

INSTALLATION INSTRUCTIONS

INSTALLER:

Leave this manual with the appliance.

CONSUMER:

Retain this manual for future reference.

⚠ WARNING

If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

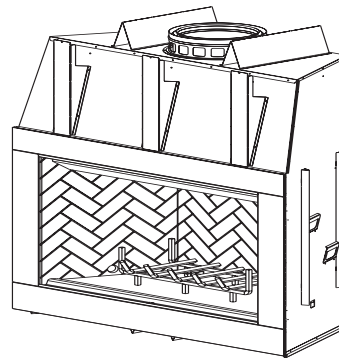
- DO NOT store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- DO NOT overfire. Overfiring will void your warranty.
- Comply with all minimum clearances to combustibles as specified. Failure to comply may cause house fire.

⚠ WARNING

FIRE RISK! For use with solid wood fuel only. Other fuels may overfire and generate poisonous gases (i.e. carbon monoxide).

WOOD BURNING FIREPLACE MODELS:

WB5412FB0F



⚠ WARNING

DO NOT alter or modify the fireplace or its components under any circumstances. Any modification or alteration of the fireplace system, including but not limited to the fireplace, chimney components and accessories, may void the warranty, listings and approvals of this system and could result in an unsafe and potentially dangerous installation.



DANGER



**HOT SURFACES! GLASS
AND OTHER SURFACES ARE
HOT DURING OPERATION
AND COOL DOWN.
HOT GLASS WILL
CAUSE BURNS.**

DO NOT touch glass until it is cooled. **NEVER** allow children to touch glass. Keep children away. **CAREFULLY SUPERVISE** children in same room as fireplace. Alert children and adults to hazards of high temperatures. **High temperatures may ignite clothing or other flammable materials.** Keep clothing, furniture, draperies and other flammable materials away.

NATIONAL
FIREPLACE
INSTITUTE



CERTIFIED

www.nficertified.org

Our wood burning hearth products must be installed and serviced by professionals who are certified in the U.S. by the National Fireplace Institute® (NFI) as NFI Wood Burning Specialists.



LISTED

This fireplace is approved for use as a wood burning fireplace or for use with a vented gas log approved to ANSI Z21.60 or Z21.84 standards or for use with a vent-free gas log heater approved to ANSI Z21.11.2 standard.

NOTICE: Contact your dealer for installation, service, repair, or warranty claim

Empire Comfort Systems does not sell, service, or provide warranty directly to consumers. The consumer must contact the dealer where the product was purchased for a warranty claim. If a non-qualified installer or consumer installs or services this product, the product warranty is voided. Most dealers will only service products they sold so it is important for the consumer to choose a qualified dealer for installation and warranty service. In order to maintain the warranty, service must be performed annually and documentation reviewed during the warranty request.

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CAUTION, WARNINGS AND DEFINITIONS

SAMPLE - CAUTION, WARNINGS AND DEFINITIONS:

CAUTION

FOR YOUR SAFETY:

- DO NOT store or use gasoline or any other flammable vapors or liquids in the vicinity of this or any other appliance.
- Due to high temperatures, the appliance should be located out of traffic and away from furniture and draperies.
- DO NOT place clothing or other flammable materials on or near the appliance.

WARNING

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual for correct installation and operational procedures. For assistance or additional information consult a qualified installer, service agency.

WARNING

Always leave glass doors fully opened or fully closed when operating fireplace.

INSTALLATION INFORMATION

Before beginning the fireplace installation, read the instructions completely.

- This fireplace and its components are safe when installed according to this installation manual. Unless you use Empire components, that are designed and tested for the fireplace system, you may cause a fire hazard.
- The warranty will be voided by Empire, and Empire disclaims any responsibility for the following actions.
 - a. Modification of the fireplace, components, doors, air inlet system and damper control.
 - b. Use of any component part not manufactured or approved by Empire in combination with an Empire fireplace system.

Proper installation is crucial for safe and continuous fireplace operation. Consult local building codes for the requirements of all factory built fireplaces.

DISPOSAL OF ASHES

Place ashes in a metal container with a tight-fitting lid. Place the closed container of ashes on a noncombustible floor or on the ground, away from all combustible materials, pending final disposal. If the ashes are buried in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have cooled.

When using the decorative appliance, the fireplace damper must be set in the fully open position.

Do not use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to freshen or start a fire in the fireplace. Keep these liquids away from the fireplace when it is in use.

WARNING

Use solid wood or processed solid fuel firelogs only. When processed wood fuel fire logs are used, do not poke or stir the logs while they are burning. Use only fire logs that have been evaluated for the application in fireplace and refer to fire log warnings and caution markings on packaging prior to use.

WARNING

BURNING IMPROPER FUEL (I.E. CHARCOAL) CAN RESULT IN CARBON MONOXIDE POISONING, WHICH MAY LEAD TO DEATH!

Carbon Monoxide Poisoning – Early signs of carbon monoxide poisoning resemble the flu with headaches, dizziness, or nausea. If you have these signs, get fresh air at once! Have the appliance inspected by a qualified service technician. 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.

VENTILATION REQUIREMENTS

Provide adequate air for combustion. The fresh air requirements of this appliance must be met within the space where it will be installed.

CREOSOTE – FORMATION

When wood is burned slowly, it produces tar and other organic vapors that combine with expelled moisture to form creosote. The creosote vapors condense in the cool chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited this creosote makes an extremely hot fire.

WARNING

Children and adults should be alerted to the hazards of high surface temperatures and to stay away to avoid burns or clothing ignition. Young children should be carefully supervised when in the same room as fireplace.

When using **SOLID WOOD** only for fuel, use dry well seasoned hardwood. Softwoods burn quickly. Do not use treated wood, charcoal, coal, trash, driftwood or woods dipped in tar, pitch, pine tar, or creosote. Wood products made with synthetic binders, such as plywood, produce abnormally high temperatures and smoking fires. When burning artificial logs follow the manufacturer's instructions.

CERTIFICATION AND IMPORTANT SAFETY INFORMATION

FIREPLACE CERTIFICATION

This fireplace system has been tested and listed in accordance with UL 127 standards by Underwriters Laboratories Inc. for installation and operation in the United States.

The decorative gas appliance shall be installed in accordance with the National Fuel Code, ANSI Z223.1.

CAUTION

When using the decorative appliance, the fireplace damper must be set in the fully open position.

This fireplace has been tested and listed for use with the optional components specified in this manual. These optional components may be purchased separately and installed at a later date. An outside air kit, gas insert, gas log set or gas log-lighter should be installed at the time of fireplace installation.

This fireplace may be installed in sleeping rooms. This fireplace is not approved for manufactured housing. If installed with a gas log set, provisions for the National Fuel Gas Code must be met.

WARNING

RISK OF FIRE! Empire Comfort Systems disclaims any responsibility for, and the warranty and agency listing will be voided by the following actions.

DO NOT:

- | | |
|---|--|
| <ul style="list-style-type: none">• Install or operate damaged fireplace• Modify fireplace• Install other than as instructed by Empire Comfort Systems• Overfire | <ul style="list-style-type: none">• Operate the fireplace without fully assembling all components• Install any component not listed or approved by Empire Comfort Systems |
|---|--|

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. For more information, consult a qualified installer, service agency or your dealer.

WARNING

This product and the fuels used to operate this product (processed solid fuel firelogs), and the products of combustion of such fuels, can expose you to chemicals including carbon black, which is known to the State of California to cause cancer and carbon monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to: www.P65Warnings.ca.gov.

WARNING

DO NOT install a fireplace insert in this box unless the manufacturer's instructions with the insert specifically state this fireplace has been tested for use with this insert.

WARNING

When processed solid fuel firelogs are used: Do not poke or stir the logs while they are burning. Use only firelogs that have been evaluated for the application in fireplace and refer to firelog warnings and caution markings on packaging prior to use.

ATTENTION

This installation manual will enable you to obtain a safe, efficient and dependable installation of your fireplace system. Please read and understand these instructions before beginning your installation.

ATTENTION

This fireplace is not intended to be used as a substitute for a furnace to heat an entire home. Use for supplemental heat only.

ATTENTION

The chimney shall be inspected at least twice a year during the heating season to determine when a creosote buildup has occurred.

NON-COMBUSTIBLE MATERIALS

- Materials which will not ignite and burn, composed of any combination of the following:
 - Steel – Concrete – Iron – Slate
 - Brick – Glass – Tile – Plasters
- Materials reported as passing ASTM E 136, Standard Test Method for Behavior

ATTENTION INSTALLER

Fireplace Installation Checklist

Use this checklist along with the instructions in this manual.

Customer: _____

Address: _____

Model: _____

Date Installed: _____

Fireplace Location: _____

Installer: _____

Dealer Phone #: _____

Serial # _____

FIREPLACE INSTALLATION

Verified that the chase is insulated and/or sealed. (pgs. 15 and 26)

Protective hearth strips installed per manual.....

Fireplace is leveled and secured. (pg. 16)

Hearth extension installed per the manual

Outside air kit installed

CHIMNEY SECTION

Chimney and Firestops installed, locked and secured in place with proper clearances

Chimney configuration complies with diagrams. (pgs. 19-20)

Attic insulation shield installed.

Exterior roof flashing installed and sealed.

Termination installed and sealed (pg. 22).....

SHROUDS (pgs. 28-30)

Shroud installed properly per instructions.

FINISHING (pgs. 31-36)

Verified all clearances meet installation manual requirements.....

Combustible materials not installed in non-combustible areas.....

Mantels and wall projections comply with installation manual clearances.

FIREPLACE SETUP

Brick panels installed correctly.

Grate properly installed with grate retainer brackets.....

Optional doors properly installed.....

Firescreen installed

Manual bag and all of its contents are removed from the fireplace and given to

the Homeowner

COMMENTS

Empire recommends the following:

- Keep this checklist visible on the fireplace until the installation is complete.
- Photograph the installation and copy this completed checklist for your file.

GET STARTED

TYPICAL FIREPLACE SYSTEM

**ADDITIONAL LATERAL
SUPPORT MAY BE NEEDED
FOR CHIMNEY ABOVE ROOF
(OR ENCLOSED IN CHASE)
NON-COMBUSTIBLE ROOF
FLASHING MUST MAINTAIN
MINIMUM CLEARANCES
AROUND CHIMNEY SYSTEM**

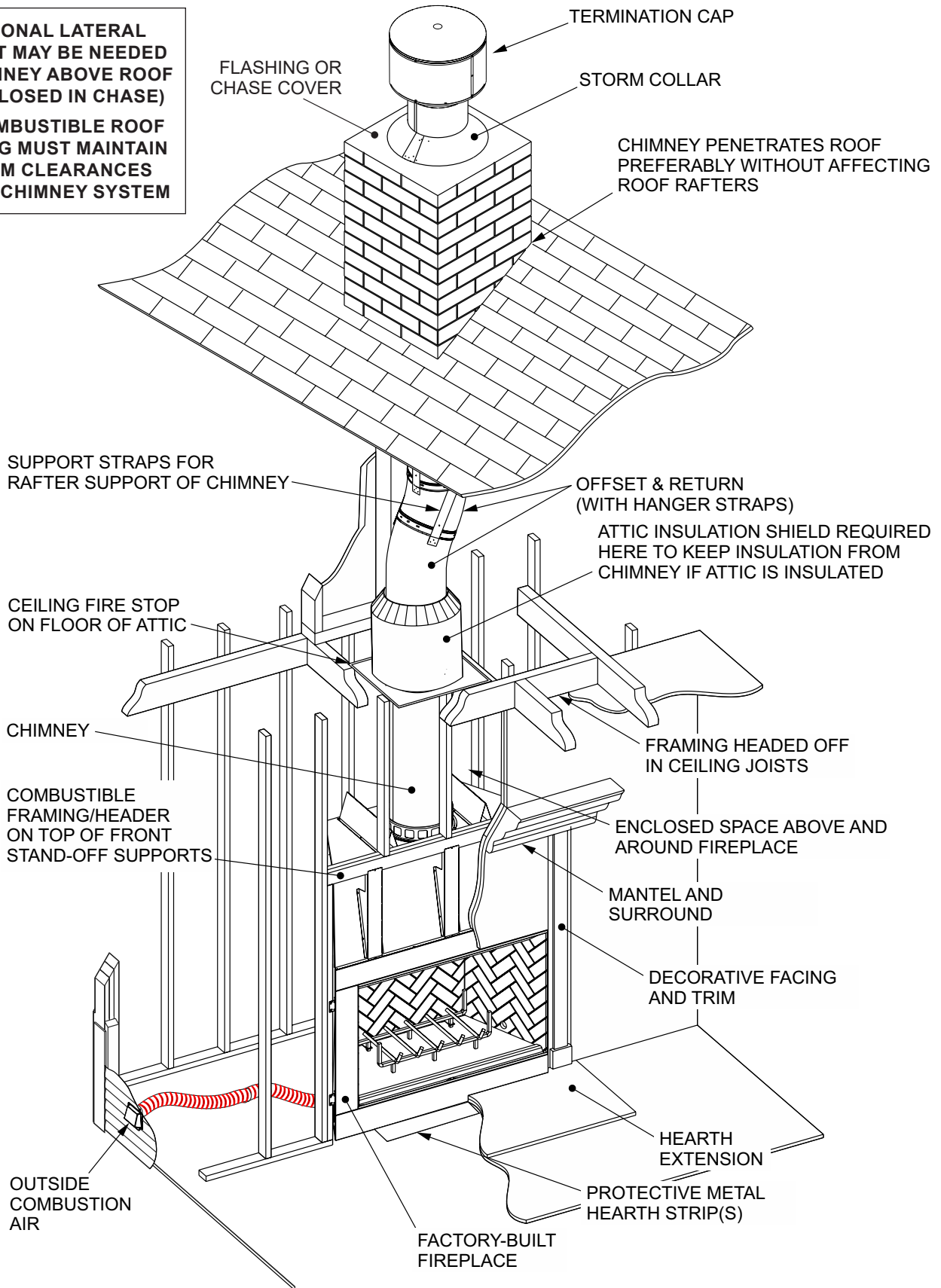


Figure 1

GET STARTED (CONT'D)

INSTALLATION CONSIDERATIONS

NOTICE: Check building codes prior to installation.

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

Before Installing, Find The Following:

- Installation location.
- Vent system configuration.
- Gas supply piping.
- Electrical wiring.
- Framing and finishing details.

SELECTING FIREPLACE LOCATIONS

This fireplace can be used as a room divider or installed along a wall, across a corner or in an exterior chase. See Figure 2.

Avoid locating this fireplace in a basement. Locating it near frequently opened doors, central heat outlets or returns, or other locations of air movement can affect the performance.

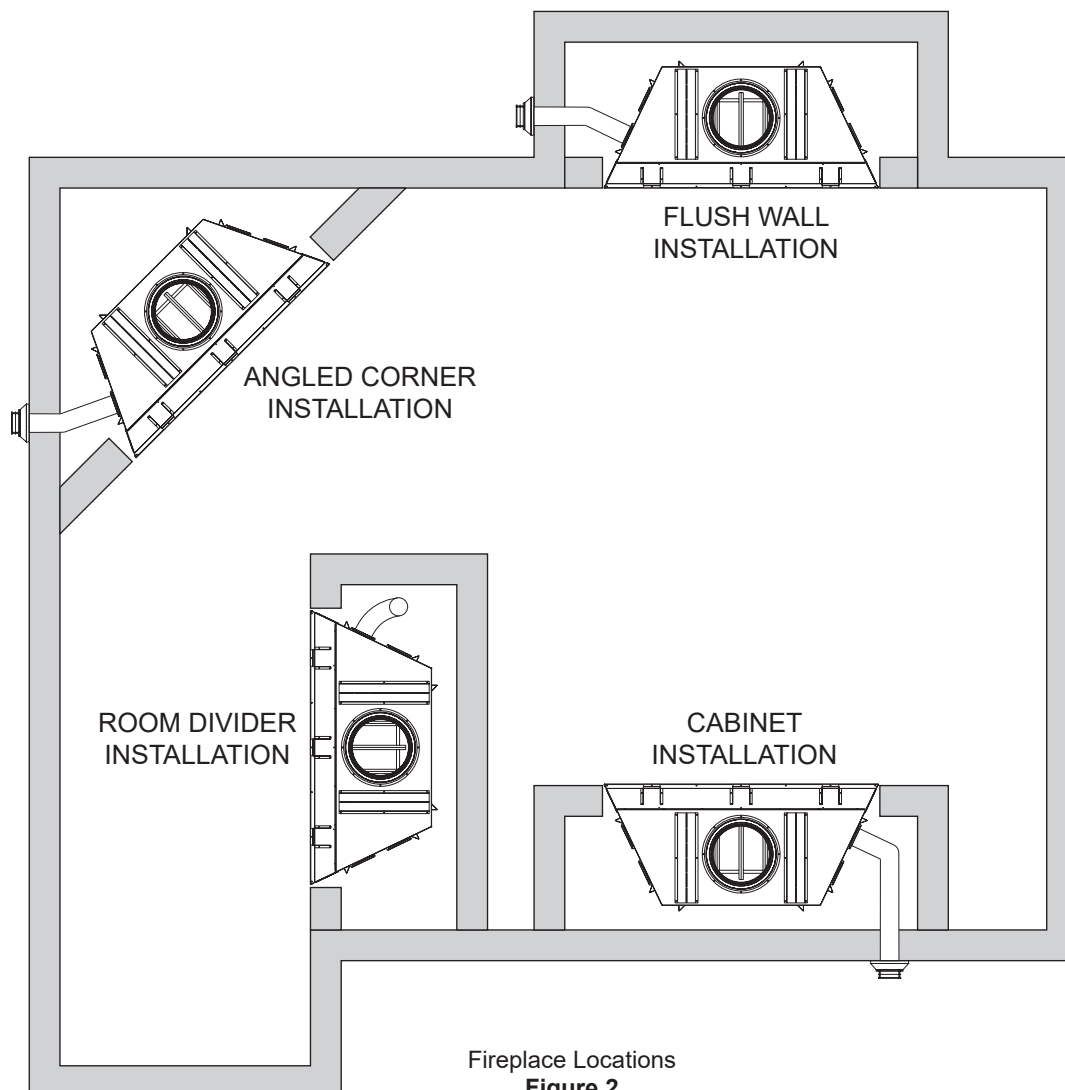
NOTICE: In addition to these framing dimensions, also reference the following section:

- Clearances. See page 12.

NOTICE: Illustrations and photos of typical installations are *For Design Purposes Only*. Illustrations/diagrams are not drawn to scale. Actual installation/appearance will vary with individual design preferences.

NOTICE: Maintain a minimum 1-1/2 in. (38 mm) air clearance at the back and a minimum 1-1/2 in. (38 mm) air clearance to the sides of the fireplace assembly.

Chimney sections at any level require a 2 in. (51 mm) minimum air space clearance between the framing and chimney sections.



NOTE: 1-1/2 in. (38 mm) MIN. DISTANCE FROM SIDES AND BACK OF FIREPLACE TO COMBUSTIBLE MATERIALS. 1/2 in. (13 mm) MIN. AT NAILING FLANGES.

*8 in. (203 mm) EXTRA SPACE INCLUDED (LEFT SIDE) FOR OUTSIDE AIR CONNECTION. IF OUTSIDE AIR DUCT HAS NO BEND, THIS DIMENSION MAY BE REDUCED AS LONG AS MINIMUM CLEARANCES ARE MET.

Fireplace Locations
Figure 2

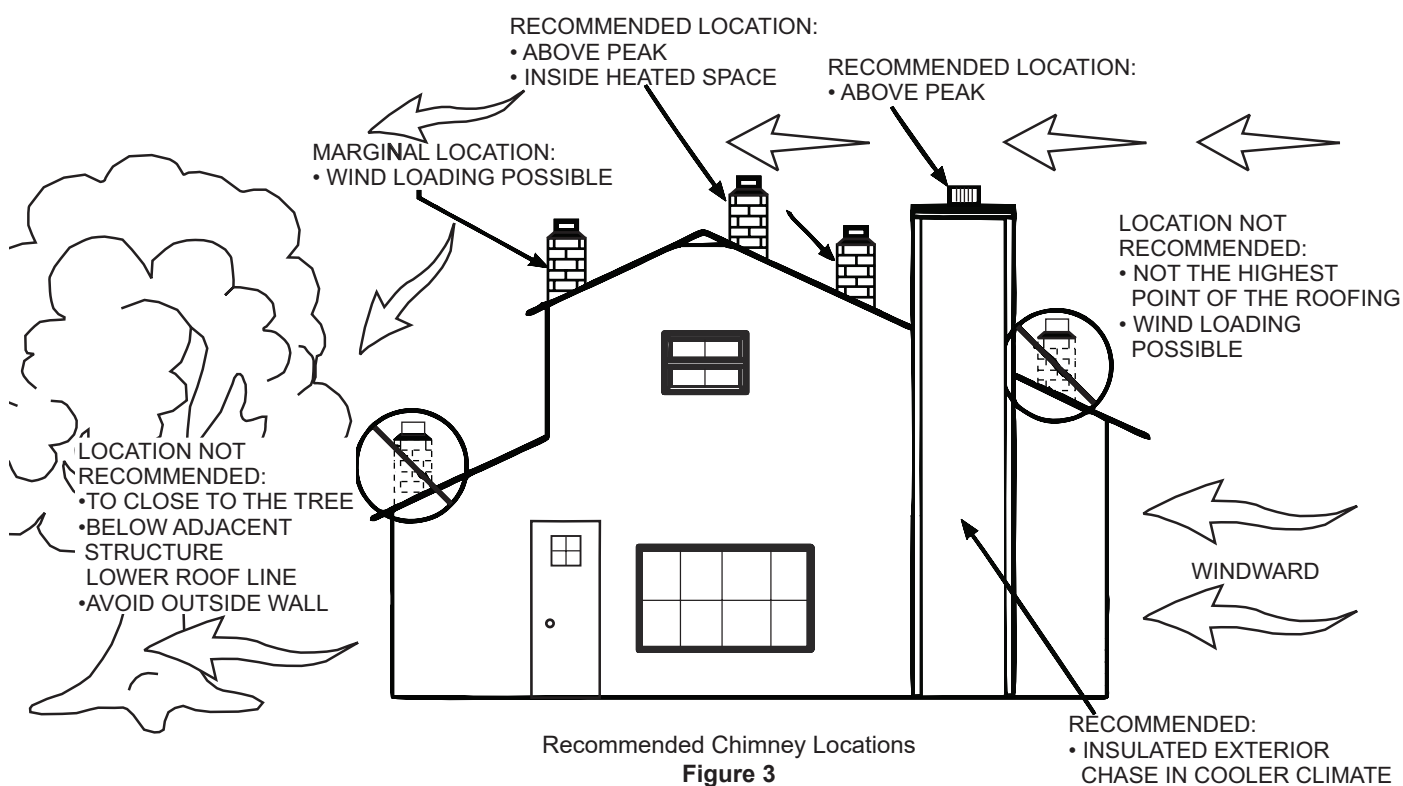
GET STARTED (CONT'D)

LOCATING FIREPLACE AND CHIMNEY

Location of the Fireplace and Chimney Will Affect Performance.

- Install in the warm airspace enclosed by the building envelope to produce more draft, especially during lighting and die-down.
- Penetrate the highest part of the roof to minimize wind loading effects.
- Locate termination cap away from trees, adjacent structures, uneven roof lines and other obstructions.
- Minimize the use of chimney offsets.
- Consider the fireplace location compared to floor, ceiling, and attic joists.
- Consider the termination requirements. See page 20.
- Install the outside air kit with the intake facing prevailing winds during the heating season.
- Ensure adequate outdoor air for all combustion appliances and exhaust equipment.
- Ensure furnace and air conditioning return vents are not located in the immediate vicinity of the fireplace.
- Avoid installing the fireplace near doors, walkways or small isolated spaces.
- Recessed lighting should be a "sealed can" design.
- Attic hatches should be weather stripped or sealed.
- Ensure all attic-mounted duct work and air handler joints and seams are taped or sealed.

MULTI-LEVEL ROOFS



GET STARTED (CONT'D)

TOOLS AND SUPPLIES NEEDED

Ensure the following tools and supplies are available:

- Gloves
- Safety glasses
- Reciprocating saw
- Pliers
- Hammer
- Phillips screwdriver
- Flat blade screwdriver
- Plumb line
- Level
- 5/16 in. (8 mm) nut driver
- Framing material
- Non-combustible sealant
- Framing square
- Electric drill and bits
- Tape measure
- 1/2-3/4 in. (13 mm-19 mm) length, #6 or #8 self-drilling screws, misc. screws and nails

INSPECT FIREPLACE AND COMPONENTS

Steps For Inspection:

WARNING

RISK OF FIRE AND/OR EXPLOSION! Damaged parts could impair safe operation. DO NOT install damaged, incomplete or substitute components. Keep fireplace dry.

- Unpack fireplace and components and inspect for damage.
- Inspect vent system components and doors shipped in separate packages.
- Report any parts damaged in shipment to your dealer.
- Read all instructions before starting the installation. Follow instructions during installation to ensure maximum safety and performance.

HARDWARE PACK:

- SS self-drilling #10 x 1/2 in. screws (6)
- #10 x 1/2 in. sheet metal screws (20)
- Framing brackets (4)
- Concrete liner brackets (3)
- Grate retainer brackets (2)

FIREPLACE SYSTEM REQUIREMENTS

Fireplace system requirements include:

- **Fireplace**
 - Refractory brick liners
 - Firescreen (included with fireplace)
 - Grate (included with fireplace)
 - Hearth extension (required, and sold separately)
- **Outside Air System**
 - 4 in. (102 mm) Dia. flex (optional, and sold separately)
 - WBOAK (optional, and sold separately)
- **Chimney System**
 - Attic insulation shield (included with fireplace)
 - Chimney termination cap (required, and sold separately)
 - Chimney venting sections and firestops (sold separately)
- **Non-Combustible Finish Material**
 - (Required, and sold separately)

FIREPLACE DIMENSIONS

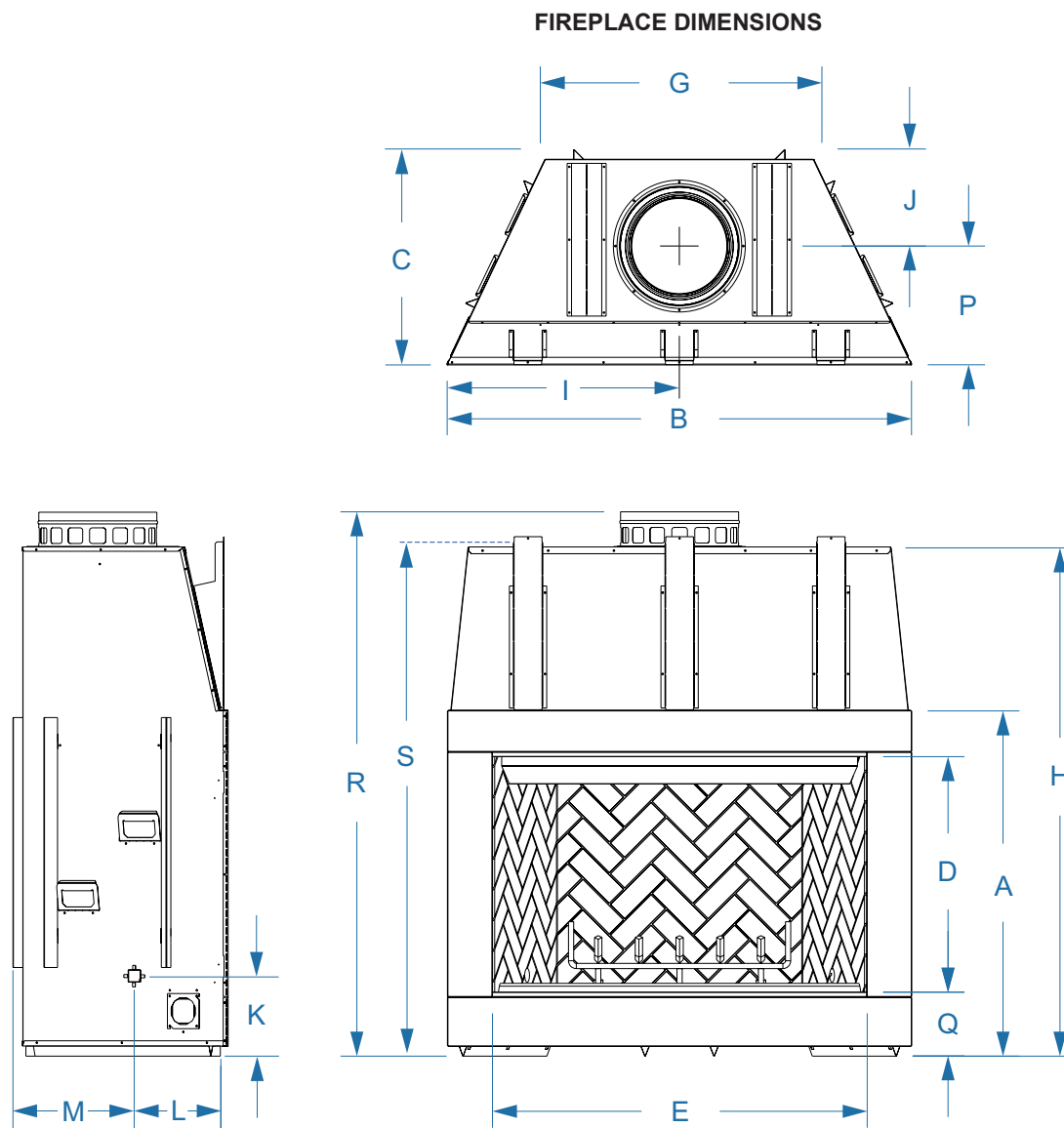
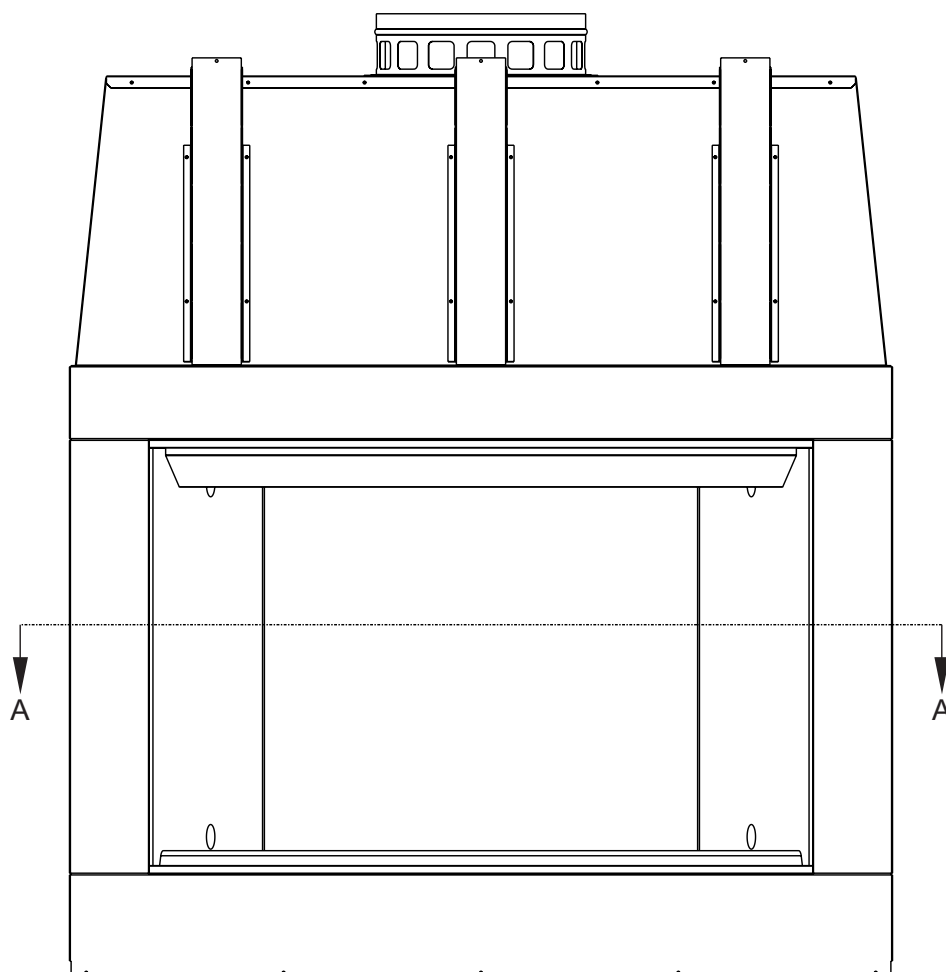
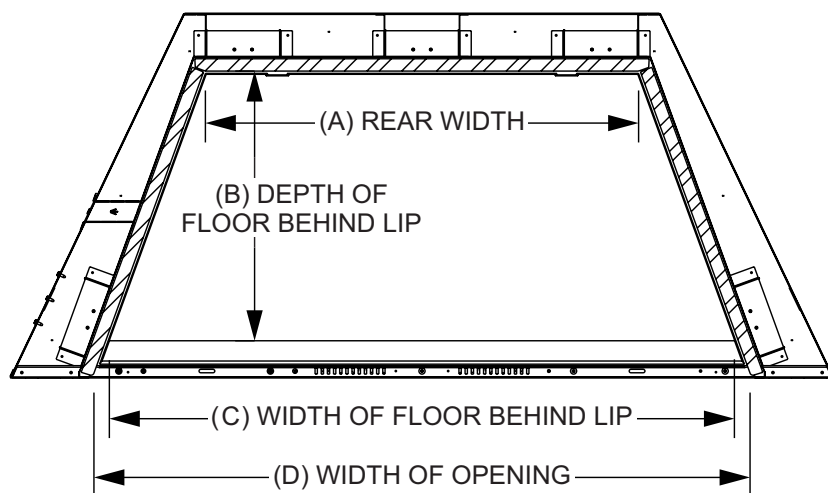


Figure 4

DIMENSION MEASUREMENTS							
Index	Description	in.	mm	Index	Description	in.	mm
A	Face Height	49 ¹³ / ₁₆	1265	J	Rear Wall To Center Of Vent	13 ⁷ / ₈	352
B	Face Width	66 ⁷ / ₈	1699	K	Floor To Gas Line Opening	11 ⁵ / ₈	295
C	Fireplace Depth	31	787	L	Face To Gas Line Opening	13 ¹ / ₂	343
D	Firebox Opening Height	34	864	M	Rear Wall To Gas Line Opening	17 ¹ / ₂	445
E	Firebox Opening Width	54	1372	P	Face To Center Of Vent	17 ¹ / ₈	435
F	Firebox Depth	25	635	Q	Floor To Firebox Opening	9 ³ / ₁₆	233
G	Fireplace Rear Width	40 ⁷ / ₁₆	1027	R	Height To Adapter Collar	78 ⁷ / ₁₆	1992
H	Fireplace Height	73 ³ / ₈	1864	S	Height To Framing Header	74 ¹ / ₈	1883
I	Face Side To Center Of Vent	33 ⁷ / ₁₆	849	-	-	-	-

FIREBOX DIMENSIONS

SECTION A-A



54" - DIMENSIONS

A	35-7/16"	C	51-1/4"
B	21-3/4"	D	53-1/2"

FRAMING AND CLEARANCES

CLEARANCES

⚠ WARNING

RISK OF FIRE!

Comply with all minimum air space clearances to combustibles as specified in table on right and shown in **Figures 5 and 6**. DO NOT pack required air spaces with insulation or other materials. Framing or finishing material used on the front of, or in front of, the fireplace closer than the minimums listed must be constructed entirely of non-combustible materials (e.g., steel studs, concrete board). Non-compliance can cause fire.

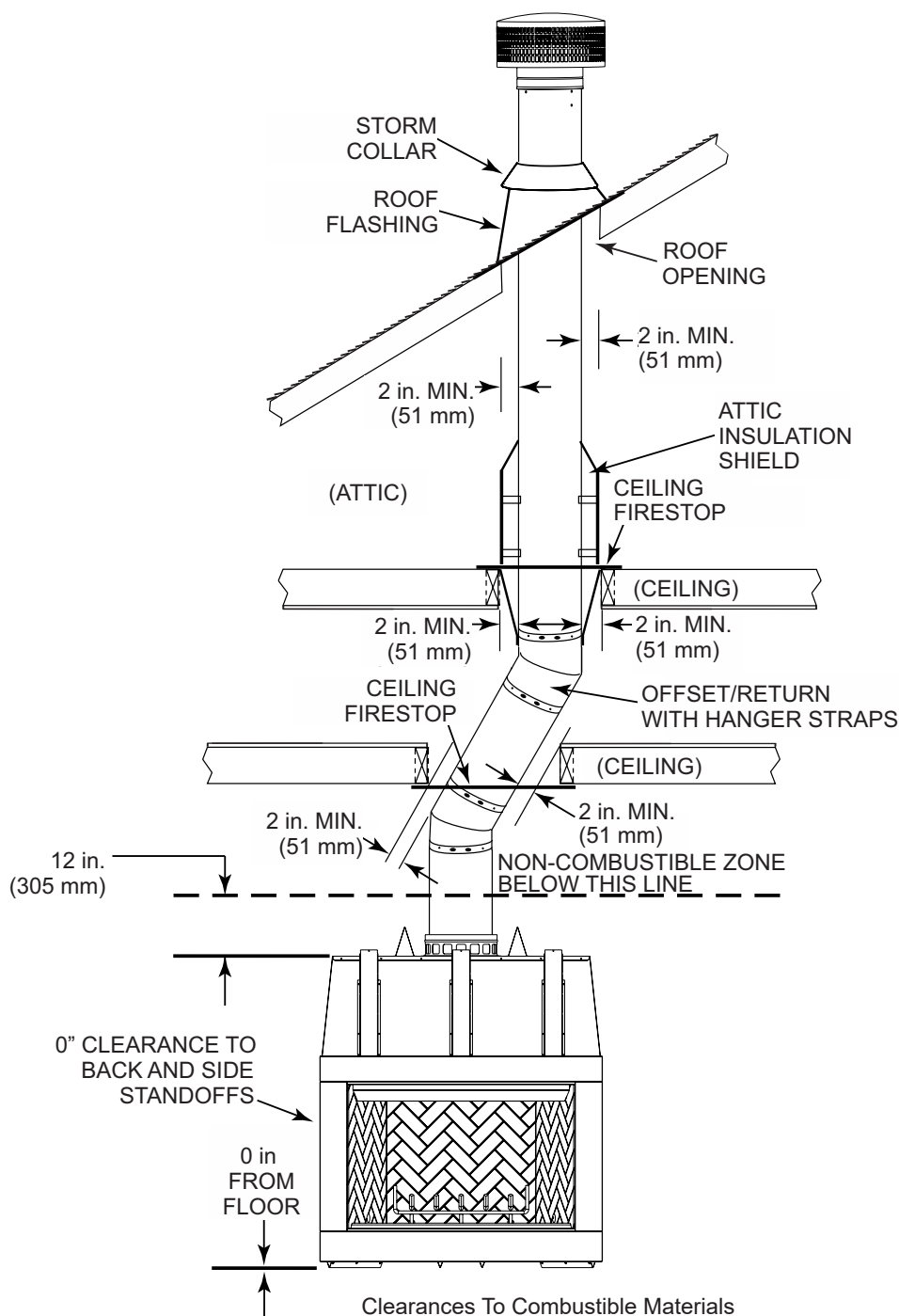
MINIMUM CLEARANCES TO COMBUSTIBLES

Within Enclosure Area

Fireplace to back wall	1-1/2 in. (38 mm)
Fireplace to sidewall	1-1/2 in. (38 mm)
Header brackets to header	0 in. (0 mm)
Opening to sidewall	24 in. (610 mm)

Mantel

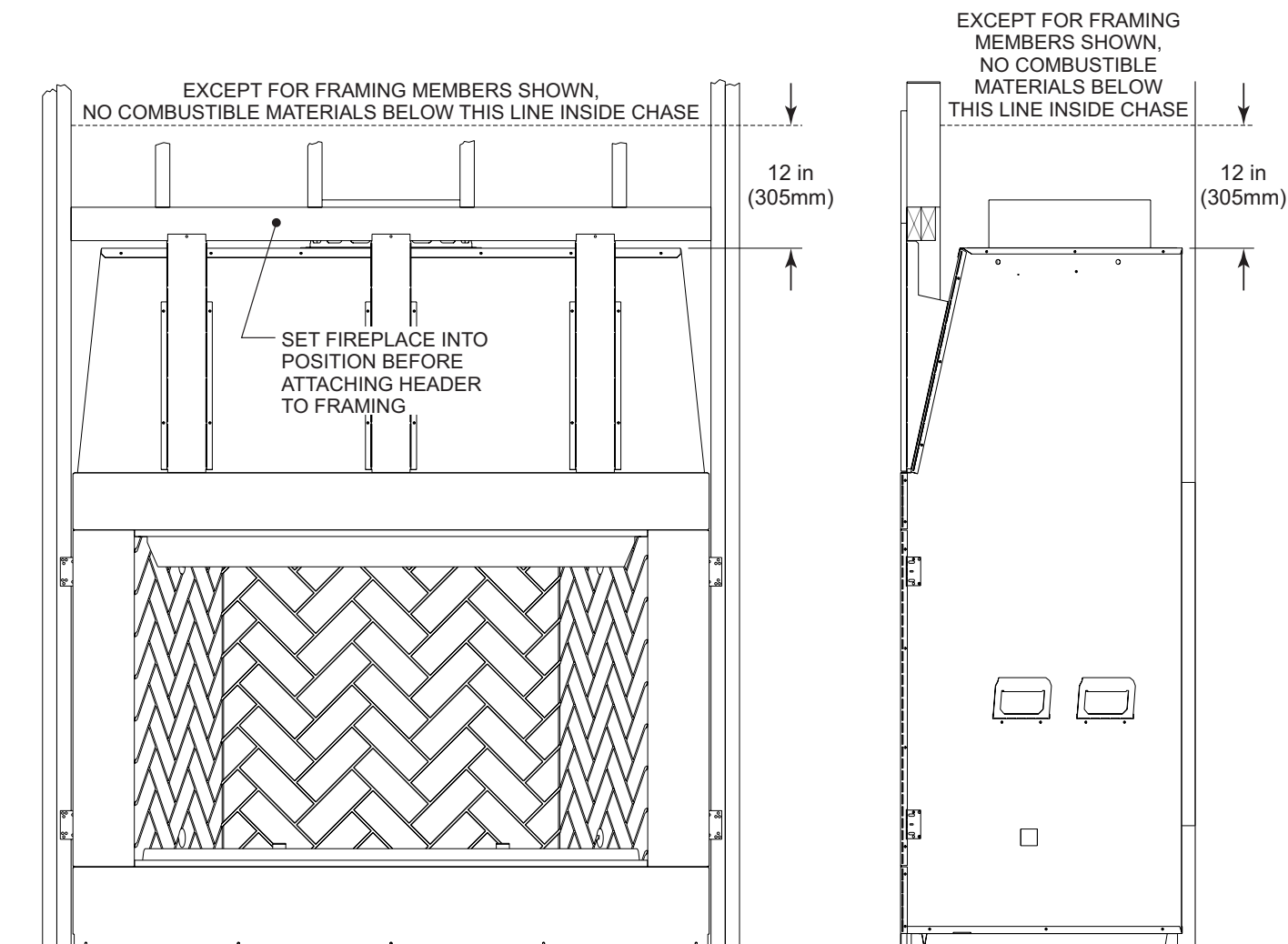
Mantel minimum height	18 in. (457 mm) above opening
Maximum mantel depth	10 in. (254 mm)



Clearances To Combustible Materials

Figure 5

FRAMING AND CLEARANCES (CONT'D)



Clearances To Combustible Materials
Figure 6

FRAMING AND CLEARANCES (CONT'D)

CHASE CONSTRUCTION

A chase is a vertical boxlike structure built to enclose the fireplace and/or its vent system. Vertical chimneys that run on the outside of a building must be installed inside a chase.

In cold climates, Empire Comfort Systems recommends that the chase is insulated using batt-type insulation between the joists.

Chase construction will vary by building type. These instructions are not substitutes for local building codes.

Chases should be constructed similarly to outside walls of the home to prevent air drafting issues. The chase should not break the outside building envelope. All outer walls must be insulated.

Insulate walls, ceiling, base plate, and cantilever floor at the first level of the chase. **See Figures 7 and 8.** Install vapor and air infiltration barriers in the chase following regional codes for the rest of the home. Empire Comfort Systems recommends that the inside surfaces are drywalled and taped (or the equivalent method) for air tightness.

Caulk holes and other openings with high temperature caulk, or fill with unfaced fiber glass insulation.

⚠ WARNING

You must install false ceilings and ceiling firestops at each floor of the chase or every 10 ft. (3.05 m) to control spread of fire.

⚠ WARNING

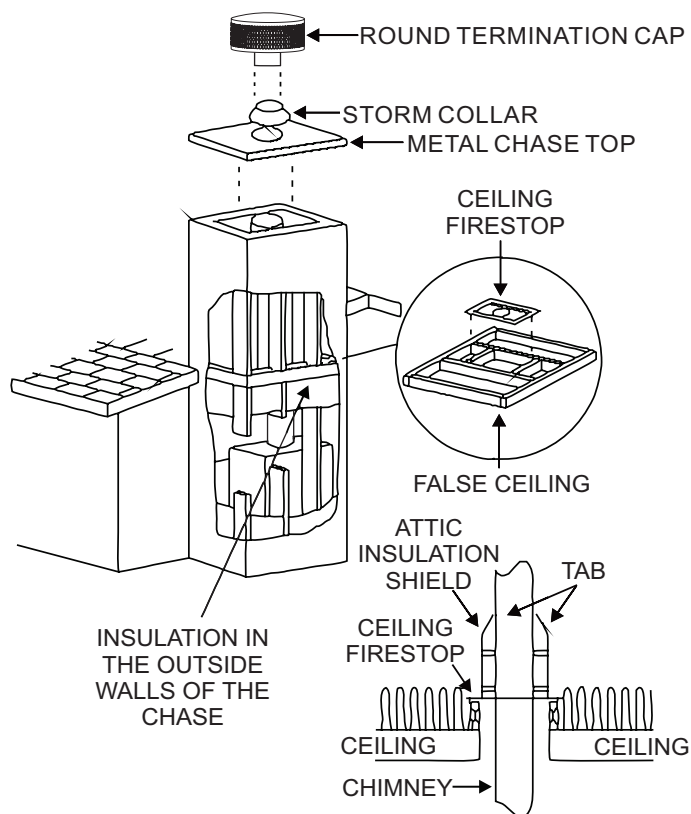
RISK OF FIRE! DO NOT seal area between fire stop opening and chimney pipe except where they enter the attic or leave the warm air envelope of the home (use 600° F sealant).

- Construct the chase using framing materials like the walls in the home, various siding materials can be used including brick, stone, veneer, or standard siding materials.
- In chase construction, several factors must be considered:
 - Maintain a 2 in. (51 mm) air space around the chimney.
 - Construct the chase top of non-combustible material.
 - In cold climates, install a firestop spacer and attic insulation shield in an insulated false ceiling at the 8 ft. (2438 mm) level above the fireplace assembly, reducing heat loss through the chase.

⚠ WARNING

RISK OF FIRE! You must maintain a minimum 2 in. (51 mm) air space clearance to insulation and other materials surrounding the chimney system.

- Firmly secure insulation and other materials to prevent accidental contact with chimney system.
- Properly block the chase to prevent blown insulation or other combustibles from entering and making contact with fireplace or chimney.
- Failure to prevent contact between insulation or other materials and chimney system may cause overheating and fire.



Chase Assembly - Figure 7

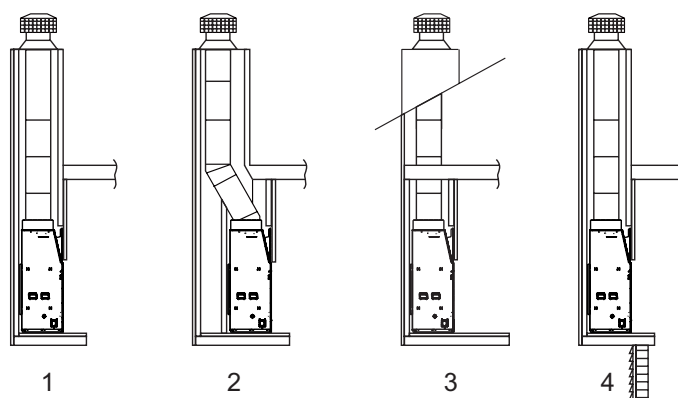
⚠ WARNING

RISK OF FIRE! You must maintain a minimum 2 in. (51 mm) air space clearance to insulation and other materials surrounding the chimney system.

Figure 8 below shows three examples of chase construction applications:

- Fireplace and chimney enclosed in an exterior chase.
- Chimney offset through exterior wall and enclosed in chase.
- Chase constructed on roof.

INSULATE ALL OUTSIDE WALLS.



Chase Constructions - Figure 8

FRAMING AND CLEARANCES (CONT'D)

FRAME THE FIREPLACE

NOTE: Determine Hearth extension design before installation.

If the fireplace is placed on the floor the maximum height of a finished raised hearth is 9-3/16 in. (233 mm). For a higher raised hearth the fireplace must be placed on a platform.

⚠ WARNING

RISK OF FIRE! Comply with all minimum clearances specified.

- Maintain a minimum 1-1/2 in. (38 mm) air clearance at the back and 1-1/2 in. (38 mm) to the sides of the fireplace assembly.
- Chimney sections at any level require a 2 in. (51 mm) minimum air space clearance between the framing and chimney section.

⚠ WARNING

RISK OF FIRE! You must comply with all minimum air space clearances to combustibles. DO NOT pack required air spaces with insulation or other materials.

Figure 9 shows a typical framing (using 2 x 4 lumber), assuming combustible materials are used. Adhere to all required clearances to combustibles around the fireplace. See Figures 6 and 9.

The finished cavity depth must be no less than 31 in. (787 mm) from the finished back wall to the front wall framing surface.

DO NOT install header until the fireplace is in position.

NOTE: Before framing the chase, identify any obstacles in the way. It may be necessary to make the chase larger for offsets. Refer to offset chart on page 20.

⚠ CAUTION

Risk of Cuts/Abrasions. Wear protective gloves and safety glasses during installation. Sheet metal edges are sharp.

SECURE AND LEVEL THE FIREPLACE

This fireplace can be placed on either a combustible or non-combustible continuous flat surface. Follow the instructions for framing on pages 11-17. Slide the fireplace into position. Ensure you provide the minimum 1-1/2 in. (38 mm) air clearance at the sides and 1-1/2 in. (38 mm) at the back of the fireplace.

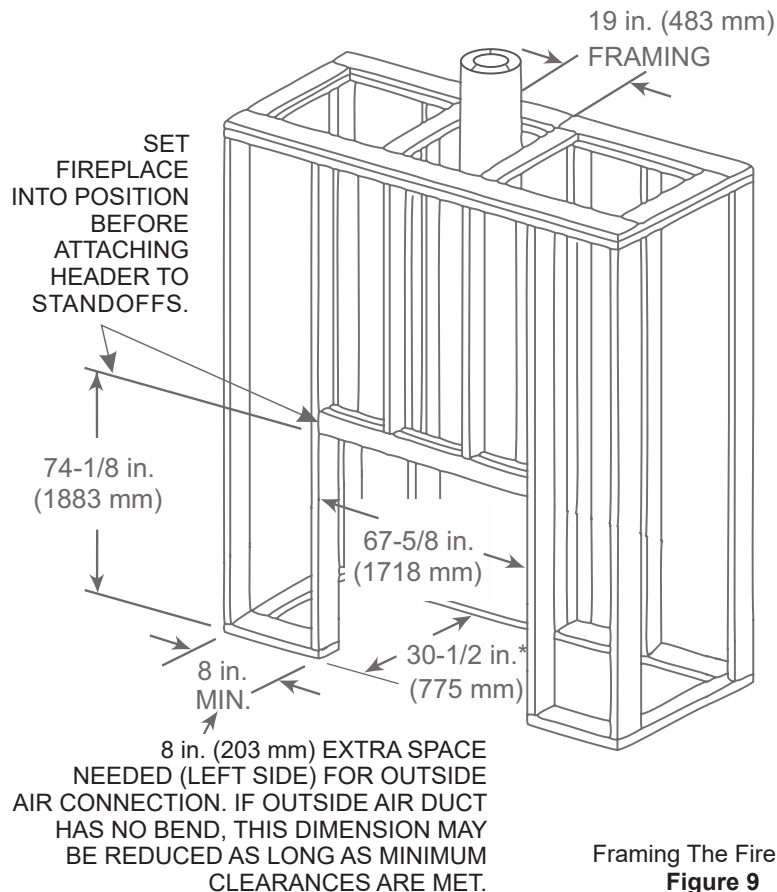
Position the fireplace so the face of the non-combustible material on the fireplace will be flush with the face of the drywall on the walls.

Level the fireplace and shim as needed.

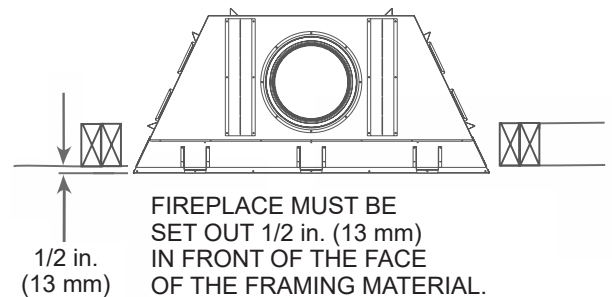
⚠ WARNING

RISK OF FIRE! Prevent contact with sagging, loose insulation.

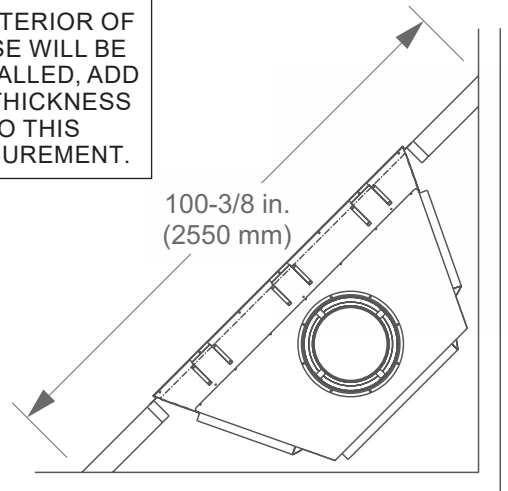
- DO NOT install against vapor barriers or exposed insulation.
- Secure insulation and vapor barriers.
- Provide minimum air space clearances at the sides and back of the fireplace assembly.



Framing The Fireplace
Figure 9



* IF INTERIOR OF CHASE WILL BE DRYWALLED, ADD THE THICKNESS TO THIS MEASUREMENT.



FRAMING AND CLEARANCES (CONT'D)

PROTECTIVE METAL HEARTH STRIPS

⚠ WARNING

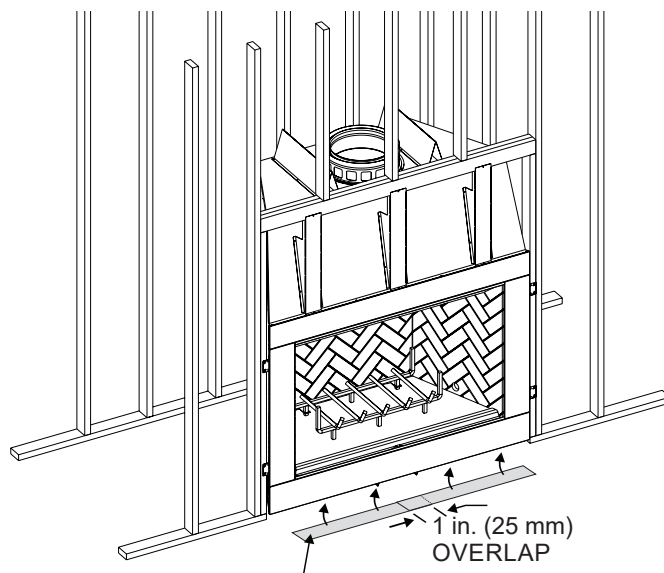
RISK OF FIRE! Protective metal hearth strips **MUST** be installed on combustible surfaces. **DO NOT** cover metal strips with combustible materials.

⚠ WARNING

RISK OF FIRE! High temperatures, sparks, embers or other burning material falling from the fireplace may ignite flooring or concealed combustible surfaces.

Sparks or embers may ignite flooring.

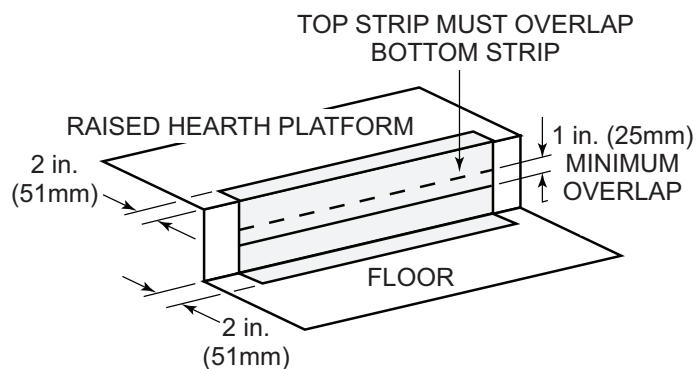
- Protective metal hearth strips **MUST** be installed.
- Locate the two protective metal hearth strips measuring approximately 38 in. x 4 in. (965 mm x 102 mm) included.
- Slide each metal strip 2 in. (51 mm) under front edge of fireplace.
- Overlap strips in the middle of fireplace opening by 1 in. (25 mm) minimum.
- Metal strips must extend beyond the front and sides of the fireplace opening by at least 2 in. (51 mm). **See Figure 10.**
- Protect the front of a platform elevated above the hearth extension with metal strips. **See Figure 11.** See pages 31 through 33 for hearth extension instructions.
- Install hearth extensions as specified.



PROTECTIVE METAL STRIPS ARE PLACED 2 in. (51 mm) UNDER THE FRONT OF THE FIREPLACE AND MUST EXTEND BEYOND THE FRONT AND SIDES OF FIREPLACE OPENING BY 2 in. (51 mm).

Position The Protective Metal Hearth Strips

Figure 10



Protect The Front Of A Raised Platform

Figure 11

FRAMING AND CLEARANCES (CONT'D)

OUTSIDE AIR KIT

Use one outside air kit (WBOAK, not supplied) for combustion. Empire Comfort Systems recommends using the shortest duct runs to optimize performance of the outside air kits and install a P-trap. **See Figure 14.** Position the outside air inlet hoods so they will not allow snow or leaves to block the inlets.

In some installations the air duct may need to run vertically. In vertical installations, a 3 ft. (914 mm) height difference must be maintained from the top of the uppermost chimney section to the outside air inlet hoods.

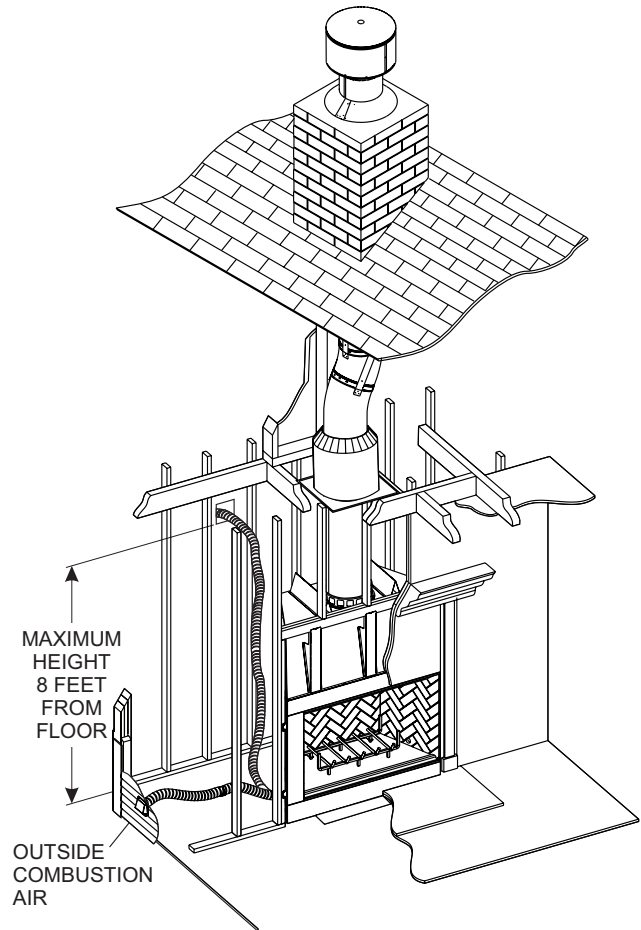
The 4 in. (102 mm) diameter outside air flex duct used must meet the UL 181-UL Standard for Safety Factory-Made Air Ducts and Air Connectors.

NOTE: The maximum length of a 4 in. (102 mm) diameter duct is 20 ft. (6.1 m). The duct can be extended up to a maximum of 40 ft. (12.2 m) by using 6 in. (152 mm) duct. A 4 in. (102 mm) to 6 in. (152 mm) adapter will be needed. (not included).

Figures 12 and 13 show placing of the outside air inlet hoods.

The outside air duct is attached to the left side of the fireplace.

1. Cut 4-1/2 in. (114 mm) holes in outside wall to accommodate the outside air flex vent.
2. Use 4 in. (102 mm) flex (not included) to directly connect outside air to fireplace intake. Insulate the pipe to prevent frost condensation.
3. Use the supplied outside air inlet hoods included with outside air kit (WBOAK).
4. Seal between the wall and the pipe with (not included) silicone to prevent moisture penetration and air leaks.
5. Seal between the outside air inlet hoods and the house with silicone to prevent air infiltration.

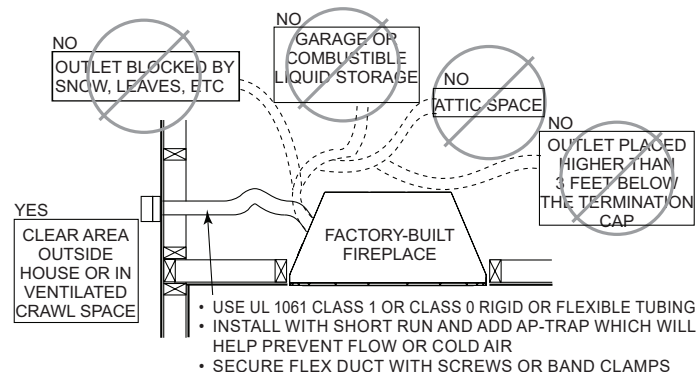


Outside Air Hood Locations - Figure 13

CAUTION

RISK OF FIRE OR ASPHYXIATION! DO NOT draw outside combustion air from wall, floor or ceiling cavity, or enclosed spaces such as an attic or garage.

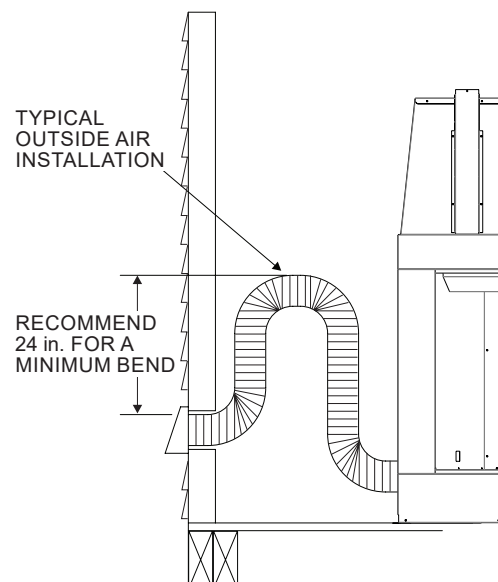
6. DO NOT place outside air inlet hood close to exhaust vents or chimneys. Fumes or odor can be drawn into the room through the fireplace.
7. Locate outside air inlet hood to prevent blockage from leaves, snow/ice, or other debris. Blockages can cause combustion air starvation.



Outside Air Installation - Figure 12

CAUTION

Risk of Cuts/Abrasions. Wear protective gloves and safety glasses during installation. Sheet metal edges are sharp.



Outside Air Installation With P-Trap - Figure 14

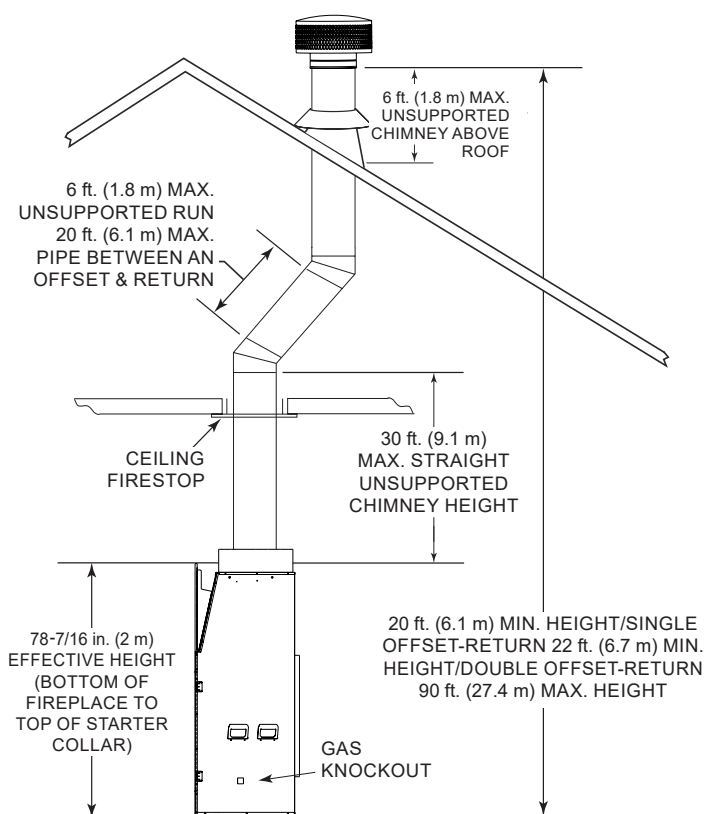
CHIMNEY AND TERMINATION REQUIREMENTS

CHIMNEY REQUIREMENTS

Vertical distances are measured from the base of the fireplace as shown in **Figure 15**.

CHIMNEY MEASUREMENT REQUIREMENTS		
Minimum overall straight height	20 ft.	6.1 m
Minimum height with single offset/return	20 ft.	6.1 m
Double offset/return minimum height	22 ft.	6.7 m
Maximum height	90 ft.	27.4 m
Maximum chimney length between an offset and return	20 ft.	6.1 m
Maximum distance between chimney stabilizers	35 ft.	10.7 m
Maximum unsupported chimney length between the offset and return	6 ft.	1.8 m
Maximum unsupported chimney height above the fireplace	30 ft.	9.1 m
Maximum unsupported chimney above roof	6 ft.	1.8 m

NOTICE: A maximum of two pairs of offsets and returns may be used.



Chimney Requirements - Figure 15

⚠ WARNING

RISK OF FIRE! You must maintain 2 in. (51 mm) air space clearance to insulation and other combustible materials around the chimney system. Failure to do so may cause overheating and fire.

NOTICE: Provide support for the pipe during construction and check to ensure inadvertent loading has not dislodged the chimney section from the fireplace or at any chimney joint.

CHIMNEY COMPONENT DIMENSIONS

HEIGHT OF CHIMNEY COMPONENTS		
OFFSETS/RETURNS**		
Model	Height Measurement	
WB12V15EK	14-1/2 in.	368 mm
WB12V30EK	16 in.	404 mm
CHIMNEY SECTIONS*		
Model	Height Measurement	
WB12V06	6 in.	152 mm
WB12V12	12 in.	305 mm
WB12V18	18 in.	457 mm
WB12V36	36 in.	914 mm
WB12V48	48 in.	1219 mm
INSULATED OFFSETS/RETURNS**		
Model	Height Measurement	
WBIN12V15EK	14-1/2 in.	368 mm
WBIN30V15EK	16 in.	404 mm
INSULATED CHIMNEY SECTIONS*		
Model	Height Measurement	
WBIN12V06	6 in.	152 mm
WBIN12V12	12 in.	305 mm
WBIN12V18	18 in.	457 mm
WBIN12V36	36 in.	914 mm
WBIN12V48	48 in.	1219 mm

* Dimensions reflect effective height

** Kit of Qty. (2)

CHIMNEY AND TERMINATION REQUIREMENTS (CONT'D)

OFFSETS/RETURNS

- Use an offset/return to bypass overhead obstructions.
- An offset and return can be used as a single entity or separated by chimney section(s).

⚠ WARNING

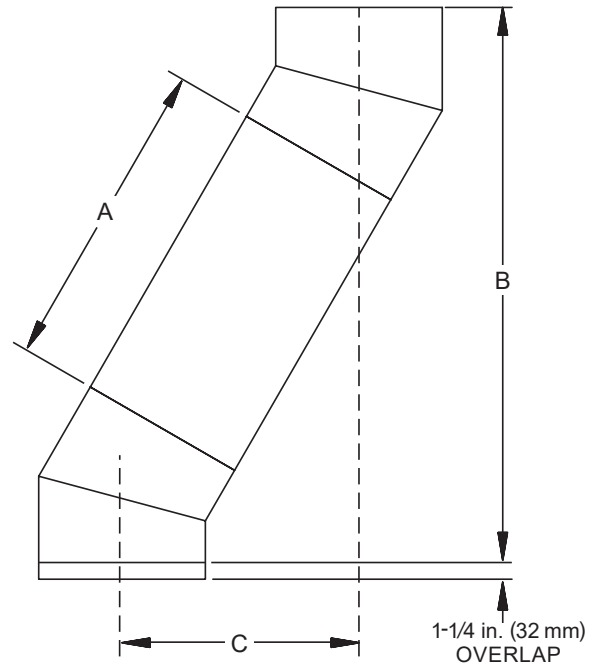
RISK OF FIRE! DO NOT use offset/returns greater than 30°. Chimney draft will be restricted and could cause overheating and fire. Secure offsets with screws (not to exceed 1/2" / 13 mm in length) Secure returns with strapping. Straight chimney sections may be secured with screws. Keep chimney sections from separating or twisting.

- Measure the shift needed to avoid the overhead obstruction. Refer to **Dimension C** in **Figure 16**.
- Find the appropriate **Dimension C** listed in below **Offset Dimensions** table. The **Dimension B** coinciding with the **Dimension A** measurement in below **Offset Dimensions** table represents the required vertical clearance needed to complete the offset/return.
- Read across the chart to find the number of chimney sections/ model numbers needed between the offset and return.

EXAMPLE:

Using the 30 degree offset chart, **Dimension C** from **Figure 16** is 25 in. (635 mm). Using below **Offset Dimensions** table the dimension closest to, but not less than 25 in. (635 mm) is 28-5/8 in. (727 mm) using a 30° offset/return.

You determined from the table that you would need 62-1/8 in. (1578 mm) **Dimension B** between the offset and return. The chimney component that best fits your application is one WB12V48.



Chimney Offset/Return - **Figure 16**

ELBOW OFFSET CHART											
15° OFFSETS						30° OFFSETS					
Elbow Angle	Quantity And Length A	Offset Vertical B		Offset Horizontal C		Elbow Angle	Quantity And Length A	Offset Vertical B		Offset Horizontal C	
		in.	mm	in.	mm			in.	mm	in.	mm
15°	0,0	23 1/8	587	2 7/8	73	30°	0,0	22	559	5 1/2	140
15°	1-6"	27 1/4	692	4	102	30°	1-6"	25 3/4	654	7 5/8	194
15°	1-12"	33	838	5 1/2	140	30°	1-12"	30 7/8	784	10 5/8	270
15°	1-18"	38 7/8	987	7	178	30°	1-18"	36 7/8	918	13 3/8	346
15°	1-18", 1-6"	43	1092	8 1/8	206	30°	1-18", 1-6"	39 3/4	1010	15 3/4	400
15°	1-18", 1-12"	48 3/4	1238	9 3/4	248	30°	1-18", 1-12"	45	1143	18 3/4	476
15°	1-36"	56 1/4	1429	11 3/4	298	30°	1-36"	51 3/4	1314	22 5/8	575
15°	1-36", 1-6"	60 3/8	1534	12 7/8	327	30°	1-36", 1-6"	55 3/8	1407	24 3/4	629
15°	1-48"	67 3/4	1721	14 7/8	378	30°	1-48"	62 1/8	1578	28 5/8	727
15°	1-48", 1-6"	71 7/8	1826	15 7/8	403	30°	1-48", 1-6"	65 3/4	1670	30 3/4	781
15°	1-48", 1-12"	77 3/4	1975	17 1/2	445	30°	1-48", 1-12"	71	1803	33 3/4	857
15°	1-48", 1-18"	83 1/2	2121	19	483	30°	1-48", 1-18"	76 1/8	1934	36 3/4	933
15°	2-36"	89 1/4	2267	20 5/8	524	30°	2-36"	81 3/8	2067	39 3/4	1010
15°	1-48", 1-18", 1-12"	93 3/8	2372	21 1/8	549	30°	1-48", 1-18", 1-12"	85	2159	41 7/8	1064
15°	1-48", 1-36"	100 7/8	2562	23 3/4	603	30°	1-48", 1-36"	91 3/4	2330	45 3/4	1162
15°	1-48", 1-36", 1-6"	105	2667	24 3/4	629	30°	1-48", 1-36", 1-6"	95 3/8	2423	47 7/8	1216
15°	2-48"	112 1/2	2858	26 3/4	679	30°	2-48"	102 1/8	2594	51 3/4	1314

Proper assembly of air cooled chimney parts results in an overlap of chimney joints of 1-1/4 in. (32 mm). Effective length is built into this table.

CHIMNEY AND TERMINATION REQUIREMENTS (CONT'D)

TERMINATION REQUIREMENTS

- Install a cap approved and listed for this fireplace system.
- Locate cap where it will not become plugged by snow or other materials.
- Locate cap away from trees or other structures.
- The bottom of the termination cap must be at least 3 ft. (.91 m) above the roof AND at least 2 ft. (.61 m) above any portion of roof within 10 ft. (3.05 m).
- The distance required between caps is shown below.

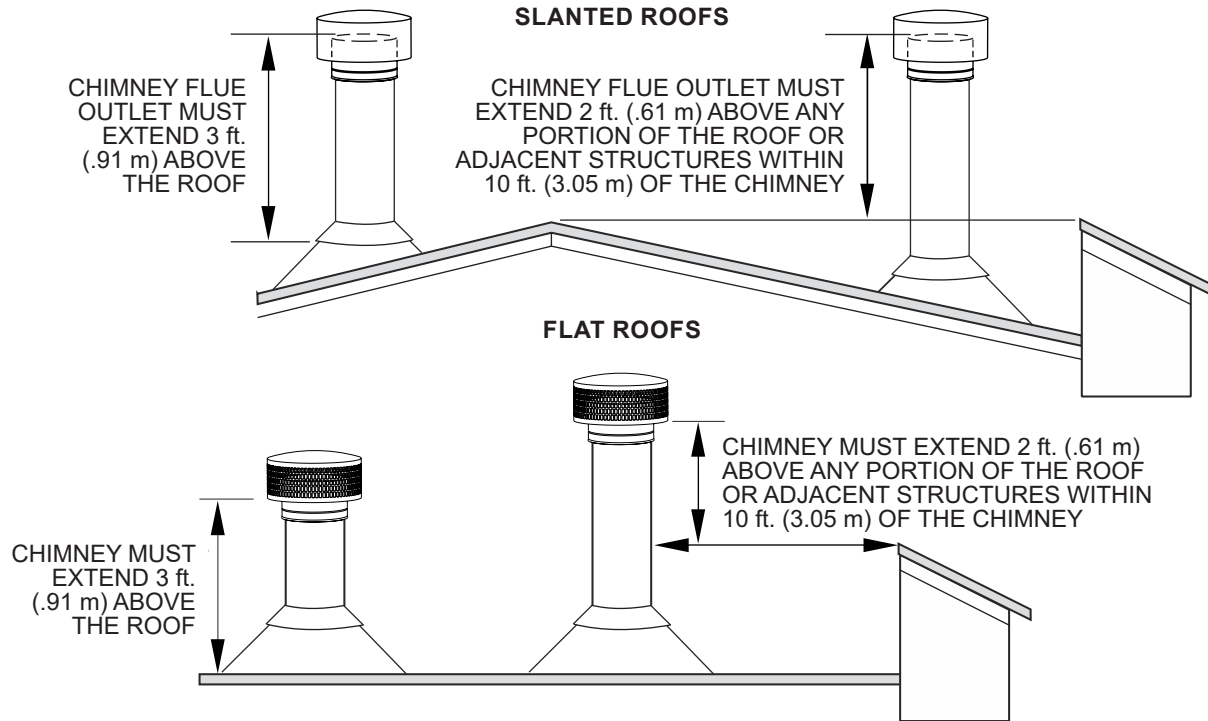
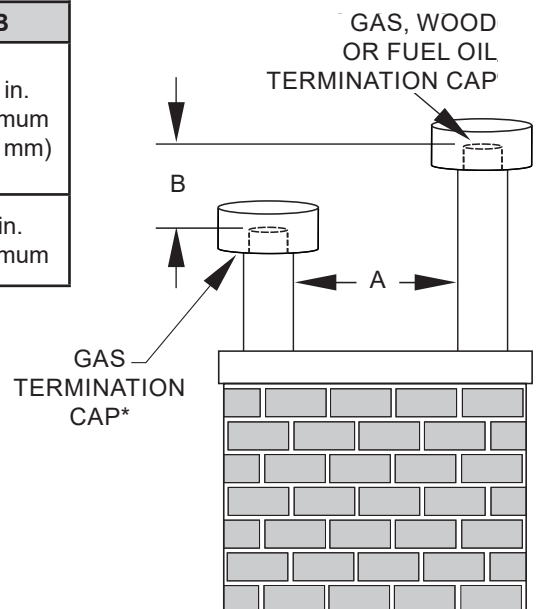


Figure 17

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

MULTIPLE CHIMNEY LOCATIONS



*IN A STAGGERED INSTALLATION WITH BOTH GAS AND WOOD TERMINATIONS, THE WOOD TERMINATION CAP FLUE OUTLET MUST BE HIGHER THAN THE GAS TERMINATION CAP FLUE OUTLET.

Figure 18

CHIMNEY COMPONENTS INSTALLATION

TYPICAL CHIMNEY SYSTEM

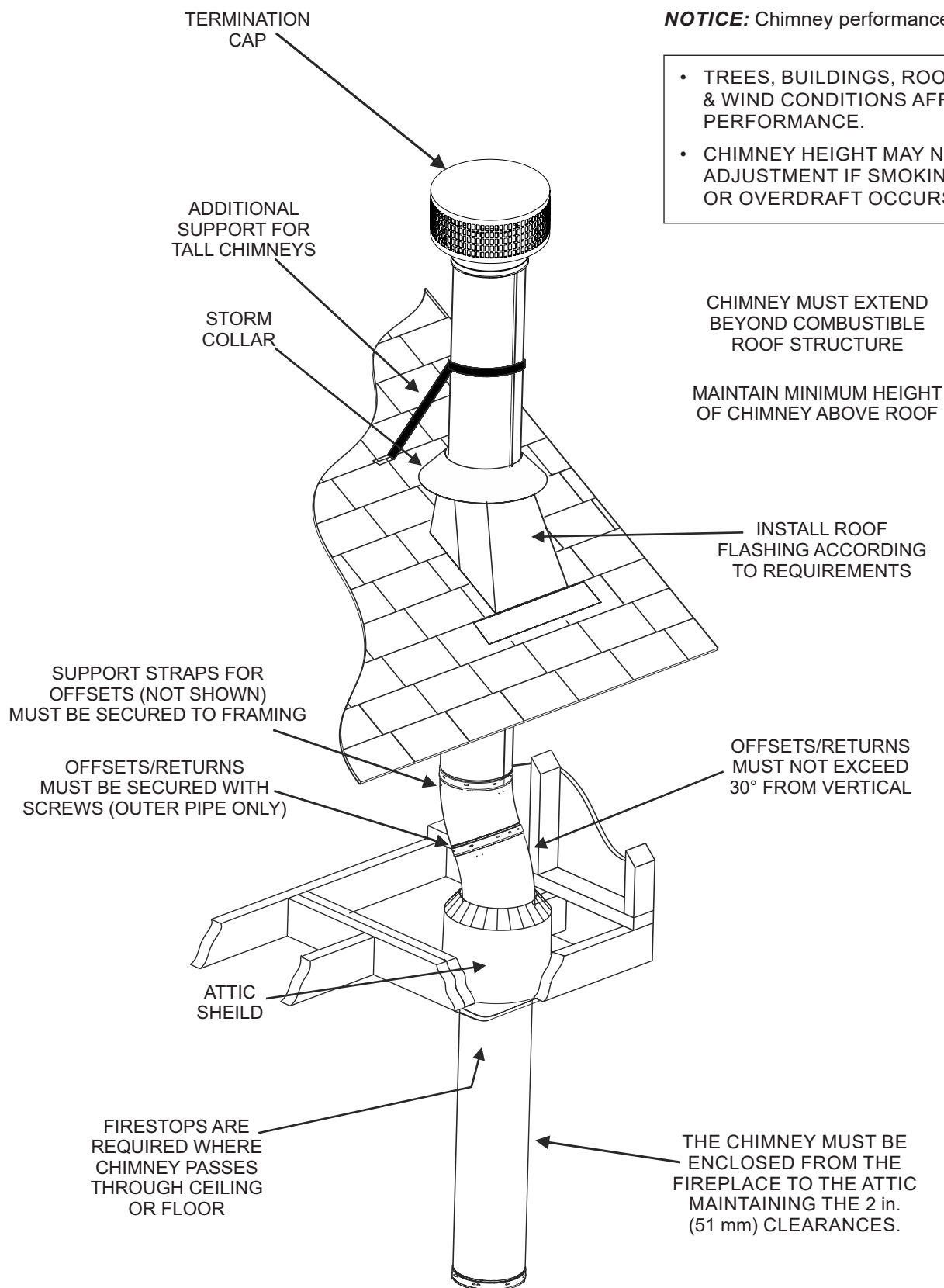


Figure 19

CHIMNEY COMPONENTS INSTALLATION (CONT'D)

ASSEMBLE CHIMNEY SECTIONS

Use only those components described in this manual. Substitute or damaged chimney components could impair safe operation and cause overheating and fire.

Attach either a straight chimney section or an offset to the top of the fireplace (depending on your installation requirement). Chimney sections are locked together by pushing downward until the top section meets the stop bead on the lower section.

The inner flue is placed to the inside of the flue section below it. The outer pipe is placed outside the outer pipe of the chimney section below it. **See Figure 20.**

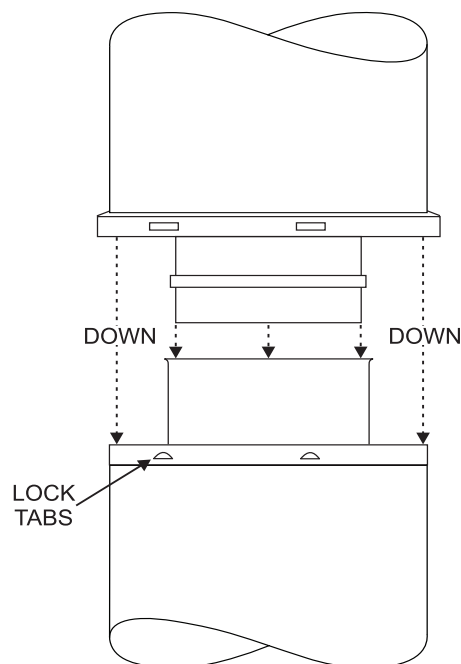
NOTE: Chimney sections cannot be disassembled once locked together.

- Lock chimney sections and/or offsets/returns together by aligning holes in lower pipe to the tabs in the upper pipe and pushing downward until the upper pipe meets the stop bead on the lower pipe.
- Pull on the top section to make sure it is fully engaged and will not separate.
- You may use either #6 or #8 sheet metal screws no longer than 1/2 in. (13 mm) to fasten chimney sections together. DO NOT penetrate the inner flue.

⚠ WARNING

RISK OF FIRE! You MUST use screws to fasten offset/returns to chimney sections to keep the chimney parts from twisting. Failure to do so could cause fire.

- Secure chimney returns with hanger straps (not provided); fasten to studs or joists.
- Vertical straight runs of chimney must be supported every 30 ft. (9.14 m).



Assembling Chimney Sections - Figure 20

⚠ WARNING

RISK OF FIRE! DO NOT install substitute or damaged chimney components.

CHIMNEY COMPONENTS INSTALLATION (CONT'D)

SECURE OFFSET/RETURN

When offsets and returns are joined to straight pipe sections, they must be locked into position with the screws (outer only). To prevent gravity from pulling the chimney sections apart, the returns and the chimney stabilizers have hanger straps for securing these parts to joists or rafters. See Figure 21.

To Assemble:

- Use either #6 or #8 sheet metal screw, no longer than 1/2 in. (13 mm).

⚠ WARNING

RISK OF FIRE!

- Secure offsets with screws (not to exceed 1/2 in./13 mm in length).
- Secure returns with strapping.
- Straight chimney sections may be secured with screw (not to exceed 1/2 in./13 mm in length) at the joints.
- Keep chimney sections from separating or twisting.

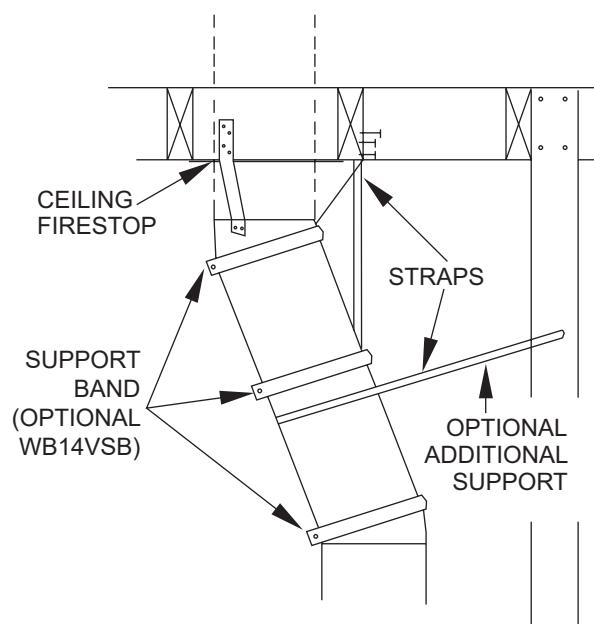


Figure 21

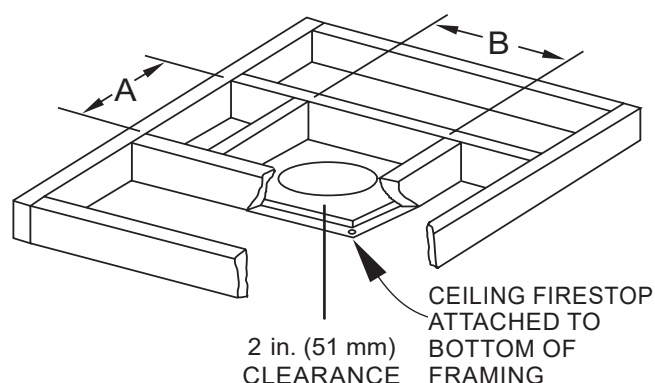
INSTALL CEILING FIRESTOPS

⚠ CAUTION

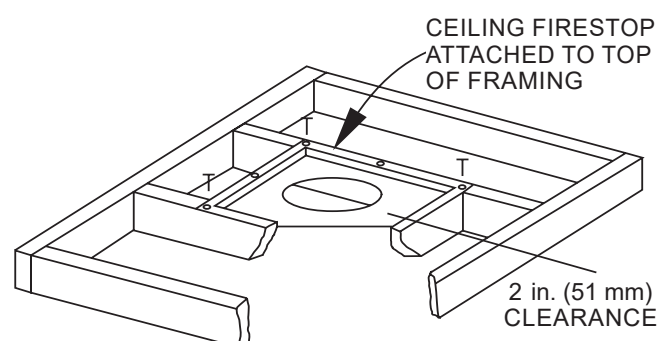
RISK OF FIRE! Ceiling firestops must be used whenever the chimney penetrates a ceiling/floor.

- Chase construction requires ceiling firestops at each floor or every 10 ft. (3.05 m) of clear space.
- The ceiling firestop slows spread of fire and reduces cold air infiltration.
- Install a ceiling firestop whenever chimney penetrates ceiling/floor.
- Mark and cut an opening in ceiling as shown in Figure 22.
- Frame the opening with the same size lumber used in the ceiling joists.
- Nail the ceiling firestop to the bottom of the ceiling joists when there is a room above.
- Use an attic insulation shield if the ceiling is insulated.
- The ceiling firestop may then be attached above or below the joists.

ROOM ABOVE (Non-Insulated Ceiling)



ATTIC ABOVE (Insulated Ceiling)



NOTE: Use same dimensional lumber for framing ceiling firestop and joists.

PART NUMBER	A		B	
	In.	mm	In.	mm
WB12VFS	19	483	19	483

Installing The Ceiling Firestop
Figure 22

⚠ WARNING

RISK OF FIRE! DO NOT seal area between firestop opening and chimney pipe except where they enter the attic or leave the warm air envelope of the home (use 600° F sealant).

CHIMNEY COMPONENTS INSTALLATION (CONT'D)

INSTALL ATTIC INSULATION SHIELD:

⚠ WARNING

RISK OF FIRE! You **MUST** install an attic insulation shield when there is any possibility of insulation or other combustible material coming into contact with the chimney.

- DO NOT pack insulation between the chimney and the attic insulation shield.
- Failure to keep insulation and other materials away from chimney pipe could cause fire.
- DO NOT offset chimney inside insulation shield.
- Combustible material may come in contact with the attic insulation shield as long as the required clearances are maintained to the chimney pipe.

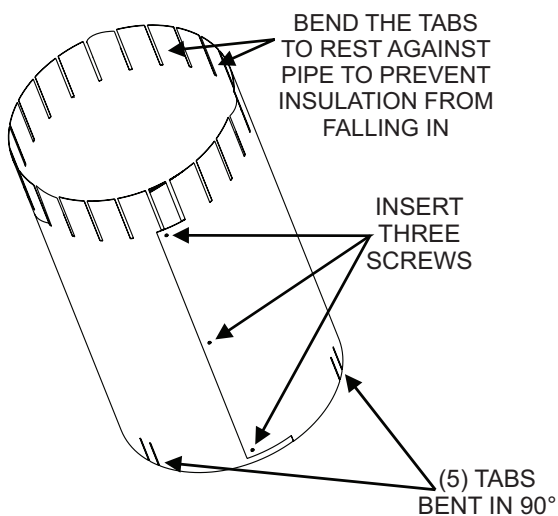
Installation Of A Required Attic Insulation Shield:

- Refer to **Figures 23, 24, and 25.**
- Roll it up to aid in wrapping it around the chimney.
- Wrap the shield around the chimney already installed until you have an overlap and the three holes on each side match up.
- Insert three screws into the matching holes to form a tube starting at the bottom.
- Bend all the tabs in at the top to 45°.
- Bend the tabs on the bottom inward to 90° to maintain chimney air space.
- Rest the insulation shield on the ceiling firestop below.
- Tape off any opening around the bottom.

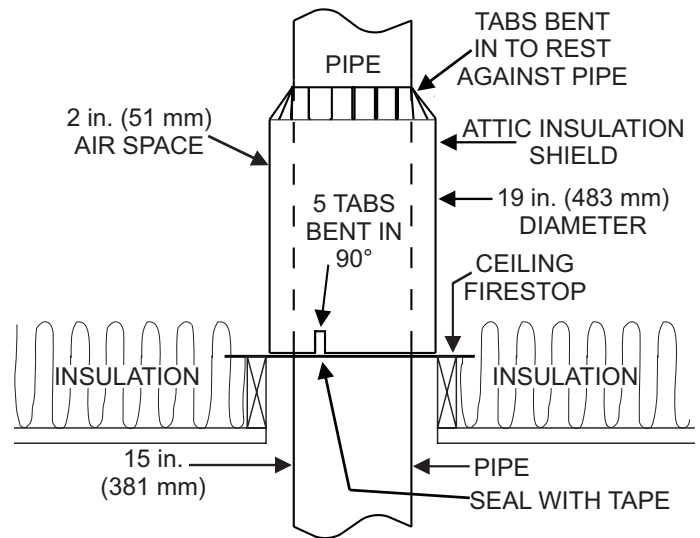
DOUBLE-CHECK THE CHIMNEY ASSEMBLY

Continue assembling the chimney sections up through the ceiling firestops as needed. Stay aware of the height and unsupported chimney length limitations given under Chimney Installation beginning on page 21.

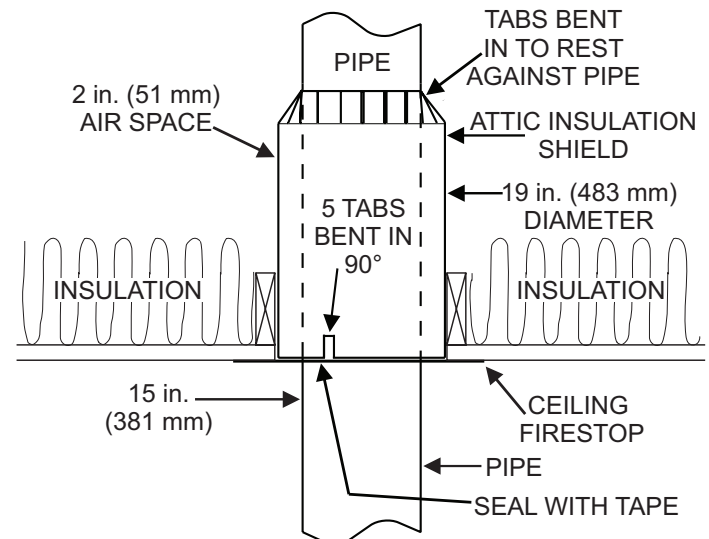
Check each section by pulling up slightly from the top to ensure proper engagement before installing the succeeding sections. If they have been connected correctly, they will not disengage when tested.



Prepare Attic Insulation Shield
Figure 23



Install Attic Insulation Shield (firestop above ceiling)
Figure 24



Install Attic Insulation Shield (firestop below ceiling)
Figure 25

CHIMNEY COMPONENTS INSTALLATION (CONT'D)

ROOF PENETRATION:

- Refer to **Figure 26**.
- Plumb from roof to center of chimney.
- Drive a nail up through roof to mark center of pipe.
- Measure to either side of nail and mark the 19 in. x 19 in. (483 mm x 483 mm) opening required.
- Measure opening on the horizontal; actual length may be larger depending on roof pitch.
- Cut out and frame opening.

INSTALL FLASHING:

- Assemble chimney so it passes through the framed opening.
- Slip the flashing over the chimney.

NOTICE: Roofing shingles must be below the flashing plate on the lower side of a sloped roof and over the flashing plate on the sides and top.

- Nail the flashing to the roof. Keep gaps between the flashing plate and the roof to a minimum.
- Caulk the flashing plate and roof junction as well as the vertical seam on the flashing. All nail heads must be caulked with a roofing sealant.
- Caulk the overlap seam of any exposed pipe sections that are located above the roof line to prevent leaks.

INSTALL CHASE/CHASE TOP:

- You must use a chase top in chase installations (WB12VFC), or they may be field constructed.
- Include a turndown and drip edge to prevent water from seeping into the chase.
- Include a 2 in. (51 mm) minimum soldered, welded or spun collar around pipe opening to keep water out.
- Provide a 1/8 in. (3 mm) gap around the flue pipe.
- Slope the chase top downward away from the opening.

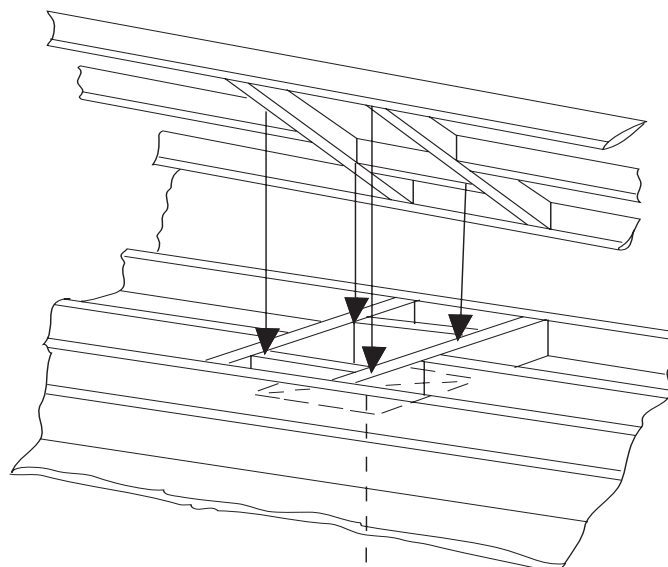
⚠ WARNING

RISK OF FIRE! DO NOT caulk the pipe to the chase top collar.

- Caulk all seams to prevent leaks.

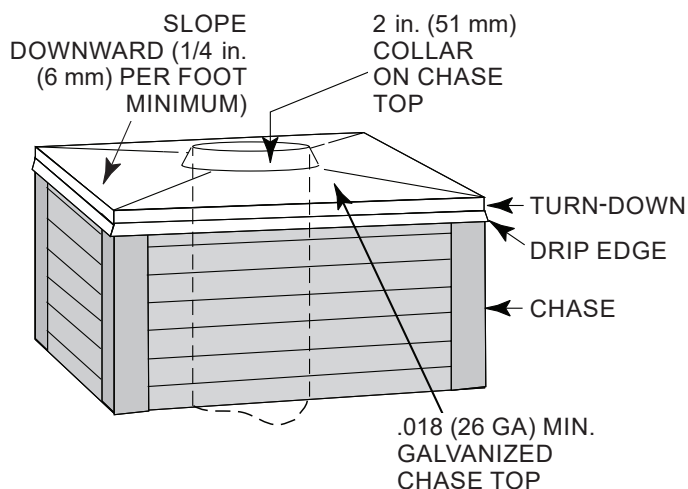
⚠ WARNING

If a shroud is going to be installed, please go to page 27 for additional Chase Top Flashing requirements.



Ceiling/Attic Construction

Figure 26



Chase Top Construction

Figure 27

CHIMNEY COMPONENTS INSTALLATION (CONT'D)

TERMINATION CAP REQUIREMENTS:

- Install a cap approved and listed for this fireplace system.
- Locate cap where it will not become plugged by snow or other materials.
- Locate cap away from trees or other structures.
- The bottom of the termination cap must be at least 3 ft. (.91 m) above the roof and at least 2 ft. (.61 m) above any part of the roof within 10 ft. (3.05 m).

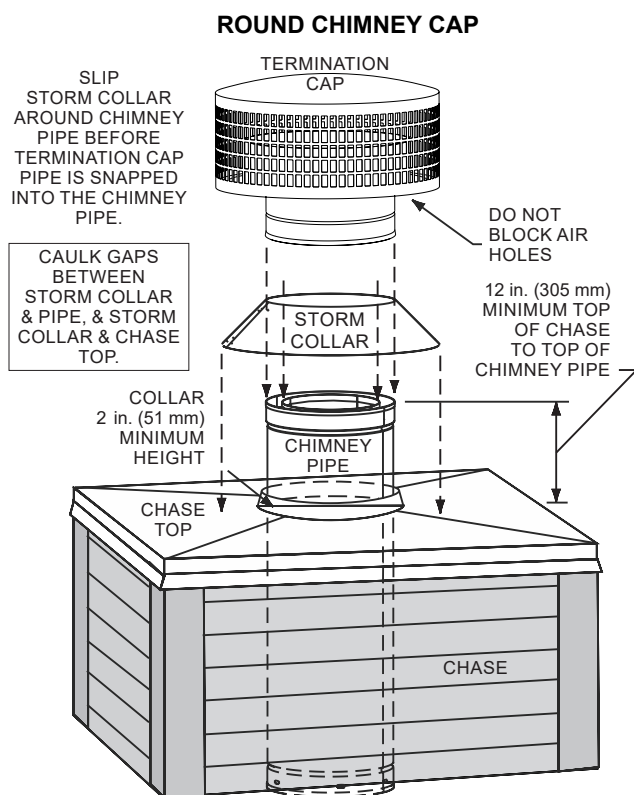
INSTALL TERMINATION CAP:

- Install the chimney sections up through the chase enclosure.
- Caulk the overlap seam of any exposed pipe sections that are located above the roof line to prevent leaks.
- Refer to termination cap instructions.

⚠ WARNING

RISK OF FIRE! The minimum overlap of cap to pipe (as shown in the following illustrations) **MUST** be met or chimney may separate from cap. Separation allows sparks, heat and embers to escape.

NOTICE: Paint the termination cap with a rust-resistant paint to protect against the effects of corrosion on those parts exposed to the weather.



Termination cap pipe and chimney section must be pushed together to maintain an overlap of 1-1/2 in. (38 mm).

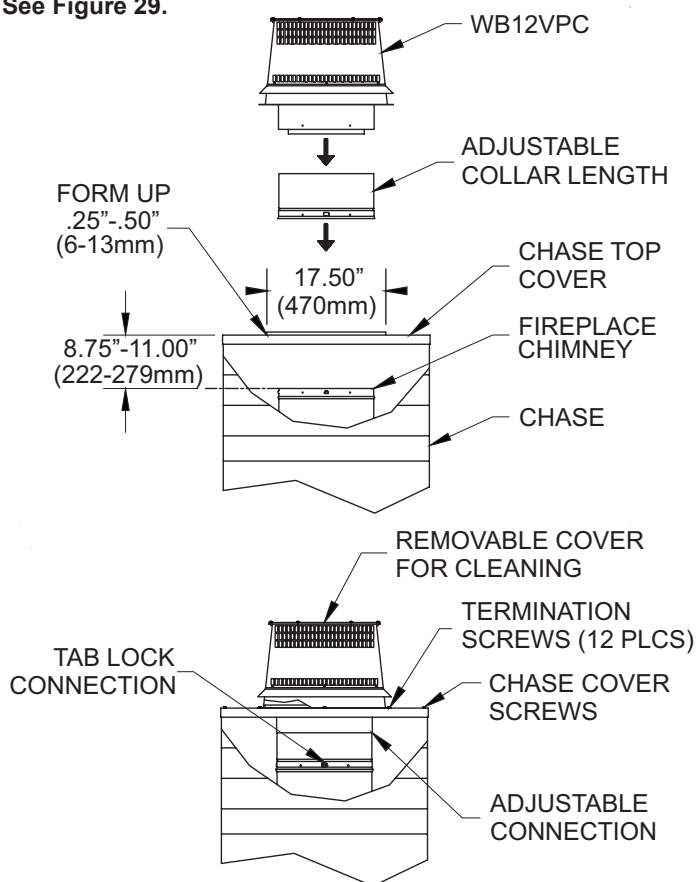
Installing a WB12VRCC Round Termination Cap
Figure 28

PYRAMID CHIMNEY CAP

The chimney must be 8.75 in. to 11 in. (222 mm to 279 mm) below the top of the chase top cover. The collar of the WB12VPC Pyramid Cap will adjust 2.25 in. (57 mm). **See Figure 29.**

To attach the Cap to the chase, line up the knockout of the adjustable termination collar and the buttons of the chimney and push together to lock. Attach the chase top cover to the chase using screws or nails. Attach the WB12VPC Pyramid Cap to the adjustable collar by inserting the termination flue and casing through the hole of the chase top cover aligning it over the collar and sliding together.

Secure the WB12VPC Pyramid Cap to the chase top cover with sheet metal screws in 12 places at the holes provided in the termination outer cover. Seal screws with sealant after assembly. **See Figure 29.**



Installing a WB12VPC Pyramid Termination Cap
Figure 29

SHROUDS

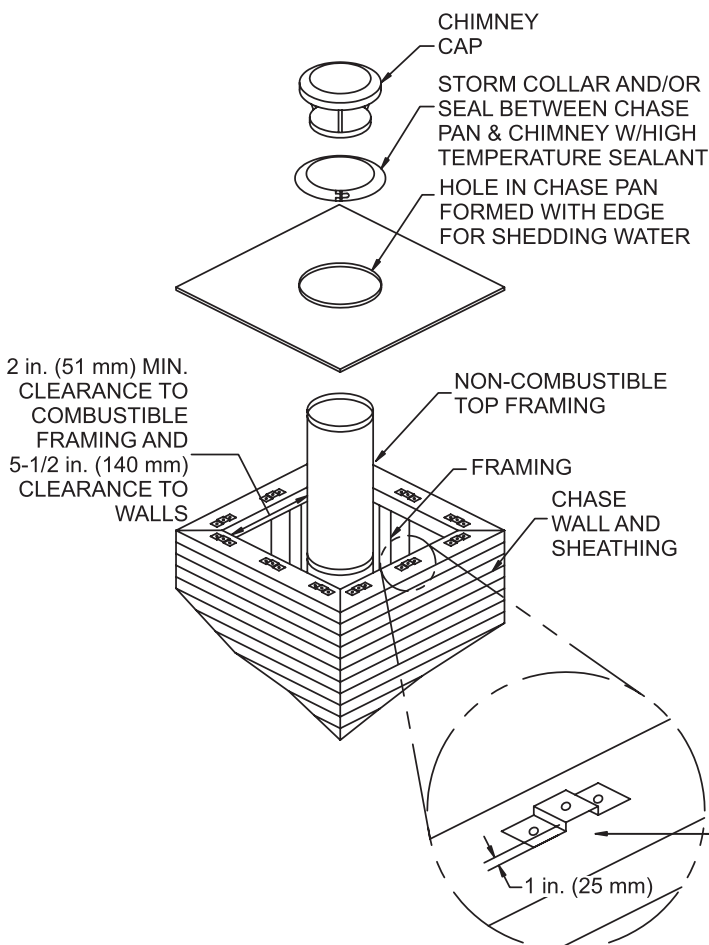
⚠ WARNING

RISK OF FIRE! Shrouds must be constructed as specified. Improper construction may overheat chase top.

SHROUD REQUIREMENTS

Shrouds can either be field-fabricated or factory fabricated, but they must meet the requirements as specified in these instructions. Shrouds must be constructed of a minimum 24 gauge (.025") stainless steel, (.028) aluminized steel, (.028) galvanized steel, or (.020) copper. Other materials may also be used, such as brick, mortar, stucco, stone, etc., provided they are completely non-combustible. Check with your local building code authorities for any shroud requirements. Shrouds must be able to be removed to allow chimney access to properly clean the chimney. Temp/Guard and Air-Cooled Temp/Guard installations, which include the use of a shroud, must comply with the following requirements. **See Figure 30.**

- Requires a minimum 2 in. (51 mm) clearance to combustible framing and a minimum 5-1/2 in. (140 mm) clearance to combustible wall or sheathing be maintained.



- The chase enclosure must be ventilated.

The Chase Top Flashing or field-fabricated chase pan must be used. Field-fabricated chase pans are acceptable if they meet these requirements:

- Material must be 24 gauge (.028") Galvanized steel or equivalent.
 - Chase pan opening should be 1/16 in.–1/8 in. (1.6 mm–3 mm) larger than outside diameter of chimney pipe with 1/2 in. (13 mm) upturned flange/collar. A Storm Collar may be used and/or seal between chase pan and chimney with high temperature sealant.
 - Chase pan must overhang chase by 3/4 in. (19 mm) per side for proper airflow.
- Spacers (1 in. tall (25 mm), 24 gauge or, 0.028 in. Galvanized Steel) must be used to support the Chase Top Flashing or chase pan, in order to provide airflow.
 - Empire chimney caps must be used inside the shroud.
 - The shroud must not be in direct contact with any of the components (other than Chase Pan).
 - All Open Areas of the shroud must be covered with 1/2 in. (13 mm) stainless or galvanized steel mesh screen to prevent debris from entering the shroud.
 - Shrouds must follow the dimensional requirements specified in TABLES 1, 2 or 3, depending on the style of shroud used.

The three basic shroud styles are: a) House, b) Mailbox, and c) Pyramid. Most factory-fabricated shrouds will fall under one of these basic style categories.

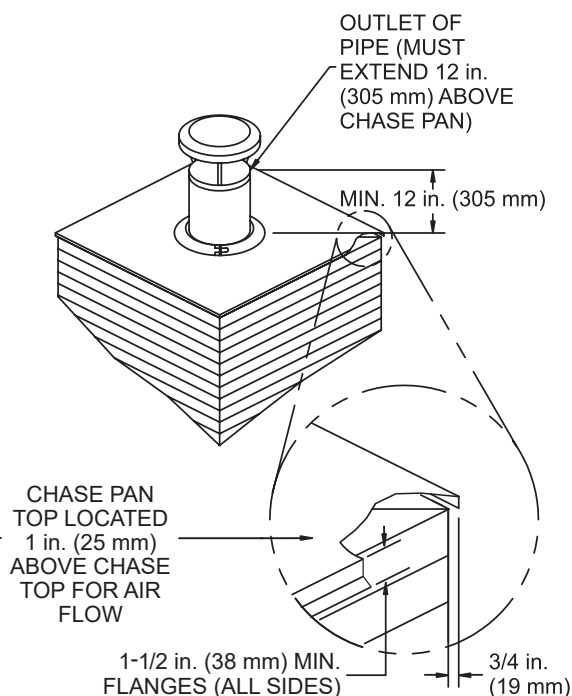


Figure 30

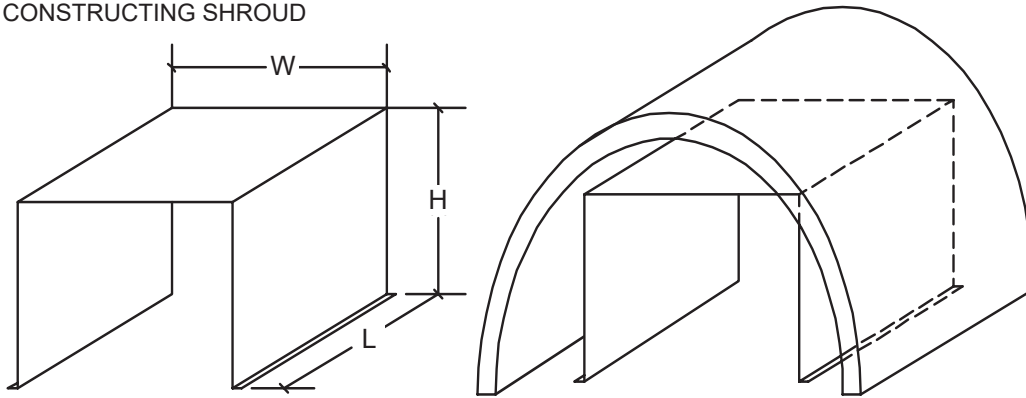
SHROUDS (CONT'D)

MAILBOX STYLE SHROUD

The Mailbox style shroud generally has two solid sides and a solid top. The exhaust openings are on the two open ends of the shroud. See **Figure 31. Mail Box Style Shroud** table lists the minimum shroud dimensions, depending on the diameter of the chimney.

INTERNAL SHROUD REPRESENTS MINIMUM DIMENSIONAL DESIGN AND OPEN AREA (FROM FIGURE 30) THAT MUST BE PRESENT WHEN CONSTRUCTING SHROUD

MAIL BOX STYLE SHROUD				
Dia.	Cap Part Number	H = Min. Height	W = Min. Width	L = Min. Length
12 in. (305 mm)	WB12VRCC / WB12VRC	25 in. (635 mm)	30 in. (762 mm)	30 in. (762 mm)



Mail Box Shroud Dimensions
Figure 31

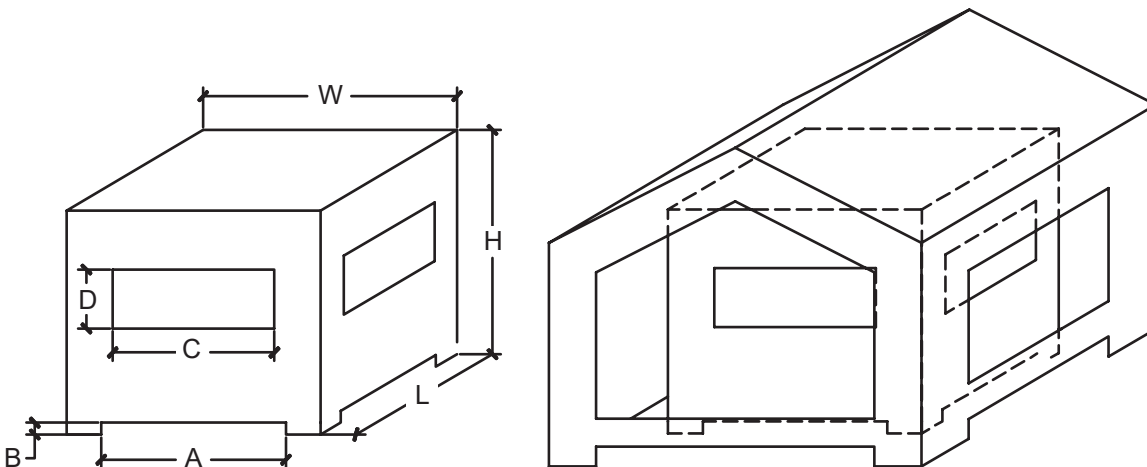
HOUSE STYLE SHROUD

The House style shroud is roughly square or rectangular with a closed top and exhaust openings on four (4) sides. See **Figure 32. House Style Shroud** table lists the minimum shroud dimensions, minimum Open Area per side, minimum window open area per side, minimum base open area per side, depending on the diameter of the chimney.

INTERNAL SHROUD REPRESENTS MINIMUM DIMENSIONAL DESIGN AND OPEN AREA (FROM FIGURE 31) THAT MUST BE PRESENT WHEN CONSTRUCTING SHROUD

HOUSE STYLE SHROUD - DIMENSION: (H, W, L)				
Dia.	Cap Part Number	H = Min. Height	W = Min. Width	L = Min. Length
12 in. (305 mm)	WB14VRCC / WB14VRC	25 in. (635 mm)	30 in. (762 mm)	30 in. (762 mm)

HOUSE STYLE SHROUD - SINGLE SIDE: (A X B), (C X D)			
Dia.	Minimum Open Area For Single Side	Min. Window Open Area For Single Side - C X D	Min. Base Open Area For Single Side - A X B
12 in. (305 mm)	246 Sq. In.	160 Sq. In.	86 Sq. In.



House Shroud Dimensions
Figure 32

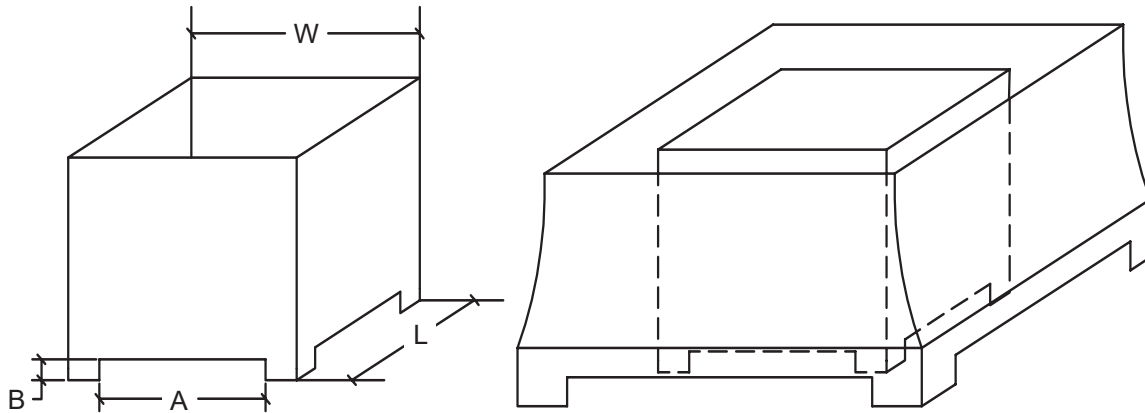
SHROUDS (CONT'D)

PYRAMID STYLE SHROUD

The Pyramid style shroud is roughly square or rectangular with an open top for exhaust as well as openings along the base of the four sides. See **Figure 33. Pyramid Style Shroud** table lists the minimum shroud dimensions, including the minimum width and length and base opening area per side, depending on the diameter of the chimney.

INTERNAL SHROUD REPRESENTS MINIMUM DIMENSIONAL DESIGN AND OPEN AREA (FROM FIGURE 32) THAT MUST BE PRESENT WHEN CONSTRUCTING SHROUD

PYRAMID STYLE SHROUD			
Dia.	Cap Part Number	W= Min. Height	L= Min. Width
12 in. (305 mm)	WB12VRCC / WB12VRC	30.5 in. (775 mm)	30.5 in. (775 mm)
Dia.	Cap Part Number	Min. Open Area For Single Side - A X B	
12 in. (305 mm)	WB12VRCC / WB12VRC	88 Sq. In.	



Pyramid Shroud Dimensions
Figure 33

FINISHING

FINISHING MATERIALS

Refer to **Product Specific and Important Safety Information** See page 5 for combustible/ non-combustible materials. Refer to **Figure 34** for non-combustible zone.

⚠ WARNING

RISK OF FIRE! You must maintain clearances.

- DO NOT cover metal fireplace front with combustible materials.
- Install combustible materials only to specified clearances on top front and side edges.
- Complete framing and apply drywall over framing.
- Only non-combustible materials may be used to cover the metal fireplace front.
- A bead of 300° F minimum non-combustible sealant must be used to close off any gaps at the top and sides between the fireplace and drywall to prevent cold air leaks.

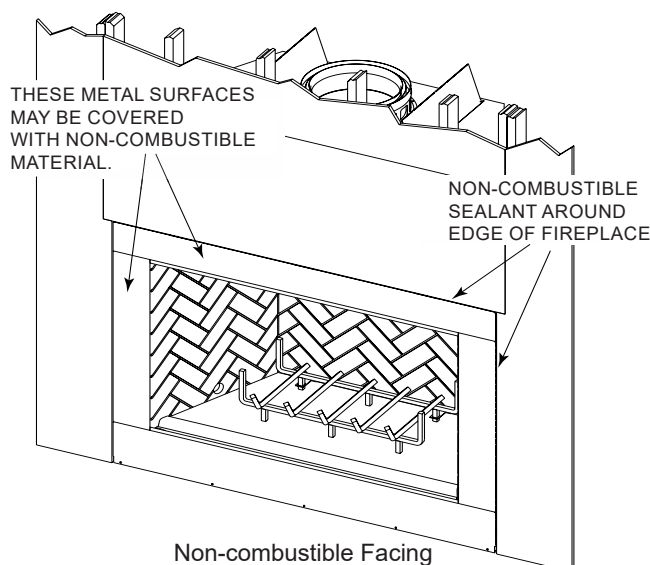
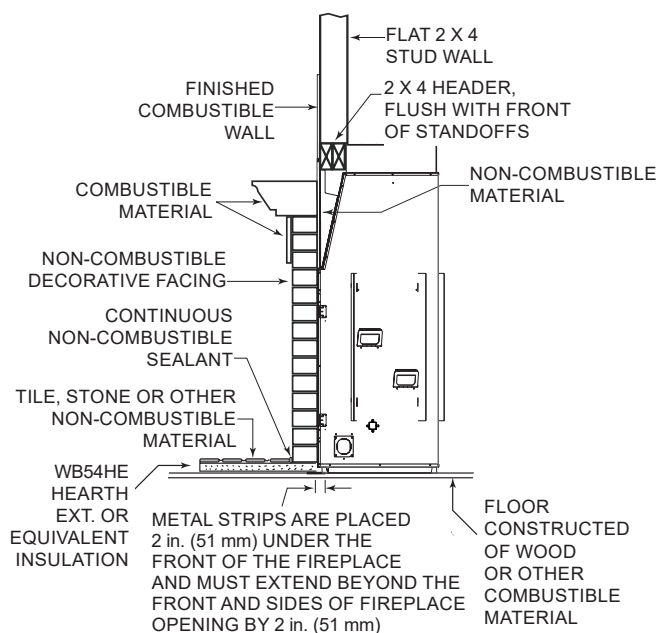


Figure 34



Decorative Facing
Figure 35

HEARTH EXTENSION CONSTRUCTION

⚠ WARNING

RISK OF FIRE! High temperatures, sparks, embers or other burning material falling from the fireplace may ignite flooring or concealed combustible surfaces.

- Protective metal hearth strips **MUST** be installed.
- Hearth extensions **MUST** be installed exactly as specified.

A hearth extension must be installed with all fireplaces to protect the combustible floor in front of the fireplace from both radiant heat and sparks.

- You **MUST** use a hearth extension with this fireplace.
- Refer to **Figure 36** for minimum dimensions.
- This fireplace has been tested and approved for use with a hearth extension insulated to a minimum R value of 2.06.
- The hearth extension material **MUST** be covered with tile, stone or other non-combustible material.
- Manufactured hearth materials will usually have a published R value (resistance to heat) or K value (conductivity of heat). Refer to the formula in **Extension Insulation** table on page 31 to convert a K value to an R value.
- Refer to **Extension Insulation** table on page 31 for hearth extension insulation alternatives.
- Choose finishing materials carefully.

⚠ WARNING

RISK OF FIRE! Empire Comfort Systems is not responsible for discoloration, cracking or other material failures of finishing materials due to heat exposure or smoke.

⚠ WARNING

RISK OF FIRE! Maintain clearances. Use only non-combustible material below standoffs, material such as cement board is acceptable. Framing or finishing material used on the front of the fireplace closer than the minimums listed, must be constructed entirely of non-combustible materials (i.e., steel studs, concrete board, etc.).

⚠ WARNING

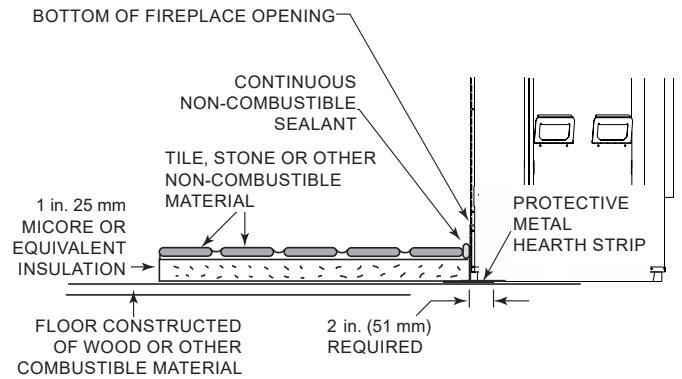
RISK OF FIRE! Hearth extensions are to be installed only as illustrated to prevent high temperatures from occurring on concealed combustible materials.

FINISHING (CONT'D)

R = 1/K X INCHES OF THICKNESS

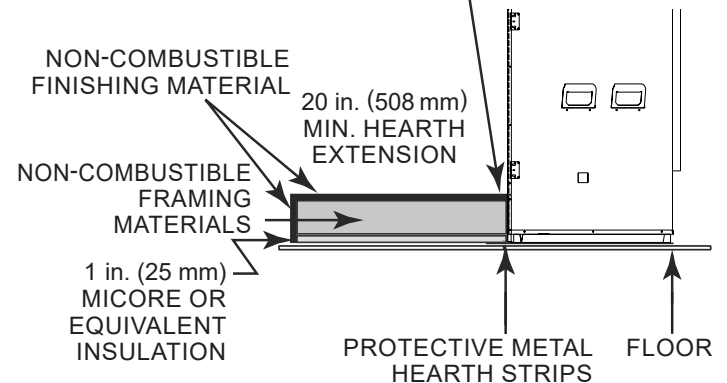
EXTENSION INSULATION			
Hearth Extension Insulation Alternatives, R Value = 2.06			
Material	(K) per inch thick	(R) per inch thick	Minimum thickness required
Empire Comfort Systems WB54HE	0.49	2.06	1 in.
USG Micore 300™	0.49	2.06	1 in.
USG Durock™ Cement Board	1.92	0.52	4 in.
Cement Mortar	5.0	0.20	10-1/4 in.
Common Brick	5.0	0.20	10-1/4 in.
Armstrong™ Privacy Guard Plus	0.46	2.18	1 in.

NOTE: MAXIMUM HEIGHT FROM FLOOR UNDER FIREPLACE TO TOP OF FINISHED HEARTH EXTENSION IS 9-3/16 in. (233 mm).

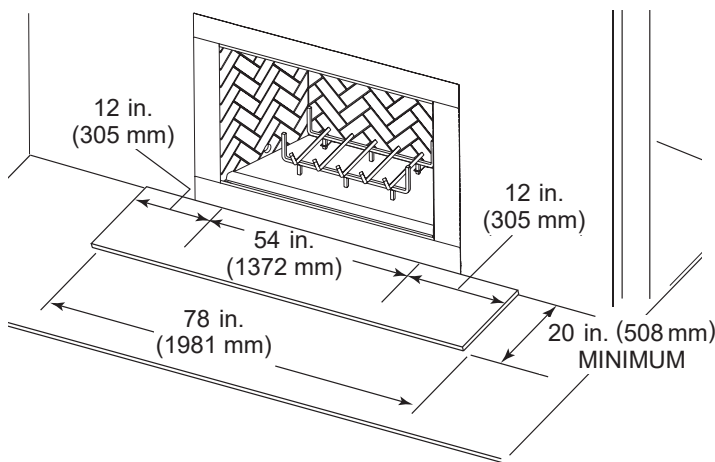


Hearth Extension Construction
Figure 37

NOTE: THE BOTTOM OF THE FIREPLACE OPENING IS 9-3/16 in. (233 mm) ABOVE THE BOTTOM OF THE FIREPLACE. FINISHED HEARTH MUST NOT EXTEND ABOVE THIS LEVEL.



Raised Platform Hearth Extension Detail
Figure 38



Hearth Extension Dimensions
Figure 36

HEARTH EXTENSION KIT **WB(36,44,54)HE** BOARD ARRANGEMENT

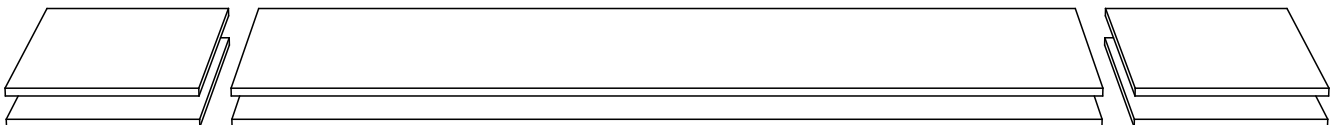
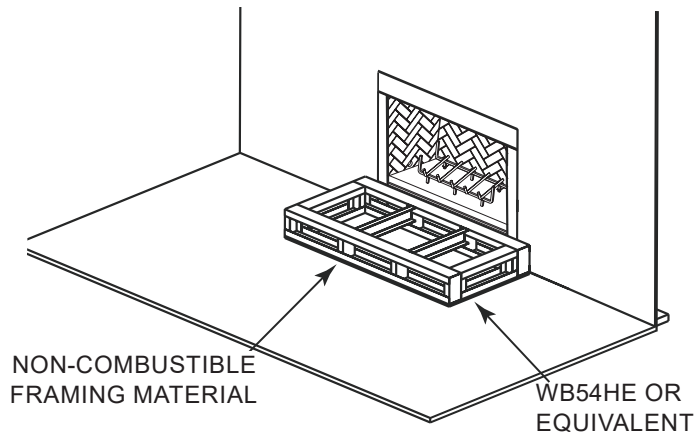
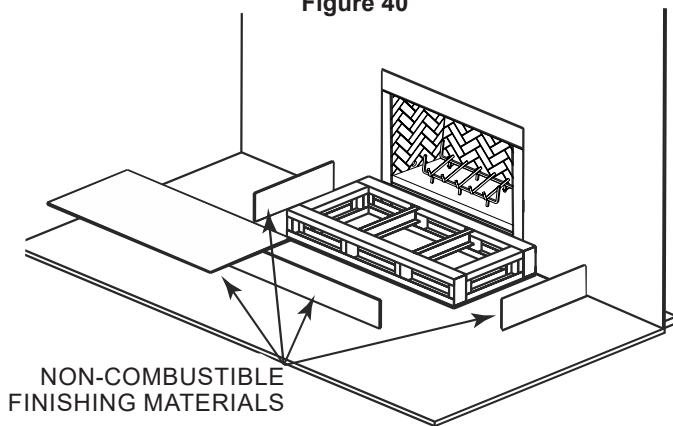


Figure 39

FINISHING (CONT'D)



Raised Platform Hearth Extension-Framing
Figure 40



Raised Platform Hearth Extension-Finishing
Figure 41

RAISED HEARTH EXTENSION AND RAISED FIREPLACE

Non-combustible flooring a minimum of 20 in. (508 mm) in front of and 12 in. (305 mm) to each side of the fuel opening is required.

The hearth framing must be constructed of non-combustible materials (such as metal framing or equivalent material) and placed on WB54HE or equivalent material. **See Figure 42.**

When creating the platform, allow for the thickness of the non-combustible finishing materials.

Seal gaps between the hearth extension and the front of the fireplace with a bead of non-combustible sealant or grout.

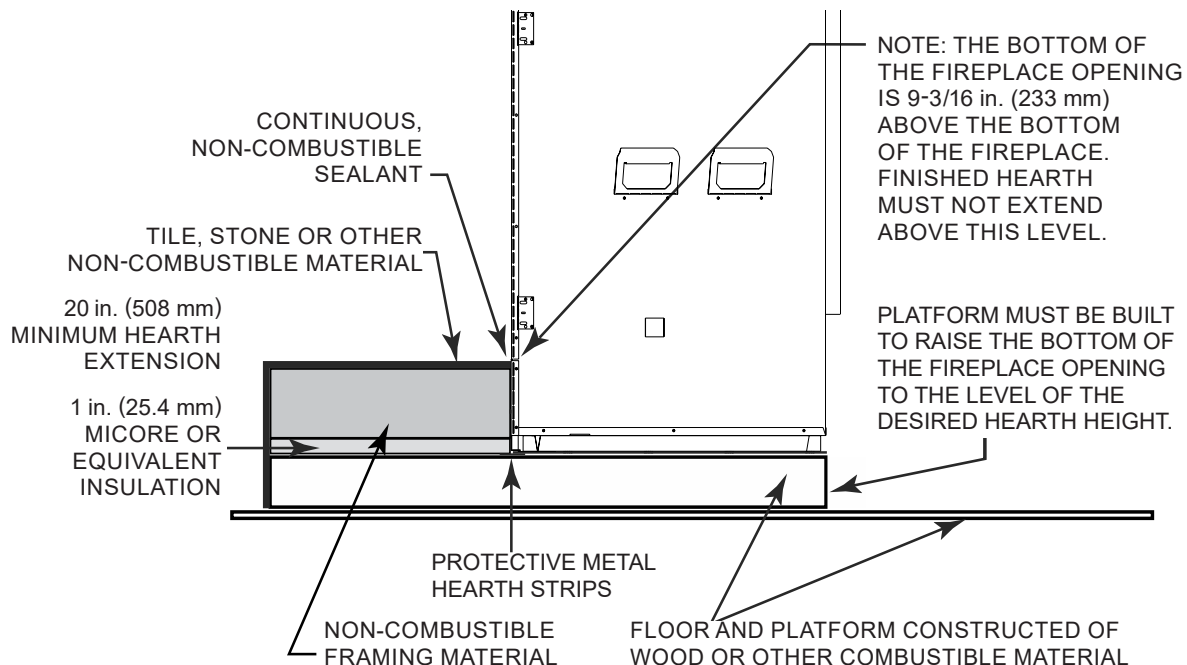
FIREPLACE OPENING AND HEARTH EXTENSION FLUSH WITH THE FLOOR

Non-combustible flooring a minimum of 30 in. (762 mm) in front of and 12 in. (305 mm) to each side of the fuel opening is required.

The hearth framing must be constructed of non-combustible materials (such as metal framing or equivalent material) and placed on WB54HE or equivalent material.

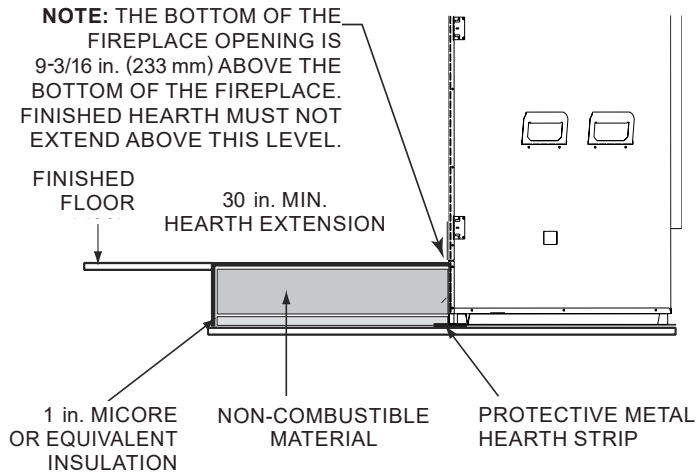
When creating the platform, allow for the thickness of the non-combustible finishing materials.

Seal gaps between the hearth extension and the front of the fireplace with a bead of non-combustible sealant or grout.



Raised Hearth Extension and Fireplace Framing Materials
Figure 42

FINISHING (CONT'D)

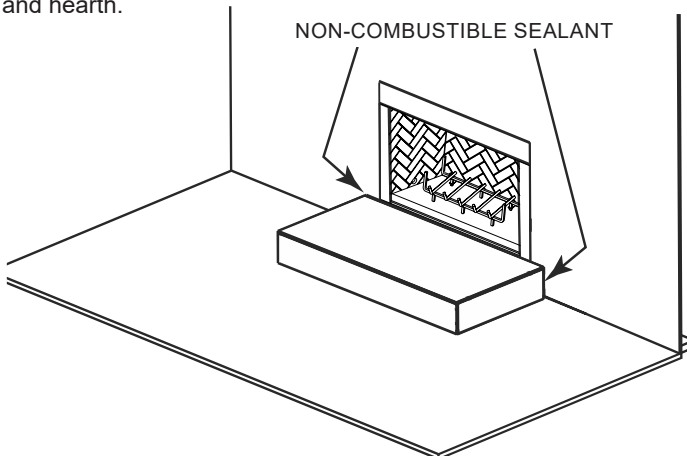


Flush Hearth Extension Side View

Figure 43

NON-COMBUSTIBLE SEALANT MATERIAL

After completing the framing and applying the facing materials over the framing, a bead of non-combustible sealant must be used to close off any gaps at the top and sides between the fireplace and hearth.



Place Non-combustible Sealant

Figure 44

⚠ WARNING

RISK OF FIRE! Empire Comfort Systems is not responsible for discoloration, cracking or other material failures of finishing materials due to heat exposure or smoke.

- Choose finishing materials carefully.

FINISHING (CONT'D)

MANTEL AND WALL PROJECTIONS

The combustible mantel may have a maximum depth of 10 in. (254 mm), positioned 18 in. (457 mm) above the opening. Combustible trim pieces that project no more than 1-1/2 in. (38 mm) from the face of the fireplace can be placed no closer than 8 in. (203 mm) from the top of the opening.

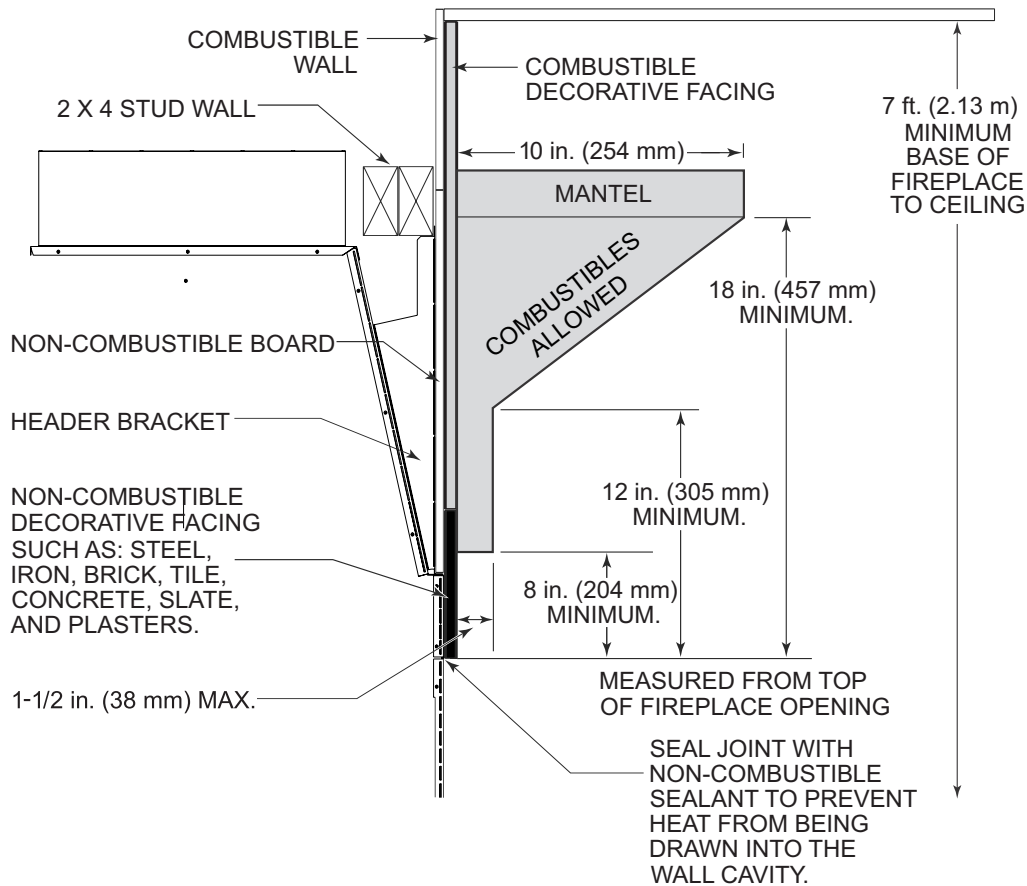
COMBUSTIBLE TRIM MUST NOT COVER:

- The metal surfaces of the fireplace
- The areas where a non-combustible board is placed over the metal surfaces
- The space between the metal face of the fireplace and the framing members

⚠ WARNING

RISK OF FIRE!

- You must seal around the finishing material to fireplace.

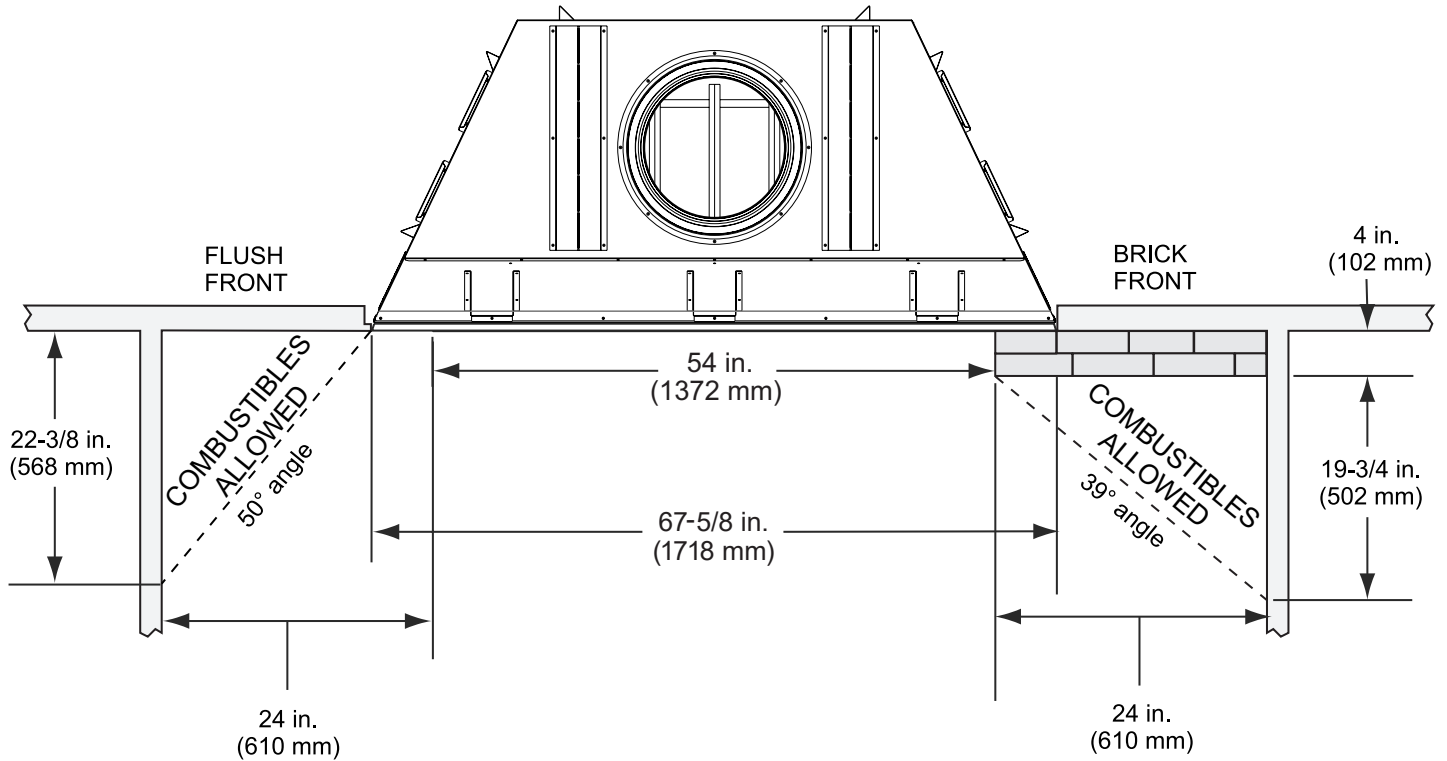


Mantel Specifications
Figure 45

FINISHING (CONT'D)

SIDEWALLS/SURROUNDS:

- Locate adjacent combustible sidewalls a minimum of 24 in. (610 mm) from fireplace opening.
- Mantle leg, surround, stub wall, whether combustible or non-combustible, may be constructed as shown in **Figure 46**.



Mantel Leg, Surround or Wall Projection (acceptable on both sides of opening)

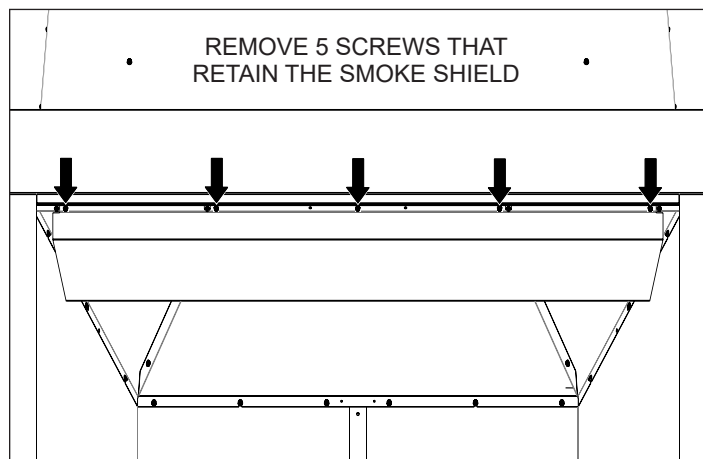
Figure 46

FIREPLACE SETUP

INSTALL REFRACTORY BRICK LINERS:

Because of the weight of the refractory liners, we recommend two installers work together when setting and securing the liners in place.

1. First, remove the Smoke Shield from the fireplace top opening by removing (5) Screws as shown in **Figure 47**.



Remove Smoke Shield
Figure 47

2. Install the Back Refractory liner panel as shown in **Figure 48**. Secure the back panel using (2) self-drilling Screws and one of the Brick Retainer brackets included in the hardware packet. See **Figure 49a**.



Install Back Refractory
Figure 48

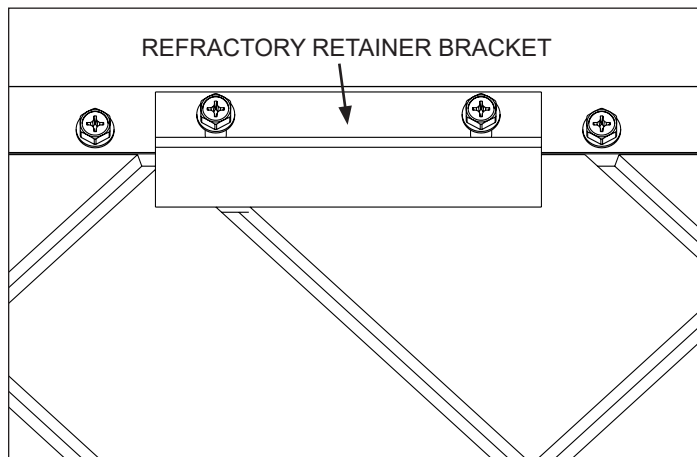


Figure 49a

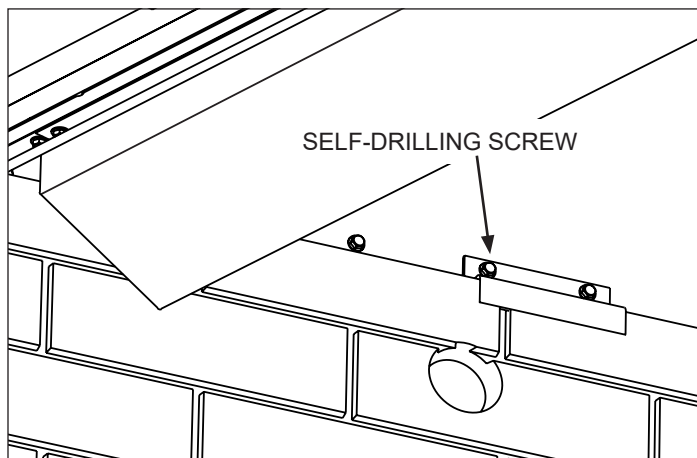


Figure 49b

3. Install the Right Side Refractory Brick Liner. See **Figure 50**. The rounded edge goes towards the front. Shift the liner rearward to contact the Back Refractory liner, then secure the side panel using (2) Screws (One self-drilling from hardware pack and one already present on fireplace wall) and one of the Brick Retainer brackets included in the hardware packet. See **Figure 49b**.



Install Right Side Refractory Brick Liner
Figure 50

FIREPLACE SETUP (CONT'D)

4. Install the Left Side Refractory Brick Liner. **See Figure 51.** The rounded edge goes towards the front. Shift the liner rearward to contact the Back Refractory liner, then secure the side panel using (2) (One self-drilling from hardware pack and one already present on fireplace wall) Screws and one of the Brick Retainer brackets included in the hardware packet. **See Figure 49b.**



Install Left Side Refractory Brick Liner
Figure 51

5. Locate the (2) Grate Retainer Brackets which are in the Hardware Pack.
6. Place the (2) Grate Retainer Brackets at the rear of the Hearth Refractory Liner panel at the two notched locations. **See Figure 51.** Position the retainers so that the square holes are above the brick and forward, in order to match up with the Grate legs in step 8.
7. Install the Hearth Refractory into place so that the Grate Retainer Brackets are retained in the notched locations, slide the Hearth rearward until the front of the Hearth liner is set down behind the front ledge of the firebox. **See Figure 52.**



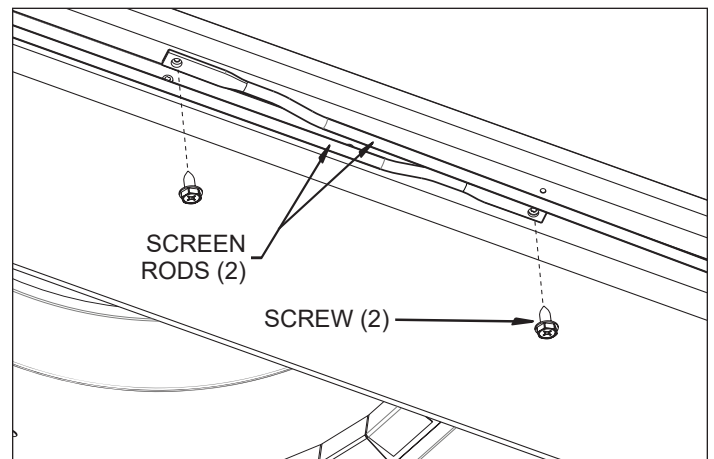
Install Hearth Refractory With Grate Retainers
Figure 52

8. Install the Grate Assembly by placing the rear legs into the Grate Retainer Brackets. These are required to hold the grate securely. **See Figure 52.**



Install Grate Assembly
Figure 53

9. Replace the Smoke Shield. Install the Smoke Shield using the (5) Screws previously removed in Step 1. **See Figure 47.**
10. Locate the Left and Right Firescreen panels, then insert a Screen Rod through the rings of the Firescreen panel. **NOTE:** The Pull Tassel should be next to the offset end of the screen rod.
11. Install the Right Firescreen panel by placing the Screen Rod end into a hole provided in the right side of the firebox, just above the right side Refractory Liner panel. Next, align the hole in the offset end of the rod with the pilot hole located at the center of the Smoke Shield, then secure with (1) Screw provided. **See Figure 54.**
12. Repeat Step 10 and 11 for installation of the Left Firescreen panel. **See Figure 54.**



Install Right And Left Firescreens
Figure 54

FIREPLACE SETUP (CONT'D)

GAS LOG/LIGHTER PROVISION

⚠ WARNING

FIRE AND/OR ASPHYXIATION RISK! Use with solid wood fuel or decorative gas appliance only. Gas fire generates fumes.

A certified gas log lighter or decorative gas log set can be installed in this fireplace.

- Decorative gas appliance must be certified to **ANSI Z21.60/ CSA 2.26** "Standard for Decorative Gas Appliances for Installation in Vented Fireplaces".
- Must be installed in accordance with the **National Fuel Gas Code, ANSI Z223.1** and **Natural Gas Installation Code, CAN/CGA-B149.1-M95** or the **Propane Installation Code, CAN/CGA-B149.2-M95**.
- A gas log set must incorporate a gas shut-off.
- A gas log set requires the damper to be locked fully open.
- Knockouts are provided on both sides of the fireplace and in refractories for 1/2 in. (13 mm) iron pipe.
- Seal refractory around pipe with fireplace mortar or a non-combustible sealant.

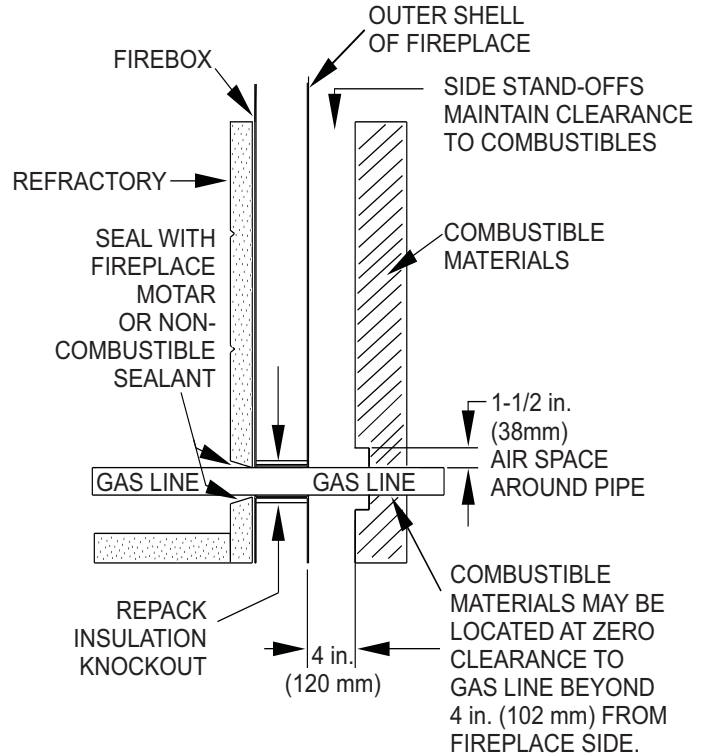
UNVENTED GAS LOGS

⚠ CAUTION

If an unvented gas appliance is installed in the fireplace, the gas appliance must only be operated with the fireplace glass door fully open (if included). Only unvented gas log sets which have been found to comply with the standard for unvented room heaters, ANSI Z211.11.2, are to be installed in this fireplace. If an unvented gas appliance is installed it must incorporate an automatic shut-off device, and must be installed in accordance with the National Fuel Gas Code Z223.1, Latest edition.

⚠ WARNING

DO NOT operate an unvented gas log set in this fireplace with the chimney removed.



Gas Line Installation

Figure 55

WOOD BURNING INSERTS

⚠ WARNING

RISK OF FIRE! Improper installation of wood inserts may cause fireplace or chimney system to overheat.

If a wood burning insert is being installed in this fireplace, Empire Comfort Systems recommends full relining of the chimney.

- Cooling air openings at the top of the chimney must not be obstructed in any manner.
- Empire Comfort Systems recommends securing the reline at the top of the flue and using the cap certified for use with this fireplace system.
- When installing a listed Wood Burning Fireplace Insert, be sure to follow the insert Manufacturer's instructions for installation into a factory-built wood-burning fireplace system.

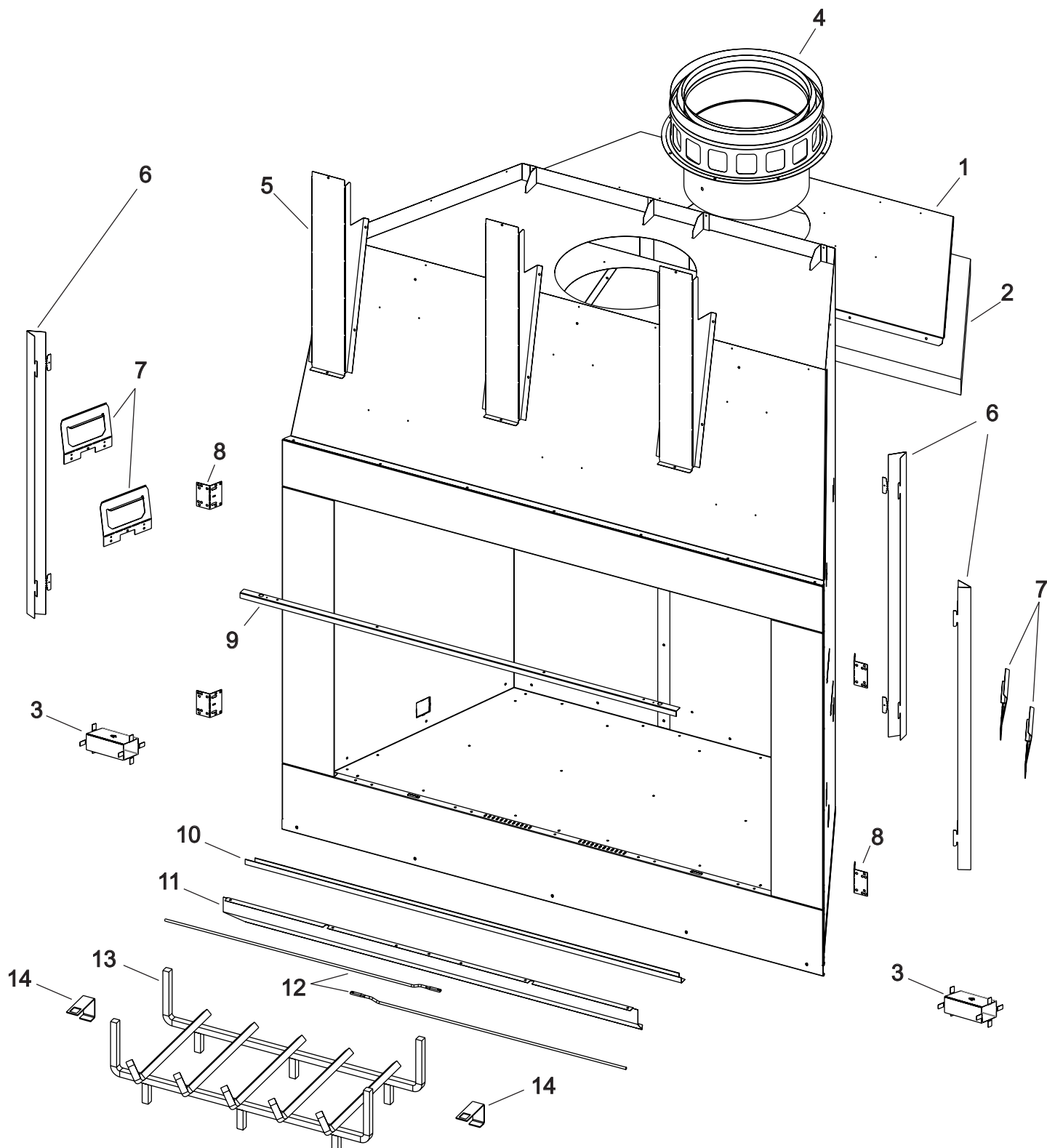
TROUBLESHOOTING

PROBLEM OBSERVED	POSSIBLE CAUSE	CORRECTIVE MEASURE
Fireplace smoking	Other appliances competing for available air.	These could be other fireplaces, furnaces, kitchen/bathroom exhaust fans, whole house fans or other heating appliances. Turn off any competing appliance while operating fireplace is possible.
	Grate too close to front of fireplace.	Position grate on the grate retainer brackets.
	Damper not in fully opened position.	Ensure damper in fully opened position.
	Outside air damper not in opened position.	Ensure air damper in opened position. If not, adjust air damper until fully open.
	Operating fireplace with partially closed doors.	During fireplace operation doors should be either in the fully opened or fully closed position.
	Flue and termination is caked with creosote buildup.	We recommend to have your chimney professionally cleaned, by a chimney sweep, at least once per year.
	Chimney Cap not installed to required height.	Verify height and reinstall chimney cap to correct height.
	Environmental conditions adversely affecting draft.	Check relationship of your chimney to trees, nearby taller structures or high wind areas.
	Lack of ventilation due to a tightly insulated house	Open a window a small amount while operating fireplace.
Cold air drafts coming from fireplace	Air coming out of fireplace opening.	Close damper and/or outside air damper.
	During installation, didn't follow Cold Climate instructions in owner's manual.	Refer to Cold Climate notes in owner's manual.
	Air coming in around sides of fireplace, between fireplace and wall.	Make sure fireplace frame has been sealed to wall.
Glass door breakage	Heat has built up too fast.	Before closing doors allow them to warm up slowly as you build the fire. Close them once the fire is established and doors are heated.
	Fire is too large.	Ensure fire is appropriate size. Check manual for size of fire. Continued operation at excessively high temperatures may cause glass to partially lose its temper and break.
	Logs are too close to glass.	Logs and burning material should not touch glass.

TROUBLESHOOTING (CONT'D)

PROBLEM OBSERVED	POSSIBLE CAUSE	CORRECTIVE MEASURE
Burning wrong material	Avoid burning green wood, that is high in water content. As such, it can seriously damage the inside of your chimney lining.	Make sure you're only burning seasoned, dry wood in your fireplace. We recommend purchasing a moisture meter to check the wood before burning.
Dirty Glass Doors	Doors not kept cleaned causing soot buildup.	You can avoid this problem by cleaning it regularly. However, avoid hard chemical cleaners as these will leave unattractive marks. Instead, simply use a clean cloth covered in water.
Improper Wood Storage	Leaving wood outdoors in an uncovered area.	Store firewood on an elevated rack that is covered, yet slightly elevated, to allow air flow. Store firewood a short distance from your building's exterior. This ensures pests don't enter your home.
Improper burning techniques	Firewood not burned correctly or efficiently.	To burn wood correctly: • Heat your flue and let it reach about 600 degrees. • Fill your grate with wood. • Wait around 10 minutes. • Close the doors of your fireplace and keep the doors closed until you go to load more wood.

WB54FB - EXPLODED VIEW



⚠ WARNING

Failure to position the parts in accordance with these diagrams or failure to use only parts specifically approved with this heater may result in property damage or personal injury.

WB54FB - PARTS LIST

INDEX NO.	PART NO.	DESCRIPTION
	WB54FB	
Firebox Part Numbers		
1	46619	Outer Top
2	R13962	Insulation, Top
3	43666	Gas Line Tube
4	R13430	Vent Adapter With Damper
5	44159	Header Bracket
6	44267	Stand-Off, Side
7	34360	Lift Handle
8	42261	Nailing Flange
9	43664	Opening Lip, Top, Painted
10	44582	Opening Lip, Bottom, Painted
11	43656	Smoke Shelf, Painted
12	R13423	Pull Screen Rod, 54
13	R13452	Grate, 54
14	44483	Grate Retainer
NS	44619	Concrete Liner Bracket
NS	46197	Attic Insulation Shield
NS	R13426	Pull Screen, 54
NS	43647	Stand-Off, Bottom
NS	44725	Hook, Damper Chain

PART NO.	DESCRIPTION
	WB54FB
Concrete Liner Part Numbers	
Natural	
44585	Brick, Floor, 54 in. (1372 mm)
44586	Brick, Rear, Herringbone
44587	Brick, Side, Herringbone
44588	Brick, Rear, Traditional
44589	Brick, Side, Traditional
44590	Brick, Rear, Smooth
44591	Brick, Side, Smooth
Black	
44941	Rear Panel - Traditional
44942	Side Panel - Traditional
44943	Rear Panel - Herringbone
44944	Side Panel - Herringbone
44945	Rear Panel - Smooth
44946	Side Panel - Smooth
Mocha	
44947	Rear Panel - Traditional
44948	Side Panel - Traditional
44949	Rear Panel - Herringbone
44950	Side Panel - Herringbone
44951	Rear Panel - Smooth
44952	Side Panel - Smooth
White	
44954	Rear Panel - Traditional
44955	Side Panel - Traditional
44956	Rear Panel - Herringbone
44957	Side Panel - Herringbone
44958	Rear Panel - Smooth
44959	Side Panel - Smooth

SERVICE TECHNICIAN NOTES

Date	Dealer Name	Service Technician Name	Service Performed/Notes

SERVICE TECHNICIAN NOTES

Date	Dealer Name	Service Technician Name	Service Performed/Notes

MASTER PARTS DISTRIBUTOR LIST

To Order Parts Under Warranty, contact your local Empire dealer. See the dealer locator at www.empirecomfort.com. To provide warranty service, your dealer will need your name and address, purchase date and serial number, and the nature of the problem with the unit.

To Order Parts After the Warranty Period, contact your dealer or one of the Master Parts Distributors listed below. This list may change. For the current list, click on the Master Parts button at www.empirecomfort.com. **NOTE:** Master Parts Distributors are independent businesses that stock the most ordered Original Equipment repair parts for Heaters, Grills, and Fireplaces manufactured by Empire Comfort Systems Inc.

Dey Distributing

1401 Willow Lake Boulevard
Vadnais Heights, MN 55101

Phone: 651-490-9191

Toll Free: 800-397-1339

Website: www.deydistributing.com

Parts: Heater, Hearth and Grills

F. W. Webb Company

200 Locust Street
Hartford, CT 06114

Phone: 860-722-2433

Toll Free: 800-243-9360

Fax: 860-293-0479

Toll Free Fax: 800-274-2004

Website: www.fwwebb.com

Parts: Heater, Hearth and Grills

East Coast Energy Products

10 East Route 36
West Long Branch, NJ 07764

Phone: 732-870-8809

Toll Free: 800-755-8809

Fax: 732-870-8811

Website: www.eastcoastenergy.com

Parts: Heater, Hearth and Grills

HOW TO ORDER REPAIR PARTS

Parts Not Under Warranty

Parts can be ordered through your Service Person, Dealer, or a Master Parts Distributor. See this page for the Master Parts Distributors list. For best results, the **service person or dealer** should order parts through the distributor. Parts can be shipped directly to the **service person/dealer**.

Warranty Parts

Warranty parts will need a proof of purchase and can be ordered by your Service Person or Dealer. Proof of purchase is **required** for warranty parts.

All parts listed in the Parts List have a Part Number. When ordering parts, first obtain the Model Number and Serial Number from the name plate on your equipment. Then determine the Part Number (**not** the Index Number) and the Description of each part from the following illustration and part list. Be sure to give all this information . . .

Appliance Model Number _____ Part Description _____

Appliance Serial Number _____ Part Number _____

Type of Gas (Propane or Natural) _____

Do not order bolts, screws, washers or nuts. They are standard hardware items and can be purchased at any local hardware store. Shipments contingent upon strikes, fires and all causes beyond our control.

WARRANTY

Empire Comfort Systems Inc. warrants this hearth product to be free from defects at the time of purchase and for the periods specified below. Hearth products must be installed by a qualified technician and must be maintained and operated safely, in accordance with the instructions in the owner's manual. This warranty applies to the original purchaser only and is not transferable. All warranty repairs must be accomplished by a qualified gas appliance technician.

Limited Lifetime Parts Warranty With A Five-Year Limited Labor Warranty – Combustion Chamber

If the combustion chamber (see parts list) fails because of defective workmanship or material,

Empire will repair or replace at Empire's option.

Within five years from the date of purchase, Empire will pay reasonable labor to have the defective part repaired or replaced at Empire's option.

Limited Ten-Year Parts Warranty – Venting

Should any part fail because of defective workmanship or material within ten years from the date of purchase, Empire will repair or replace at Empire's option.

Limited One-Year Parts Warranty – Accessories and Parts

Handles, glass, and cast refractory panels

Should any accessory, or other part fail because of defective workmanship within one year from the date of purchase,

Empire will repair or replace at Empire's option.

Duties Of The Owner

The appliance must be installed by a qualified installer and operated in accordance with the instructions furnished with the appliance.

A bill of sale, cancelled check, or payment record should be kept to verify purchase date and establish warranty period.

Ready access to the appliance for service.

What Is Not Covered

Damages that might result from the use, misuse, or improper installation of this appliance.

Travel, diagnostic costs and freight charges on warranted parts to and from the factory.

Claims that do not involve defective workmanship or materials.

Unauthorized service or parts replacements.

Removal and reinstallation cost.

Inoperable due to improper or lack of maintenance.

How To Get Service

To make a claim under this warranty, please have your receipt available and contact your installing dealer. Provide the dealer with the model number, serial number, type of gas, and purchase verification. The installing dealer is responsible for providing service and will contact the factory to initiate any warranted parts replacements. Empire will make replacement parts available at the factory. Shipping expenses are not covered.

If, after contacting your Empire dealer, service received has not been satisfactory, contact: Consumer Relations Department, Empire Comfort Systems Inc., PO Box 529, Belleville, Illinois 62222, or send an e-mail to info@empirecomfort.com with "Consumer Relations" in the subject line.

Your Rights Under State Law

This warranty gives your specific legal rights, and you may also have other rights, which vary from state to state.



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Empire Comfort Systems Inc.
Belleville, IL

If you have a general question
about our products, please e-mail
us at info@empirecomfort.com.

If you have a service or repair
question, please contact your dealer.

www.empirecomfort.com