



## **ECOVENT USA CHIMNEY MODEL EV-SHT 5"-8" DIAMETER INSTALLATION INSTRUCTIONS**

**A MAJOR CAUSE OF CHIMNEY RELATED FIRES IS FAILURE TO MAINTAIN REQUIRED CLEARANCES (AIR SPACES) TO COMBUSTIBLE MATERIALS. IT IS OF THE UTMOST IMPORTANCE THAT THIS CHIMNEY BE INSTALLED ONLY IN ACCORDANCE WITH THESE INSTRUCTIONS.**

Read through all these instructions before beginning your installation. Failure to install the chimney as described in these instructions will void the manufacturer's warranty and may have an effect on your homeowner insurance and UL listing status. Keep these instructions for future use.

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## **CLEARANCES**

Always allow at least a **2-inch** clearance between Model EV-SHT chimney pipe and any combustible materials. Never fill any required clearance space with insulation or any other materials. Combustible materials include lumber, plywood, sheetrock, plaster and lath, furniture, curtains, electrical wiring and building insulation. Keep single wall stovepipe at least **18 inches** away from combustible materials, unless a clearance reduction system that is acceptable to the authority having jurisdiction is used, or the appliance to be installed is listed and the instructions specify a different clearance.

## **PERMITS**

Contact your local Building Official or Fire Official regarding permits, restrictions, and installation inspections in your area.

## **Model EV-SHT APPLICATIONS**

Model EV-SHT chimney is **UL 103 Type HT** insulated chimney, which can be used with wood stoves, fireplaces, fireboxes, furnaces, boilers, water heaters, stoves, ranges, or other residential-type appliances fueled by oil, gas, coal, or wood, that require a chimney system. Do not use with forced draft, positive-pressure appliances.

## **CHIMNEY DIAMETER**

Follow the appliance manufacturer's instructions to determine chimney diameter and clearances between combustible materials and your heating appliance. Never choose a chimney with an inside diameter smaller than your appliance's outlet. To calculate the chimney's outside diameter, add 2 inches to the inside diameter.

## **CHIMNEY HEIGHT**

The National Fire Protection Association Standard #211 states: "Chimneys shall extend at least three feet above the highest point where it passes through the roof of a building, and at least two feet higher than any portion of a building within ten feet." (Fig 1) If the chimney extends more than 5 feet above the roof, a Roof Brace must be used (see page 9). Due to the overlap of the joints, subtract 1-1/8 inches from each Chimney Section's height to calculate installed height.

The chimney shall at least **10 feet** to adjacent walls or buildings.

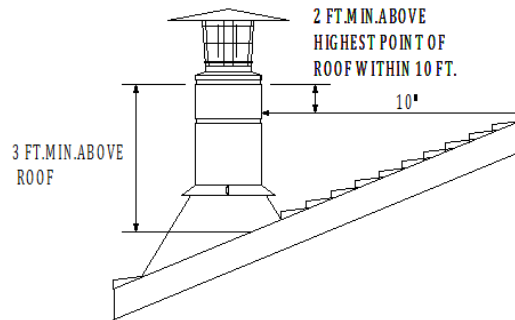


Fig.1

The Tee Support can hold a maximum of **50 feet** of Rainbow Chimney. The required parts and general configuration are as shown in Figures 21 and 22.

### CHIMNEY PLACEMENT

When deciding the location of your chimney, try to avoid modifications to roof beams and other structural components of the building.

### CHIMNEY ENCLOSURE REQUIREMENTS

**Through Rooms:** Interior chimneys shall be enclosed where they extend through closets, storage areas, occupied spaces, or any place where the surface of the chimney could be contacted by persons or combustible materials. The space between the outer wall of the chimney and the enclosure shall be at least 2 inches (Fig 2).

**Multi-Story:** Consult local building codes for requirements in your area. In the U.S., the National Fire Protection Association Standard #211 states: "Factory-built chimneys that pass through floors of buildings requiring the protection of vertical openings shall be enclosed with approved walls having a fire resistance rating of not less than one hour when such chimneys are located in a building less than 4 stories in height, and not less than 2 hours when such chimneys are located in a building more than 4 stories in height." In Canada, except in single-family and two family dwellings, chimneys which extend through another story must have an enclosure with a fire resistance rating equal to or greater than that of the floor or roof assembly through which they pass.

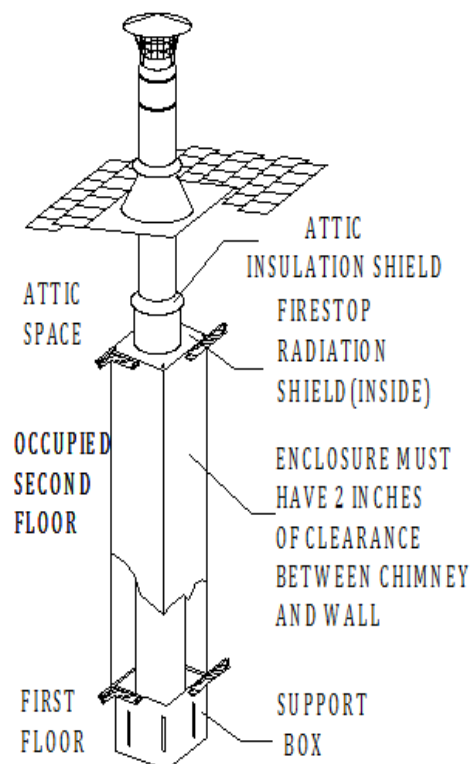


Fig.2

**Cold Climates:** In cold climates, chimneys mounted on an outside wall should be enclosed in a chase. Exterior chases reduce condensation and creosote formation, and enhance draft. Include an access door by the Tee Cap for chimney cleaning (Refer to Fig 21, page 16).

## **STOVE RECOMMENDATIONS**

Follow the stove manufacturer's instructions. The requirements stated below pertain to all stoves or other appliances installed with Model EV-SHT systems.

**Choice:** Choose an appliance that is listed by a recognized testing laboratory, is appropriate for your needs, and is not larger than required.

**Installation:** Once the chimney system is in place, install the stovepipe to connect the appliance to the chimney as described in the appliance manufacturer's instructions. Be sure to maintain all required clearances.

**Fuels:** Connect only one solid fuel appliance per chimney.

**Operation:** Follow the appliance manufacturer's instructions for maximum efficiency and safety. Over firing can damage the appliance, stovepipe and chimney.

**Fuels:** Do not burn driftwood, plastic, or chemically treated wood such as railroad ties. They are corrosive to your appliance, stovepipe and chimney. Follow the appliance manufacturer's instructions and safety manual in regards to fuels. Not all appliances are equipped to burn coal. Coal with a low sulfur content will reduce the possibility of corrosion.

**Mobile Homes:** Please read the appliance manufacturer's instructions and safety manual carefully. Not all appliances are listed for use in mobile homes.

## **STEP-BY-STEP DIRECTIONS**

There are four general types of EV-SHT installations:

1. Ceiling-supported
2. Roof-supported
3. Tee-supported (through-the-wall)
4. Masonry Fireplace
5. Zero-clearance Fireplace

Review the step-by-step directions before beginning your installation.

### **CEILING SUPPORTED**

**1. Place Appliance:** Position the appliance according to the manufacturer's instructions. The flue outlet collar should be placed between the rafters or joists above, if possible.

**2. Frame Support Opening:** Drop a plumb bob to the center of the appliance's flue outlet and mark this center point on the ceiling. Refer to Table 1 for specific framing and clearance dimensions. Mark appropriate cutting lines around the center point. Cut a square hole in the ceiling for the Support Box. Frame a level, square opening centered over the hole which you have cut. (Figure 3 and 4).

**3. Install Support:** For installation into a flat ceiling, you may use either the Round Support Box or the Square Ceiling Support Box. For the Square Ceiling Support Box, refer to the Square ceiling installation below. The Round Ceiling Support Box has the option of a square or round Trim Collar available (Fig 5). The bottom of the Round Support Box must extend at least 3 inches below the finished ceiling. Level the Support Box and secure it to the framing using at least three 8-penny nails per side (min. of 12 total ). Alternatively, you may use 1-1/2" #8 wood screws (min. of 12 total), instead of nails. Next, secure the Trim Collar (round or square) to the framing members using provided hardware (Fig 6).

For installation into a cathedral ceiling, you must use the Square Ceiling Support Box and the two-piece Trim. The bottom of the square portion of the Support Box must be a minimum of 2-inches lower (round portion is an additional 3 inches lower) than the finished ceiling at the lowest side of the penetration (Fig 5 & 6). Level the Support Box and secure it to the framing using at least three (3) 8-penny nails per side (minimum of 12 nails total), or a minimum of (3) #8, 1-1/ 2" wood screws. Adjust the overlapping "U-shaped" Trim pieces so they cover the Support Box, and secure them to the framing members using provided hardware

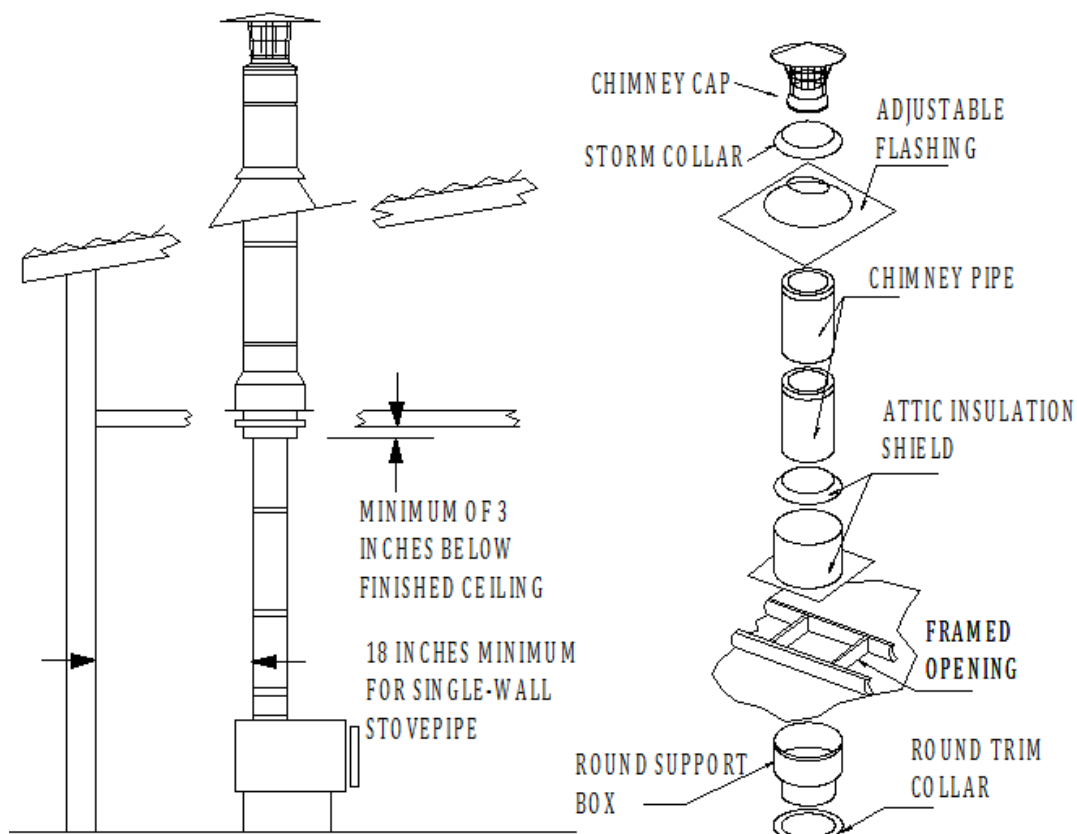


Fig.3

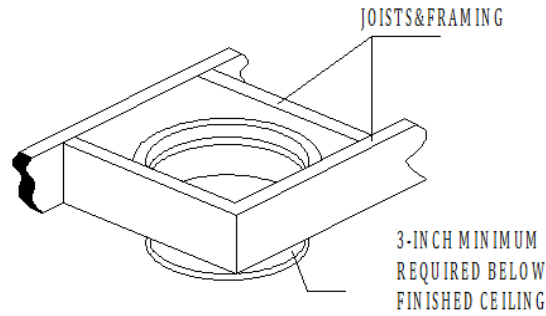


Fig.4

**4. Frame Openings:** Frame openings in each ceiling or floor above the Support Box (Fig 7). These openings are to hold the Radiation Shield and Attic Shield. Locate each opening by dropping a plumb bob to the four corners of the opening below. Maintain the minimum clearances and dimensions as specified in Table 1. If Elbows must be used to avoid an obstruction, refer to the Offset Elbow Installation section.

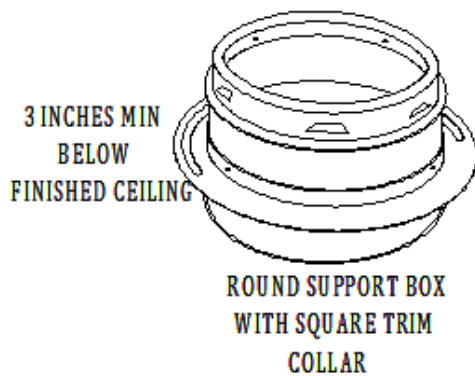


Fig.5

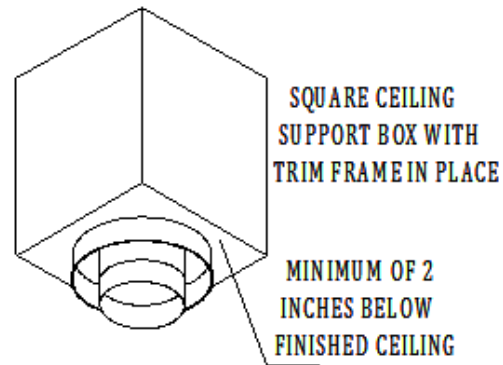


Fig.6

**5. Cut Roof Opening:** Cut an opening in the roof directly above the opening below, and at least 4 inches larger than the chimney's outside diameter to provide at least a 2-inch clearance all around the chimney. The chimney must be centered within this opening and maintain the 2-inch clearance to combustibles.

**6. Install Radiation Shield:** A Radiation Shield is required in multistory installations at each floor penetration above that where the Support Box is located **when the attic insulation shield is to be enclosed**. Example: in a multistory home where the appliance is on the ground floor (Support Box is in the 1st floor ceiling), you would need a Radiation Shield at the 2nd floor ceiling, and at the 3rd floor ceiling, etc., including where the chimney penetrates into the attic. Figure 7 shows a typical 2-story installation with an attic. Note: a Radiation Shield is not installed where the chimney penetrates through the roof. The Radiation Shield is installed on the underside of the ceiling/floor framing, with the cylindrical "tube" portion of the shield pointing upward (Fig 8). Use a minimum of either (1) 8 penny nail or (1) #8, 1-1/2" wood screws per corner. Refer to Table 1 for framing requirements.

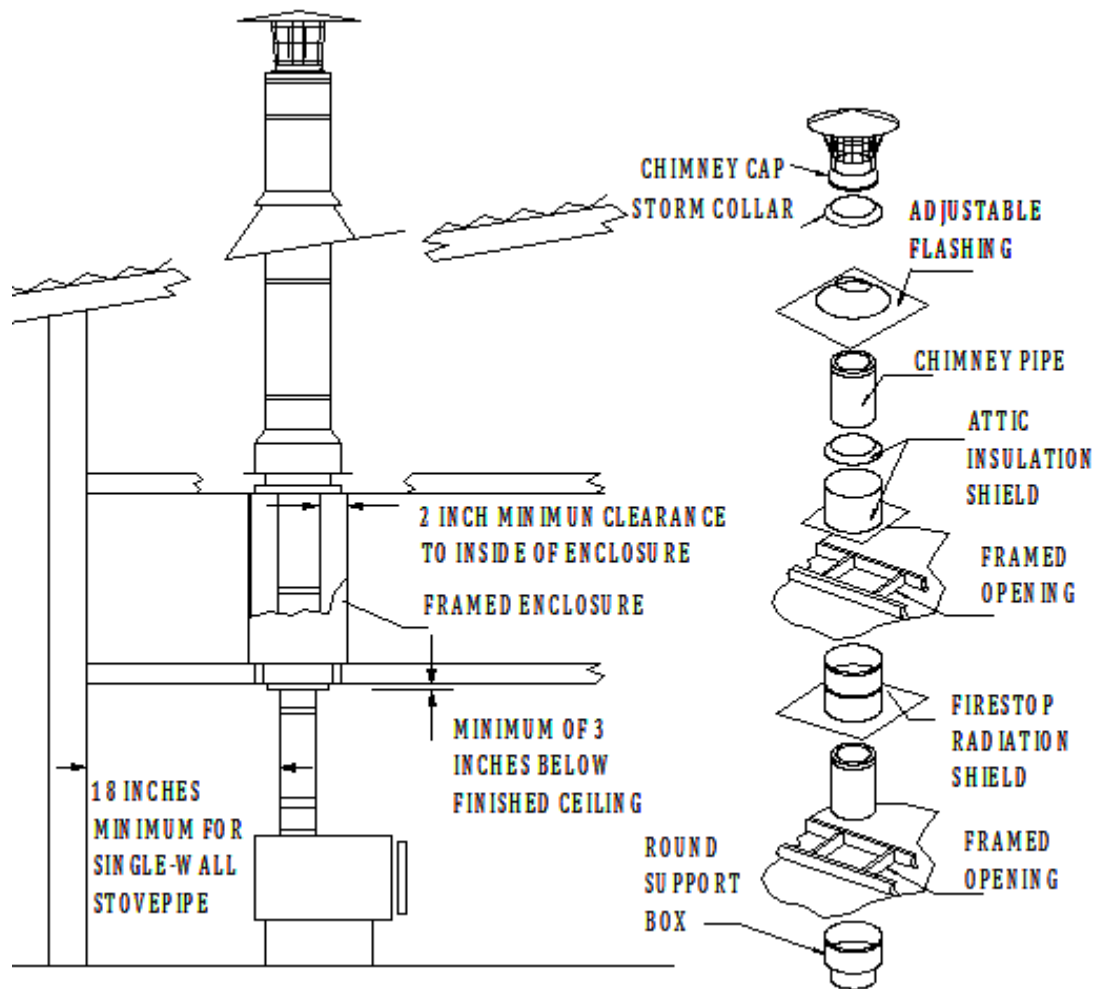


Fig.7

Table 1

FRAME DIMENSIONS FOR SQUARE CEILING SUPPORT BOX, ROUND CEILING SUPPORT BOX, WALL THIMBLE, AND RADIATION SHIELD				
CHIMNEY SIZE	5"	6"	7"	8"
FRAMED OPENING INSIDE DIMENSIONS	11 1/2 X 11 1/2	12 1/2 X 12 1/2	13 1/2 X 13 1/2	14 1/2 X 14 1/2

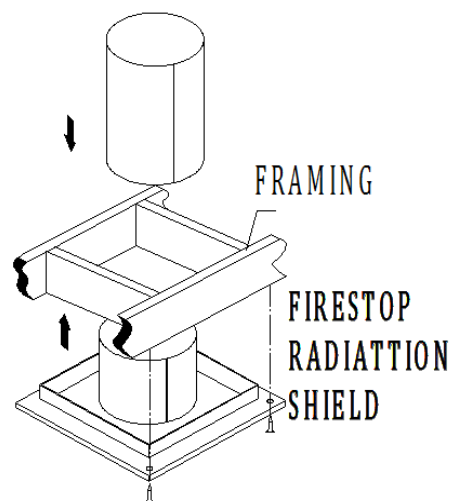


Fig.8



**7. Assemble Chimney Sections:** Lower the female end of the first Chimney Section in the Support Box (Fig 9). It will twist-lock clockwise onto the male end of the Support Box. Turn Pipe Sections firmly clockwise to lock them together. Sheet metal screws are not required, but they may be used to reinforce the connection, if desired. Use only 1/2" (or shorter) sheet metal screws. Do not penetrate the inner liner of the chimney.

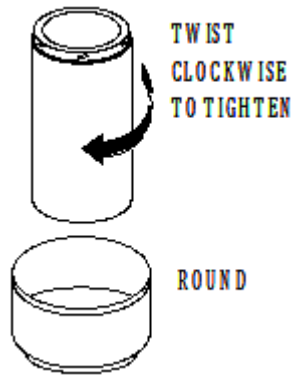


Fig.9

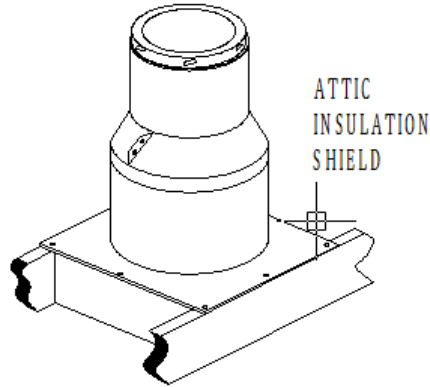


Fig.10

**8. Install Attic Insulation Shield (when the attic insulation shield is to be enclosed):** Install the Attic Insulation Shield where the chimney passes into an attic. Its purpose is to prevent debris and insulation from getting too close to the chimney (Fig 10). An installed Attic Insulation Shield is 15 inches high. In attic areas where this shield cannot fit, you must enclose the attic portion of the chimney in a framed enclosure. If the chimney is fully enclosed through the attic, an Attic Insulation Shield is not required. If the chimney passes into the attic, install the Attic Insulation Shield as follows:

- a. If the Radiation Shield extends above the attic floor, no modifications are necessary. The Radiation Shield will fit inside the Attic Insulation Shield.
- b. Assemble Chimney Sections until at least 18 inches of chimney extends above the Radiation Shield.
- c. Extend the Radiation Shield tube extension (keep at least 1" overlap), and secure in place using sheet metal screws.
- d. Slip the Attic Insulation Shield over the Chimney and Radiation Shield until the base sits squarely on the framed opening (Fig 7 & 10).
- e. Secure the Attic Insulation Shield to the top of the framed opening using at least (3) 8-penny nails or (3) #8, 1-1/2" wood screws per side (Fig 10).
- f. Wrap the Collar of the Attic Insulation Shield around the chimney and fasten it loosely with supplied hardware. Slide the Collar down to meet the Attic Insulation Shield. Tighten the hardware to secure the Collar.

**9. Attach Flashing:** In new construction, assemble the Chimney Sections to a point above the roof, then slip the Flashing over the chimney. On an existing roof, center and install the Flashing before extending the chimney above the roof. Allow space to permit sliding the next Chimney Section up through the

Flashing. Always insure the chimney remains vertical (use level), and that at least a 2-inch clearance to combustible materials is maintained all around. Install the upper edge of the Flashing under the roofing. Nail to the roof along the upper edge and down each side with 1-inch roofing nails. Do not nail the lower edge of the Flashing (Fig 11). Be sure to follow local building practices, as needed. Seal all nail heads with a non-hardening waterproof sealant. On flat or tarred and graveled roofs, nail and seal the Flat Roof Flashing to the roof on all sides with roofing compound. Do not put screws through the Flashing into the Chimney Pipe.

**10. Finish Top:** Apply a high-temperature (500<sup>0</sup>F), non-hardening waterproof sealant around the chimney at the point where the Storm Collar will meet the chimney just above the Flashing **1/2 INCH**. (Figures 11 and 12). Slide the Storm Collar down over the chimney to the **tab** of the Flashing. Tighten and seal the Storm Collar against the sealant. After installing sufficient Chimney Sections to meet the height requirement (Fig 1), attach the Chimney Cap onto the top of the chimney by holding the collar of the cap and twist locking it clockwise onto the chimney. Do not hold upper portion of the cap and twist, as this may damage the cap. The Chimney Cap can be removed for chimney cleaning as described in the Chimney Maintenance section of the instructions. Use a Roof Brace if the chimney extends more than 5 feet above the roof (Figures 14 & 15 in the Roof Brace).

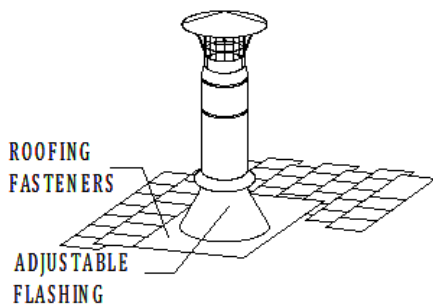


Fig 11

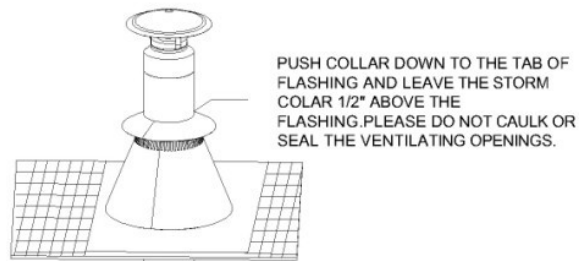


Fig 12

**11. Enclosures:** Enclose chimneys where they pass through occupied spaces, including closets. Always maintain at least a 2-inch clearance between the chimney and any combustible materials. Interior enclosures may be constructed with standard framing and sheathed with sheetrock or plywood. Use Wall Brackets as needed to maintain a minimum of 2 inches of air space between the chimney and combustible materials.

### OFFSET ELBOW INSTALLATION

Elbows are manufactured in 15° and 30° angles measured from the vertical. A 30° Elbow is the largest that can be used in an offset. A 30° Elbow may not be combined with a 15° Elbow to make a 45° offset. Avoid Elbows if possible, since a totally vertical chimney is more efficient. When Elbows are necessary

to avoid obstructions such as rafters, ridgepoles, or joists, use **no more than two 30° offsets** in any one chimney system.

**1. Attach Elbows:** Attach Elbow to Chimney Section or other Elbow. Please be noticed that the female end of the elbows are not lanced, in order to ensure proper alignment of the chimney system can be maintained. Locking bands must be used at all chimney joints. Attach one Elbow to the Chimney Section below, and align it for the offset. Refer to Table 2 to determine the required offset length and attach an appropriate length (or lengths) of Chimney Section(s) above the Elbow. The maximum length of chimney pipe between elbows is not to exceed 72" (maximum of two chimney sections only). Attach the second Elbow above the Chimney Section to complete the offset (Fig 13).

**2. Secure Offset:** Place the Elbow Strap's band around the angled portion of the top Elbow, then tighten the nut and bolt until the clamp is firm. Wrap the Elbow Strap end over an adjacent joist or rafter and secure it with at least (2) 8-penny nails or (2) #8, 1-1/2 screws. Do not add more Chimney Sections until the Elbows are supported. Be sure that the chimney remains vertical. If there is more than one Chimney Section between the Elbows, install a second Elbow Strap around the joint of the two Chimney Sections (Fig 13).

## ROOF BRACE INSTALLATION

If the chimney extends more than 5 feet above the roofline, a Roof Brace must be installed at every 5-foot increment of chimney height above the roofline,

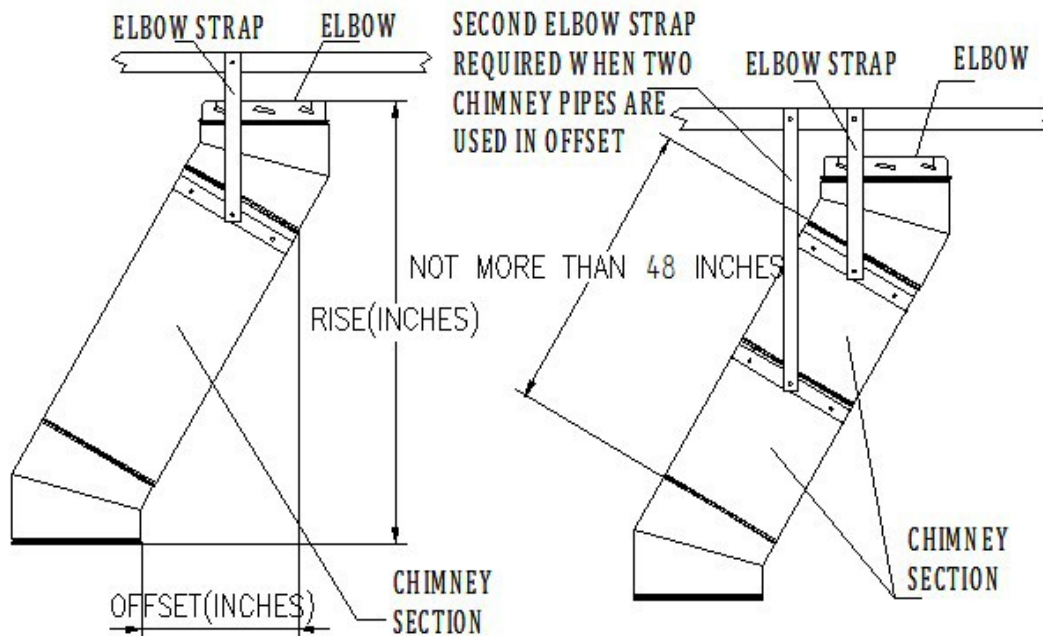


Fig 13

leaving no more than 5 feet of chimney extending above the last Roof Brace. The Roof Brace consists of the Pipe Band, the Adjustable Legs, and the Roof Brackets.

**1. Mount Pipe Band:** Slip the Pipe Band around the chimney and secure by tightening the nut and bolt.

**2. Attach the Legs:** The Adjustable Legs of the assembly will adjust from 60" to 108". Secure one end of the Legs to the Pipe Band using the nuts and bolts included (1 per Leg). Position the Adjustable legs so they form approximately a 60° angle with the chimney, and with each other (Figures 14 and 15). Be sure that there is at least 3" of overlap between the top and bottom halves of the Adjustable Leg. In order to secure Legs in proper position, there is a hole provided in the outer leg where the outer and inner halves overlap. Use a 1/4" drill bit to drill through the inner leg at that location. Use the nut & bolt provided to pin the Adjustable Legs in position.

**3. Install Roof Bracket:** Mount the two Roof Brackets where each of the adjustable Legs meets the roof, using (6) 1" roofing nails per bracket. Seal the nail heads carefully with a non-hardening, waterproof sealant. Attach the bottom end of the Adjustable Legs to the Roof Brackets using the nuts & bolts provided.

	CHIMNEY LENGTH BETWEEN ELBOWS	5		6		7		8	
		OFFSET	RISE	OFFSET	RISE	OFFSET	RISE	OFFSET	RISE
ELBOW DEGREE = 15	0	1 29/64	12 6/64	1 29/64	12 16/64	1 32/64	12 33/64	1 34/64	12 48/64
	6	2 62/64	17 51/64	3	17.94277	3 2/64	18 14/64	3 4/64	18 29/64
	12	4 32/64	23 32/64	4 33/64	23.64705	4 36/64	23 59/64	4 38/64	24 10/64
	18	6 2/64	29 13/64	6 3/64	29.35134	6 6/64	29 40/64	6 8/64	29 55/64
	24	7 36/64	34 58/64	7 37/64	35.05563	7 39/64	35 21/64	7 41/64	35 36/64
	30	9 6/64	40 39/64	9 7/64	40.75991	9 9/64	41 2/64	9 11/64	41 17/64
	36	10 40/64	46 20/64	10 41/64	46.4642	10 43/64	46 47/64	10 45/64	46 63/64
	42	12 9/64	52 1/64	12 11/64	52.16849	12 13/64	52 28/64	12 15/64	52 44/64
	48	13 43/64	57 46/64	13 44/64	57.87277	13 47/64	58 9/64	13 49/64	58 25/64
ELBOW DEGREE = 30	0	3 7/64	12 46/64	3 15/64	13 10/64	3 25/64	13 50/64	3 27/64	13 60/64
	6	6 4/64	17 53/64	6 11/64	18.25035	6 23/64	18 58/64	6 25/64	19 4/64
	12	9 1/64	22 61/64	9 8/64	23.36467	9 20/64	24 1/64	9 22/64	24 11/64
	18	11 62/64	28 4/64	12 5/64	28.47899	12 17/64	29 9/64	12 19/64	29 18/64
	24	14 59/64	33 11/64	15 2/64	33.59332	15 14/64	34 16/64	15 16/64	34 26/64
	30	17 56/64	38 18/64	17 63/64	38.70764	18 10/64	39 23/64	18 13/64	39 33/64
	36	20 53/64	43 26/64	20 60/64	43.82196	21 7/64	44 31/64	21 10/64	44 40/64
	42	23 50/64	48 33/64	23 57/64	48.93629	24 4/64	49 38/64	24 7/64	49 48/64
	48	26 47/64	53 40/64	26 54/64	54.05061	27 1/64	54 45/64	27 4/64	54 55/64

**TABLE 2 ELBOW OFFSET CHART**

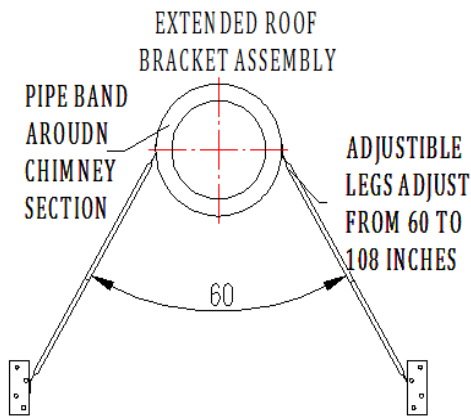


Fig 14

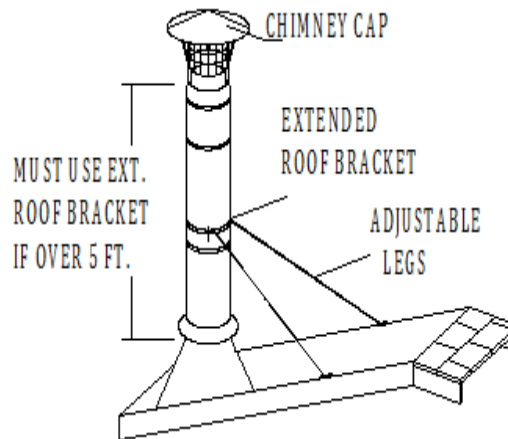


Fig 15

## ROOF SUPPORTED INSTALLATIONS

There are two types of Roof Supported Installations: (1) Using a roof jack, and (2) Using a Roof Support.

(1) For a roof jack installation, make sure that the square box portion of the Support Box can extend at least 2" below the low side of the finished ceiling (Fig 16). The roof jacket must remain level, and the top edge of the box must cover the edge of the roof's decking material. Mobile home chimney installations are roof supported. Do not seal openings in flashing.

**1. Place Appliance:** Place the appliance in its proper location, referring to the manufacturer's instructions as to allowable distances from combustibles, etc.

**2. Cut Openings:** Cut a roof opening in your desired location, just as in a Ceiling Supported Installation (Steps 1 through 5, page 4 – 6). If a separate ceiling and roof exists, as shown in Figure 17 (Low Attic), first cut and frame a ceiling opening as described in Ceiling-Supported Installations (Step 2). Refer to Table 1 for clearance and framing specifications. If it is desired to install through a cathedral ceiling (Fig 16), then the hole is cut in the roof.

**3. Install Roof jack:** Slip the roof jack into the framed opening so the square portion projects at least 2 inches below the finished ceiling and rafters (bottom of round portion is 5" below), and extends above the ceiling to framing or decking materials that it can be nailed to. Level the roof jacket, and slit the corners to the roofline where they extend beyond it. Using 8-penny nails, or 1-1/2", #8 screws, per side (Fig 20). Screw the trim sections into the ceiling (Fig 6). **Roof jack must extend from the roof line 6 inches.**

**4. Complete Installation:** Refer to Steps 7, 9 & 10 in the Ceiling Supported Installation section to complete the Roof Supported installation.

(2) A Roof Support is used in installations where there is a cathedral ceiling, and a Square Ceiling Support is not desired. The Roof Support allows the EVHST to come down into the room below the level of the ceiling (Fig 18). The Roof Support can support a maximum of 45 feet of EVHST total, and maximum of 20 feet below the support.

1. Cut and frame opening to provide a minimum 2" clearance on all sides of the

chimney pipe.

2. Bolt on the Roof Support Brackets to the Roof Support Band using the supplied hardware. Attach the Roof Support Brackets to roof using (4) 8 penny nails or (4) #8, 1-1/2" screws per side (Fig 18).

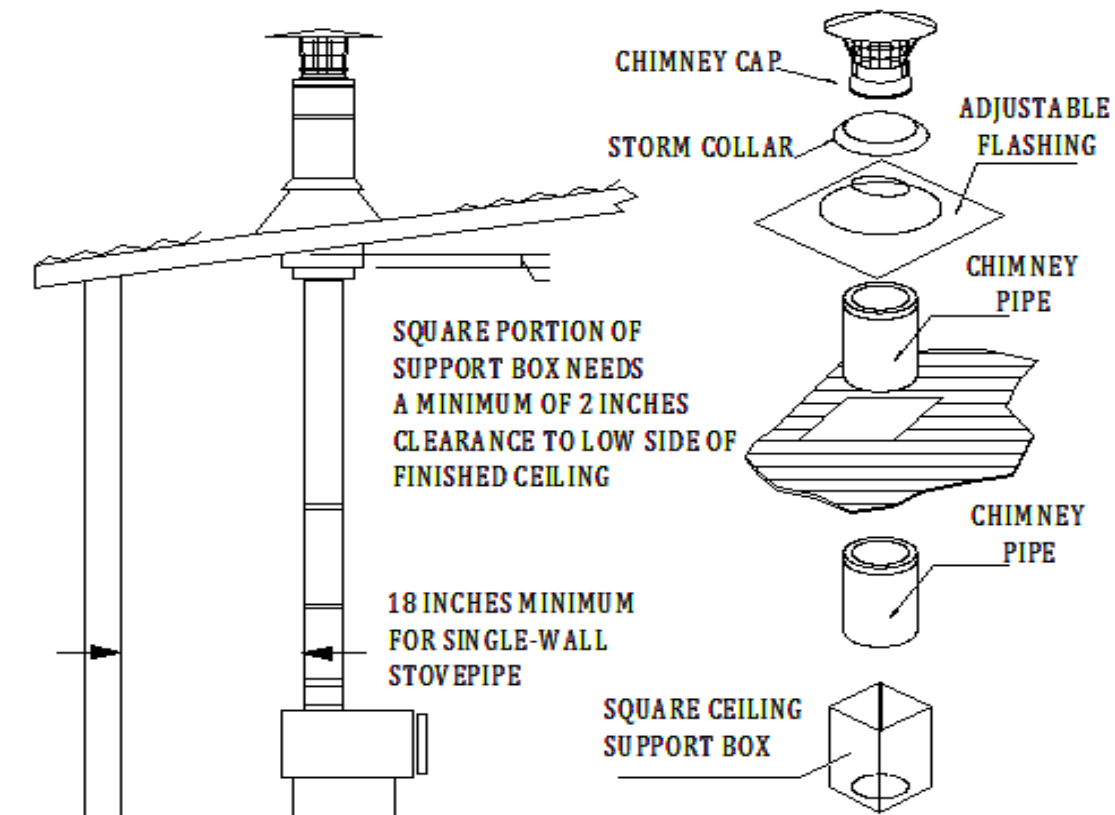


Fig 16

3. Determine how much EV-HST chimney will be extending into the room (minimum of 3" below the ceiling). Be sure to maintain the proper clearance to combustibles (walls and ceilings) for the connector pipe. Once you have identified the proper height for your installation, attach the Roof Support Band to the Chimney Section by tightening the Bolt, and secure it with supplied hardware.

4. Attach desired length of Chimney Sections above and below the roof level (max. of 45' total, 20' below the support) (Fig 18).

5. Refer to Steps 10 & 11 in the Ceiling Supported Installation section (page 8, 9) to complete the Roof Supported installation.

Alternative Installation Location for Roof Support: The Roof Support may be used at the bottom of a Chimney installation (Fig 19). This may be useful for some basement installations. Maintain a minimum of 2" clearance to combustibles at all times. The EV-HST chimney needs to extend a minimum of 3" below the finished ceiling or exposed framing members. Please note that you cannot extend the chimney all the way to the appliance – you must have some connector pipe.

1. Cut and frame opening to provide a minimum of 2" clearance on all sides of the chimney. Be sure to maintain the proper clearance to combustibles for the connector pipe
2. Bolt on the Roof Support Brackets to the Roof Support Band. Attach the Roof Support Brackets to floor (Fig 19).
3. Determine how much EV-HST chimney will be extending into the room (minimum of 3" below the framing), and attach the Roof Support Band to the Chimney Section by tightening the Bolt, and secure it with supplied hardware (Fig 18 & 19).

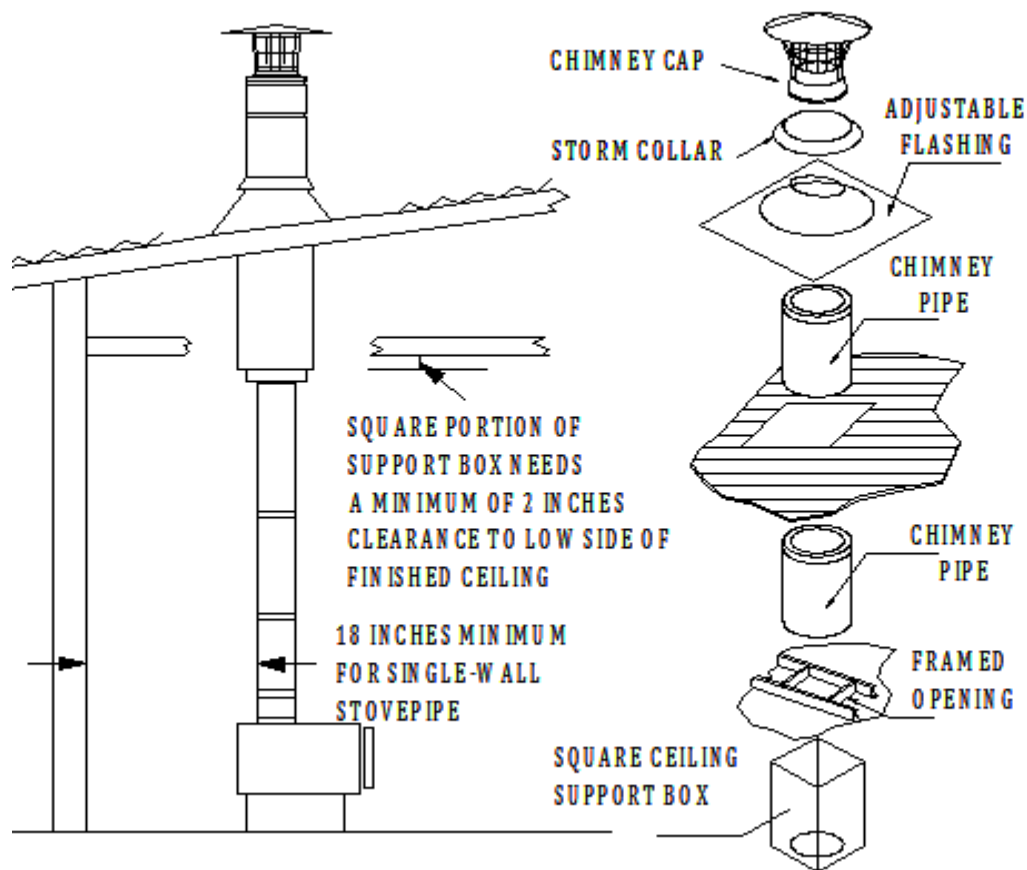


Fig 17

4. Install the specialized Firestop below the finished ceiling or framing members. The Firestop can only be used when installed with the Roof Support in this type of installation. Use a standard Radiation Shield at all other locations.
5. Follow steps 4, 5 for the Roof Support Installation (page 13).

### TEE-SUPPORTED INSTALLATIONS

Tee-Supported installations are used when passing through a wall to an outside chimney. The Tee Support can hold a maximum of **50 feet** of ev-HST chimney. The required parts and general configuration are as shown in Figures 21 and 22.



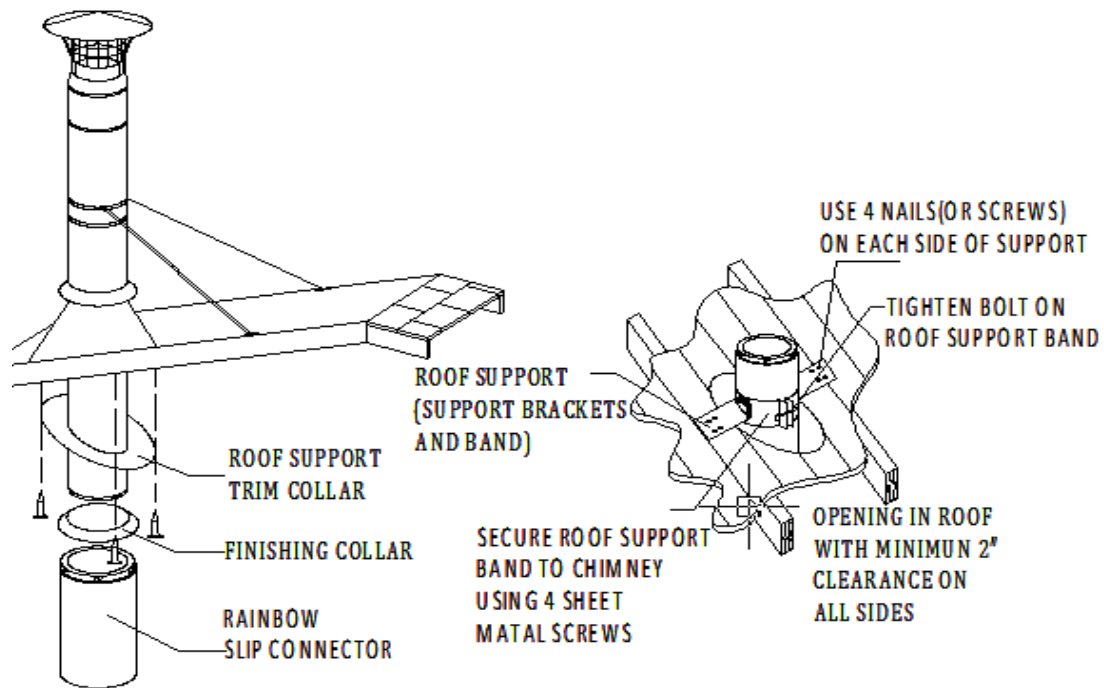


Fig 18

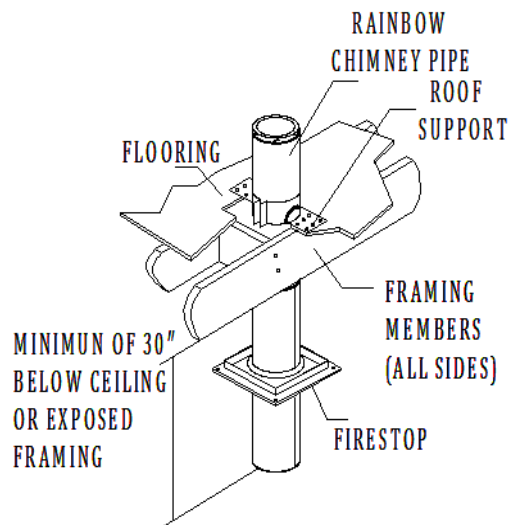


Fig 19



Fig 20

**1. Place Appliance:** Position the appliance according to the manufacturer's instructions. It is a good idea to try to position the appliance so it will allow the chimney to line up centered between studs.

**2. Locate, Cut & Frame Opening:** Determine the location where the chimney will pass through the wall. The chimney should pass through the wall, centered between two studs. The height of the penetration can be determined by positioning sections of stove pipe until you have the desired configuration (refer to the appliance manufacturer's installation instructions for restrictions



on stove pipe). Cut and frame an opening in the inner and outer walls at this location. Refer to Table 1 (page 7) for the appropriate framing dimensions.

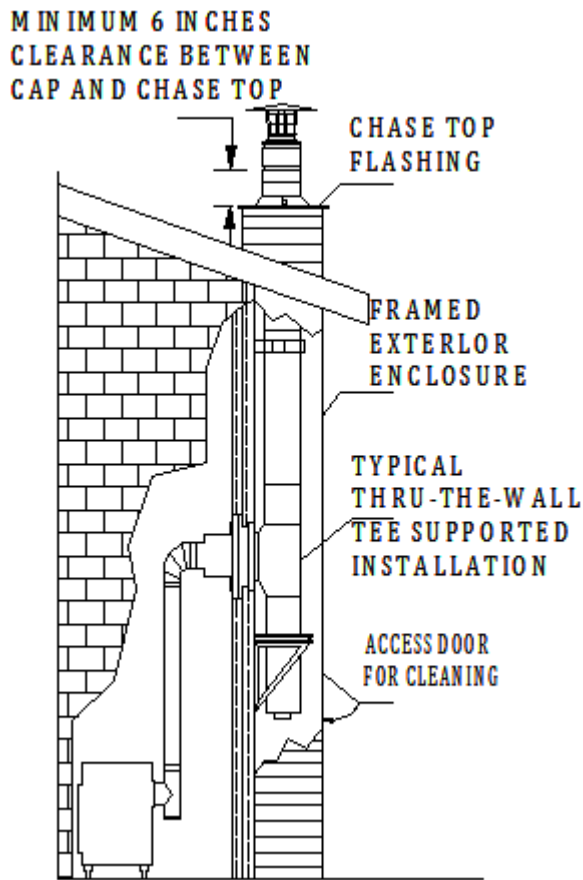


Fig 21

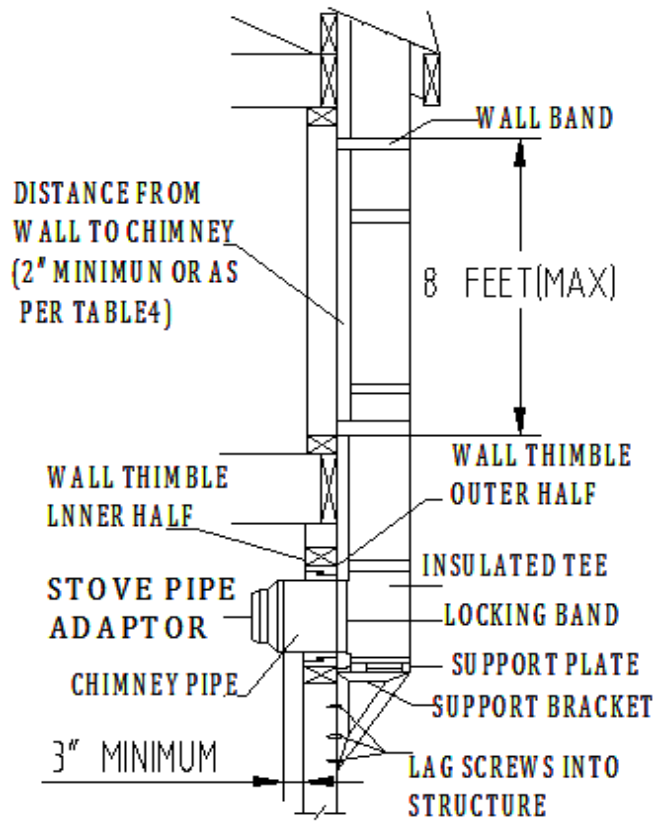


Fig 22

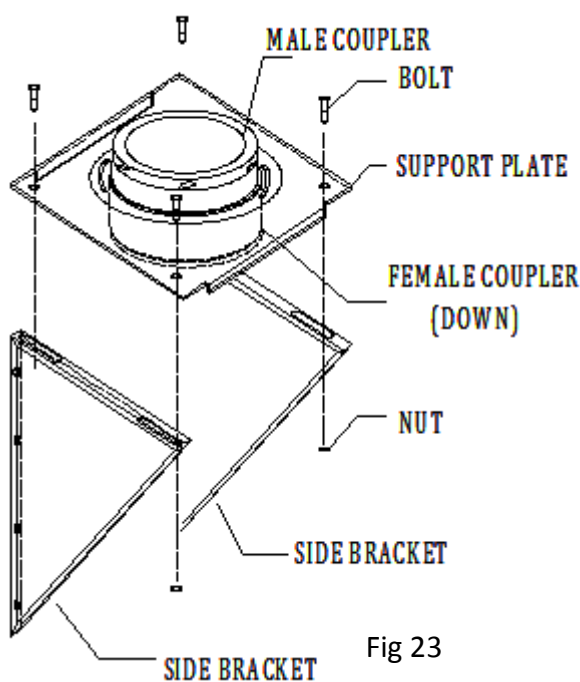


Fig 23

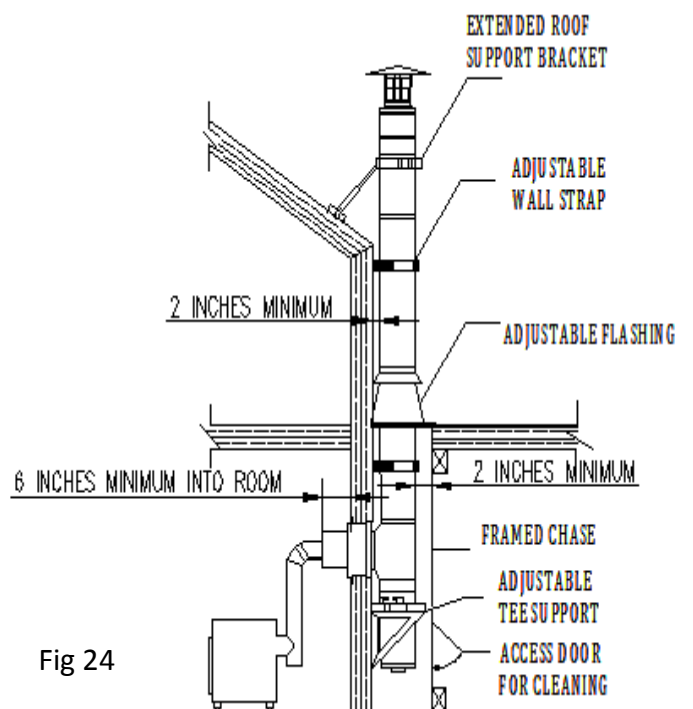


Fig 24

**3. Install Wall Thimble:** From the outside wall, put the outer half of the Wall Thimble in the opening. Center the outer half of the Wall Thimble. Secure the Wall Thimble to the outside wall with at least (4) 8 penny nails or (4) #8, 1-1/2" screws. For concrete wall, Wall Thimble is not needed. The hole on the wall just needs to be slightly larger than the chimney. Install the inner half (with round plate) of the Wall Thimble in the inside wall surface, ensuring that the shield slides into the shield of the outer half. Secure the Wall Thimble to the inside wall with at least (4) 8 penny nails or (4) #8, 1-1/2" screws

**4. Install Wall Support, Tee and Tee Cap:** Assemble the Wall Support (Figure 23) by attaching the 2 side brackets to the support plate, with the hardware supplied (female coupler of the insulated coupling section is down). Install one 6" Chimney Section (or longer as required) to the horizontal branch of the insulated tee. Lock securely into the tee by twisting clockwise. A locking band must then be installed at this connection. Make sure the clamp is facing down to prevent any water from collecting in the locking band.

From outside the building, slide the chimney length (previously installed on a tee) through the wall thimble ensuring the male coupling on a tee is facing upward.

Install the male coupler of insulated coupling section on the support plate into the female coupler of the Tee. Lock securely into the tee by twisting clockwise. Place the assembled wall support against the wall (plate up) directly below the insulated coupling section of the Wall Support. Tighten the insulated coupling section and the support plate with supplied lag screws (**14#, 2"**). Then secure the whole Wall Support assembly onto wall using **14#, 2" wood screws** through the pre-punched slots in each bracket. Important: Verify that Wall Support is level, and secure the leg brackets of the Tee Support to the wall (Figs 24). Finally, install Tee Cap into the female coupler of the insulated coupling section. Lock securely by twisting clockwise.

**5. Complete Chimney:** Attach the Chimney Sections as in Step 7 in the Ceiling Supported Installation section (page 7). Secure the chimney to the wall with Wall Straps at a minimum of 8-foot intervals and maintain at least 2 inches of clearance to combustible materials. Slip the Wall Straps around the chimney, tighten the bolts, adjust the clearance, and fasten the Wall Straps to the wall. Once the chimney is at the minimum height specified in Figure 1, attach the Chimney Cap onto the top of the chimney by holding it by the collar and twist locking it clockwise onto the Chimney Pipe. If the chimney penetrates an overhang, frame for at least 2 inches of clearance, and install Flashing and Storm Collar as described in Steps 9 & 10 for Ceiling Supported Installations (page 8). Another option is to cut away the overhang for a 2-inch clearance (Fig 25). If the chimney extends more than 5 feet above the top Wall Strap or Flashing, use a Roof Brace.

**6. Install Chase Top Flashing:** It is recommended that a Tee Supported Chimney be enclosed in a chase. If a chase enclosure has been constructed, you can either use a standard flat-roof flashing, or you can use a Chase Top

Flashing. Using a Chase Top Flashing allows for a lower profile for the chimney. The Chase Top Flashing has an opening that is 3" larger in diameter than the EV-HST chimney. If the Chase Top Flashing can fit over your chase enclosure as required (Fig 26) then install as directed, or trim as needed. However, if the Chase Top Flashing is smaller than your chase enclosure, you

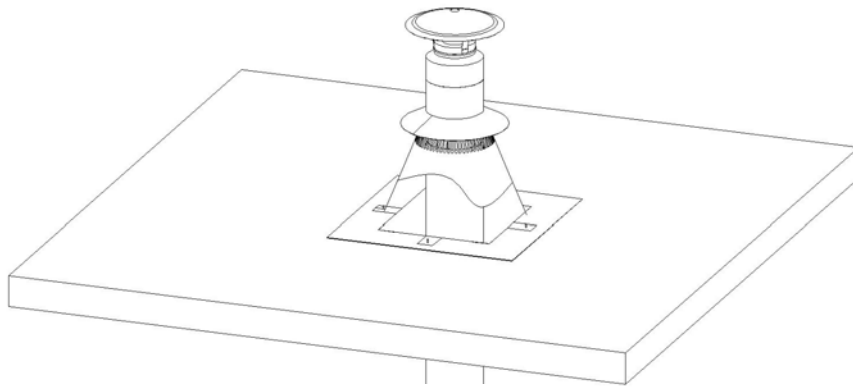


Fig 25

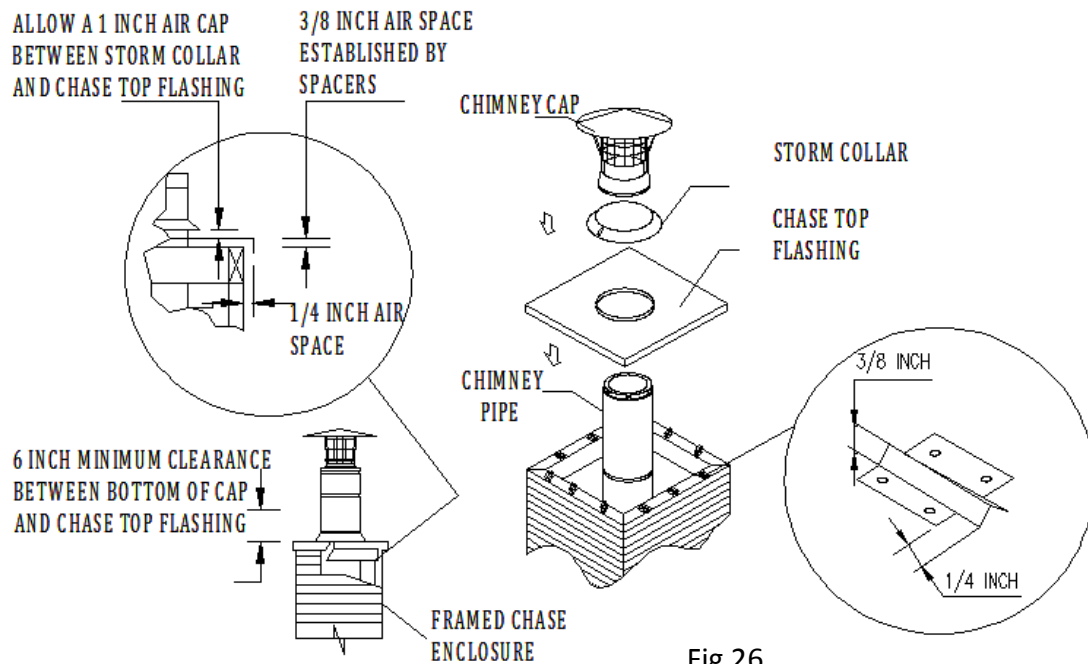


Fig 26

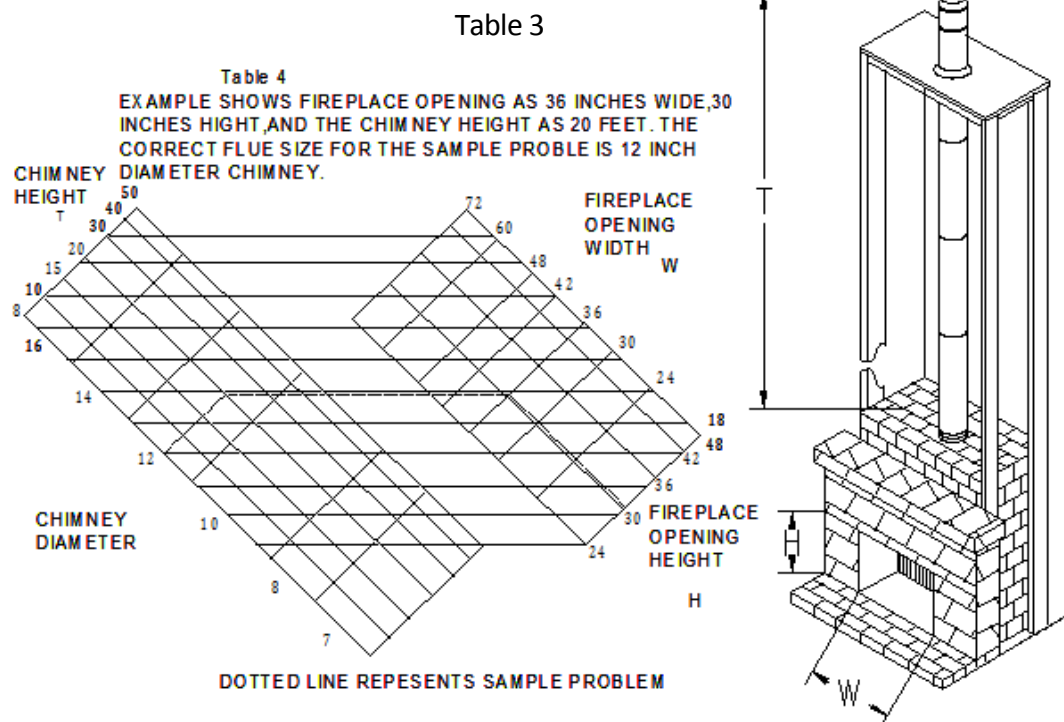
will need to provide a galvanized sheet capable of covering your chase and overhanging the sides by 1/2 - 3/4 inch. Attach the Chase Top Flashing to the

galvanized sheet using appropriate sheet metal screws and non-hardening waterproof sealant. Use the Chase Top Flashing Spacers to allow the proper air-gap clearances on the galvanized sheet. The Chase Top Flashing Spacers are available to insure that the proper air-gap is maintained. Figure 26 displays in some detail, how these air gaps are established using the Spacers and Chase Top Flashing. Secure the Chase Top Flashing to the chase using a sufficient number of #8, 1-1/2" wood screws, being careful to insure the air gap is maintained between the flashing and the chase. Seal the screw heads with non-hardening sealant. When installing the Storm Collar, allow a 1" air space between the bottom of the Storm Collar and the Chase Top Flashing.

### MASONRY FIREPLACE INSTALLATIONS

**1. Determine Chimney Size:** Use Table 3 to determine the correct diameter chimney for your fireplace.

**2. Mount Anchor Plate:** Chimneys for masonry fireplaces begin with an Anchor Plate. Make sure the surface of the masonry chimney has a level surface on which to attach the Anchor Plate. If the top of the masonry does not have a level surface, then you will need to modify the masonry accordingly. Center the Anchor Plate over the masonry flue opening, and seal the Anchor Plate with a high-temperature (1000<sup>0</sup>F) sealant. Secure Anchor Plate with (4) 1/4" x 2" masonry anchors (Fig 27). It is very important that the Anchor Plate is level. Be sure to maintain a 1" min. clearance to combustibles from the Anchor Plate.



**3. Attach Chimney:** Twist lock the first Chimney Section clockwise onto the

Anchor Plate.

**4. Finish Chimney:** Install the rest of the chimney as directed in the Ceiling Supported Installation section, Steps 4 through 10 (page 5). Refer to Figure 1 and Table 3 for chimney height requirements. Always maintain at least 2 inches of clearance to combustible materials, and enclose the chimney where it passes through occupied areas. Use a Wall Strap for every eight (8) feet of chimney height.

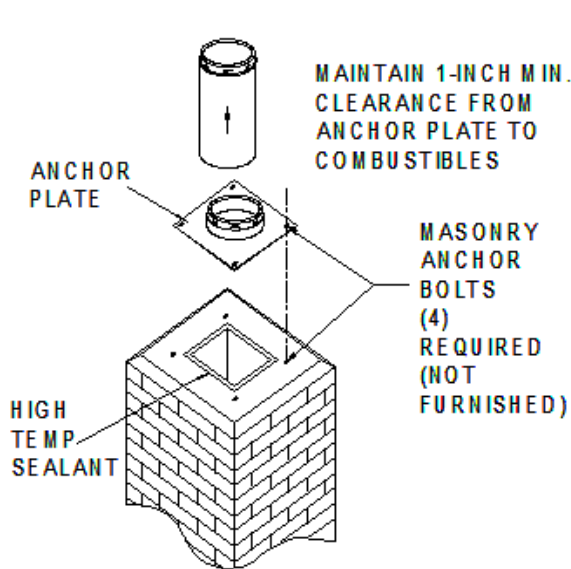


Fig 27

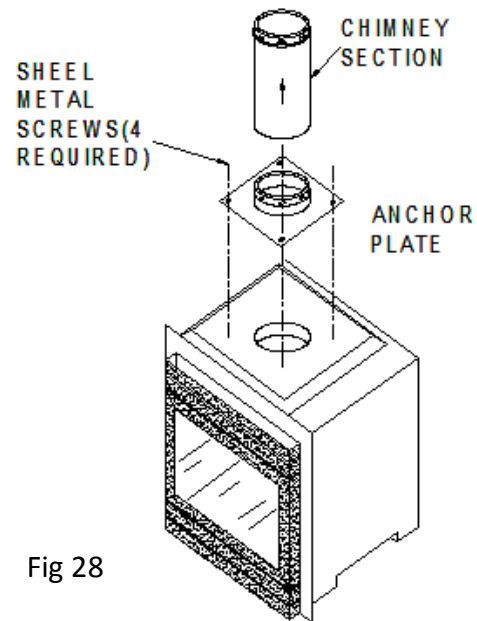


Fig 28

## ZERO-CLEARANCE FIREPLACE INSTALLATIONS

**1. Manufacturer's Instructions:** Carefully read and comply with the manufacturer's installation instructions for your fireplace. Be sure that Rainbow is approved for use with your appliance.

**2. Anchor Plate:** Attach an Anchor Plate to the fireplace top with (4) 5/8" sheet metal screws (Fig 28). Check with the appliance manufacture about the use of high temperature sealants.

**3. Chimney Sections:** Attach a Chimney Section to the Anchor Plate by twist locking clockwise.

**4. Completion:** Install the remainder of the chimney as instructed for a standard Ceiling-Supported installation, (using a Radiation Shield in the 1<sup>st</sup> floor ceiling instead of the Support Box). Always maintain at least 2 inches of clearance to combustibles, and enclose the chimney where it passes through occupied areas.

## CHIMNEY MAINTENANCE

**1. Creosote and Soot:** When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to produce creosote. The creosote vapors condense in the relatively 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.

**2. Access:** Chimneys must be installed so that access is provided for inspection and cleaning.

**3. When to Clean:** The chimney should be inspected at least once every month during the heating season to determine if creosote or soot has built up. Check spark arrestor screens at least every 2 to 4 weeks. If creosote or soot has accumulated, it should be cleaned or replaced to reduce the risk of chimney fire.

**4. How to Clean:** Have your chimney cleaned by a professional chimney sweep if you have doubts about your ability to clean it. Use a plastic, wood, or steel brush. Do not use a brush that will scratch the stainless steel liner of your chimney. Scrub the spark arrestor with a wire brush. To remove the Chimney Cap for cleaning, either twist counter-clockwise to remove the entire cap, or unscrew the four (4) screws that attach the cap's support legs to the cap base. The Tee Cleanout Cap can be removed by turning counter-clockwise. Be sure to replace Tee Cleanout Cap when you are finished cleaning the chimney.

**5. Coal:** To reduce corrosion in chimneys where coal is burned, clean the chimney thoroughly within 48 hours of shutting down the stove for the season.

**6. Chemical Cleaners:** Use chemical cleaners only as a last resort, and use only those which the manufacturer specifically warrants as being noncorrosive to the chimney liner. Rainbow will assume no liability for damage resulting from the use of chemical cleaners.

**7. In Case of Fire:** If a flue fire occurs, close all appliance air inlets, and call your Fire Department. Do not use the chimney again, until it has been inspected for possible damage.

**8. Painting:** As an option, you can coat all exterior metal parts, with the exception of the Chimney Cap, with high temperature, rust proof paint. Wash the metal with a vinegar and water solution before painting. Painting the chimney will help to increase chimney life.

**9. Creosote Formation:** Rainbow assumes no liability for any structural damage or roof contamination as the result of creosote formation. It is the owner's responsibility to comply with inspection and cleaning requirements as described in these instructions, and those of the appliance manufacturer.

**10. Warranty:** Rainbow proudly offers a limited lifetime warranty on EV-HST chimney components. The warranty includes all components manufactured by Rainbow except chimney caps, which are warranted for 5 years. For specific details, refer to the printed warranty included in the Chimney Product Catalog.