



# 8" SURE-SEAL DV DIRECT VENT INSTALLATION INSTRUCTIONS



## IMPORTANT:

DO NOT INSTALL WITHOUT FIRST READING THESE INSTRUCTIONS VERY CAREFULLY. BE SURE TO CHECK APPLIANCE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR SPECIFIC CLEARANCE TO COMBUSTIBLE REQUIREMENTS. DO NOT EXTEND THE VENTING SYSTEM VERTICALLY OR HORIZONTALLY TO EXCEED THE MAXIMUM DISTANCE PER THE APPLIANCE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

## WARNING:

THE LISTING FOR THIS PRODUCT IS VOID IF COMPONENTS OTHER THAN THOSE SUPPLIED AS LISTED COMPONENTS BY METAL-FAB, INC. 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.

Sure-Seal DV Direct Vent System is manufactured by Metal-Fab, Inc., for use only with direct vent gas fired appliances certified for use with Sure-Seal DV, in accordance with ANSI and CSA gas appliance standards. Sure-Seal DV is listed by Underwriters Laboratories Inc. for use on Direct Vent Appliance Systems. Contact Local Building or Fire Officials about restrictions and installation inspection in your area.

**Examine all components for possible shipping damage before installation. Proper joint assembly is essential for a safe installation. Check for severe stress of joints upon completion of assembly. Different manufacturers have different joint systems and seal methods. Do not mix pipe, fittings or joining methods from different manufacturers. Failure to follow these instructions will void the manufacturer's warranty and may result in serious fire, health or other safety hazards.**

## CAUTION:

Wear gloves while handling sheet metal parts to avoid injury. Be aware of electrical wiring locations in walls / ceilings when installing this product.

## GENERAL:

Sure-Seal DV components can be used in a vertical installation, horizontal installation or combination of both. Follow the specific appliance manufacturer's installation instructions regarding proper clearance to combustibles and maximum venting lengths.

## JOINT CONNECTION

Sure-Seal DV Direct Vent components are engineered for easy twist lock assembly. Eight indentations are located on the female end of pipe and fittings to slide straight into the male end of the adjacent pipe or fitting, by orientating the eight indentations so they match and slide into the eight entry slots on the male ends.

Push the pipe sections completely together, then twist lock one section clockwise approximately one-quarter turn until the two sections are fully locked (See FIG. 1).

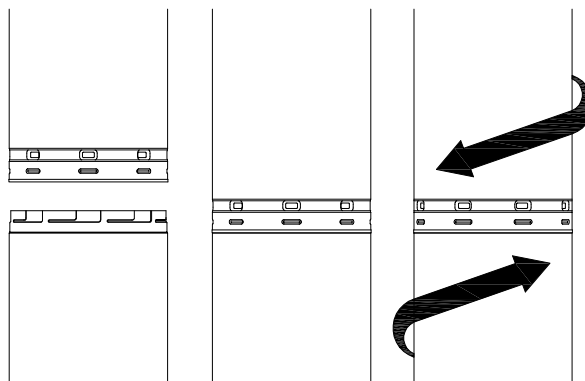


FIG. 1

Sealant is optional, unless specified by the appliance manufacturer. If sealant is used, it is only necessary to be put on the outer tube of the Sure-Seal DV vent pipe or fitting. Run a 1/8-inch wide band of sealant around the male end of the outer sleeve (See FIG. 2) and twist lock the pipes or fittings together.

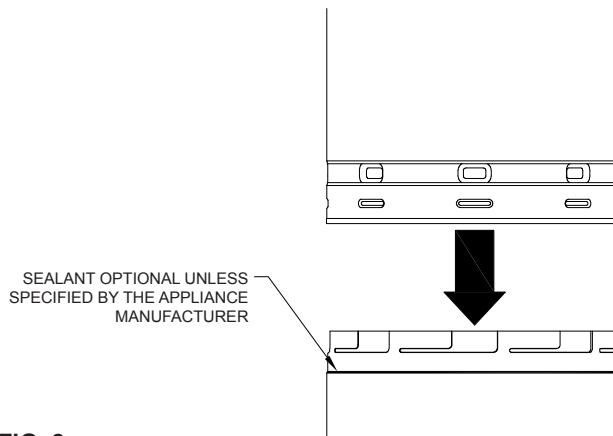


FIG. 2

### APPLIANCE ADAPTER

The Sure-Seal DV Appliance Adapter (8DVA) is typically used to connect an appliance outlet collar to a 8" (ID) by 11" (OD) pipe or fitting containing a "Twist Lock" design. These appliance adapters feature a "Twist Lock" joint design. Align the indentations on the female end of the adapter over the entry slots of the appliance outlet collar, slide the adapter down onto the outlet collar and twist in a clockwise motion to secure the joint. (For more information, see the following section **JOINT CONNECTION** to learn about this connection.)

A Collector Box (8DVCB) is an appliance adapter with an air intake connection. The Collector Box (**FIG. 3**) is secured to the top of appliance with fasteners and sealed with hi-temp silicone or Mill-Pac. See appliance manufacturer's installation instructions for proper securing and sealing of collector box.

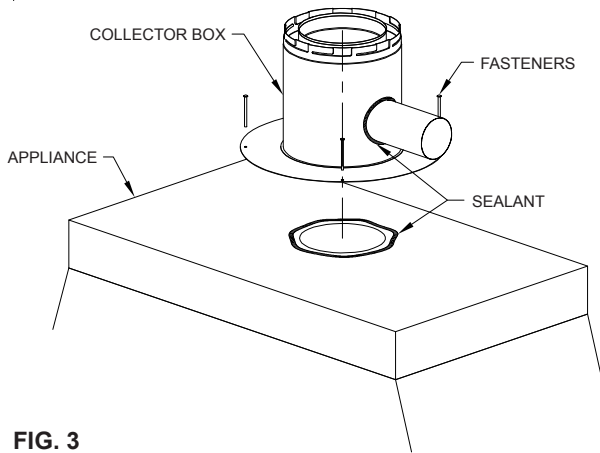


FIG. 3

Other adapters may be available. Consult factory.

If the Sure-Seal DV vent section fits directly on the appliance outlet collar, proceed with installation. If the fit is loose or results in interference fit, refer to available appliance adapters or contact the appliance manufacturer or Metal-Fab, Inc. with dimensions of appliance outlet for further assistance.

### ADJUSTABLE LENGTH

An adjustable Length (8DVAL) is provided for installations that require non-standard lengths. The Adjustable Length is a telescopic section of pipe that slips over the male end of standard pipe sections to provide an additional 3" to 10" of pipe length. After positioning the Adjustable Length appropriately, secure it to the standard pipe with three (3) #8x1/2" sheet metal screws. Seal the area around the outer wall using an approved silicone sealant.

### FRAMING OPENINGS

Sure-Seal DV systems are provided with supports and fire stopping components. Refer to the appliance manufacturer's installation instructions for the minimum framing opening dimensions.

### HORIZONTAL SUPPORTS

Horizontal vent must be sloped to 1/4" per foot rise from inlet to termination unless otherwise specified by the appliance manufacturer. Use non-combustible hanger straps (such as plumbers tape) to support horizontal sections every 3 feet unless otherwise specified by appliance manufacturer. Pipe must not sag.

### VERTICAL SUPPORTS

Sure-Seal DV can be supported vertically using a Support Plate Assembly (8DVSP). Frame opening (minimum 13"x13") and secure Support Plate to frame with nails or screws. Slide vent section through the Support Plate and secure by firmly tightening the Support Collar around the pipe so that the Support Collar rests upon the Support Plate (See **FIG. 4**). Secure Collar to pipe with (6) #8-1/2 sheet metal screws.

**Maximum distance between vertical supports is 30 feet.**

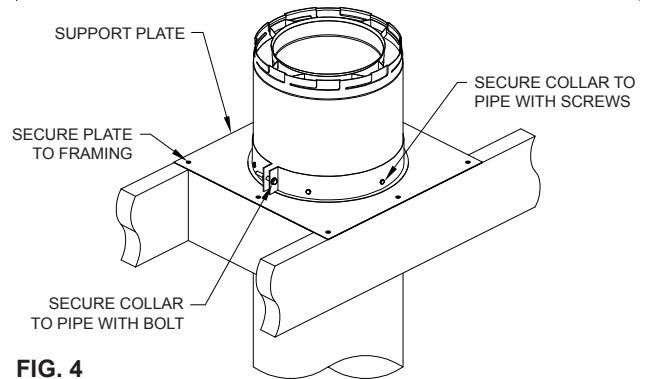


FIG. 4

### VERTICAL INSTALLATION

A typical vertical installation is shown in **FIG. 5**.

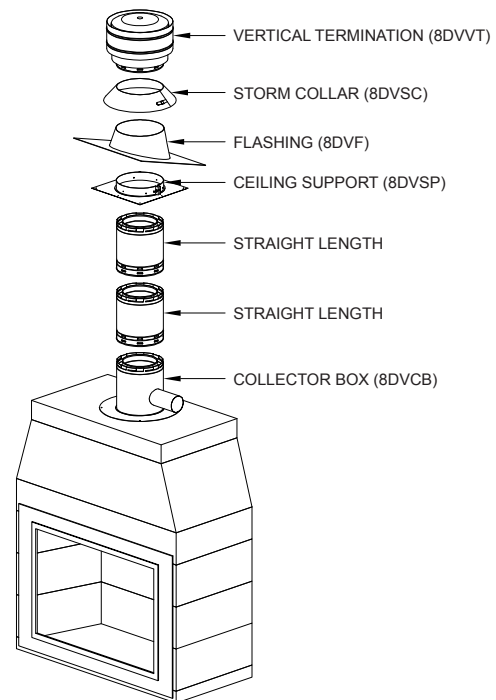


FIG. 5

Prior to installation determine the location where the appliance will be permanently located and where vent will be terminated above roof line. See **FIG. 7** for minimum vertical termination clearances.

Vertical installations require proper location for penetration points. If a penetration interferes with ceiling or roof joists, use elbows to provide offsets to avoid cutting load bearing structural members and to maintain clearance to combustible construction. Offsets are to be supported laterally every 4 feet or less of vent pipe. Horizontal sections between elbows must slope a minimum of 1/4" per foot. Whenever possible, use 45 degree elbows instead of 90 degree elbows to reduce restriction to airflow of the flue gases and intake air.

Refer to appliance manufacturer's installation instructions for proper clearance to combustibles. Also, check appliance manufacturer's instructions for vent maximum vertical rise and any limitations to maximum offsets.

After appliance is installed, attach an Adapter or Collection Box (as needed) to appliance. Continue by assembling Sure-Seal DV pipe sections and fittings necessary to reach the Ceiling Support or Firestop. Confirm that each pipe section is fully twist-locked together as previously detailed in these instructions.

When penetrating the ceiling, a Vertical Firestop (8DVFSV), must be used. In the attic space, if an Attic Insulation Shield (8DVIS) is not being used, the Vertical Firestop must be installed on top of the joist framing to prevent debris from falling into the joist framing (See FIG 6). Minimum framed opening for Vertical Firestop or Attic shield is 13" x 13".

**Warning: DO NOT PACK AIR SPACES WITH INSULATION.**

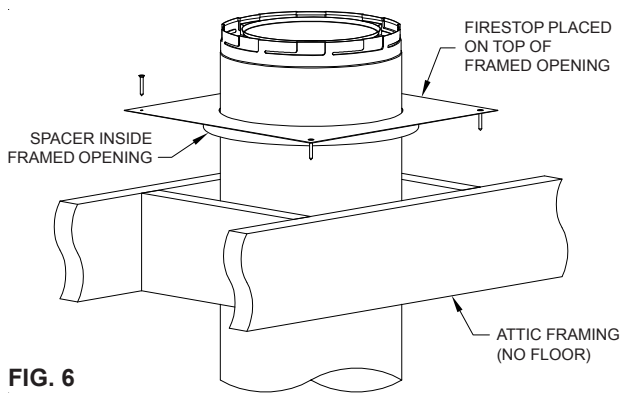


FIG. 6

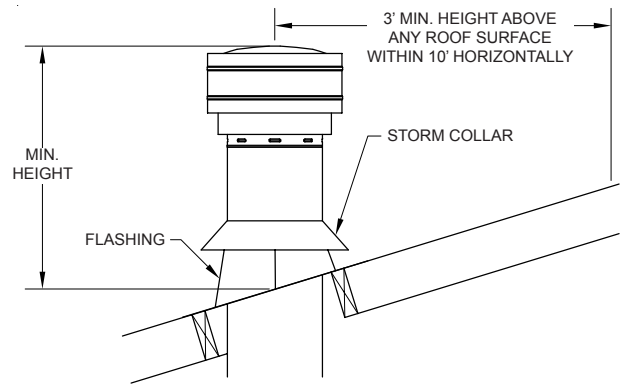
Cut a hole in the roof. The hole must be large enough to meet minimum clearance to combustibles as specified by the appliance manufacturer. Continue to assemble lengths of pipe and fittings necessary to run up and through roof line. Galvanized pipe and fittings are recommended for use in the attic and above the roof line. Galvanized steel pipe is especially desirable above the roof line to resist corrosion.

Install Flashing (8DVF series) over the pipe and secure to roof using nails or wood screws. Use a non-hardening sealant between the flashing and the roof. Make sure that the roofing material overlaps the top edge of the Flashing Plate. Verify that proper clearances have been maintained at the roof line.

Provide an ample sized bead of approved sealant between the Flashing Cone and the vent pipe to seal against rain entry. Take special care to seal tightly around the pipe seam as it passes through the Flashing. Then place the Storm Collar (8DVSC) onto the top of the Flashing Cone and apply a bead of sealant. (NOTE: Metal-Fab MST Tape may also be used to provide seal).

Continue to add pipe sections until the height of the vent meets the minimum building code requirements (See FIG. 7). Twist-lock the Vertical Termination (8DVVT) onto the last section of vent pipe. It is recommended to further secure the Termination to the pipe section by using two (2) #8 x 1/2" sheet metal screws. This will help secure the Termination joint as it is exposed to high wind conditions. The screws should be located approximately 3/4" above the bottom edge of the Termination Collar. Vent sections in excess of 5 feet above the roof should be guyed to

prevent unnecessary movement. Attach guying to vent. Never attach guying to the Termination.



ROOF PITCH	MIN. HEIGHT	ROOF PITCH	MIN. HEIGHT
FLAT TO 7/12	1'-0"	12/12 TO 14/12	5'-0"
7/12 TO 8/12	1'-6"	14/12 TO 16/12	6'-0"
8/12 TO 9/12	2'-0"	16/12 TO 18/12	7'-0"
9/12 TO 10/12	2'-6"	18/12 TO 20/12	7'-6"
10/12 TO 11/12	3'-3"	20/12 TO 21/12	8'-0"
11/12 TO 12/12	4'-0"		

FIG. 7

**HORIZONTAL INSTALLATION**

A typical horizontal installation is shown in FIG. 8.

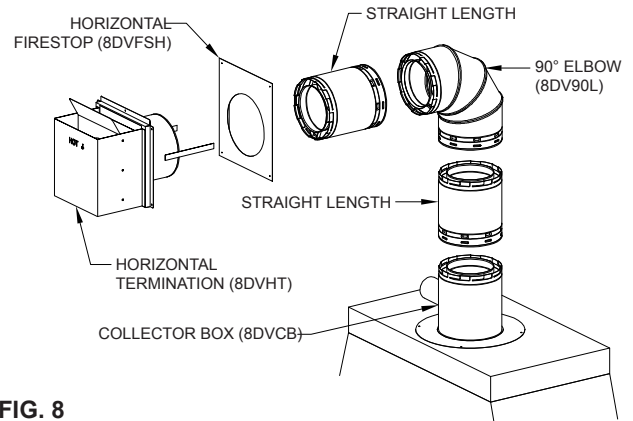


FIG. 8

After appliance is installed, attach an Adapter or Collection Box (as needed) to appliance. Install elbow and pipe sections to reach exterior wall. The horizontal portion of vent is to slope not less than to 1/4" per foot and be supported at every 4 feet or less. See appliance manufacturer's installation instructions for slope and support spacing requirements.

Mark the wall where vent system will exit building so that pipe has 1" clearance on sides and bottom along with 3" clearance on top. Minimum framing size is 15" x 13" (See FIG. 9) unless otherwise specified by appliance manufacturer. A Horizontal Firestop (8DVFSH) should be installed on the exterior of wall opening. Cut and frame the square hole in the exterior wall where the vent will be terminated.

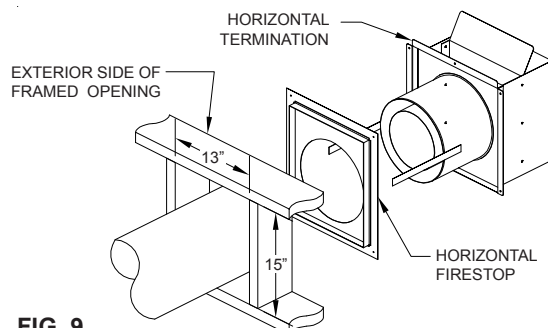


FIG. 9

**Note: The termination must be located at least 12" above grade, remain above snow line in geographical regions that accumulate snow and be away from traffic areas such as walkways if it is less than 7 feet high (See FIG. 10)**

Before attaching the Termination to exterior wall, run bead of non-hardening sealant around the Termination's outside edges, so as to make a seal between it and the wall. **The HOT arrow on Termination should be pointed up.** Secure termination to exterior wall with four wood screws.

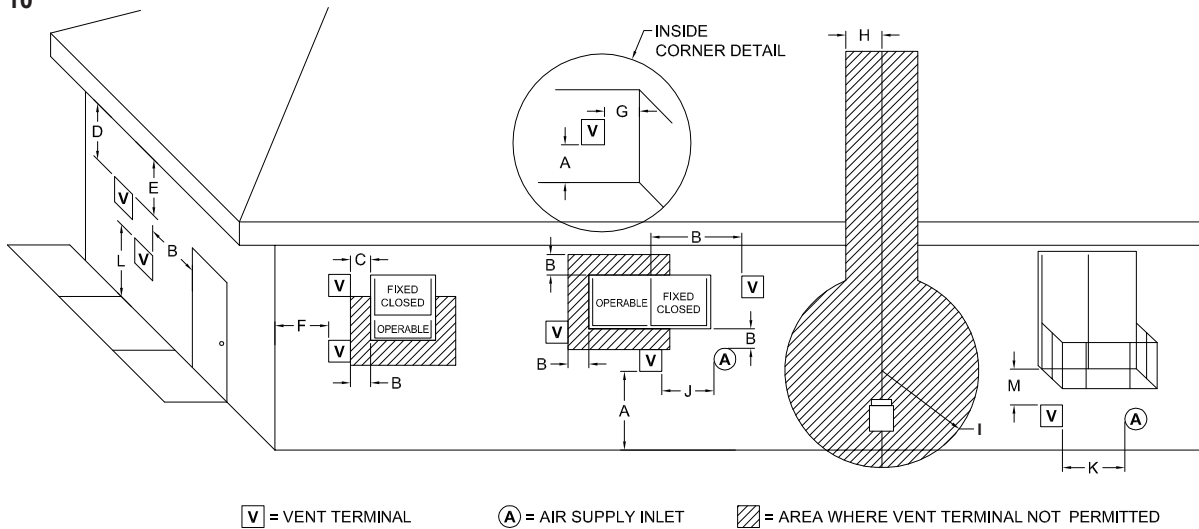
Slide Termination into vent pipe a minimum 1-1/4" and secure joint by attaching the two metal strips extending from Termination to outer wall of vent pipe with two (2) #8 x 1/2 sheet metal screws. Bend any remaining portion of metal strips back towards cap.

**GENERAL MAINTENANCE**

Venting system should be inspected on a semi-annual basis. It is recommended the inspection should include:

- Check for corrosion on areas of venting system exposed to the elements. Corrosion will appear as rust spots, streaks or holes. Components will corrosion should be replaced immediately.
- Remove the Vertical Termination and shine a light down vent to inspect for any obstructions to the vent and air intake path. Remove any foreign material.
- Check for excessive condensation, such as water droplets forming in the inner liner and subsequently dripping out of the joints. Continuous condensate could corrode vent. It is recommended that venting system be enclosed below the roof line to limit condensation and protect against damage.
- Inspect joints to ensure no pipe or fittings have been loosened. Also check mechanical supports for rigidity.

**FIG. 10**



**Minimum Clearances**

- A = Clearance above grade, veranda, porch, deck, or balcony
- B = Clearance to window or door that may be opened
- C = Clearance to permanently closed window
- D = Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of 2 feet (61 cm) from the center line of the terminal.
- E = Clearance to unventilated soffit
- F = Clearance to outside corner
- G = Clearance to inside corner
- H = Clearance to each side of center line extended above meter/regulator assembly
- I = Clearance to service regulator vent outlet
- J = Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other appliance.
- K = Clearance to a mechanical air supply inlet
- L = Clearance above paved sidewalk or paved driveway located on public property
- M = Clearance under veranda, porch deck or balcony

**US Installations<sup>1</sup>**

- 12 inches (30 cm)
- 6 inches (15 cm) for appliances ≤ 10,000 Btuh (3 kW), 9 inches (23 cm) for appliances > 10,000 Btuh (3 kW) and ≤ 50,000 Btuh (15 kW)
- 12 inches (30 cm) for appliances > 50,000 Btuh (15 kW)
- 9 inches (23 cm) recommended
- 18 inches (45 cm)
- 12 inches (30 cm)
- 6 inches (15 cm)
- Non-combustible and combustile – As determined by Manufacturer's Installation Instructions
- 3 feet (91 cm)
- 3 feet (91 cm)
- 6 inches (15 cm) for appliances ≤ 10,000 Btuh (3 kW), 9 inches (23 cm) for appliances > 10,000 Btuh (3 kW) and ≤ 50,000 Btuh (15 kW)
- 12 inches (30 cm) for appliances > 50,000 Btuh (15 kW)
- 3 feet (91 cm) above if within 10 feet (3 m) horizontally
- 7 feet (2.13 m)\*
- 18 inches (45 cm)\*\*

<sup>1</sup> In accordance with the current ANSI Z223.1/NFPA 54 National Fuel Gas Code

\* A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both drawings.

\*\* Permitted only if veranda, porch, deck, or balcony is fully open on a minimum of two sides beneath the floor.



P.O. Box 1138 • WICHITA, KANSAS 67201  
 316-943-2351 • 800-835-2830  
 FAX: 316-943-2717  
 info@mtlfab.com • www.mtlfab.com