INSTALLATION AND MAINTENANCE INSTRUCTIONS FOR

HOMESAVER®

ROUNDFLEX™, OVALFLEX™, RECTANGLEFLEX™

FLEXIBLE STAINLESS STEEL RELINING PIPES

UL/ULC Listed Sizes: 3", 4", 5", 6", 7", 8", 9", 10", 11" and 12" diameters of RoundFlex, small and large OvalFlex, and RectangleFlex

(Even though Dial-A-Flex, FireplaceFlex, and other sizes of HomeSaver Flex are not UL/ULC Listed, use these instructions for installation guidelines.)

Manufactured Exclusively for: Copperfield Chimney Supply, Inc.,
304 South 20th Street, Fairfield, IA 52556

INTRODUCTION

The HomeSaver family of flexible stainless steel relining pipes are intended for use in conjunction with residential building heating appliances. Use 304 type stainless for wood pellet stoves, woodstoves, including fireplace inserts, and woodburning fireplaces. Type 316 stainless may be used for the above appliances, as well as coal-burning appliances, oil-burning appliances, and Category I gas appliances. See the last page of this booklet for warranty information for different fuels.

HomeSaver Flex is a high quality, UL/ULC Listed, 4-ply flexible stainless steel lining system designed for relining existing masonry chimneys and for certain factory-built chimney applications. Figure 1.

Figure 1

HomeSaver requires that the installation of HomeSaver Flex be performed only by an experienced professional who works with chimneys on a regular basis. HomeSaver RoundFlex, OvalFlex, and RectangleFlex are tested and listed to UL Standard 1777 (UL File #MH13768), in conjunction with ¼" and ½" HomeSaver Foil-Face FlexWrap insulations and HomeSaver InsulationMix or TherMix insulation, as explained in the following procedure. This liner is also ULC listed to ULC S635-00 for use in existing construction. HomeSaver's commitment to providing a product of superior quality is reflected in obtaining this UL/ULC Listing. The testing is very stringent, and UL/ULC ensures consistency of the product by regularly inspecting the manufacturing facility and materials. This commitment is also reflected in HomeSaver's excellent warranties. UL/ULC acceptance of the lining systems is void if these installation instructions are not followed.

These installation instructions must be followed to ensure the prevention of moisture from entering the liner, the space between the liner and factory-built chimney, and the chimney insulation. Use only the parts described in these installation instructions.

SECTION 1
How To Determine If A Reline Is Needed

A reline is advisable when:

- The chimney has missing or damaged flue tiles.
- The cross-sectional area of the flue of a chimney venting solid fuels with no walls exposed to the outside below the roofline is more than three times the cross-sectional area of the appliance flue collar.
- The cross-sectional area of the flue of a chimney venting solid fuels with one or more walls exposed to the outside below the roofline is more than two times the cross-sectional area of appliance flue collar.
- There are hairline cracks in flue tiles or mortar missing between flue tiles.
- The system has a history of repeated excessive creosote buildup.
- Deemed necessary by the appliance manufacturer.
- Deemed necessary by NFPA 211, NFPA 31, or NFPA 54.

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 portion of any structure within 10' (Figure 2).

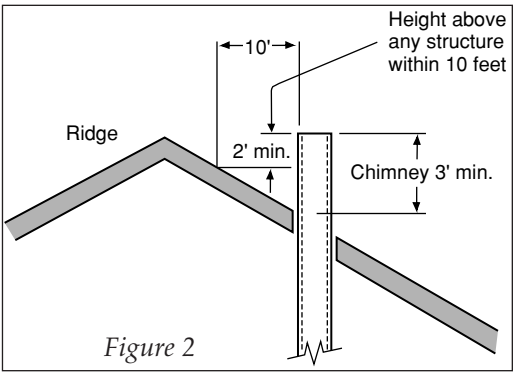

Figure 2

CLEARANCES – MASONRY CHIMNEYS

Airspace clearances between the masonry 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

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". Waiving this 2" clearance to 1" can only be done by the local building official issuing the building permit. In either case, 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 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, this 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" collar only. Only 6" HomeSaver Pro, HomeSaver UltraPro, or HomeSaver RoundFlex liner may be used.*

FLEX EXTENSION FROM CHIMNEY

The HomeSaver Flex should not extend more than 3" above the masonry chimney. Additional liner height above the masonry chimney may create condensation resulting in the formation of excessive creosote buildup. The 3" maximum also allows for thermal expansion of the liner when using a Gelco Knock-Down Cap or Chimney Protector Cap.

CONNECTING OTHER APPLIANCES

Do not connect gas or oil appliances to flues serving solid fuel burning equipment. Do not connect more than one solid fuel burning appliance to a single chimney flue. Be sure to consult the local authority having jurisdiction for any special code and permit requirements.

RAIN CAPS

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

SECTION 3
How To Determine What Materials You Will Need

1. WHAT SIZE OF HOMESAVER FLEX TO USE

HomeSaver Flex must be properly sized to the appliance. This means it must be sized as specified in the appliance manufacturer's instructions or its cross-sectional area shall not be less than the area of the appliance flue collar. Please refer to the chart in Figure 3, which gives the cross-sectional areas for 3" through 16" HomeSaver RoundFlex, as well as for RectangleFlex and small and large OvalFlex.

Only a 6" HomeSaver RoundFlex, Pro, or UltraPro liner may be used to line a factory-built chimney when being connected to a solid fuel burning insert or hearth stove. The minimum inside diameter of the factory-built pipe must be 8".

CROSS-SECTIONAL AREA FOR EACH SIZE AND SHAPE OF PIPE:

3" Round	7.06 sq. in.
4" Round	12.56 sq. in.
5" Round	19.64 sq. in.
6" Round	28.27 sq. in.
7" Round	38.48 sq. in.
8" Round	50.27 sq. in.
9" Round	63.62 sq. in.
10" Round	78.54 sq. in.
11" Round	95.03 sq. in.
12" Round	113.10 sq. in.
13" Round	132.73 sq. in.
14" Round	153.94 sq. in.
15" Round	176.72 sq. in.
16" Round	201.06 sq. in.
RectangleFlex.	54.63 sq. in.
Small OvalFlex	40.22 sq. in.
Large OvalFlex	52.97 sq. in.

All other square and rectangular sizes can be calculated by multiplying inside length by inside width.

Figure 3

For oil liner appliance sizing, consult the appliance manufacturer or NFPA 31. For gas appliance liner sizing, consult the appliance manufacturer or National Fuel Gas Code (NFPA 54).

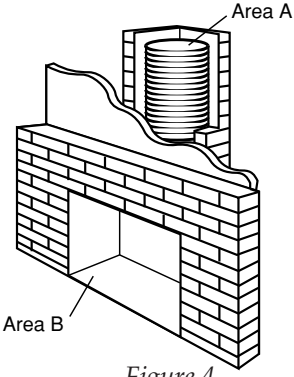

Figure 4

Sizing fireplace liners (Figure 4, previous page): If the chimney is straight, and at least 8' tall, the cross-sectional opening of the flue liner (Area A) for a round liner shall be no less than 1/12th of the fireplace opening (Area B). If the chimney is offset, or if RectangleFlex, OvalFlex, or other configurations of HomeSaver liners are being used, the flue liner shall not be less than 1/10th of the fireplace opening. Refer to NFPA211 for additional sizing specifications. In all cases, the authority having jurisdiction can mandate sizing.

2. WHAT ALLOY OF HOMESAVER FLEX TO USE

Use 304-alloy HomeSaver flex for wood and wood pellets; 316-alloy for wood, wood pellets, coal, oil, and Category I gas.

3. DETERMINING WHAT LENGTH OF HOMESAVER FLEX IS NEEDED

Determine the length of flex needed by lowering a weighted rope down the chimney to the position at which you wish your relining pipe to terminate. Remove and measure the rope. HomeSaver Flex will compress during the installation, therefore an additional 10% must be added to the overall length. Add another 3" of length for the installation of the top clamp, storm collar, and Guardian Cap or rain cap. Subtract this length from the height of the tee(s), if required. The maximum recommended height is 65'. Minimum height is 10'.

HomeSaver Flex is made from one continuous strip and is not under any tension, making it easy to cut. We recommend cutting HomeSaver Flex with a circular or reciprocating saw with a metal-cutting blade. You will notice there are grooves running around the pipe, formed by the interlocking process. Simply begin cutting in one of these grooves. Continue cutting until you come around through the groove to a spot right next to where you began your cut. Then simply cut across to meet your original beginning spot, and your cut is complete. File or grind any rough edges.

4. DETERMINING WHAT INSULATION TO USE

When relining a factory-built chimney, one wrap of ½" Foil-Face FlexWrap is required. For masonry chimneys, first determine if the chimney you are relining has at least 1" air space clearance between its exterior masonry surfaces and combustibles. If it does, you may insulate per the chart in Figure 5a, facing page. If it has less than 1" of air space clearance, or if you are unable to determine the clearance, you must insulate per the chart in Figure 5b, (page 8).

Note: When using FlexWrap for insulation, there is no airspace required between the insulation and the inside of the masonry chimney (or flue tile liner).

MINIMUM INSULATION REQUIREMENTS WHERE AT LEAST 1" OF EXTERIOR CLEARANCE TO COMBUSTIBLES IS PRESENT

APPLIANCE TYPE	FLEX CONFIGURATION			
	ROUNDFLEX	SMALL OVALFLEX	LARGE OVALFLEX	RECTANGLEFLEX
Coal appliance, insert, wood-burning appliance, or fireplace (UL 1777 Listing)	One wrap ¼" Foil-Face FlexWrap* or 1" of HomeSaver InsulationMix or TherMix* on all sides of the liner	One wrap ¼" Foil-Face FlexWrap* or 1" of HomeSaver InsulationMix or TherMix* on all sides of the liner	One wrap ¼" Foil-Face FlexWrap* or 1" of HomeSaver InsulationMix or TherMix* on all sides of the liner	One wrap ¼" Foil-Face FlexWrap* or 1" of HomeSaver InsulationMix or TherMix* on all sides of the liner
Pellet, oil, or Category I gas appliances	Insulation recommended, but not required	Insulation recommended, but not required	Insulation recommended, but not required	Insulation recommended, but not required

*These are minimums — more insulation is always acceptable.
You may also use ½" Foil-Face FlexWrap.

Figure 5a

5. WILL IT FIT?

Double check the fit before you proceed. Once you've gone through points 1 through 4, you must be sure your flex liner and the required insulation will all fit into the chimney. There are three steps in doing this:

A. Determine the inside dimensions of the flue you wish to reline.

B. Determine the "fully insulated" size of your flex (remember to add ¼" for the outside diameter of the flex).

C. Compare the sizes you determined in steps A and B. If the dimensions found in step A exceed those of step B, then you have proper fit and you may proceed. Let's look at steps A through C in more detail.

(a.) Measure the inside dimension of the flue. Be sure these dimensions are the same all the way down with no tapering or obstructions. The dimensions you ultimately use must be the smallest dimensions present inside the chimney.

(b.) Determine the "fully insulated" size.

1. For Foil-Face FlexWrap applications, just add 1" to the outside

MINIMUM INSULATION REQUIREMENTS WHERE LESS THAN 1" OF EXTERIOR CLEARANCE TO COMBUSTIBLES IS PRESENT				
	FLEX CONFIGURATION			
APPLIANCE TYPE	ROUNDFLEX	SMALL OVALFLEX	LARGE OVALFLEX	RECTANGLEFLEX
Coal appliance, insert, wood-burning appliance, or fireplace (UL 1777 Listing)	1 wrap of ½" Foil-Face FlexWrap* or Two wraps ¼" Foil-Face FlexWrap* or 1" of HomeSaver InsulationMix or TherMix* on all sides of the liner	1 wrap of ½" Foil-Face FlexWrap* or Two wraps ¼" Foil-Face FlexWrap* or 1" of HomeSaver InsulationMix or TherMix* on all sides of the liner	1 wrap of ½" Foil-Face FlexWrap* or Two wraps ¼" Foil-Face FlexWrap* or 1" of HomeSaver InsulationMix or TherMix* on all sides of the liner	1 wrap of ½" Foil-Face FlexWrap* or Two wraps ¼" Foil-Face FlexWrap* or 1" of HomeSaver InsulationMix or TherMix* on all sides of the liner
Pellet, oil, or Category I gas appliances	Insulation recommended, but not required	Insulation recommended, but not required	Insulation recommended, but not required	Insulation recommended, but not required

*These are minimums — more insulation is always acceptable.

Figure 5b

dimensions of your flex for each wrap of ¼" FlexWrap (it lofts to ½"); add 1½" to the outside dimensions of your flex when using one wrap of ½" FlexWrap (it lofts to ¾").

2. For HomeSaver InsulationMix or TherMix installations using RoundFlex, small and large OvalFlex, and RectangleFlex, just add 2" to your outside flex dimensions (don't forget to add ¼" for outside flex dimensions). This is the minimum cavity size you need to install RoundFlex, OvalFlex, or RectangleFlex and have the required 1" minimum of HomeSaver InsulationMix or TherMix on all sides.

(c.) Now simply compare the inside flue dimensions with "fully insulated" size dimensions. As long as the "fully insulated" size is smaller than the inside chimney dimensions, you know your installation will fit and you can proceed.

When using a 6" liner to reline an 8" minimum inside dimension factory-built chimney, there will be sufficient room for one wrap of ½" Foil-Face FlexWrap.

6. MORE ON INSULATION

The use of insulation around HomeSaver Flex will keep the liner temperature warmer, reducing heat transfer and helping to reduce creosote buildup, as well as reducing cold spots which will affect chimney performance. Insulation is required for a woodstove, woodburning insert, coal appliance, or fireplace reline. Although not required, it is recommended for pellet, oil, and Category I gas appliances.

TRIM CHART —
HOMESAVER® FLEX AND FLEXWRAP™ INSULATION

HomeSaver® Flex size to be used	Cut this width for first ¼" wrap	Cut this width for second (outer) ¼" wrap	Cut this width for ½" wrap
3" dia.	11¼"	12½"*	12¾"
4" dia.	14½"	16"*	16½"
5" dia.	18"	19½"*	19¼"
6" dia.	21½"	23½"*	22¼"
7" dia.	24¼"	26¼"**	25¼"
8" dia.	27½"	29½"**	28½"
9" dia.	30½"	32½"**	32¼"
10" dia.	34"	36"**	35¼"
11" dia.	37½"	39½"**	38½"
12" dia.	40½"	42½"**	41¼"
13" dia.	43½"	45¾" **	45"
14" dia.	46½"	49" ***	48"
15" dia.	49½"***	52" ***	51¼"***
16" dia.	53"***	55¼" ***	54½"***
Small OvalFlex	27½"	29½"**	28¾"
Large OvalFlex	34"	36"**	34½"
RectangleFlex	29"	31"**	29¾"

Other square and rectangular sizes should be measured and trimmed individually.

* Because you can cut both wraps from one width of 48" FlexWrap, you will only need one 25 ft. roll of FlexWrap for every 25 ft. of these diameter pipes when double-wrapping.

** You will need two 25 ft. rolls of FlexWrap for every 25 ft. of these diameter pipes when double-wrapping.

*** These diameters must be wrapped widthwise. The number of rolls you will need depends on your overall liner length.

Figure 6

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 Flex will help to center the liner in the chimney, in addition to the general benefits mentioned previously.

The working loft of ¼" FlexWrap is really ½", the working loft of ½" is ¾". The insulation thickness is almost the same for each of these choices, so the most convenient choice will usually be a single wrap of ½" FlexWrap.

To determine the width of FlexWrap needed, see Trim Chart, Figure 6, previous page. Adhesive and foil tape will also be needed to adhere the FlexWrap to the flex. FlexWrap must be covered with ArmorMesh to protect the FlexWrap from tearing during installation — see the chart at right, Figure 7, to determine what size is needed. Clamps for fastening the ArmorMesh at the top and bottom will also be needed — they can be created from a Make-A-Clamp brand clamping kit, or large radiator-type clamps which can be purchased at automotive supply stores.

WHICH SIZE ARMORMESH™ TO USE WITH DIFFERENT SIZES OF HOMESAVER® FLEX

HomeSaver® Flex size to be used	Use this size ArmorMesh™ with all insulation combinations
3" dia.	Small
4" dia.	Small
5" dia.	Small
6" dia.	Small
7" dia.	Large
8" dia.	Large
9" dia.	Large
10" dia.	Extra-Large
11" dia.	Extra-Large
12" dia.	Extra-Large
13" dia.	Extra-Large
14" dia.	Extra-Large
15" dia.	Extra-Large
16" dia.	Extra-Large
Sm. OvalFlex	Large
Lg. OvalFlex	Extra-Large
RectangleFlex	Large

Figure 7

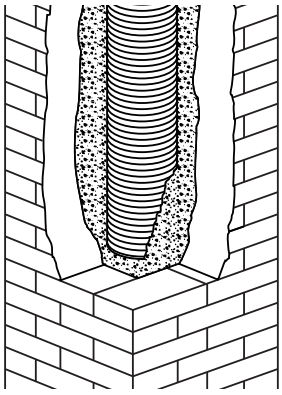

Figure 8

Using HomeSaver InsulationMix or TherMix

Remember, HomeSaver InsulationMix or TherMix insulation is only to be used when there is at least 1" of space between the flex and the interior of the chimney to be relined (because a minimum of 1" of HomeSaver InsulationMix or TherMix is required around the flex, see Figure 8).

HomeSaver Flex in conjunction with HomeSaver InsulationMix or TherMix insulation makes an efficient and safe relining system. These mixes are a specially formulated, dirt-like consistency chimney fill insulation.

The formula for determining the volume of insulation needed in cubic feet is:

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

Small OvalFlex $$\frac{(W'' \times D'' \times H'') - (40.2'' \times H'')}{1728}$$

Large OvalFlex $$\frac{(W'' \times D'' \times H'') - (53'' \times H'')}{1728}$$

RectangleFlex $$\frac{(W'' \times D'' \times H'') - (54.6'' \times H'')}{1728}$$

W = width of flue in inches

D = depth of flue in inches

H = height of flue in inches (note: convert from feet to inches)

π = 3.1416

R^2 = radius of pipe multiplied by radius of pipe

Dividing by 1728 converts the answer to the number of cubic feet of space you need to fill with HomeSaver InsulationMix or TherMix. Each bag of HomeSaver InsulationMix holds 2.5 cubic feet, so divide the final figure by 2.5 to determine the number of bags of HomeSaver InsulationMix you need. TherMix holds 2.4 to 3 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:

1. 8" = diameter of HomeSaver RoundFlex
   10" = width of flue
   12" = depth of flue
   (35 ft.) 420" = height of flue

   $$\frac{(10 \times 12 \times 420) - (3.1416 \times 16 \times 420)}{1728} = \frac{29{,}288.45}{1728} = 16.95 \text{ cubic feet}$$

   16.95 cubic feet ÷ 2.5 cubic feet/bag = 6.78 bags of HomeSaver InsulationMix

   16.95 cubic feet ÷ 2.4 cubic feet/bag = 7.07 bags of TherMix

2. 6" = diameter of HomeSaver RoundFlex
   8" = width of flue
   8" = depth of flue
   (16 ft.) 192" = height of flue

$$\frac{(8 \times 8 \times 192) - (3.1416 \times 9 \times 192)}{1728} = \frac{6859.32}{1728} = 3.97 \text{ cubic feet}$$

3.97 cubic feet ÷ 2.5 cubic feet/bag = 1.59 bags of HomeSaver InsulationMix

3.97 cubic feet ÷ 2.4 cubic feet/bag = 1.66 bags of TherMix

7. COMPONENTS

Flex installations should be finished at the top with a top plate, top clamp (or top/bottom support brackets), storm collar, and either a Guardian Cap, Inverted Cone Cap, regular Rain Cap, Gelco Knock-Down Cap, or Chimney Protector. (See page 25 for specifics on listed sizes for Gelco and Chimney Protectors).

If relining a factory-built chimney, a Factory-Built Liner Adaptor will be needed as part of the top termination. It is important these instructions are followed to ensure moisture is prevented from entering the liner and or the space between the liner and the factory-built chimney and the insulation.

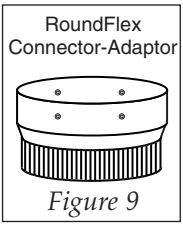

Figure 9

A flex connector-adaptor (Figure 9) is needed when connecting two pieces of HomeSaver Flex or as an optional method of terminating into a Heat-Fab Tee (Figure 13, page 17).

The adaptor allows a drip-free connection so any condensation within the pipe runs down into the appliance. It is required that four stainless pop rivets be used at every connection.

Flex installations should be finished at the bottom with a tee (woodstoves and pellet stoves); an insert boot or connector/adaptor (woodstove inserts); a plate, brackets, and support rods at the smoke chamber (fireplaces), or bottom insulation plug (fireplace) — see pages 14 – 22 for details.

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

HomeSaver Reline Job Shopping Lists and Work Proposal Forms are available to help in figuring the cost of materials.

SECTION 4
Before You Begin

The following tools and supplies are basic ones needed for your HomeSaver Flex installation:

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

Wear eye protection, gloves, and respirator whenever you're in contact with creosote, soot, mortar, or insulation as these may be harmful to your health. Caution must be used when working on a roof. Proper and safe scaffolding should be used for a safe installation. All ladders should be secured to the building. Check overhead for antennas, power lines, or other obstacles before erecting the ladder and installing the liner.

SECTION 5
Doing The Installation

1. 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. *WARNING: Incorporation of parts or materials not manufactured, supplied, or recommended by HomeSaver will not provide a UL/ULC Listed system.*

2. Inspect the masonry chimney for structural integrity before it is lined. HomeSaver liner shall be installed in a chimney with a minimum 4" of solid brick as specified in NFPA 211. Inspect the chimney 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.

Before relining a factory-built chimney, determine if the existing factory-built fireplace and chimney system has been installed correctly and 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, this must be remedied! Do *not* install a liner if the above requirements cannot be met!

3. Clean and remove all tar-glazed creosote and soot found on internal chimney walls and fireplace smoke chamber before the chimney is relined. This is important — if not removed, creosote is a fire hazard. It will also cause an unpleasant smell.

4. Test your fit. On any installation where minimum or near-minimum inside chimney dimensions are present (as explained in section 3, point 5, page 7), always test your fit before proceeding. Chimneys are irregular and hard to "sight" accurately. Take a small section of properly sized flex, say 2' in length, and wrap it with FlexWrap (either one wrap or two wraps depending on factors already outlined). Be sure this "test section" fits easily, without binding, through the entire length of the chimney to be lined.

5. If you are relining a fireplace, go to point 9, page 16.

If you are relining a woodstove or gas insert, the flex will terminate either in a connector-adaptor or right into a boot installed directly on the insert. (See Figure 16, page 21.)

If you are relining to a hearth stove, the liner will terminate into a tee, which should be located in the fireplace firebox. See facing page, starting with point 6 for information on connecting the tee.

If you are relining a woodstove, pellet stove, oil or gas appliance, and if the chimney to be relined has no existing opening for stovepipe, you will 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.

To make an initial opening in the chimney, choose a brick that is at the level you want the stovepipe to enter (at least 18" from unprotected combustibles unless a UL Listed wall penetration assembly or other approved method is used). The wall penetration assembly must be above the appliance.

Drill a series of holes in the mortar around the perimeter of the brick with a masonry drill bit. Knock remaining mortar free with a hammer and cold chisel. Remove the brick. Additional bricks are usually easier to remove than the first one. Remove only enough bricks so you can assemble the tee take-off to the flex tee.

Figure 10, facing page, shows a typical framing which would have to be done in a combustible wall next to the chimney. This framing requires a minimum of 12" of brick masonry surrounding the thimble on all sides. See NFPA 211 for more details. For solid fuel devices the NFPA "minimum

clearance to combustibles" is 18" for single-wall connectors. Consult NFPA 211 for clearances concerning gas and oil connectors.

If a UL Listed wall penetration assembly is used (as an alternative to Figure 10), it must be located above the heating appliance and may not be located directly behind the heating appliance.

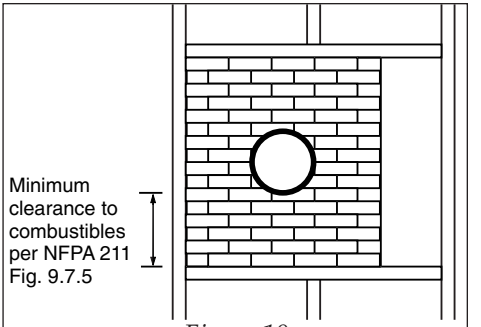

Figure 10

Clearances from solid fuel burning appliances to combustible materials must be strictly adhered to. Follow all local codes and manufacturers' instructions.

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.

6. The tee will need a cover. Place the cover over the outside of the bottom end of the tee. Use the four stainless rivets supplied with the cover and fasten the two parts together (Figure 11). In hearth stove applications, ½" #8 stainless steel screws may be used to connect the tee cover to the tee.

7. Place the flex tee and cover assembly into the opened flue hole and determine the location of the support rods. The support rods should be positioned slightly narrower

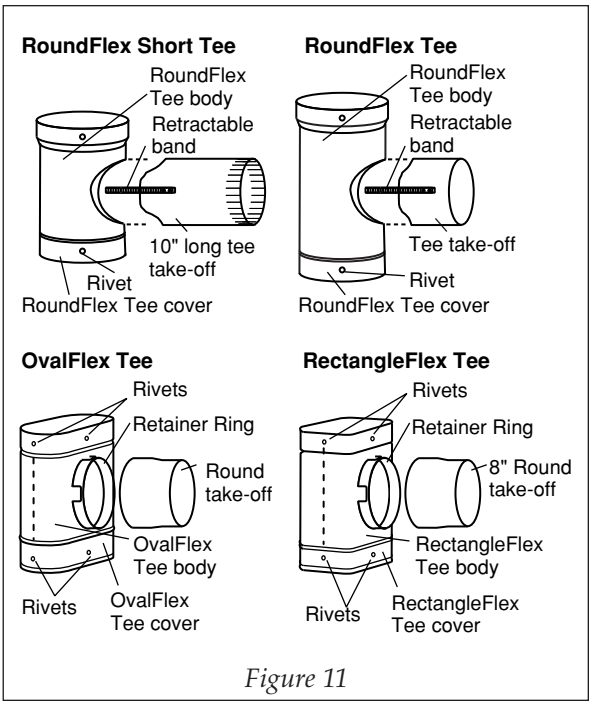

Figure 11

(about one inch on each side) than the diameter of the liner for proper support, so the tee cover can rest on them. Remove the flex tee and cover assembly. Drill the two holes all the way through the mortar joints penetrating about one inch deep into the mortar joints on the opposite side. Mortar the rods in place (Figure 12).

If a crimped take-off or a longer take-off is desired for the RoundFlex tees, a 6" or 8" diameter crimped take-off and a 6" diameter 22" long 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.

If you will be insulating with HomeSaver InsulationMix or TherMix, you will need to install a bottom plate to isolate and hold this insulation from entering below the liner installation. The use of this plate even when Foil-Face FlexWrap is used is still recommended. Measure the inside of your flue and cut a stainless steel bottom plate, see Figure 12 below. This will rest on the support rods.

8. Select the desired tee and attach it to the HomeSaver Flex with four pop rivets using the predrilled holes in the expanded portion of the tee.

Note: In a RoundFlex application, an alternative to using a HomeSaver Flex tee is to use a Heat-Fab tee (with welded take-off or a removable take-off) in conjunction with a flex connector-adaptor (Figure 13, page 17). On 9" – 12" diameter HomeSaver RoundFlex the only tee available is a Heat-Fab tee with a welded take-off. Thus, you'll always need a connector-adaptor when joining 9" – 12" flex to a tee.

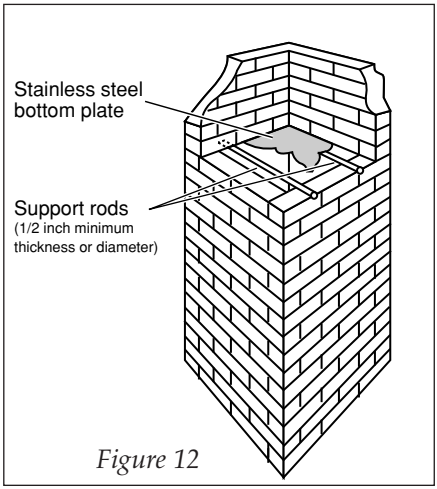

Figure 12

9. When using HomeSaver Flex to reline a fireplace, the flex is to be terminated at the bottom of the chimney flue just above the smoke chamber. Termination is illustrated in Figure 14, page 18. Support rods are installed as explained in point 7, above, with the added instruction to be sure the rods are spaced widely enough to not block the hole in your stainless steel bottom plate. Install your four support brackets by bolting to the flex in a position that will have them resting on the bottom plate, and so no more than 2" of flex is below the plate (Figure 14, page 18). As an alternative method of support, a HomeSaver Bottom Plate Leg Support System can be used instead of support rods. Full instructions come with each system. (See Figure 14, page 18).

RoundFlex, RectangleFlex, and OvalFlex Tees

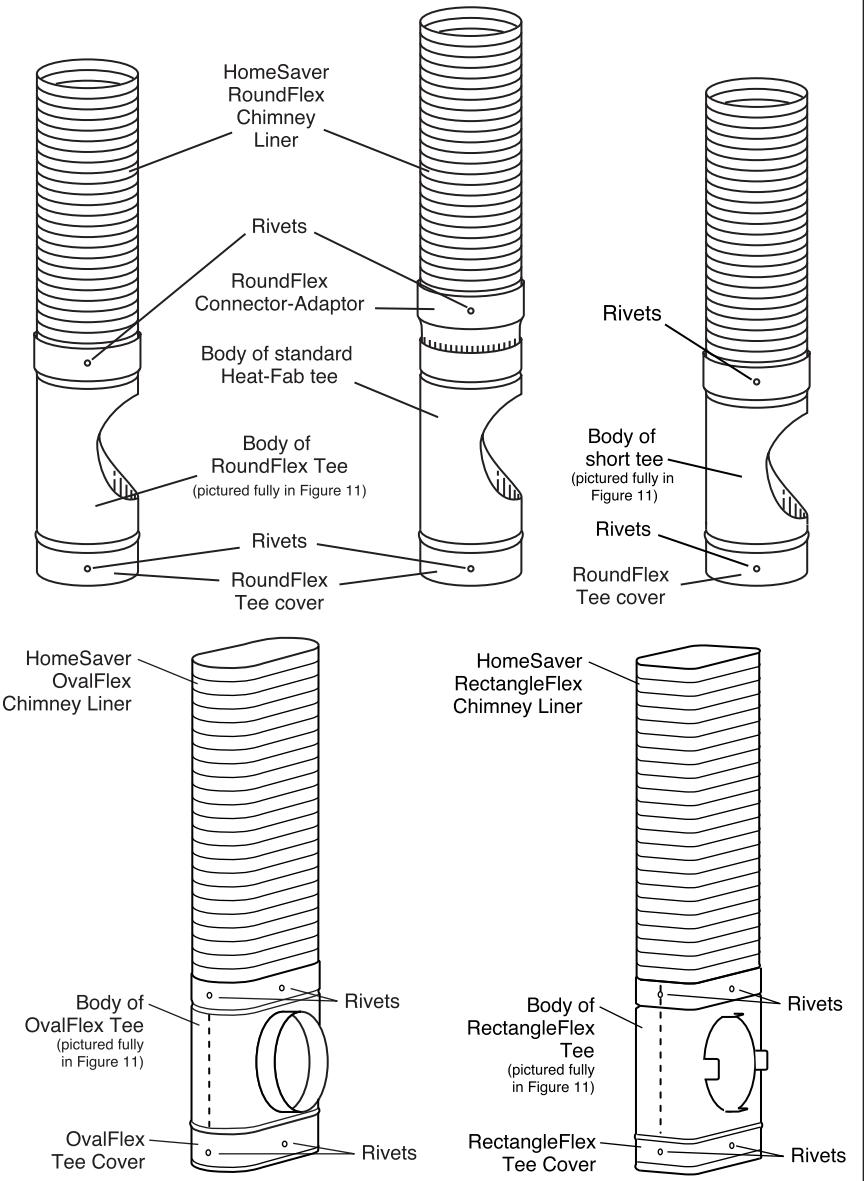

Figure 13

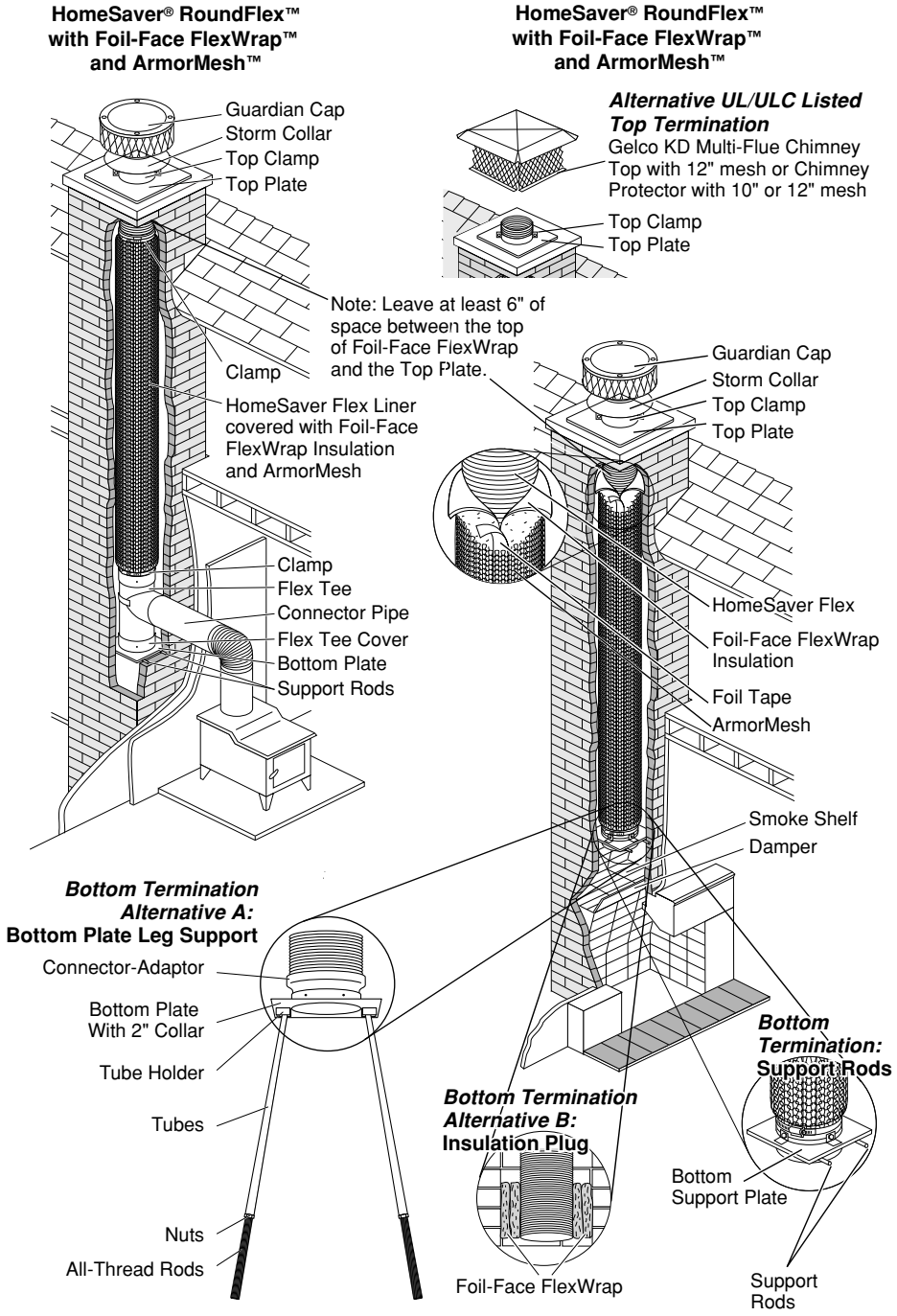
HomeSaver® RoundFlex™ with Foil-Face FlexWrap™ and ArmorMesh™
Guardian Cap
Storm Collar
Top Clamp
Top Plate
Note: Leave at least 6" of space between the top of Foil-Face FlexWrap and the Top Plate.
Clamp
HomeSaver Flex Liner covered with Foil-Face FlexWrap Insulation and ArmorMesh
Clamp
Flex Tee
Connector Pipe
Flex Tee Cover
Bottom Plate
Support Rods
HomeSaver® RoundFlex™ with Foil-Face FlexWrap™ and ArmorMesh™
Alternative UL/ULC Listed Top Termination
Gelco KD Multi-Flue Chimney Top with 12" mesh or Chimney Protector with 10" or 12" mesh
Top Clamp
Top Plate
Guardian Cap
Storm Collar
Top Clamp
Top Plate
HomeSaver Flex
Foil-Face FlexWrap Insulation
Foil Tape
ArmorMesh
Smoke Shelf
Damper
Bottom Termination Alternative A:
Bottom Plate Leg Support
Connector-Adaptor
Bottom Plate With 2" Collar
Tube Holder
Tubes
Nuts
All-Thread Rods
Bottom Termination Alternative B:
Insulation Plug
Foil-Face FlexWrap
Bottom Termination:
Support Rods
Bottom Support Plate
Support Rods

Figure 14

A second alternative is an insulation plug used to form a bottom plug (Figure 14, Alternative B, page 18). It must be tightly packed with HomeSaver Foil-Face FlexWrap to a depth of 6". Refractory cement may be used in between the layers of ceramic blanket to create the seal. Make sure there is adequate support at the top of the chimney. If the liner, including insulation weighs more than 150 lbs., double up on top plates and top/bottom support brackets.

10. Each flex component (flex tee, connector-adaptor, and tee cover, comes equipped with four pilot holes. To fasten, simply install the component on the flex, drill through the flex (using the pilot holes) with a 9⁄64" drill, insert rivets, and fasten.

11. If insulating with HomeSaver InsulationMix or TherMix, go to point 13, page 20.

A.) If insulating with FlexWrap, wrap lengthwise, creating one long vertical seam down the length of the flex. The foil side should face away from the pipe.

B.) Begin by rolling out a length of FlexWrap equal to 9" less than the length of the HomeSaver Flex to be used in the installation. Do this on a clean, dry surface suitable for working. If relining for a woodstove insert installed in a masonry fireplace, 1' to 2' may be left uninsulated immediately above the insert. When insulating for a liner installed in a factory-built chimney, the insulation must start 6" above the appliance flue collar and terminate 6" below the factory built liner adaptor.

C.) Trim the FlexWrap lengthwise with a sharp utility knife so that when wrapped around the flex, a tight butt joint, the length of the flex, is achieved. You want no gaps where the insulation butts together. Accuracy in cutting is important.

D.) Apply 3M Spray Adhesive or Rutland Water Glass to the HomeSaver Flex.

E.) Carefully wrap the FlexWrap around the flex. The adhesive will hold the FlexWrap in place.

F.) Thoroughly tape your butt end insulation seam with foil tape.

G.) If using ¼" FlexWrap where less than required clearances exist, repeat the above steps on a second wrap.

H.) Measure, cut, and install a length of HomeSaver ArmorMesh Insulation Cover over your FlexWrap insulation.

I.) Clamp the bottom end of the ArmorMesh at the bottom of the liner, just before it enters the tee.

J.) Grasp the unclamped end of the ArmorMesh and pull, working it tight from one end to the other. This will draw the ArmorMesh snug around the FlexWrap.

K.) Trim any excess FlexWrap and ArmorMesh from the top of your installation back to within 6" of where the flex will stick through the top plate or factory-built liner adaptor (see Figure 14, page 18). Clamp the ArmorMesh to the flex at this point. Leave no more than 3" of flex protruding above the flex top plate.

L.) Figure 15, shows the FlexWrap after it has been wrapped on the pipe and a clamp applied to the bottom of the insulation. You'll notice that the FlexWrap butt seam has been covered with foil tape. For illustration purposes, we have drawn the insulation in a "peeled away from the pipe" fashion to illustrate how the insulation is applied. Naturally, there would normally be a clamp at the top too.

Explanation: Due to normal thermal expansion, HomeSaver Flex may "grow" lengthwise in the chimney during use. Leaving 6" of uninsulated flex just below the top plate termination will allow this thermal expansion to take place without interference from the insulation.

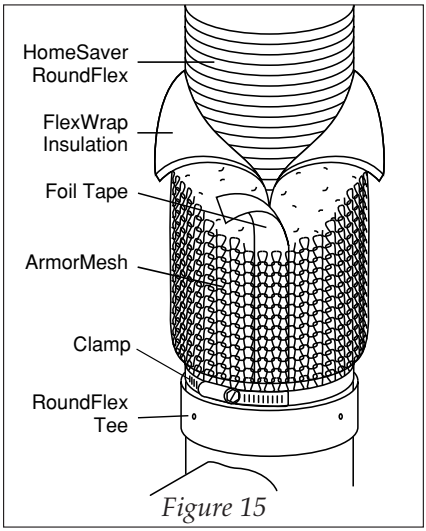

Figure 15

12. In installations using either a regular RoundFlex tee, or a RoundFlex Short tee with 10" long removable take-off, position the tee take-off with retractable band into the chimney opening. The retractable band should be opened fully so when the HomeSaver Flex and assembled components are lowered down the chimney, it can go through the retractable band. As you are lowering the HomeSaver Flex assembly from the roof into the chimney, someone should position himself at the chimney opening to secure the tee body to the take-off by tightening the retractable band. Go to point 14, page 22, if FlexWrap is used.

When relining to a wood or gas insert, a connector-adaptor will be needed to make the connection to the insert. As an alternative, a RoundFlex cast-iron insert boot may be used, Figure 16, facing page. Secure to the insert by bolts or screws. Go to point 15, page 22, if FlexWrap is used.

In fireplace installations, lower directly down the chimney until the brackets rest on the stainless bottom plate, if a plate is used. Go to point 15, page 22, if FlexWrap is used.

13. A.) When using HomeSaver InsulationMix or TherMix, follow the manufacturer's instructions very carefully. *Be sure to follow the instructions on the*

bag for mixing, drying, and curing requirements.

B.) When installing HomeSaver InsulationMix or TherMix, best results are obtained by taking care not to add too much water. It should have the consistency of damp potting soil. Maintain proper clearances between the liner and the inside of the masonry chimney by keeping the liner centrally located in the chimney. Leave at least 6" of space between the top of the insulation and the top plate for expansion of pipe. The insulation should be poured into the chimney, a small section at a time, and the liner gently rocked to verify that there are no large voids left uninsulated. Do not *pack* into the chimney.

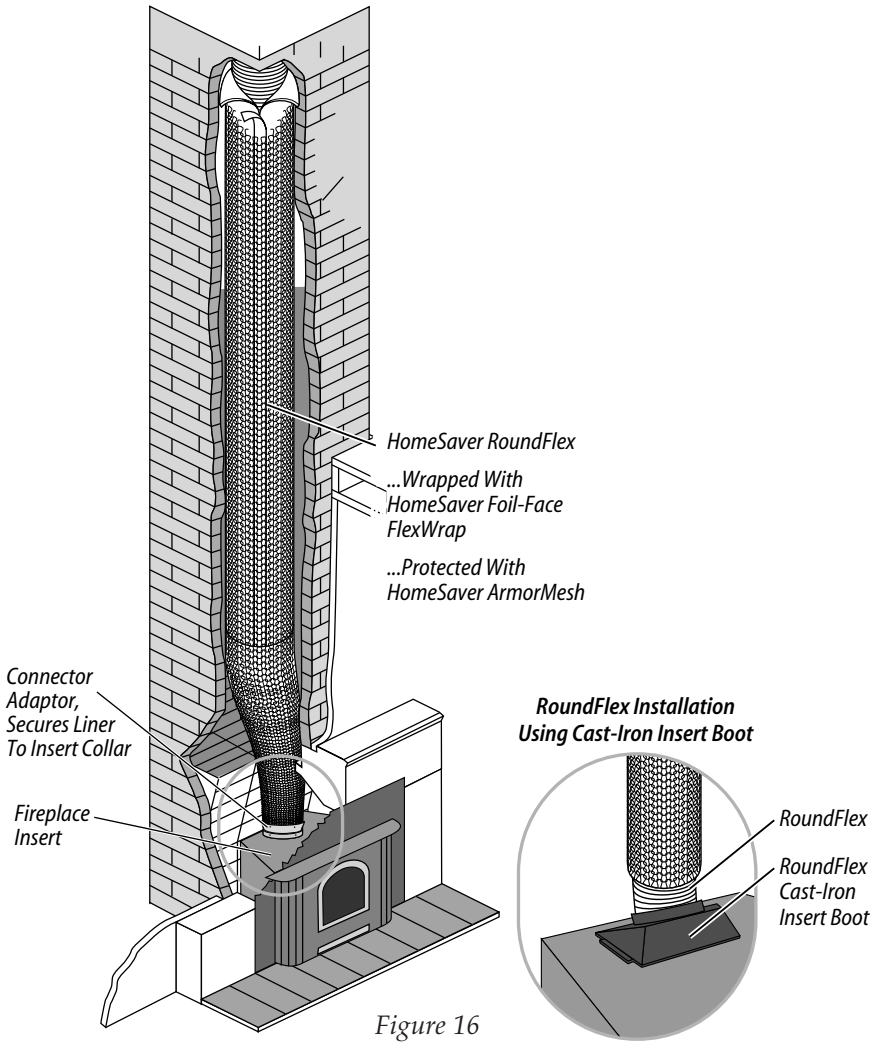

Figure 16

14. A.) In installations with tees, rebuild the chimney using bricks that are as square as possible. Fill mortar in tightly around the take-off to the tee, flush with the outside of the chimney.

B.) Make sure the connector pipe slides easily into the take-off before the mortar cures. Single-wall metal connectors must maintain a minimum of 18" clearance to combustibles. Connectors should have a rise of at least ¼" per foot (horizontal length of pipe) and shall be securely supported and joints fastened with sheet metal screws or stovepipe screws. The connector shall be readily accessible for inspection, cleaning, and replacement.

C.) The initial pipe connector will either be a direct connection to the take-off of the flex tee in a HomeSaver Flex 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.

For factory-built chimneys, see point 16, facing page.

For masonry chimneys, please see the following.

15. A.) Apply an exterior-rated silicone sealant to the perimeter of the top plate. Slide the top plate over the HomeSaver Flex until it rests squarely on the chimney top. Next, slide the top clamp over the HomeSaver Flex so it rests on the top plate. Secure and tighten the top clamp to the HomeSaver Flex. The top clamp will ride up and down with the HomeSaver Flex installation during thermal expansion. Alternatively, a set of top/bottom support brackets may be bolted to the flex and used instead of a top clamp.

B.) 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.

C.) Position the storm collar so it is above the top clamp. Securely tighten the storm collar. A bead of silicone sealant between the storm collar and the pipe will prevent water from entering the chimney through this joint.

D.) Attach the rain cap to the HomeSaver Flex with the supplied stainless steel screws. It is recommended that the rain cap be installed about 3" above the top of the chimney. Or…

E.) Insert a friction-fit Guardian Cap, Figure 14, page 18. Or…

F.) Insert an Inverted Cone Cap with band connection. Or…

G.) Some Gelco Knock-Down Tops or Chimney Protector Caps may be used to terminate a HomeSaver Relining Installation, see Figure 17, page 23. A storm collar is not required but may be used with these caps. Allow a maximum of 3" of HomeSaver Flex 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 (see Figure 17).

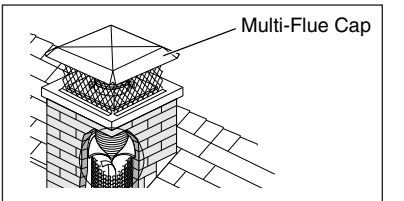

Figure 17

To install the cap you will need a caulking gun, drill, and a 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 3⁄16" drill bit and anchor the cap with the masonry screws to the crown.

16. When terminating at the top of a factory-built chimney, make sure the liner passes through the HomeSaver Factory-Built Liner Adaptor and extends 3" above it. Then 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. Squeeze the base of the HomeSaver Pro Guardian Cap and slide it down into the liner. See illustration in Figure 18.

17. After completing the installation where a new appliance is being installed, the initial firing precautions of the appliance manufacturer's instructions must be strictly followed.

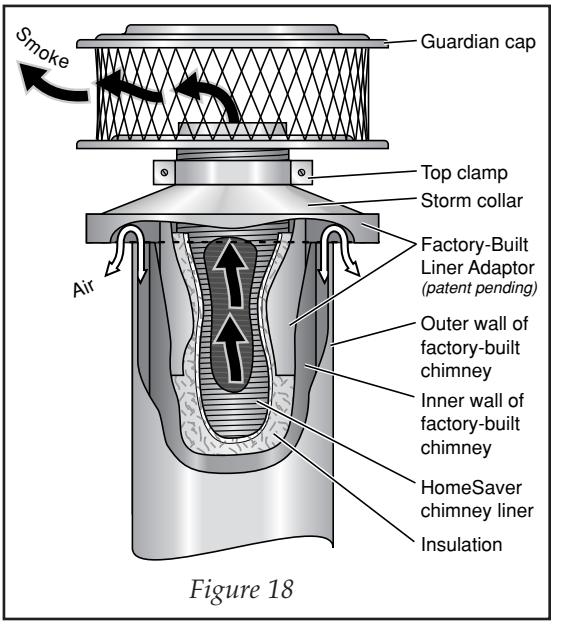

Figure 18


HomeSaver Guardian Cap
HomeSaver Top Clamp
HomeSaver Storm Collar
HomeSaver Factory-Built Liner Adaptor, item #14940
HomeSaver 6" Chimney Liner (RoundFlex, Pro, or UltraPro). ½" Foil-Face FlexWrap insulation and insulating components required, but not shown.
Double-wall factory-built chimney (minimum 8" inside diameter)
c UL us LISTED
AND LIFETIME WARRANTIED
HomeSaver Insert Adaptor (not needed for HomeSaver RoundFlex)
HomeSaver Insert Boot (not needed for most installations)

Figure 19

Maximum Liner Size Per Cap				
Screen Size	***Model Number***	***Description***	***With Storm Collar***	***Without Storm Collar***
9"×13"	11705	Chimney Protector with 10" mesh	4"	8"
13"×20"	11710	Chimney Protector with 10" mesh	6"	12"
13"×24"	11714	Chimney Protector with 10" mesh	6"	12"
13"×26"	11716	Chimney Protector with 10" mesh	6"	12"
13"×28"	11718	Chimney Protector with 10" mesh	6"	12"
13"×36"	11726	Chimney Protector with 10" mesh	6"	12"
14"×14"	11730	Chimney Protector with 10" mesh	9"	12"
14"×14"	13212	Knock-Down Model A Cap with 12" mesh	9"	12"
17"×17"	11740	Chimney Protector with 10" mesh	10"	12"
17"×17"	13222	Knock-Down Model B Cap with 12" mesh	10"	12"
17"×22"	11742	Chimney Protector with 10" mesh	10"	12"
17"×29"	11746	Chimney Protector with 10" mesh	10"	12"
17"×29"	13231	Chimney Protector with 12" mesh	10"	12"
17"×29"	13234	Knock-Down Model C Cap with 12" mesh	10"	12"
17"×35"	11750	Chimney Protector with 10" mesh	10"	12"
17"×41"	11754	Chimney Protector with 10" mesh	10"	12"
17"×41"	13248	Chimney Protector with 12" mesh	10"	12"
17"×41"	13244	Knock-Down Model D Cap with 12" mesh	10"	12"
17"×49"	11760	Chimney Protector with 12" mesh	10"	12"
17"×58"	11758	Chimney Protector with 10" mesh	10"	12"
17"×58"	13254	Knock-Down Model E Cap with 12" mesh	10"	12"

SECTION 6 – PLEASE READ AND SAVE
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 thinks its product is the best available for chimney relining. But starting with an excellent product is only the beginning. The installer then has to install it correctly, and the homeowner has to use it correctly in order to get the most safety and benefit from this product. For this reason, the following maintenance and usage instructions must be followed.

MAINTENANCE

1. The chimney connector pipe and HomeSaver Flex installation 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 creosote or soot has accumulated, 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 Flex. Some chemical chimney cleaners may be harmful to HomeSaver Flex, 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.

Therefore, advise homeowners to prevent creosote buildup with safe burning procedures — burn fires hot with flames, not smoldering with a lot of smoke. And keep the fire small — 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.

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

WARRANTY CHART*		
APPLICATION	304-ALLOY	316-ALLOY
Wood	Lifetime	Lifetime
Coal	Not warrantied	Lifetime
Wood Pellets	Lifetime	Lifetime
Category I Gas	Not warrantied	Lifetime
Oil	Not warrantied	Lifetime

* This chart is intended as a quick reference on the warranties — please read the actual written warranty cards for specific details.

Figure 20

This Product is Listed by
UNDERWRITERS LABORATORIES INC.
and Bears the Mark:
c UL US LISTED

304 S. 20th Street, Fairfield, IA 52556