

INSTALLATION AND MAINTENANCE INSTRUCTIONS FOR



HOMESAVER[®]
ULTRAPRO[™]
AND
PRO[™]

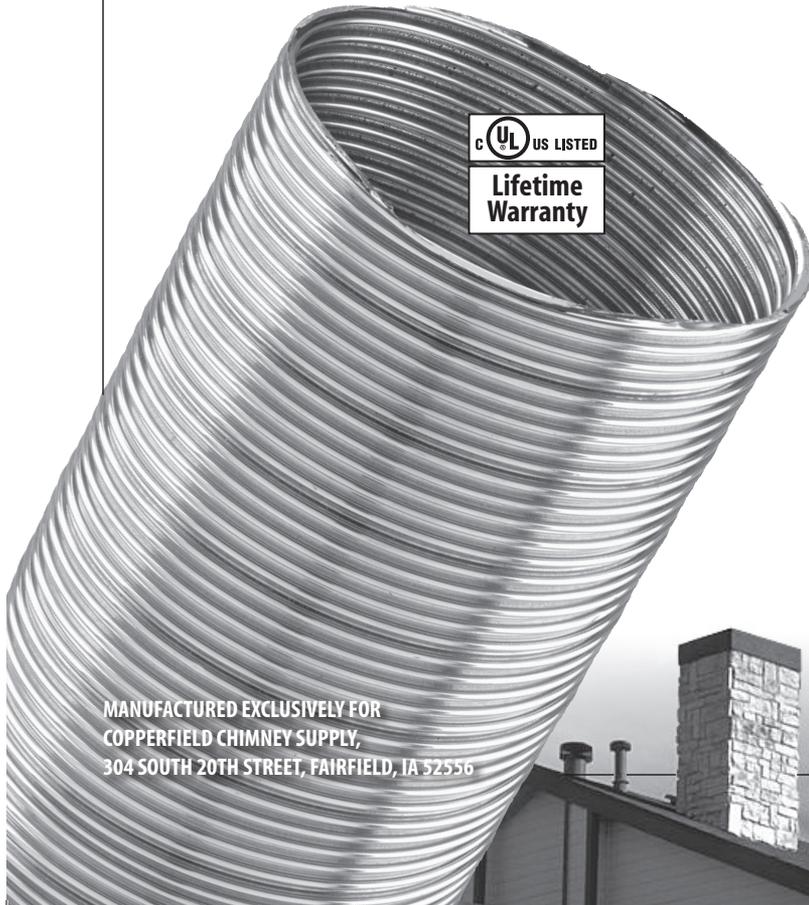
FLEXIBLE STAINLESS STEEL CHIMNEY RELINING PIPE

UL/ULC LISTED SIZES: 3"–12" DIAMETERS



**Lifetime
Warranty**

MANUFACTURED EXCLUSIVELY FOR
COPPERFIELD CHIMNEY SUPPLY,
304 SOUTH 20TH STREET, FAIRFIELD, IA 52556



Introduction

HomeSaver® UltraPro™ and Pro flexible stainless steel relining pipe are intended for use in conjunction with residential heating appliances which burn wood, wood pellets, coal, oil, any Category I LP or natural gas appliances, and gas logs installed in a fireplace. HomeSaver UltraPro and Pro can be installed in masonry or certain factory-built chimneys.

HomeSaver UltraPro and Pro relining pipe are a high-quality, patented, flexible, stainless steel lining system. They have been tested and listed by Underwriters Laboratories, file #MH13768. HomeSaver UltraPro and Pro are made of high-quality, 316 Ti-alloy or 304 stainless steel. This maintains the corrosion resistance while also giving the benefits of high heat resistance.

HomeSaver's commitment to providing a product of superior quality is reflected in its obtaining the UL Listing. The testing is very stringent, and UL ensures consistency of the product by regularly inspecting the manufacturing facility and materials. This commitment is also reflected in HomeSaver's excellent warranty.

These liners are also ULC listed to ULCS635-00 for use in existing construction.

HomeSaver UltraPro and Pro are corrugated liners with a unique mechanical, roll lock seam. These seams are gas tight and hold tight no matter how much you bend or shape them (Figure 1).

HomeSaver requires that an experienced professional who works with chimneys on a regular basis perform the installation of HomeSaver UltraPro and Pro relining pipe. HomeSaver UltraPro and Pro are tested and listed to the UL 1777 Standard which requires insulation for wood and coal appliances.

Use only the parts described in these installation instructions.

These installation instructions must also be followed to ensure the prevention of moisture from entering the liner, the space between the liner and factory-built or masonry chimney, and the chimney insulation.

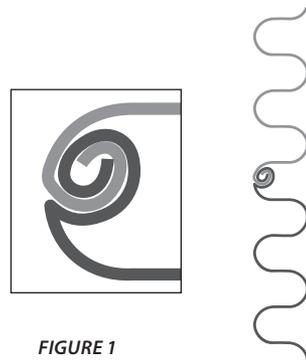


FIGURE 1

Section 1:

How To Determine If A Reline Is Needed

A reline is advisable when:

- The chimney has missing or damaged flue tiles or mortar is missing between flue tiles.
- A chimney venting solid fuels is exposed on at least one side to the outside below the roofline and the flue area exceeds two times the area of the appliance flue collar.
- A chimney venting solid fuels with no sides exposed to the outdoors below the roofline has a flue area exceeding three times the area of the flue collar.
- Deemed necessary by the appliance manufacturer.
- Deemed necessary according to the NFPA 31 Oil Standard or the NFPA 54 Fuel Gas Code Book or your local codes or authority bearing jurisdiction.
- The system has a history of repeated excessive creosote and/or moisture build-up.

Section 2:

Important Code And Safety Considerations

CHIMNEY HEIGHT

The National Fire Protection Association Standard 211 requires that the chimney extend at least 3' above the highest point where it passes through the roof and at least 2' higher than any structure within 10' (Figure 2).

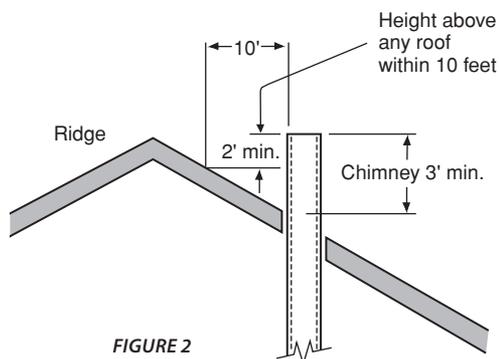


FIGURE 2

CLEARANCES

Airspace clearances between the chimney exterior and combustible materials should be checked to verify whether the chimney is in accordance with the clearance specifications contained in:

1. NFPA 211
2. Other recognized major building codes
3. These instructions
4. Factory-built chimney manufacturer's instructions

NFPA 211 states that the minimum airspace clearance between exterior masonry chimneys (which have the chimney completely outside the exterior wall of the building, excluding the soffit or cornice area) and combustible material shall be at least 1".

NFPA 211 states that the minimum airspace clearance between interior masonry chimneys (which have any portion of the chimney located within the exterior wall of the building) and combustible materials shall be at least 2". The airspace shall not be filled.

Factory-built Chimneys

Before beginning the installation, determine if the existing factory-built fireplace and chimney system has been installed correctly and if required clearances have been maintained. Be sure the factory-built chimney and components are not warped, rusted, or damaged in any way. The system must be structurally sound. If there is damage to the system, insufficient clearances, or rusting of components, these must be remedied! Do not install a liner if the above requirements cannot be met!

Make sure you are connecting to an appliance that has been listed for installation in a zero clearance fireplace and that all clearances and requirements set forth by the listed insert manufacturer have been met. Also make sure the fireplace manufacturer has approved this type of installation. This installation is approved for these types of appliances with a 6", 4", or 3" collar only. Only a 6", 4", or 3" HomeSaver Pro or HomeSaver UltraPro liner may be used.

CONNECTING OTHER APPLIANCES

Use of 316 Ti-Alloy liners is approved for wood, wood pellets, coal, oil, any Category I LP or natural gas appliances, and gas logs installed in a fireplace. However, remember: You cannot connect gas or oil appliances to a liner serving solid fuel-burning appliances. You cannot connect more than one, solid fuel-burning appliance to a single liner. UltraPro 304 alloy is approved for use with woodburning and pellet burning appliances.

Rain Caps

Listed rain caps with bird screens are necessary and/or required in some areas but may be susceptible to blockage through freezing moisture in areas of low ambient temperature. Consult authority having jurisdiction for any special requirements.

Section 3: **Determining The Materials You Need**

1. WHAT SIZE HOMESAVER ULTRAPRO OR PRO LINER TO USE

For solid fuels, the cross-sectional area shall not be less than the area of the appliance flue collar unless specified in the manufacturer's instructions. Please refer to the chart in Figure 3, which gives the cross-sectional areas for 3" – 12" Home-Saver UltraPro and Pro.

When using HomeSaver UltraPro and Pro to vent a fireplace (Figure 3), if the chimney is straight and you are using a round pipe, the cross-sectional opening of the flue liner (Area A) should be no less than $\frac{1}{12}$ of the face opening of the fireplace chamber (Area B) to ensure

CROSS SECTIONAL AREA OF EACH PIPE SIZE

| | |
|----------------|----------------|
| 3" round..... | 7.06 sq. in. |
| 4" round..... | 12.56 sq. in. |
| 5" round..... | 19.60 sq. in. |
| 5.5" round.... | 23.80 sq. in. |
| 6" round..... | 28.30 sq. in. |
| 7" round..... | 38.50 sq. in. |
| 8" round..... | 50.30 sq. in. |
| 9" round..... | 63.58 sq. in. |
| 10" round..... | 78.50 sq. in. |
| 11" round..... | 94.98 sq. in. |
| 12" round.... | 113.04 sq. in. |

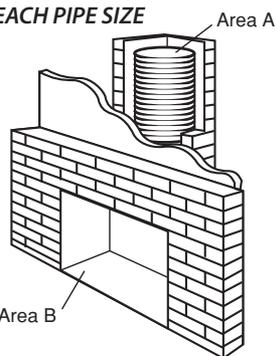


FIGURE 3

proper draft. If the chimney is offset, or if the liner is square, oval or rectangular, the flue liner shall not be less than $\frac{1}{10}$ of the fireplace opening. You should refer to the current NFPA 211 for additional sizing specifications.

For oil-burning appliance venting, the flue shall be sized according to the NFPA 31 Oil Standard or the appliance manufacturer's instructions. For LP or natural gas appliance venting, the flue shall be sized according to the NFPA 54 Fuel Gas Code Book or the appliance manufacturer's instructions. It is especially important for the liners to be properly sized when venting appliances with low flue gas temperatures in sustained low ambient temperatures. In all cases, the authority having jurisdiction can mandate sizing.

2. DETERMINING WHAT LENGTH OF HOMESAVER ULTRAPRO AND PRO LINER IS NEEDED

Determine the length of liner needed by lowering a weighted rope down the chimney to where your relining pipe will terminate. Add another 3" for the installation of the top clamp, storm collar, and Guardian™ Cap or the CollarPlate and CollarPlate Rain Cap.

If needed, HomeSaver UltraPro may be cut with an angle grinder or circular saw with a metal-cutting blade.

The maximum recommended height for HomeSaver UltraPro and Pro is 65'. Minimum height is 10'.

3. INSULATING THE LINER

Insulation is required when venting solid fuel appliances but is optional for wood pellet appliances, oil appliances, and Category I LP or natural gas-burning appliances.

Wood And Coal Applications

There are three scenarios you may encounter when lining for wood and coal that will affect your choice of insulation options.

In a case where a masonry chimney is found to have at least 1" clearance to combustibles the minimum insulation requirements are one wrap of 1/4" foil-face insulation or 1" of HomeSaver InsulationMix or TherMix insulation.

When less than 1" clearance exists between the exterior of the masonry and the surrounding combustibles, the minimum insulation requirements are one wrap of 1/2" foil-face insulation, two wraps of 1/4" foil-face insulation, or 1" of HomeSaver InsulationMix or TherMix insulation.

The insulation requirement for a properly installed factory-built chimney is one wrap of 1/2" foil-face insulation.

Remember: the insulation wraps will loft to more than their stated thickness in most cases. One wrap of 1/4" insulation will add 1" to the diameter of the liner. Two wraps of 1/4" will add 2" to the liner diameter. One wrap of 1/2" will add 1 1/2" to the liner diameter.

Go to pages 15 and 16 for the formula to determine how much HomeSaver InsulationMix or TherMix will be needed in a particular installation.

HomeSaver offers insulation kits including all the components needed to insulate a liner with the foil-face insulation trimmed to the appropriate widths. These are available in 25' lengths of 5" – 8" diameters. There are two additional insulation kits for 6" liners in 30' and 35' lengths.

Wood Pellet, Oil, And LP Or Natural Gas-Burning Appliances

Since the use of insulation around HomeSaver UltraPro and Pro keeps the liner warmer, one wrap of 1/4" Foil-Face FlexWrap will help reduce condensation, as well as reducing cold spots which affect chimney performance. This is especially important when the flue gas temperature is below 280°F at the thimble, when large portions of the chimney are located on the exterior of the house, when HomeSaver UltraPro or Pro is venting a fan-assisted Category I gas appliance, or when the flue cavity is much larger than the liner.

Using HomeSaver Foil-Face FlexWrap

HomeSaver Foil-Face FlexWrap is an insulating blanket of special ceramic fibers mated to a heavy reflective foil. The use of FlexWrap around HomeSaver UltraPro and Pro relining pipe will help center the liner in the chimney, in addition to the other benefits previously mentioned.

To determine the width of FlexWrap needed, see Trim Chart below left.

Adhesive and foil tape will be needed to adhere the FlexWrap to the liner. FlexWrap must be covered with ArmorMesh to protect the FlexWrap from tearing during installation — see the chart below right, to determine what size is needed. Clamps for fastening the ArmorMesh at the top and bottom will be needed and can be created from a Make-A-Clamp brand clamping kit, or large radiator type clamps which can be purchased at automotive supply stores.

**TRIM CHART
FOR HOMESAVER FLEXWRAP INSULATION**

| HomeSaver UltraPro size to be used | Cut this width for first 1/4" wrap | Cut this width for second 1/4" wrap | Cut this width for 1/2" wrap |
|-------------------------------------|------------------------------------|-------------------------------------|----------------------------------|
| 3" dia | 12 ³ / ₄ " | 14" | 13 ¹ / ₂ " |
| 4" dia | 16" | 17 ¹ / ₂ " | 17" |
| 5" dia | 19 ¹ / ₂ " | 21" | 19 ¹ / ₂ " |
| 5 ¹ / ₂ " dia | 21 ¹ / ₂ " | 23 ¹ / ₂ " | 21 ¹ / ₂ " |
| 6" | 23" | 25" | 22 ¹ / ₂ " |
| 7" | 27 ¹ / ₂ " | 29 ¹ / ₂ " | 26 ¹ / ₄ " |
| 8" | 30" | 32" | 29 ¹ / ₄ " |
| 9" | 30 ¹ / ₂ " | 32 ¹ / ₂ " | 32 ¹ / ₄ " |
| 10" | 34" | 36" | 35 ¹ / ₄ " |
| 11" | 37 ¹ / ₂ " | 39 ¹ / ₂ " | 38 ¹ / ₂ " |
| 12" | 40 ¹ / ₂ " | 42 ¹ / ₂ " | 41 ¹ / ₄ " |

**WHICH SIZE
ARMORMESH TO USE**

| HomeSaver UltraPro size to be used | ArmorMesh size to use |
|-------------------------------------|-----------------------|
| 3" dia | Small |
| 4" dia | Small |
| 5" dia | Small |
| 5 ¹ / ₂ " dia | Small |
| 6" dia | Small |
| 7" dia | Large |
| 8" dia | Large |
| 9" dia | Large |
| 10" dia | Large |
| 11" dia | Large |
| 12" dia | Large |

4. COMPONENTS

UltraPro and Pro installations in a masonry chimney can be finished with two different top plate options. It's important that these instructions are followed to ensure the prevention of moisture entering the liner, the space between the liner and factory built chimney and the chimney insulation. The first option, Figure 4, utilizes the HomeSaver CollarPlate which incorporates all the features of the top plate, top clamp, and storm collar into one unit and the HomeSaver CollarPlate Rain Cap with band connection or a Guardian cap. The second, Figure 5, involves a top plate, top clamp (or top/bottom support brackets), storm collar, and one of the UL Listed cap types. The cap options are a Guardian cap, inverted cone cap, a Gelco knock-down top, or a Chimney Protector.

When installing UltraPro or Pro in a factory-built chimney, the top must be finished with the Factory-Built Liner Adaptor, top clamp, storm collar, and Guardian cap, Figure 6.

To connect two pieces of UltraPro or Pro, a connector adaptor with band connection is used. This allows a drip free connection, Figure 7.

Bottom terminations will vary with the specifics of each installation. These specifics are discussed at length later in these instructions.

Important Note: Do not use any liner parts except those specified in these installation and maintenance instructions.



FIGURE 4 – OPTION 1



Above: Chimney Protector
Below: Storm Collar, Top Clamp, Top Plate

Above: Guardian Pro. Below: Inverted Cone Cap

FIGURE 5 – OPTION 2

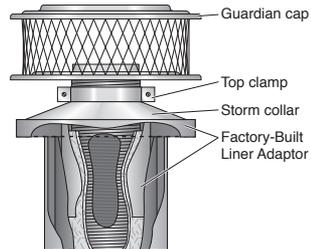


FIGURE 6 – TOP OF FACTORY-BUILT CHIMNEY INSTALLATION

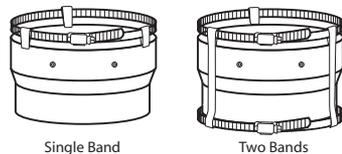


FIGURE 7 – CONNECTOR ADAPTORS

Section 4:

Before You Begin

The following tools and supplies are basic ones needed for your HomeSaver UltraPro or Pro installation:

- Trowel
- Steel snips
- Ladder
- Electric drill
- 9/64" high-speed drill bit
- Cold chisel
- Eye protection
- 3/16" masonry drill bit
- Circular saw with metal-cutting blade (or similar tool)
- Respirator (MSA Comfo Classic or equivalent)
- Mortar
- Silicone sealant
- Pop rivet gun
- Stainless steel pop rivets
- Hammer
- Gloves
- Rope
- Safety Harness
- Mortar pan
- File
- Utility knife
- Measuring tape
- Screwdriver
- Pliers
- Caulking gun

Wear eye protection, gloves, and respirator whenever you're in contact with creosote, soot, mortar, or insulation. Use caution when working on a roof. Proper and safe scaffolding should be used for a safe installation. All ladders should be secured to the building. Be sure to check overhead for antennas, power lines, or other obstacles before erecting the ladder and installing the liner.

INSPECT THE CHIMNEY

Inspect the chimney for structural integrity before it is lined. HomeSaver Ultra-Pro or Pro relining pipe can be installed in a masonry chimney with a minimum 4" of solid brick as specified in NFPA 211. Look for loose or eroded mortar, cracks in the masonry, missing bricks, internal obstructions, abandoned flue holes, and excessive creosote accumulation. Make necessary masonry repairs prior to relining.

In the case of a factory-built chimney, determine if the chimney and factory-built fireplace have been installed correctly and required clearances have been maintained. Check to make sure no signs of rust, warpage, or other damage exist. The system must be structurally sound. If there is damage to the system, insufficient clearances, or rusting components, these parts must be replaced or installed properly. Do not install a liner if the above conditions don't exist.

Installations in factory-built chimneys do not meet UL requirements. and are not listed for this application.

CLEAN THE CHIMNEY

Clean and remove all tar-glazed creosote and soot found on internal chimney

walls and the fireplace smoke chamber before relining the chimney. If not removed, creosote is a fire hazard. It can also cause an unpleasant odor.

TEST TO MAKE SURE THE LINER FITS

On any installation where minimum or near minimum inside chimney dimensions are present, always test your fit before proceeding. Chimneys are irregular and hard to “sight” accurately. Take a small scrap section of liner, about 2' in length, then wrap it with the required thickness of FlexWrap (if this is your insulation choice). Be sure this “test section” can be lowered easily, without binding, through the entire length of chimney.

Section 5: Doing The Installation

The following instructions are intended as a guide to assist a qualified professional installer. Check your local building codes and contact local building or fire officials to obtain any required permits.

1. Inspect the chimney for structural integrity before it is lined. HomeSaver Ultra-Pro and Pro relining pipe can be installed in a masonry chimney with a minimum 4" of solid brick as specified in NFPA 211. Look for loose or eroded mortar, cracks in the masonry, missing bricks, internal obstructions, abandoned flue holes, and excessive creosote accumulation. Make necessary masonry repairs prior to relining the chimney.

In the case of a factory-built chimney, determine if the chimney and factory-built fireplace have been installed correctly and required clearances have been maintained. Check to make sure no signs of rust, warpage, or other damage exist. The system must be structurally sound. If there is damage to the system, insufficient clearances, or rusting components this situation must be remedied. Do not install a liner if the above conditions don't exist.

2. If you are relining a fireplace, go to point 7, page 13.

If the liner is to be connected to an insert, determine if the liner will line up with the flue collar on the insert top. If it does, and the collar is round, use a HomeSaver connector/adaptor to make the connection. The connector/adaptor should be securely attached to the liner. The male end of the adaptor should then fit into the insert flue collar and stainless screws may be used to attach it to the collar Figure 8.

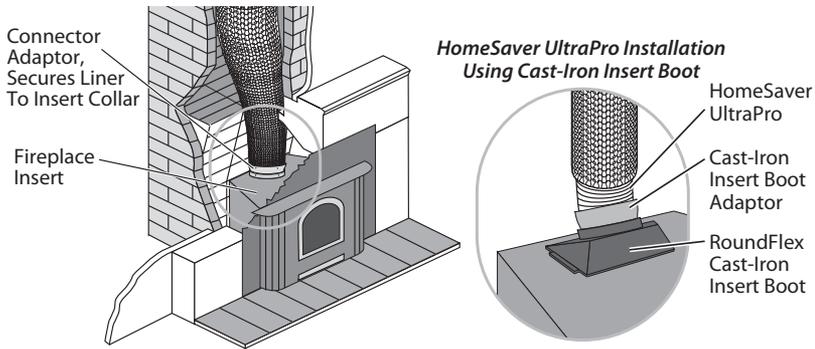


FIGURE 8 – LINER CONNECTION TO FIREPLACE INSERT

If the liner angles towards the insert collar, or has an oval or rectangular opening, a HomeSaver RoundFlex cast-iron insert boot or an elbow may be used to connect the liner to the insert. If an insert boot is used, an insert boot adaptor is needed to connect the UltraPro to the insert boot.

3. If you are relining a flue venting a woodstove and there is no existing opening for stovepipe, you now need to make one. If there is an opening, it may need to be expanded in order to assemble the take-off to the flex tee.

For solid fuel appliances the NFPA “minimum clearance to combustibles” is 18” for single-wall connectors. Figure 9 shows a typical framing, which would have to be constructed in a combustible wall next to the chimney. This framing requires a minimum of 12” of brick masonry surrounding the thimble on all sides. It must not be located directly behind the appliance, but above it. See NFPA 211 for more details.

Minimum clearance to combustibles per NFPA 211 Fig. 9.7.5

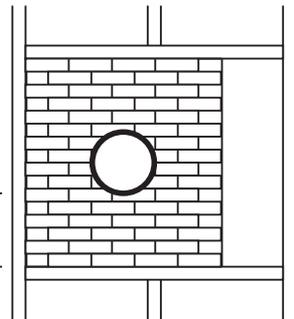


FIGURE 9 – UL LISTED WALL PENETRATION

If a UL Listed wall penetration assembly is used (as an alternative to Figure 9), it must be located above the heating appliance and may not be located directly behind the heating appliance.

Clearances from solid fuel-burning appliances to combustible materials must be strictly adhered to. Follow all local codes and manufacturer’s instructions.

For Category I LP or natural gas you may make a 90 degree bend when passing through a masonry thimble. You will need to use a mortar sleeve in this application.

If this liner is installed in Canada, a notice must be posted where the connection is made to the appliance concerning its limitation of use with specific fuels and appliances including a reminder to homeowners to check the rain cap for icing during low ambient temperatures. Such notices shall include the date of installation, the manufacturer's name, the model number, and class of lining system.

4. To install the tee, first place the tee cover over the outside of the bottom end using four, 1/2" stainless steel pop rivets to secure (Figure 10).

In hearth stove applications, 1/2" #8 stainless steel screws may be used to connect the tee cover to the tee.

The take-off attaches to the tee body with a retractable band connection.

The first tee, on left in Figure 8, is called the Short Flex Tee With 10" Long, Removable, Uncrimped Take-Off With Band Connection. The UltraPro slides into the top of the tee and is secured by tightening the retractable band connection. There are also four pilot holes where 1/2" stainless steel pop rivets may also be used if desired.

The second tee in Figure 10 is a Short Tee Body Only. You must use one of two removeable take-offs to go with it: 1) 10" Removeable Slip Take-Off, which connects to a female connector pipe without crimping, or 2) 22" Removeable Take-Off (Female) (uncrimped).

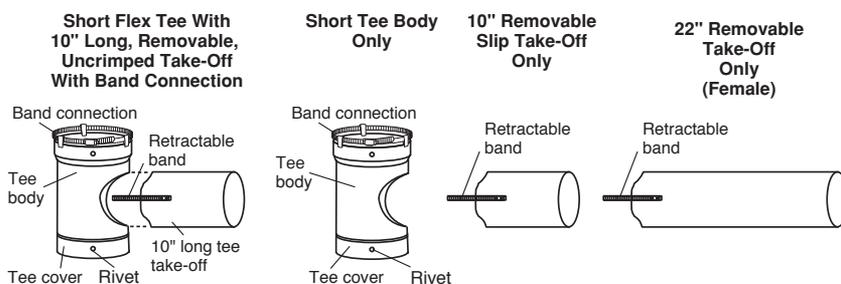


FIGURE 10 – TEES AND TAKE-OFFS

These two tees have a retractable band that secures the take-off to the tee body. The band should be opened so that when the HomeSaver Flex and tee are lowered down the chimney, the tee body can pass through the band.

If a crimped take-off or a longer take-off is desired, a crimped take-off and a

longer take-off are available as an alternative to the standard tee take-off. These alternative take-offs are designed to be used solely as a replacement tee take-off.

5. Install support rods and bottom plate as shown (Figure 11) so the take-off will line up with the thimble hole. The tee sits on the plate which supports the weight of the liner.
6. Attach the UltraPro or Pro liner to the tee with the clamp connection. As an alternative, a connector-adaptor with band connection may be used to join the liner to a Heat-Fab rigid tee.

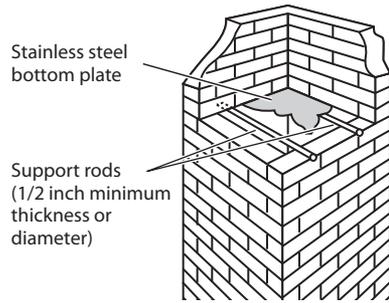


FIGURE 11 – LINER SUPPORT RODS

7. When using HomeSaver UltraPro or Pro relining pipe to reline a fireplace flue, terminate the liner at the bottom of the chimney flue just above the smoke chamber. Several terminations are illustrated on page 14, Figure 12. Support rods are also illustrated in Figure 11. As an alternative method of support, a HomeSaver Bottom Plate Leg Support System can be used instead of support rods (see Figure 12, page 14, alternative "A.") Install the four support brackets by bolting to the liner in a position that allows them to rest on the bottom plate, and so no more than 2" of liner is below the plate. Or, a bottom plate with 2" collar may be used. A connector-adaptor will be needed to join the liner to the collar.

Another choice is the Home-Saver Insulation Plug (see Figure 12, alternative "B," page 14). HomeSaver Foil-Face FlexWrap must be layered with refractory cement and tightly packed at the base of the liner to a depth of 6" to form a seal. Make sure there is adequate support at the top of the chimney. If the liner, including insulation, weighs more than 150 pounds, double up on the top plates and top/bottom support brackets.

8. Each of these liner components (tee and connector-adaptor) comes equipped with band connection. The tee cover requires pop rivets or screws.

Note: If you are using a connector/adaptor with band connection or a tee with band connection, pop rivets are optional.

9. Insulating the liner with HomeSaver Foil-Face FlexWrap:
 - A. Wrap lengthwise, creating one long vertical seam down the length of the liner. The foil side should face away from the pipe.

**HomeSaver® UltraPro™ or Pro
with Foil-Face FlexWrap and ArmorMesh**

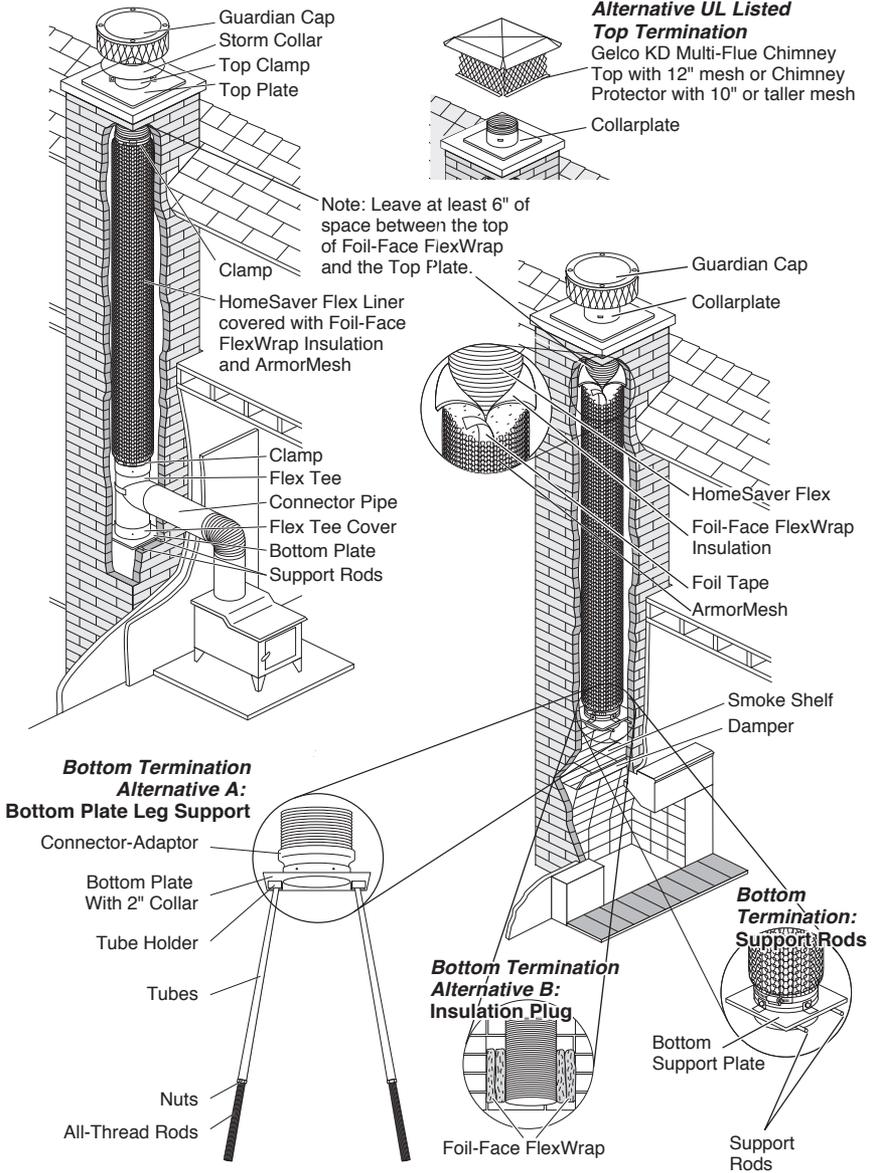


FIGURE 12 – ALTERNATIVE TOP AND BOTTOM INSTALLATIONS

- B. Begin by rolling out a length of FlexWrap equal to 9" less than the length of the liner to be used in the installation. Do this on a clean, dry surface. If relining a woodstove insert installed in a masonry fireplace, 1' to 2' may be left uninsulated immediately above the insert. (For factory-built chimneys, see pages 18-19.)
- C. Trim the FlexWrap lengthwise with a sharp utility knife so that when wrapped around the liner, a tight joint, the length of the liner, is achieved. Accuracy in cutting is important.
- D. Apply 3M Spray Adhesive or Rutland Water Glass to the liner. Then carefully wrap the FlexWrap around the liner.
- E. Thoroughly tape the insulation seam and the ends with foil tape.
- F. If two wraps of the ¼" Foil-Face FlexWrap insulation are being used, repeat the steps above for the second wrap.
- G. Measure, cut, and install a length of HomeSaver ArmorMesh Insulation Cover over your FlexWrap insulation. This can be accomplished by rolling the mesh like a stocking, then unrolling over the insulated pipe. Clamp the bottom end of the ArmorMesh, just before it enters the tee.
- H. Grasp the unclamped end of the ArmorMesh, unroll the ArmorMesh over the liner and insulation and pull, working it tight from one end to the other. This will draw the ArmorMesh snug around the FlexWrap.
- I. Trim any excess FlexWrap and ArmorMesh from the top of your installation back to within 6" of where the liner will stick through the top plate, collar-plate, or factory-built liner adaptor, then clamp it in place. Leave no more than 3" of liner protruding above the flex top plate. If using a CollarPlate, cut the liner flush with the top of the collar.

10. Insulating UltraPro or UltraPro with HomeSaver InsulationMix or TherMix Insulation:

HomeSaver InsulationMix and TherMix are specially formulated, dirt-like consistency chimney fill insulations and are intended for use when relining masonry chimneys only. Since 1" of HomeSaver InsulationMix or TherMix needs to surround the liner on all sides, the inside flue dimension needs to be a minimum of 2" larger than the outer diameter of the liner (which is ¾" larger than I.D.). This means a 6" diameter liner would require a flue opening of 8¾"× 8¾".

The formula for determining the volume of insulation in cubic feet for HomeSaver UltraPro or Pro is:

$$\frac{(\text{area of chimney}) - (\text{area of liner})}{1728}$$

$$\frac{(W'' \times D'' \times H'') - (\pi \times R^2 \times H'')}{1728}$$

W = width of flue in inches

D = depth of flue in inches

H = height of flue in inches (multiply feet 3 12 to convert to inches)

$\pi = 3.1416$

R^2 = radius of pipe multiplied by itself (remember, radius is $\frac{1}{2}$ diameter)

Dividing by 1728 converts the answer (in inches) to the number of cubic feet of space you need to fill with HomeSaver InsulationMix or TherMix. Each bag of HomeSaver InsulationMix holds two and a half cubic feet, so divide the final figure by 2.5. TherMix holds 2.4 cubic feet, so divide the final figure by 2.4 to determine the number of bags of TherMix you need.

The following are typical examples:

A. 6" diameter HomeSaver UltraPro or Pro relining pipe

8 $\frac{1}{2}$ " = width of flue

8 $\frac{1}{2}$ " = depth of flue

(16 ft.) 192" = height of flue

$$\frac{(8.5 \times 8.5 \times 192) - (3.1416 \times 9 \times 192)}{1728} = \frac{8443.32}{1728} = 4.89 \text{ cu. ft.}$$

4.89 cubic feet \div 2.5 cubic feet/bag = 1.96 bags (InsulationMix)

4.89 cubic feet \div 2.4 cubic feet/bag = 2.04 bags (TherMix)

B. 8" diameter HomeSaver UltraPro or Pro relining pipe

10 $\frac{1}{2}$ " = width of flue

12" = depth of flue

(35 ft.) 420" = height of flue

$$\frac{(10.5 \times 12 \times 420) - (3.1416 \times 16 \times 420)}{1728} = \frac{31,808.45}{1728} = 18.41 \text{ cu. ft.}$$

18.41 cubic feet \div 2.5 cubic feet/bag = 7.37 bags (InsulationMix)

18.41 cubic feet \div 2.4 cubic feet/bag = 7.67 bags (TherMix)

Be sure to follow the instructions on the bag for mixing, drying, and curing requirements.

11. In installations using a tee, position the tee take-off with retractable band into the chimney opening. The retractable band should be fully opened so the body of the HomeSaver tee may be lowered through the band. Then the band must be secured to the tee body by tightening the retractable band.

The HomeSaver universal take-off is used to connect a water heater or other gas appliance into HomeSaver UltraPro or Pro above another connector. Drill a hole in the liner using a hole saw. Place duct tape over the area and drill in reverse for improved results. Insert the universal take-off into the hole, tighten the band, and seal with RTV silicone sealant.

Fill mortar in tightly around the take-off to the tee. Make sure the connector pipe will connect easily to the take-off before the mortar cures. Single-wall metal connectors must maintain a minimum of 18" clearance to combustibles for woodburning and a rise of at least $\frac{1}{4}$ " per foot. Refer to NFPA211 for clearances for other appliance types. Connectors shall be securely supported and fastened with sheet metal screws or stovepipe screws. The connector shall be readily accessible for inspection, cleaning, and replacement.

The initial pipe connection will either be a direct connection to the take-off of the flex tee in a HomeSaver UltraPro or Pro installation, or a connector through a UL Listed wall penetration assembly. Any pipe connector used, which is not in plain view from the room, must be made of stainless steel or equivalent materials.

When relining to a wood or gas insert, a connector-adaptor with band connection will be needed to make the connection to the insert. As an alternative, a RoundFlex cast-iron insert boot and insert boot adaptor may be used.

In fireplace installations, lower the liner directly down the chimney until the top/bottom support brackets rest on the stainless bottom plate (if one is used).

If installing UltraPro or Pro in a factory-built fireplace chimney, make sure you are connecting to an appliance that has been listed for installation in a zero clearance fireplace and that all clearances and requirements set forth by the listed insert or stove manufacturer have been met. Also make sure the fireplace manufacturer has approved this type of installation. *This installation is approved for these types of appliances with a 6", 4", or 3" collar only. Only a 6", 4", or 3" HomeSaver Pro or HomeSaver UltraPro liner may be used.*

If a hearth stove will be connected to the liner, determine which type of tee will be used (see page 12 for specific recommended tees).

If an insert will be connected to the liner, you may use a HomeSaver connector/adaptor with band connection to make the connection between the flex

and the insert. If the liner comes down towards the insert at an angle, or has a rectangle or oval flue collar, you may need two items. They are the HomeSaver RoundFlex cast-iron insert boot, as well as the HomeSaver Pro/UltraPro cast-iron insert boot adaptor, Figure 8, page 11.

Remove the damper from the top of the firebox following the specific instruction as required from the zero clearance fireplace manufacturer. Be careful not to affect the structural integrity of the unit.

Insulate the liner with one wrap of 1/2" HomeSaver Foil-Face FlexWrap including the adhesive, the ArmorMesh, foil tape, and Make-A-Clamp kit as detailed on page 7. Or, a HomeSaver Pro/UltraPro Insulation Kit may be used which includes these items.

The insulation must start 6" above the appliance connection in a factory built fireplace chimney and must terminate 6" below the factory-built liner adaptor.

12. There are three accepted methods of installing the top hardware on an UltraPro or Pro installation.

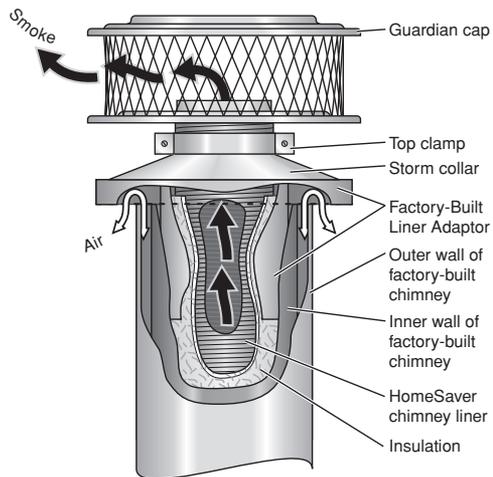


FIGURE 13 – FLOW DIAGRAM OF FBLA ADAPTOR

1. **Using the CollarPlate:** apply an exterior-rated silicone sealant to the perimeter of the CollarPlate. Slide the plate over the liner until it rests squarely on the chimney or flue tile. Tighten the clamp. Install the CollarPlate rain cap or a Guardian cap.

2. **Use the HomeSaver Factory-Built Liner Adaptor** if you are relining a factory-built chimney, Figures 11 and 12. Allow the liner to extend 3" above the adaptor. Install the storm collar over the liner, making sure the bottom of the storm collar sits flush on the liner adaptor. Seal with high temperature silicone sealant. Install the top clamp above the storm collar so it sits on the collar. Squeeze the base of a Guardian cap and slide it into the liner. See illustration.

Use the pellet adaptor when using a 4" or 3" liner.

3. **If you are using a top plate** on a masonry chimney, apply an exterior-rated



FIGURE 14 – COMPONENTS OF A FACTORY BUILT CHIMNEY RELINE

silicone sealant to the perimeter of the top plate. Slide the top plate over the liner until it rests squarely on the chimney top. Next, position the top clamp or top/bottom support brackets over the liner so it rests on the top plate, then secure to the liner.

Do not allow the top clamp or top/bottom support brackets to be the installation's sole means of support. Always support your installation solidly at the bottom. Position the storm collar so it is above the top clamp and tighten the storm collar. A bead of silicone sealant between the collar and the pipe will prevent

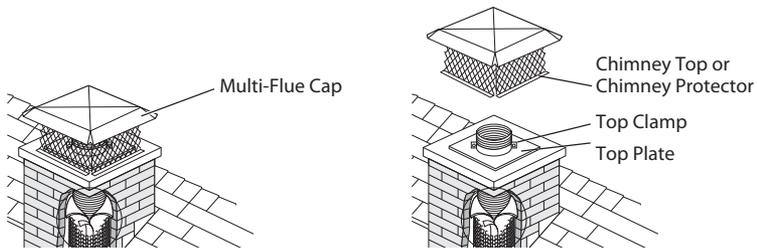


FIGURE 15 - COVER TOP TERMINATION WITH CHIMNEY CAP

water from entering the chimney through this joint. Insert the friction fit 316 or 304-alloy Guardian Cap into the liner.

A Gelco Knock-Down Top, inverted cone cap, or Chimney Protector Cap may be used as an alternative to terminate a HomeSaver Relining Installation, (Figure 15). A storm collar is not required but may be used with a Chimney Protector or Gelco Chimney Top. Allow a maximum 3" of HomeSaver Liner to extend past the top plate. Make sure the combined height of liner and tile extend into the cap no more than 4" for the Chimney Protector with 10" high mesh and no more than 6" for the knock-down tops and Chimney Protectors with 12" high mesh. This ensures adequate clearance for the liner.

To install the cap you will need a caulking gun, drill, and a $\frac{3}{16}$ " masonry drill bit. Set the cap on the crown of the chimney, marking with a pencil where the base will sit. Apply chimney top adhesive within the penciled lines. Be sure to leave spaces where the holes for the masonry screws will be drilled. Firmly press the cap base into the adhesive. Drill into the crown using the $\frac{3}{16}$ " drill bit and anchor the cap with masonry screws.

13. After completing the installation of a new appliance, the initial firing precautions of the appliance manufacturer's instructions must be strictly followed.

PLEASE READ AND SAVE

Section 6:

Maintenance Instructions For Installer And Homeowner

HomeSaver's commitment to providing a product of superior quality is reflected in its excellent warranty and UL/ULC Listing. HomeSaver UltraPro and Pro re-lining pipe must be installed and used correctly in order to have the safest, most efficient, long lasting system. For this reason, the following maintenance and usage instructions must be followed. Parts or materials other than those specified in our installation instructions must not be used.

MAINTENANCE

1. The chimney connector pipe and HomeSaver UltraPro and Pro system must be cleaned and the entire installation inspected annually by a professional chimney sweep. During the heating season, the chimney liner system should be inspected at least once every two months to determine if creosote or soot buildup has occurred. If buildup has occurred, it should be removed to reduce the risk of a chimney fire.
2. A round wire steel chimney cleaning brush is recommended to clean HomeSaver UltraPro and Pro liner. Some chemical chimney cleaners may be harmful to HomeSaver UltraPro and Pro, so use only brands approved by HomeSaver.

The chimney may be accessed for cleaning through the top by removing the rain cap. If unaccessible from the top, the cleaning may be done through the appliance tee, clean-out opening, or through the damper (for a fireplace). Debris should then be removed from below.

USAGE

When wood is burned slowly, it produces tar and other organic vapors which combine with expelled moisture to form creosote. These vapors condense in the relatively cool flue during slow-burning periods. This results in creosote accumulation on the chimney liner, which is dangerous. If this creosote should ignite, it makes an extremely hot chimney fire which may destroy the corrosion resistance of the stainless steel, and may cause a house fire if flames ignite the roof or nearby combustibles.

Therefore, we advise homeowners to prevent creosote buildup with safe burning procedures -- burn fires hot, not smoldering with a lot of smoke. In a fireplace,

keep the top of the flames visible below the fireplace opening; in a woodstove, keep the flames confined to the woodstove itself. Never burn trash, papers, garbage, etc. in a fireplace or woodstove. This could cause a fire hazard and damage the liner.

When used for venting solid fuel appliances, this liner must not be smaller than the appliance flue collar unless specified by the appliance manufacturer.

Be sure to check the rain cap for icing during low ambient temperatures.

WARRANTY QUICK REFERENCE

Please read warranty card included with product for specific details.

| LINER ALLOY | FUEL TYPE | WARRANTY | INSTALLATION REQUIREMENTS |
|---------------------------------|-------------------------------------|-------------------|--|
| 316 Ti-Alloy Stainless Steel | Wood, coal | Lifetime warranty | Insulation required. See point 3, pages 6 and 7. |
| | Oil, wood pellet, Category 1 gas | Lifetime warranty | Insulation recommended but not required. See point 3, pages 6 and 7. |
| 304 Alloy Stainless Steel | Wood | Lifetime warranty | Insulation required. See point 3, pages 6 and 7. |
| | Wood pellet | Lifetime warranty | Insulation recommended but not required. See point 3, pages 6 and 7. |

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and Bears the Mark:

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