

NovaVENT®

INSTALLATION AND MAINTENANCE INSTRUCTIONS

**3", 4" & 5" SINGLE WALL / DOUBLE WALL
SPECIAL STAINLESS STEEL VENTING SYSTEM
FOR CATEGORY II, III, & IV
HEATING APPLIANCES**



UL1738 & ULC S636

Read the following before installation of NovaVENT®

- * Examine all components for possible shipping damage prior to installation.
- * The **NovaVENT®** system must be free to expand and contract. Check for unrestricted vent movement through walls, ceilings and roof penetrations.
- * The vent system **must** be properly supported “**DURING ASSEMBLY**” vertically & horizontally as prescribed in this manual. Failure to support the components at the point of install will cause undue stress on the joints of the components and fittings thereby voiding warranty.
- * Proper joint assembly is essential for a safe installation. Follow these instructions exactly as written. Check the connection of all joints during and after completion of assembly for proper insertion depth and check gear clamps of single wall vents for proper torque.
- * Different manufacturers have different joint systems and adhesives. Do Not Mix Pipe, Fittings or Joining methods from different manufacturers beyond the flue collar adaptor.

WARNING: CONDENSATION WITH HIGH ACID CONTENT MAY BE PRODUCED DUE TO UNFORESEEN CONDITIONS. THE HEATING APPLIANCE AND VENTING SYSTEM SHOULD BE INSPECTED BY A LICENSED CONTRACTOR ON AN ANNUAL BASIS FOR POSSIBLE SIGNS OF DETERIORATION DUE TO RUSTING OR PIN HOLES. CONDENSATION WITH HIGH ACID CONTENT MAY CAUSE LEAKAGE OF HARMFUL GASES WHICH CAN CAUSE NAUSEA, FAINTING OR DEATH. IF DETERIORATION IS DETECTED, IMMEDIATELY CEASE USE OF THE HEATING SYSTEM AND CALL FURNACE / BOILER INSTALLER FOR REMEDIAL ACTION.

IMPORTANT: The qualified installing contractor **must** leave this instruction with the end-user along with a vent layout drawing of the install detailing the entire vent system including all enclosures, access doors, condensate drains etc. The installer shall instruct the end-user on how to check the condensate drains periodically and if required, how to fill with water.

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Hazard Definitions

The following terms are used throughout this Installation Guide to bring attention to potential hazards of varying risk levels or to important information concerning the product and / or its use.

DANGER!

Indicates the presence of a hazardous situation which, if ignored, will result in death, serious injury or substantial property damage.

WARNING!

Indicates a potentially hazardous situation which, if ignored, can result in death, serious injury or substantial property damage.

CAUTION!

Indicates a potentially hazardous situation which, if ignored, may result in minor injury or property damage.

NOTICE

Indicates special instructions on installation, operation or maintenance, which are important to equipment but not related to personal injury hazards.

Contaminants Notice

It is understood that all appliances requiring inside combustion air must have sufficient supply of the air for proper combustion of the fuel air mixture within the appliance. What may not be understood is this supply of air shall be free of corrosive contaminants. Air mixture containing corrosive contaminants when under fire through the combustion process of the appliance produces exhaust gases containing these corrosive contaminants. These contaminants are prevalent in the condensate of these gases throughout the vent system and will eventually damage the vent material. Refer to Table 1 for listing of products.

The supply air to the appliance shall be free of any contaminants. Heating appliances installed in areas where the supply air is contaminated shall have clean combustion air piped directly to the unit.

PRODUCTS THAT WILL CONTAMINATE THE COMBUSTION AIR SUPPLY IN THE MECHANICAL ROOM	
Salts – Sodium Chloride used in water softeners	Adhesives, cements, glues used to fasten building products
Dirty air due to renovation / construction	Solvents containing Hydrochloric acid / Muriatic acid
Chlorine based swimming pool chemicals	Chlorinated waxes and/or cleaners
Chlorine type bleaches, cleaning solvents, laundry detergents	Aerosol sprays containing Chloro-flouorocarbons (CFC's)
Fabric softeners used in clothes dryers	Paint & varnish and remover solvents
Permanent wave hair product solutions	Refrigerant leaks

Table 1 ** List is subject to change without notice.

WARNING

With the above contaminants present, failure to remove these contaminants or to pipe combustion air directly to the heating appliance can eventually lead to the deterioration of the venting material by way of the contaminated condensate, resulting in severe personal injury, death or substantial property damage.

SPECIAL STAINLESS STEEL VENTING

For use with Category II, III, & IV gas burning appliances

Contact Local Building or Fire Officials about Restrictions and Installation Inspections in your area as well as National codes: USA -National Fuel Gas Code ANSI-Z223.1/NFPA 54, CANADA – CAN/CSA-B149.1 Natural gas and propane installation code.

Please refer to appliance manufacturers' instructions to determine proper sizing and connection of venting system to appliance, including maximum horizontal length, maximum height, and installation clearances (air spaces). The proper operation of the vent system and appliance requires parts specified by Z-FLEX® with no deletions or substitutions.

In order to validate a warranty installation **Z-FLEX®** recommends that a professional with Special Gas Venting experience or a certified Gas Ticket professional MUST perform the installation.

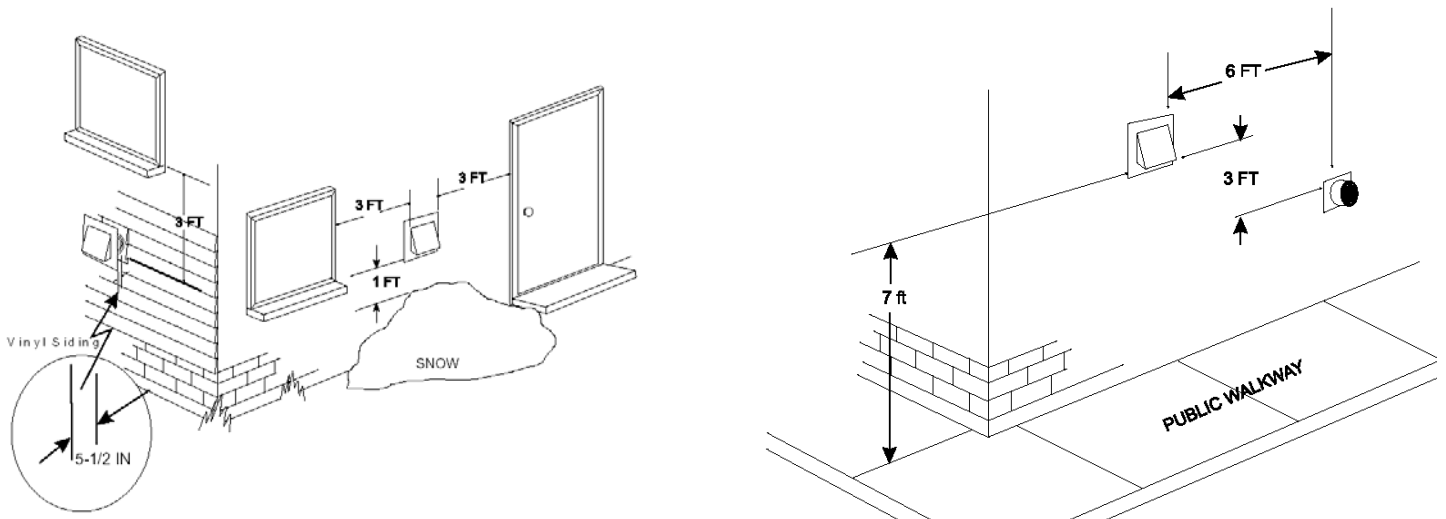
These instructions are intended as a guide to assist a professional installer.

When the **NovaVENT®** system is installed, the following should be observed:

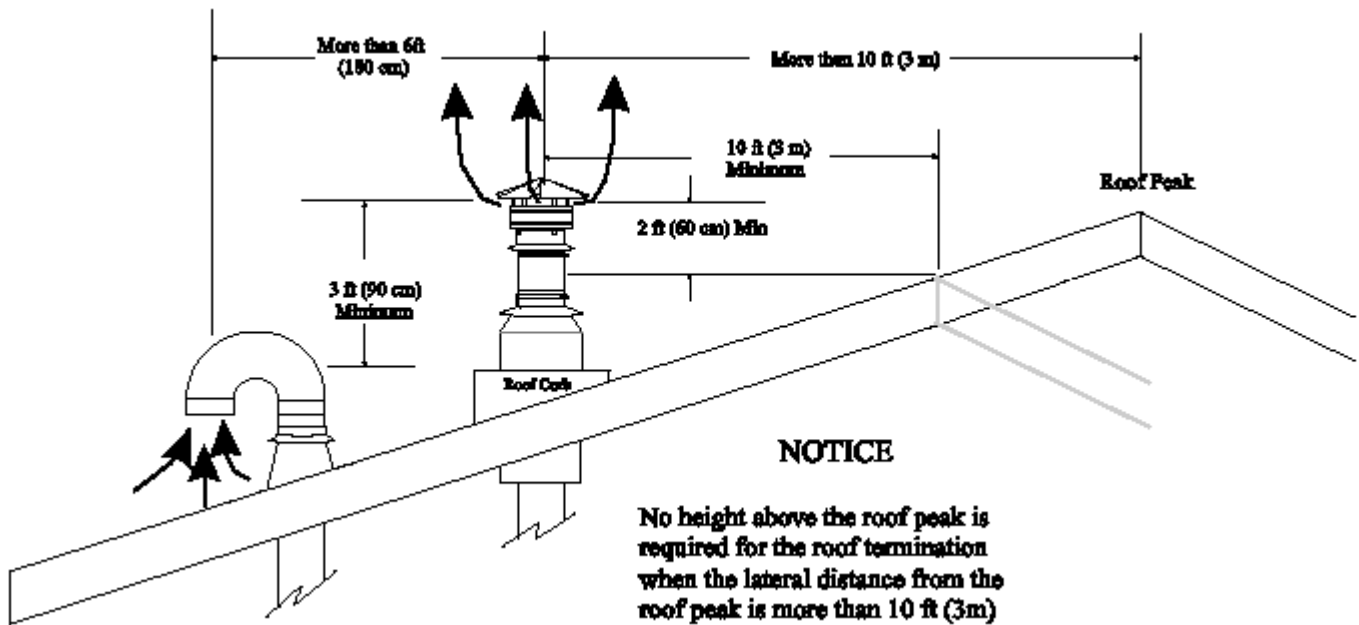
1. A venting system that exits the structure through a sidewall or the like, shall terminate not less than 12 inches (254 mm) above the ground or normal snowline. (Minimum Clearance to Vent Termination Illustrations).
2. The termination of a system shall be located above the snow line in geographical areas where snow accumulates. The termination area should be kept clear of snow and ice at all times.
3. The vent shall not terminate less than 7 ft. (2.13 m) above a paved sidewalk or driveway.
4. The termination shall be 6 ft. (1.8 m) or more from the combustion air intake of any appliance.
5. The system shall terminate more than 3 ft. (.91m) from any other building opening, gas utility meter, service regulator or the like.
6. Exterior mounted venting systems should be enclosed below the roof line with a chase to limit condensation and protect against mechanical failure. Vent system must be pitched minimum ¼" per foot back to condensate drain within the system.

MINIMUM CLEARANCE TO VENT TERMINATION

Sidewall Clearances



Vertical Clearances



NOTICE

The vent terminations of some Listed appliances may be installed at lesser clearances when specified in the appliance installation instructions and in compliance with NFPA 54 or CSA B149.

NOTICE

When installing the Venting, the use of an adjustable pipe is preferable, however, if a "field cut" pipe is required, see section; See TO CUT PIPE FOR SINGLE WALL ONLY on page 8.

NOTICE

- A. The Z-FLEX® SPECIAL STAINLESS VENT SYSTEM is for use only with appliances having a positive vent pressure of 8" of water column or less.
- B. Except for installation in one and two family dwellings, a venting 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
- C. Do not wrap the pipe with insulation or cladding or place any type of insulation within the required air spaces surrounding the venting system.
- D. A termination must be used on all installations to assure proper operation and to prevent debris from entering the venting system.
- E. Vertical runs must use a fire-stop as a lateral support at each ceiling level and at least one support at the base of the vertical run where required by the appliance manufacturer. For vertical runs exceeding 16 ft (4.88m), a support collar is required at 16 ft (4.88m) intervals. Support horizontal runs using loose fitting metal straps as hangers and similar supports at each elbow.
- F: **It may be required to have more than one condensate drain on a single vent system**, therefore it is recommended that **vertical** and **horizontal drain tees** with 3inch p-traps be installed on long vent systems in order to eliminate the system of condensate as quickly as possible. **Note: These Drain Tees & Traps must be accessible for future inspections.**

JOINT PROCEDURE

The female end of each NovaVENT® Model NV component incorporates a self sealing gasket. Examine all components for damage to ensure that gasket integrity has remained intact during shipping.

WARNING! Joint connections not meeting the full insertion can leak causing severe personal injury, death or substantial property damage.

SINGLE WALL: (see illustration #1 & images 1, 2 & 3)

1. Align pipes and push them together to indent or at least... 1.75 inches for diameters 3 inch thru 12 inch.

PIPE JOINT NOT MEETING THE MINIMUM ABOVE PARAMETER IS NOT FULLY SEATED AND IS THEREFORE AN UNACCEPTABLE CONNECTION.

2. Tighten gear clamp to a **minimum** torque of 40 in/lbs. and a **maximum** of 50 in/lbs.

WARNING! Over tightening the gear clamp can cause the seal to fail. **DO NOT** use power tools when tightening gear clamps.

DANGER! Fasteners (screws, rivets, etc.) must not penetrate the components of the single wall system either when joining pipes and fittings or using support straps. Drilling holes in the components is not permitted.

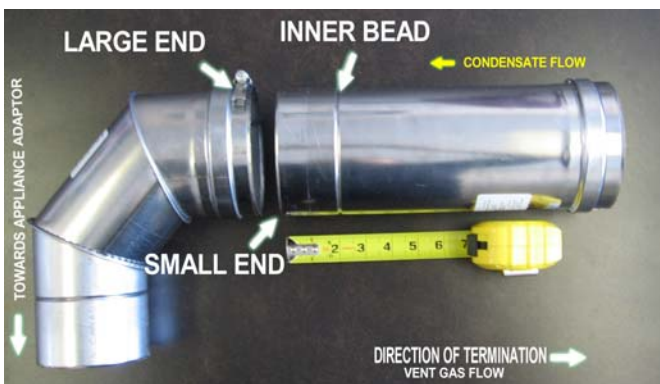
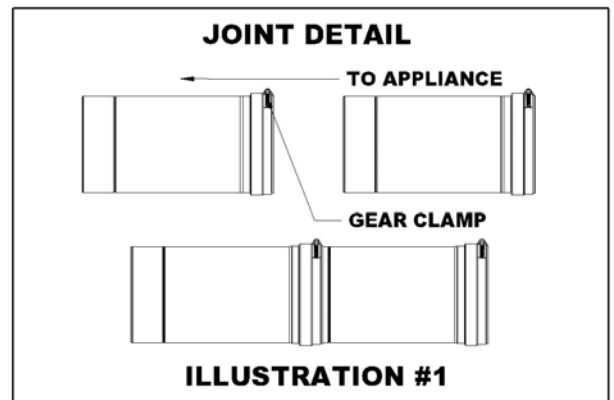


Image 1



Image 2



Image 3

DOUBLE WALL:

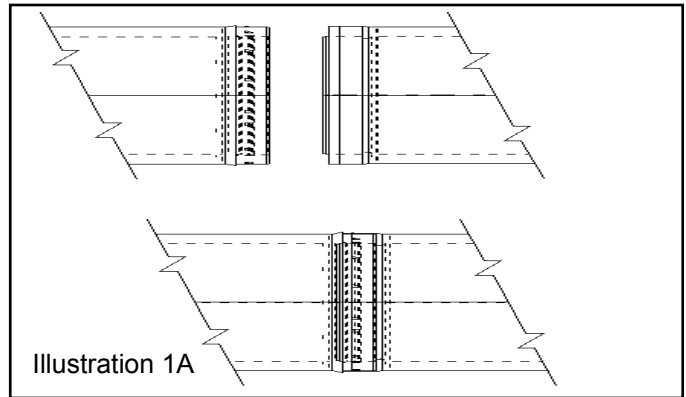
1. Align pipes and push them together until the snap-lock engages. (Illustration #1A, Images 4, 5 & 6).

NOTICE

Proper pipe orientation is essential to achieve effective condensate flow. In most cases the use of an appliance specific **flue collar adaptor** is required to connect directly to the appliance. This adaptor will configure the vent orientation with the gasket end of pipe and fittings towards termination.

Also:

Some flue collars may require the use of high temperature silicone sealant to make a positive pressure gas tight seal. In some cases a clamping mechanism may be necessary to secure the adaptor to the appliance.



IMAGES BELOW SHOW DOUBLE WALL PIPE CONNECTION

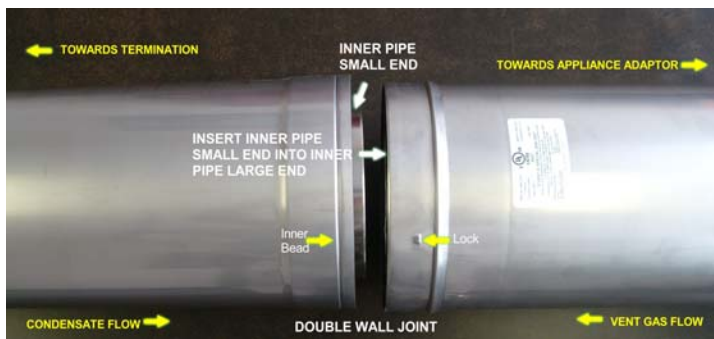


Image 4

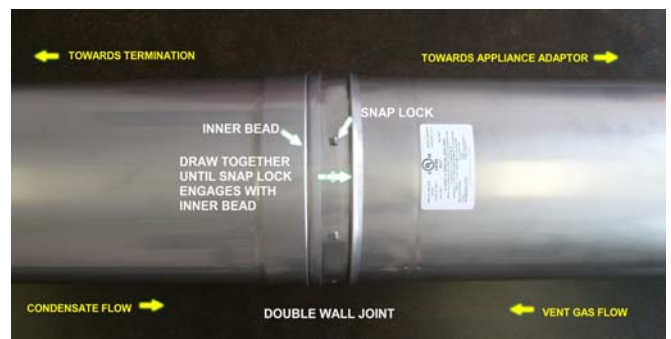


Image 5

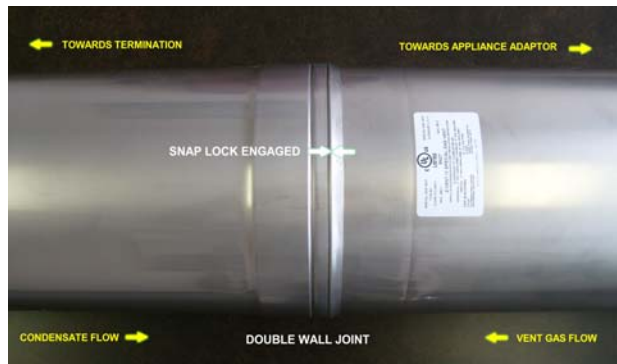


Image 6

CLEARANCE TO COMBUSTIBLES

SYSTEM	SYSTEM OPERATING TEMPERATURE	CLEARANCE ENCLOSED VERTICAL	CLEARANCE UNENCLOSED	
			HORIZONTAL	VERTICAL
SINGLE WALL	550°F (288°C)	6" (150 mm)	Pipe 3" (75 mm)	3" (75 mm)
	Up to 480°F (249°C)	4" (100 mm)	1" (25 mm)	1" (25 mm)
DOUBLE WALL	550°F (288°C)	6" (150 mm)	Pipe -2" (50 mm)	2" (50 mm)
	Up to 480°F (249°C)	4" (100 mm)	1" (25 mm)	1" (25 mm)

Table 2

HORIZONTAL / SIDE WALL VENTING INSTALLATION

(see illustration # 2 and images 7 & 8 below)

1. Prior to beginning the installation, loosely assemble all parts required to make sure **all** parts are present.
2. Review the venting requirements section in the appliance manufacturer's installation & operating manual to determine the vent system configuration.
3. Select and apply the appliance adaptor to the flue outlet collar of the appliance.
4. Observing the sidewall vent termination rules on pages 3 & 4 and/or local building codes. Select the point of wall penetration where the minimum $\frac{1}{4}$ " per foot of slope (6.4 mm per 305 mm) can be maintained.
 - i) On a non-combustible wall, the pipe may be mortared in directly without using a wall thimble.
 - ii) A *wall thimble* is required if terminating is through a combustible wall.
 - iii) A framed opening is required to insert the thimble halves. The thimble is adjustable for different wall thicknesses.
 - iv) Install wall thimble into wall. Caulk around outside edge of plates as necessary and fasten to wall using suitable screws or nails.
 - v) The termination cap shall be installed no less than 5-1/2 in. from a *combustible* exterior sidewall (see pg. 3 Sidewall Clearances).
 - vi) The vent pipe must be sealed at wall thimble as per the Local Building Code regarding continuous vapor barrier of the building structure.
5. Continue connecting the required lengths of pipe and fittings starting from the appliance adaptor throughout the system making certain to follow the instructions in this guide with respect to i) Joint Procedure, ii) Slope iii) Supports iv) Clearances, v) Drain Traps and vi) Side Wall Termination.
6. Installing the NovaVENT® sidewall termination through the wall thimble is achieved from outside through the wall thimble to the inside. Perform all joint connections per illustration using **JOINT PROCEDURE** as described on page # 5.
 - i) Connect the termination to the required length pipe.
 - ii) Insert the small end of the pipe through the wall thimble from outside. (Note: The "UP" arrow on the label of the termination for proper orientation)
 - iii) Install a gear clamp around the pipe on the inside of wall to within $\frac{1}{4}$ inch of wall plate to trap the pipe in position so that the system cannot be moved in or out of wall (see images 7 & 8). This applies to both combustible and non-combustible walls.

Single wall termination shown

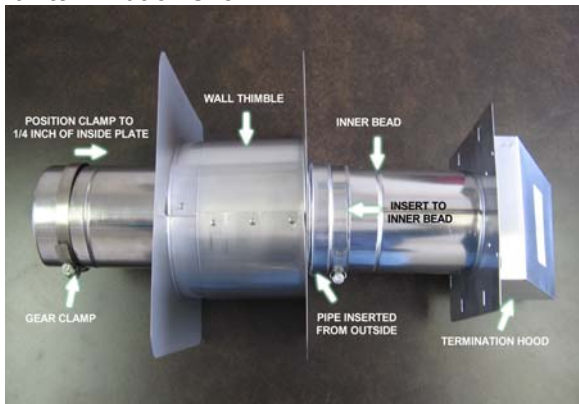


Image 7



Image 8

7. The system must be supported along its horizontal length every forty-eight inches or less and at all elbow locations using suitable supports around pipes (See Illustration #2) maintaining clearance to combustibles as per table 2 on page 6.
8. The horizontal distance of the system from the appliance flue collar to the outside of the horizontal termination shall not be greater than that specified in the appliance manufacturer's installation instructions.

Vent Pipe Slope

NOTICE

All horizontally installed portions of a vent system shall have a slope (upwards for Category II, III, or IV appliances) **not less than $\frac{1}{4}$ " (6.4 mm) every 12 inches (305 mm)** to prevent collection of condensate at any location in the vent system. This condensate shall be directed to a condensate drain installed within the system.

TO CUT PIPE FOR SINGLE WALL ONLY

The pipe may be cut to length on the non-expanded end using aviation snips or a hacksaw with a 24 tpi blade. Make certain to keep the cut end square & cylindrical. The cut end must be filed or sanded smooth before joining (see images 9 & 10).

NOTICE

Make certain to account for the 2 inch insertion depth when measuring for a cut length of pipe.

WARNING!

Failure to properly smoothen the cut edge of the pipe (i.e. **NO** jagged, sharp or burred edges) may result in the tearing or displacement of the gasket during insertion causing joint failure.

- i) Measure 2 inches from cut end and draw a line to indicate depth insertion.
- ii) Insert male end into female end to within $\frac{1}{4}$ inch of the drawn line to achieve full depth insertion.

WARNING!

Cut pipe joint connections not meeting the full insertion criteria can cause personal injury, death or substantial property damage.

6 INCH SINGLE WALL SHOWN

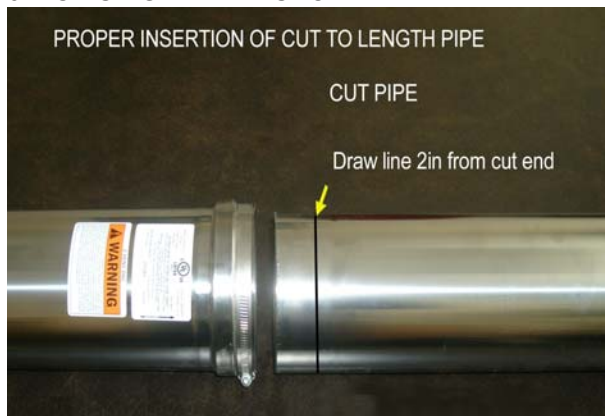


Image 9

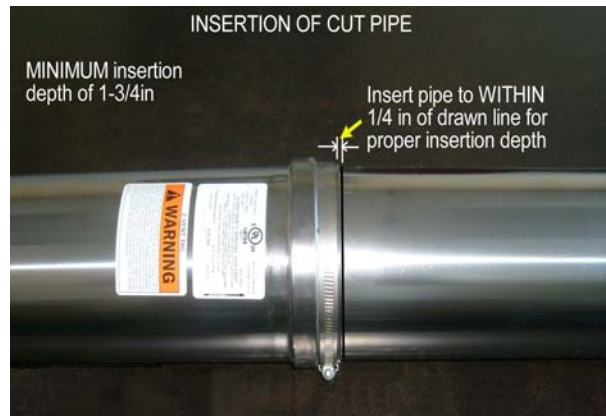


Image 10

NOTICE

Double wall pipe **MUST NOT** be cut. Adjustable pipe must be considered (Refer to the Double Wall Adjustable section on page 10).

Single Wall Adjustable:

- The adjustable pipe is only to be installed into an adjacent pipe with a minimum length of 18 inches for the full range (13-1/2 inch) of adjustment.
- The adjustable slides into this adjacent pipe (see image 11 & 12) and *should be used on vertical and horizontal runs where possible in order to allow ease of connecting the vent assembly during the final stages.*

WARNING!

Adjustable pipes are **NEVER** to be inserted into a tee, elbow or any other fitting as it may block the flow of flue gases. It is **ONLY** inserted into another pipe. Where a non standard length pipe is required: Use and cut-to-length a (single wall NovaVENT® ONLY) pipe in place of an Adjustable Length. For proper cutting and fitting see instructions above. Refer to "TO CUT PIPE FOR SINGLE WALL ONLY".



Image 11

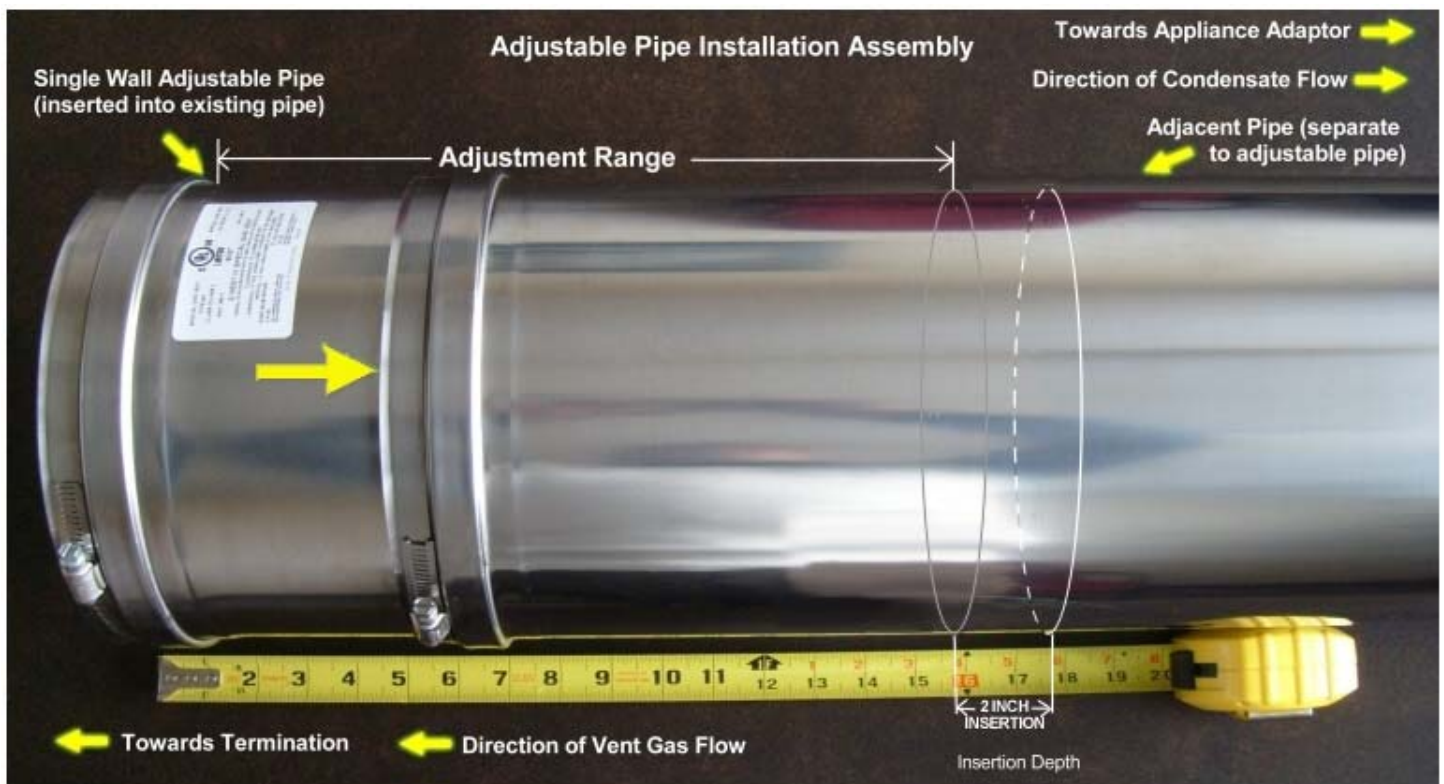


Image 12

NOTICE

Installer shall mark the minimum insertion depth on the adjustable pipe and insert to at least this marking.

WARNING!

Neglecting to insert the adjustable pipe to the prescribed insertion depth can result in joint failure.

Double Wall Adjustable:

- The Double Wall Adjustable Pipe adds approximately 9 inches to the overall length PLUS the adjustment range up to a maximum range of 6-1/2 inches (see images 13 & 14).
- Following the double wall pipe connection instructions above (pg. 6) make certain that the pipes are inserted to the full insertion depth for the required diameter.
- Once the proper length is achieved with the adjustable pipe, the adjustment sleeve can slide to close the outer wall until the inner bead clicks with the locks.
- Secure the gear clamp to lock slider in place.

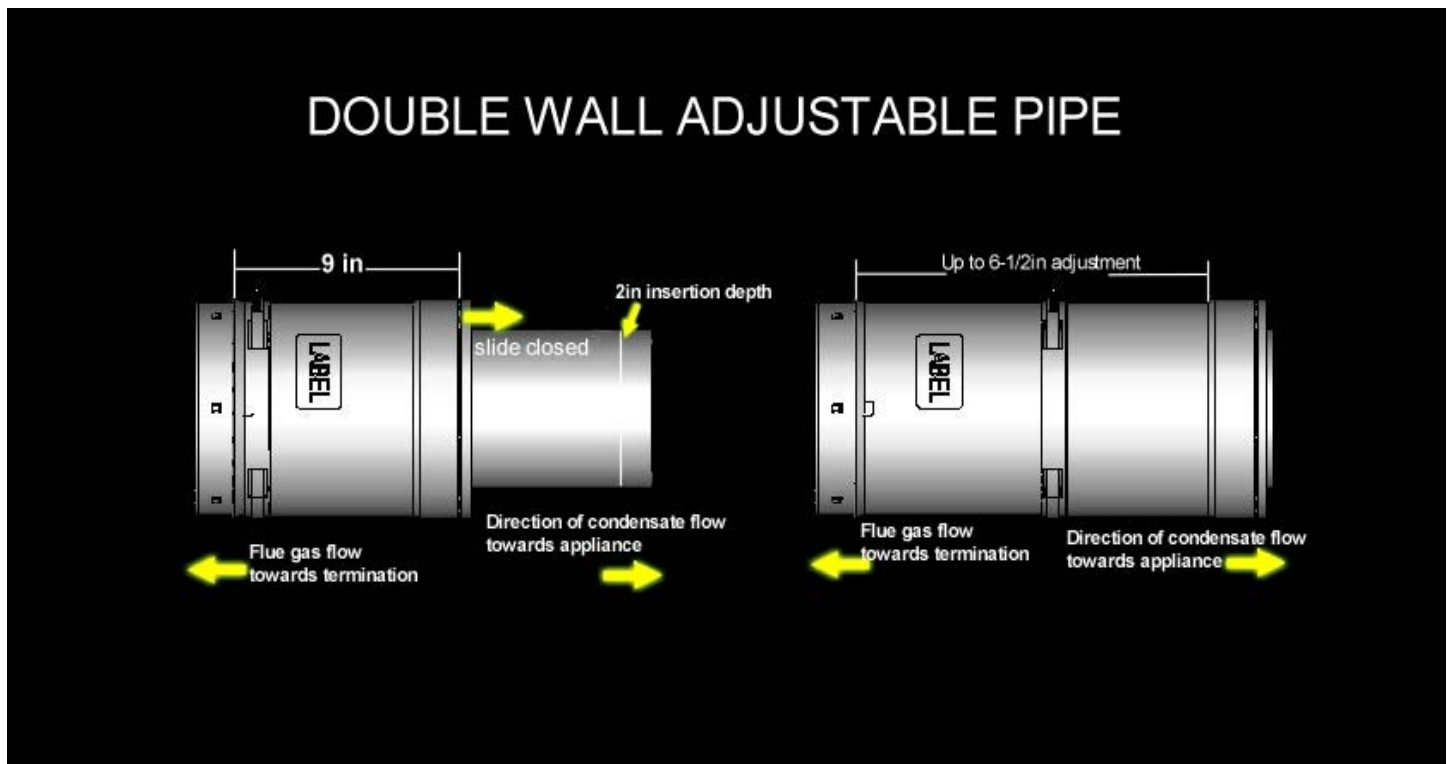


Image 13

Image 14

NOTICE

Installer shall mark the minimum insertion depth on the double wall adjustable pipe small end and insert to at least this marking.

WARNING!

Neglecting to insert adjustable pipe to the prescribed insertion depth may result in joint failure.

CAUTION!

Adjustable pipes should not be inserted into a tee, elbow or any other fitting **past the prescribed 2 inch insertion depth.**

CAUTION!

Where a non-standard length is required between 9"-15" adjustable range the **inner** pipe of the Double Wall Adjustable Pipe may be cut. Refer to section "**TO CUT PIPE FOR SINGLE WALL ONLY**" on page 8. Once the cut is completed engage inner wall into a tee, elbow or any other fitting **to the prescribed 2 inch insertion depth** and slide the outer wall closed to engage the snap lock and tighten gear clamp.

WARNING!

Inserting the adjustable pipe **TOO FAR** into a tee, elbow or any other fitting **BEYOND** the prescribed insertion depth **WILL** constrict the vent size in the tee, elbow or any other fitting thereby choking the exhaust gases.

Condensate Tube Installation:

- The NovaVENT® Silicone Tube Kit contains: 3/8in ID tube (various lengths), 1 hose (wire) clamp ½ in, 2 cable ties.
- When installing the condensate tube be sure to make a trap by forming a 3 inch (75 mm) diameter loop and secure with cable tie.
- Fill the p-trap loop with water • Place hose clamp over the end of the tube • Attach the tube to the spigot of the drain cap
 - Using standard pliers pinch the hose clamp and slide towards the tube / spigot connection and release. (See images 15 & 16)

Note 1:

This tube must be 3/8 inch ID high temperature silicone for at least the first 6 inches (152 mm) for category III systems. Alternate tubing having a minimum temperature rating of 300 °F ≈ 150 °C may be used on category II & IV systems.

Note 2:

The spigot fitting on the Tee Cap with Drain is equipped with an inside thread. **This thread serves no purpose to the installer.** The prescribed condensate tube is to fit over the spigot fitting as prescribed above.

- Check the local codes / regulations to determine how the effluent (condensate fluid) is to be drained.

NOTICE

Local regulations may require the use of a neutralizer kit when using a condensate trap. A condensate pump may also be required. Contact your heating appliance manufacturer or local distributor for a neutralizer kit if required.

IMPORTANT:

- **Installer must demonstrate to the resident** how to periodically check the p-trap loop(s) during the operating months to make certain that that it is free flowing and filled with water. This will ensure the flow of condensate and...
 - a) Prevent the exhaust gases venting through the drain fitting in a positive pressure vent system (Category III / IV).
 - b) Prevent the suction of mechanical room air through the drain fitting in a negative pressure system (Category II).

NOTICE

Z-flex® recommends that a condensate drain of suitable configuration be installed in the venting system so that any condensate produced in the vent system is allowed to drain from the vent system before collecting in the appliance.

Drain Assembly with p-Trap (Double Wall Pipe shown)

NOTE: IT MAY BE REQUIRED TO HAVE MORE THAN ONE CONDENSATE DRAIN ON A LONG VENT RUN IN ORDER TO DRAIN THE CONDENSATE FROM THE SYSTEM AS QUICKLY AS POSSIBLE.

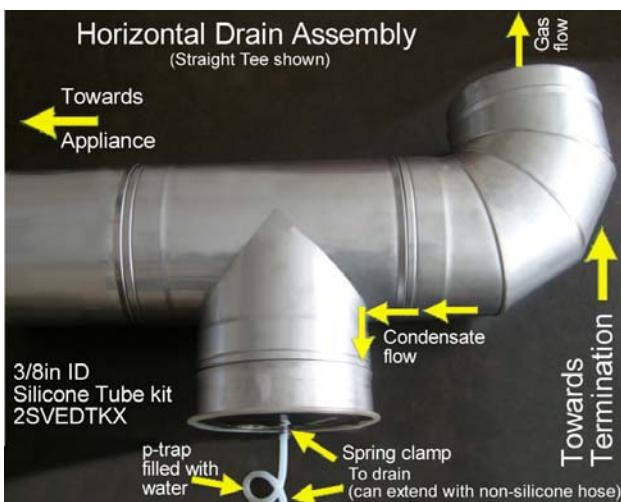


Image 15

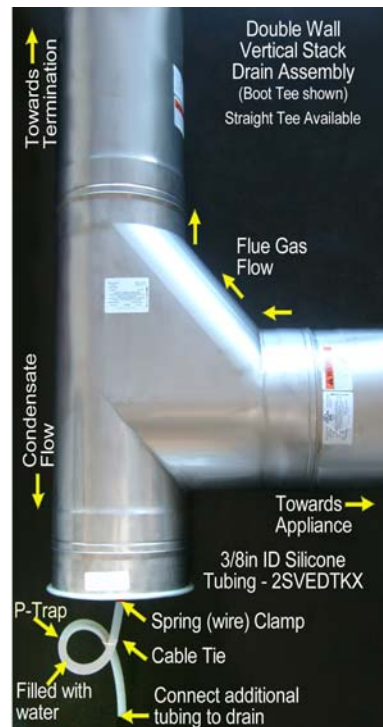


Image 16

Support Systems:

It is recommended to support the venting system with suitable supports every 48 inches or less of horizontal vent run and at the point of every elbow. Vertical vent runs shall be supported at the base and every 16ft or less of vertical height with a support collar.

NOTICE

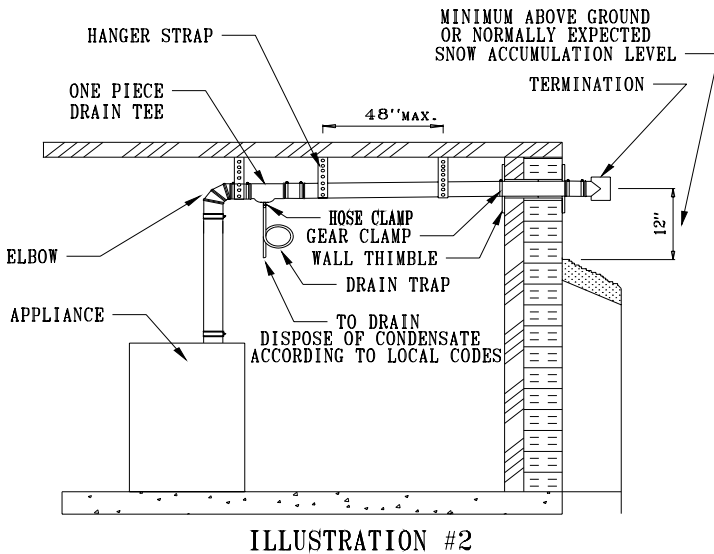
It is recommended to use strapping made of similar material to the vent pipe (stainless steel) in order to minimize galvanic reaction, thereby preventing accelerated corrosion of the support systems (see Illustration 2)

INSTALLATION OF HORIZONTAL SUPPORTS

IMPORTANT: The vent system **MUST** be supported **DURING** THE POINT OF INSTALL.

Example:

- 1) From your selected termination point at the wall you can prepare your support locations by temporarily placing one end of a straight length of wood such as a 2" x 2" or 2" x 4" or broom handle in the prepared termination location.
- 2) Lower the other end of this length of wood to make certain that you have sloped / pitched your horizontal run properly. (minimum 1/4" per foot slope)
- 3) Affix your hanger supports at the proper intervals. I.E. At each "directional change" and every 48 inches
- 4) Install pipe and or fittings through the supports during assembly.



VERTICAL VENTING INSTALLATION

- Single wall vent terminations above the roof line must be at least 3 ft. (.9m) high to a maximum of 6 ft. (1.8m) without the use of lateral supports and 2 ft. (.61 m) higher than any part of a structure within 10 ft. (3.1 m).
 - Vertical heights greater than 6ft. above the roof shall be supported by Guy Bands. Fasten Guy wires of stainless steel or galvanized cable with a minimum capacity of 500 lbs. to each of the four anchor holes that are integral to the guy band and anchor to the roof structure using the appropriate fastening method.
 - The total vertical distance of the vent system from appliance flue collar to the rain cap termination and the maximum length of offsets shall not exceed that specified in the appliance manufacturer's installation instructions.
 - A drain tee **MUST** be installed at the bottom of all vertical stacks in a conditioned space for a category IV vent system to collect and dispose of any condensate that may occur in the vent system.
 - Any part of a vent system passing through an unconditioned space where freezing may occur shall be installed into a chase enclosure.
 - All horizontal sections must observe the rules for **HORIZONTAL VENTING**.
1. Prior to beginning the installation, loosely assemble all parts required to make sure **all** parts are present.
 2. Review the venting requirements section in the appliance manufacturer's installation & operating manual to determine the vent system configuration.
 3. Select and apply the appliance adaptor to the flue outlet collar of the appliance.
 4. Locate and mark the breach location(s) of the vertical stack for Fire-stop Support(s) and/or Fire-stop Spacer(s). Refer to section:
 - i) **INSTALLING FIRE-STOP SUPPORT / SPACER**
 5. Install the required Fire-stop Support(s) and/or Fire-stop Spacers per the instruction listed above.
 6. Continue connecting the required lengths of pipe and fittings starting from the appliance adaptor throughout the system making certain to follow the instructions in this guide with respect to i) Clearances ii) Joint Procedure, iii) Slope iv) Drain Traps v) Supports and vi) Vertical Termination.
 7. Where a pipe is to install through a Fire-stop Support, insert small end of pipe through loosely connected clamp and insert into gasket end of mating pipe. Position properly maintaining the correct horizontal slope and tighten the two nut & bolt assemblies to the plate.
 8. Repeat step 6.

9. Install the NovaVENT® Flashing and Top Support / Storm Collar on the pipe and seal around the top edge where the collar meets the pipe.

10. Affix the NovaVENT® Vertical Termination following the Joint Procedure. (*illustration #1 images 1, & 2*)

INSTALLING FIRE-STOP SUPPORT / SPACER PLATE

NOTICE

A Fire-stop Support or Spacer must be used when a vent passes through a combustible floor or ceiling. The opening must be framed to meet the 6 inch clearance around the vent pipe. The brackets on the plate conforms to the clearance to combustibles dimensions.

- Determine whether a Fire-stop Spacer plate and/or Fire-stop Support collar is required. (see pg. 5 clause E).
- Measure the dimensions of the selected spacer brackets to determine the hole size that must be cut into the floor.
- Transfer this dimension to the predetermined breaching floor locations and cut hole.
- Cut a square hole and clear any flooring material so that a proper frame can be installed.
 - i. When cutting the opening, allowance must be made for the thickness of the frame and frame the opening of the floor using lumber, which is dimensionally consistent with the structural members.

NOTICE

In the event that floor joists must be cut follow the building codes having jurisdiction for reframing the opening.

- The Fire-stop Spacer plate is shipped as a square plate with spacer brackets 6 inches from the hole perimeter.
 - ii. The Fire-stop Spacer plate can be positioned into the framed opening from the topside of the ceiling by simply placing the Spacer, bracket side down. The brackets shall centre itself into a properly framed opening.
 - iii. Mounting the Fire-Stop Spacer from the underside will require affixing the plate to the framed opening using the appropriate fastening method.
- The Fire-stop Support plate is shipped as a square plate with spacer brackets 6 inches from the hole perimeter along with a separate collar. See Illustration 2a.
 - a. The Fire-stop Support plate can be positioned into the framed opening from the topside of the ceiling by simply placing the Support plate bracket side down. The brackets shall centre itself into a properly framed opening.
 - b. Feed the small end of pipe down through hole in Support plate and connect to vent system below. Check the height of the vent system making certain to maintain the correct horizontal slope, (if applicable) and tighten the fire-stop support collar onto the pipe just above the plate.

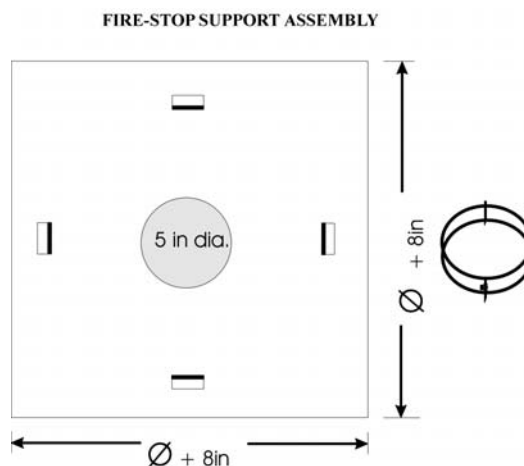


Illustration 2a

INSTALLING NovaVENT® INTO AN EXISTING MASONRY CHIMNEY

NOTICE

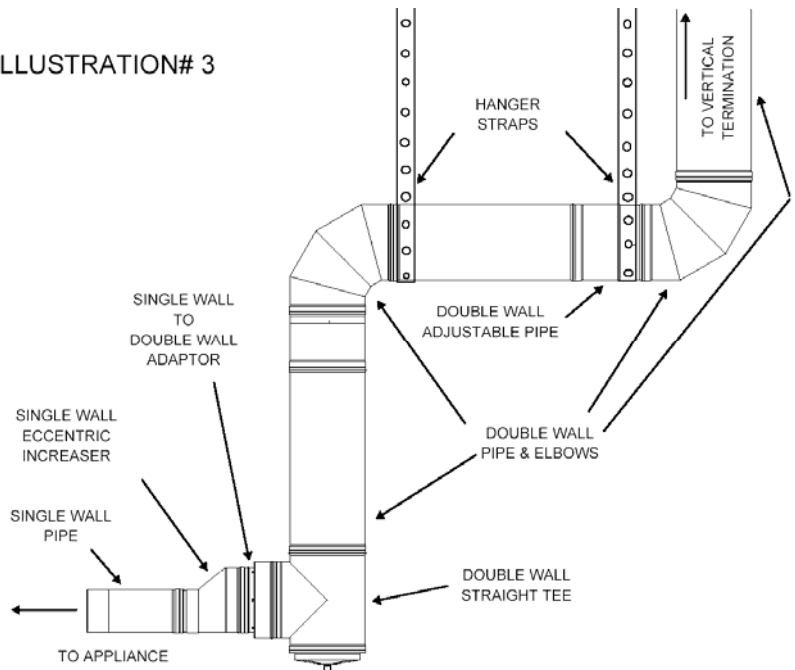
A masonry chimney flue may be used to route NovaVENT® through provided that no other appliance is vented directly into the same flue without a chimney liner.

- Prior to beginning the installation make certain that the existing chimney meets all national and local building codes.
- The chimney must be cleaned, removing all soot, debris and creosote before installing NovaVENT®.
- It is recommended to have the vent stack supported from the bottom so that the system is in compression.
- Prepare and install the “preferred” support for receiving the vent system at the bottom of the stack.
- Following the joint procedure (pg. 5, 6) connect the bottom fitting / pipe together. Implementing “best practice” and / or “preferred” methods assemble the vent system while lowering the flue downwards into the chimney onto the support.
- Prepare the chimney cap to receive the NovaVENT® Flashing. Install the flashing over the last length of pipe down to the chimney cap.
- Loosely attach the NovaVENT® Top Support / Storm Collar to the pipe directly above the flashing leaving approximately 6 inches of pipe for the vertical termination connection and any breaching adjustment.
- Fasten the NovaVENT® Flashing to chimney top using caulking and/or screws. If the top clay tile is still in place, the corners of the flashing should be notched and flashing plate formed down around clay tile.
- Install the NovaVENT® Vertical Termination. Adjust the top support and tighten the collar. Apply sealant to upper edge where the top support collar meets the pipe.

TYPICAL ECCENTRIC INCREASER / SINGLE WALL TO DOUBLE WALL APPLICATION

- Eccentric Increaser (see illustration #3) shall be used when increasing the appliance vent diameter or system diameter from one size to a larger size in a **“horizontal application”**. (Refer to appliance installation & operating manual and /or engineered approved design)
- The NovaVENT® Eccentric Increaser provides a level wall allowing the condensate to flow unimpeded back to drain. (see Vent Pipe Slope pg. 7)
- A NovaVENT® Single Wall to Double Wall fitting is necessary when transitioning from a single wall vent system to a double wall vent system.

ILLUSTRATION# 3



TYPICAL CONCENTRIC INCREASER APPLICATION

- Concentric Increasers shall be used when increasing the vent diameter or system diameter from one size to a larger size in a **“vertical application”**. (Refer to appliance installation & operating manual and /or engineered approved design)
- The NovaVENT® Concentric Increaser provides a conical wall allowing the condensate to flow vertically unimpeded back to drain. (see Vent Pipe Slope pg. 7)

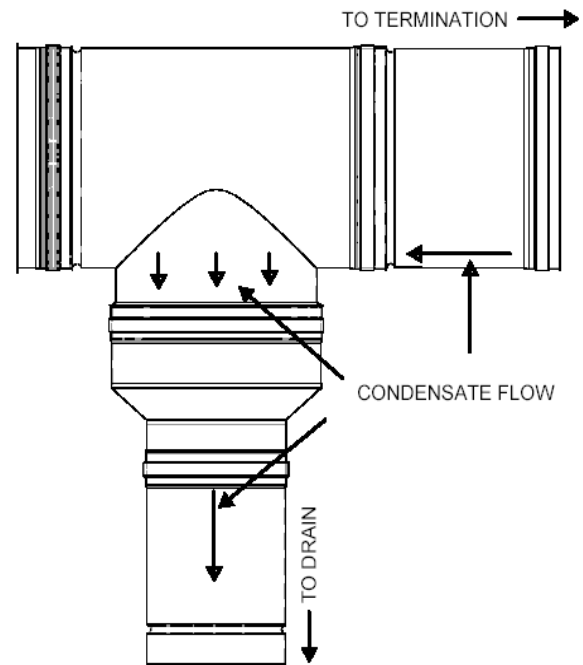
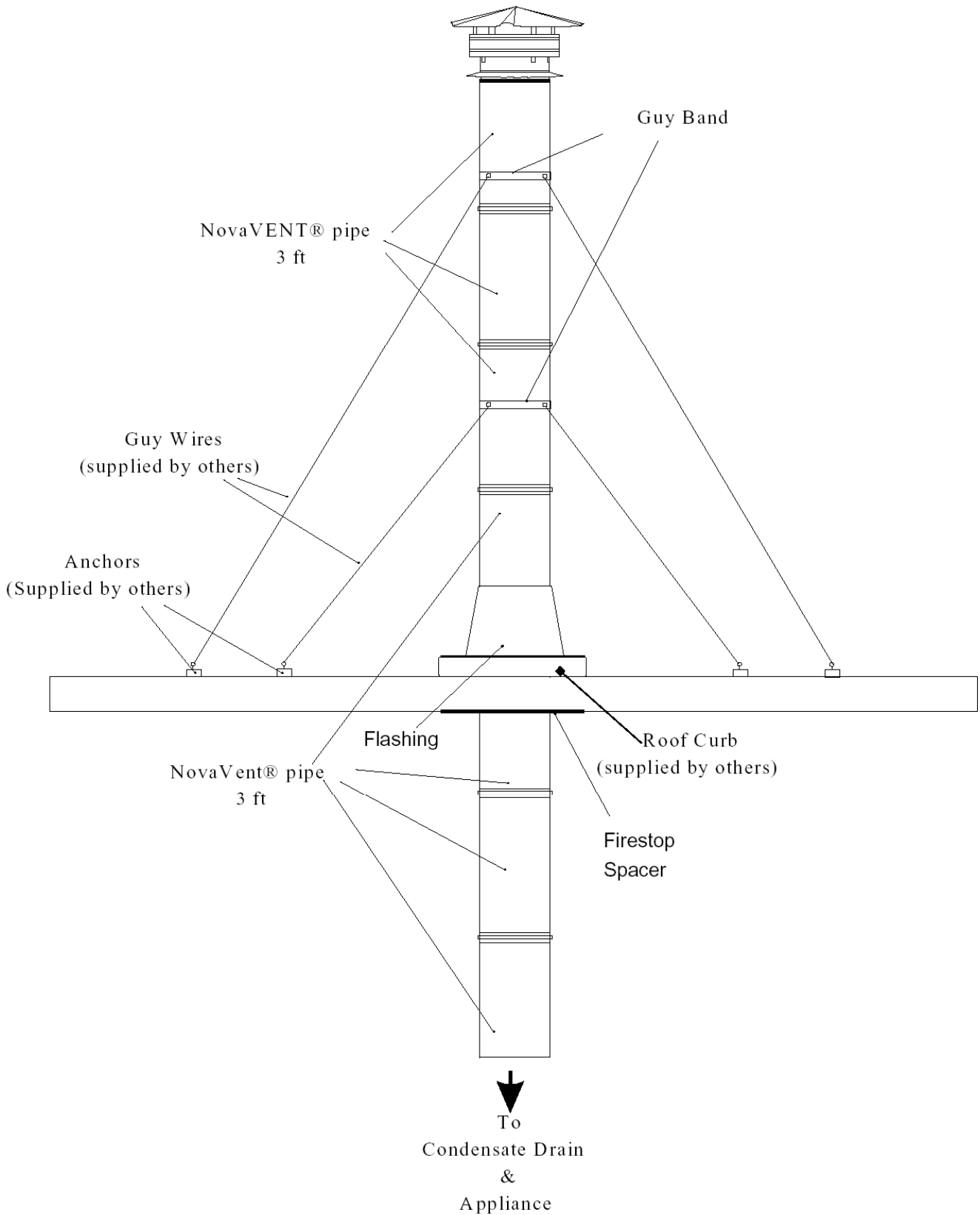
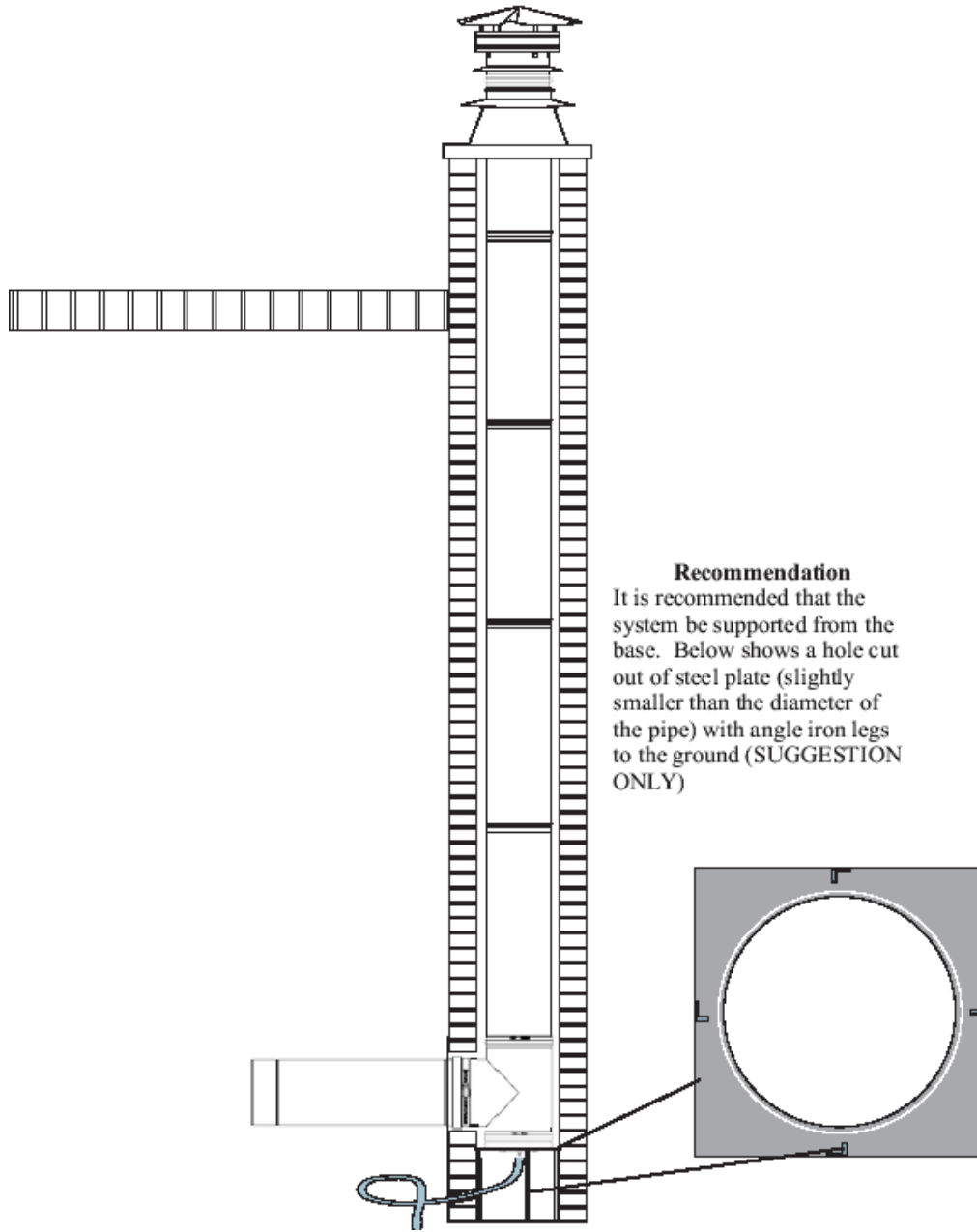


ILLUSTRATION # 5

TYPICAL THROUGH THE ROOF STACK TERMINATION
(ILLUSTRATION # 6)



TYPICAL VENT THROUGH MASONRY CHIMNEY APPLICATION
(ILLUSTRATION # 7)



Recommendation
It is recommended that the system be supported from the base. Below shows a hole cut out of steel plate (slightly smaller than the diameter of the pipe) with angle iron legs to the ground (SUGGESTION ONLY)

APPLIANCE CONNECTION

Refer to the appliance manufacturer's installation manual for proper method of joining NovaVENT® to the appliance collar. An appliance adapter to suit specific requirements may be obtained from Z-FLEX®.

Advisory:

It is recommended to install a CO detector on all levels of the home. Follow the manufacturer's installation instructions on preferred locations for optimum performance.

IMPORTANT NOTICE

When any of the previous installation procedures are completed, be sure to go over the entire system to make sure all joints are secure and sealed correctly. The seams and joints must be checked for tightness prior to using the venting system.

It is recommended that a qualified serviceman / inspector must check the entire vent system at least once annually prior to the heating season (preferably during annual maintenance of the heating appliance) following the initial installation to maintain the Z-FLEX® warranty. The installation must conform to the requirements of the appliance manufacturers' instructions, The National Fuel Gas Code and local codes and regulations.

Z-FLEX® LIMITED LIFETIME WARRANTY

Z-FLEX® (“Seller”) extends the following LIMITED WARRANTY for NovaVENT® (the “NovaVENT®”):

Seller warrants that at the time of purchase, the NovaVENT® will be free of manufacturer’s defects in material and/or workmanship. This warranty shall extend to the original purchaser of the NovaVENT® or, if purchased by a contractor, to the end user. This warranty is valid for a period of five (5) years from the date of purchase, provided that the NovaVENT® has been installed according to Z-Flex® installation instructions. Deviating from the installation and use instructions included with the NovaVENT® will void the warranty.

Under this Limited Warranty, Seller’s sole responsibility and liability shall be to replace the NovaVENT® and/or accessories, if found by Seller to be defective according to the terms of the warranty, and shall not include replacement installation or other costs.

IMPORTANT: The NovaVENT® is designed for use with Category II, III and IV furnace and boiler venting and should not be used with any other type of furnace and boiler venting. Use of the NovaVENT® with any other type of furnace and boiler venting other than those recommended by Seller for use with its NovaVENT® will void the warranty.

WARNING: CONDENSATION WITH HIGH ACID CONTENT MAY BE PRODUCED DUE TO UNFORESEEN CONDITIONS. YOUR HEATING APPLIANCE AND VENTING SYSTEM SHOULD BE INSPECTED BY A LICENSED CONTRACTOR ON AN ANNUAL BASIS FOR POSSIBLE SIGNS OF DETERIORATION DUE TO RUSTING OR PIN HOLES. CONDENSATION WITH HIGH ACID CONTENT MAY CAUSE LEAKAGE OF HARMFUL GASES WHICH CAN CAUSE NAUSEA, FAINTING OR DEATH. IF DETERIORATION IS DETECTED CEASE USE OF HEATING SYSTEM AND CALL FURNACE/BOILER INSTALLER FOR REMEDIAL ACTION.

To activate the warranty, the end-user must complete and return the Z-Flex® Warranty Registration Card within ninety (90) days of installation of the NovaVENT®. Upon written notice of any defects, Z-Flex® reserves the right to examine or establish reasonable proof of defective material or workmanship justifying replacement.

NO OTHER EXPRESS WARRANTY HAS BEEN MADE OR WILL BE MADE ON BEHALF OF SELLER WITH RESPECT TO THE NovaVENT® OR THE INSTALLATION OR REPLACEMENT OF THE NovaVENT®. SELLER SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT OR CON-SEQUENTIAL DAMAGES.

As some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, the above limitations or exclusions may not apply to you.

IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IMPOSED ON THIS SALE UNDER STATE LAW, ARE LIMITED TO THE PERIOD DURING WHICH THIS WARRANTY IS IN EFFECT. AS SOME JURISDICTIONS DO NOT ALLOW LIMITATIONS ON THE LENGTH OF AN IMPLIED WARRANTY, THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

Claims under this Warranty must be made within the warranty period in writing and directed to: In **the USA**; Warranty Claims, Z-Flex®(US) Inc., 20 Commerce Park North, Bedford, New Hampshire 03110, (603) 669-5136 or (800) 654-5600.

In **Canada**; Warranty Claims, Z-Flex® Inc., 452 Attwell Drive, Etobicoke, Ontario, M9W 5C3, (416) 679-0045.

This Warranty gives you specific legal rights, and you may also have other rights that vary in different States and Provinces.



WARRANTY REGISTRATION CARD: Z-FLEX®

For this warranty to be effective, this card must be completed upon purchase of the covered NovaVENT® and returned to Z-Flex® within ninety (90) days of installation of the NovaVENT®.

Original end-user’s name: _____

Address of premises in which the NovaVENT® is installed: _____

NovaVENT® purchased from: _____

Date of Installation: _____

Type of Heating System into which NovaVENT® installed: _____

I understand and agree to the Warranty as stated: _____

Signature

Date