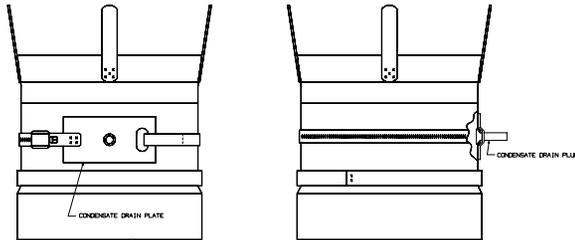


drain clamp assembly and clamp the Saf-T Vent drain fitting over the hole. Using a very sharp 1/4-inch drill make a 1/4-inch hole in a the Saf-T Vent conduit using the drain tube as a drill guide. Place the flat head screw into the 1/4-inch hole with the washer and nut at the end of the drain tube. Tighten the nut until the screw is pulled flat with the inside surface of the conduit. Remove the screw, nut and washer. Tighten the clamp strap being careful not to distort the conduit by over tightening. An alternate drain is to install a Saf-T Vent Tee or Boot Tee with a drain cap.



Attach a 3/8-inch ID drain hose to the drain fitting and run the hose to a sanitary sewer drain following all local and national codes and regulations for the draining of acidic effluent.

4. Connect the Saf-T Vent system to the appliance flue collar as directed in the manufacturer's instructions and in part II above.

#### **DETAILED MASONRY CHIMNEY RELINING INSTALLATION**

1. Follow the **Main Instructions** for Saf-T Vent Chimney Relining System packed with the conduit sections to inspect and prepare the chimney. Locate the breaching hole and open the chimney as described in the **Main Instructions**.
2. Begin with an elbow or drain tee (if allowed by appliance manufacturer) installed at the breaching opening, attach the conduit section(s) to the elbow or tee, as described in section H of the **Main Instructions**, using sealant at each joint as described above continuing to the top of the chimney. Terminate the chimney top with a flashing and storm collar and a Saf-T Vent or Saf-T CI Vent Rain Cap.
3. Attach sections of Saf-T Vent conduit and elbows, with the male ends toward the appliance, as necessary to connect the appliance to the vertical conduit. Be sure to allow the proper clearance to combustibles, proper pitch of 1/4 inch per foot and to seal **all** joints as specified in **Conduit Installation** above.

Support any extended horizontal or vertical runs of conduit as in section II above.



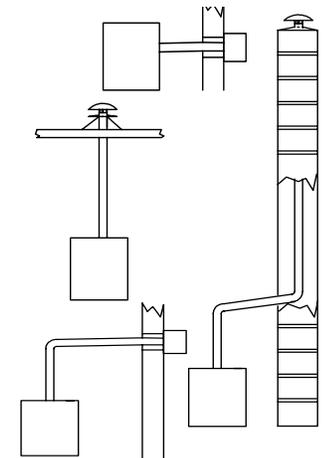
## Supplemental Instructions for Installation of SAF-T VENT™ Chimney Liner and Gas Vent Connector For Use With Listed Gas Appliances Category I, II, III or IV

The Saf-T Vent Special Gas Vent System may be used to vent an appliance with a UL® Temperature Rating of less than 550°F including Category III and IV gas appliances marked or labeled by Underwriters Laboratories, American Gas Association Labs, or other recognized agency. The connected appliance must be Listed for use with a Type B Vent, or a stainless steel vent system. This Saf-T Vent system is for use only with appliances with positive vent pressures of 3 inches of water column or less, because these types of appliances may produce vent gases under positive pressure and/or at or near their dew point, special installation considerations are required. **WE RECOMMEND: WHENEVER GAS BURNING EQUIPMENT IS INSTALLED IN THE SAME SPACE AS ANY EQUIPMENT WHICH UTILIZES AND/OR COULD VENT ANY HALOGENATED SUBSTANCE** (Freon, solvents, and etc.), **THAT CLEAN OUTSIDE AIR BE UTILIZED FOR COMBUSTION.** Read and follow these instructions completely, together with the appliance manufacturer's instructions and any applicable local, state and national codes.

Consult the appliance manufacturer's instructions for the minimum and maximum horizontal length of the vent connector, as well as any restriction on total vent height, proper sizing of the vent and procedure for connecting the vent to the appliance. This Special Gas Vent Connector system must be sized according to the gas appliance manufacturer's instructions and the National Fuel Gas Code NFPA 54.

#### **PRE-INSTALLATION CONSIDERATION**

This Special Gas Vent System may be installed in three separate orientations depending on the requirements of the building and the appliance. The installer must decide which method is most appropriate for each installation. These orientations are: 1. As a direct vent system through an outside wall or roof structure. 2. As a relining system vertically through a masonry chimney chase constructed of 4" nominal solid masonry units. 3. In



conjunction with a fully compatible Listed double wall or insulated Special Gas Vent System.

Be aware that some appliances are Listed for limited horizontal and/or vertical vent lengths, total equivalent vent length see below and vent diameter refer to Appliance Manufacturer's Instructions for these and other possible restrictions.

**FITTING EQUIVALENT LENGTHS**

<i>SAF-T VENT CONDUIT</i>	<i>1'/FOOT</i>
<i>SAF-T VENT STANDARD TEE</i>	<i>45'</i>
<i>SAF-T VENT BOOT TEE</i>	<i>15'</i>
<i>SAF-T VENT 90 DEGREE ELBOW</i>	<i>15'</i>
<i>SAF-T VENT 70 DEGREE ELBOW</i>	<i>12'</i>
<i>SAF-T VENT 45 DEGREE ELBOW</i>	<i>8'</i>
<i>SAF-T VENT 30 DEGREE ELBOW</i>	<i>5'</i>
<i>SAF-T VENT 15 DEGREE ELBOW</i>	<i>3'</i>

**SAF-T VENT CLEARANCE TO COMBUSTIBLES**

**WHEN INSTALLED UNENCLOSED AS A VENT CONNECTOR**

<i>APPLIANCE TYPE</i>	<i>CLEARANCE TO COMBUSTIBLES</i>
<i>GAS APPLIANCE 300 DEG F. MAX FLUE GAS IN US</i>	<i>1"</i>
<i>GAS APPLIANCE 550 DEG F. MAX FLUE GAS IN US</i>	<i>2"</i>
<i>UNLISTED GAS APPLIANCE OR ANY GAS APPLIANCE IN CANADA</i>	<i>6"</i>
<i>LIQUID FUEL APPLIANCE</i>	<i>6"</i>
<i>SOLID FUEL APPLIANCE</i>	<i>18"</i>

**APPROVED SEALANTS**

*MAXIMUM APPLIANCE FLUE GAS TEMPERATURE 550 DEGREES F.*  
*GENERAL ELECTRIC RTV106 DOW CORNING 736 POLYBAC #500*  
*SHIN-ETSU KE45 SHIN-ETSU KE45R*  
*MAXIMUM APPLIANCE FLUE GAS TEMPERATURE 300 DEGREES F.*  
*DOW CORNING 732*

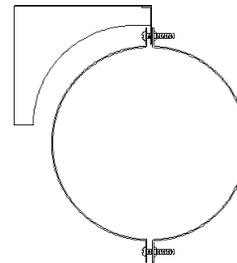
**GENERAL INSTALLATION REQUIREMENTS**

1. Failure to conform with any of these requirements may violate local, state or national codes as well create conditions which may cause catastrophic property damage or personal injury.
2. Tee sections should only be incorporated in conjunction with a drain on appliances investigated for use with a drain, or if allowed by the appliance manufacturer for multiple appliance connections.

inspect the joint to ensure that flue gases will not escape. If necessary, apply additional sealant to any visible voids around the joint and smooth it into any crevices (pay special attention to any place(s) that may have been damaged in shipping and handling). Allow the sealant to cure for 24 hours before operating the appliance.

Any connection to Saf-T CI Vent will be done exactly as the above connections. When adapting the Saf-T Vent system to a Listed Type B Vent the final section of Saf-T Vent will be a 'B Vent adapter for above Saf-T Vent'. The B Vent adapter connects to the female end of the Saf-T Vent and straps to the outer wall of The Type B Vent. When connected to Type B Vent this system is for use with Natural Draft Non-condensing appliances only.

**Conduit Supports**



When any horizontal run of Saf-T Vent extends for more than 6 feet a horizontal support must be installed with subsequent supports after every additional 6 feet. The support must be secured using at least #10 fasteners to a solid material (solid masonry or wood framing or blocking). Do not fasten to drywall sheathing using hollow wall anchors. Each support will be 1 1/2 inch higher than the previous support when spaced 6 feet apart. The support clamp should be fastened securely around the Saf-T Vent conduit.

As an alternative to the horizontal support, a threaded rod and trapeze support in accordance with SMACNA HVAC Construction Standards - Metal and Flexible, First Edition-1985 Section IV or the latest update, shall be installed for every 6 feet of continuous horizontal vent and after any offset elbows.

A vertical support must be installed at least twice in any continuous vertical run and after every continuous 30 feet of vertical run. Refer to the Saf-T Vent/Saf-T CI Vent Vertical support instructions packed with the Vertical Support

Install a Saf-T Vent/Saf-T CI Vent Roof Jack Assembly or Firestop Plate at every penetration of a floor or ceiling.

If the appliance instructions or local regulations call for a condensate drain installed in the vent conduit, and one is not provided by the appliance manufacturer, install a Saf-T Vent drain fitting, in the horizontal conduit, as close as possible to the appliance flue collar. Locate the drain fitting so that the drain tube is as nearly vertical as possible. Apply a bead of recommended sealant around the hole in the

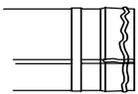
**Conduit Termination Installation**

For a direct horizontal termination refer to the Saf-T Vent/Saf-T CI Vent Horizontal Termination Installation Instructions packed with the Horizontal Termination. The Saf-T Vent must extend at least 6 inches beyond the exterior sheathing into the Saf-T Vent/Saf-T CI Vent Termination.

For a vertical termination install a Saf-T Vent/Saf-T CI Vent Roof Jack Assembly at the roof penetration, refer to the Saf-T Vent/Saf-T CI Vent Roof Jack Installation Instructions packed with the Roof Jack.. The Saf-T Vent must extend above the roof line at least 3 feet or 2 feet higher than any wall, parapet or etc. within 8 feet.

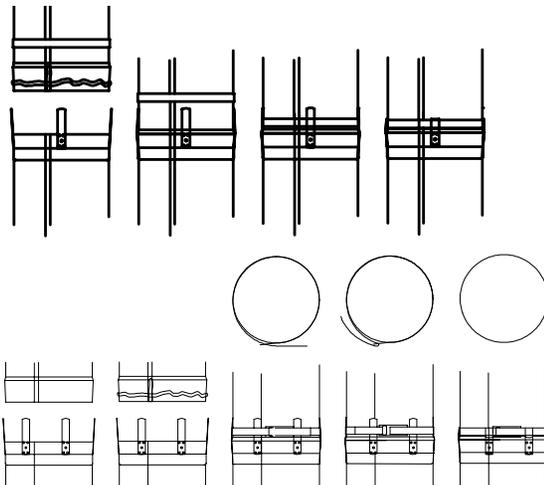
**Conduit Installation**

Beginning with the appliance flue connector or collar join Saf-T Vent conduit or elbow sections as appropriate up to the termination or where Double Wall materials are required maintaining a continuous pitch toward the appliance of at least 1/4 inch per foot.



Before joining the elbow and/or conduit sections together, wipe the male and female ends clean with alcohol wipes.

Apply a bead of GE RTV 106 sealant, about 1/4 inch in diameter, completely around the male (without the tabs) end of each conduit section or fitting, between 1/4 and 3/8 inch from the end of the section. Also run a similar sized bead down the seam weld of each section, from the edge of the pipe to the top of the bulge.



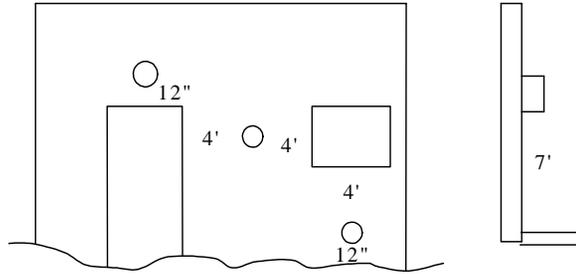
Fully insert the male end of the section into the female fitting of the section below. With a moistened finger or flat tool, spread any sealant that squeezes out around the circumference of the joint. Attach the sections together with the locking ring and tabs bending the tabs over the locking ring per diagram at right (for 10" systems see lower diagram). Again spread any extruded sealant around the joint. Finally,

3. When connected to Category III or IV appliances Saf-T Vent conduit sections or a fully compatible Listed special gas vent system **must** be used for the entire length of the system; alternatives such as galvanized pipe, PVC, CPVC, other non-metallic pipe or Type B Vent sections must not be used.
4. The horizontal vent connector must slope **upward** toward the termination at least 1/4 inch per foot and be installed so that all condensate runs back toward the appliance or intermediary drains and is not retained in any part of the venting system.
5. If called for by the appliance manufacturer's instructions, a drain fitting must be located as close as possible to the appliance flue outlet. Depending on the arrangement of the vent more than one drain may be required in the venting system. If a drain fitting is not supplied with the appliance, install a Saf-T Vent drain fitting or tee with a drain tee cover.
6. When connected to Category III or IV appliances all joints between sections or fittings of the vent must be sealed with one of the approved sealants (see above), using the installation technique described in Part II of this manual.
7. More than one Category III or IV appliance may not be interconnected to any part of the venting system unless the appliance manufacturer has specifically approved the engineering of the vent system and the appliances are designed for multi-venting. A Category III or IV appliance may not be interconnected to any part of a vent system common with a natural draft or draft hood appliance.
8. The venting system must be planned so as to avoid possible contact with concealed plumbing or electrical wiring.
9. The venting system must be planned to maintain the proper airspace clearance from combustibles (see above) for the length of any horizontal and/or vertical conduit and fittings.
10. The vent system in a multi-family structure must be planned to be enclosed when passing through occupied or unoccupied spaces above the connected appliance. This enclosure is to be of solid masonry materials only. Heat-Fab recommends that the system be enclosed whenever passing through occupied spaces. (**Saf-T CI Vent** or Listed Type B Vent must be used if the vent is to be enclosed by combustible materials)

## HORIZONTAL INSTALLATION REQUIREMENTS

1. The system must terminate with a Saf-T Vent Through-the-Wall termination.

2. The Through-the-Wall Termination shall be located not less than 12 inches above grade or, in geographical areas where snow accumulates no less than 12 inches above the anticipated snow line, or not less than 7 feet above grade when located adjacent to a public walkway. It also shall terminate at least 3 feet above any forced air inlet within 10 feet and shall terminate at least 4 feet below, 4 feet horizontally from or 1 foot above any door, window or gravity air inlet into any building as provided in the National Fuel Gas Code ANSI Z223.1 NFPA 54. Proper judgement may require greater distances depending on the size of the equipment installed or to allow for snow drifting.

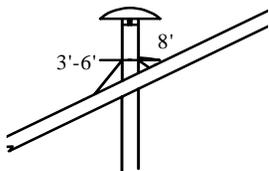


3. The total effective (see page 2) horizontal distance of the vent system from the appliance flue collar to the outside of the Through-the-Wall Termination shall not be greater than that specified in the appliance manufacturer's installation instructions nor less than 18 inches.

4. Saf-T CI Vent or Listed Type B Vent must be used after passing through any interior wall, floor or ceiling.

## VERTICAL INSTALLATION REQUIREMENTS

1. The vent system must terminate at least 3 feet and no more than 6 feet above the roof line and no closer than 8 feet from any wall or vertical structure.



2. The total vertical distance of the vent system from appliance flue collar to the rain cap termination shall not exceed that specified in the appliance manufacturer's installation instructions. No continuous vertical run shall be longer than sixty (60) feet.

3. A Saf-T Vent or Saf-T CI Vent Rain Cap must be used at the termination

4. Saf-T CI Vent or Listed Type B Vent must be used after passing through any interior wall, floor or ceiling.

## INSTALLATION CONSIDERATIONS

Proper operation of the appliance and venting system is dependent upon use of all specified parts and installation techniques; both safety and proper performance of the system may suffer if instructions are not followed.

## INSTALLATION PROCEDURE

### Personal Safety

Wear eye protection and heavy gloves throughout the installation. In addition, wear an approved dust and mist respirator whenever in contact with insulation. Use caution when working on roofs and/or scaffolding. Proper and safe scaffolding and/or ladders should be used. All ladders should be secured when in use. Check overhead for antennas, power lines or other obstacles before erecting ladders or scaffolding and while working with conduit on any roof structure.

Clear a safe working area around the appliance to be connected as well as around any areas which will be passed through by the venting system. If necessary lay down drop cloths to protect floors, equipment and furnishings.

### Tools Needed

Measuring Tape	Pliers	Hammer	Screw Driver
Circular Saw	Saws-All	Electric Drill	Hole Saw
Framing Square	Level	Gloves	Eye Protection
Drop Cloth(s)	Ladder/Scaffold		

Other tools may be required for specific installations.

## GENERAL INSTALLATION PROCEDURE

Prior to beginning the installation of a Saf-T Vent Special Gas Vent System loosely assemble all parts required for the installation to verify that all parts are present. Refer to part II of this manual for specific parts needed for each installation.

## PART II

### Conduit Connection to Saf-T CI Vent Special Gas Vent or Type B Vent

When the system must pass through interior walls, floors, or ceilings Saf-T CI Vent Special Gas Vent or Type B Vent (**ONLY for Appliances Listed for Use With B Vent**) must be used from 2" from the wall or ceiling to the building exterior refer to the Saf-T CI Vent or B Vent Manufacturers installation and maintenance instructions for installation suggestions and guidelines.