

# heatilator®

THE WOODBURNING SPECIALISTS

Heatilator Inc.  
1915 W. Saunders Street  
Mt. Pleasant, IA 52641  
Division, HON INDUSTRIES

## TC34A, TC38A, TC42A INSTALLATION & OPERATING INSTRUCTIONS TUBE CIRCULATOR MASONRY FIREPLACE FORMS

### I. LISTING AND CODE APPROVALS

These Tube Circulator Masonry Fireplace Forms have been tested in accordance with Underwriters Laboratories Inc. Standards, and have been LISTED by them for installation and operation as described in these Instructions and in the Operating Instructions accompanying each unit.

Tube Circulator Masonry Fireplace Forms Catalog Numbers TC34A, TC38A and TC42A have been tested and LISTED for use with the Optional Components listed in Section II of these Instructions. These Optional Components may be purchased separately and installed either at the time of initial installation or at some later date.

Check with your local building code agency before you begin installation to ensure compliance with local codes, including the need for "permits" and follow-up inspections. If any problems are encountered regarding code approvals, or if you wish clarification of any of the instructions contained here, contact: Technical Services, Heatilator Inc., 1915 W. Saunders Street, Mt. Pleasant, Iowa 52641. HEATILATOR® is a registered trademark of Heatilator Inc., Division, HON INDUSTRIES.

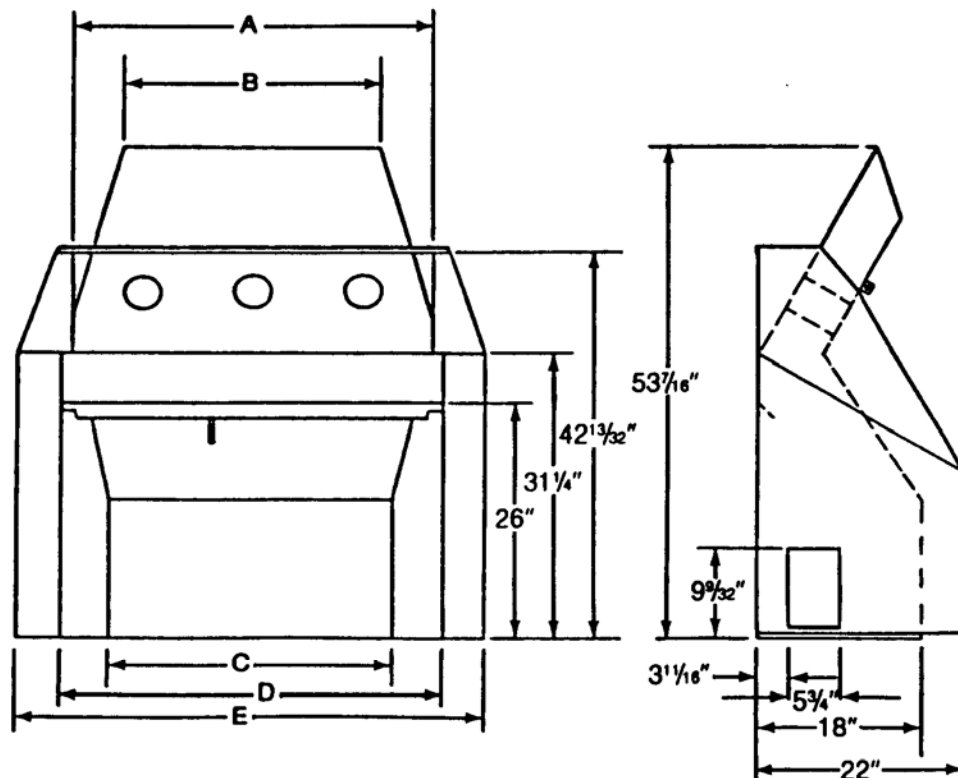
#### WARNING

**THIS HEATILATOR FIREPLACE AND ITS COMPONENTS ARE DESIGNED TO BE INSTALLED AND OPERATED AS A SYSTEM. ANY ALTERATION TO OR SUBSTITUTION FOR ITEMS IN THIS SYSTEM UNLESS ALLOWED BY THESE INSTALLATION INSTRUCTIONS WILL VOID THE UNDERWRITERS LABORATORIES LISTING AND MAY VOID THE PRODUCT WARRANTY. IT MAY ALSO CREATE A HAZARDOUS INSTALLATION. READ THROUGH THESE INSTRUCTIONS THOROUGHLY PRIOR TO STARTING YOUR INSTALLATION AND FOLLOW THEM CAREFULLY THROUGHOUT YOUR PROJECT.**

## II. DESCRIPTION OF THE FIREPLACE SYSTEM

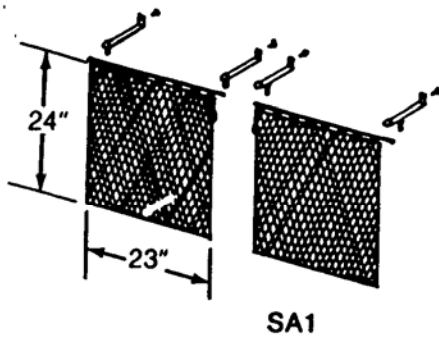
Catalog Number	Description
TC34A	34" Front Opening Tube Circulator Masonry Fireplace Form
TC38A	38" Front Opening Tube Circulator Masonry Fireplace Form
TC42A	42" Front Opening Tube Circulator Masonry Fireplace Form
SA1	Screen Kit
40AK	Outside Air Kit
MA11	Ash Dump Kit
MA16	Cleanout Door Kit
GH2	Inlet Grille Kit
GH35	Outlet Grille Kit
FK50	Fan Kit
BC10	Motor Speed Control Kit
RL34	34" Refractory Liner Kit
RL38	38" Refractory Liner Kit
RL42	42" Refractory Liner Kit

### TC34A, TC38A, TC42A TUBE CIRCULATOR MASONRY FIREPLACE FORM

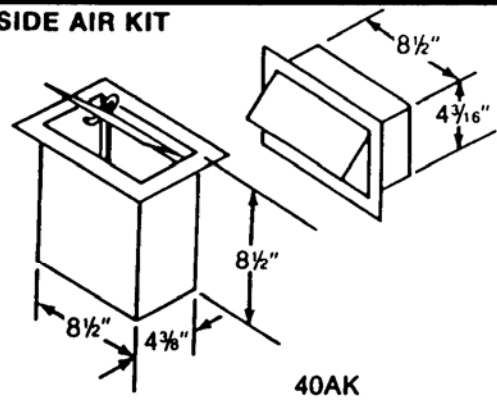


CAT. NO.	A	B	C	D	E
TC34A	31"	20 <sup>7</sup> / <sub>16</sub> "	23"	34"	42 <sup>3</sup> / <sub>4</sub> "
TC38A	35"	24 <sup>7</sup> / <sub>16</sub> "	27"	38"	46 <sup>3</sup> / <sub>4</sub> "
TC42A	39"	28 <sup>7</sup> / <sub>16</sub> "	31"	42"	50 <sup>3</sup> / <sub>4</sub> "

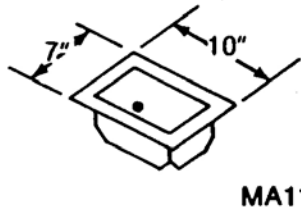
**SCREEN KIT**



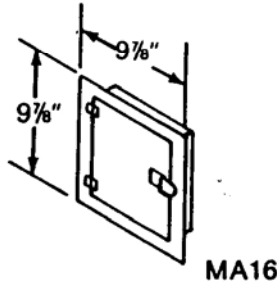
**OUTSIDE AIR KIT**



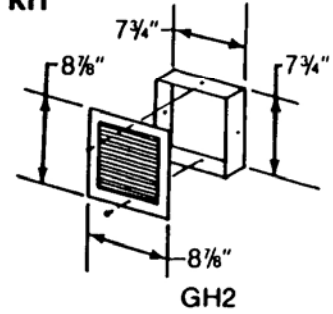
**ASH DUMP KIT**



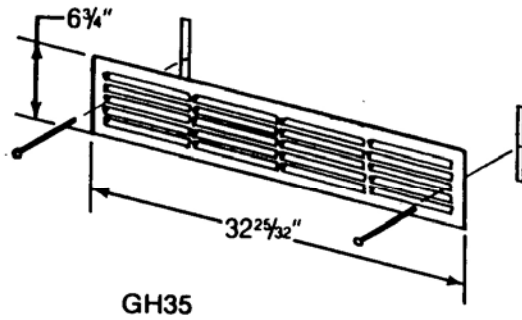
**CLEANOUT DOOR KIT**



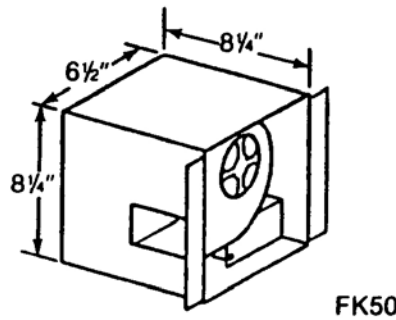
**INLET GRILLE KIT**



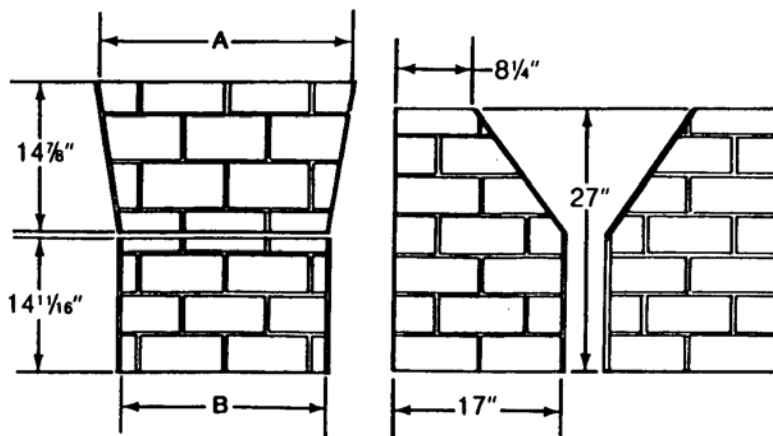
**OUTLET GRILLE KIT**



**FAN KIT**



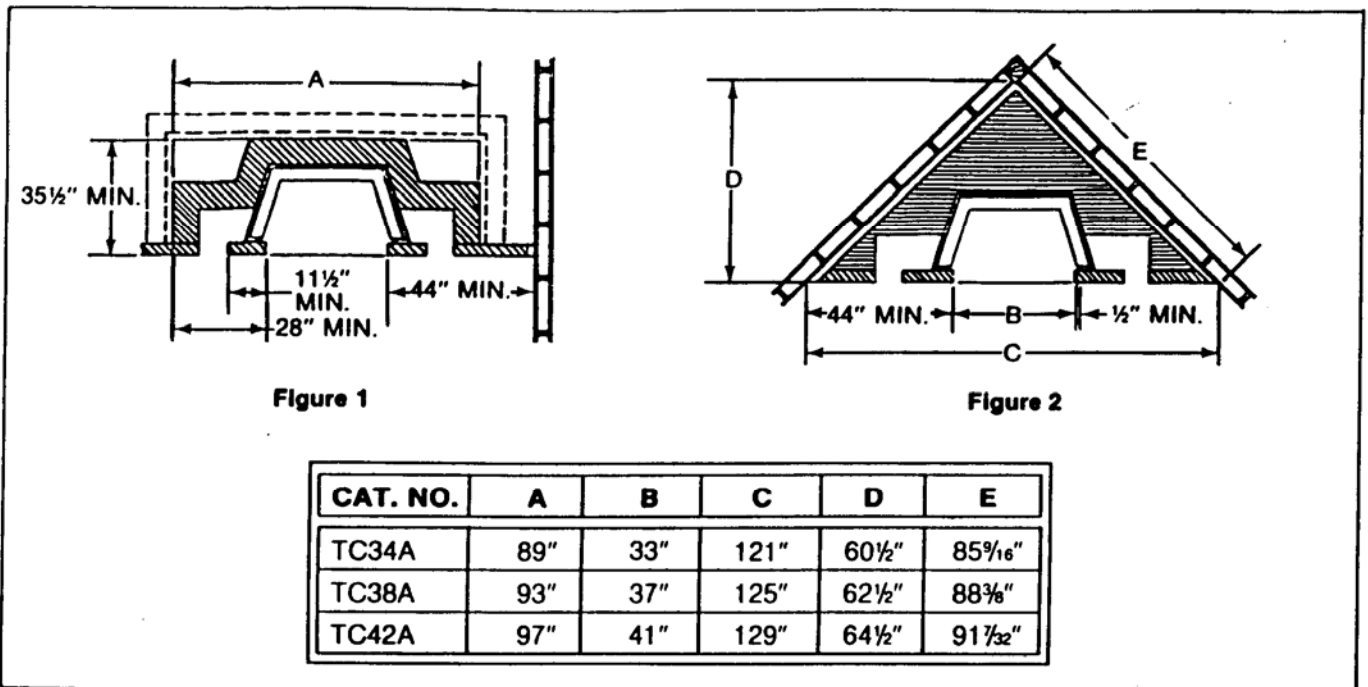
**REFRACTORY LINER KIT**



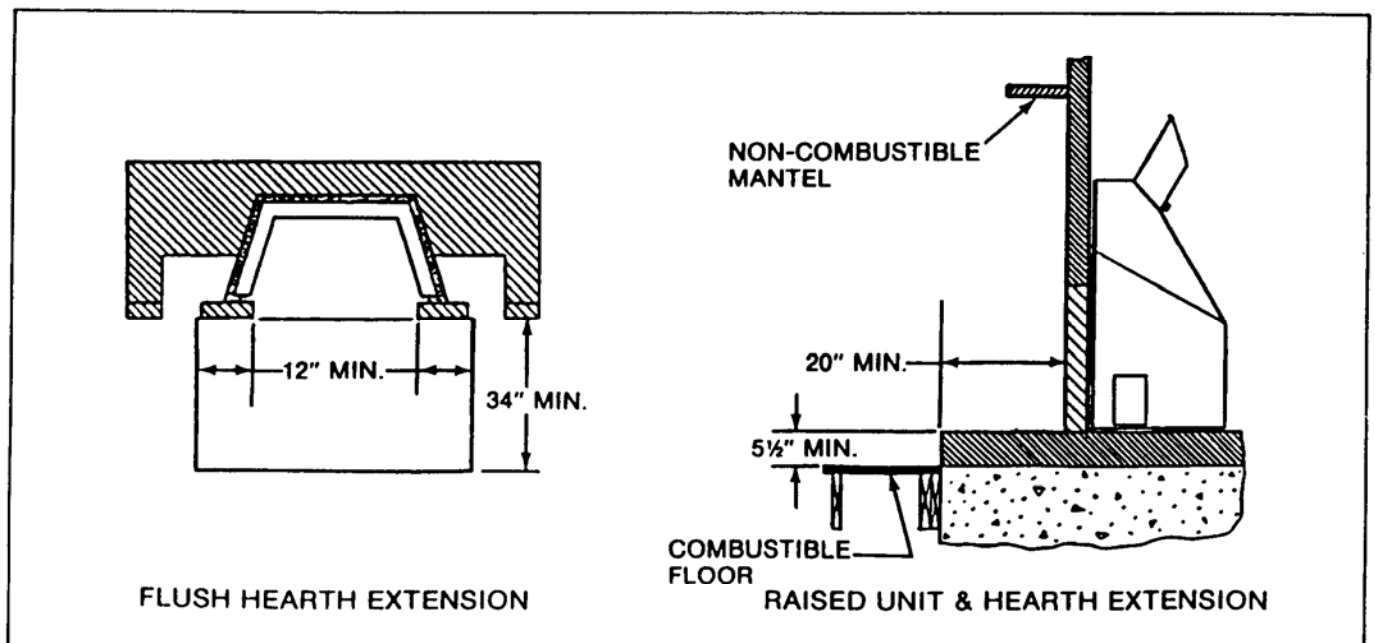
CAT. NO.	A	B
RL34	26 5/8"	21 1/2"
RL38	30 5/8"	25 1/2"
RL42	34 5/8"	29 1/2"

### III. LOCATING THE FIREPLACE

A fireplace may be located in virtually any room within a house, however, minimum clearances must be maintained to reduce the potential of a fire hazard. The clearances to combustible side walls are illustrated in Figures 1 and 2.



Minimum hearth extension dimensions for the units are illustrated in Figure 3. The hearth extension should be built over the fireplace foundation and be composed of non-combustible materials. The hearth extension must extend 12" minimum beyond each side of the fireplace opening, and depending on the height of the hearth area above the combustible floor in front of the unit, must have an overall depth of 34" minimum for a flush installation, or a 20" depth if the hearth extension has a minimum height of 5½".



**Figure 3**

**WARNING**

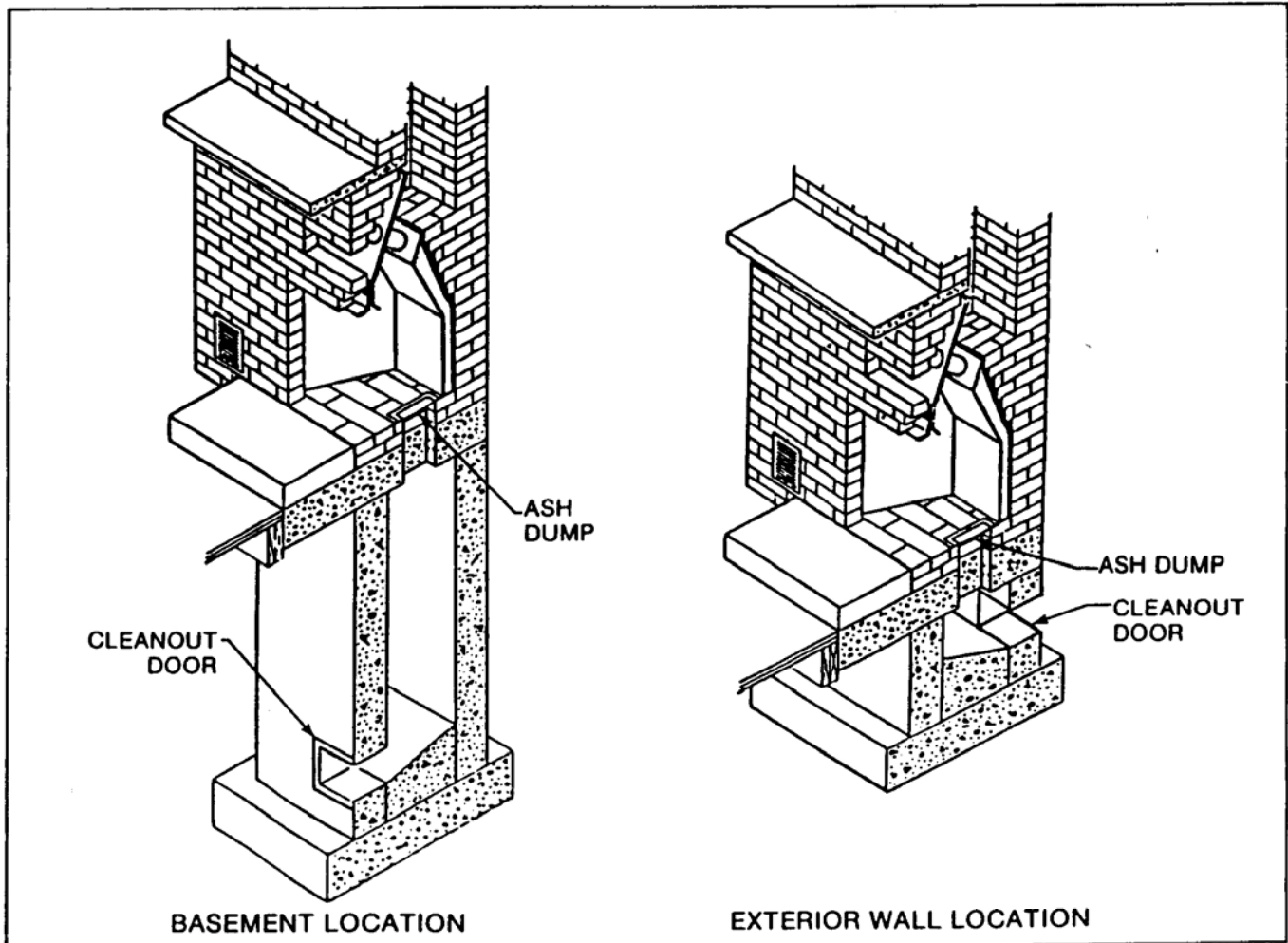
**MINIMUM HEARTH EXTENSION DIMENSIONS ARE SHOWN IN FIGURE 3. THE HEARTH EXTENSION MUST EXTEND A MINIMUM OF 12 INCHES BEYOND THE FIREPLACE OPENING AND BE AT LEAST 20 INCHES BEYOND THE FIREPLACE HEARTH. ALL CONSTRUCTION BENEATH THE FIREPLACE, FIREPLACE HEARTH, AND THE HEARTH EXTENSION MUST BE OF NON-COMBUSTIBLE MATERIAL.**

**IV. FOUNDATION**

Due to the weight of this fireplace and its chimney system a footing must be provided to properly support the weight of the finished fireplace. Form and construct a footing in accordance with applicable building codes in your area. Minimum foundation dimensions required usually are 8" minimum thickness for a one-story chimney installation, 12" min. thickness for a two-story chimney. The foundation should extend 6" minimum beyond the rear and side masonry walls of the fireplace. The foundation may be reinforced with 1/2" steel rods placed in a grid pattern.

**WARNING**

**ALWAYS CONSULT WITH YOUR LOCAL BUILDING CODE AGENCY FOR APPLICABLE LOCAL CODE REQUIREMENTS. WHEN REQUIRED BY A BUILDING CODE, VERTICAL REINFORCING RODS SHOULD BE SET IN THE FOUNDATION AND CHIMNEY CONSTRUCTION.**



**Figure 4**

### Ash Dump MA11/Cleanout Door MA16.

If an Ash Dump with Cleanout Door is to be utilized, see Figure 4 for suggested construction. The Cleanout Door may be located in a basement or on an exterior wall of the house in the masonry wall.

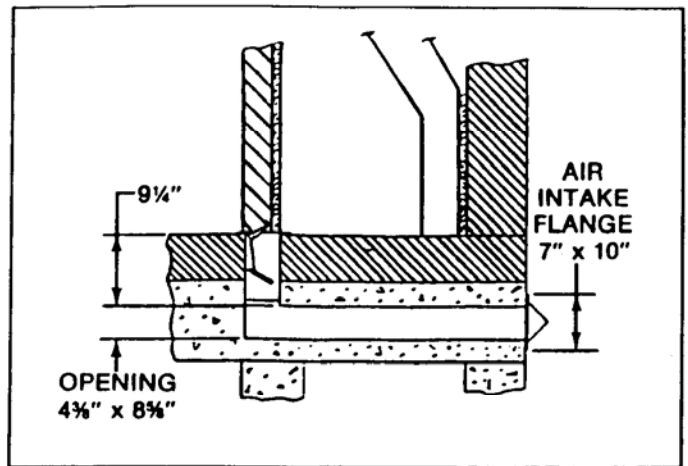


Figure 5

### Outside Air Kit 40AK.

Many areas require that outside combustion air be installed on all new fireplaces. If this feature is desired, see Figure 5 for typical construction showing the air intake passage beneath the fireplace hearth. The opening area should be approximately 4 3/8" x 8 3/8". The Outside air supply to the fireplace should be located just beyond the fireplace hearth and midway between the fireplace opening. Seal all cracks against cold air entry. Figure 6 illustrates the hearth configuration to be used if both Outside Air and an Ash Dump are used.

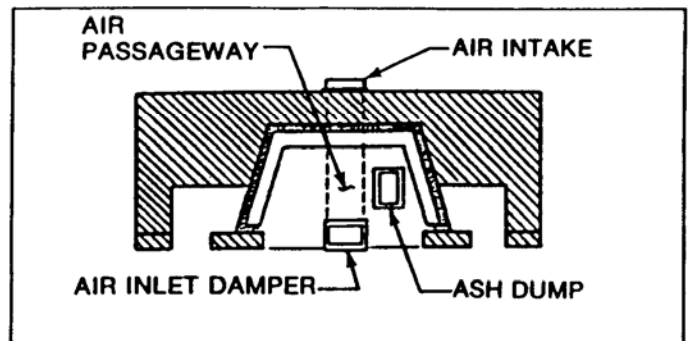


Figure 6

### WARNING

**WHEN LOCATING THE FIREPLACE IN A SPACE PROJECTING INTO A GARAGE, THE OUTSIDE AIR MUST NOT BE TAKEN FROM THE GARAGE SPACE. EXHAUST PRODUCTS OF GASOLINE ENGINES ARE HAZARDOUS.**

**DO NOT INSTALL OUTSIDE AIR DUCTS SUCH THAT THE AIR MAY BE DRAWN FROM ATTIC SPACES, BASEMENTS, OR ABOVE THE ROOFING WHERE OTHER HEATING APPLIANCES OR FANS AND CHIMNEYS EXHAUST OR UTILIZE AIR. THESE PRECAUTIONS WILL REDUCE THE POSSIBILITY FOR SMOKING OR FLOW REVERSAL.**

## V. INSTALLING FIREPLACE FORM

### WARNING

**BEFORE STARTING, DO THE FOLLOWING:**

- 1. WEAR GLOVES AND SAFETY GLASSES FOR PROTECTION.**
- 2. KEEP HAND TOOLS IN GOOD CONDITION. SHARPEN CUTTING EDGES AND MAKE SURE TOOL HANDLES ARE SECURE.**
- 3. ALWAYS MAINTAIN THE MINIMUM AIR SPACE REQUIRED TO THE ENCLOSURE TO PREVENT FIRE.**

Place a single layer of firebrick over the concrete slab in a configuration to fit under the Fireplace Form's shape. The Ash Dump, if used, should be set level with the firebrick.

#### CAUTION

**THIS FIREPLACE FORM IS INTENDED FOR DIRECT EXPOSURE TO THE WOOD FIRE WITH NO LINING OF THE INTERIOR WALLS WITH FIREBRICK. A FIREBRICK FLOOR OR OTHER HIGH TEMPERATURE MASONRY PRODUCT MUST BE USED AS A BASE ON WHICH THE FORM RESTS. JOINTS BETWEEN FIREBRICK MUST BE LESS THAN 1/4" AND USE FIRECLAY MORTAR. HIGH TEMPERATURE MASONRY PRODUCT IS NOT REQUIRED FOR THE HEARTH EXTENSION.**

A decorative gas appliance complying with the National Fuel Code ANSI Z223.1-1980 may be installed through the floor in which the Fireplace Form rests. Provision for piping and control valves requires preplanning and should be installed when constructing the foundation. Do not drill through the Fireplace Form - drilling a hole through the Fireplace Form could create a hazard and voids the listing and warranty.

#### CAUTION

- 1. WHEN USING THE DECORATIVE APPLIANCE, THE FIREPLACE DAMPER MUST BE SET IN THE FULLY OPEN POSITION.**
- 2. A FULLY OPEN DAMPER ENSURES PROPER VENTING OF COMBUSTION PRODUCTS.**

After the firebrick inner hearth is set, place the Fireplace Form on a thin layer of cement mortar spread on the firebrick floor. This will help to seal the bottom of the unit and will also aid in leveling the unit.

The Fireplace Form may be covered with a maximum of 1" of insulation if desired, but is not required. Masonry must be kept a minimum of 1" away from the metal Fireplace Form to allow the Form to expand and contract without cracking the masonry. If insulation is used, it must be cut out around air inlets and outlet and must not block these openings in any way.

To begin the brick work, lay the first course of brick so it extends 1/2" to 1" beyond both sides of the firebox opening. Continue setting brick, positioning the air inlet grilles in place.

See Figure 7, which illustrates the minimum spacing of air inlets from the Fireplace Form opening.

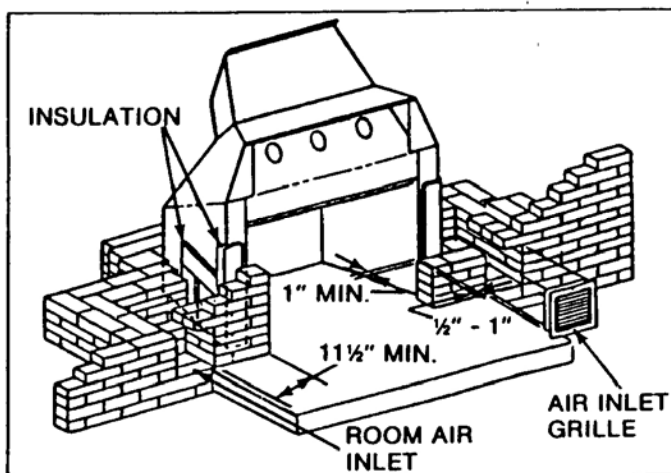


Figure 7

If desired, the air inlets can be constructed from masonry materials. See Figure 8. The inlet area of this type duct should be equal to that of the Inlet Grille (GH2), or 30 sq. inches. To install Grilles, first assemble the Grille to the housing. Do not overtighten screws on the Grille face to the point of bending. Place the housing into position. Build masonry around the Grille housing, and level the Grille as required. After masonry has set, remove the Grille faces to prevent damage during the rest of construction.

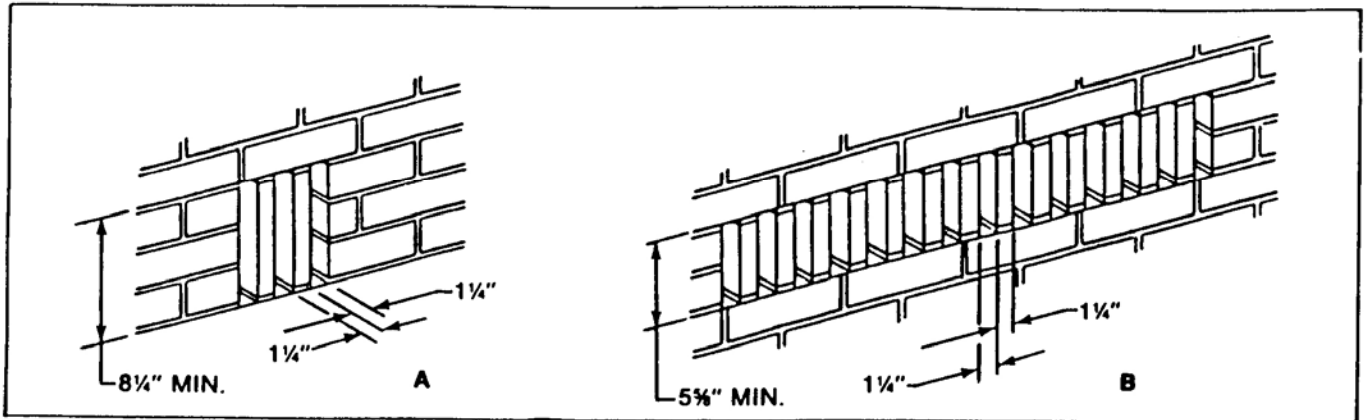


Figure 8

Construct air passages to the unit, taking care to smooth the insides of these passages with mortar, which will increase the air flow to the unit. These air passages may be alternately constructed from metal.

#### Fan Kit FK50

If it is desired to increase the heat circulation of your fireplace, a Fan Kit (FK50) is recommended. Use air Inlet Grilles (GH2) with the Fan Kit. The air Inlet Grilles will allow later access to the Fan Kit if maintenance is needed. Form the Grille opening as specified above, and install the fan box directly behind this opening. Form an air passage between the fan box and the unit. The fan box may be enclosed with masonry as shown in Figure 9. See separate FK50 Instructions for wiring information and further details. An optional Motor Speed Control (BC10) is available for use with this Fan Kit.

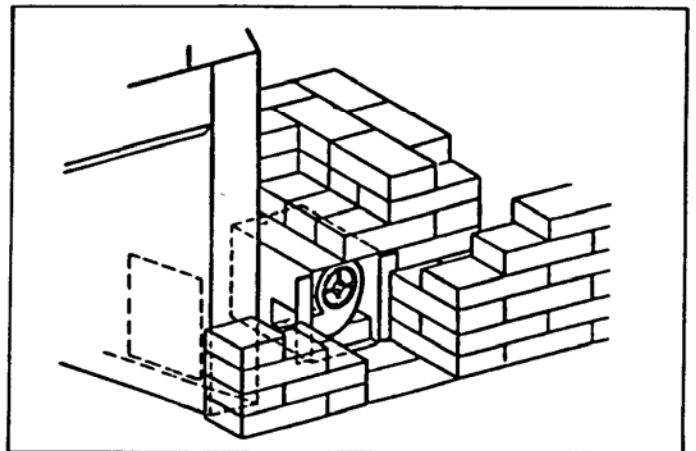


Figure 9

Continue laying masonry around the unit and up to the top of the Fireplace Form opening. Masonry must have an 8" minimum thickness surrounding the Fireplace Form. Maintain the required minimum 1" clearance between the masonry and the metal Fireplace Form. See Figure 10. Seal all gaps between the Fireplace Form and the masonry with insulation.

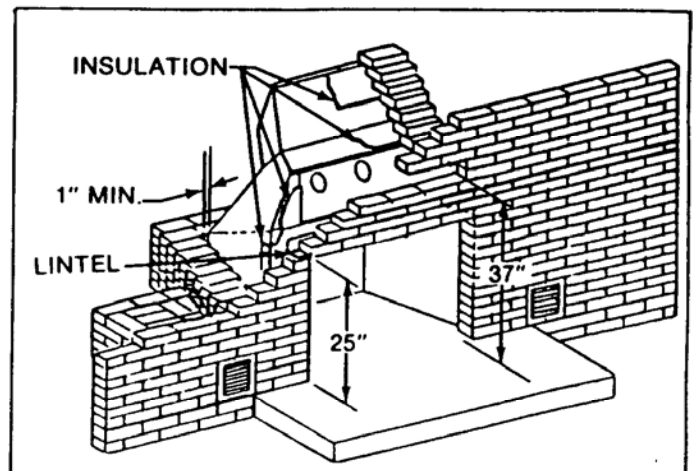


Figure 10



The finished masonry opening height should be approximately 25" from the hearth. To support the masonry over the Fireplace Form front opening, an angle iron lintel must be used. Seal the space between the lintel and the Fireplace Form with insulation.

The Outlet Grille (GH35) should be installed directly above the Fireplace Form opening and approximately 37" from the hearth. Secure the Grille with the brackets provided. Optionally, the Outlet Grille may be constructed of masonry materials. See Figure 8. The outlet area of this duct must be a minimum of 94 sq. inches.

**WARNING**

**THESE FIREPLACE FORMS ARE DESIGNED TO ALLOW THE HEATED AIR SURROUNDING THE FIREBOX TO EXIT AT THE TOP FRONT OF THE FORM, AND BE DIRECTED INTO THE LIVING SPACE OF THE HOME. BLOCKING THESE OPENINGS OR NOT ALLOWING THIS AIR TO EXIT THE FIREPLACE FORM MAY CREATE A FIRE HAZARD OR SHORTEN THE USEFUL LIFE OF THE INSTALLATION. NEVER USE COMBUSTIBLE MATERIALS TO LINE THESE PASSAGES. SEAL ALL GAPS BETWEEN THE FIREPLACE FORM AT THE FRONT AND SIDE WITH MORTAR AND INSULATION TO PREVENT HEAT LEAKS.**

Continue laying masonry around the Fireplace Form, and begin corbelling the masonry back with the dome of the smoke chamber and to the flue lining.

**CAUTION**

**ALL MASONRY MUST BE SELF-SUPPORTING - MASONRY MAY NOT REST ON THE FIREPLACE FORM.**

If a mantel is desired, it must be positioned 55½" to 62" from the floor of the firebox. See Figure 11. The mantel must be constructed of non-combustible materials only.

**VI. INSTALLING CHIMNEY**

A flue liner of sufficient size must be used with each Tube Circulator Masonry Fireplace Form and each fireplace must have a separate flue. Multiple flues may be built into a single chimney, but must be separated by a minimum of 4" of masonry. Table 1 gives the minimum sized flue liner that must be used with each Fireplace Form. If this size is not available in your area, use the next larger size. Never use an undersized flue liner.

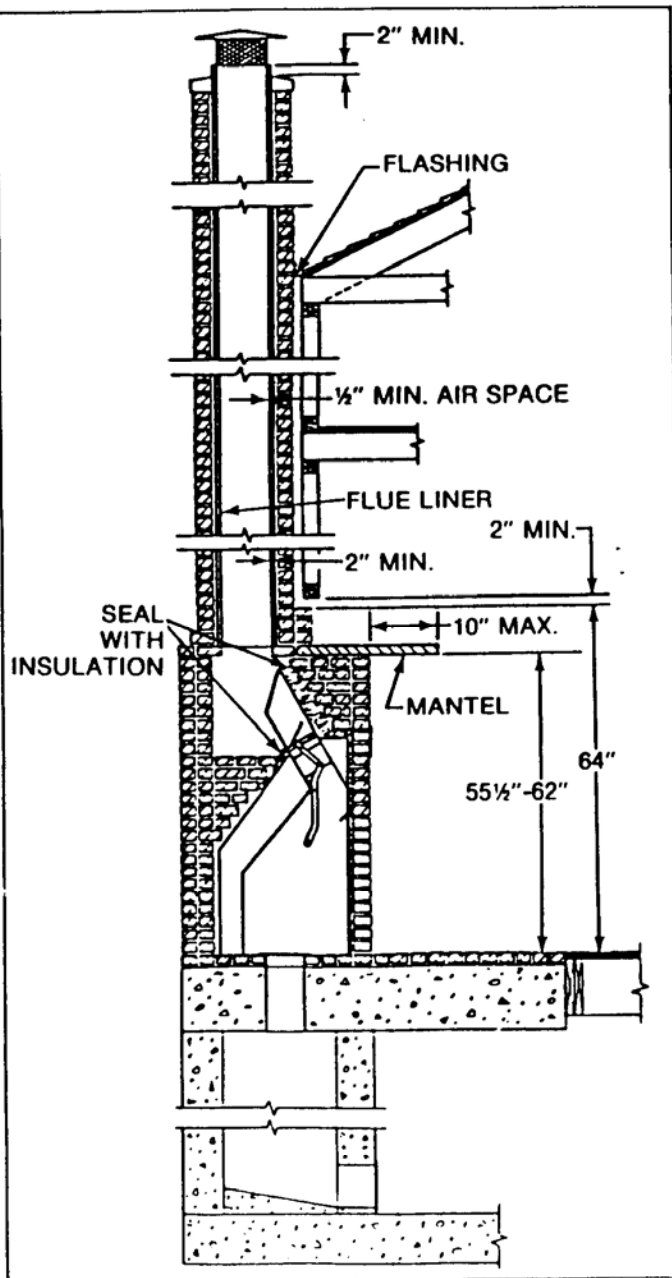


Figure 11

TABLE 1

(Dimensions in Inches)

Minimum Flue Liner Dimensions (Outside)			
	TC34A	TC38A	TC42A
Non-Modular	13 x 13	13 x 17 $\frac{1}{4}$	13 x 17 $\frac{1}{4}$
Modular	11 $\frac{1}{2}$ x 15 $\frac{1}{2}$	15 $\frac{1}{2}$ x 15 $\frac{1}{2}$	15 $\frac{1}{2}$ x 15 $\frac{1}{2}$

The tile flue liners should begin approximately two courses of brick above the dome of the Fireplace Form. See Figure 11.

**CAUTION**

**THE FLUE LINER MUST BE SUPPORTED BY MASONRY CONSTRUCTION - NOT BY THE FIREPLACE FORM.**

Keep the damper open during the construction of the chimney, checking periodically to be sure it opens and closes freely. The flue should have a smooth, unobstructed passageway for proper draft. Clay flue linings used should conform to ASTM C315, or equivalent.

A minimum of 4" thickness of solid masonry material, separated by a 1/2" minimum air space from the flue liner, must be built around the flue liners of the chimney. The flue liner should run as straight up as possible. Offsets must not exceed 30° from vertical, and the flue liner joints must be cut to insure a tight fit. The masonry at the top of the chimney should be capped, with at least 2" of the flue liner extending beyond the cap. Chimney that passes through combustible construction must have a 2" minimum air space clearance from masonry to combustibles. See Figure 11.

The minimum chimney height above the roof top is specified by building codes. These specifications are summarized in what is known as the "Ten Foot Rule". This rule states:

1. If the horizontal distance from the side of the chimney to the peak of the roof is 10 feet or less, the top of the chimney must be at least 2 feet above the peak of the roof, but never less than 3 feet in height above the highest point where it passes through the roof. See Figure 12.
2. If the horizontal distance from the side of the chimney to the peak of the roof is more than 10 feet, a chimney height reference point is established on the surface of the roof a distance of 10 feet from the side of the chimney in a horizontal plane. The top of the chimney must be at least 2 feet above this reference point, but never less than 3 feet in height above the highest point where it passes through the roof. See Figure 13.

These chimney heights are necessary in the interest of safety and do not assure smoke-free operation. Trees, buildings, adjoining roof lines, adverse wind conditions, etc., may require a taller chimney should smoking occur.

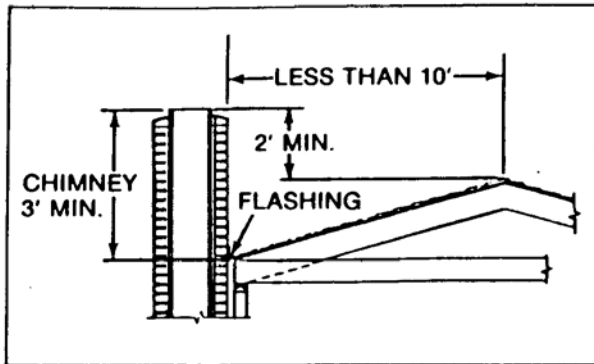


Figure 12

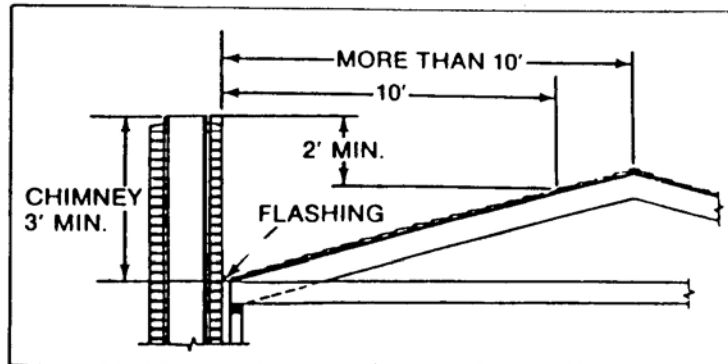


Figure 13

Where the chimney and roof intersect, the connection should be made weather-tight with a flashing of galvanized metal. The flashing should be fitted and installed to allow movement between the chimney and the roof.

The chimney should be terminated with a hood or a terminal cap. A hood, see Figure 14, may be constructed of concrete or steel and is used to protect the chimney from rain or snow. The hood should be open on at least two sides with a total open area of approximately 440 sq. inches for TC34A, and 570 sq. inches for TC38A or TC42A Fireplace Form.

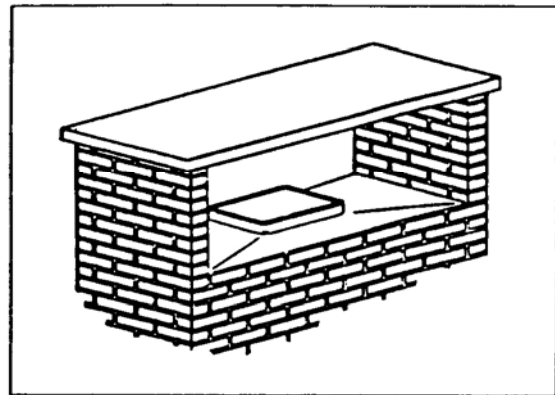


Figure 14

A properly constructed hood or terminal cap also aids in preventing downdrafts, which may be caused by nearby buildings, hills or trees. A terminal cap, as is typically available, is illustrated in Figure 15. The terminal cap should be equipped with a spark arrestor. The spark arrestor should not have openings larger than 1/2 inch and should have an open area greater than 350 sq. inches for TC34A, and 450 sq. inches for TC38A or TC42A Fireplace Form.

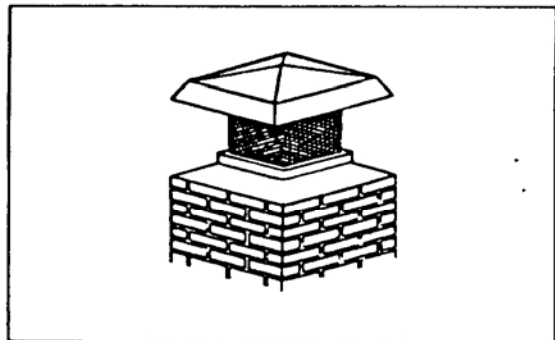


Figure 15

## VII. OPTIONAL ACCESSORIES

### Firescreen Kit SA1

All Fireplace Form units should have a Firescreen installed to prevent sparks and embers from entering the room. Install the Firescreen Kit by following the Instructions supplied with the Kit.

### Refractory Liner Kit RL34, RL38, RL42

If desired, a Refractory Liner Kit may be installed in the Fireplace Form to achieve a true masonry fireplace look. Install the Kit as specified in the Instructions supplied with the Kit.

### Grate

A grate must be used to obtain the best results in fireplace operation. Andirons or a steel grate may be used - choose a grate that is proportioned correctly for your fireplace, and that positions the fire in the rear half of the Fireplace Form.

# OPERATING INSTRUCTIONS

## NOTICE

**SAVE AND PASS THESE OPERATING INSTRUCTIONS AND THE INSTALLATION INSTRUCTIONS TO SUBSEQUENT OWNERS. THE INFORMATION PROVIDED IS INTENDED TO NOTIFY AND WARN THEM ABOUT MAKING UNSAFE FUTURE MODIFICATIONS SUCH AS THE ADDITION OF SHELVES OR THE USE OF UNAUTHORIZED PARTS AND REPAIRS.**

## CAUTION

**EDGES ARE SHARP. HAND PROTECTION IS RECOMMENDED.**

Before starting a fire in your new or existing fireplace, use the following check list:

- A. **FLUE DAMPER.** Move the lever forward to open the damper. Verify by looking up from the inside of the firebox.

## WARNING

**THE FIREPLACE MUST BE OPERATED WITH THE DAMPER IN THE FULL OPEN POSITION.**

- B. **CHIMNEY INSPECTION.** Visually inspect the chimney internally for obstructions and construction damage. In a used chimney, additional inspection is needed for the following:

"Creosote - Formation and Need for Removal.

When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited, this creosote makes an extremely hot fire.

The chimney should be inspected at least twice monthly during the heating season to determine if creosote build-up has occurred.

If creosote has accumulated, it should be removed to reduce the risk of a chimney fire."

C. **CHIMNEY CLEANING.** If you do detect a build-up of creosote, contact a qualified chimney sweep or clean it yourself.

1. Open the damper.
2. Hang a damp sheet across the fireplace opening to stop dirt and soot from entering the room.
3. Remove the terminal cap.
4. Clean with a stiff bristled brush attached to a pole,

OR

- 4A. Tie a rope to a burlap bag filled with straw and several stones. Work up and down the flue until clean.
5. Replace the terminal cap.

D. **CLEAR SPACE NEAR FIREPLACE.** The hearth extension must extend at least 20 inches to the front and 12 inches on either side of the firebox. Combustible materials must not be stored in this area. Combustible walls perpendicular to the front of the fireplace must be at least 44 inches from the fireplace opening. Room furnishings such as drapes, curtains, chairs, or other combustibles must be at least 6 feet from the open front of the fireplace.

E. **GRATE.** A grate must be used to hold the logs from falling out of an open fireplace and to allow air to pass between the burning logs. It is important to keep the fire off the hearth and to allow the ashes to collect beneath the fire.

F. **FIRESCREEN.** A firescreen should be installed to control sparks. The firescreen must be closed whenever the fireplace is in use. Firescreens must not be used to hold burning material inside the fireplace as might occur when overfilling the fireplace with empty boxes or branches.

G. **OUTSIDE AIR.** A damper allows control of the outside air inlet of your fireplace. In a tightly sealed or well insulated home, replacement of combustion air is necessary to keep harmful gases from entering living spaces.

**CAUTION**

**FIREPLACE OPERATION DOES REQUIRE AIR. DO NOT TAKE AIR FROM OTHER FUEL BURNING APPLIANCES WHICH CAN RESULT IN IMPROPER VENTING (SMOKING) OR AIR DILUTION. ALWAYS PROVIDE ADEQUATE MAKE-UP AIR.**

H. **SETTING THE FIRE.** Check the flue damper to be sure it is fully open. Place crumpled or twisted paper under the grate. Loosely arrange kindling or small pieces of wood to form a layer above the paper. Place three logs in a rough pyramid, being sure to allow free air space between the logs. Small sticks of wood may be used to separate the logs.  
**NOTE:** When heated the first time, the temperature of the fireplace must be raised gradually, to allow the masonry materials in the chimney and around the unit to cure properly.

**CAUTION**

**NEVER USE GASOLINE, GASOLINE-TYPE LANTERN FUEL, KEROSENE, CHARCOAL LIGHTER FLUID, OR SIMILAR LIQUIDS TO START OR 'FRESHEN UP' A FIRE IN THIS FIREPLACE. KEEP ALL SUCH LIQUIDS WELL AWAY FROM THE FIREPLACE WHILE IT IS IN USE TO AVOID THE RISK OF FIRE.**

I. **DISPOSAL OF ASHES.** Ashes should be placed in a metal container with a tight-fitting lid. The closed container of ashes should be placed on a non-combustible floor or on the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled.

J. **GLASS DOORS.** Glass doors have not been tested for use with the Tube Circulator Masonry Fireplace Forms and must not be used.

K. **OPERATING YOUR FIREPLACE.**

**WARNING**

**CONTINUED OVERFIRING CAN PERMANENTLY DAMAGE YOUR FIREPLACE SYSTEM. EXAMPLES OF OVERFIRING ARE:**

- 1. QUANTITIES OF SCRAP LUMBER, PINE BRANCHES OR CARDBOARD BOXES WHICH EXCEED THE VOLUME OF THE "NORMAL LOG FIRE". THESE MATERIALS PRODUCE MANY SPARKS AND MUST NOT BE USED.**
- 2. THE "NORMAL LOG FIRE" IS THREE LOGS, EACH FOUR INCHES IN DIAMETER, WITH THE LENGTH NO GREATER THAN THE WIDTH OF THE FIREBOX OPENING. THE RATE OF FIRING MUST NOT EXCEED THESE THREE LOGS PER HOUR.**

L. **SAFETY - A FINAL WORD.** Fireplaces as well as other woodburning appliances have been used safely for many years. Our own experience is that most problems are caused by improper installation, fueling, and operating. All dimensions specified are minimum and increasing distances to combustibles decreases risk. Such common practice as leaving the fire unattended will increase the risk of fire.





# *Attention* **Fireplace Installer:**

*Please return operating  
and installation  
instructions to the firebox  
for consumer use.*

**heatilator**<sup>®</sup>  
THE WOODBURNING SPECIALISTS