



INSTALLATION AND MAINTENANCE INSTRUCTIONS

MODEL MLK & MLKE CHIMNEY LINING AND VENT CONNECTOR SYSTEMS



Listing No. MH 17528
Tested to UL 1777 & ULC 3635
(For Chimney Liners)

Listing No. MH 25730
(For Vent Connectors)

MODEL MLK

Flex Aluminum Chimney Liner Kit

Kit Includes:

- Gas Liner
- Mortar Guard
- Rain Cap
- Factory Attached Couplings
- Flashing
- Pull Bar
- Storm Collar

MODEL MLKE

Flex Aluminum Chimney Liner Kit

Kit Includes:

- Gas Liner
- Mortar Guard
- Rain Cap
- Hardware Package (9ea. Self Tapping Screws)
- Flashing
- Coupling (5.5" Dia. Only)

CAUTION:

Metal-Fab gas vent relining systems have been designed to properly vent Category I gas-burning appliances only. Appliances burning solid or liquid fuels or Category II, III, or IV furnaces are not to be connected to this lining system.

This Metal-Fab lining system is intended for use as a masonry chimney liner, factory-built chimney liner, or Type-B gas vent liner. Metal-Fab liners are intended to be installed in accordance with the standard for chimneys, fireplaces, vents and solid fuel burning appliances, per NFPA 211.

NOTE: When an existing gas, oil, or wood burning appliance is being replaced by a gas burning appliance, the existing chimney can be used as a conduit for a flexible aluminum liner. The inside of the existing system must be of sufficient diameter to allow the liner to pass through and the existing system must have been properly installed (See Manufacturer's instructions for details).

Although this product may be installed in an unenclosed space between the appliance and the masonry chimney, factory-built chimney, or Type-B gas vent, it must not pass through any combustible structure such as a wall, ceiling, floor, attic space, or crawl space. Contact local building or fire officials about restrictions and installations in your area.

Metal Fab gas vent relining systems have been designed to properly vent gas burning appliances. Substituting other parts not identified within these instructions may pose an unsafe installation. Acceptance of the lining system is void if the installation instructions are not followed.

Wall penetration assemblies are not to be located directly behind a heating appliance.

The chimney liner must not be sized less than that specified in the appliance manufacturers instructions. Correct sizing of liner is critical for venting of low temperature flue products in geographical areas experiencing sustained low ambient temperatures.

Prior to installing a liner system in a masonry chimney, the chimney is to be thoroughly cleaned and inspected. Check for cracked, loose or missing bricks, mortar or other materials that could inhibit correct liner installation. Repair chimney as required. Removal of all tar glazed creosote is a must prior to installation of chimney liner. Verify the air space clearances between the masonry chimney exterior and combustible materials is in accordance with applicable building code requirements.

Prior to installing linear system in a factory-built chimney or Type-B gas vent, the chimney is to be thoroughly cleaned and inspected. Check for structural defects that all parts (such as support, radiation shield, firestop, etc.) specified by the chimney or vent manufacturer. Repair chimney or vent as required. Removal of all tar glazed creosote is a must prior to installation of chimney liner. Verify that the airspace clearances between chimney or vent exterior casing and combustible material is in accordance with the installation instructions.

Wear gloves when handling metal parts to avoid personal injury.

The liner should terminate with the lowest discharge opening no closer to the roof than the minimum height shown in the table below. These minimum heights may be used provided the vent is not less than 8 ft. (2.4 m) from any vertical wall.

Roof Pitch	Minimum Height
Flat to 6/12	1.0 foot (305mm)
6/12 to 7/12	1.25 feet (380mm)
Over 7/12 to 8/12	1.5 feet (451mm)
Over 8/12 to 9/12	2.0 feet (610mm)
Over 9/12 to 10/12	2.5 feet (762mm)
Over 10/12 to 11/12	3.25 feet (991mm)
Over 11/12 to 12/12	4.0 feet (1218mm)
Over 12/12 to 14/12	5.0 feet (1524mm)
Over 14/12 to 16/12	6.0 feet (1829mm)
Over 16/12 to 18/12	7.0 feet (2134mm)
Over 18/12 to 20/12	7.5 feet (2286mm)
Over 20/12 to 21/12	8.0 feet (2438mm)

GENERAL:

MLK and MLKE gas vent lining systems are listed by UL & ULC for installation at zero clearance to the inside masonry surface and with zero clearance from the outside surface of the masonry chimney and surrounding combustible material.

Do not place insulation or other materials in required clearance spaces surrounding the liner unless otherwise specified.

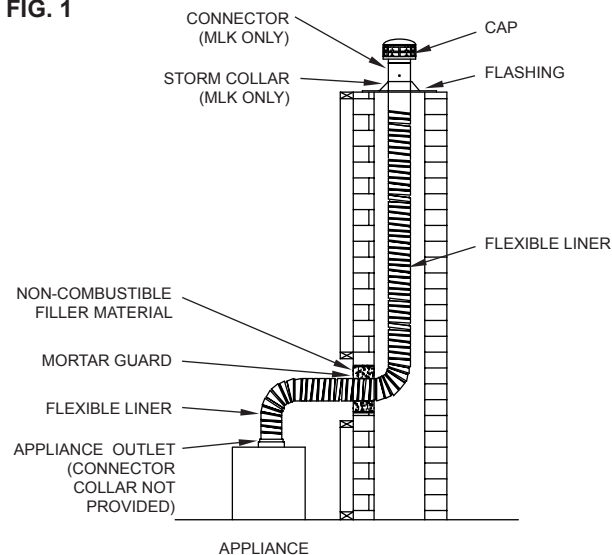
Use only parts referenced in these instructions when installing a MLK or MLKE liner system. Never substitute liner material.

Rain caps and flashing must be used to prevent moisture from entering the liner and entering the space between liner and chimney. Bird screens on rain caps may be necessary and/or required in some areas but could be susceptible to blockage through freezing moisture. Consult authority having jurisdiction before using bird screen.

Metal-Fab MLK liners may be extended from the outlet (top), to the cap using Type-B gas vent. MLK and MLKE liners may be extended from the inlet (bottom) to the appliance using flexible MLCK connectors (See FIG. 6 & 8).

Metal-Fab MLK and MLKE liners may be connected continuously from the appliance to the termination cap, provided that the liner is always in an unenclosed space or is within a masonry chimney, factory built chimney, or Type-B gas vent.

FIG. 1



These liner systems are NOT listed as Type-B gas vent and are not intended to pass through any wall, ceiling, attic, crawl space or other combustible area. A liner that is used as a connector in open and unenclosed space must be installed with minimum clearance to combustibles, in accordance with NFPA 211. The appliance to which the flexible liner is connected shall be listed gas-fired appliance equipped with a draft hood or other appliance listed for use with Type-B Vent.

To size the liner system, follow the Category 1 venting table now contained in the National Fuel Gas Code NFPA 54/ANSI Z223.1 in the USA or CAN CSA-B149.1 in Canada. Be certain to follow the capacity reduction directions for the corrugated metallic chimney liner systems.

While installing flexible liner, consideration should be given to the following: 1) make no unnecessary bends 2) make no bends greater than 90° 3) make bends as smooth as possible, with no dips or sags and 4) install with at least a 1/4" per foot rise.

Before installing liner authorities having jurisdiction (such as Gas Inspection Authority, Municipal Building Department, Fire Department, Fire Prevention Bureau, etc.) should be consulted to determine the need to obtain a permit.

The installer must post the completed date of installation notice at the point where the connection is made to the appliance. This notice shall include date of installation, the manufacturer's name, the model number and class of lining system, and a reminder to homeowners to check the rain cap for icing during low ambient temperatures.

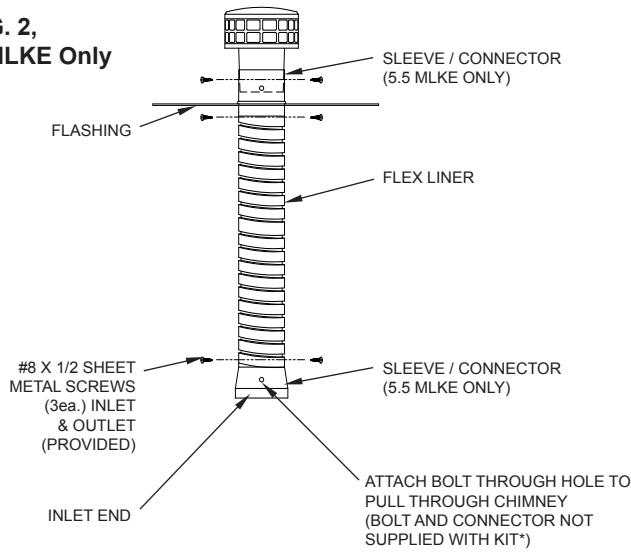
INSTALLATION:

1. MLK/MLKE: Determine the length of the liner needed by dropping a pre-measured length of rope or other measuring device down the chimney. If the liner is to mate directly to an appliance, measure all the way to the appliance. Otherwise, measure to a point that is just outside of the chimney that is being re-lined.
2. MLK/MLKE: If installing the liner into a masonry chimney, determine the location of the point where the flex system will penetrate the masonry sidewall. This opening must be located above the appliance outlet. It is recommended that you install an inspection/cleanout door on the opposite side of the chimney, if conditions permit.
3. MLK/MLKE: To configure the liner to its proper length, remove the liner from the carton. One person (wearing gloves) is to securely grasp one end of the liner while the second person (also wearing gloves) pulls and stretches the liner from the other end. Both persons should be on level ground when stretching the liner. Pull and stretch to the required length, being careful not to over-stretch the liner.

NOTE: For shipping purposes, the flexible liner has been compressed to approximately 1/3 its usual length. A 25-foot (7.62 m) length will be approximately 8 feet (2.44 m) in the carton. For taller chimneys two lengths of liner can be joined together (See Flex Extension on Page 4).

4. MLKE Only: While still on level ground, press a termination into the flashing until the tapered termination collar makes contact with flashing. Attach one end of the flexible liner to the portion of the termination protruding below the flashing (use 3 ea. screws provided). Attach sleeve/connector to the inlet (bottom) end of the flexible liner (use 3 ea. screws provided). Temporarily attach a bolt through the holes that are provided in the sleeve connector to serve as a pull bar. You are now ready to lower the flex into the chimney from the top down (See FIG. 2).
5. MLK Only: This liner has a B-Vent style connector pre-attached to the outlet (top) end of the flex and a stainless steel slip connector pre-attached to the inlet (bottom) end. You are now ready to lower the flex into the chimney from the top down.

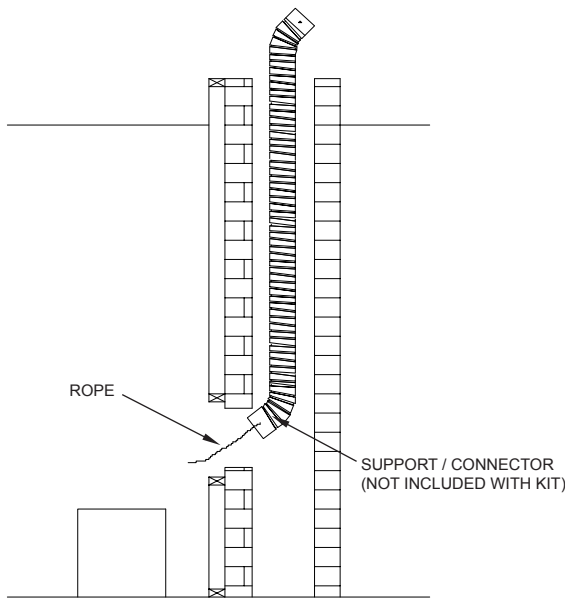
**FIG. 2,
MLKE Only**



6. MLK and MLKE: Secure a rope to the bolt or pull bar(s) on the inlet (bottom) connector (NOT INCLUDED WITH KIT). Drop the other end of the rope down the chimney for an assistant to pull the liner down the chimney (See FIG. 3). As the liner is being pulled through the chimney, a person is needed at the top to guide the flexible liner down the chimney.

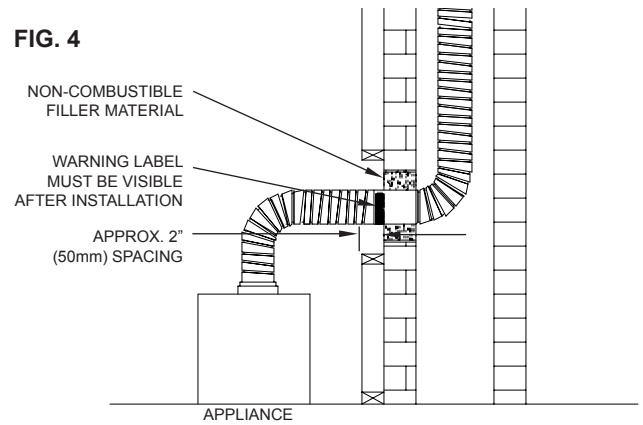
*Contact Metal-Fab for connector availability.

FIG. 3



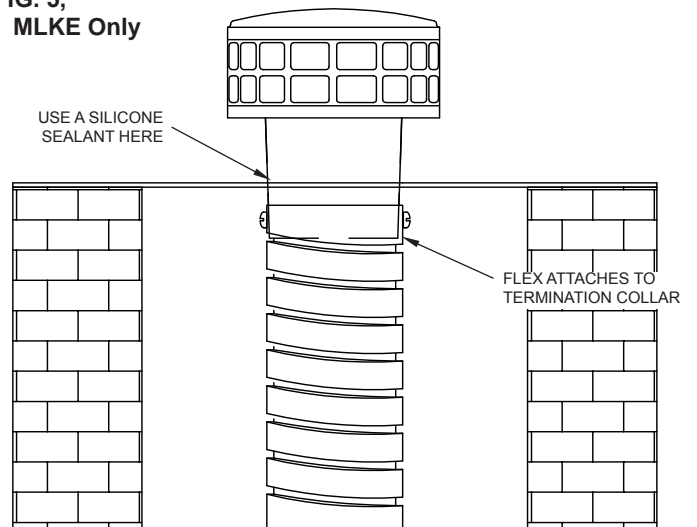
7. MLK and MLKE: If the flex liner is to exit the sidewall of a masonry chimney, it must pass through the mortar guard (See FIG. 4). The mortar guard is positioned so that the labeled edge of the mortar guard (and tag, if applicable) extends approximately 2 inches (50 mm) past the exterior surface of the chimney. NFPA211 requires that the warning label on the mortar guard be visible after the installation is completed. The opening in the masonry chimney can be closed and mortared around the mortar guard. When the liner is in position to start at the appliance (or just outside the chimney, at the inlet end) and in position at the termination cap, remove the rope and the connector bolts or pull bar(s). Discard MLK pull bar(s).

FIG. 4



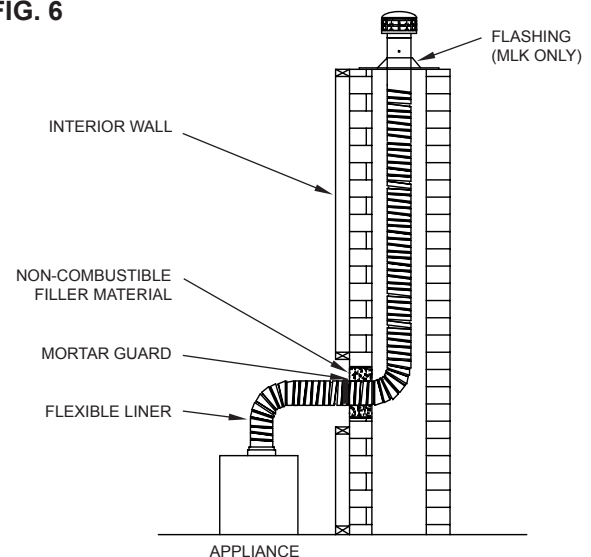
8. MLKE Only: At the outlet end, attach the flashing to the chimney, apply a bead of silicone sealant around termination and flashing (See FIG. 5).
9. MLK only: At the outlet end, slide the flashing and storm collar over the outlet fitting. Twist the cap onto the fitting. Attach the flashing to the chimney. Push down on the cap until it rests on the storm collar.

**FIG. 5,
MLKE Only**



10. MLK and MLKE Inlet Connection Options
 - A) Attach the inlet end of the flexible liner to a single gas appliance, using a draft hood connector or other B-Vent style appliance adapter that may be needed for a secure connection. Be careful not to make any abrupt or sharp bends in the flex or create any bends greater than 90 degrees (See FIG. 6).

FIG. 6



- B) Attach the inlet end of the flexible liner to either single wall pipe or B-Vent pipe that is serving as the connector between a single gas appliance and the flex liner (See FIG. 7).
- C) Attach the inlet end of the flexible liner to a "Y" or "Tee" which is, in turn, connected to single wall pipe, B-Vent pipe, or flexible MLCK connector that is serving as the connector between two gas appliances (See FIG. 8).

FIG. 7

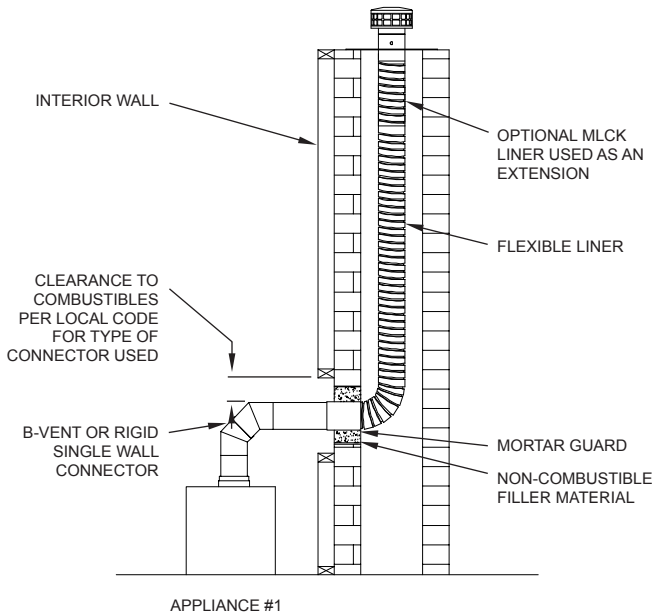
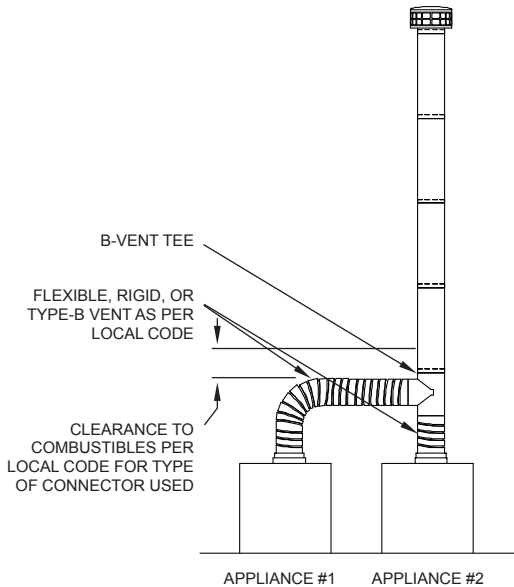


FIG. 8

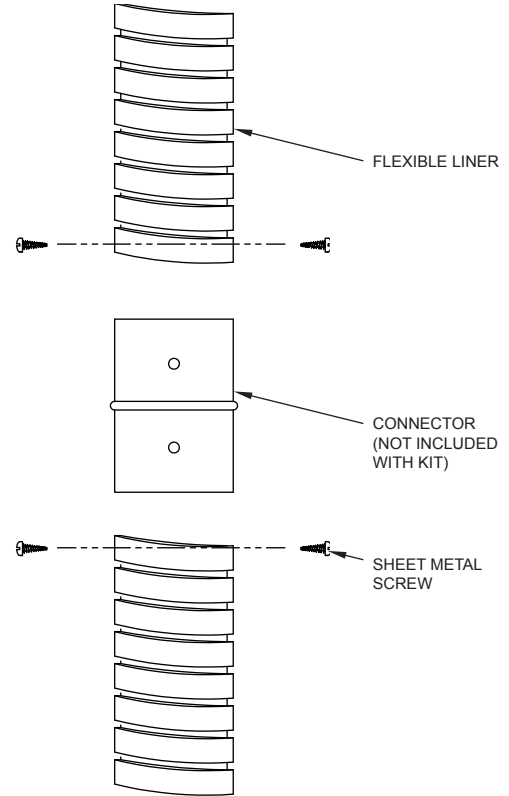


FLEX EXTENSIONS:

MLK/MLKE: For tall chimney installations where more than one length of flex is required, two lengths may be connected together. Additional liner FLX will be required for extending length. Extend liner by inserting flex connector (NOT INCLUDED WITH KIT) into one end of two liners and secure with three sheet metal screws at each end (See FIG. 9).

CAUTION: Size and overall length of extended liner must follow the Category I Venting table in NFPA 54/ANSI Z223.1 (USA) and CAN/CSA-B149.1 (Canada).

FIG. 9



MAINTENANCE INSTRUCTIONS:

The chimney lining system should be checked by a qualified person at least once a year following initial installation. To inspect the liner, remove the Rain Cap via the three securing screws for MLKE and twist lock counter clockwise for MLK. Check appliance manufacturer's instructions to see if any particular precautions should be taken on initial firing of any appliance that is vented through a chimney liner.

- 11. After making all connections, check the system for soundness of connections and compliance with clearance to combustibles.



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