



## INSTALLATION INSTRUCTIONS

CTX Secure Seal® is a special stainless steel vent system for gas fired appliances listed as Category II, III, and IV or in Canada as Type BH Gas Venting as noted in ULC-636, with a rated operating temperature of 480 Degrees F (249 Degrees C), and a rated positive pressure of 6" Water Column. **CTX Secure Seal® must be installed by an experienced professional familiar with the operation and maintenance of heating appliances and venting. Before installing this product, examine all components for possible shipping damage and read the complete installation manual. Failure to follow proper installation procedures, including vent pitch and improper appliance connections, may cause unsafe conditions.** Security Chimneys International Limited (SCIL) recommends the system to be inspected once a year by a qualified service technician.

When venting Category II, III, or IV appliances, CTX Secure Seal® **must** be used for the entire length of the system. Do not mix pipe, fittings, or joining methods from different manufacturers. **See the CTX Secure Seal® catalog for a complete list of parts and products.** Every vent system must be planned and installed for optimum performance and safety. The venting system must be free to expand and contract and must be supported in accordance with these instructions. (Check for unrestricted vent movement through walls, ceilings, and roof penetrations.) Refer to the gas appliance manufacturer's instructions to determine venting requirements and limitations with respect to installation and use of the appliance. **It is the responsibility of the installer to contact local building and fire officials concerning any installation restrictions and/or inspection requirements that may apply.** Permits may be required before starting an installation. This product must be installed in accordance with local building code requirements as well as national codes: USA - National Fuel Gas Code ANSI-Z223.1 or NFPA Standard 54, or NFPA 211. In CANADA - CAN/CGA-B149.1 or CAN/CGA-B149.2 Propane Installation Code as applicable.

### GENERAL INSTALLATION REQUIREMENTS

Failure to conform with these installation instructions and all applicable codes may result in catastrophic property damage, personal injury, or death. These instructions are a guide to assist a professional installer.

- Proper operation of the vent system and appliance depends on the use and correct assembly of all parts specified by SCIL for a particular installation.

- Tee sections should only be incorporated in conjunction with a drain on appliances tested for use with a drain, or if allowed by the appliance manufacturer for multiple appliance connections.
- If required by the appliance manufacturer, a Drain Tee Cap 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.** Unless a Drain Tee Cap is supplied with the appliance, install a CTX Secure Seal® Drain Tee Cap.
- More than one Category II, III, or IV appliance may not be connected into the same vent system, unless the appliance manufacturer specifically approved such a system and the appliances are designed for multiple venting. Cat. II, III, or IV appliances MAY NOT be common vented with Cat. I, natural draft appliances.
- CTX Secure Seal® must not come in contact with plumbing or electrical systems.
- Maintain rated clearances to combustibles over the entire length of the vent system.
- Except for installation in one or two family dwellings, a vent system that extends through any zone above that on which the connected appliance is located, shall be provided with an enclosure having a fire resistance rating equal to or greater than that of the floor or roof assemblies through which it passes.

**NOTE: WHEN INSTALLING CTX Secure Seal® OF 5" DIAMETER OR GREATER, ANY ENCLOSURES MUST BE OF NON-COMBUSTIBLE MATERIALS!**

- Never install CTX Secure Seal® on an appliance that is not listed for use with a Special Gas Vent or Type BH vent.
- CTX Secure Seal® shall not be routed into, through, or within any vent, such as an existing masonry or factory-built chimney, that is connected to another appliance.
- Do not install insulation in any required clearance space around CTX Secure Seal®.

**NOTE: FOLLOW APPLIANCE MANUFACTURER'S ALLOWANCES FOR ELBOWS.**

### VENT SIZE AND LENGTH

Refer to the appliance manufacturer's installation instructions for proper size and vent configuration. Follow any horizontal/vertical length and height limitations, minimum clearances (air space) to combustibles, or specifications for the use of Elbows, Tees, or Drain Tees.

Although our Adjustable Length and Wall Radiation Shield are designed to eliminate cutting, there may be occasions when you must field cut a length.

**FIELD CUTTING:** When necessary, cut the male end only and keep in mind that a minimum of 2" length is needed to obtain a seal on the female end. Make a **straight cut** to ensure the gasket is completely covered. **Sand all burrs off to avoid damaging the gasket** during installation. When these procedures are followed, CTX Secure Seal® may safely be cut in the field.

### CTX Secure Seal® ADJUSTABLE LENGTH (LA)

The LA Adjustable Length is available in all diameters and allows the installer to easily adjust the vertical or horizontal length of a vent system. Cutting or piecing together several lengths can be avoided.

The WRSAL Wall Radiation Shield already incorporates the LA. In most system layouts, this provides enough adjustability for the horizontal vent run.

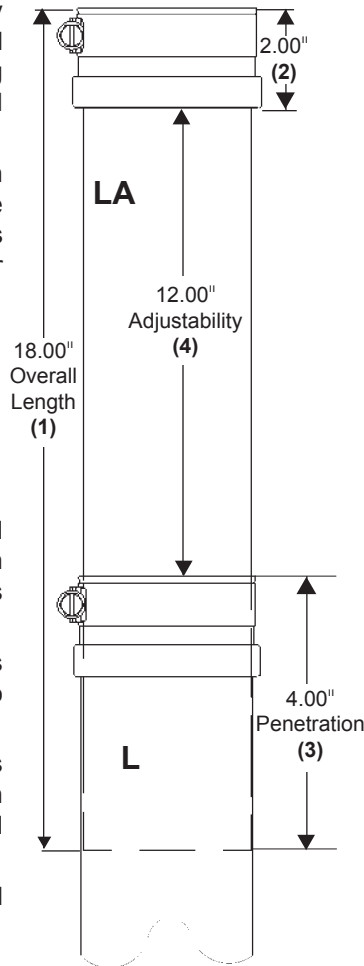
Use the LA vertically for easy adjustment of the required minimum 1/4" per foot pitch.

Technical details about the stand alone LA: The overall length of all LA Adjustable Lengths is 18" (1).

The female end (2) measures 2", leaving 12" to telescope into a standard length.

The LA must penetrate no less than 4" into a standard length (3) to assure a good seal and structural stability.

This leaves up to 12" in true axial adjustability (4).



### JOINT CONNECTIONS

The female end of each CTX Secure Seal® component incorporates a sealing gasket and a mechanical locking band. Examine all components prior to installation. Gaskets must be in proper position or flue gases could leak and result in carbon monoxide poisoning.

1. Insert the male end into the female section. Push the units together and turn them until the bead of the male end is seated against the flared end of the female section. This creates the needed airtight seal for Category II, III, or IV appliances. Align the seams on the lengths and orient them upward in all horizontal applications.
2. Tighten the locking band with a nut driver until snug plus 1/4 turn.

**Before proceeding, recheck all joints and ensure that all male sections extend to the top of the flared female end and all clamps are tightened.**

### APPLIANCE CONNECTION

Connect CTX Secure Seal® to the appliance flue collar as directed in the appliance manufacturer's instructions. If the appliance flue collar is not designed to accept CTX Secure Seal® directly, an adapter may be available from SCIL.



Stop bead on male end must be pushed directly against the flared end of the female end. When checking the inside of the joint, the gasket is fully covered and out of sight.



### CONDENSATE DRAINS

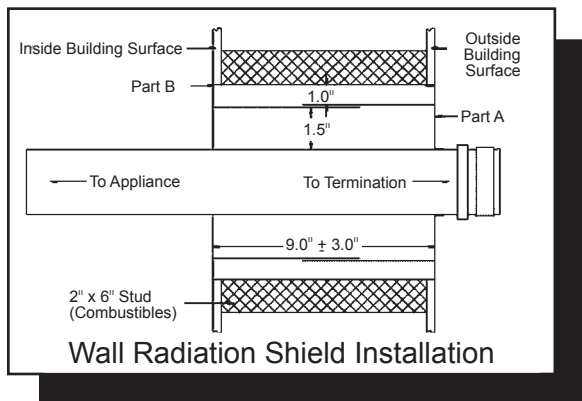
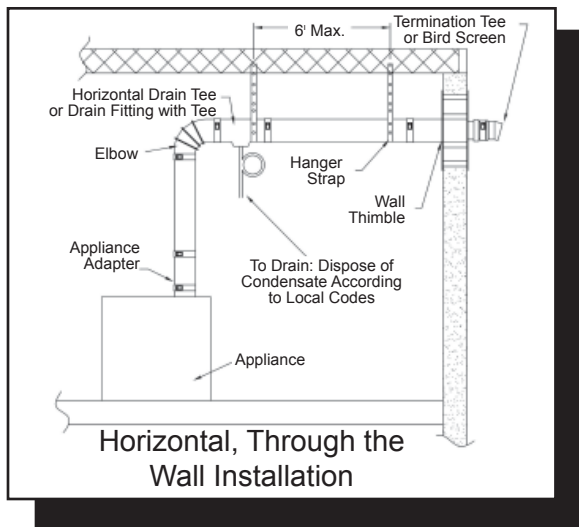
If instructions or local regulations call for a condensate drain, use a CTX Secure Seal® Drain Tee Cap and a 5/8" ID plastic tube (3/8" for HDT) of appropriate size to connect the Tee into the sanitary sewer drain. Always create a siphon loop in the plastic tube. Follow all local and national codes for draining acidic effluent. Do not use copper as a drain as it may corrode.

### HORIZONTAL, THROUGH THE WALL INSTALLATION

- When venting through a sidewall, terminate the system not less than 12" (.3 m) above the ground and above the

snow line in geographical areas where snow accumulates. The termination area must be kept clear of snow and ice at all times.

- Terminate the system at least 7' (2.1 m) above a public walkway or driveway, no less than 6' (1.8 m) from the combustion air intake of any appliance, or 3' (.9 m) from any other building opening, gas utility meter, service regulator or the like. It also shall terminate at least 3' (.9 m) above any forced air inlet within 10' (3.1 m) and shall terminate at least 4' (1.2 m) below, 4' horizontally from, or 1' (.3 m) above any door, window, or gravity air inlet into any building as provided in the National Fuel Gas Code ANSI Z223.1 and NFPA 54. Proper judgment may require greater distances depending on the size of the equipment installed or to allow for snow drifting or falling from overhead roofs or trees. The termination should be far enough away from trees, shrubs, or decorative items to prevent damage.
- The total length from the appliance flue collar to the outside termination shall not be greater than specified in the appliance manufacturer's instructions.
- A horizontal installation shall have a slope (upwards or downwards for Category II, III, or IV appliances) of no less than 1/4" (6.4 mm) every 12" (305 mm) to prevent collection of condensates, formation of ice build up, or blockage at any location within the assembly. Refer to appliance manufacturer's installation instructions for further details regarding the installation of condensate Drain Tee Caps and the pitch of the system.



- Use non-combustible hanger straps a minimum of every 6' (1.8 m) to support the vent system from ceiling joints or other solid structures. Do not puncture the vent system!

1. Determine the location and install the Wall Radiation Shield so that a continuous minimum slope of 1/4" per foot is maintained in any horizontal portion of the vent system.

**Condensate must flow freely and may not be retained in any part of the vent system.**

2. Cut the opening for the Wall Radiation Shield to allow the spacer tabs protruding from the outer plate to sit comfortably within the opening. (See Wall Radiation Shield Installation diagram.)
3. Position Part A into the opening so that the gasketed end of the Wall Radiation Shield is located on the outside of the structure.
4. Apply a bead of silicone between the two surfaces and around the edges before nailing or screwing the plate on Part A to the outside of the structure.
5. From the inside, slide the sleeve of Part B onto the sleeve of Part A until Part B's plate is flush against the inside structure surface. Fasten with screws or nails.
6. NOTE: When terminating through a non-combustible wall, the Wall Radiation Shield is optional.
7. Use a Termination Tee or an Angled Horizontal Termination to finish the system's exterior.
8. When the vent system must pass through an interior wall, use a Wall Radiation Shield (WRS).
9. Assemble CTX Secure Seal® from the appliance towards the Wall Radiation Shield. Refer to "Joint Connections" in these installation instructions for procedure. (See photos on page 2.)

**Do not drill through or penetrate any part of the vent system.**

### VERTICAL, THROUGH THE ROOF INSTALLATION

- Terminate the system 6' (1.8 m) from the combustion air intake of any appliance.
- Terminate the system at least 3' (.9 m) from any other building opening, gas utility meter, service regulator, or the like.
- Terminate the system at least 2' (.61 m) above the roofline and any wall or vertical structure closer than 8' (2.4 m). Additional support is required for systems that extend more than 6' (1.8 m) above the roofline.
- Enclose residential exterior vent below the roof line or use CTX Secure Seal® to limit condensation and protect against mechanical failure.
- Install a Wall Support after every transition from horizontal to a vertical run of over 10' (3.05 m), a minimum of every 12' (3.66 m) of vertical run, and after any offset in the vertical run. (See Detailed CTX Secure Seal® Wall Support Installation.)

- Unless CTX Secure Seal® is installed in a fire rated shaft, a firestop and support is required when penetrating fire rated floors, walls, or ceilings.
- The total equivalent length from appliance flue collar to the termination shall not be greater than specified in the appliance manufacturer's installation instructions.
- A CTX Secure Seal® Rain Cap or any other provision as required by the appliance manufacturer must be used to keep rain or debris out of the vent.

1. Locate the path for the vent system.
2. Cut and frame openings in floors and ceilings to accommodate Firestops.
3. Cut the opening in the roof for the Roof Radiation Shield. Cut the opening so that a minimum distance of 1" (25.4 mm) is between the Roof Radiation Shield and any combustibles.

4. When installing on a pitched roof, place the Roof Flashing under the roofing material up slope from the vent and above the roofing material below the vent. Seal as required.

5. Install a Roof Radiation Shield into the Roof Flashing to ensure proper ventilation.

6. Now begin installing CTX Secure Seal® from the appliance upward.

7. Once CTX Secure Seal® reaches the roof line, slide the Flashing Collar onto the length. Install length through the Roof Radiation Shield and Flashing. Slide the Flashing Collar down to rest on the Flashing, then seal as required. Add additional lengths as needed, attach Rain Cap, then tighten all connections.

8. To inspect the vent system, open the locking band and remove the Rain Cap.

**CTX Secure Seal®  
EXTERIOR WALL  
Pre-Installation**

1. Wall Supports must be securely fastened to a solid member of the building using appropriate fasteners - Tapcon screws for solid

masonry, wood screws for wood framing, or sheet metal screws for 5" structural steel.

2. A Wall Support must be installed after any transition from horizontal to a vertical run of 10 feet or more, after every 12 feet of vertical run, or after any offset in a vertical run.

**Installation**

1. Use the Wall Support as a template for marking the hole locations on the wall surface.
2. If the Wall Support is secured to a masonry structure, drill 3/16 pilot holes for 1/4" Tapcon screws.
3. If the Wall Support is secured to a steel structure, drill and tap holes for 1/4-20 screws.
4. If the Wall Support is secured to a wood structure, it may be helpful to pre-drill for #8 wood screws.
5. Always install a 1" diameter washer between each fastener and Wall Support.
6. Securely attach the Wall Support using the appropriate fasteners to the wall.
7. Tighten Wall Support to CTX Secure Seal® tubing using 45-50 in/lb torque.

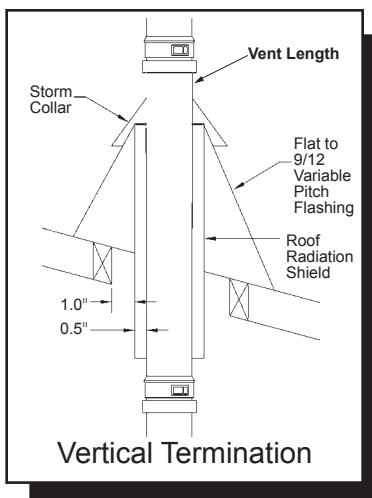
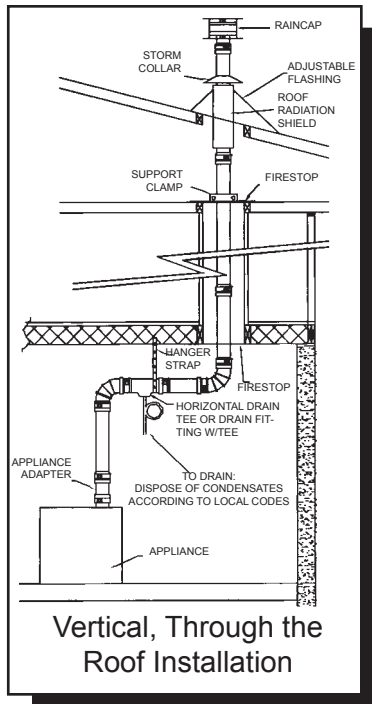
**VENTING THROUGH A MASONRY CHIMNEY**

When using the CTX Secure Seal® Vent System inside a masonry structure, follow CTX Secure Seal® Installation Guide for Lining a Masonry Chimney for general guidelines. When using CTX Secure Seal® to vent Category I natural draft appliances, remove the gaskets. For installation information please contact your venting supplier.

For additional technical support email your request to [CommercialTech.support@securitychimneys.com](mailto:CommercialTech.support@securitychimneys.com).

**IMPORTANT NOTICE**

The UL listing for this product is void if components other than those supplied as Listed Components by SCIL are used. All warranties, stated or implied, are void if this product and the appliances to which it is connected are not installed in accordance with their respective instructions and local code requirements. After the installation, check the entire system to make sure all joints are secure and sealed correctly. The seams and joints must be checked for gas tightness when using the venting system with Category II, III, or IV appliances. Security Chimneys International recommends that the entire system be checked by a qualified inspector at least once annually following initial installation. The installation must conform to the requirements of the appliance manufacturer's instructions, the National Fuel Gas Code, and local codes and regulations.



**CLEARANCE TO COMBUSTIBLES**

Rated Operating Temperatures		Minimum Clearance Enclosed		Clearance Unenclosed	
		Hor.	Vert.	Hor.	Vert.
3" & 4"	300°F	Side: 8" Top: 12" Bottom: 4"	4"	1"	1"
	149°C		101.6 mm	25.4 mm	25.4 mm
	480°F		4"	3"	1"
	249°C		101.6 mm	76.2 mm	76.2 mm
5" - 16"	300°F	Non Combustible Enclosures		3"	3"
	149°C			76.2 mm	76.2 mm
	480°F			3"	3"
	249°C		76.2 mm	76.2 mm	

Rated Operating Temperature of 300°F = Max Flue Gas Temperature of 375°F  
 Rated Operating Temperature of 480°F = Max Flue Gas Temperature of 550°F