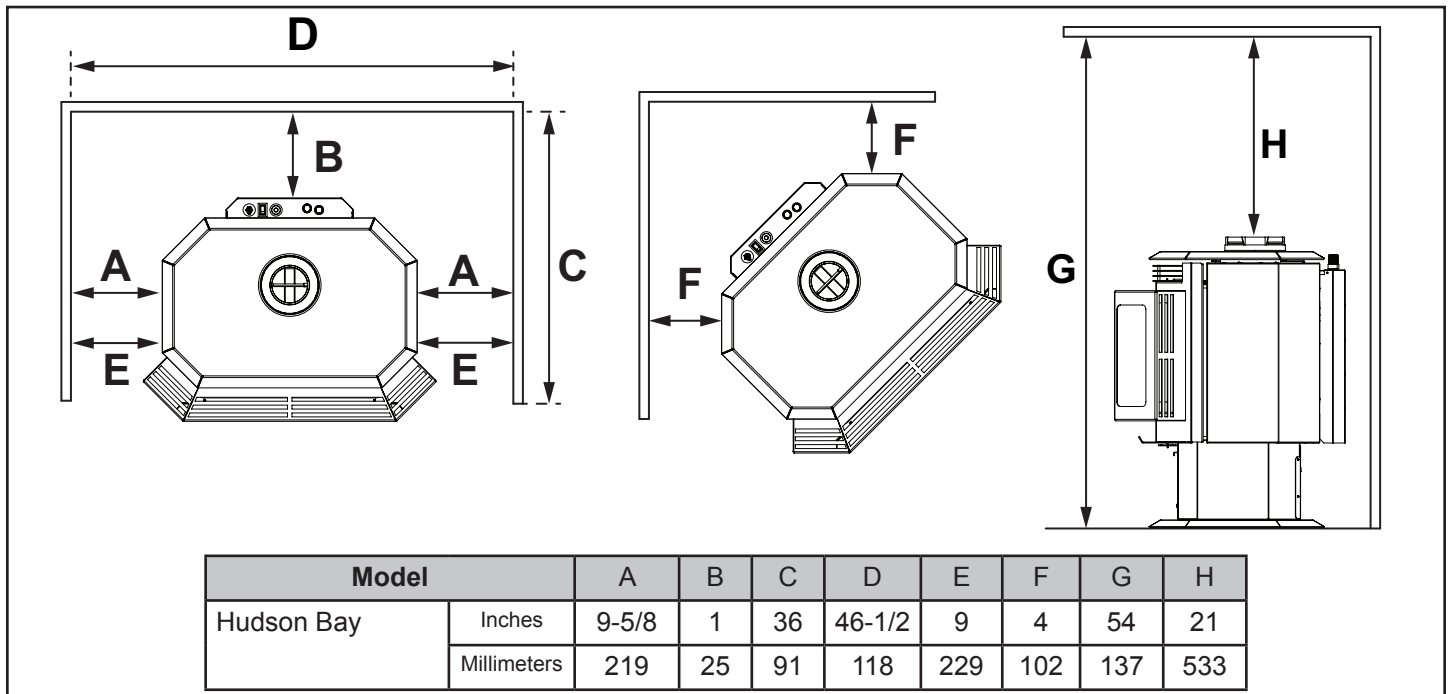




Figure 3.2 - Appliance Locations

4 Termination Location and Vent Information

A. Vent Termination Minimum Clearances



WARNING



Fire Risk.
Explosion Risk.

Maintain vent clearance to combustibles as specified.

- Do not pack air space with insulation or other materials.



Failure to keep insulation or other materials away from vent pipe may cause fire.

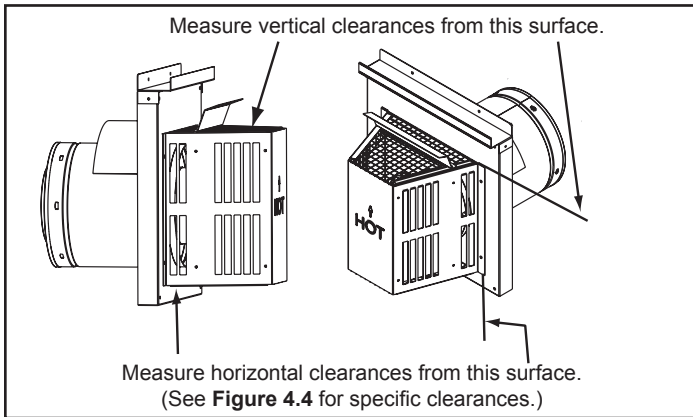
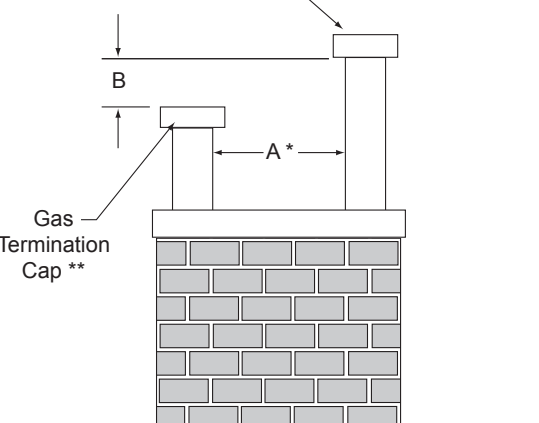


Figure 4.1 - Termination Clearances

A	B
6 in. (minimum) up to 20 in. <i>152 mm/508 mm</i>	18 in. minimum <i>457 mm</i>
20 in. and over	0 in. minimum

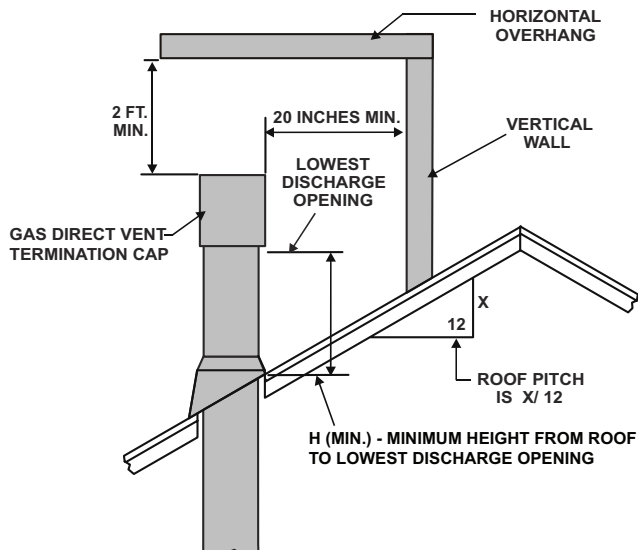
Gas, Wood or Fuel Oil Termination Cap



* If using decorative cap cover(s), this distance may need to be increased. Refer to the installation instructions supplied with the decorative cap cover.

** In a staggered installation with both gas and wood or fuel oil terminations, the wood or fuel oil termination cap must be higher than the gas termination cap.

Figure 4.2 - Multiple Vertical Termination

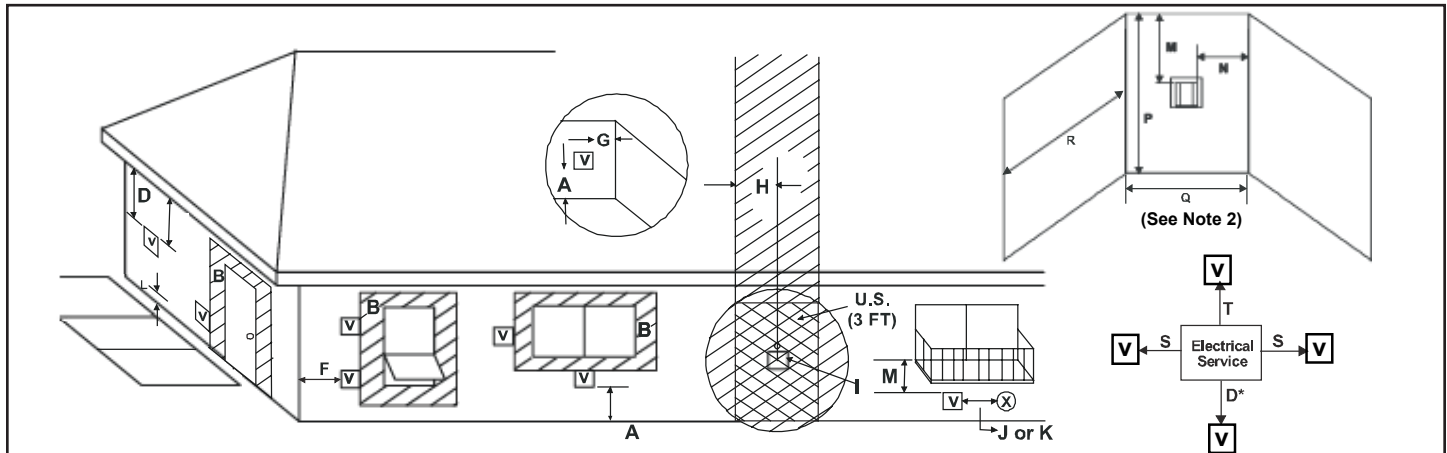


<u>Roof Pitch</u>	<u>H (Min.) Ft</u>
Flat to 6/12	1.0*
Over 6/12 to 7/12	1.25
Over 7/12 to 8/12	1.5*
Over 8/12 to 9/12	2.0*
Over 9/12 to 10/12	2.5*
Over 10/12 to 11/12	3.25
Over 11/12 to 12/12	4.0
Over 12/12 to 14/12	5.0
Over 14/12 to 16/12	6.0

Minimum Height from Roof to Lowest Discharge Opening

Figure 4.3 - Specifies minimum vent heights for various pitched roofs.

B. Chimney Diagram



V = VENT TERMINAL

X = AIR SUPPLY INLET

[Hatched Area] = AREA WHERE TERMINAL IS NOT PERMITTED

A	=	12 Inches (See Note 1)	Clearances above grade, veranda, porch, deck or balcony
B	=	12 Inches	Clearances to window or door that may be opened, or to permanently closed window. (Glass)
D*	=	18 Inches	Vertical clearance to unventilated soffit or to ventilated soffit located above the terminal
	=	*30 Inches	For vinyl clad soffits and below electrical service
F	=	9 Inches	Clearance to outside corner
G	=	6 Inches	Clearance to inside corner
H	=	3 ft. (Canada)	Not to be installed above a gas meter/regulator assembly within 3 feet (90cm) horizontally from the center-line of the regulator
I	=	3 ft.	Clearance to gas service regulator vent outlet
J	=	9 Inches (USA) 12 Inches (Canada)	Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other appliance

K	=	3 ft. (USA) 6 ft. (Canada)	Clearance to a mechanical (powered) air supply inlet
L**	=	7 ft. (See Note 1)	Clearance above paved sidewalk or a paved driveway located on public property
M***	=	18 Inches	Clearance under veranda, porch, deck, balcony or overhang
	=	42 Inches	Vinyl
S	=	6 Inches (See Note 3)	Clearance from sides of electrical service
T	=	12 Inches (See Note 3)	Clearance above electrical service

Alcove Applications

N	=	6 Inches	Non-vinyl sidewalls
	=	12 Inches	Vinyl sidewalls
P	=	8 ft.	

	Q _{MIN}	R _{MAX}
1 Cap	3 Feet	2 X Q _{ACTUAL}
2 Caps	6 Feet	1 X Q _{ACTUAL}
3 Caps	9 Feet	2/3 X Q _{ACTUAL}
4 Caps	12 Feet	1/2 Q _{ACTUAL}
Q _{MIN} = # termination caps x 3 R _{MAX} = (2 / # termination caps) x Q _{ACTUAL}		

** 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 of 2 sides beneath the floor, or meets Note 2.

NOTE 1: On private property where termination is less than 7 feet above a sidewalk, driveway, deck, porch, veranda or balcony, use of a listed cap is suggested. (See vents components pages.)

NOTE 2: Termination in an alcove space (spaces only open on one side and without an overhang) are permitted with the dimensions specified for vinyl or non-vinyl siding and soffits. 1. There must be at least 3 feet minimum between termination caps. 2. All mechanical air intakes within 10 feet of a termination cap must be a minimum of 3 feet below the termination cap. 3. All gravity air intakes within 3 feet of a termination cap must be a minimum of 1 foot below the termination cap.

NOTE 3: Location of the vent termination must not interfere with access to the electrical service.

NOTE: Local codes or regulations may require different clearances.

NOTE: Termination caps may be hot. Consider their proximity to doors or other traffic areas.

WARNING: In the U.S.: Vent system termination is NOT permitted in screened porches. You must follow side wall, overhang and ground clearances as stated in the instructions.

In Canada: Vent system termination is NOT permitted in screened porches. Vent system termination is permitted in porch areas with two or more sides open. You must follow side wall, overhang and ground clearances as stated in the instructions.

Quadra-Fire assumes no responsibility for the improper performance of the appliance when the venting system does not meet these requirements.

CAUTION: IF EXTERIOR WALLS ARE FINISHED WITH VINYL SIDING, IT IS SUGGESTED THAT A VINYL PROTECTOR KIT BE INSTALLED (part #VPK-DV).

Figure 4.4

5 Vent Information

A. Venting Components

In order to comply with applicable codes and product warranties, use only following venting components:


- Hearth & Home Technologies (HHT)
- Security Chimney's Secure Vent Chimney System
- Selkirk Metalbestos
- AmeriVent
- Simpson Dura-Vent (SDV)


DO NOT USE FIELD-FABRICATED VENTING COMPONENTS. Refer to the venting manufacturer's instructions.

This product is approved to be vented either horizontally, through the side wall or vertically through the roof. You may vent through a Class A or masonry chimney if an approved adapter is used.


This appliance is a direct vent heater. All combustion air must come directly from the outside of the building. The vent pipe for this unit consists of an inner and an outer pipe. The inner pipe carries the appliance exhaust out of the system, and the outer pipe brings fresh combustion air into the appliance.

- A round support box/wall thimble or heat shield is required when the venting passes through a combustible wall.
- A support box or ceiling firestop is required when the venting passes through a ceiling.
- Roof flashing and a storm collar are required when venting passes through the roof.
- Follow instructions provided with the venting for installation of these items.

**WARNING**



**Fire Hazard, Explosion Risk,
Asphyxiation Risk**




Do NOT connect this gas appliance to a chimney flue serving a separate solid-fuel or gas burning appliance.

- Vent this appliance directly outside.
- Use separate vent system for this appliance.

May impair safe operation of this appliance or other appliances connected to the flue.

B. Use of Elbows

**CAUTION**

ALL vent configuration specifications MUST be followed.

- This product is tested and listed to these specifications.
- Appliance performance will suffer if specifications are not followed.

Diagonal runs have both vertical and horizontal vent aspects when calculating the effects. Use the rise for the vertical aspect and the run for the horizontal aspect. (See Figure 5.1.)

Two 45° elbows may be used in place of one 90° elbow. On 45° runs, one foot of diagonal is equal to 8-1/2 in. (216mm) horizontal run and 8-1/2 in. (216mm) vertical run. A length of straight pipe is allowed between two elbows. (See Figure 5.1.)

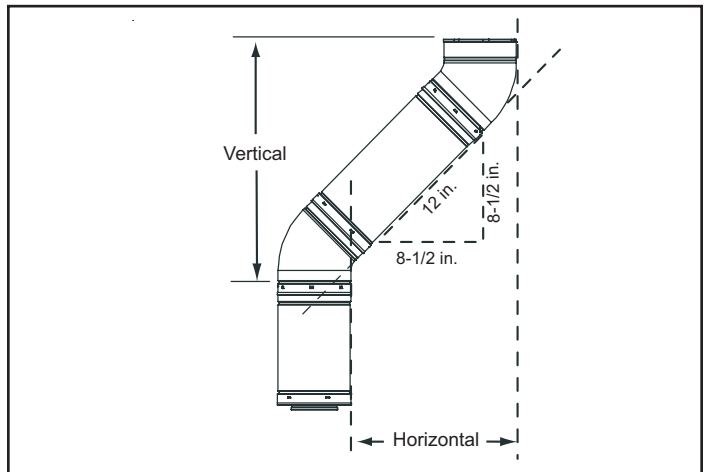


Figure 5.1

C. Measuring Standards

Vertical and horizontal measurements were made using the following standards.

- Pipe measurements are from center line to center line.
- Horizontal terminations are measured to the outside of the mounting surface (flange of termination cap). See Figure 4.1.
- Vertical terminations are measured to the top of the last pipe before termination cap.
- Horizontal pipe installed level with 1/4 in. rise for every 12 in. of horizontal travel.

D. Venting Guidelines

Example 1: If the vertical dimension from the top of the appliance is to the center of the 90° elbow is 7 ft. (2m), the horizontal run to the outer wall flange must not exceed 10' ft. 6 in.

Example 2: If the vertical dimension from the top of the appliance is 21 ft. (6m), the horizontal run to the outer wall flange must not exceed 9 ft. (3m).

Each 90° elbow is equivalent to 3 ft. (914mm) of vent pipe and each 45° elbow is equivalent to 1 ft. (305mm) of vent pipe, and must be subtracted from vent pipe run. A single vertical to horizontal 90° elbow is already calculated into the allowable 15 ft. (5m) run. Each additional 90° elbow reduces the maximum horizontal distance by 3 ft. (914mm).

Example: The use of 3 elbows would reduce the allowable horizontal run to 9 ft. (3 - 1 = 2 elbows x 3 ft. = 6 ft.; 15 ft. max. - 6 ft. = 9 ft. max.)

NOTES:

The maximum horizontal vent run is 15 ft. (5m) with a minimum vertical vent rise of 10 ft. (3m).

The minimum horizontal vent run is 11 in. (279mm).

Minimum wall thickness is 4 in. (102mm). Maximum wall thickness is 20 in. (508mm).

Horizontal sections require a 1/4 in. (6mm) rise for every 12 in. (305mm) of horizontal travel.

Exterior Vent Diameter = 6 5/8 in. (168mm); Inner Vent Diameter = 4 in. (101mm)

Horizontal sections require noncombustible support every 3 ft. (914mm), e.g. wall straps.

Maximum 90° elbows for horizontal termination is 3.

Maximum 90° elbows for vertical termination is 4.

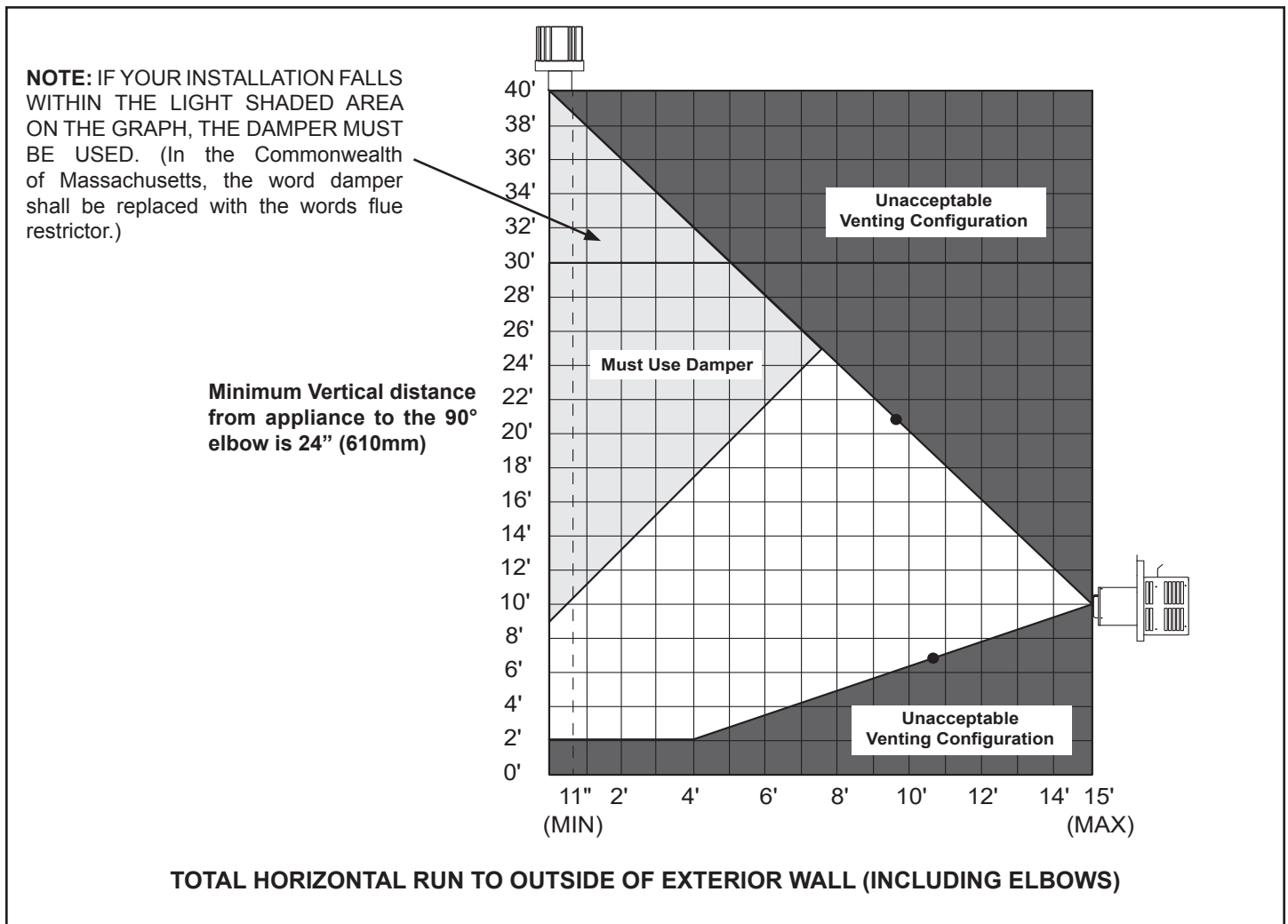


Figure 5.2

E. Horizontal Termination

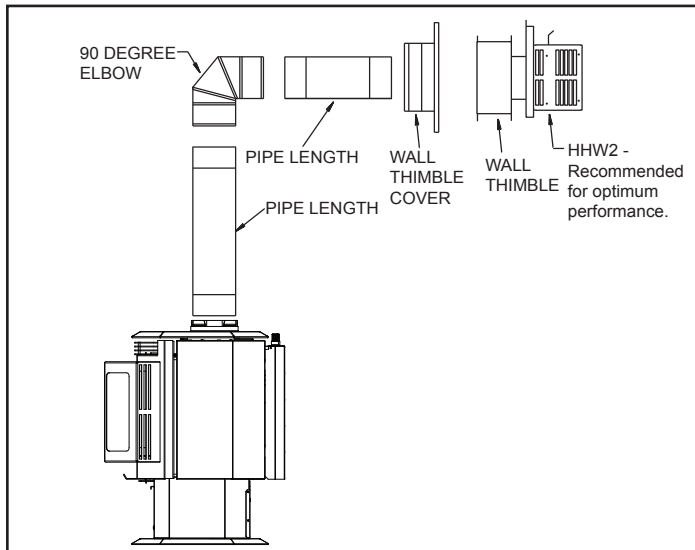


Figure 5.3

Step 1 - Determine the desired location of the appliance. Check to ensure that wall studs or roof rafters are not in the way when the venting system is attached. If this is the case, you may want to adjust the location of the appliance.

WARNING	
	Fire Hazard. Exhaust Fume Risk. Impaired Performance of Appliance.
<ul style="list-style-type: none"> • Ensure vent components are locked together correctly. • Pipe may separate if not properly joined. 	

Step 2 - Direct vent pipe is designed with a locking connection. To connect the venting system to the appliance flue outlet, a twist-lock adapter is built into the appliance at the factory. Remember to include wall thickness in minimum clearances when figuring the measurements for your installation needs.

Note: Direct vent pipe is designed to slide straight onto the male ends of adjacent pipes and fittings by orienting the pipe indentations so they match and slide into the entry slots on the male ends, Figure 5.4. Push the pipe sections completely together, then twist-lock one section clockwise approximately one-quarter turn, until the two sections are fully locked. The female locking lugs may not be visible from the outside, on the pipe or fittings. They may be located by examining the inside of the female ends.

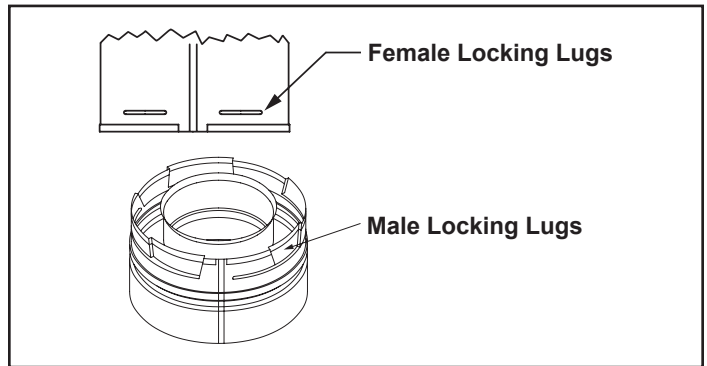


Figure 5.4

WARNING	
	Fire Risk, Explosion Risk, Combustion Fume Risk. Use vent run supports per installation instructions.
	Connect vent sections per installation instructions.
<ul style="list-style-type: none"> • Maintain all clearances to combustibles. • Do NOT allow vent to sag below connection point to appliance. • Maintain specified slope (if required). Improper support may allow vent to sag or separate.	

Step 3 - For installations using a support box/wall thimble (check pipe manufacturer's instructions), mark the wall for a 10 in. x 10 in. (254mm x 254mm) square hole. The center of the square hole should line up with the center line of the horizontal pipe, as shown in **Figure 5.5**. Cut and frame the hole in the exterior wall where the vent will be terminated. If the wall being penetrated is constructed of noncombustible material, i.e. masonry block or concrete, a 7 in. (178mm) diameter hole is acceptable.

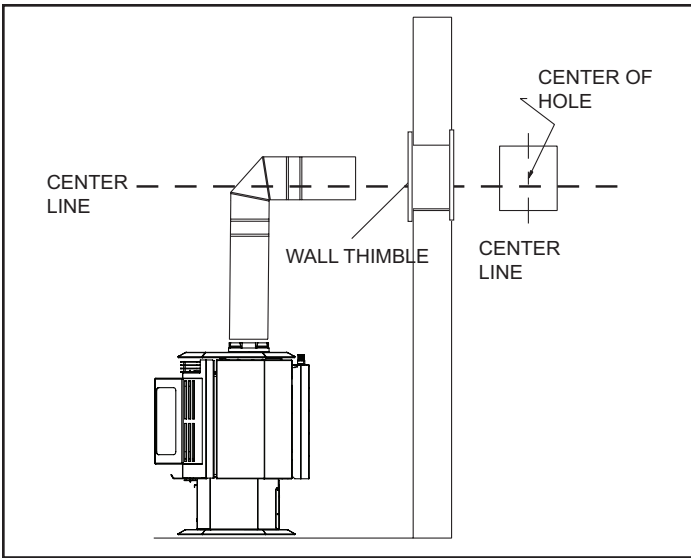


Figure 5.5

NOTE:

1. Installation requires a minimum of 6 in. (152mm) horizontal run of vent with a 1/4 in. (6mm) rise run towards the termination. Each 1 ft. (305mm) of horizontal venting must include a 1/4 in. (6mm) rise. Never allow the vent to run downward. This could cause high temperatures and may present the possibility of a house or structure fire.
2. The location of the horizontal vent termination on an exterior wall must meet all local and national building codes, and must not be easily blocked or obstructed, see Figure 4.4.
3. For installations requiring a vertical rise on the exterior of the building, the HHT RHVK snorkel kit (Part #844-8921) is available with a 14 in. (356mm) and a 36 in. (914mm) tall snorkel termination cap. Follow the same installation procedures as used for standard horizontal terminations. If the snorkel termination must be installed below grade (i.e. basement application), proper drainage must be provided to prevent water from entering the snorkel termination. Do not backfill around snorkel termination.

Step 4 - Position the horizontal termination cap in the center of the 10 in. x 10 in. (254mm x 254mm) square hole and run a bead of non-hardening mastic around its outside edges, so as to make a seal between it and the wall, attach termination cap to the exterior wall with the four wood screws provided. The arrow on the vent cap should be pointing up (Figure 5.6).

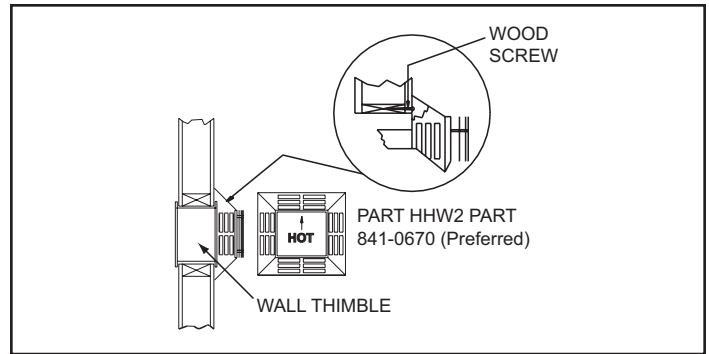


Figure 5.6

NOTES:

1. The four wood screws provided should be replaced with appropriate fasteners for stucco, brick, concrete, or other types of sidings.
2. Termination cap HHW2 (Part #841-0670) is highly recommended on a building with vinyl siding, as the vinyl siding standoff is built in. The pilot hole will be 2 in. (51mm) closer to the bottom of the square than the top. Using a framing square, draw a 14 in. x 14 in. (356mm x 356mm) square around the pilot hole in the siding. See Figure 5.7.

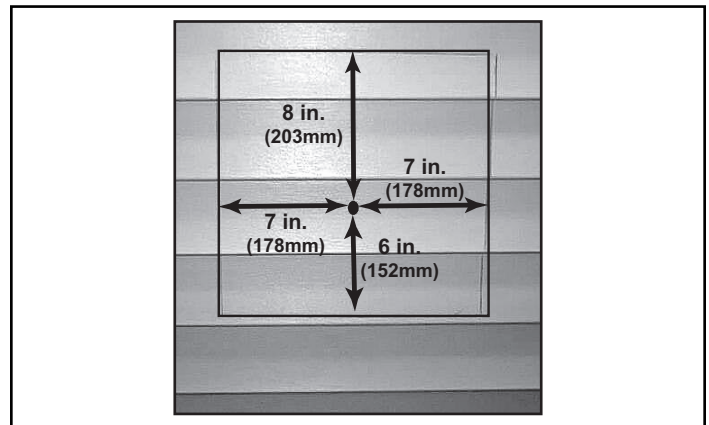


Figure 5.7

(NOTE: If you are installing termination cap HHW2, the pipe will be off center on the flashing). Ensure that proper clearances to combustible materials are maintained. If you are using an approved termination cap other than HHW2 on a building with vinyl siding, a vinyl siding standoff should be installed between the vent cap and the exterior wall, Figure 5.8. Attach the vinyl siding standoff to the horizontal termination cap. The vinyl siding standoff prevents excessive heat from possibly melting the vinyl siding material. The vent termination cap shall not be recessed into a wall or siding. Remove siding from the area where the standoff will be located.

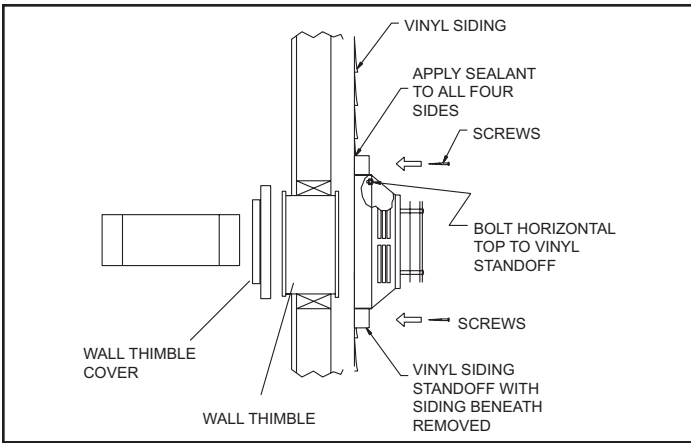


Figure 5.8

Step 5 - Place the wall thimble cover over the pipe assembly and slide the appliance and vent assembly towards the wall, carefully inserting the vent pipe into the vent termination cap assembly. It is important that the vent pipe extend into the vent termination cap a sufficient distance so as to result in a minimum pipe overlap of 1-1/4 in. (32mm). Secure the connection between the vent pipe and the vent termination cap by attaching the two sheet metal strips extending from the vent termination cap assembly into the outer wall of the vent pipe. Use the two sheet metal screws provided to connect the strips to the pipe section (Figure 5.9).

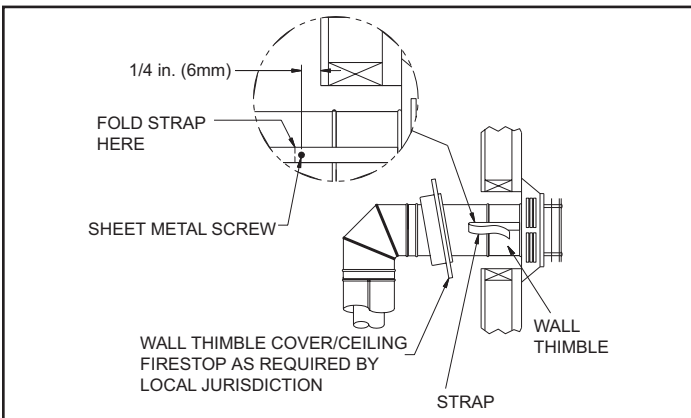


Figure 5.9

Note: The attachment from the vent pipe to the vent termination cap must be sealed with silicone. Termination caps shall not be recessed into a wall or siding.

⚠ WARNING

Fire Hazard, Exhaust Fume Risk, Impaired Performance of Appliance

- Ensure vent components are locked together correctly.
- Pipe may separate if not properly joined.

⚠ WARNING

Do NOT connect a pipe section to a termination cap without using the telescoping flue section found on the termination cap.

⚠ WARNING

Burn Risk.

- Local codes may require installation of a cap shield to prevent anything or anyone from touching the hot cap.

F. Vertical Termination

1. Direct Vent Pipe

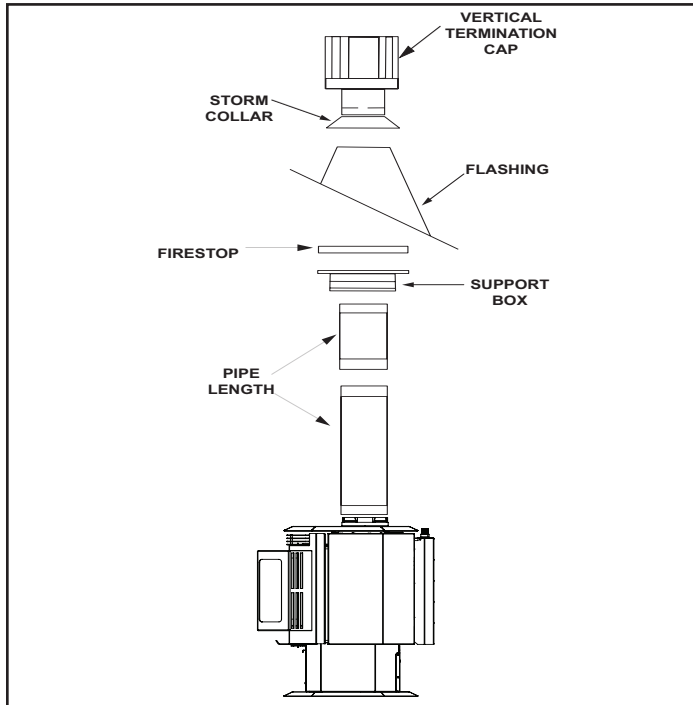





Figure 5.10

Step 1 - Check the installation instructions for required 1 in. (25mm) clearances (air space) to combustibles when passing through ceilings, walls, roofs, enclosures, attic rafters, or other nearby combustible surfaces. See Figure 5.16. Check the instructions below for maximum vertical rise of the venting system, and any maximum horizontal offset limitations. All offsets must fall within the set parameters of the vent graph, Figure 5.2.

NOTE: Maximum vertical rise allowable is 40 ft. (12m) See Figure 5.11.

NOTE: Maximum number of 45° elbows permitted for a vertical installation is eight, provided their installation does not decrease maximum allowable horizontal run (as specified by vent graph, Figure 4.4).

 WARNING	
	Fire Risk, Explosion Risk
	Maintain vent clearance to combustibles as specified.
	<ul style="list-style-type: none"> Do not pack air space with insulation or other materials.
	Failure to keep insulation or other materials away from vent pipe may cause fire.

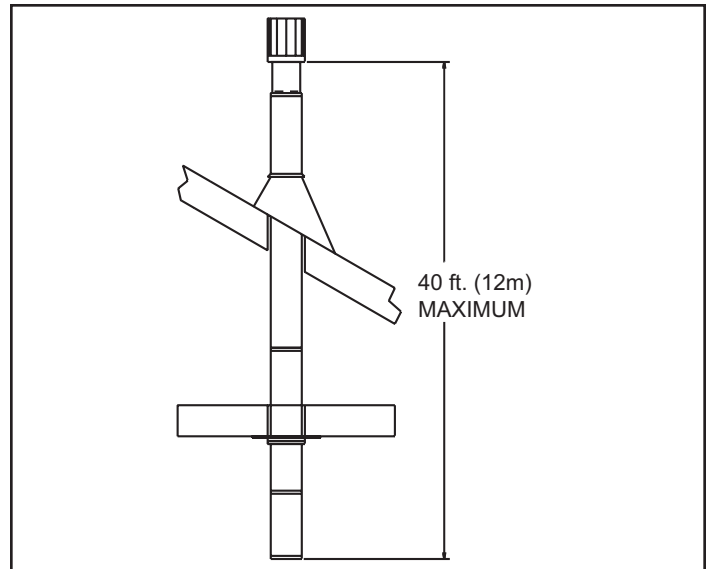


Figure 5.11

Step 2 - Set the gas appliance in its desired location. Drop a plumb bob from the ceiling to the position of the appliance flue exit, and mark the location where the vent will penetrate the ceiling. Drill a small hole at this point. Next, drop a plumb bob from the roof to the hole previously drilled in the ceiling, and mark the spot where the vent will penetrate the roof. Determine if ceiling joists, roof rafters, or other framing will obstruct the venting system. You may wish to relocate the appliance, or to offset, as shown in Figure 5.12 to avoid cutting load bearing members. When location is determined, drill small hole.

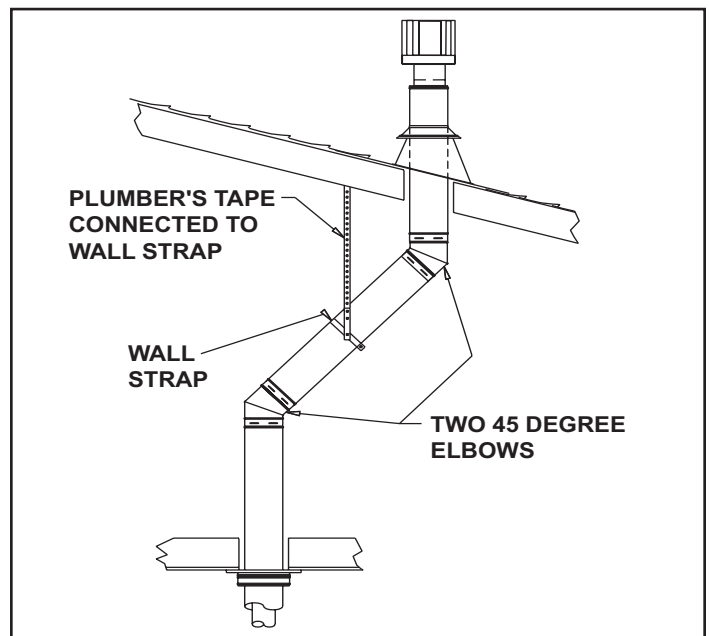


Figure 5.12

Step 3 - To install the round support box/wall thimble cover in a flat ceiling, cut a 10 in. (254mm) square hole in the ceiling, centered on the hole drilled in Step 2. Frame the hole as shown in Figure 5.13.

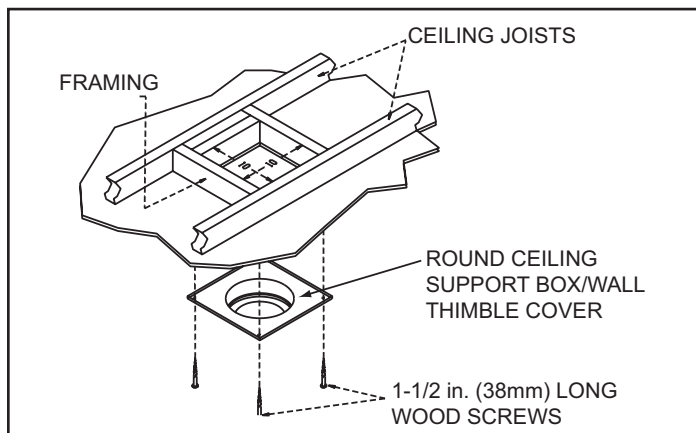


Figure 5.13

Step 4 - Assemble the desired lengths of pipe and elbows necessary to reach from the appliance up through the round support box. Ensure that all pipe and elbow connections are in their fully twist-locked position. Assemble as instructed.

Step 5 - Cut a hole in the roof centered on the small drill hole placed in the roof in Step 2. The hole should be of sufficient size to meet the minimum requirements for clearance to combustibles, as specified. Continue to assemble lengths of pipe and elbows necessary to reach from the ceiling support box/wall thimble up through the roof line. Galvanized pipe and elbows may be utilized in the attic, as well as above the roof line. The galvanized finish is desirable above the roof line, due to its higher corrosion resistance.

NOTE:

1. If an offset is necessary in the attic to avoid obstructions, it is important to support the vent pipe every 3 ft. (914mm) to avoid excessive stress on the elbows, and possible separation. Wall straps are available for this purpose, Figure 5.12.
2. Whenever possible, use 45° elbows, instead of 90° elbows. The 45° elbow offers less restriction to the flow of flue gases and intake air.

Step 6 - Slip the flashing over the pipe section(s) protruding through the roof. Secure the base of the flashing to the roof with roofing nails. Ensure the roofing material overlaps the top edge of the flashing as shown in Figure 5.14. Verify that the chimney is the required height above the roof. See roof pitch table, Figure 4.3.

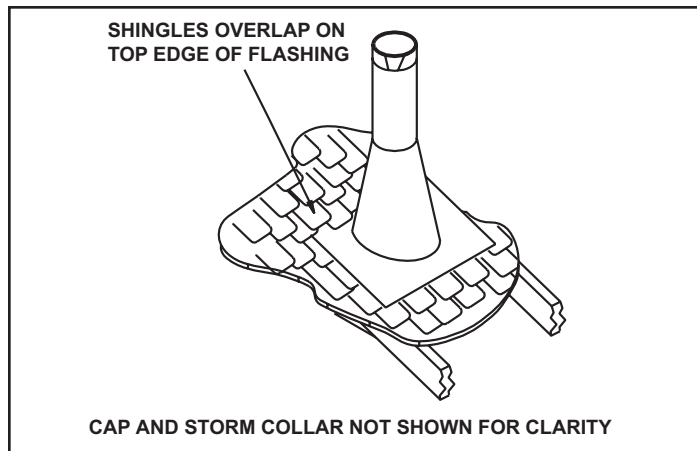


Figure 5.14

Step 7 - Continue to assemble pipe sections until the height of the vent (before adding the termination cap) meets the minimum code requirements as outlined in the current CAN/CGA-B149 Installation Codes (in Canada), the National Fuel Gas Code NFPA 54/ANSI Z223.1 (in USA), or local codes. Note that for steep roof pitches, the vent height must be increased. See Roof Pitch Table (Figure 4.3). In high wind conditions, nearby trees adjoining roof lines, steep pitched roofs, and other similar factors can result in poor draft, or down drafting. In these cases increasing the vent height or switching to the high wind termination cap may solve this problem.

Step 8 - Slip the storm collar over the pipe, and push it down to the top of the flashing (Figure 5.15). Use non-hardening sealant above and below the joint between the storm collar and the pipe.

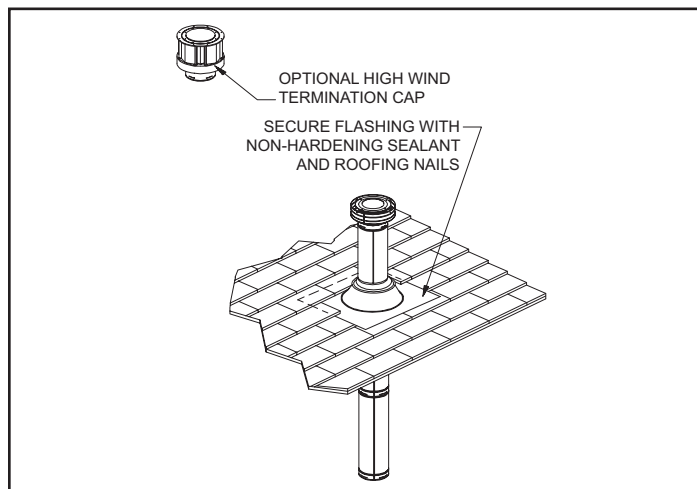


Figure 5.15

Step 9 - Twist-lock the vent cap and seal.

Note: For multi-story vertical installations, a ceiling firestop is required at the second floor, and any subsequent floors (Figure 5.16). The opening should be framed to 10 in. x 10 in. (254mm x 254mm) inside dimensions, in the same manner as shown in Figure 5.13.

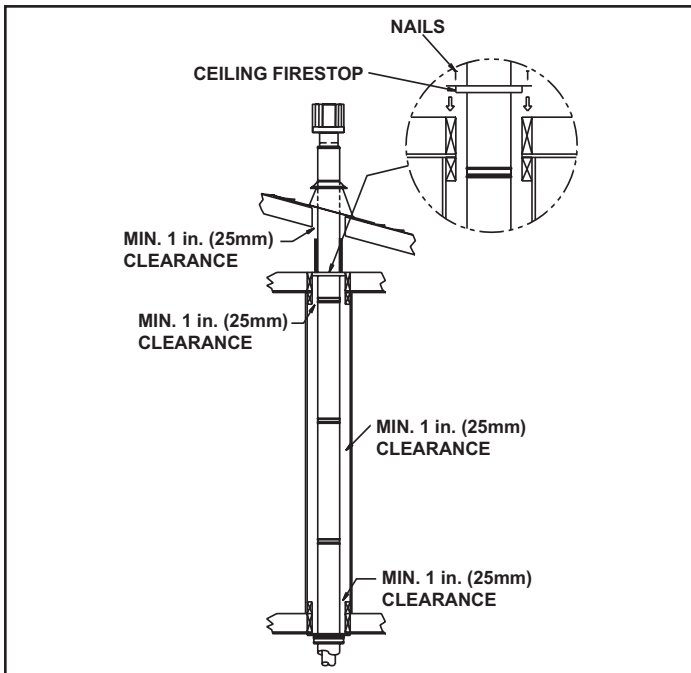


Figure 5.16

 **WARNING**



Fire Risk, Explosion Risk

- Any occupied areas above the first floor, including closets and storage spaces, which the vertical vent passed through must be enclosed. The enclosure may be framed and sheet rocked with standard construction materials; however, refer to these installation instructions for the minimum allowable clearance between the outside of the vent pipe and the combustible surfaces of the enclosure. Do not fill any of the required air space with insulation.

2. Cathedral Ceiling

Step 1 - Follow installation Steps 1 and 2 under Vertical Installation Section G.

Step 2 - Remove shingles or other roof covering as necessary to cut the rectangular hole for the support box. Cut the hole 1/8 in. (3mm) larger than the support box outline.

Step 3 - Lower the support box through the hole in the roof until the bottom of the support box protrudes at least 2 in. (51mm) below the ceiling (Figure 5.17). Align the support box both vertically and horizontally with a level. Temporarily tack the support box in place through the inside walls and into the roof sheathing.

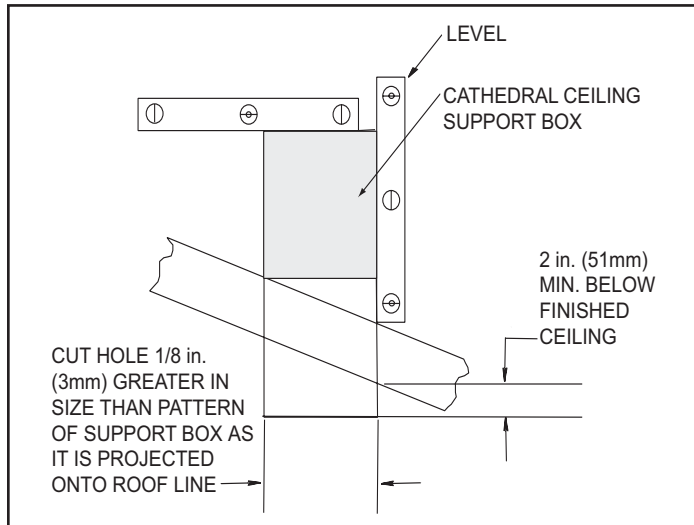


Figure 5.17

Step 4 - Using tin snips, cut the support box from the top corners down to the roof line, and fold the resulting flaps over the roof sheathing (Figure 5.18). Before nailing it to the roof, run a bead of non-hardening mastic around the top edges of the support box to make a seal between it and the roof. Clean out any combustible material from inside the support box.

Step 5 - Assemble the desired lengths of pipe and elbows necessary to reach from the appliance up through the round support box. Ensure that all pipe and elbow connections are in their fully twist-locked position. Assemble as instructed.

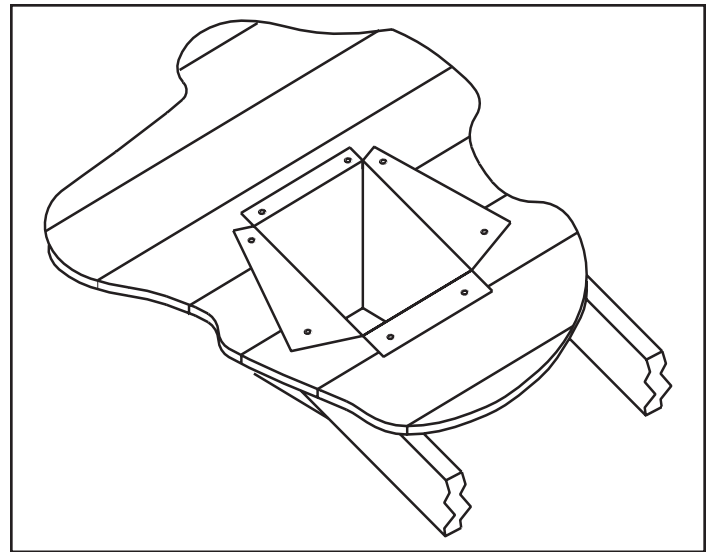


Figure 5.18

Step 6 - Place the support clamp (provided with the support box) inside the support box (at the bottom), and secure to the pipe section. The clamp allows the support box to support the weight of the pipe sections. Continue to add pipe sections until you are above the roof line.

Step 7 - Complete the cathedral ceiling installation by following the same procedures outlined in steps 7 through 9 under Vertical Installations, Section G.

Step 8 - Install the black trim collar around the outside of the cathedral ceiling support box (Figure 5.19). The two pieces of the trim collar slide over one another to allow for easy adjustment around the support box. Using the six screws provided, secure the four corners and the overlapping sections of the trim collar to the ceiling. You may want to predrill the holes for the overlapped sections for ease of installation.

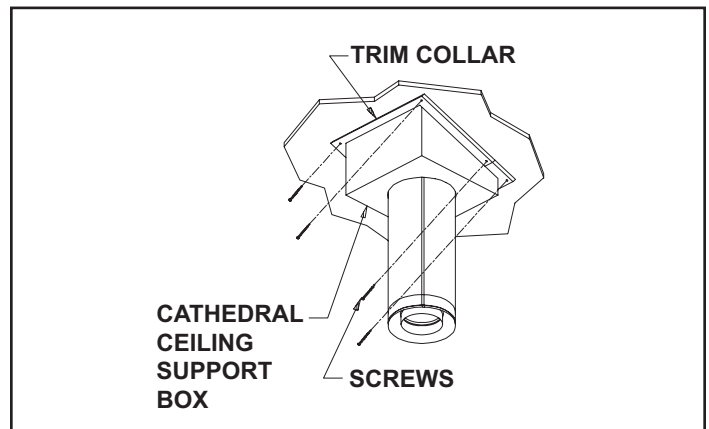


Figure 5.19

3. Class A Metal Chimney

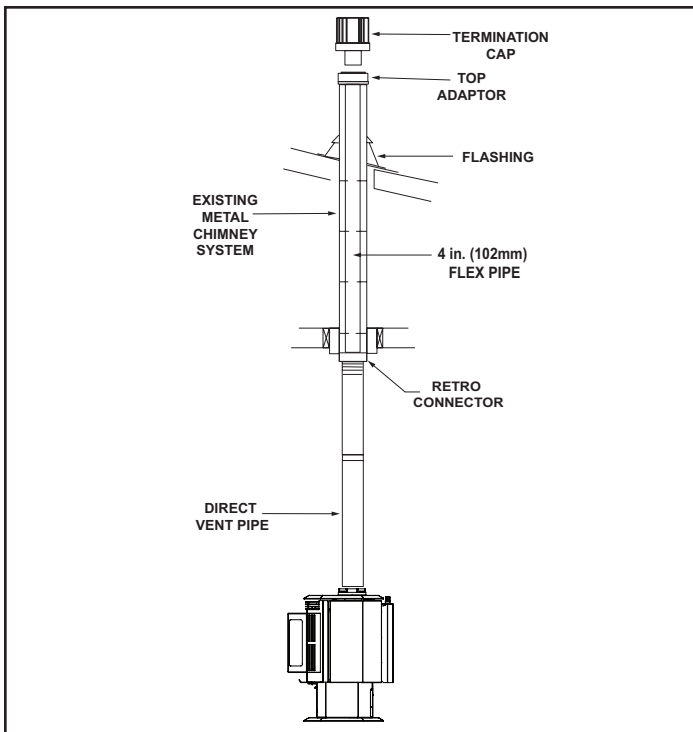


Figure 5.20



CAUTION

Ensure that existing chimney is functionally sound and clean.

- Have inspection done by qualified chimney sweep or professional installer BEFORE converting to direct vent appliance.

Step 1 - Remove existing chimney cap.

Step 2 - Measure the distance from the top of the chimney to the bottom of the ceiling support box, add 3 in. (76mm) to this measurement, and cut a section of 4 in. (101mm) flex pipe to that length (the flex should be fully extended).

Step 3 - Connect the end of the flex pipe section to the underside of the top adaptor, using four sheet metal screws (Figure 5.21).

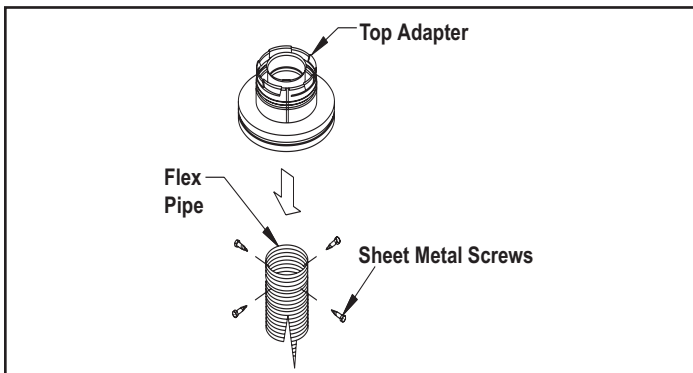


Figure 5.21

Step 4 - Pass the flex pipe down through the center of the chimney system, and center the top adaptor on the top of the chimney pipe. Drill four 1/8 in. (3mm) diameter holes through the top adaptor, and into the chimney top. Ensure that you are drilling into the metal on the chimney. Twist lock the high wind termination cap onto the top adaptor (Figures 5.22 and 5.23).

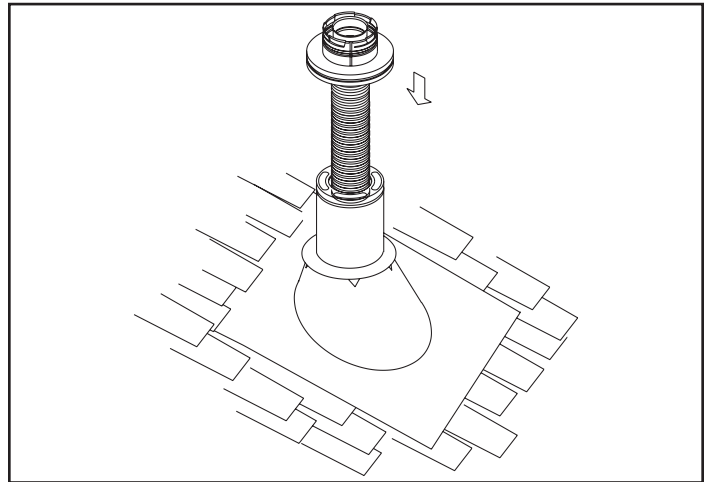


Figure 5.22

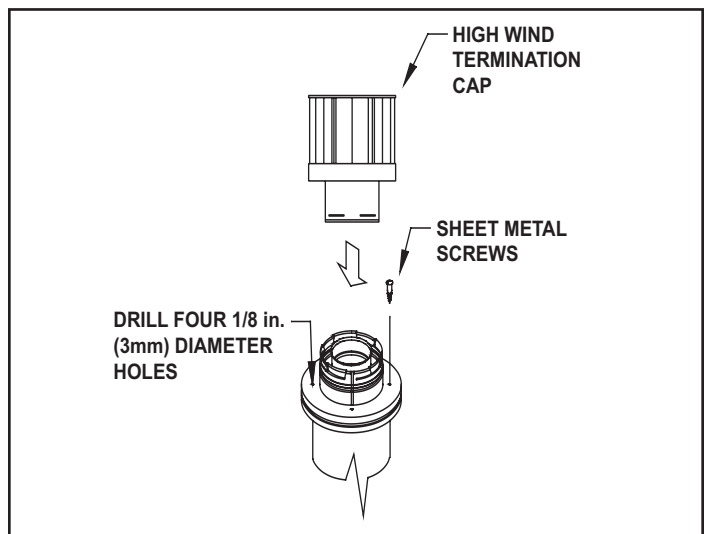


Figure 5.23

Step 5 - Pull the flex pipe down through the ceiling support box, until it protrudes approximately 3 in. (76mm). Connect the flex pipe to the retro connector, and attach with sheet metal screws.

Step 6 - Push the flex pipe back up into the ceiling support box, center the retro connector, and attach it to the support box with sheet metal screws.

Step 7 - The connection between the appliance and the retro connector may be completed with sections of direct vent pipe.

4. Existing Masonry Chimney

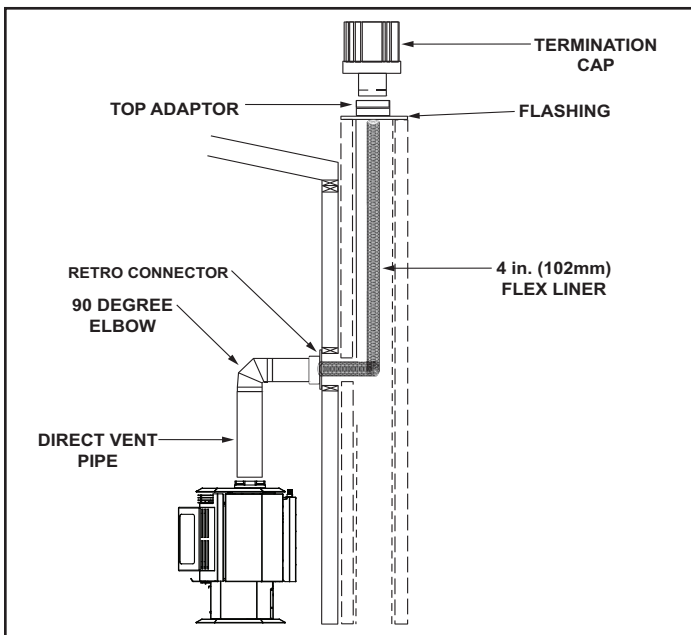


Figure 5.23



CAUTION

Ensure that existing chimney is functionally sound and clean.

- Have inspection done by qualified chimney sweep or professional installer BEFORE converting to direct vent appliance.

Step 1 - Before cutting any holes, assemble the desired sections of direct vent pipe to determine the center of the masonry penetration.

Step 2 - Once the center point of the penetration has been determined, cut a 6 in. (152mm) diameter hole in the masonry. If the hole is too large, the retro connector might not mount properly; if the hole is too small, the appliance might starve for intake air. If there is a frame wall in front of the masonry wall, cut and frame a 10 in. (254mm) square opening in the wall (centered around the 6 in. (152mm) masonry opening). If there is sheet rock only (no studs) in front of the masonry the 10 in. (254mm) opening is still needed, but does not need to be framed. If the hole is framed a wall thimble is required. This allows the retro connector to mount directly on the masonry and provide the correct clearances to combustibles, Figure 5.25.

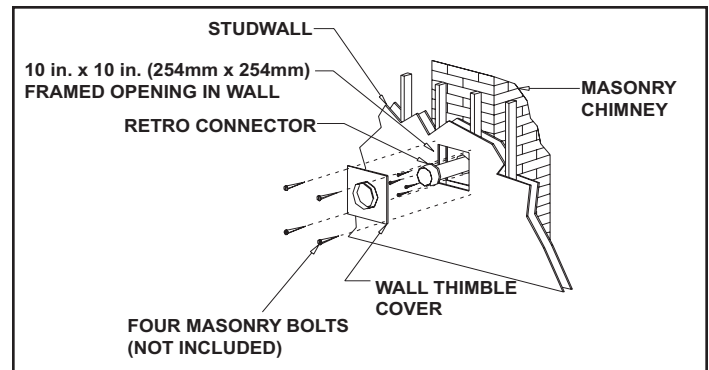


Figure 5.25

Step 3 - Secure the flashing to the top of the masonry chimney using a bead of non-hardening sealant-adhesive. If the flashing is larger than the top of the chimney, cut and fold flashing as needed to fit chimney, Figure 5.26.

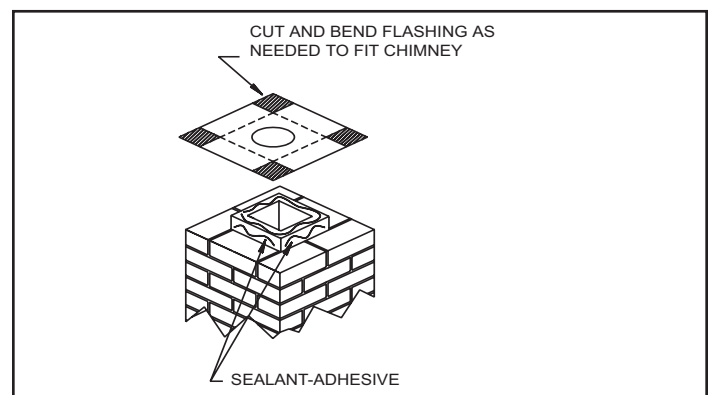


Figure 5.26

Step 4 - To determine the length of flex needed, measure from 3 in. (76mm) above the top of the flashing down to the level of the opening. Add the distance from the center of the chimney out through the wall. Cut a piece of 4 in. (102mm) flex to this length (extended to its nominal length). Be sure to leave 2-3 in. (51-76mm) of flex above the existing chimney to allow for connection to the termination kit.

Step 5 - Connect the flex liner to the top adaptor using three sheet metal screws, Figure 5.21.

Step 6 - Feed the flex liner through the flashing into the chimney. Carefully feed the flex liner down the chimney to the bottom and out the opening in the masonry wall, forming an angle to line up the flex liner with the vent opening on the appliance.

WARNING



Fire Risk, Explosion Risk

- Do not let the flex liner sag below the level at which it will connect to the appliance or connector. This could allow hot gas to become trapped and potentially become a fire hazard. The flex liner path should always be sloped up toward the termination cap.

Step 7 - If additional lengths of flex liner are needed to span the chimney height, use a flex coupler to connect the pieces of flex liner together. Connect the flex to the coupler by using four sheet metal screws for each side (Figure 5.27).

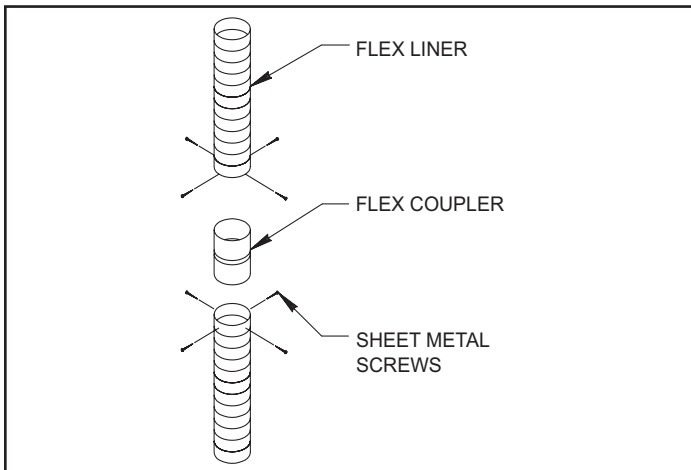


Figure 5.27

Step 8 - Secure the top adapter to the flashing. Use three sheet metal screws through the side of the top adapter into the flange on the flashing (Figure 5.28). Twist lock the high wind termination cap on to the top adapter.

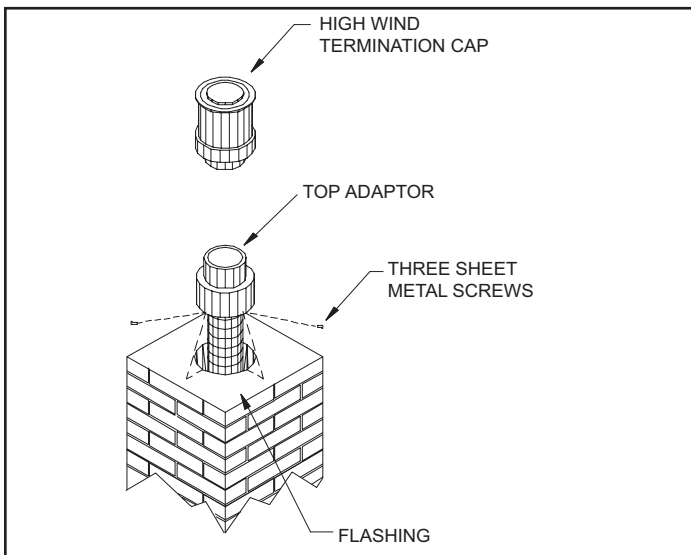


Figure 5.28

Step 9- Attach the flex to the retro connector. Use three sheet metal screws to attach the flex liner to the connector (Figure 5.29). Mount the retro connector to the masonry wall using masonry bolts. Redrill larger holes on connector as needed. Be careful to ensure that the connector is centered in the opening and the mounting holes line up with the masonry wall.

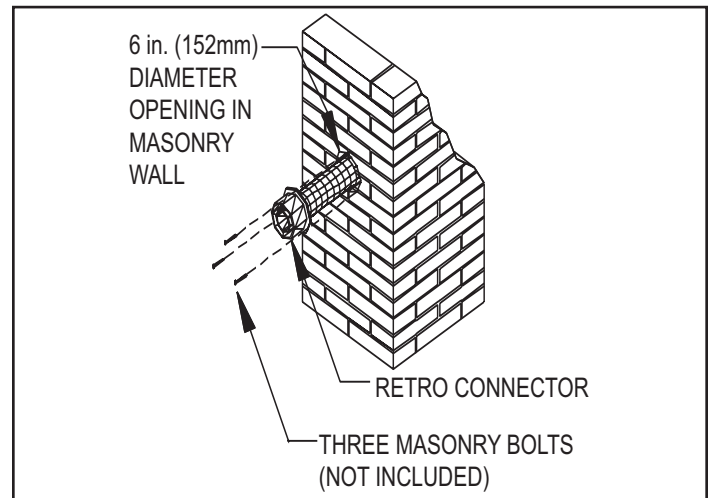


Figure 5.29

Step 10 - Slide wall thimble cover over retro connector and secure with masonry bolts (Figure 5.30). If you have a framed wall in front of the masonry, use wood screws to mount wall thimble cover to framed wall, over retro connector and 10 in. (254mm) square framed opening (Figure 5.25). If needed, add a section of direct vent pipe to the retro connector in order to extend through the opening in the wall thimble cover.

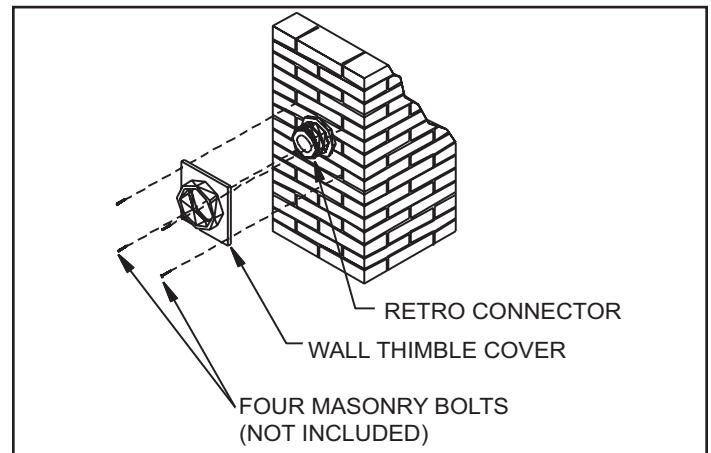


Figure 5.30

Step 11 - The connection between the appliance and the retro connector may be completed with sections of direct vent pipe.

6 Gas Information

A. Fuel Conversions

Before making gas connections ensure that the appliance being installed is compatible with the available gas type.

Any natural or propane gas conversions necessary to meet the appliance and locality needs must be made by a qualified technician using Hearth & Home Technologies specified and approved parts.

1. Converting to LP Gas

NOTE: Gas conversions should only be performed by a qualified service person, and/or where required by state and local codes, licensed installer/service technician. In the Commonwealth of Massachusetts, installation must be performed by a licensed plumber or gas fitter.

KIT CONTENTS: Replacement orifice; replacement pilot injector; and valve regulator.

TOOLS REQUIRED: Ratchet with 7/16 in. socket and 2 in. - 4 in. extension; power drill (a 90° handle is helpful); #2 Phillips bit; 5/32 in. allen wrench; 5/8 in. open end wrench.

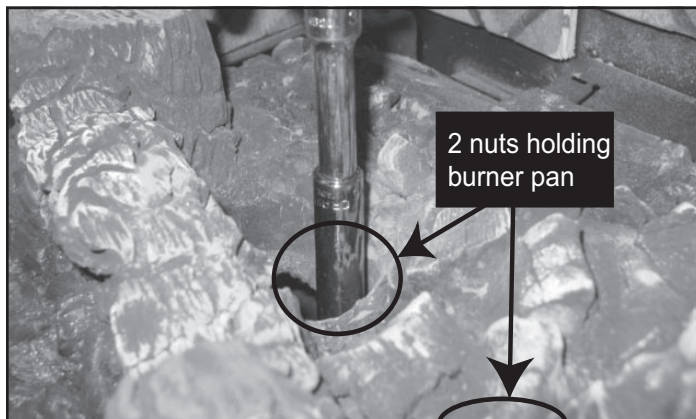


Figure 6.1 - Remove right and left twigs and right and left rear logs from the burner pan, if installed. Remove the 2 nuts that secure the burner pan to the burner support with the ratchet and socket.



Figure 6.2 - Lift burner up and out of the firebox opening.

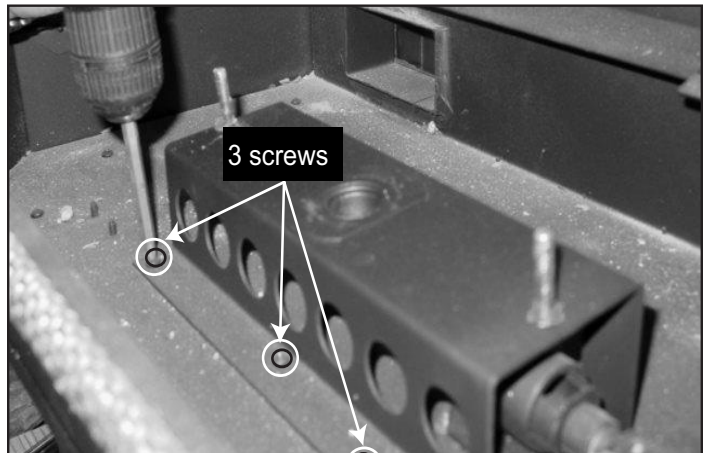


Figure 6.3 - Remove the three screws on the front of the burner support. Set screws aside.

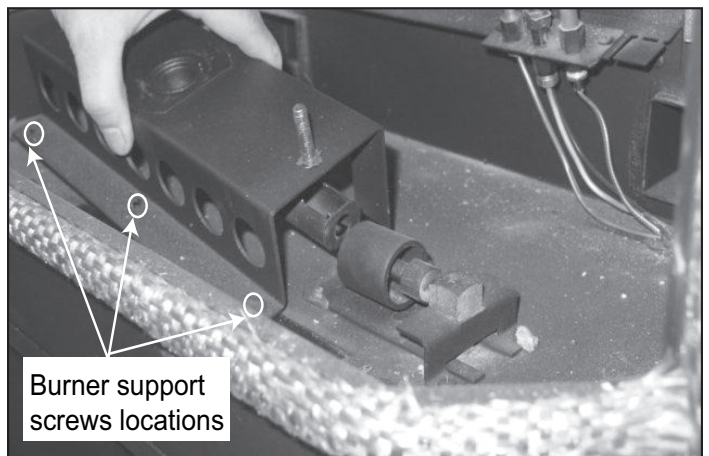


Figure 6.4 - Slide the burner support to the left to access the orifice.

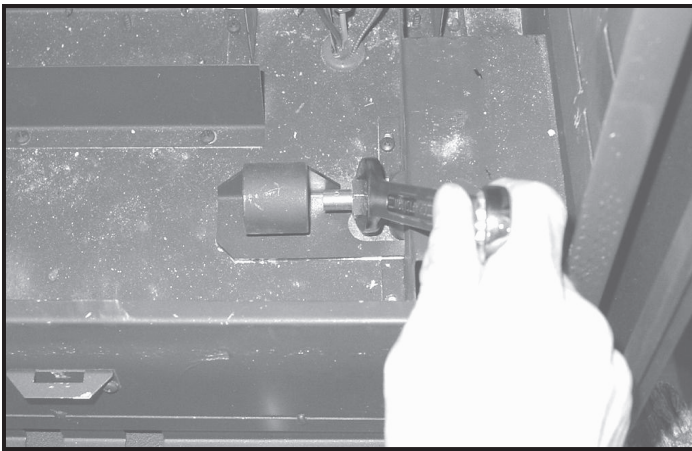


Figure 6.5 - With a 5/8 in. wrench remove the orifice retaining nut. Replace with appropriate orifice. (.076 LP / .125 NG)

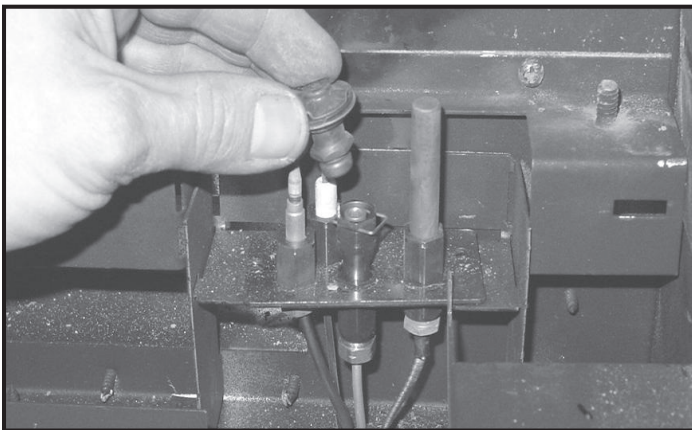


Figure 6.6 - Remove pilot hood and set aside.
NOTE: Do not remove retaining clip from pilot hood.

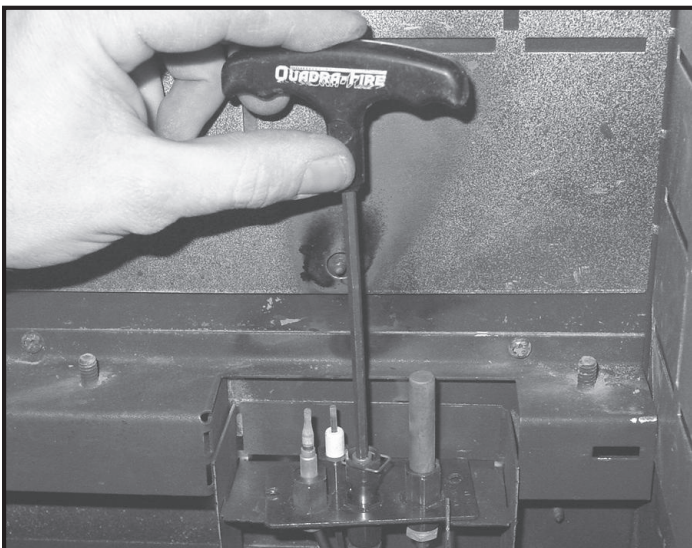


Figure 6.7 - Using a 5/32 in. allen head wrench, remove pilot injector and replace with an appropriate injector. (#35 LP / #62 NG)

NOTE: If installing brick also, do so now before reassembling. If not installing brick, reassemble burner in reverse order.

2. Valve Regulator Replacement

WARNING



Fire Risk, Explosion Risk

- Disconnect any electrical cords and turn off gas supply to unit before proceeding if converting fuel on an appliance already fully installed.



Remove upper and lower back shield. Loosen the set collars on the extension rods with the 3/32 in. Allen wrench. Remove the rods and adapter cap.

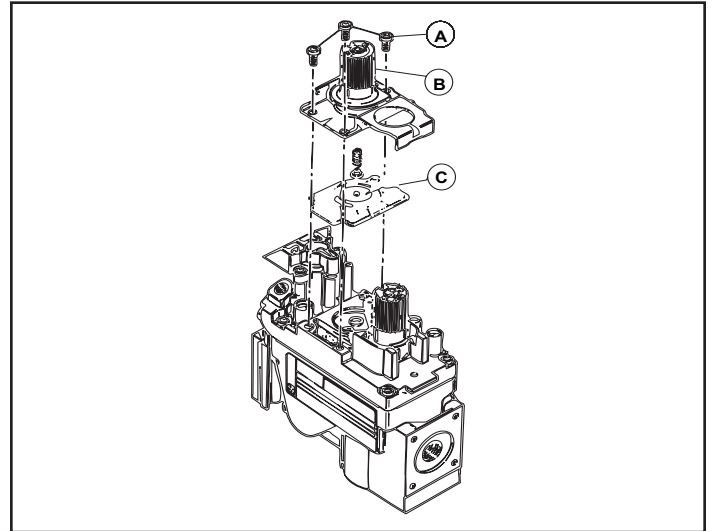


Figure 6.8 - Turn control knob to the OFF position, ensure that gas supply to the valve has been turned off. Using a Torx TH20, or slotted screwdriver, remove the three pressure regulator mounting screws (A), pressure regulator tower (B), and diaphragm (C).

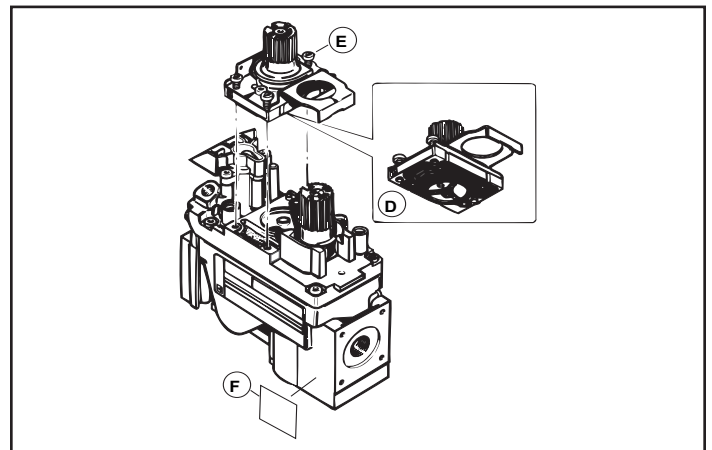


Figure 6.9 - Ensure that the rubber gasket (D) is properly positioned and install the new HI/LO pressure regulator assembly to the valve using the new screws (E) supplied with the kit. Tighten screws securely. (Reference torque = 25 in./lb.) Install the enclosed identification label (F) to the valve body where it can be seen.

Fill out the conversion label and attach it to the valve cover.

 **WARNING**



Fire Risk, Explosion Risk, Gas Leak Risk

- Rubber gasket must be seated properly on valve face.
- Do not install a valve or regulator that has been dropped.



 **WARNING**



Verify inlet pressures.

- High pressure may cause overfire condition.
- Low pressure may cause explosion.



Install regulator upstream of valve if line pressure is greater than 1/2 psig.

 **WARNING**



Fire Risk, Explosion Risk

- 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 qualified service agency is responsible for the proper installation of this conversion kit. The installation is not proper and complete until the operation of the converted appliance is checked as specified in the manufacturer's instructions supplied with the kit.

Pressure requirements for appliance are shown in the table below.

PRESSURE	NG	LP
Minimum Inlet Pressure	4.5 inches w.c.	11.0 inches w.c.
Maximum Inlet Pressure	7.0 inches w.c.	14.0 inches w.c.
Manifold Pressure on "HI"	3.5 inches w.c.	10.0 inches w.c.

If the pressure is not sufficient, ensure:

1. The piping used is large enough.
2. The supply regulator is adequately adjusted.
3. That the total gas load for the residence does not exceed the amount supplied.

The supply regulator (the regulator that attaches directly to the residence inlet or to the propane tank) should supply gas at the suggested input pressure listed above. Contact the local gas supplier if the regulator is at an improper pressure.

B. Gas Pressures

Proper input pressures required for optimum appliance performance, gas line sizing requirements need to be followed from NFPA54.

 **WARNING**



Fire Risk, Explosion Hazard

High pressure will damage valve.

- Disconnect gas supply piping BEFORE pressure testing gas line at test pressures above 1/2 psig.



- Close the manual shutoff valve BEFORE pressure testing gas line at test pressures equal to or less than 1/2 psig.

C. Gas Connection

NOTE: Have the gas supply line installed in accordance with local building codes, if any. If not, follow ANSI Z223.1. Installation should be done by a qualified installer approved and/or licensed as required by the locality. (In the Commonwealth of Massachusetts, installation must be performed by a licensed plumber or gas fitter.)

NOTE: A listed (and Commonwealth of Massachusetts approved) 1/2 inch (13mm) T-handle manual shut-off valve and flexible gas connector are connected to the 1/2 inch (13mm) control valve inlet.

- **If substituting for these components, please consult local codes for compliance.**

WARNING



Gas Leak Risk.

- Support control when attaching pipe to prevent bending gas line.

NOTE: The gap between the supply piping and gas access hole may be plugged with non-combustible insulation to prevent cold air infiltration.

Leak test all gas line joints and the gas control valve prior to and after starting the fireplace.

Before making the gas connection, ensure that the appliance you are installing is designed for the type of gas being supplied. This information can be found on the Ratings Label under the appliance. If the appliance has been converted to propane (LP), the valve cover should have a label stating that the unit has been converted to propane.

Connect the gas line at the 3/8 in. (9.5mm) pipe connector on the valve at the back of appliance. We recommend connecting the appliance with an approved flex gas line. If flex gas lines are not approved in your area, you must connect a hard pipe to the gas hookup.

You must supply a manual shut-off valve in a visible location within 3 feet (914mm) of the appliance.

WARNING



Fire or Explosion Hazard

- Gas build-up during line purge may ignite.
- Purge should be performed by qualified technician.
- Ensure adequate ventilation.
- Ensure there are no ignition sources such as sparks or open flame.

- A small amount of air will be in the gas supply lines. When first lighting appliance it will take a short time for air to purge from lines. When purging is complete the appliance will light and operate normally.

Air only needs to be purged again if gas valve has been turned to the OFF position.

WARNING



CHECK FOR GAS LEAKS

Explosion Risk, Fire Risk, Asphyxiation Risk

- Check all fittings and connections.
- Do not use open flame.
- After the gas line installation is complete, all connections must be tightened and checked for leaks with a commercially-available, non-corrosive leak check solution. Be sure to rinse off all leak check solution following testing.

Fittings and connections may have loosened during shipping and handling.



WARNING



Fire hazard.

Do NOT change the valve settings.

- This valve has been preset at the factory.
- Changing valve settings may result in fire hazard or bodily injury.

Omni-Test Laboratories listed gas appliances are tested and approved without requiring changes for elevations from 0 to 2000 feet in the U.S.A. and 0 to 4500 feet in Canada.

When installing this appliance at an elevation above 2000 feet, it may be necessary to decrease the input rating by changing the existing burner orifice to a smaller size. Input rate should be reduced by 4% for each 1000 feet above a 2000 foot elevation in the U.S.A. If the heating value of the gas has been reduced, these rules do not apply. To identify the proper orifice size, check with the local gas utility.

If installing this appliance at an elevation above 4500 feet (in Canada), check with local authorities.

7 Electrical Information


A. Recommendation for Wire


See B5 below for recommended maximum lead length (two wire) when using wall thermostat/switch.

NOTE: This appliance must be electrically wired and grounded in accordance with local codes or, in the absence of local codes, with **National Electric Code ANSI/NFPA 70-latest edition** or the **Canadian Electric Code, CSA C221.1**.

- A 110-120 VAC circuit for this product must be protected with ground-fault circuit-interrupter protection, in compliance with the applicable electrical codes, when it is installed in locations such as in bathrooms or near sinks.


B. Connecting to the Appliance


WARNING



Wire 110v to electrical junction box.
Do NOT wire 110v to the valve.
Do NOT wire 110V to wall switch.

- Incorrect wiring will damage millivolt systems.



1. This appliance may be used with a wall switch, wall mounted thermostat and / or a remote control.
2. If using thermostat, use one compatible with a millivolt gas valve system.
3. Follow parameters for locating thermostat (see individual thermostat instructions) to ensure proper operation of appliance.
4. Use low resistance thermostat wire for wiring from ignition system to the wall switch and thermostat.
5. Use the following chart for wire sizing.


Wire Size	Max. Length
16 gauge	65 feet
18 gauge	40 feet
20 gauge	25 feet
22 gauge	18 feet


6. Keep wire lengths as short as possible by removing any excess wire length.
7. Low voltage and 110 VAC voltage cannot be shared within the same wall box.

8. Ensure the thermostat is mounted level for accurate readings.
9. The thermostat should be mounted on an inside wall and not in direct line with the appliance convection air.
10. If the thermostat is located too close to the appliance, you may need to set the temperature setting slightly higher to maintain the desired temperature in your home.

Do not connect this appliance to a thermostat serving any other appliance.

Bedroom installation in Canada requires this appliance to be connected to a thermostat.


WARNING



Shock hazard

- This appliance is equipped with a three pronged (grounding) plug for your protection against shock hazard and should be plugged directly into a properly grounded three prong receptacle. Do not cut or remove the grounding prong from this plug.

C. Standing Pilot Ignition System Wiring

This appliance DOES NOT require 110 VAC supply for operation. A wiring diagram is shown in Figure 7.1.

This appliance is equipped with a millivolt control valve.

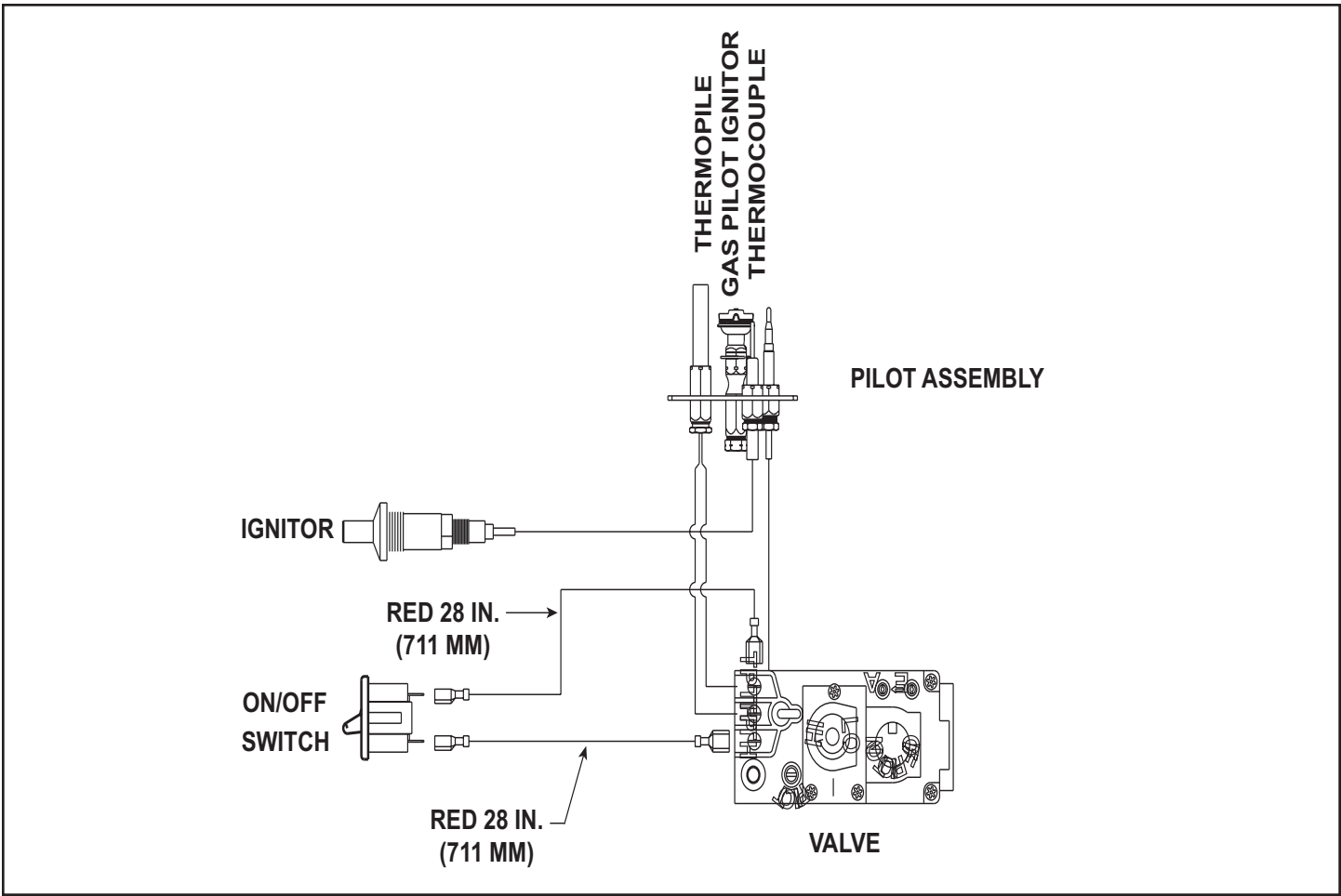


Figure 7.1

⚠ CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

⚠ CAUTION

Shock hazard

- Replace damaged wire with type 105° C rated wire.
- Wire must have high temperature insulation.

8 Appliance Set-Up

A. Remove Shipping Materials

Remove shipping materials from inside or underneath the firebox.

B. Accessories

Install approved accessories per instructions included with accessories.

C. Front Door Assembly / Installation

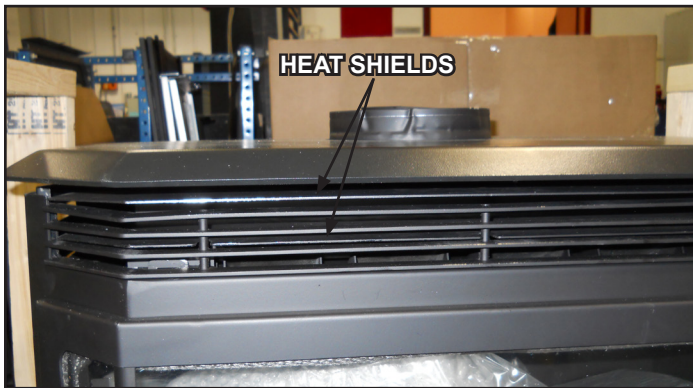


Figure 8.1 - Before removing the door, notice the location of the interior heat shields between door grille fins. The heat shields will need to remain in these locations when reattaching the door.

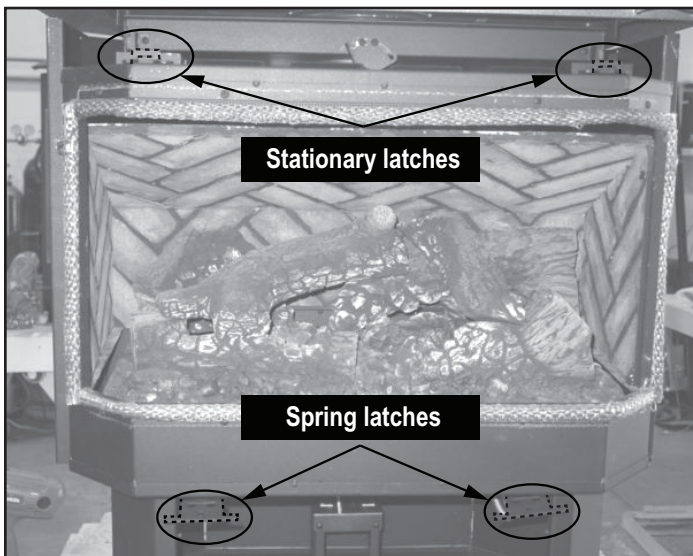


Figure 8.2 - Open lower access panel. Pull out and unhook the two spring latches on the bottom of the appliance that secure the door.

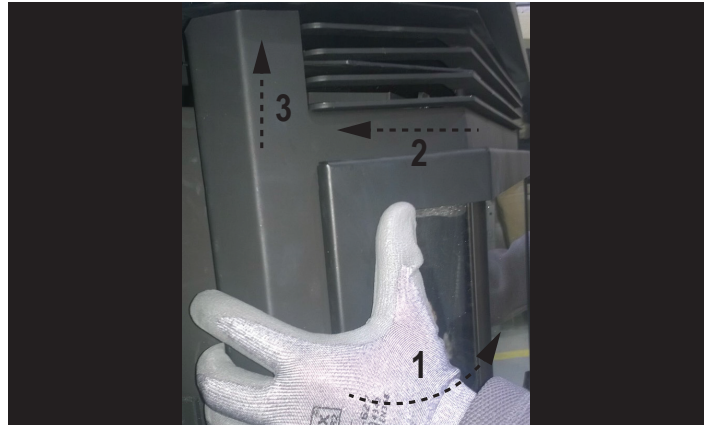


Figure 8.3 - **Step 1** - Pull the bottom of the door forward approximately 1-1/2" (38mm). **Step 2** - Grabbing the door from the sides towards the top of the glass, push in on the top of the door. **Step 3** - Lift up off of the stationary latches and away from the stove, removing the door.

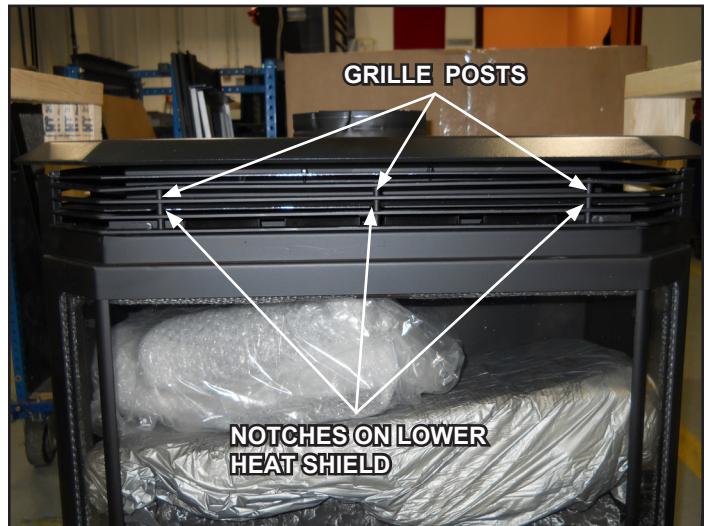


Figure 8.4 - When reassembling the door, be sure to line up the lower shield in the middle grille, line up the grille post with the notches in the lower heat shield. Once shields are lined up (post should be flush with front of shields) push up on the shields using the door and push in to allow the door to rest on the latches. Figure 8.4.

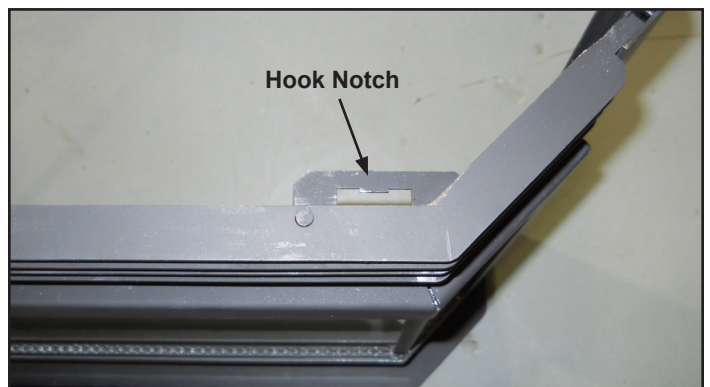


Figure 8.5 - Notice Hook Notch on upper corner of front assembly. Figure 8.5.

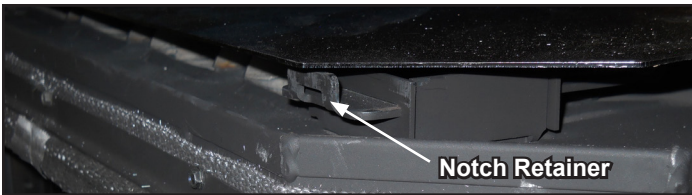


Figure 8.6 - The notch on the front assembly is hooked on the retainer at the top of the stove. It will be necessary to apply a small amount of force to the top of the front when removing the front from the appliance. When pivoting the front away from the appliance push up and inward to release the hook notches from the notch retainers.

When reassembling the front to the appliance, be sure notches are hooked into the retainers before attempting to attach spring latches at the bottom of the front.

D. Door Crown Installation



Figure 8.7 - Uninstall the existing crown by removing the four screws on the back side of the door. Retain the screws.

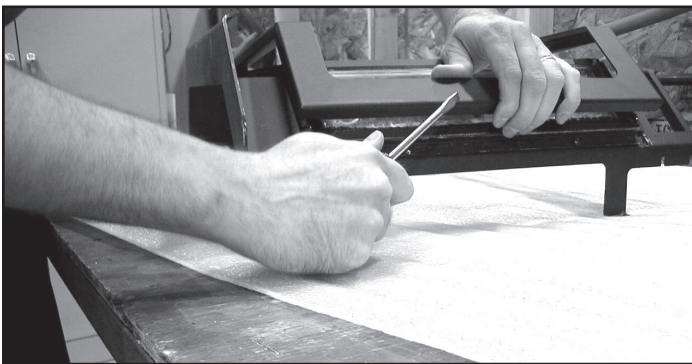


Figure 8.8 - Use a flat-head screwdriver to pry the black crown free on the right side. Remove the crown and discard.

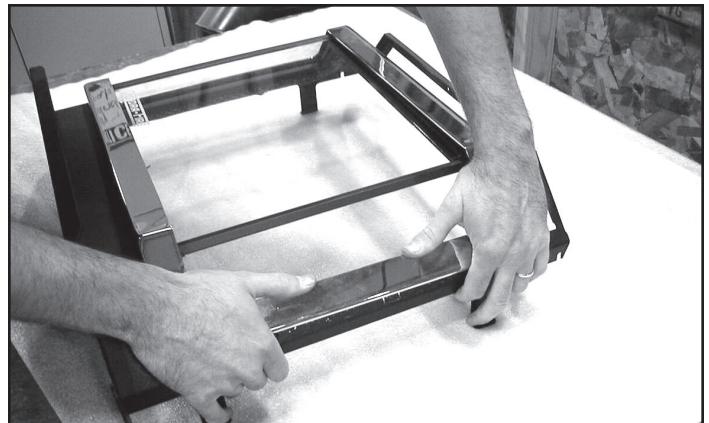


Figure 8.9 - Carefully align the left side of the crown into place, and wrap it across the face of door, finally snapping it into place on the right hand side. Reinsert and tighten the screws previously removed.

Use a soft cloth and a window cleaning solution to clean all fingerprint oils from the gold or nickel surface of crown **PRIOR** to lighting the appliance.

E. Grille Installation

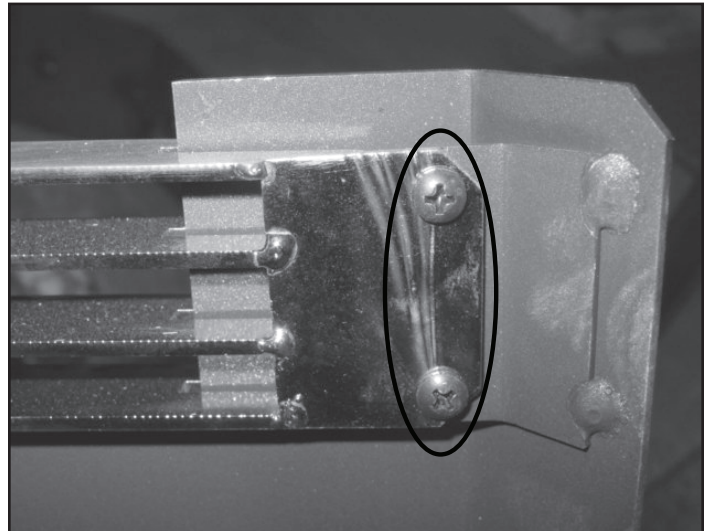


Figure 8.10 - Following instructions stated above, remove the door of appliance.

Remove the four screws (two at each end) holding the grille in place. Lift up to remove.

Install the new grille by reversing the removal instructions.

NOTE: Clean glass and gold or nickel plating with glass cleaner and a soft cloth, wiping off all fingerprints prior to first fire to prevent permanent staining.

F. Brick Set Installation

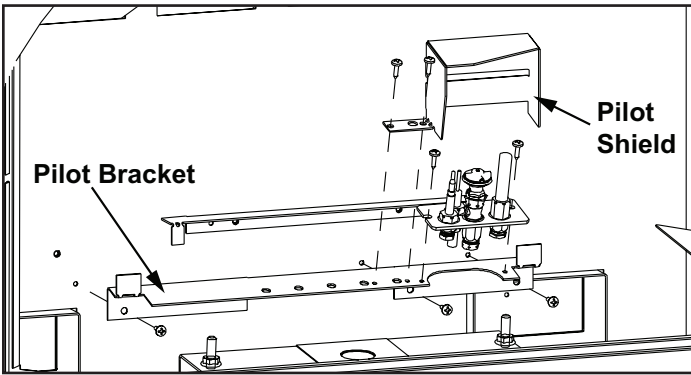


Figure 8.11 - The pilot shield has to be removed to install or remove the brick refractory. Removal of the bracket requires removing two screws.

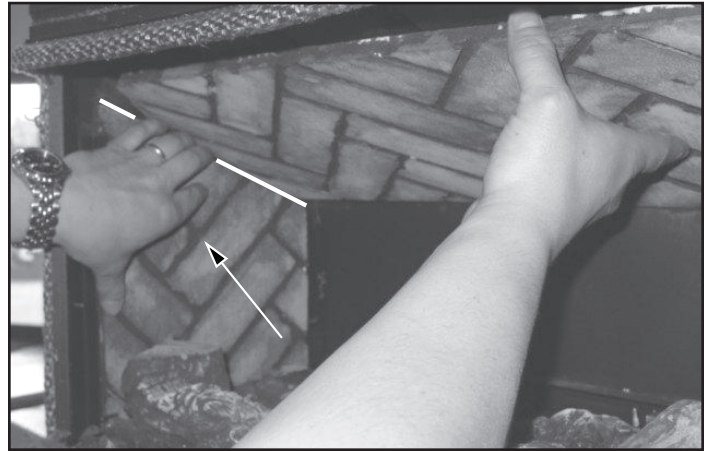


Figure 8.14 - Still holding the baffle in place, install the left brick into position.

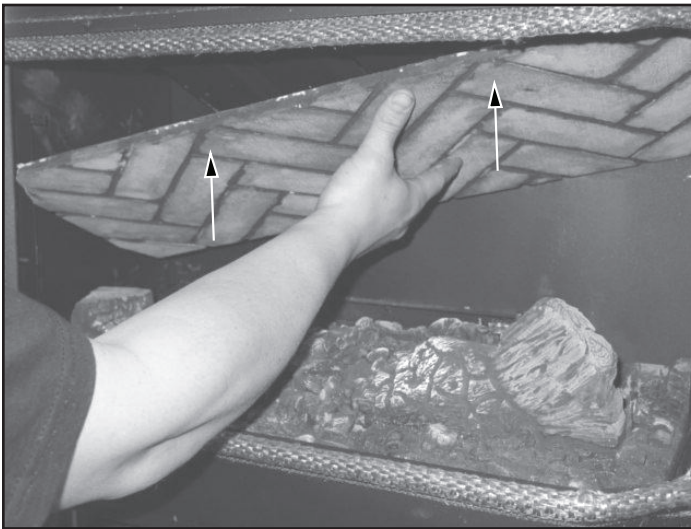


Figure 8.12 - To install the baffle, slide it in at an angle and rotate upward parallel with the firebox. Place baffle up against the heat exchangers in top of the firebox. Hold against heat exchangers, slide baffle towards front of appliance.

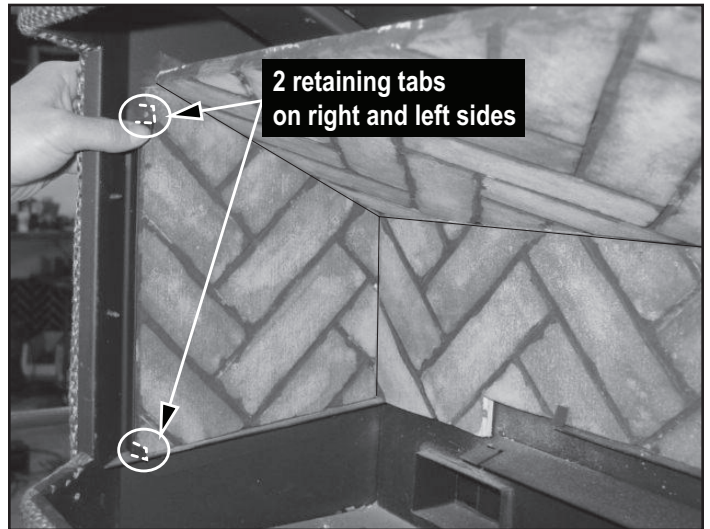


Figure 8.15 - Bend retaining tabs on the left and right sides inward to hold brick in place.

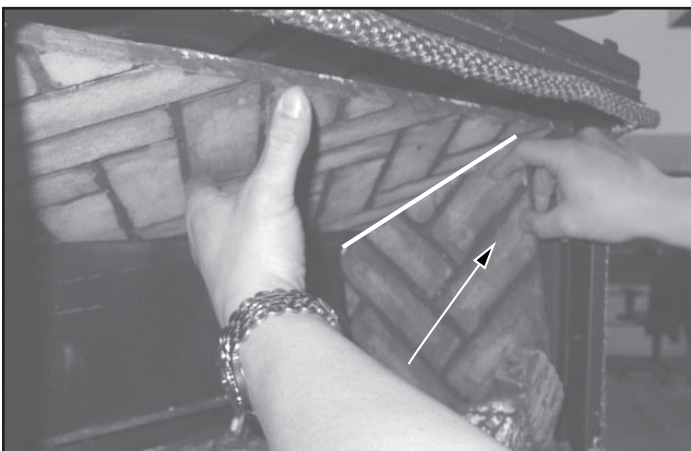


Figure 8.13 - Keeping the baffle elevated with your hand, put the right side brick into position. Rest the baffle on the right side brick.

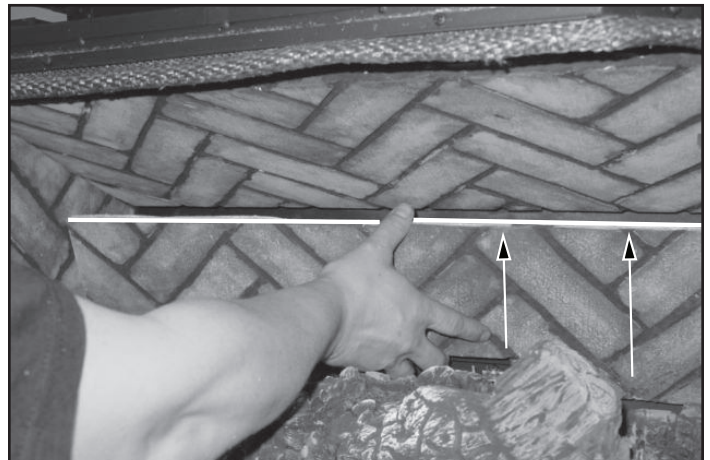


Figure 8.16 - Install the rear brick. Slide it in at an angle and place over the rear brick retainer. Hand bend retaining tabs up to hold brick in place. Push baffle towards back of firebox.

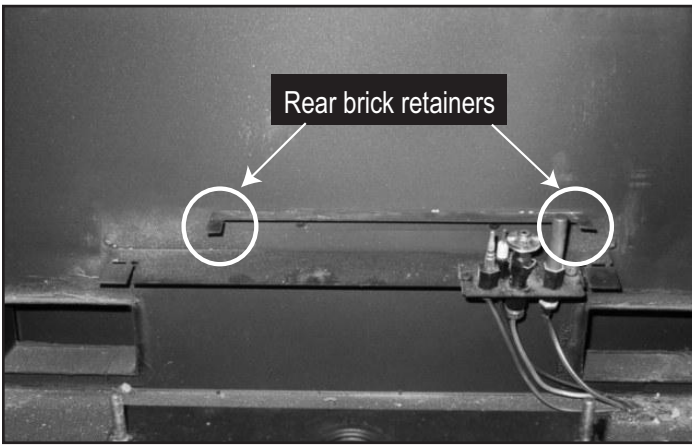


Figure 8.17 - NOTE: For the Hudson Bay Free Standing the upper rear brick retainer is used.

Reinstall the pilot shield with the screws removed in Figure 8.6. The pilot shield must be in place before operation of appliance.

G. Positioning the Logs

While still breakable, the logs do not become fragile until after the appliance is burned and they have cured. After curing, any handling must be done with care as breakage can easily occur.

PLEASE NOTE: Logs have been designed to work specifically with the burner of this appliance. Exact placement will ensure proper operation of your gas appliance and reduce sooting.

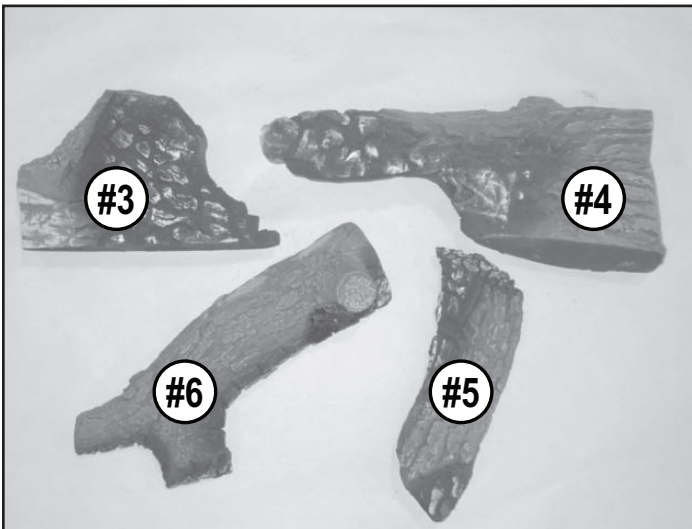


Figure 8.18 - Log Set

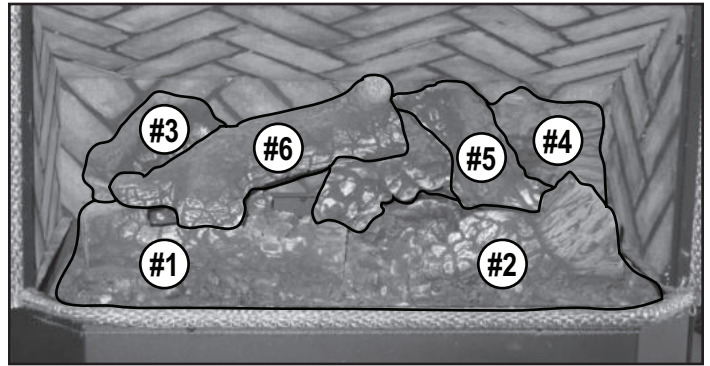


Figure 8.19 - Logs shown installed in firebox. Logs #1 and #2 are part of the burner pan and are numbered for reference only.

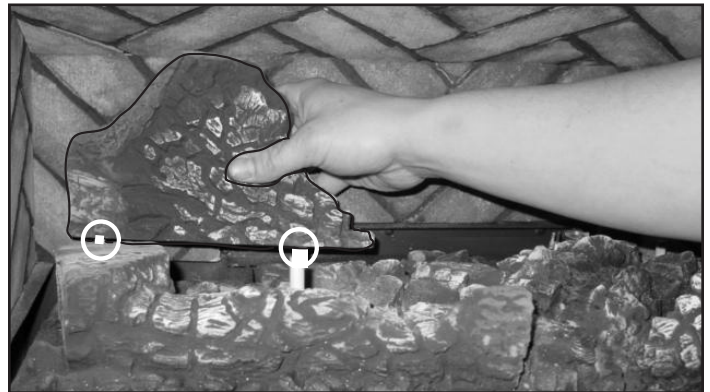


Figure 8.20 - Install the left rear log (#3) over the locator pins in the burner pan.

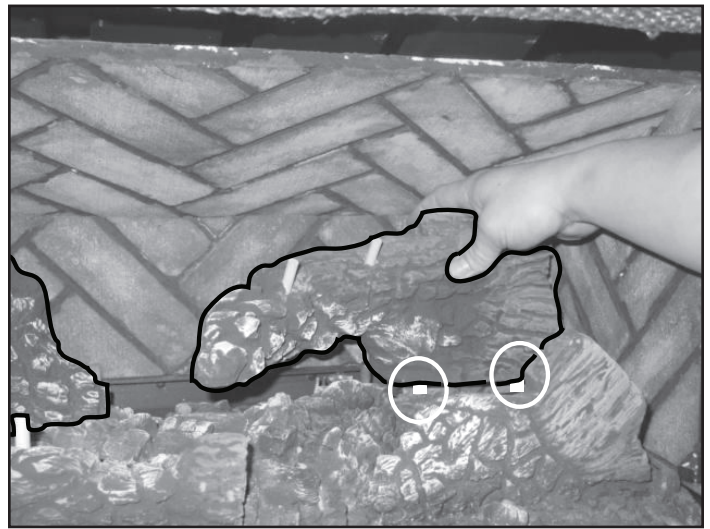


Figure 8.21 - Install the right rear log (#4) over the locator pins in the burner pan.

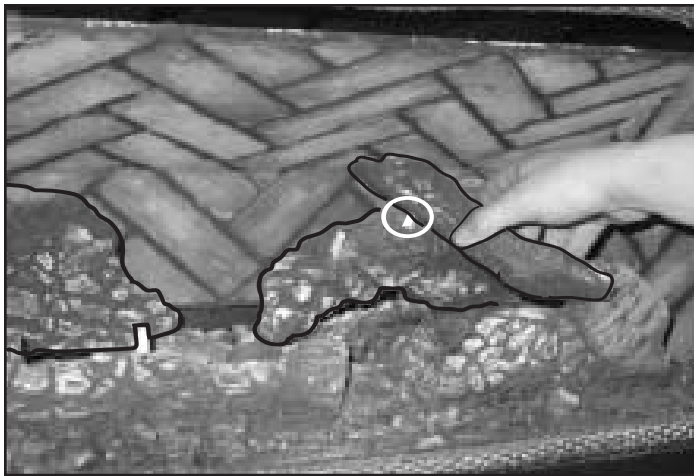


Figure 8.22 - Install the right twig (#5) on the right rear log and the right front log. The twig will rest in formed notches on the rear and front log.



Figure 8.23 - Install the left twig (#6) over the locator pins in the right rear log and the left front log.

H. Mineral Wool

WARNING



- Follow ember placement instructions in manual.
 - Do **NOT** place embers directly over burner ports.
 - Replace ember material annually.
- Improperly placed embers interferes with proper burner operation.

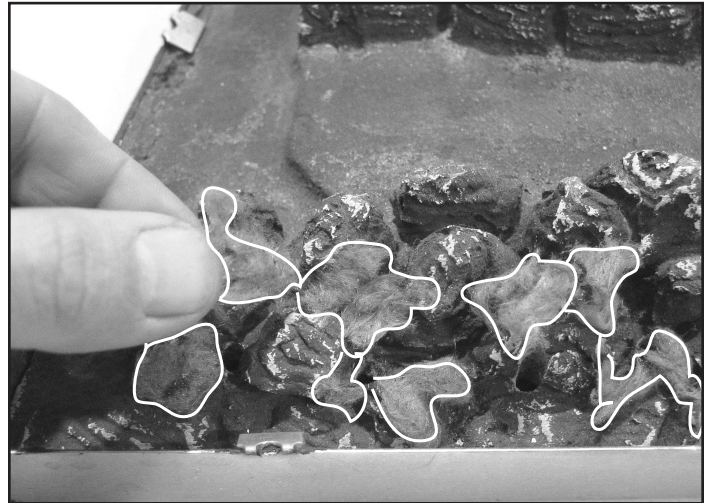


Figure 8.24 - Place individual pieces of embers in front of and around the gas logs where they can be seen. Space them so that gas can contact them on all sides. Avoid stacking the embers on top of each other.

NOTE: Do not block gas ports.

I. Blower Installation

KIT CONTENTS: Blower; 2 female spade wire connectors.

TOOLS REQUIRED: Powered screwdriver with a #2 Phillips head bit.

The blower motor comes standard with two male spade wire connectors. If your appliance has a different connection, use the two female spade wire connectors provided to modify the appliance wiring harness.

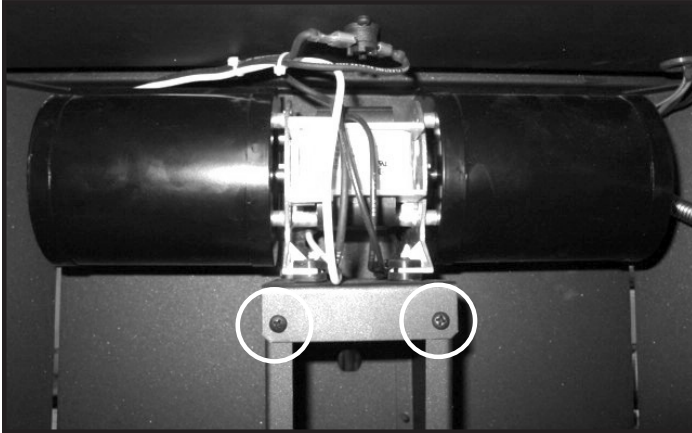


Figure 8.25 - Disconnect power to the appliance. To access the blower, open the door located on the front of the pedestal. Remove the two screws holding the blower bracket in place.

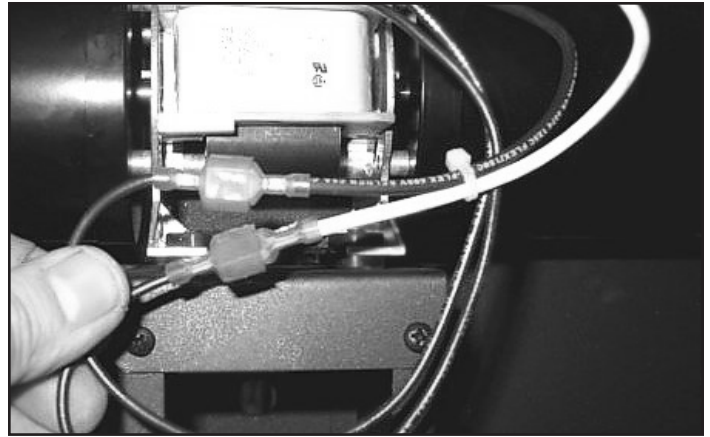


Figure 8.26 - Disconnect wires to the blower motor. Remove the blower from the bracket.

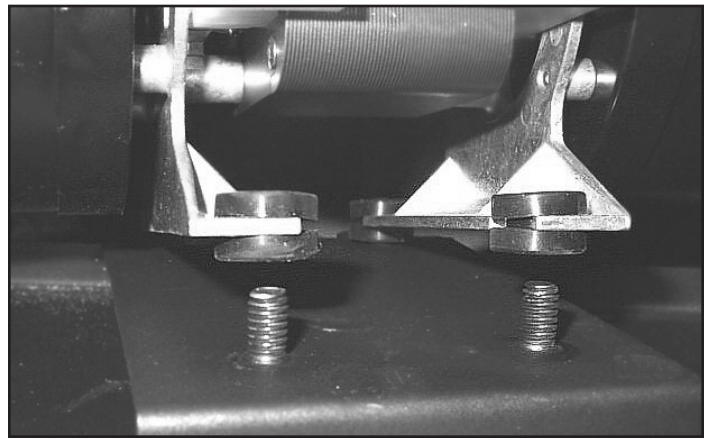


Figure 8.27 - Install the new blower by slipping grommets over studs on the blower bracket. Reinstall the blower and bracket. Connect the wires. Install screws. Restore power to the appliance.

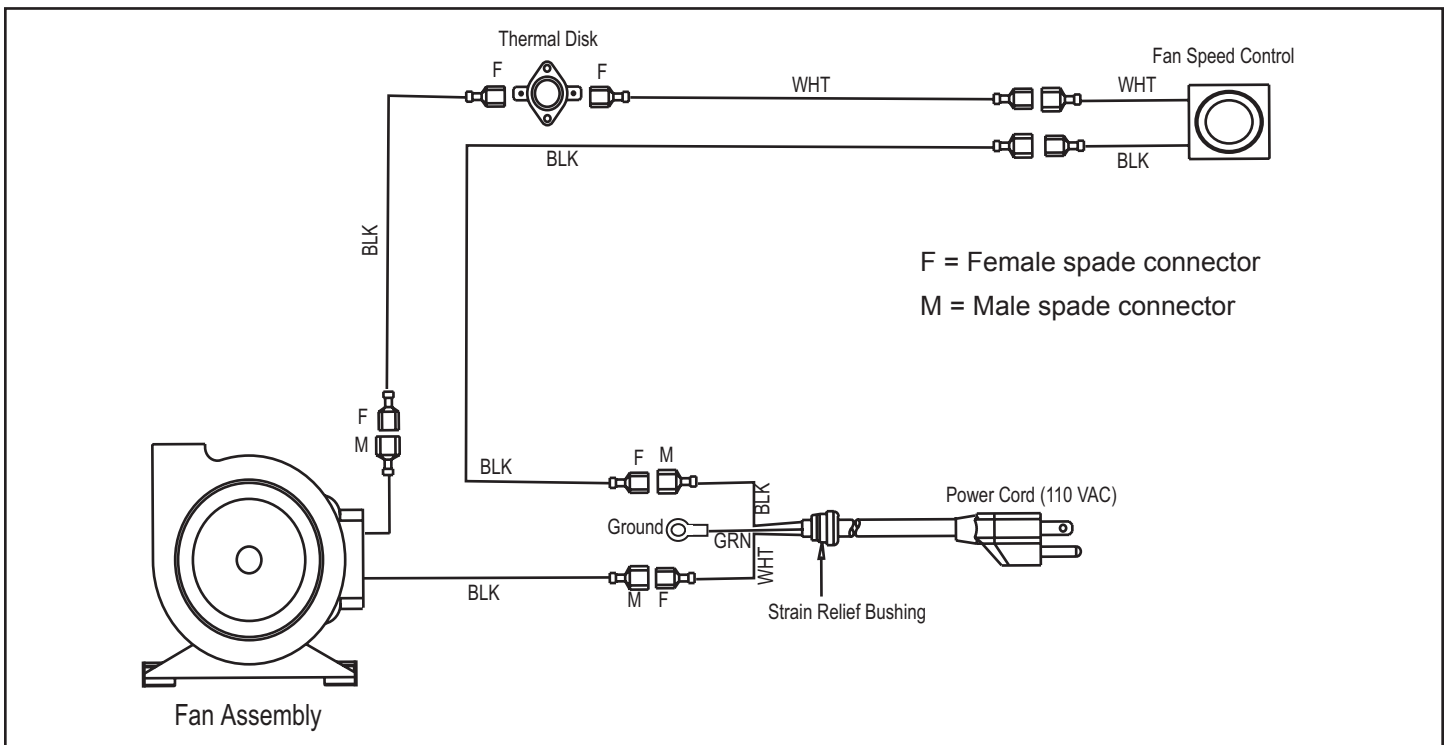


Figure 8.23 Blower Wiring Diagram

J. Damper Adjustment

See vent graph for recommendations (Figure 5.2) before you begin your adjustment. If your installation falls within the range of the gray shaded area of graph, it may be necessary to make an adjustment to the vertical damper to improve the flame appearance in your appliance.

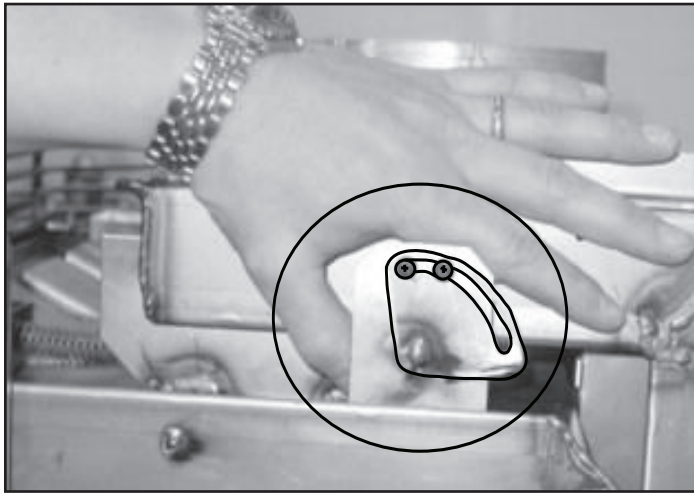


Figure 8.28 - Open the right side panel to access the damper adjustment.

Loosen screws and make adjustment according to vent chart. Make adjustment until flame size and activity suits your personal preference, and then retighten the screws.

NOTE: In the Commonwealth of Massachusetts, the word damper shall be replaced with the words flue restrictor.

K. Shutter Adjustment

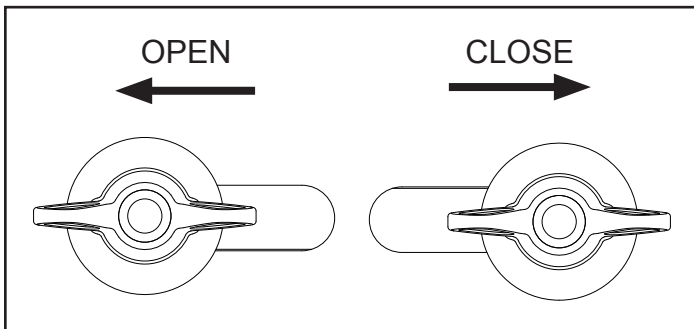


Figure 8.29 - The shutter is located on the underside of the appliance, on the right side. To adjust the shutter, loosen the wingnut. Retighten the wingnut after adjustment.

Moving the shutter bolt to the right closes the shutter. Moving the shutter bolt to the left, will open the shutter. Opening the shutter causes flames to become shorter and blue. Closing the shutter creates taller orange/yellow flames.

NOTE: Shutter is factory set in the fully open position. Do not close so much as to cause a sooty flame. Improper adjustment can cause sooting in the firebox and/or on the outside of a house with a horizontal termination.

After adjustment, tighten nut to lock in place.

Adjustments should only be made by a qualified installer.

L. Glass Replacement

NOTE: Glass can be replaced either as three separate pieces, or as an assembly with the door. See Section 12.


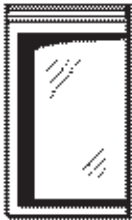
To Replace Separate Glass Pieces

1. Turn off gas to appliance.
2. Remove safety barrier from appliance by lifting it slightly upward.
3. Remove door from the appliance and set on a protective surface.
4. Remove door crown. See instructions in this manual for installation of door crown for procedure.
5. Remove top and bottom retainer screws from front of door. Set top and bottom glass retainers aside. Loosen side glass retainer screws, but do not remove.
6. Remove glass pieces and discard. Keep aluminum channels for reassembly.
7. Slide replacement side glass into the side glass retainers.
8. Place aluminum channels over side glass.
9. Install center glass into aluminum channels.
10. Reinstall glass retainers and screws.
11. Reinstall door crown.

Door Frame with Glass Assembly Replacement

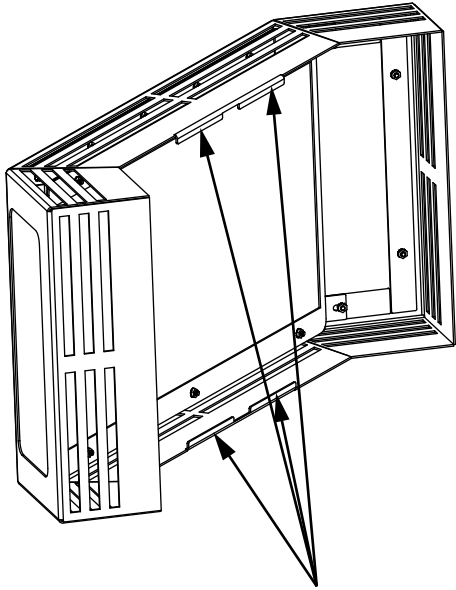
Use only Door Assembly replacement as specified in Section 12 of this manual, available from your dealer, if any glass becomes broken in the Hudson Bay.

Follow the previous instructions to install the door crown and grille to the new Door Assembly.

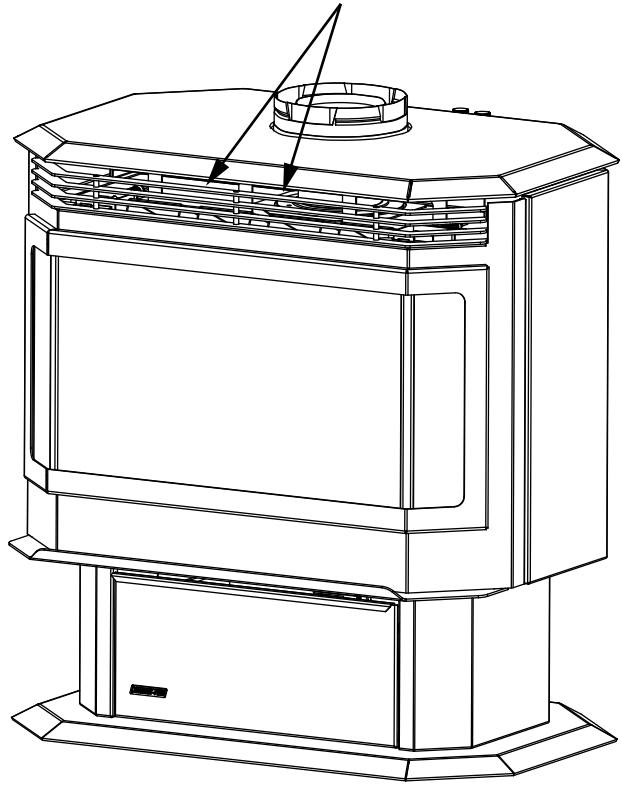
 CAUTION	
	<p>Handle glass assembly with care.</p> <ul style="list-style-type: none">• Inspect the gasket to ensure it is undamaged.• Inspect the glass for cracks, chips or scratches.• Do NOT strike, slam or scratch glass.• Do NOT operate appliance with glass door removed, cracked, broken or scratched.• Replace glass assembly as a complete assembly.

M. Safety Barrier Installation

Hook Safety Barrier over top edge of the door crown. Center the Safety Barrier on appliance.



Safety Barrier Hooks



QUADRA-FIRE®

CONTACT INFORMATION:

Quadra-Fire, a brand of Hearth & Home Technologies
352 Mountain House Road, Halifax, Pa 17032
www.quadrafire.com

Please contact your Quadra-Fire dealer with any questions or concerns.
For the number of your nearest Quadra-Fire dealer,
please visit our web site www.quadrafire.com

CAUTION



Do NOT discard this manual.

- Important operating and maintenance instructions included.
- Read, understand and follow these instructions for safe installation and operation.
- Leave this manual with party responsible for use and operation.



Your Records for Model: Hudson Bay Direct Vent Gas Appliance

DEALERSHIP WHERE PURCHASED:

SERIAL NUMBER: _____

DATE PURCHASED: _____

DATE INSTALLED: _____

DEALER TELEPHONE: _____

This product may be covered by one or more of the following patents: (United States) 5613487, 5647340, 5890485, 5941237, 6006743, 6019099, 6053165, 6145502, 6374822, 6484712, 6601579, 6769426, 6863064, 7077122, 7098269, 7258116, 7470729, 8147240 or other U.S. and foreign patents pending.