



# DuraFlex

## INSTALLATION INSTRUCTIONS FOR RELINING MASONRY CHIMNEYS FOR USE WITH GAS APPLIANCES



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### APPLICATION

The DuraFlex Chimney Relining System is UL listed for relining masonry chimneys which are intended to be used for venting gas appliances and decorative gas fireplaces. These instructions cover installation from the appliance vent connector through the wall of the masonry chimney, or through the damper, up to the termination cap.

The DuraFlex Gas Relining System is for venting listed Category I draft hood-equipped or fan-assisted gas appliances, decorative gas fireplaces, or other gas appliances listed by a recognized listing agency, and approved for use with Type B gas vent.

### WARNING

The DuraFlex Gas Relining System shall **not** be used for venting wood-burning appliances, combination gas/oil burning appliances, incinerators, conversion burners, or listed Category II, III, or IV gas appliances.

**The DuraFlex Gas Relining System is for use in Masonry Chimneys only. It is important that B-Vents and Vent Connectors be installed to the DuraFlex system per Simpson Dura-Vent Installation Instructions.**

### IMPORTANT

Read all instructions carefully before starting the installation. Failure to follow these instructions may create a fire or other safety hazard, and will void the warranty. It is important to follow the appliance manufacturer's installation instructions and to check the label on the appliance to confirm the appliance category and any restrictions or limitations. **Consult appliance manufacturer's instructions as to**

**the maximum run allowed for venting.**

## **INSTALLATION PRECAUTIONS**

The Simpson Dura-Vent DuraFlex is an engineered product that has been designed and tested for use as specified above. The Simpson Dura-Vent warranty will be voided, and serious fire, health, or other safety hazards may result from any of the following actions:

- Installation of any damaged component.
- Unauthorized modification of any Dura-Vent product.
- Installation of any component part not manufactured or approved by Simpson Dura-Vent.
- Installation other than as instructed by Simpson Dura-Vent and the appliance manufacturer.

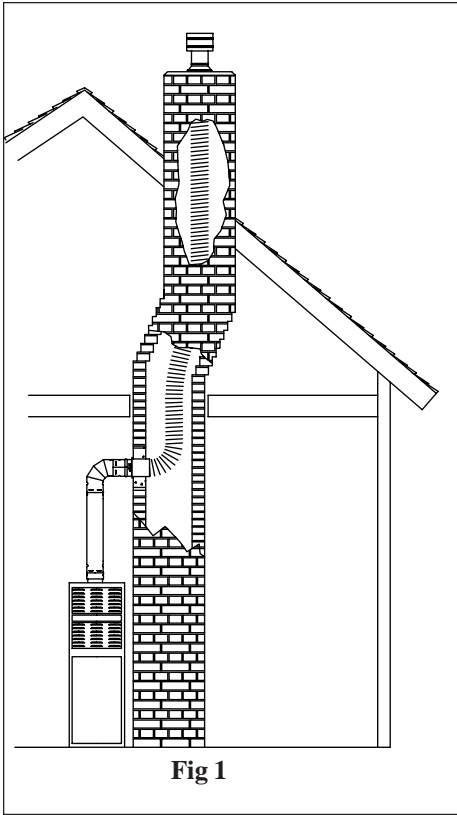
Consult your local building codes before beginning the installation.

**CAUTION:** Make sure you have the proper equipment for the job, including adequate safety protection for working at elevated heights. Always wear gloves and safety glasses when handling sheet metal parts.

## **SIZING REQUIREMENTS**

Proper sizing of the relining system to the appliance(s) is very important. For complete sizing instructions, refer to the National Fuel Gas Code or the Simpson Dura-Vent Sizing Handbook. Failure to properly size the venting system may result in draft hood spillage, back pressure, and corrosive condensation in the relining system.

As an alternate method, for draft hood-equipped appliances and decorative gas fireplaces only, the venting system may be sized to the outlet of the appliance. For two or more draft hood-equipped appliances, the effective area of the vent shall not be less than the area of the largest appliance, plus 50% of the areas of additional draft hood outlets. For fan-assisted gas appliances, the vent system must be sized using the sizing instructions and tables referenced above.

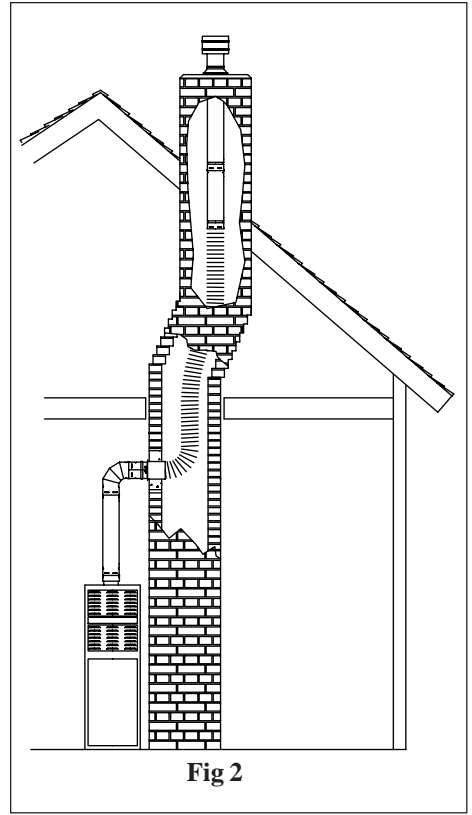


**PRIOR TO INSTALLATION**

Before installing the chimney liner system, the chimney passageway should be examined to ascertain that it is clear and free of obstructions, and should be cleaned if it has been previously used for venting solid or liquid-burning appliances or fireplaces.

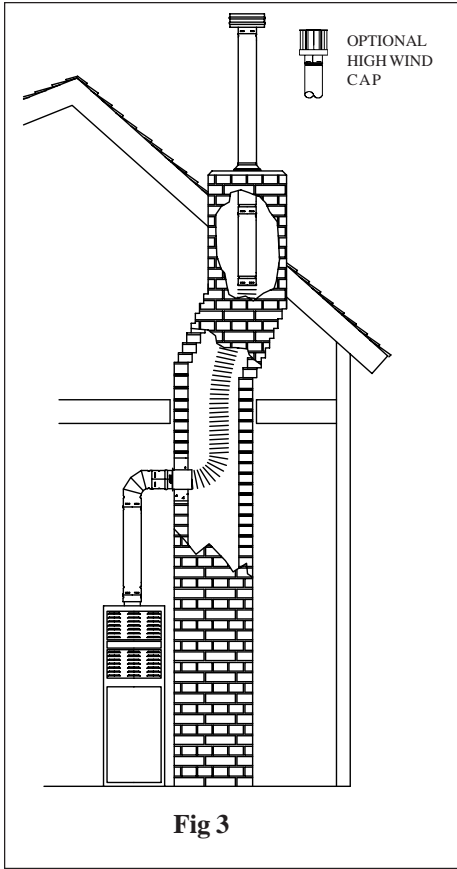
**CHIMNEY LINER SELECTION**

The basic DuraFlex Chimney Liner System consists of a continuous flexible liner from the top of the chimney to the appliance connection. **(Figure 1)** This system is relatively easy to install, even



in masonry chimneys that are constructed with an offset. This single-wall flexible system is intended for warm **interior** masonry chimneys, enclosed within the building on all four sides, and thus exposed to cold outdoor temperatures only above the roofline.

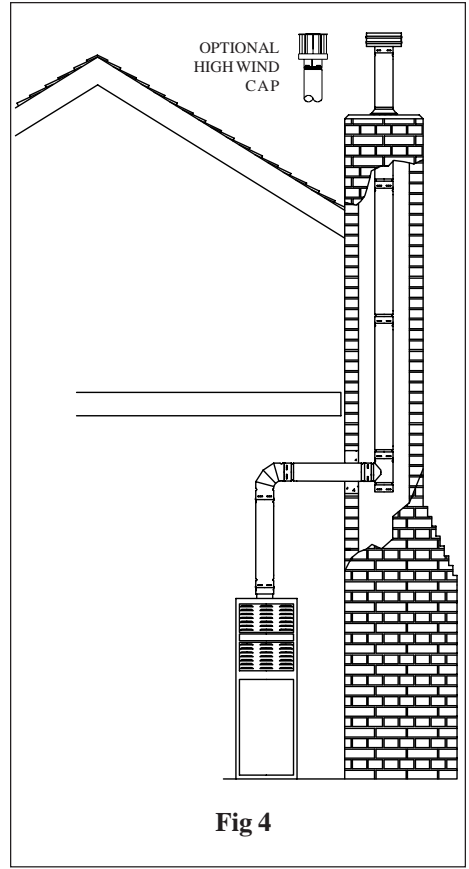
In cold climates, it is preferable to switch to double-wall, air insulated Type B gas vent near the top exposed portion of the chimney. **(Figure 2)** At the top of the chimney, the flue gas has lost much of it's heat, and is therefore susceptible to corrosive condensation and poor draft. This is particularly true with fan-assisted gas appliances.



**Fig 3**

In the event that the existing masonry chimney is relatively short in height, the draft may be too weak for proper performance of the appliance and venting system. By switching to Type B gas vent at the top of the chimney, the installer has the option of extending the height of the venting system. (**Figure 3**).

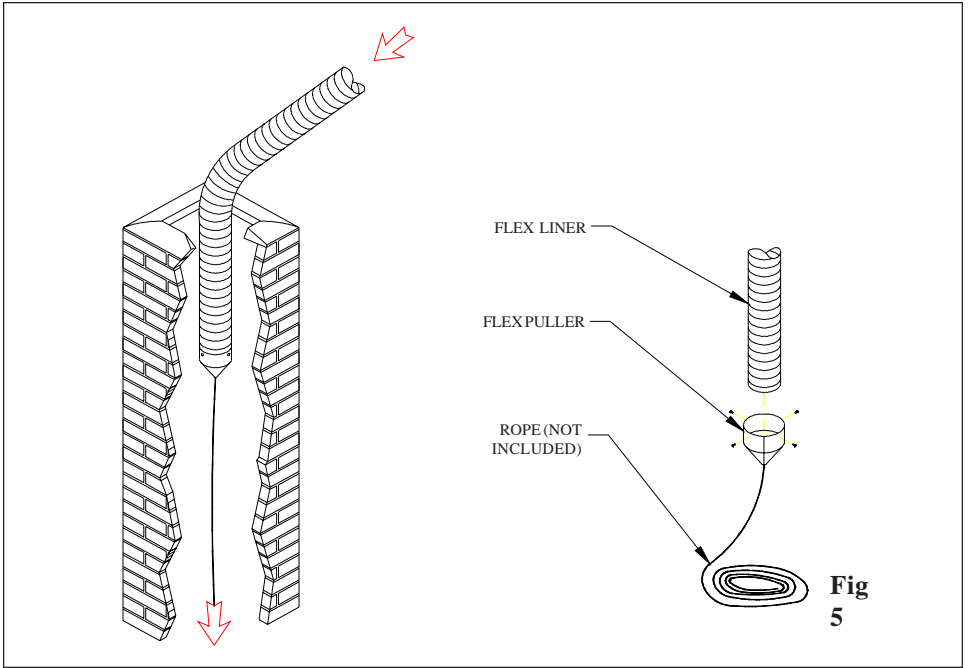
For **exterior** masonry chimneys, typically exposed on one or more sides to cold outdoor temperatures, a 100% Type B gas vent chimney liner system is preferable. (**Figure 4**). In the event that



**Fig 4**

the exterior masonry chimney is constructed with an offset, single-wall flex will be necessary below the offset, with Type B gas vent above the offset.

If you decide to install the flexible liner, the DURA FLEX KIT is available for convenience. The kit includes: a TERMINATION CAP, FLASHING COVER, MORTAR SLEEVE, UNIVERSAL ADAPTOR / FLEX COUPLING, and a 15', 25', or 35' length of FLEX LINER. Any additional parts will need to be ordered separately.



## **FLEXIBLE LINER INSTALLATION**

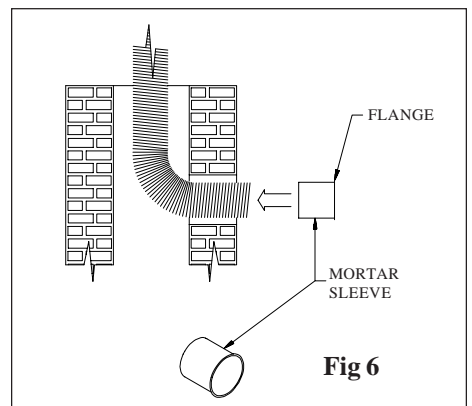
The basic flexible liner installation procedure for gas appliances such as Category I furnaces, water heaters, and boilers is as follows:

**Step 1.** Measure and record dimensions to determine total flex pipe requirements.

**Step 2.** After locating where the appliance flue connection will be made in the chimney wall, break out sufficient masonry to form a hole large enough for the MORTAR SLEEVE or FLEX PIPE to pass through easily. If a TEE application is necessary, a larger hole may be required. (See TEE Installation Section)

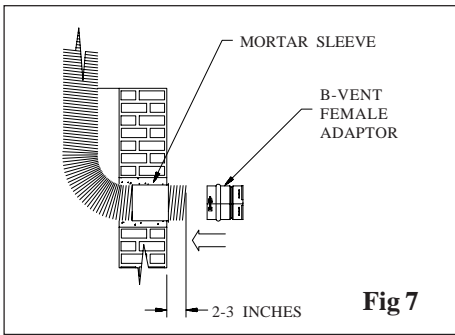
**Step 3.** Extend the FLEX LINER from its compressed length to its normal length by pulling at the ends. Please note that the liner **will not** extend beyond its normal length. Attempting to do so may result in damage to the liner.

**Step 4.** Secure a rope to the FLEX PULLER and attach the FLEX

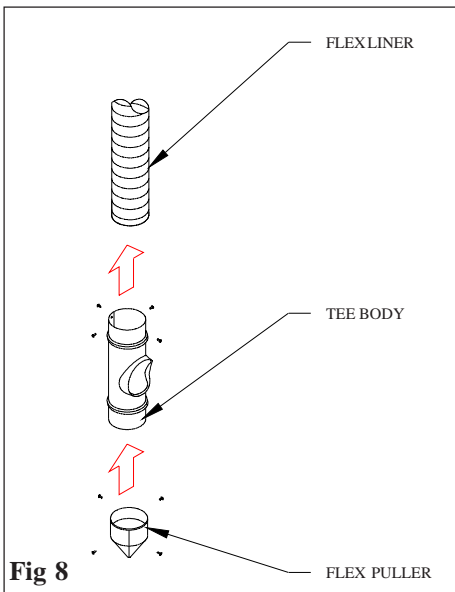


PULLER to DURA FLEX LINER, as shown in **Figure 5**. One person should feed the liner through the chimney, and another person should pull the liner from the bottom, using the rope to guide the liner though to the chimney bottom.

**Step 5.** After carefully feeding the LINER down the chimney to the bottom, form a 90° angle, and bring the FLEX LINER through the hole in the chimney wall.



**Fig 7**



**Fig 8**

**Step 6.** Slide the MORTAR SLEEVE over the FLEX PIPE, until the flange of the MORTAR SLEEVE is flush with the wall of the chimney, as shown in **Figure 6**.

Once the MORTAR SLEEVE is in place, the space between the SLEEVE/PIPE and the masonry may be filled with grout.

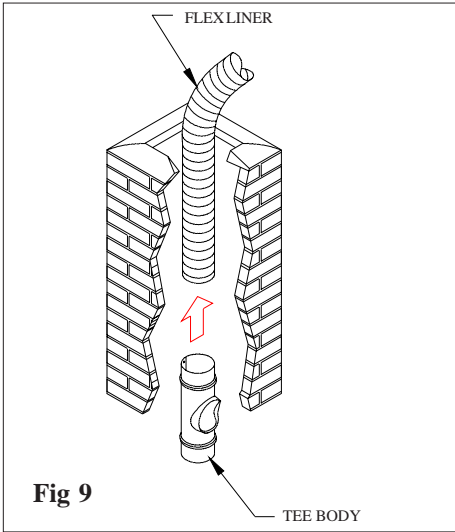
**Step 7.** The FLEX PIPE should extend at least 2 inches beyond the flange on the MORTAR SLEEVE. If Type B gas vent or the Dura/Connect Flexible Vent Connector is to be used between the appliance and the chimney liner, slide the UNIVERSAL ADAPTOR/FLEX COUPLING or B-VENT FEMALE ADAPTOR over the FLEX PIPE, and secure with either a nut & bolt or sheet metal screw, as appropriate. Refer to **Figure 7**. If a single-wall galvanized steel vent connector is to be used between the appliance and the chimney liner, attach the UNIVERSAL ADAPTOR or B-VENT FEMALE ADAPTOR to the FLEX PIPE. Crimp the end of the vent connector and attach to the UNIVERSAL ADAPTOR or B-VENT FEMALE ADAPTOR.

## TEE INSTALLATION INSTRUCTIONS

**1-TEE.** If a tee application is required, and the masonry chimney has no offsets, attach the body of the TEE to the FLEX as shown in **Figure 8**, using the sheet metal screws provided. Attach the other

end of the TEE to the FLEX PULLER, and proceed as described in STEP 4.

**2-TEE.** If the masonry has an offset, pull the FLEX down as in STEP 4 to it's proper location, even with the opening in the chimney wall. Disconnect the FLEX PULLER. Remove the TEE BRANCH and attach the TEE to the FLEX PIPE. (**Figure 9**) It may be necessary to rotate the FLEX and TEE to get all screws in the proper location. Attach the TEE CAP to the bottom of the TEE.

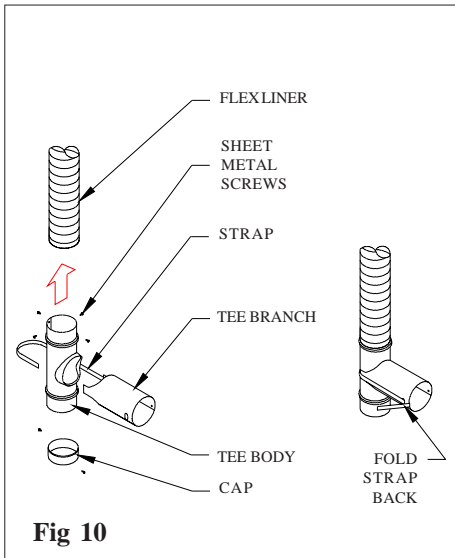


**Fig 9**

**3-TEE.** When the TEE is in it's final location, attach the BRANCH to the main body of the TEE using the strap provided on the BRANCH. Wrap the strap around the TEE, and insert through the slot on the BRANCH. Fold back remainder of strap on outside of BRANCH. (**Figure 10**)

**4-TEE.** After the TEE and BRANCH are installed, Type B gas vent or Dura/Connect Flexible Vent Connector can be attached directly to the TEE BRANCH with a minimum of three screws. Slide the MORTAR SLEEVE over the connector and BRANCH, and fill in around the MORTAR SLEEVE with grout, keeping the TEE centered in the masonry chimney, and the flange of the MORTAR SLEEVE even with the wall of the chimney.

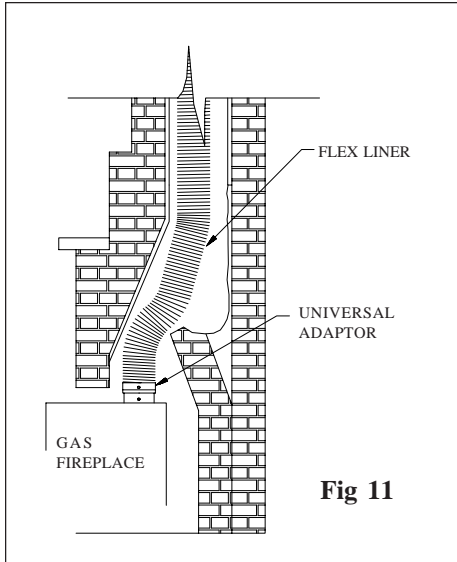
**5-TEE.** Complete the vent connector attachment to the gas appliance.



**Fig 10**

## **RELINING INSTRUCTIONS FOR A GAS FIREPLACE VENTING INTO AN EXISTING MASONRY FIREPLACE AND CHIMNEY**

**1-GF.** For gas fireplaces, the DURA FLEX KIT may be used, but the

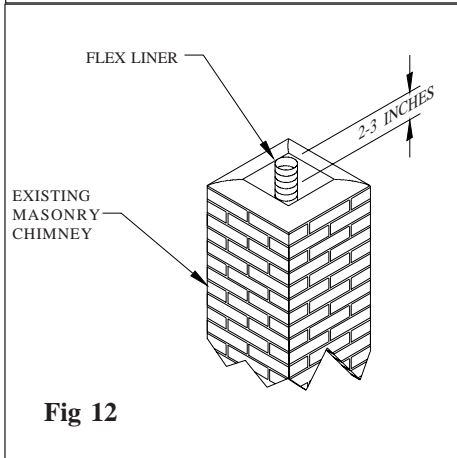


**Fig 11**

MORTAR SLEEVE is not needed. The UNIVERSAL ADAPTOR is used to adapt the FLEX LINER to the gas fireplace flue outlet.

**2-GF.** Measure and record the dimensions to determine total FLEX LINER requirements.

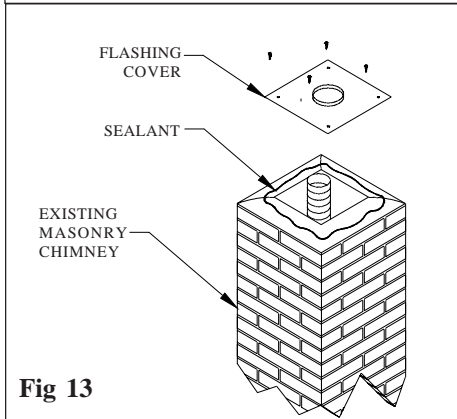
**3-GF.** Extend the FLEX LINER from its compressed length to its normal length by pulling at the ends. Please note that the liner **will not** extend beyond its normal length. Attempting to do so may result in damage to the liner.



**Fig 12**

**4-GF.** Secure a rope to the FLEX PULLER and attach the FLEX PULLER to the DURA FLEX LINER. One person should feed the liner through the chimney from the top, while another should pull the liner from the bottom, as shown in **Figure 5**. The reason for using two people is that care must be taken not to tear the aluminum FLEX LINER.

**5-GF.** After the FLEX LINER is pulled through the damper area, attach the UNIVERSAL ADAPTOR/FLEX COUPLING to the end of the FLEX, then connect it directly to the flue outlet on top of the gas fireplace. (**Figure 11**).

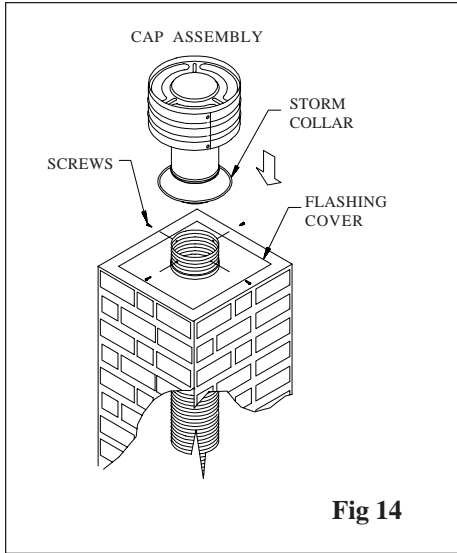


**Fig 13**

## TERMINATIONS

**1-T.** When terminating your flex installation, insure the FLEX protrudes 2-3 inches over the top of the masonry chimney, as shown in **Figure 12**. Trim the base of the FLASHING COVER to fit on the masonry



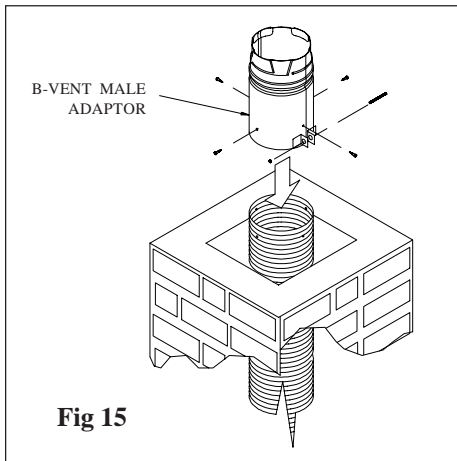


**Fig 14**

chimney as needed.

**2-T.** Slide the FLASHING COVER over the FLEX and seal the FLASHING COVER to the masonry chimney using a bead of non-hardening sealant around the top of the chimney. Refer to **Figure 13**.

**3-T.** After sealing the FLASHING COVER to the masonry chimney, attach the CAP ASSEMBLY to the FLEX with screws, as shown in **Figure 14**. Push the CAP ASSEMBLY down until the STORM COLLAR meets the FLASHING COVER. Seal the STORM COLLAR to the FLASHING COVER.



**Fig 15**

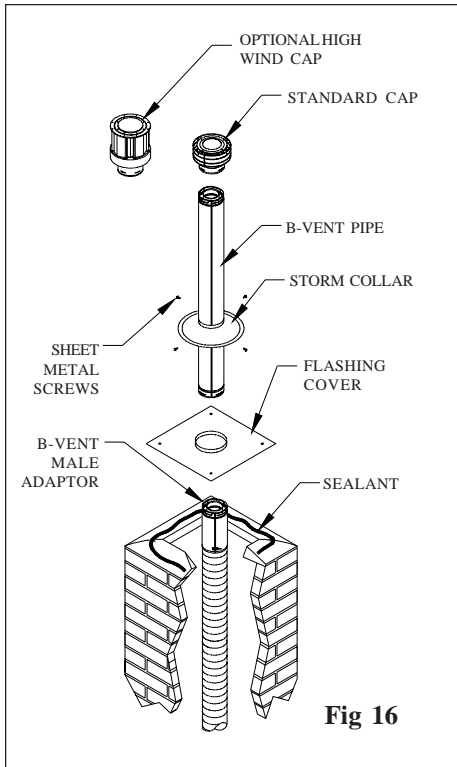
## TYPE B GAS VENT TOP TERMINATION

The installation procedure for use of insulated Type B gas vent near the top of the masonry chimney, or for extending the height of the venting system above the masonry chimney is as follows:

**1-T1.** You will need a B-VENT CAP (Standard or High Wind), STORM COLLAR, FLASHING COVER, MALE B-VENT/FLEX ADAPTOR, and a length of B-VENT PIPE to extend the cap as needed. (See **Figures 15, 16**)

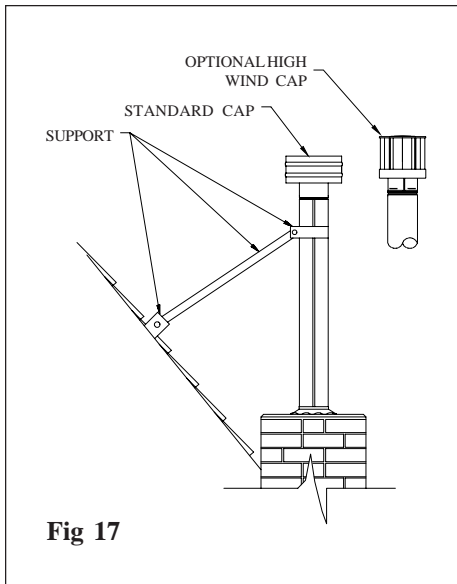
**2-T1.** Attach the MALE B-VENT/FLEX ADAPTOR to the FLEX with the locking lug and four sheet metal screws, as shown in **Figure 15**.

**3-T1.** Attach a suitable length of double-wall Type B gas vent pipe to the MALE B-VENT/FLEX ADAPTOR. After sealing the FLASHING COVER to the masonry chimney using the non-hardening sealant, slide the B-VENT STORM COLLAR over the length of B-vent pipe, until the proper length of pipe extends



above the chimney. Always have a minimum of 12 inches of B-vent pipe below the FLASHING COVER for stability. It is preferable to extend the B-vent pipe down to the roofline level so as to keep the flue gas hot in the exposed portion of the masonry chimney. Attach the STORM COLLAR to the B-Vent pipe with (4) 3/8-inch long sheet metal screws equally spaced at 90°. The STORM COLLAR rests on the FLASHING COVER and serves as the top support for the liner system, and is UL listed to support up to 50 feet of FLEX or B-Vent liner. Refer to **Figure 16**.

**4-T1.** Seal the STORM COLLAR to the FLASHING COVER and twist-lock the B-VENT TOP to the B-VENT PIPE. As an alternative to the standard cap, you may want to install a B-VENT HIGH-WIND TOP in areas where excess wind may be a concern. (**Figure 16, 17**)



**5-T1.** For improved draft, the liner may be extended in height above the top of the masonry chimney by simply adding additional lengths of B-vent pipe. If the vent is more than 3 feet above the top of the chimney, secure it with a locally fabricated brace, as shown in **Figure 17**.

### TYPE B GAS VENT LINER SYSTEM

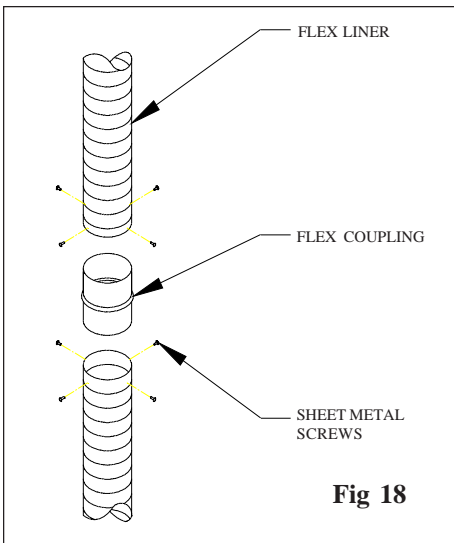
For exterior chimneys in cold climates, an air insulated, double-wall Type B Gas Vent liner system is recommended, particularly for fan-assisted gas appliances, which have a greater tendency to produce corrosive condensation when flue gases are

permitted to cool in the vent system. To install a 100% Type B Gas Vent Liner , use a Type B Gas Vent Termination and Pipe Lengths, in combination with a Type B gas vent Tee for this installation.

In the event that the exterior masonry chimney has an offset, it will be necessary to feed flexible liner down through the offset, with Type B Gas Vent to be used above the offset.

## **FLEX EXTENSIONS**

For tall chimney installations where more than one length of flex is required, additional lengths of flex may be purchased in 5-foot or 35-foot lengths. Two lengths of flex may be connected, using the FLEX COUPLING. (**Figure 18**). The DuraFlex Basic Kit includes a FLEX COUPLING, which may also be used to utilize lengths of flex left over at the end of a job.



Other products made by Simpson Dura-Vent:

**Dura/Plus** Chimney

**Dura-Vent** Gas Vent (B-Vent)

**Dura-Black** Single Wall Stovepipe

**Dura/Liner** Masonry Reliner

**DVL** Close Clearance Connector Pipe

**Dura/Connect** Single-Wall Connector for B-Vent

**Direct Vent GS** for Direct Vent Gas Appliances

**Designer Series** Accessories



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