

D. PRE-INSTALLATION PREPARATION

1. Fireplace Locations and Space Requirements

Several options are available to you when choosing a location for your fireplace. This fireplace may be used as a room divider, installed along a wall, across a corner or use an exterior chase. The room must have a minimum volume of 3,750 cubic feet. See Figure 1.

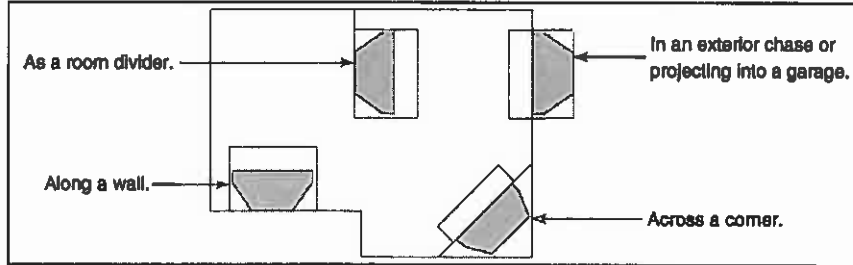


Figure 1
Fireplace Locations

Figures 2 and 3 show two typical installations assuming an outside air kit is being used. Therefore, an allowance must be made for 90° bends. Less space is required when ducting goes directly outside without forming elbows.

CLEARANCES!

A minimum 3/4" air clearance must be maintained at the back and sides of the fireplace assembly except at the nailing flange where the clearance is 1/2".

Chimney sections at any level require a 2" minimum air space clearance between the framing and chimney section.

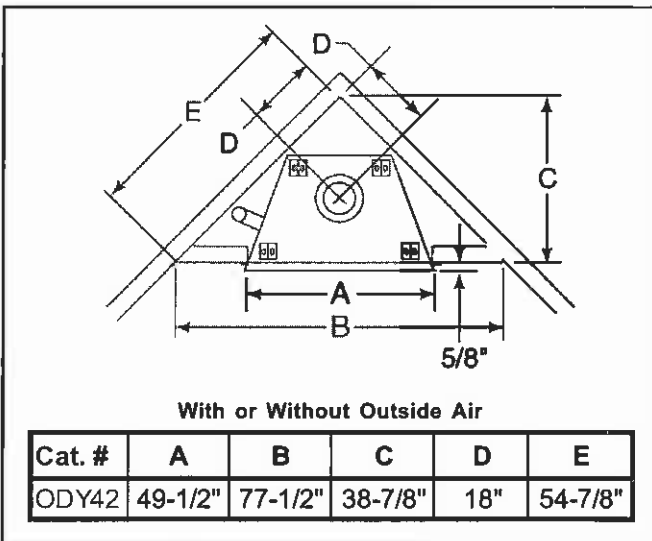


Figure 2
Corner Installation

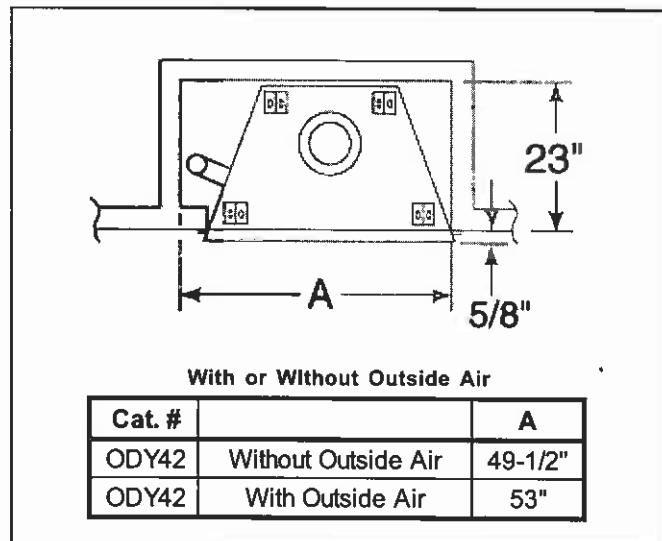


Figure 3
Installation Along a Wall or an Exterior Chase

WARNING!

Do not draw outside air from garage spaces. Exhaust products of gasoline engines are hazardous.
Do not install outside air ducts such that the air may be drawn from attic spaces, basements or above the roofing where other heating appliances or fans and chimneys exhaust or utilize air. These precautions will reduce the possibility for smoking or flow reversal.

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WARNING!

To prevent contact with sagging or loose insulation, the fireplace must not be installed against vapor barriers or exposed insulation. Localized overheating could occur and a fire could result.

2. Framing the Fireplace

Figure 4 shows a typical framing (using 2 x 4 lumber) of the fireplace, assuming combustible materials are used. All required clearances to combustibles around the fireplace must be adhered to. Any framing across the top of the fireplace must be above the level of the top standoffs. A 3/4" air clearance must be maintained at the back and sides of the fireplace assembly. Chimney sections at any level require a two-inch minimum air space clearance between the framing and chimney section.

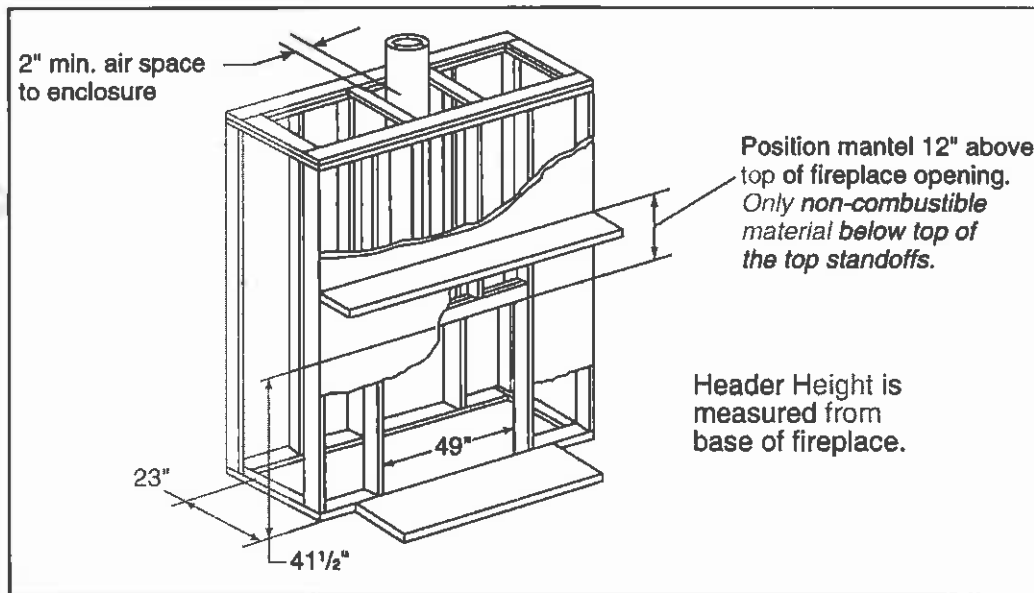


Figure 4
Framing the Fireplace

CLEARANCES!

A minimum 3/4" air clearance must be maintained at the back and sides of the fireplace assembly except at the nailing flange where the clearance is 1/2".

Chimney sections at any level require a 2" minimum air space clearance between the framing and chimney section.

Combustible Materials. Material made of or surfaced with wood, compressed paper, plant fibers, plastics, or any material capable of igniting and burning, whether flame proofed or not, plastered or unplastered.

Noncombustible Material. Material which will not ignite and burn. Such materials are those consisting entirely of steel, iron, brick, tile, concrete, slate, glass or plasters, or combination thereof.

Noncombustible Sealant Material. Sealants that will not ignite and burn; General Electric RTV103 Black) or equivalent, Rutland, Inc. Fireplace Mortar #63 or equivalent.

After completing the framing and applying the facing material (dry wall) over the framing, a noncombustible sealant, one-half inch wide maximum, must be used to close off any gaps at the top and sides between the fireplace and facing to prevent cold air leaks.

Only noncombustible materials may be used to cover the black metal fireplace front.

WARNING!

Do not apply combustible finishing materials over any part of the black face of this fireplace or a structure fire may result. The black metal fireplace front may only be covered with noncombustible materials such as ceramic tile, brick or stone. Do not cover or block any cooling air slots. Do not cover any portion of the opening to the fireplace that would prevent the installation of an authorized glass door.

5. Hearth Extensions

It is recommended that a hearth extension be installed with all fireplaces. In the event the fireplace is converted to burn solid (wood) fuel, 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. A hearth extension is required while burning solid fuel.

The construction of, and materials used for a factory built hearth extension are shown in Figure 5. A hearth extension of this construction may be covered with any noncombustible decorative material and may have a maximum thickness of 6". Seal gaps between the hearth extension and the front of the fireplace with a noncombustible sealant.

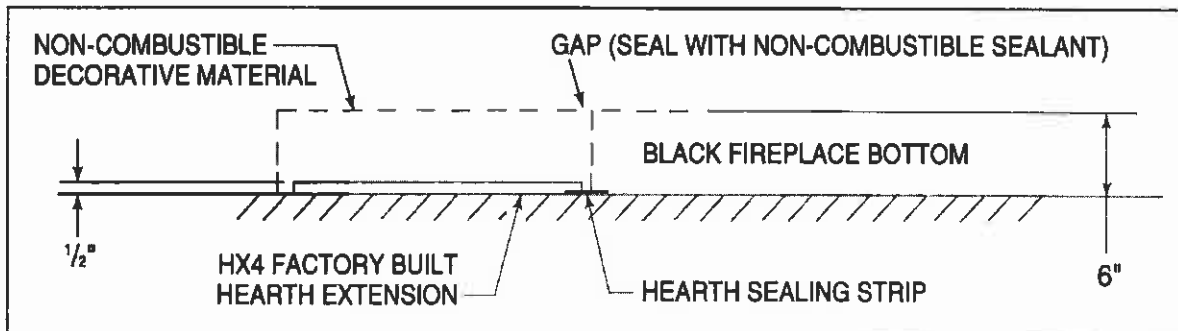


Figure 5
Factory Built Hearth Extension

Field constructed hearth extensions should be constructed in accordance with the minimum dimensions provided in Figure 6.

EXAMPLES OF INSULATION

	REQUIRED THICKNESS	K VALUE
USG MICORE CV230	1/2"	0.43

(THERMAL CONDUCTIVITY) "k" = BTU in./hr. ft.² °F

TO SUBSTITUTE ALTERNATE INSULATION MATERIAL, YOU NEED TO KNOW THE "K" FACTOR FOR THAT MATERIAL. TO CALCULATE THE REQUIRED THICKNESS FOR THE ALTERNATE MATERIAL USE THE FOLLOWING FORMULA:

$$\frac{K \text{ ALT}}{.43} \times .5 = \text{THICKNESS OF ALTERNATE MAT. (INCHES)}$$

EXAMPLE: "K" OF BRICK = 5

$$\frac{5}{.43} \times .5 = 5.81 \text{ in. OF BRICK.}$$

Figure 6 - Hearth Extension

WARNING!

Hearth extensions are to be installed only as illustrated to prevent high temperatures from occurring on concealed combustible materials. Hearth sealing strips prevent burning or hot particles from inadvertently falling directly on combustible surfaces in the event the building should settle and disturb the original construction.

4. Sidewalls/Surrounds

Adjacent combustible side walls must be located a minimum of 12" from the fireplace opening. See Figure 7. If you are using a decorative surround constructed of combustible material, it must be located within the shaded area defined in Figure 7. Short stub walls are also acceptable if they are contained within the shaded area. You must maintain adequate clearances for servicing and proper operation.

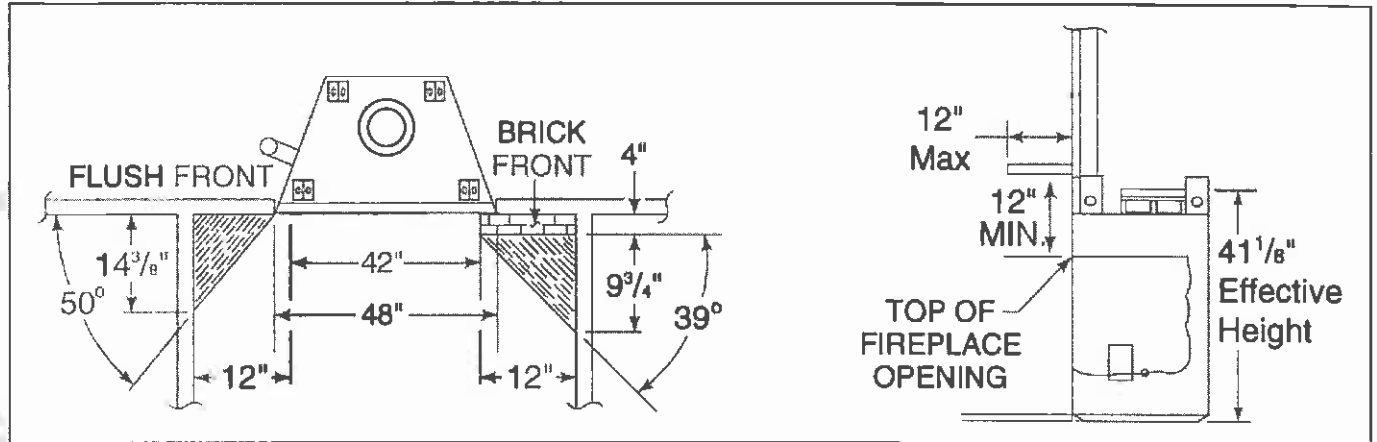


Figure 7
Sidewalls/Surrounds

5. Mantel

A combustible mantel may be positioned no lower than 12" above the top of the fireplace opening. The combustible mantel may have a maximum depth of 12". Combustible trim pieces that project no more than 1-1/2" from the face of the fireplace can be placed no closer than 6" from the top and side of the fireplace opening. However, they must not cover the black metal front of the fireplace. This mantel clearance is in accordance with Section 7-3.3.3 of ANSI/NFPA 211. Combustible trim pieces can also be located in the shaded areas shown in Figure 7.

E. CHIMNEY REQUIREMENTS

When planning your fireplace location, the chimney construction and necessary clearances must be considered. The fireplace system and chimney components have been tested to provide the following flexibility in construction. The following figures are the minimum distances from the base of the fireplace.

- | | |
|---|----------|
| 1. Minimum overall straight height | 16.5 ft. |
| 2. Minimum height with offset/return | 16.5 ft. |
| 3. Maximum height | 90 ft. |
| 4. Maximum chimney length between an offset and return | 20 ft. |
| 5. Maximum distance between chimney stabilizers | 35 ft. |
| 6. Double offset/return minimum height | 20 ft. |
| 7. Maximum unsupported chimney length between the offset and return | 6 ft. |
| 8. Maximum straight unsupported chimney height above the fireplace | 35 ft. |

1. Using Offsets and Returns

- a. To bypass any overhead obstructions, the chimney may be offset using a 15° offset/return (SL315) or a 30° offset/return (SL330). Perform the following steps to determine the correct chimney component combination for your particular installation.
- b. An offset and return may be attached together or a chimney section(s) may be used between an offset and return. However, the distance between two elbows must never exceed 12 feet in total length.
 - 1) Measure how far the chimney needs to be shifted to enable it to avoid the overhead obstacle. See Figure 8 dimension "A".
 - 2) After determining the offset dimension, refer to Table 1 (page 13) and find the "A" dimension closest to but not less than the distance of shift needed for your installation.

- 3) The "B" dimensions that coincide with the "A" dimensions represent the required vertical clearance that is needed to complete the offset and return.
- 4) Read across the chart and find the number of chimney sections required and the model number of those particular chimney parts.
- 5) Whenever the chimney penetrates a floor/ceiling, a firestop spacer must be installed.

- 6) The effective height of the fireplace assembly is 33". Effective height of fireplace assembly is measured from base of the fireplace to top of starter collar. See Figure 7.

Example: Your "A" dimension from Figure 8 is 14-1/2". Using Table 1, the dimension closest to but not less than 14-1/2" is 14-5/8" using the 30° offset/return. It is then determined from the table that you would need 33" (dimension "B") between the offset and return. The chimney components that best fit your application are two SL312's.

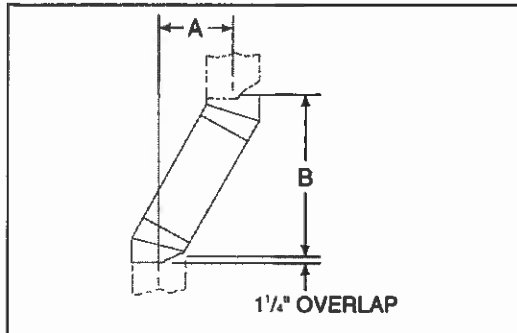


Figure 8 - Chimney Offset/Return

WARNING!

Do not combine offsets to create an offset greater than 30° from vertical. This may create a fire hazard since the natural draft may be restricted.

Table 1 Offset Chart*

15°		30°		SL306	SL312	SL318	SL324	SL336	SL348
A	B	A	B						
1-5/8"	13-3/8"	3-7/8"	14-1/2"	-	-	-	-	-	-
2-1/8"	17-3/4"	6-1/4"	18-5/8"	1	-	-	-	-	-
-	-	8-5/8"	23"	2	-	-	-	-	-
4-1/2"	23-5/8"	9-1/4"	23-3/4"	-	1	-	-	-	-
-	-	11-5/8"	27-7/8"	1	1	-	-	-	-
6"	29-3/8"	12-1/4"	29"	-	-	1	-	-	-
7-1/4"	34"	14-5/8"	33"	-	2	-	-	-	-
-	-	15-1/4"	34-1/8"	-	-	-	1	-	-
-	-	17-5/8"	38-1/4"	1	-	-	1	-	-
-	-	20-5/8"	43-1/2"	-	-	2	-	-	-
10-5/8"	46-3/4"	21-1/4"	44-5/8"	-	-	-	-	1	-
11-7/8"	51-3/8"	23-5/8"	49"	1	-	-	-	1	-
-	-	26-5/8"	53-7/8"	-	-	-	2	-	-
13-3/4"	58-3/8"	27-1/4"	55-3/4"	-	-	-	-	-	1
15"	63"	29-5/8"	59-1/8"	1	-	-	-	-	1
16-1/2"	68-3/4"	32-5/8"	64-1/4"	-	1	-	-	-	1
18"	74-5/8"	35-5/8"	69-1/2"	-	-	1	-	-	1
-	-	38-5/8"	74-5/8"	-	-	-	1	-	1
-	-	41"	78-3/4"	1	-	-	1	-	1
22-3/4"	91-7/8"	44-5/8"	85-1/8"	-	-	-	-	1	1
24"	96-1/2"	47"	89-1/8"	1	-	-	-	1	1
25-7/8"	103-1/2"	50-5/8"	95-1/2"	-	-	-	-	-	2

* Proper assembly of air cooled chimney parts result in an overlap at chimney joints of 1-1/4". Effective length is built into this chart.

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2. Chimney Height Requirements (Above the Roof Line)

a. Major building codes specify a minimum chimney height above the roof top. These specifications are summarized in what is known as the "Ten Foot Rule." This rule states:

If the horizontal distance from the side of the chimney to the peak of the roof is 10 feet or less, the top of the chimney must be at least 2 feet above the peak of the roof, but never less than 3 feet in overall height above the highest point where it passes through the roof. See Figure 9.

If the horizontal distance from the side of the chimney to the peak of the roof is more than 10 feet, a chimney height reference point is established on the surface of the roof a distance of 10 feet from the side of the chimney in a horizontal plane. The top of the chimney must be at least 2 feet above this reference point, but never less than 3 feet in height above the highest point where it passes through the roof.

b. These chimney heights are necessary in the interest of safety but do not ensure smoke-free operation. Trees, buildings, adjoining roof lines, adverse wind conditions, etc. may create a need for a taller chimney should smoking occur.

3. Determining the Number of Chimney Sections Required

To determine the chimney components needed to complete your particular installation, follow the below steps:

- a. Determine the total vertical height of the fireplace installation. This dimension is measured from the base of the fireplace assembly hearth stone to the point where the smoke exits the termination cap.
- b. Subtract the height of the fireplace assembly from the overall height of the fireplace installation.
- c. Refer to the chart below to determine what components must be selected to complete the fireplace installation.
- d. Determine the number of firestop spacers, stabilizers, roof flashing, etc. required to complete the fireplace installation.

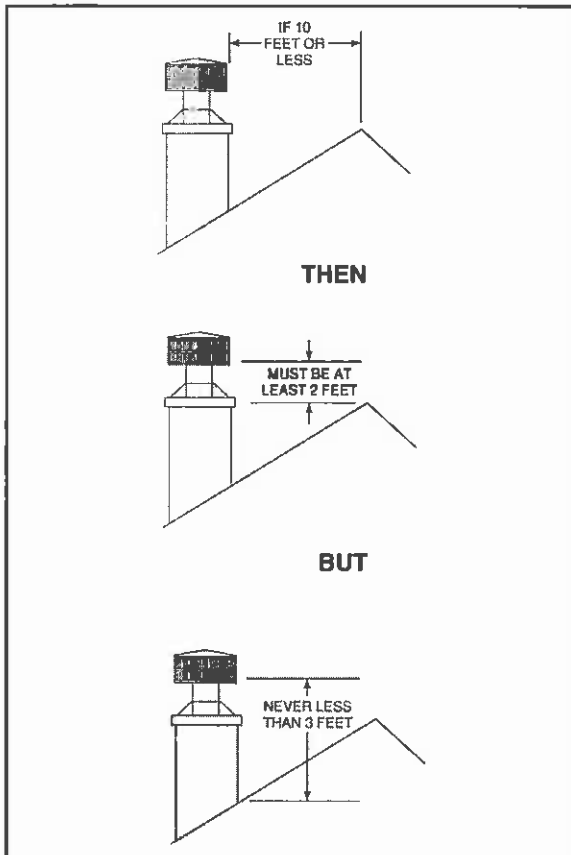


Figure 9 - Chimney Height

Table 2

Height of Chimney Components	
Chimney Stabilizer	
SL3	4-3/4"
Firestop Spacers	
FS338	0
FS339	0
FS340	0
Offsets>Returns	
SL315	13-3/8"
SL330	14-1/2"
Roof Flashing	
RF370	0
RF371	0
Chimney Sections*	
SL306	4-3/4"
SL312	10-3/4"
SL318	16-3/4"
SL324	22-3/4"
SL336	34-3/4"
SL348	46-3/4"

* Dimensions reflect effective height.

F. STEP-BY-STEP INSTALLATION OF FIREPLACE SYSTEM

WARNING!

Before starting, do the following:

1. Wear gloves and safety glasses for protection.
2. Keep hand tools in good condition. Sharpen cutting edges and make sure tool handles are secure.
3. Always maintain the minimum air space required to the enclosure to prevent fire.

1. Positioning the Fireplace

This fireplace may be placed on either a combustible or noncombustible continuous surface. Follow the instructions for framing on pages 9-12. **Be sure to provide the minimum 3/4" air clearance at the sides and back of the fireplace assembly.**

2. Placing the Protective Metal Hearth Strips

Included with your fireplace you will find two metal hearth strips measuring approximately 4" x 26". These strips are used to provide added protection where the fireplace and hearth extension meet.

Slide the metal strips two inches under the front edge of the fireplace. The individual pieces must overlap each other by one inch in the middle of the fireplace to provide continuous coverage of the floor. See Figure 10. These metal strips should extend from the front and sides of the fireplace opening by 2".

3. Leveling the Fireplace

Level the fireplace side-to-side and front-to-back. Shim with noncombustible material, such as sheet metal, as necessary.

Important: To ensure proper fit of the glass doors, check the fireplace opening to ensure it is square. Measure diagonal distances of the opening to make sure they are equal. If they do not equal, continue to shim the fireplace until those diagonals correspond.

Secure the fireplace by utilizing the nailing flanges located on either side of the fireplace to the vertical framing.

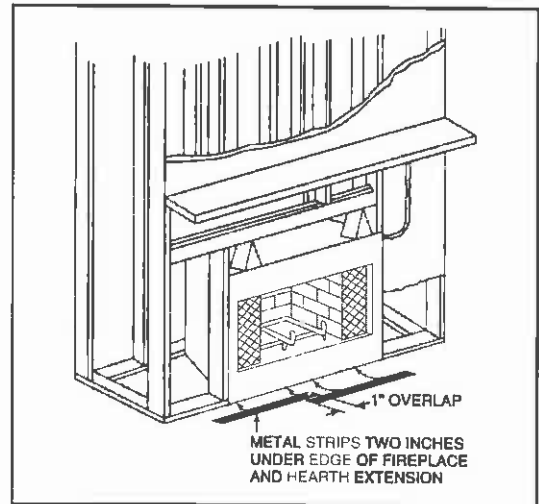


Figure 10
Positioning the Metal Strips

WARNING!

Carefully follow the instructions for assembly of the pipe and other parts needed to install this fireplace system. Failure to do so may result in a fire, especially if combustibles are too close to the fireplace or chimney and air spaces are blocked preventing the free movement of cooling air.

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4. Assembling Chimney Sections

Attach either a straight chimney section or an offset to the top of the fireplace depending on your installation requirement. See Figure 11. Chimney sections are locked together by pushing downward until the top section meets the top head on the lower section. See Figure 12. When using offsets and returns, we recommend the offset and return sections be secured in place with screws to ensure proper orientation.

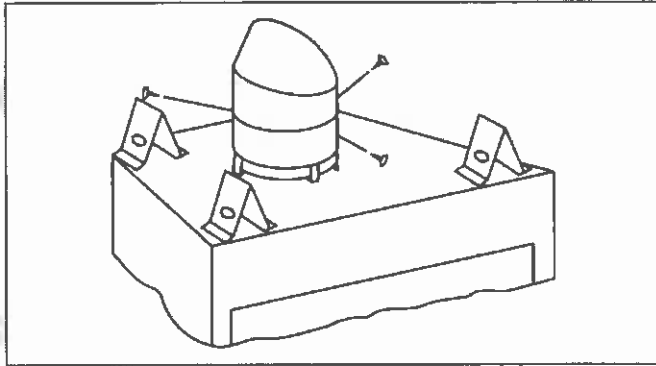


Figure 11
Offset Secured to Fireplace

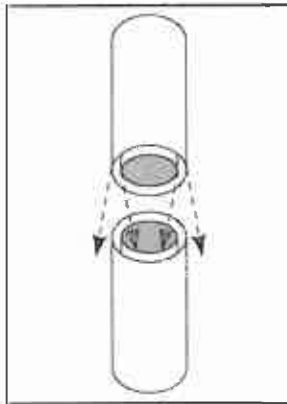


Figure 12
Connecting Chimney Sections

Note: The inner flue is placed to the **inside** of the flue section below it. The outer casing is placed **outside** of the outer casing of the chimney section below it. See Figure 12.

CAUTION:
Inner flue and outer liner sections cannot be disassembled once locked together. Plan ahead to ensure the proper installation height is achieved with the selected chimney components.

These firestop spacers are designed to provide the minimum two inch air space required around the chimney. In all situations, the firestop spacers are to be nailed to the ceiling joists from the bottom or fireplace side, **EXCEPT** when the space above is an insulated ceiling or attic space. In this situation, the firestop spacer must be nailed from the top side to prevent loose insulation from falling into the required two inch air space around the chimney. See Figure 13.

Firestop spacers must be used whenever the chimney penetrates a ceiling/floor area.

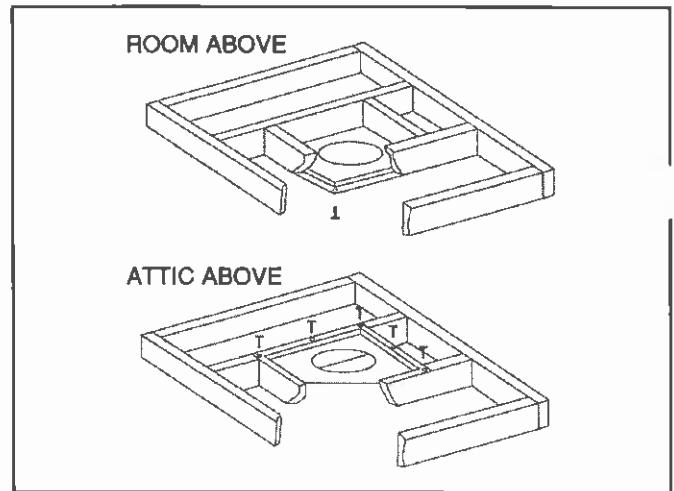


Figure 13
Installing the Firestop Spacer

5. Preparing the Ceiling for Firestop Spacers

Mark and cut out an opening in the ceiling for the particular firestop spacer being utilized (14-1/2" x 14-1/2" for an FS338, 14-1/2" x 18-3/4" for an FS339, or 14-1/2" x 23" for an FS340). Frame the opening with the same dimension lumber used in the ceiling joists.

6. Installing the Firestop Spacers

Install the firestop spacer FS338 (Straight), FS339 (if a 15° offset is located in the ceiling joist area) or FS340 (if a 30° offset is located in the ceiling joist area). Nail the four sides of the firestop spacer to the joists using a minimum of three nails per side.

7. Installing an AS8 Insulation Shield

An AS8 insulation shield should be installed when there is a possibility of insulation coming into contact with the factory built chimney system. The AS8 is installed by positioning it over the vertical chimney section where it penetrates an FS338 firestop spacer. The FS338 will support the AS8. See Figure 14, page 17

When the factory built chimney penetrates an insulated ceiling at either 15 or 30 degrees from vertical, an insulation dam should be constructed from plywood or sheet metal. A minimum 2" air space must be provided between the insulation dam and the factory built chimney system