

“DAL SIN LINE”[®] flexible aluminum chimney liner systems are for use in masonry chimneys venting listed propane and natural gas appliances equipped with draft hoods, and other appliances listed for use with Type B Gas Vents. When properly installed, the “DAL SIN LINE”[®] lining system converts a masonry chimney flue into a dedicated gas vent designed to provide optimum venting conditions for modern Category I gas appliances.

Do not connect any of the following to a “DAL SIN LINE”[®] aluminum flue: Oil or solid fuel burning appliances or appliances which can be readily converted to those fuels, incinerators; appliances listed for use with Type BW Vent; or Category II, III or IV appliances, unless specified by the appliance manufacturer's instructions.

As with any venting system, the performance and safety of the “DAL SIN LINE”[®] lining system is dependent on proper planning and installation. Read these instructions thoroughly before beginning the installation, and follow all steps. Use only parts and materials specified in these instructions and supplied by BERNARD DAL SIN MFG. CO.; substitution of unauthorized parts may increase the risk of fire, property damage, appliance malfunction, and personal injury or death.

All installations must be in accordance with the appliance manufacturer's instructions, local codes, and National Fire Protection Association (NFPA) standards, which include the National Fuel Gas Code (NFPA 54; NFGC) and Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances (NFPA 211). Contact local building and fire officials for any restrictions in your area and to obtain any required permits.

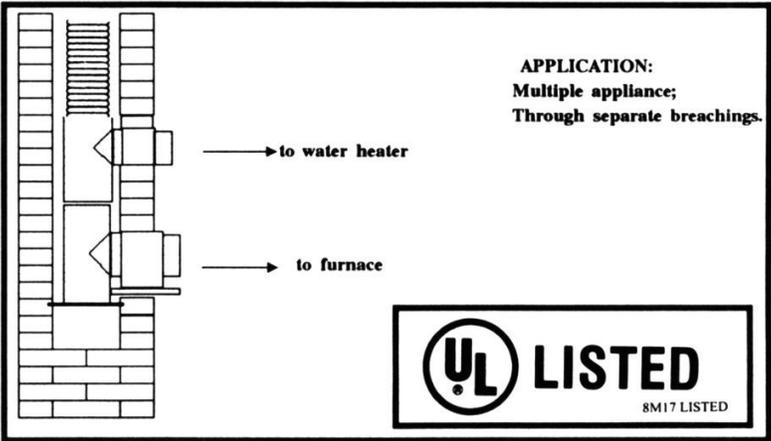
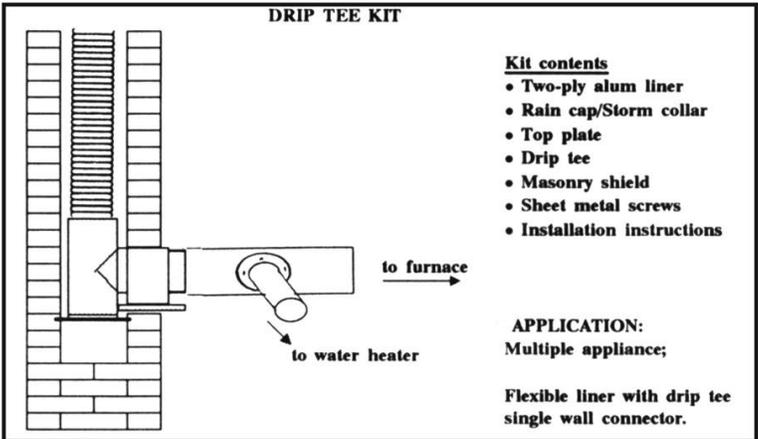
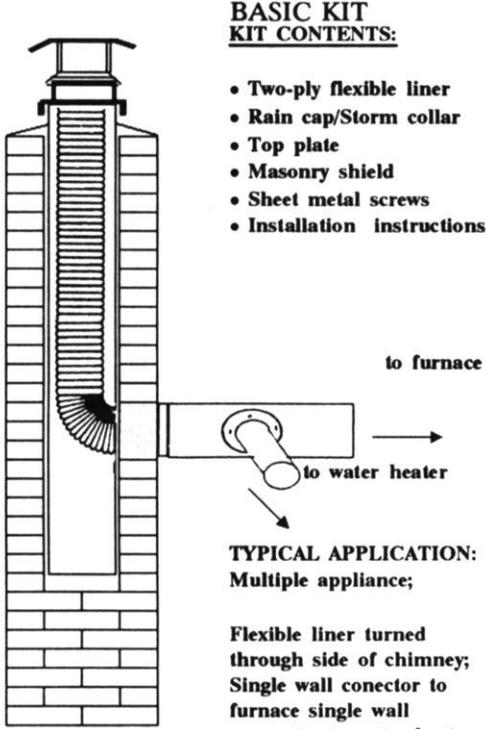
WORK SAFELY!

Wear eye protection and gloves throughout the installation. Use a dust and vapor respirator when in contact with creosote, mortar, or insulation. Use caution when working on roof, using proper ladders secured to the building, and scaffolding when necessary. Always check over and around the chimney for antennas, power lines or other obstacles before beginning the installation. Turn off any appliances connected to the chimney and other appliances to prevent the entry of dust or debris. Clear a safe working space around the bottom of the chimney and other work areas. Lay down drop cloths to protect furnishings, and use a chimney sweep's vacuum to contain dust generated during installation.

The following tools will be needed for most installations:

- Cold Chisels; Masonry Drill Bits
- Masonry Trowel; Mortar Box; Rope
- Screwdrivers; Hammer; Measuring Tape
- Gloves; Drop Cloths; Respirator
- Silicone Caulk; Mortar or Mix
- Ladders and/or Scaffolding

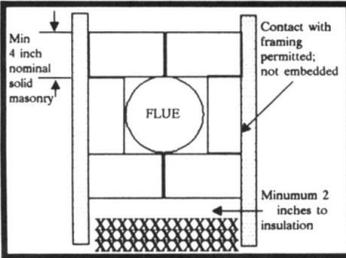
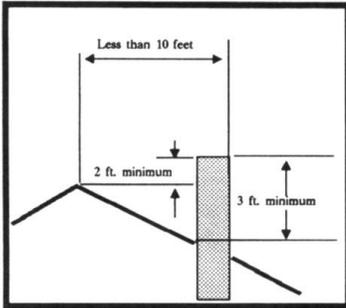
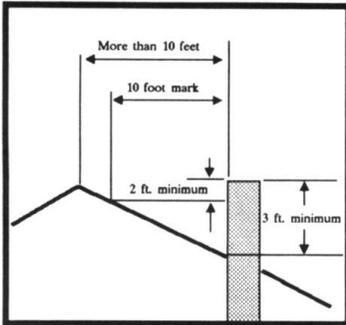




INSTALLATION PROCEDURE

CHIMNEY INSPECTION

It is the installer's responsibility to inspect and verify the suitability of the chimney of this product. The “DALSIN LINE”® system is intended for installation in new or existing masonry chimneys that comply with requirements of NFPA 211, Chimneys, Fireplaces, Vents, and Solid Fuel Burning Appliances. If inspection reveals that the chimney is not safe for its intended purpose, it must be repaired or modified to conform to recognized requirements.



The chimney must be composed of solid masonry units such as bricks or concrete block, at least 4 inches (nominal) in thickness. The chimney must extend at least 5 feet above the highest appliance draft hood or flue collar, with a maximum height of 70 feet. The chimney must terminate at least 3 feet above the point where it penetrates the roof, and 2 feet higher than any part of a structure within 10 feet.

The “DALSIN LINE”® system may be installed in chimneys that have combustible material in contact with the outer surface. However, combustible material must not be embedded in or otherwise penetrate the chimney wall. All thermal insulation, whether or not it is combustible or fire retardant, must be cleared from at least 2 inches around the chimney. If necessary, construct a barrier to prevent loose insulation from falling against the chimney. Any resulting gaps between the chimney and framing at floor or ceiling levels must be closed with a firestop.

Inspect the interior of the chimney for loose or missing mortar, holes, cracked, loose or missing bricks or unused thimbles. Repair any defects in the chimney. Thoroughly clean the chimney of combustible deposits. Particular attention should be given to deposits of tar glaze creosote, which may be resistant to normal cleaning methods. Remove any mortar projections or snags from the interior wall of the chimney.

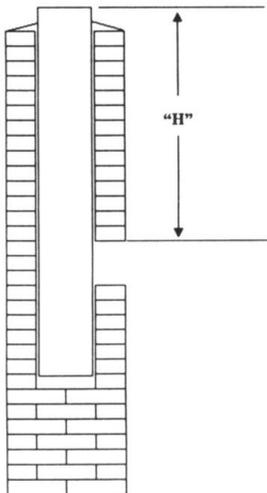
If the chimney is currently lined with a clay tile liner, dislodge any loose sections, shards or flakes and remove them. “DALSIN LINE”® liner may be installed in a chimney with interior dimensions nominally the same as the diameter of the liner. However, in practice, a certain amount of extra space will be needed to allow installation, and care should be taken in lowering the liner to avoid abrasion or damage to the liner surface.

SIZING

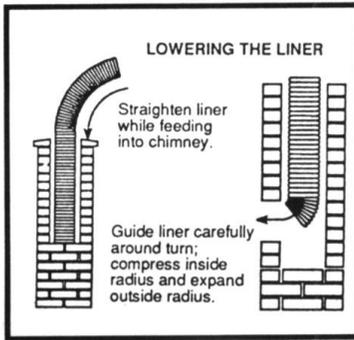
Consult the appliance manufacturer's instructions, local codes, and the National Fuel Gas Code for guidance on sizing techniques. Choose the proper size liner to provide the best combination of overall flow capacity and minimal condensation for the appliance(s) to be connected. In lieu of more specific codes or instructions current recommendations suggest that the sizing tables for Type B Vent in the National Fuel Gas Code may be used as a basis for sizing flexible chimney liners. However, the maximum capacities listed in the tables should be reduced by 20% regardless of flue collar size, the liner shall not be smaller than allowed by the appliance manufacturer's instructions.

STEP 1: OPEN THE CHIMNEY

While wearing eye protection and a respirator, use a hammer and chisel to break open the chimney at the location(s) where the vent connector(s) will enter. Remove bricks carefully, leaving them intact if possible, and set them aside for later replacement. Generally, the opening(s) into the chimney will need to be several inches larger than the liner diameter. If the flexible aluminum liner will be turned and bent through the opening, remove any sharp edges or projections that might catch or abrade the liner surface. If a tee is to be used a slightly longer hole will be needed.



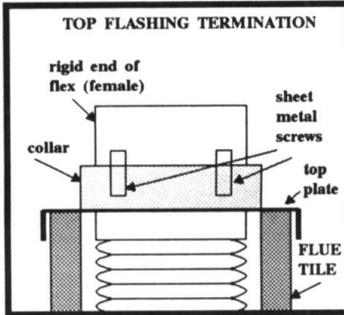
STEP 2: STRETCH THE LINER TO LENGTH



Lower the rope or other line down the chimney to measure the actual length (H) of flexible liner that will be needed, accounting for any fittings to be attached. If the liner is to be turned through the chimney opening, allow about 12 inches more than the vertical flue height for the horizontal projection ($H + 12'$). “DALSIN LINE” ® liner is shipped partially compressed, and can be extended to the necessary length. It is generally preferable to extend the liner about 6 to 12 inches shorter than the length that will eventually be needed. It is easier to stretch the liner a little further than to compress it, once it is in the chimney.

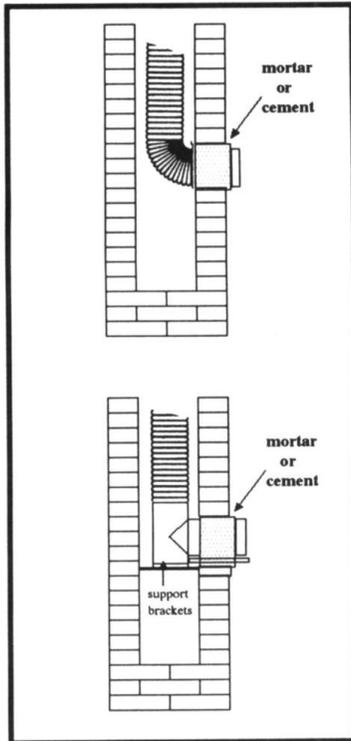
To stretch the liner, uncoil it and lay it out straight on the ground. Lay out the measuring rope next to the liner to mark the necessary length. While wearing gloves on both hands, an installer should firmly grasp each end of the liner. The installers should slowly walk apart until the liner is extended to the proper length, or slightly shorter. The design of the flexible liner material does not require that the liner be “untwisted” as it is stretched.

STEP 3: LOWER THE LINER INTO THE CHIMNEY



Carefully take the liner assembly to the roof. **Note any hazards or obstructions, particularly power lines, which might affect handling of the liner. Take steps to ensure that the entire liner is under control and clear of obstructions.**

Arch the liner over the roof so that the bottom end is pointed straight down into the chimney, and begin lowering. Straighten the liner as it is fed in. Continue lowering until the bottom approaches the opening in the chimney.



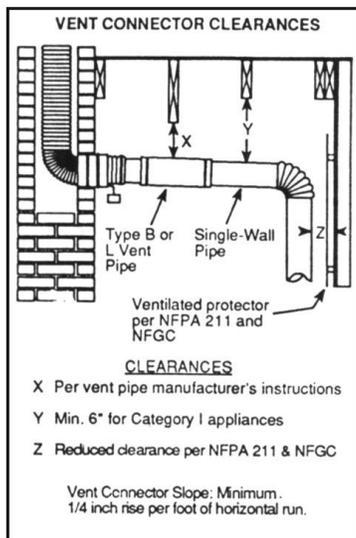
If the liner is to be turned through the opening in the chimney, reach in through the hole and guide the liner through the turn. Do not yank the end of the liner. Working inside the pipe, help the inside radius to compress and the outside radius to expand naturally. Continue lowering the liner until the termination assembly rests on top of the chimney.

If the bottom assembly includes a tee, lower the liner until the fittings reach the desired level. If the liner is too long or short, raise the liner slightly and carefully compress or expand the liner until both bottom and top assemblies rest in the proper position. Never simply shove excess length into the chimney; this will cause the liner to “snake” within the chimney, reducing flow capacity.

STEP 4: FINISH THE TERMINATION ASSEMBLY

To attach the termination assembly, slide the top flashing over the liner, bend tabs on end of flex over collar on top plate and screw through tabs to fasten. Attach the rain cap/storm collar to the liner using 3 stainless sheet metal screws.

Trim the top plate so that the hole is centered over the flue space. If a clay tile liner projects from the top of the chimney, trim the flashing 2 to 4 inches larger than the outer dimensions of the tile. Cut a rectangular notch out of each corner and fold each side of the top plate down 90 degrees, so that the top surface is slightly larger than the tile. Run a bead of silicone caulk on top of the tile and press the flashing firmly down into the caulk. If there is no projecting tile, run a bead of caulk around the chimney top and press the top plate flat on top of the chimney. Install rain cap/storm collar with 3 stainless sheet metal screws.



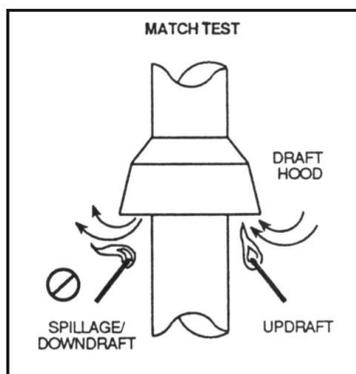
STEP 5: ATTACH FITTINGS

To attach fittings, screw together using 3 stainless sheet metal screws. To attach a fitting to another fitting, insert the crimped, male end of one fitting into the uncrimped female end of the other. Use stainless sheet metal screws supplied with the kit to secure the sections together. Do not substitute other rivets or screws. If a tee is the bottom-most fitting attach using 3 stainless sheet metal screws after liner is lowered down chimney.

STEP 6: FINISH THE BASE ASSEMBLY

If a tee is used slide support brackets under tee and drive in masonry joint in back wall so tee rests on brackets.

Slide the masonry sleeve over the projecting flexible liner or connector pipe. Position the masonry sleeve so that it surrounds and protects the liner as it passes through the chimney wall. Close the opening(s) in the chimney using mortar or refractory cement, and the bricks removed when the chimney was opened.



STEP 7: CONNECT APPLIANCE

Connect heating appliance flue connector to the “DALSIN LINE” ® assembly in compliance with NFPA-211 or local codes.

INSTALL THE VENT CONNECTOR

The vent connector may be single wall galvanized metal pipe, single wall stainless steel, or sections of double wall Type B vent. Install with the male ends up pointing toward the chimney. Attach to the end using 3 to 4 sheet metal screws. Continue to run sections of vent connector as necessary back to the appliance, securing each joint with appropriate fasteners. Attach the connector to the appliance flue collar using screws, or according to the vent and appliance manufacturer's instructions.

The vent connector should be as short and direct as possible. Regardless of connector type, it must slope upward toward the chimney at least 1/4 inch per foot. Be sure that the connector has proper clearance to combustibles, and conforms to the requirements of the appliance manufacturer's instructions, the National Fuel Gas Code, and local codes. Since The “DALSIN LINE” ® system may only be used to vent appliances that are listed for use with Type B vent, single wall metal pipe used as a connector may be installed with a 6-inch clearance to combustibles. If Type B or Type L pipe is used as a connector, it may be installed at its listed clearance. Clearances may be reduced if the combustible material is protected in accordance with Table 5-5(b) of NFPA211, or Table VI of Chapter 6 in NFPA 54.

Single wall metal vent connector may not pass through an interior wall or partition. It may pass through a combustible exterior wall if surrounded at the point of passage by a metal ventilated thimble at least 4 inches larger in diameter than the connector, or by a wall pass-through device listed for this purpose. The thimble or wall pass-through must not be located directly behind the heating appliance.

TEST FOR DRAFT

Once the installation is complete, the ability of the vent to fully exhaust the products of combustion must be verified. Turn on all connected appliances and allow them to warm up for several minutes. For draft hood-equipped appliances, do a "match test": hold a lighted match or pocket lighter just inside the draft hood. The flame should be drawn clearly inward.

For fan-assisted appliances interconnected with a draft hood appliance (such as a water heater), the match test should be conducted at the draft hood with the draft hood appliance both on and off. If a fan assisted appliance is not interconnected with a draft hood appliance a match test should not be necessary; the pressure sensing switch built in to the appliance will monitor draft.

In either case, if the flame is blown outward or extinguished, or the pressure switch shuts down the appliance, the appliance(s) should not be used until the cause of the inadequate draft is identified and corrected.

LEAVE A COPY OF THESE INSTRUCTIONS WITH THE HOMEOWNER.

MAINTENANCE INSTRUCTIONS

Normal operation of a gas appliance does not result in deposits of combustible soot or creosote in the venting system. However, a poorly adjusted or malfunctioning appliance can deposit soot, and leaves or other debris can enter the flue. Just as with all chimneys and vents the “DALSIN LINE” ® liner should be inspected annually for the presence of deposits or debris and cleaned if necessary. A Certified Chimney Sweep or other qualified person should do this.

To inspect the vent, remove the rain cap. After inspection, replace the cap.

Only Category I gas appliances or appliances listed for use with Type B vent should be connected to the “DALSIN LINE” ® liner. Do not connect a solid fuel-burning appliance to the vent. The connected appliance must not have a flue outlet size larger than the size of the vent, except as allowed by the appliance instructions, the National Fuel Gas Code and local codes. Do not add or substitute any parts or materials other than those specified in these instructions.