



**HEARTH PRODUCTS**

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KITS AND ACCESSORIES

750,237M  
REV. B 07/2007

**SECURE VENT  
REDUCED DIAMETER  
VENTING**

**INSTALLATION INSTRUCTIONS FOR SV4.5RR4 PIPE REDUCER AND ALL ASSOCIATED SV4 (4")  
SECURE VENT/DIRECT VENT COMPONENTS INCLUDING SV4CGV-1 VERTICAL TERMINATION**

**GENERAL INFORMATION**

This document details installation instructions for the SV4.5RR4 pipe reducer. Information provided here is supplemental to instructions provided with each fireplace and may, for the most part, be redundant to that information. The intent of this document is to provide complete instructions pertaining to the installation of the before-mentioned reducer, particularly any instructions that are exclusive to the installations of these reducers and 4" direct vent components.

The SV4.5RR4 reducer and associated SV4 (4") vent components are only for use with Lennox and Superior branded 33" and 35" Direct-Vent gas fireplaces: SSDV-3530, LMDVT3328, LMDV-3530, MPDT-3328 and MPD-3530 models (top vented, vertically terminating configurations only). These reducers may not be used with any horizontal terminations, or any other Lennox or Superior branded models.

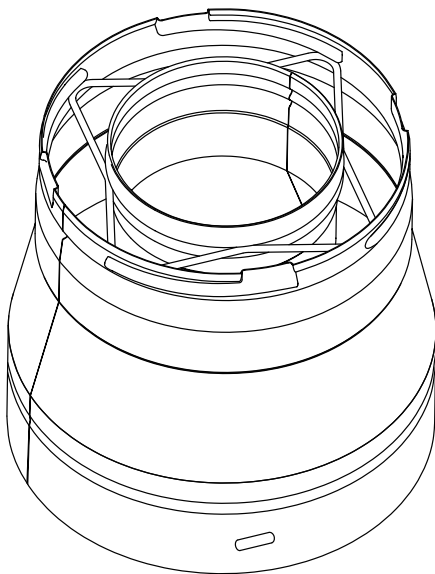
The reducers covered by this document seamlessly integrate with all the other components of the above mentioned fireplaces approved for use with these reducers and, when installed in accordance with the directions provided here and with each fireplace, constitute a complete, approved and listed installation.

Each reducer is 7-1/2" high, with an effective length of 6".

In all venting instances, the reducer is to be installed directly on the fireplace top collar.

**Framing**

Frame the fireplace in accordance with the instructions provided with the fireplace and refer to **Figure 3, Figure 6 and Figure 7** for any dimensions peculiar to the SV4.5RR4 reducer and associated components.



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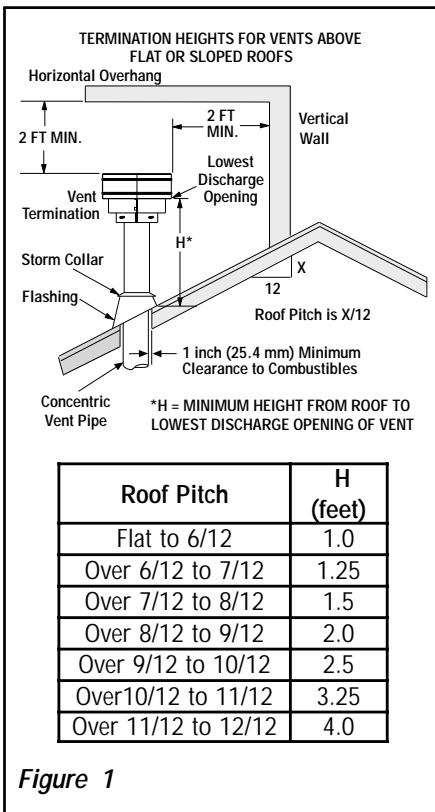
NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

## VENT TERMINATION CLEARANCES

These instructions should be used as a guideline and do not supersede local codes in any way. Install vent according to local codes, these instructions, the current National Fuel Gas Code (ANSI-Z223.1) in the USA or the current standards of CAN/CGA-B149.1 and -B149.2 in Canada.

### Vertical Vent Termination Clearances

Terminate single vent caps relative to building components according to *Figure 1*.



*Figure 1*

Terminate multiple vent terminations according to the installation codes listed at the top of this page.

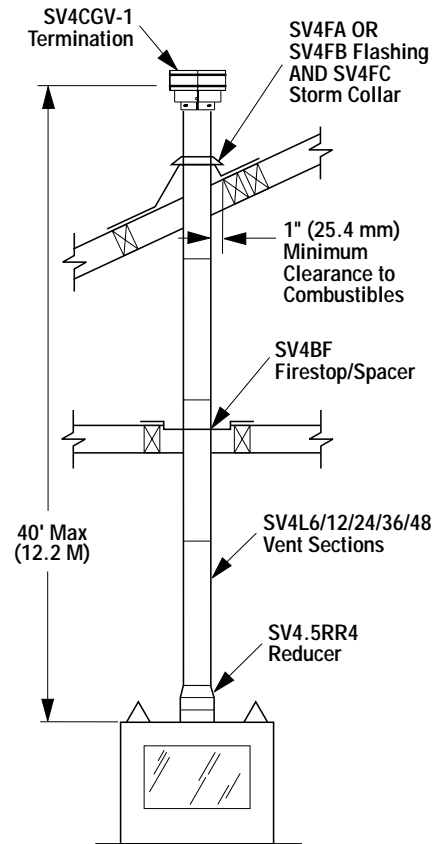
## VERTICAL TERMINATION SYSTEMS (ROOF)

*Figure 2, and Figures 11 through 13 on pages 6 and 7* and their associated Vertical Vent Tables illustrate the various vertical venting configurations that are possible for use with the SV4.5RR4 reducer. **Secure Vent** pipe applications are shown in these figures. A Vertical Vent Table summarizes each system's minimum and maximum vertical and horizontal length values that can be used to design and install the vent components in a variety of applications.

This vertical vent system terminates through the roof. The minimum vent height above the roof and/or adjacent walls is specified in ANSI Z223.1-(latest edition) (In Canada, the current CAN-1 B149 installation code) by major building codes. Always consult your local codes for specific requirements. A general guide to follow is the Gas Vent Rule (refer to *Figure 1*).

### Vertical (Straight) Installation

Determine the number of straight vent sections required. 4 1/2" (114 mm), 10 1/2" (267 mm), 22 1/2" (572 mm), 34 1/2" (876 mm) and 46 1/2" (1181 mm) net section lengths are available. Plan the vent lengths so that a joint does not occur at the intersection of ceiling or roof joists. Refer to the Vent Section Length Chart.



*Figure 2*

VENT SECTION LENGTH CHART							T O T A L  Q U A N T I T Y
Nominal Section Length (inches)	6	12	24	36	48		
Net Section Length (inches)	4-1/2	10-1/2	22-1/2	34-1/2	46-1/2		
Height of Vent	Number of Vent Sections						
inches	ft						
4.5	0.375	1	0	0	0	0	1
9	0.75	2	0	0	0	0	2
10.5	0.875	0	1	0	0	0	1
15	1.25	1	1	0	0	0	2
19.5	1.625	2	1	0	0	0	3
21	1.75	0	2	0	0	0	2
22.5	1.875	0	0	1	0	0	1
25.5	2.125	1	2	0	0	0	3
31.5	2.625	0	3	0	0	0	3
34.5	2.875	0	0	0	1	0	1
37.5	3.125	1	1	1	0	0	3
43.5	3.625	0	2	1	0	0	3
45	3.75	0	0	2	0	0	2
46.5	3.875	0	0	0	0	1	1
49.5	4.125	1	0	2	0	0	3
51	4.25	1	0	0	0	1	2
55.5	4.625	0	1	2	0	0	3
57	4.75	0	0	1	1	0	2
66	5.25	0	2	2	0	0	4
67.5	5.625	0	0	3	0	0	3
69	5.75	0	0	0	2	0	2
72	6	1	0	3	0	0	4
73.5	6.125	1	0	0	2	0	3
79.5	6.625	0	1	0	2	0	3
81	6.75	0	0	0	1	1	2
90	7.5	0	2	1	0	1	4
91.5	7.625	0	0	2	0	1	3
93	7.75	0	0	0	0	2	2
96	8	1	0	1	2	0	4
97.5	8.125	1	0	0	0	2	3
102	8.5	2	0	0	0	2	4
103.5	8.625	0	0	0	3	0	3
108	9	1	0	0	3	0	4
114	9.5	0	2	0	0	2	4
117	9.75	1	0	5	0	0	6
118.5	9.875	1	1	0	3	0	5
126	10.5	0	0	1	3	0	4
130.5	10.875	1	0	1	3	0	5
135	11.25	0	0	6	0	0	6
138	11.5	0	0	0	4	0	4
139.5	11.625	0	0	0	0	3	3
142.5	11.875	1	0	0	4	0	5

VENT SECTION LENGTH CHART							T O T A L  Q U A N T I T Y
Nominal Section Length (inches)	6	12	24	36	48		
Net Section Length (inches)	4-1/2	10-1/2	22-1/2	34-1/2	46-1/2		
Height of Vent	Number of Vent Sections						
inches	ft						
144	12	1	0	0	0	3	4
150	12.5	0	1	0	0	3	4
154.5	12.875	1	1	0	0	3	5
160.5	13.375	0	2	0	0	3	5
172.5	14.375	0	0	0	5	0	5
177	14.75	1	0	0	5	0	6
183	15.25	0	1	0	5	0	6
186	15.5	0	0	0	0	4	4
190.5	15.875	1	0	0	0	4	5
196.5	16.375	0	1	0	0	4	5
205.5	17.125	0	1	1	5	0	7
207	17.25	0	0	0	6	0	6
211.5	17.625	1	0	0	6	0	7
217.5	18.125	0	1	0	6	0	7
229.5	19.125	0	0	1	6	0	7
232.5	19.375	0	0	0	0	5	5
237	19.75	1	0	0	0	5	6
241.5	20.125	0	0	0	7	0	7
246	20.5	1	0	0	7	0	8
252	21	0	1	0	7	0	8
264	22	0	0	1	7	0	8
276	23	0	0	0	8	0	8
279	23.25	0	0	0	0	6	6
280.5	23.375	1	0	0	8	0	9
283.5	23.625	1	0	0	0	6	7
289.5	24.125	0	1	0	0	6	7
301.5	25.125	0	0	1	0	6	7
310.5	25.875	0	0	0	9	0	9
315	26.5	1	0	0	9	0	10
325.5	27.125	0	0	0	0	7	7
330	27.5	1	0	0	0	7	8
336	28	0	1	0	0	7	8
345	28.75	0	0	0	10	0	10
349.5	29.125	1	0	0	10	0	11
372	31	0	0	0	0	8	8
376.5	31.375	1	0	0	0	8	9
379.5	31.625	0	0	0	11	0	11
418.5	34.875	0	0	0	0	9	9
423	35.25	1	0	0	0	9	10
465	38.75	0	0	0	0	10	10

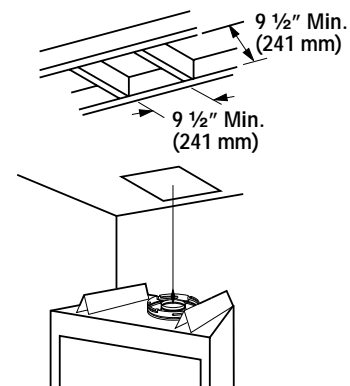
### Vertical (Offset) Installation

Analyze the vent routing and determine the quantities of vent sections and number of elbows required. Refer to **Vertical Vent Figures and Tables on page 6 and 7** to select the type of vertical installation desired. Vent sections are available in net lengths of 4 1/2" (114 mm), 10 1/2" (267 mm), 22 1/2" (572 mm), 34 1/2" (876 mm) and 46 1/2" (1181 mm). Refer to the **Vent Section Length Chart** for an aid in selecting length combinations. Elbows are available in 90° and 45° configurations. Refer to **Figure 6 on page 5** for the SV4E45 and SV4E90 elbow dimensional specifications.

Where required, a telescopic vent section (SV4LA) may be used to provide the installer with an option in installing in tight and confined spaces or where the vent run made up of fixed length pieces develops a joint in a undesirable location, or will not build up to the required length. The SV4LA Telescopic Vent Section has an effective length of from 1 1/2" (38 mm) to 7 1/2" (191 mm). The SV4LA is fitted with a locking inclined channel end (identical to a normal vent section component) and a plain end with 3 pilot holes. Slip the plain end over the locking channel end of a standard SV4 vent component the required distance and secure with three screws.

**Maintain a minimum 1" (25 mm) clearance to combustible materials for all vertical elements. Clearances for all horizontal elements are 3" (76 mm) on top, 1" (25 mm) on sides and 1" (25 mm) on the bottom.**

**A. Frame ceiling opening -** Use a plumb line from the ceiling above the appliance to locate center of the vertical run. Cut and/or frame an opening, 9 1/2" x 9 1/2" (241mm x 241mm) inside dimensions, about this center mark (**Figure 3**).

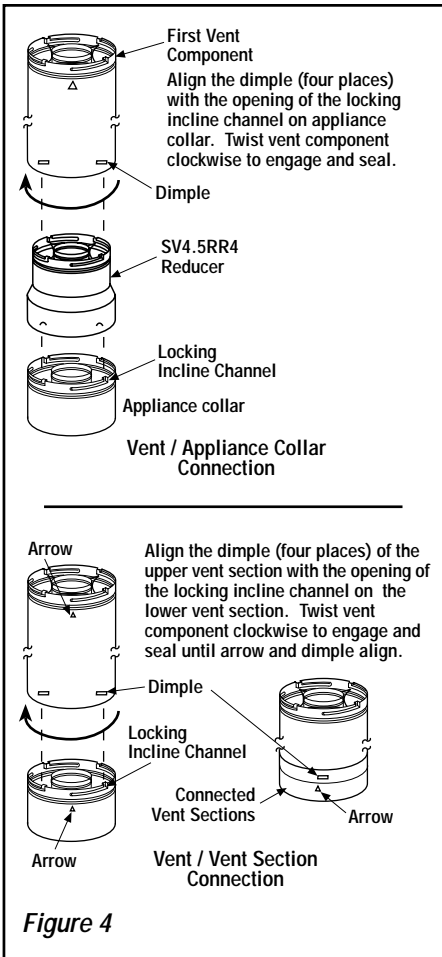


**Figure 3**

**B. Attach vent components to appliance - Secure Vent SV4 direct vent system components are unitized concentric pipe components featuring positive twist lock connections (see Figure 4).**

All of the appliances covered in this document are fitted with collars having locking inclined channels. The dimpled end of the vent components fit over the appliance collar to create the positive twist lock connection.

First attach the SV4.5RR4 reducer to the appliance collar. Then install the SV4 vent components, following directions in Figure 4.



To attach a vent component to the appliance collar, align the dimpled end over the collar, adjusting the radial alignment until the four locking dimples are aligned with the inlet of the four inclined channels on the collar (refer to Figure 4).

Push the pipe reducer against the collar until it fully engages, then twist the component clockwise, running the dimples down and along the incline channels until they seat at the end of the channels.

The unitized design of the **Secure Vent** components will engage and seal both the inner and outer pipe without the need for sealant or screws. If desired, a #6 x 1/2" screw may be used at the joint, but is not required as the pipe will securely lock when twisted.

**Note:** An elbow may also be attached to the SV4.5RR4 reducer. Attach in the same manner as you would a vent section.

**C. Attach vent components to each other -** Other vent sections may be added to the previously installed section in accordance with the requirements of the vertical vent figures and tables. To add another vent component to a length of vent run, align the dimpled end over the inclined channel end of the previously installed section, adjusting the radial alignment until the four locking dimples are aligned with the inlets of the four incline channels of the previous section.

Push the vent component against the previous section until it fully engages, then twist the component clockwise running the dimples down and along the incline channels until they seat at the end of the channels. **This seating position is indicated by the alignment of the arrow and dimple as shown in Figure 4.**

**D. Install firestop/spacer at ceiling -** When using Secure Vent, use SV4BF firestop/spacer at ceiling joists. If there is living space above the ceiling level, the firestop/spacer must be installed on the bottom side of the ceiling. If attic space is above the ceiling, the firestop/spacer must be installed on the top side of the joist. Route the vent sections through the framed opening and secure the firestop/spacer with 8d nails or other appropriate fasteners at each corner.

**Remember to maintain 1" (25 mm) clearance to combustibles, framing members, and attic or ceiling insulation when running vertical chimney sections. Attic insulation shield (SV4RSA) may be used to obtain the required clearances indicated here.**

**E. Support the vertical vent run sections -** **Note - Proper venting support is very important. The weight of the vent must not be supported by the fireplace in any degree.**

Support the vertical portion of the venting system every 8 feet (2.4m) above the fireplace vent outlet.

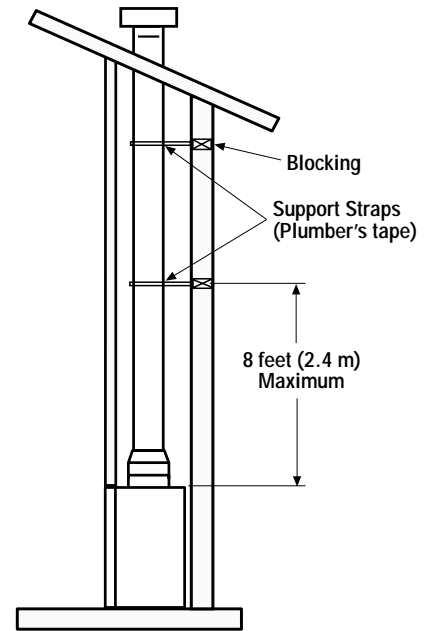
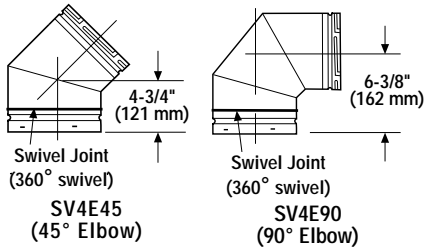


Figure 5

One method of support is by utilizing field provided support straps (conventional plumber's tape). Secure the plumber's tape to the framing members with nails or screws. Loop the tape around the vent, securing the ends of the tape to the framing. If desired, sheet metal screws #6 x 1/2" length may be used to secure the support straps to the vent pipe. Refer to Figure 5.

**F. Change vent direction to horizontal/inclined run** - At transition from or to a horizontal/inclined run, install the SV4E45 and SV4E90 elbows in the same manner as the straight vent sections. The elbows feature a twist section to allow them to be routed about the center axis of their initial collar section to align with the required direction of the next vent run element. **Twist elbow sections in a clockwise direction only so as to avoid the possibility of unlocking any of the previously connected vent sections.** See *Figure 6*.

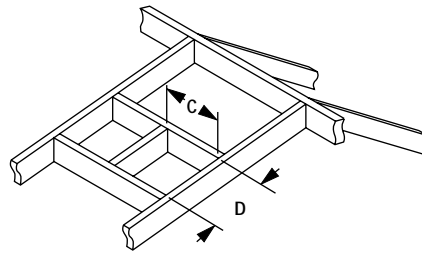


**Figure 6**

**G. Continue installation of horizontal/inclined sections** - Continue with the installation of the straight vent sections in horizontal/inclined run as described in **Step C**. Install support straps every 5 ft. (1.52 m) along horizontal/inclined vent runs using conventional plumber's tape. **It is very important that the horizontal/inclined run be maintained in a straight (no dips) and recommended to be in a slightly elevated plane, in a direction away from the fireplace of 1/4" rise per foot (20 mm per meter) which is ideal, though rise per foot run ratios that are smaller are acceptable all the way down to at or near level.** Use a carpenter's level to measure from a constant surface and adjust the support straps as necessary.

**It is important to maintain the required clearances to combustibles: 1" (25 mm) at all sides for all vertical runs; and 3" (76 mm) at the top, 1" (25 mm) at sides, and 1" (25 mm) at the bottom for all horizontal/inclined runs.**

**H. Frame roof opening** - Identify location for vent at the roof. Cut and/or frame opening per Roof Framing Chart and *Figure 7*.

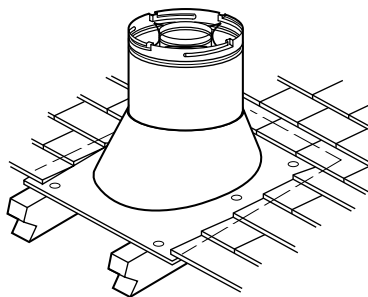


**Framing Dimensions for Roof**

Pitch	C	D
0/12	9 1/2 in. (241 mm)	9 1/2 in. (241 mm)
6/12	9 1/2 in. (241 mm)	11 in. (279 mm)
12/12	9 1/2 in. (241 mm)	16 1/2 in. (419 mm)

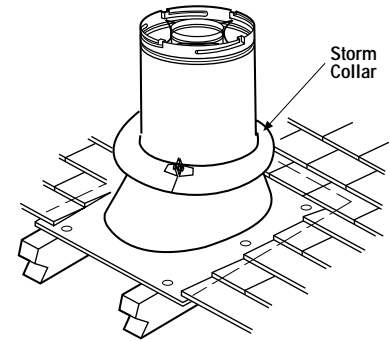
**Figure 7**

**I. Install the roof flashing** - Extend the vent sections through the roof structure. Install the roof flashing over the vent section and position such that the vent column rises vertically (use carpenter's level) (*Figure 8*). Nail along perimeter to secure flashing or adjust roofing to overlap the flashing edges at top and sides only and trim where necessary. Seal the top and both sides of the flashing with waterproof caulking.



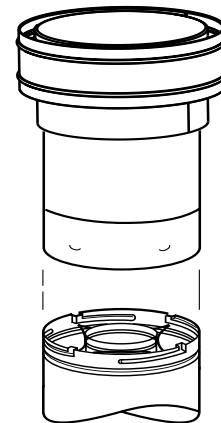
**Figure 8**

**J. Install the storm collar** - Install the storm collar, supplied with the flashing, over the vent/flashing joint. See *Figure 9*. Loosen the storm collar screw. Slide collar down until it meets the top of the flashing. Tighten the adjusting screw. Apply non-combustible caulking or mastic around the circumference of the joint to provide a water tight seal.



**Figure 9**

**K. Install the vertical termination** - The final step involves installation of the SV4CGV-1 Vertical Termination. Extend the vent sections to the height as shown in the "Vertical vent termination section" on **page 2**. The SV4CGV-1 Vertical Termination (*Figure 10*) can be installed in the exact same fashion as any other **Secure Vent** section. Align the termination over the end of the previously installed section, adjusting the radial alignment until the four locking dimples of the termination are aligned with the inlets of the four incline channels of the last vent section. Push the termination down until it fully engages, then twist the termination clockwise running the dimples down and along the incline channels until they are seated at the end of the channels.



**Figure 10**

If the vent system extends more than 5' (1.5 m) above the roof flashing, stabilizers may be necessary. Additional screws may be used at section joints for added stability. Guide wires may be attached to the joint for additional support on multiple joint configurations.

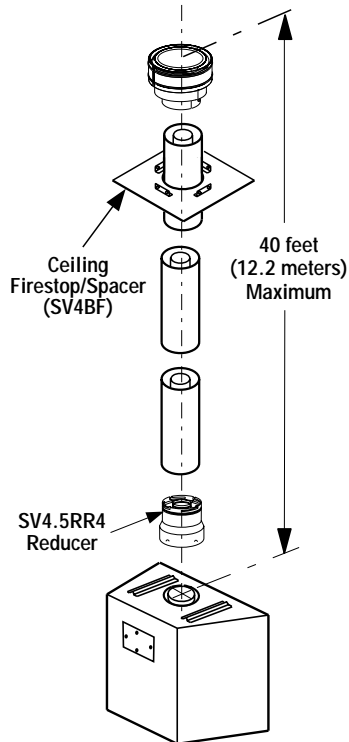
## VERTICAL VENT FIGURES/TABLES

**Note:** It is very important that the horizontal/inclined run be maintained in a straight (no dips) and recommended to be in a slightly elevated plane, in a direction away from the fireplace of 1/4" rise per foot (20 mm per meter) which is ideal, though rise per foot run ratios that are smaller are acceptable all the way down to at or near level.

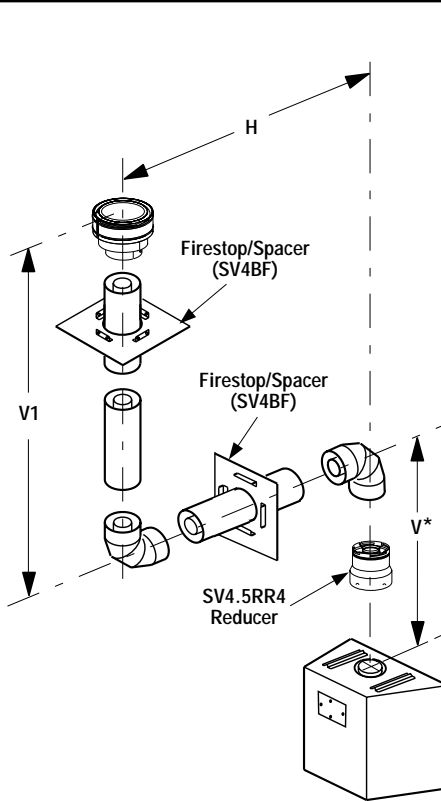
**Note:** SV4BF firestop/spacer must be used anytime vent pipe passes through a combustible wall, floor or ceiling.

**Note:** Two 45 degree elbows may be used in place of one 90 degree elbow. The same rise to run ratios, as shown in the venting figures for 90 elbows, must be followed if 45 degree elbows are used.

**Note:** Secure Vent (rigid vent pipe) is shown in the following figures.



**Figure 11 - Top Vent - STRAIGHT**



**Figure 12 - Top Vent - TWO 90 DEGREE ELBOWS**

TABLE A			
H Maximum		V Minimum	
feet	(meters)	feet	(meters)
5	(1.524)	1	(0.305)
10	(3.048)	2	(0.610)
15	(4.572)	3	(0.914)
20	(6.096)	4	(1.219)
V + V <sub>1</sub> + H = 40 feet (12.2 m) Max. H = 20 feet (6.096 meters) Max.			

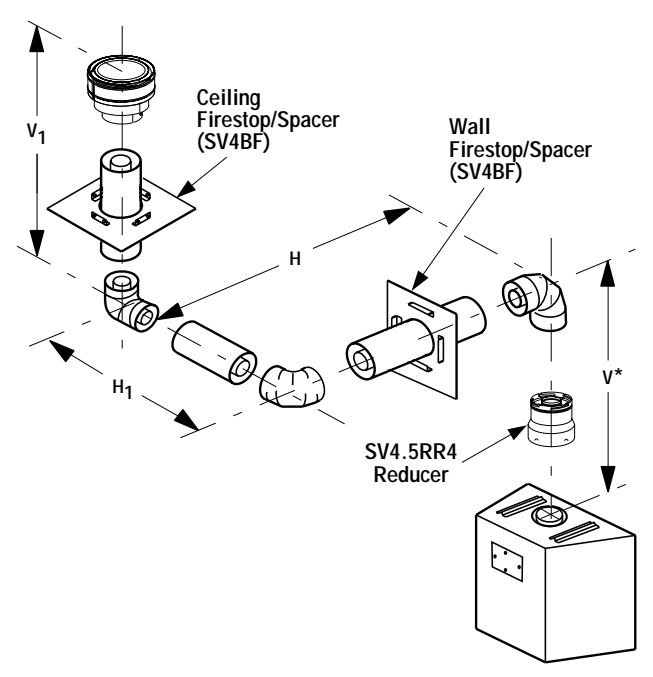
**Example:** If 20 feet of (H) horizontal vent run is needed, then 4 feet minimum of (V) vertical vent will be required.

This table shows a 1 (V) to 5 (H) ratio. For every 1 foot of (V) vertical, you are allowed 5 feet of (H) horizontal run, up to a maximum horizontal run of 20 feet.

**\*Note:** If reducer is placed directly on the collar, this dimension must be 13-1/4" minimum to allow for the reducer.

**WARNING: UNDER NO CIRCUMSTANCES MAY SEPARATE SECTIONS OF CONCENTRIC FLEXIBLE VENT PIPE BE JOINED TOGETHER.**

TABLE B			
H + H <sub>1</sub> Maximum		V Minimum	
feet	(meters)	feet	(meters)
5	(1.524)	1	(0.305)
10	(3.048)	2	(0.610)
15	(4.572)	3	(0.914)
20	(6.096)	4	(1.219)
H + H <sub>1</sub> = 20 feet (6.096 m) Max. V + V <sub>1</sub> + H + H <sub>1</sub> = 40 ft. (12.192 m) Max.			



**Example:** If 20 feet of (H + H<sub>1</sub>) horizontal vent run is needed, then 4 feet minimum of (V) vertical vent will be required.

This table shows a 1 (V) to 5 (H + H<sub>1</sub>) ratio. For every 1 foot of (V) vertical, you are allowed 5 feet of (H + H<sub>1</sub>) horizontal run, up to a maximum horizontal run of 20 feet.

**\*Note:** If reducer is placed directly on the collar, this dimension must be 13-1/4" minimum to allow for the reducer.


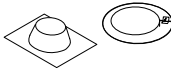




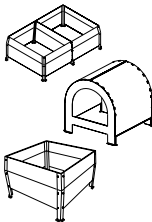

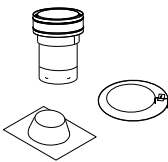
Figure 13 - Top Vent - THREE ELBOWS

### SECURE VENT VENTING COMPONENTS

	DESCRIPTION	Part No.
	Reducer	SV4.5RR4
	Vertical Termination Cap	SV4CGV-1
	Length 6" (galvalume)	SV4L6
	Length 6" (black)	SV4LB6
	Length 12" (galvalume)	SV4L12
	Length 12" (black)	SV4LB12
	Length 24" (galvalume)	SV4L24
	Length 24" (black)	SV4LB24
	Length 36" (galvalume)	SV4L36
	Length 36" (black)	SV4LB36
	Length 48" (galvalume)	SV4L48
	Length 48" (black)	SV4LB48
	Adjustable Length (galvalume 6")	SV4LA
	Adjustable Length (black 6")	SV4LBA
	Adjustable Length (galvalume 12")	SV4LA12
	Adjustable Length (black 12")	SV4LBA12
Adjustable Length (galvalume 24")	SV4LA24	
Adjustable Length (black 24")	SV4LBA24	
	Swivel 45° Elbow (galvalume)	SV4E45
	Swivel 45° Elbow (black)	SV4EB45
	Swivel 90° Elbow (galvalume)	SV4E90
	Swivel 90° Elbow (black)	SV4EB90

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

## SECURE VENT VENTING COMPONENTS

	DESCRIPTION	Part No
	Universal Support	SV4SU
	Flat Roof Flashing (storm collar included)	SV4F
	Adjustable Roof Flashing 1/12 - 7/12 (storm collar included)	SV4FA
	Adjustable Roof Flashing 8/12 - 12/12 (storm collar included)	SV4FB
	Storm Collar	SV4FC
	Attic Radiation Shield	SV4RSA
	Firestop	SV4BF
	Snorkel Cap 14"	SV4STC14
	Snorkel Cap 36"	SV4STC36
	Chase Top Shroud Kit Arch Top - 3 X 3	CTSA-33
	Chase Top Shroud Kit Open Top - 3 X 3	CTSO-33
	Chase Top Shroud Kit Open Top - 4 X 4	CTSO-44
	Chase Top Shroud Kit Open Top - 4 X 6	CTSO-46
	Mil Pac Black Hi-Temperature Sealant	SFMP
	Mil Pac Black Hi-Temperature Sealant - Bulk Pack 12	SFMP-12
	Vertical Flat Roof Kit Includes: flat roof flashing, storm collar, vertical termination cap	SV4FK
	Vertical Adjust 1/12 - 7/12 Kit Includes: adjustable roof flashing, storm collar, vertical termination cap	SV4AK
	Vertical Adjust 8/12 - 12/12 Kit Includes: adjustable roof flashing, storm collar, vertical termination cap	SV4BK
	Adjustable Decorative Square Cathedral Support (not Illustrated)	SV4CSB
	Collar For Decorative Square Cathedral Support (attic radiation shield) (not Illustrated)	SV4AC
	Square Decorative Black Plate (not Illustrated)	SV4PF
	Floor Support (can be used as a firestop) (not Illustrated)	SV4SD
	Roof Brace (not Illustrated)	SV4BS
	Roof Support (not Illustrated)	SV4ST
	Adjustable Wall Band (not Illustrated)	SV4BM
	Wall Radiation Shield (not Illustrated)	SV4RSM
Restrictor Disc (not Illustrated)	SV4RD	

NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

The manufacturer reserves the right to make changes at any time, without notice, in design, materials, specifications, prices and also to discontinue colors, styles and products. Consult your local distributor for fireplace code information.