

# *Cawley* 500



Model 500

**A Hearth Stove by *Cawley***

**The Cawley Stove Co., Inc.**

27 North Washington Street • Boyertown, PA 19512 • Phone 215/367-2643

# Cawley 500

## Specifications

OVERALL HEIGHT	22"	LEGS - FRONT TO BACK	
HEIGHT TO TOP		CENTER LINE	12
OF FLUE	21-3/4"	FRONT DOOR OPENING	15-1/2" x 11"
WIDTH OF STOVE	19-1/4"	LOG LENGTH	17"
DEPTH - FRONT TO BACK		FLUE COLLAR DIAMETER	6"
FIREBOX	15"	HEAT OUTPUT	34,000 BTU/hr.
OVERALL (including flue		WEIGHT	250#
collar & sweep shelf)	24"		

## Standard Features

Tested to UL specifications  
Top and front loading  
Manual draft control  
Glass in doors  
Fire view screen  
Log retainer

## Features & Accessories

Reduced clearance package  
Mobile home package (HUD approved)  
Cook top with two 4-1/2" cooklids  
Outside draft collar  
Coal insert

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## STOVE INSTALLATION

### PREPARING FOR YOUR STOVE

Stove Location - A woodstove, unlike a hot air furnace, does not use forced hot air convection to distribute heat throughout the house. It is a point source of heat which depends on natural air movement and radiation. Therefore, careful advanced planning and attention to the location of your stove and chimney will be important to the overall efficiency of the installation.

The proper location for your stove should be determined by the layout of your house and the space you wish to heat, whether it is one room, several rooms, or the whole house.

Your stove should be placed as centrally as possible in the space to be heated. If heating one room, locate the stove on the coldest or draftiest side of the room. If heating two or more rooms or a greater part of the house, you may help the natural circulation by allowing the heat to rise up the stairwells or by putting vents in floors and above doors.

NOTE: Do not place any stove in a restricted area such as an alcove or where dangerously high heat levels may be trapped due to inadequate circulation.

Hearth Surface - The hearth or non-combustible surface upon which the stove stands should extend a minimum of 16" beyond the front, 8" beyond the side, and 2" to the rear of the flue collar in back of the stove. If you plan to use your stove for cooking, be sure to allow ample additional standing area for comfort. Some non-combustible materials you may consider for the hearth are brick, flagstone, quarry tile and stove board (metal covered asbestos mill board). These materials, or combination of materials, must provide insulation comparable to 3/8" thick asbestos mill board. (See drawings on next page)

These materials are available from most stove stores and many hardware stores and lumber yards. These must be installed according to manufacturer's instructions.

#### STANDARD INSTALLATION

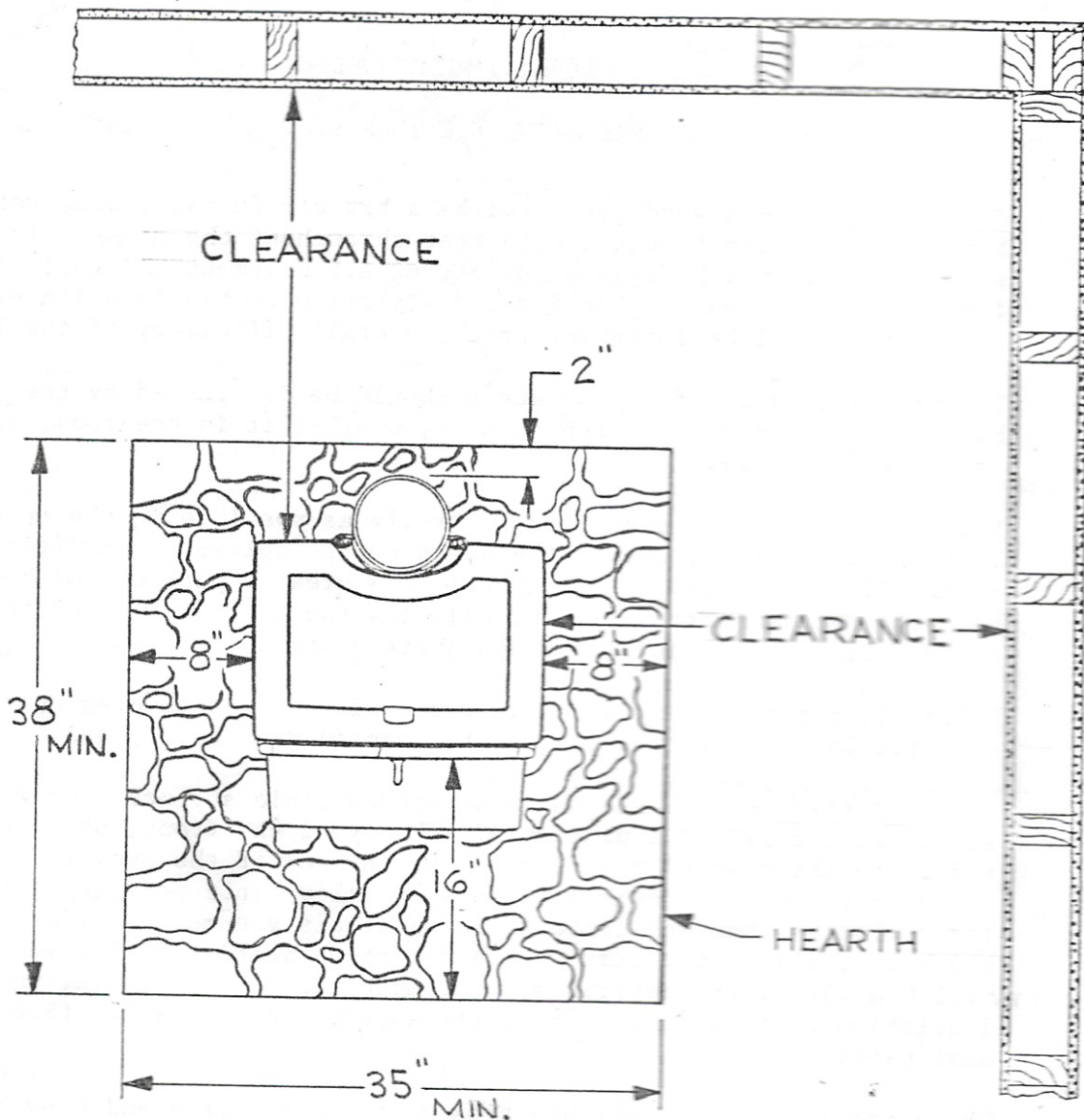
Distance From Non-Protected Combustible Materials - Non-protected combustible material must be at least 30" from the side and front of the Model 500 woodstove and 30" to the rear of the flue collar in back of the stove. (See drawing on next page)

Clearances may be reduced from 30" to 18", both side and rear, by using the applicable reduced clearance heat shield available from your local dealer.

#### CORNER INSTALLATION

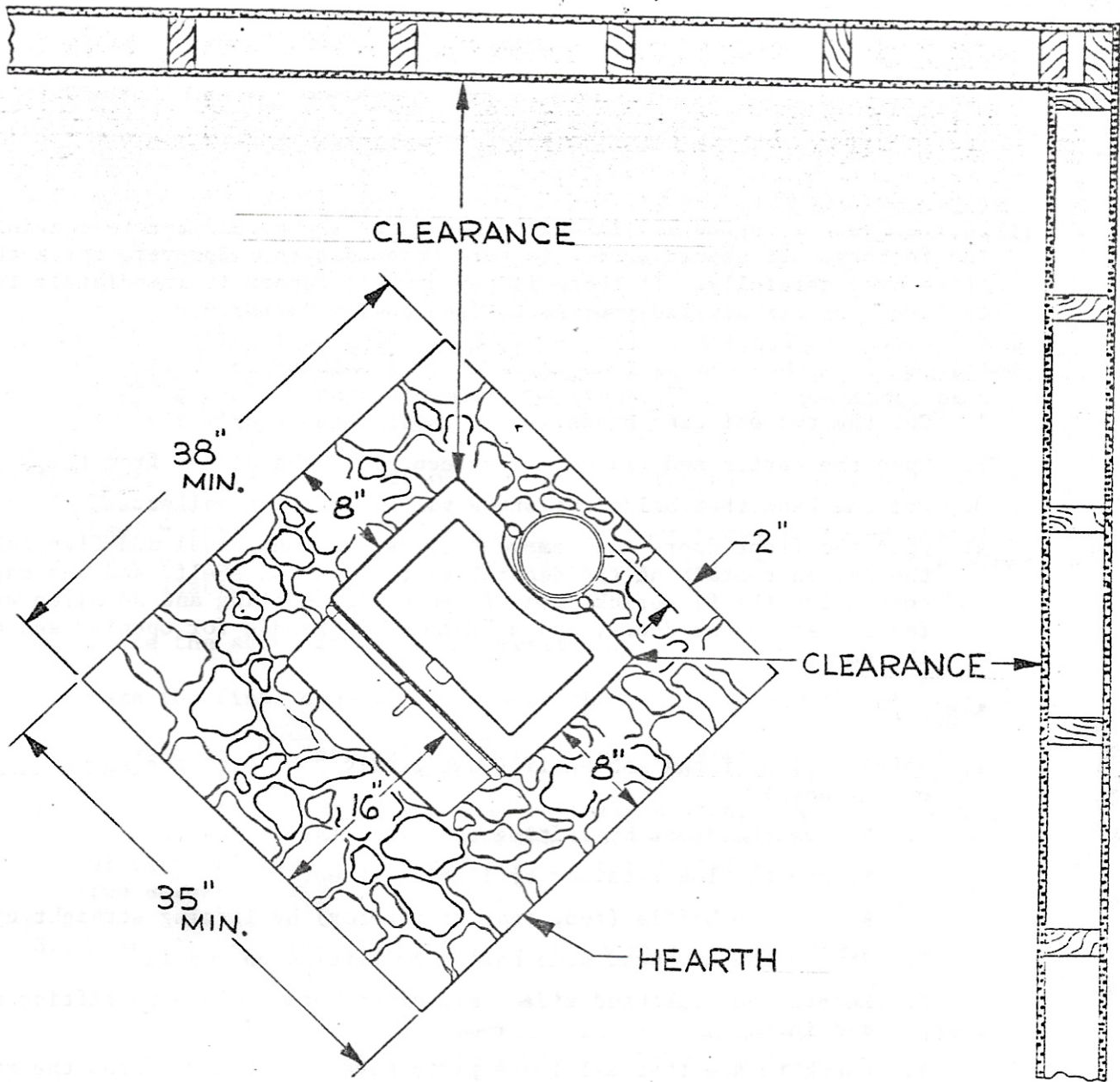
Distance From Non-Protected Combustible Materials - Non-protected combustible material must be at least 30" from the corners of the Model 500 woodstove. (See drawing on next page)

Clearances may be reduced from 30" to 18" by using the side and rear reduced clearance heat shields available from your local dealer.



500	STANDARD STOVE	WITH REDUCED CLEARANCE SHIELD
CLEARANCE TO COMBUSTIBLES	30"	18"

**NOTE:** Information on reduced clearances to non-combustible materials should be obtained from local fire and building code officials.



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## UNPACKING AND ASSEMBLING OF THE MODEL 500 STOVE

Your stove was thoroughly inspected and carefully packed before leaving the factory. It should arrive in perfect condition. However, check the stove over carefully. If there is any damage, report it immediately to the trucking company and your Authorized Cawley Dealer.

### UNPACKING

1. Cut the two shipping bands.
2. Open the carton and remove the screen, lift the carton from the stove.
3. Cut the band that holds the stove to the shipping pallet.
4. Open the front doors and remove the instruction manual and flue collar, the carton containing the decorative top and ash shelf, and the carton containing the firebrick, can of cement for sealing and an Allen wrench for adjusting the doors, and a "drop off" handle for opening and closing the door.

### ASSEMBLY

1. Installation of the Ash Shelf (Most easily done with the stove upside down)
  - A. Remove the doors by lifting them from their hinges.
  - B. Remove the log retainer by lifting it up.
  - C. Remove the baffle (top, rear of firebox) by lifting straight up.
  - D. Remove the lefthand side baffle by lifting up and in.
  - E. Remove the righthand side draft distribution plate by lifting up and in.
  - F. Check to see that all loose parts have been removed from the stove then carefully turn stove upside down to install the ash shelf. Place the lugs of the ash shelf (also upside down) over the two threaded holes in the front of the base plate. Using the two 3/8-16" hex head bolts and washers tighten the bolts firmly (not hard) with a 9/16" wrench.

NOTE: While the stove is upside down look carefully at the draft control system so that you fully understand its operation. Move the draft adjustment rod back and forth while watching the movement of the butterfly valve on the back plate. Carefully turn your stove back to its upright position.

2. Installation of the Flue Collar

- A. Determine the correct position of the rotating flue collar in relation to your stovepipe and mark it so that it may be easily repositioned.
- B. Apply the furnace cement provided to the bottom flange of the rotating flue collar and place it in its final position. Seal it by tightening it down with the 2 round-headed machine screws and washers supplied with the stove. Excess cement may be wiped off with a damp cloth.

- 3. Check the Serial Number of your stove (stamped on the Arnold Greene Testing Tag located on the rear of the stove) and record it on the Cawley Warranty Card. (Especially if your stove is to be installed into a fireplace where the serial number will be inaccessible after installation is complete.)
- 4. Place the stove in its final position.
- 5. Make the final connection between the flue pipe and the chimney.
- 6. Reassemble the internal parts by reversing steps 1A through 1E.
- 7. The top baffle assembly should be fully seated. In some instances it may be necessary to loosen the two screws on the baffle face plate to allow it to fully seat. After positioning, retighten these two screws firmly.
- 8. Install the three fire brick in the base of your stove.
- 9. Place a layer of sand approximately 1/2" to 1" over the entire bottom of the stove covering all crevices and holes especially around the draft distribution plate on the righthand side.
- 10. Before firing your stove for the first time, review the sections under Installation and Safety.

CAUTION - All sections of standard stovepipe should be put together with three sheet metal screws at each joint. If you are using fabricated stovepipe or chimney, be sure to follow the manufacturer's instructions.

- 11. Please fill in and return your Warranty Card so that we may register your stove in case you should have a problem in the future and also so that we may keep you informed of new accessories and products as they come along.

## CHIMNEYS

New Chimneys - The warmer the chimney, the better the draft and the less likely the condensation of creosote. Therefore, a new chimney should, if possible, be located inside the house and not on an exterior wall, where its warmth would be lost to the outside.

A new chimney should be constructed according to local building codes. A Class "A" single flue should incorporate no more than one heating appliance, minimum 8" x 8" flue liner.

The cost of adding additional flues for future use is minimal when building a new chimney.

Existing Chimneys - An existing chimney should be inspected by a certified chimney sweep. It should be fully lined, structurally sound, and free of any blockages.

NOTE: A chimney that was adequate for a gas or an oil furnace may not be so for a woodstove which has a much higher burning temperature.

NOTE: Use of aluminum Type B gas vent for solid fuels is unsafe and prohibited by the National Fire Protection Association Code.

Fabricated Chimneys - There are a number of excellent fabricated chimneys available which are generally less expensive than new masonry chimneys. These should be installed according to the manufacturer's instructions. It is of the utmost importance to maintain the recommended clearances between the chimney and any combustibles. (A minimum of a 6" inside diameter pre-fabricated metal chimney is required for the Model 500 stove.)

Prefabricated chimneys must be listed as approved by UL Laboratories. Four all fuel prefabricated chimneys so listed are Metalvent, Metalbestos, Pro-jet and Security.

NOTE: The top of the insulated stovepipe or chimney must be at least three feet higher than the roof at the point of exit. In the case of pitched roofs, the top of the stovepipe must be at least two feet higher than the highest point of the roof and at least ten feet away from that point. Refer to manufacturer's instructions and your local building codes.

Chimney construction and structural alterations in your house are beyond the scope of this handbook. We strongly advise obtaining more information.

Two excellent sources of additional information on chimney construction are:

The Woodburner's Encyclopedia

Vermont Crossroads Press, Waitsfield, VT 05673

The New Improved Wood Heat by John Vivian

Rodale Press, Inc., Emmaus, PA 18049



## CHIMNEY CONNECTOR (SINGLE WALL STOVEPIPE)

### INSTALLATION INSTRUCTIONS

These important points should be followed when installing your stove.

1. Heavy stovepipe, preferably 18 to 24 gauge, should be used. Lighter gauge stovepipe is more susceptible to the effects of rusting and corrosion from smoke condensates.
2. Install stovepipe sections with the crimped end down. This permits the creosote to drip back into the stove and be burned away.
3. Each stovepipe juncture should be joined and secured with 3 sheet metal screws to avoid possible separation during use.
4. If possible, do not use more than one elbow in the stovepipe.
5. Any horizontal pipe should be pitched upward toward the chimney at least 1/4" for each foot of horizontal run, with the seam at the top.
6. The longer the pipe length and the larger the number of elbows, the greater the chance of dangerous creosote and ash buildup.
7. Be sure that there is at least an 18" clearance between horizontal piping, if used, and the ceiling.
8. Particular attention should be paid to the point where the flue passes through a wall or ceiling. This penetration should always be made with insulated pipe and the proper accessories and clearances.
9. The chimney connection pipe should extend at least two inches into the chimney but not so far into the chimney flue that it blocks the air flow.
10. For fireplace installation, the chimney connector pipe should extend from the stove up through the damper area and above the smoke shelf. The area surrounding the chimney connector at the damper must be completely sealed with an approved non-combustible material.

NOTE: We do not recommend venting a connector pipe from the stove directly into a fireplace that has been sealed in the front.

11. If you install your stove yourself, be sure to have your work inspected by a local fire or building official. Just a little mistake could mean a big loss later on. If your stove is installed by a professional, be sure you hire an expert in wood and coal installation.

## FIRING YOUR STOVE

### HOW YOUR STOVE FUNCTIONS

The draft, or combustion air, enters through a 4" diameter draft control port at the rear of the stove. It is then separated into primary draft and secondary draft. It then goes through the draft manifold (a box-like part bolted to the inside rear of the firebox) which preheats and channels the primary draft to the draft distribution plate (lower right-hand side of the firebox) and the secondary draft to the top baffle assembly.

Primary draft comes into the firebox from the port in the draft distribution plate. It is this air that is used to burn the wood. Its flow determines the rate of combustion, how much heat the stove will put out and for what length of time.

The secondary draft enters through the 6 small round ports in the face plate of the top baffle assembly. Its function is to burn the combustible gasses produced by the primary combustion.

The rate of burning is controlled by the draft control lever underneath the ash shelf. This lever when pushed back and forth rotates the butterfly valve attached to the draft port at the rear of the stove. To decrease the rate of burn, push the lever to the left, to increase the burn rate, push it to the right.

A "drop off" handle is provided so that you can open and close the front doors of your stove without the use of gloves. Push it as far onto the shaft as possible (without jamming) before turning. Remove it from the door after each use and store it in a convenient location. DO NOT leave it on the door - it is made of wood and will char.

### FIRING YOUR STOVE - AIRTIGHT MODE WITH DOORS CLOSED

Draft is controlled by the lever underneath the ash shelf which actuates the butterfly valve at the rear of the stove. Open the draft by pushing the lever to the right. Build a small fire in the righthand side of the firebox. Build this fire as you would in a fireplace using a ball of newspaper, kindling and small sticks. Light the fire beside the draft port then close the door keeping the draft open until the fire is well under way. Add larger logs as the fire can support them. The draft may then be shut down to the desired burning rate. Fire should not be extended beyond an 8 hour firing period and additional logs should not be added during this time.

NOTE: Creosote will tend to form at low settings.

## RELOADING

Pull the dead ash from around the draft port on the righthand side with a stove hoe. Then, separating the dead ash from the hot coals, pull the coals to the right, directly in front of the draft port. Keep the draft port free of ash as this would impair the entrance of combustion air into the firebox. Full sized logs may be added without the use of kindling.

## FIRING YOUR STOVE - FRONT DOORS OPEN FOR VIEWING THE FIRE

Close the draft control after opening the doors, and build the fire as you would in a fireplace. Be sure to use the fire screen while viewing the fire.

## ASH REMOVAL

Maintain a depth of 1/2" to 1" of sand above the fire bricks and keep it at a relatively equal depth. Maintain the ash at a minimum of 1/2". The ash should not cover the draft port. Ashes may be removed as required, generally every 3-7 days.

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## CARE AND UPKEEP

Cleaning - The exterior of the Cawley 500 stove may be kept clean with an occasional wiping using a damp cloth when the stove is warm.

Painted Surface - The surface may be refurbished using a high quality stove paint. Remove any rust with steel wool before painting.

Stove Polish - Stove polish is available through stove stores and hardware stores. It may be used in place of paint. Your stove will not accept paint after polish has been used.

Cooklids - Wipe occasionally with cooking oil. They will eventually turn a rich brown color.

Summer Storage Preparation - Put a light coating of oil on all the door latches. Clean out all of the ashes. Go over the whole stove with a good quality high temp mat black stove paint or with stove polish.

Removal of Ashes From Behind the Draft Distribution Plate - If your stove becomes less responsive, ashes may be clogging the draft. Remove the brick directly adjacent to the righthand draft distribution plate. The draft distribution plate may then be removed. This allows easy access to any ash that may have accumulated behind it. The ash may be removed by a brush or if the stove is thoroughly cool, a vacuum cleaner may be used. The draft distribution plate and brick may then be replaced.

Bricks - As the stove is used over the years some bricks may become broken. As long as the pieces remain in place or ash has filled any voids in the bricks, the operation of the stove should not be impaired. New bricks may be obtained from your stove dealer or through The Cawley Stove Co., Inc.

Adjusting the Doors - After the first few days or weeks of use the doors may require adjusting due to the seating of the gaskets. They may be readjusted using the set screw located on the door frame above the latch mechanism. Use an adjustable wrench to loosen the lock nut retaining the set screw, then make the adjustment. After desired tightness is obtained, the lock nut may be retightened to prevent the loosening of the set screw.

Cleaning the Glass - The glass may easily be cleaned by using a standard single edged razor blade.

## SAFETY

### FLAMMABLE LIQUIDS

Flammable liquids should never be used to start your fire nor should they be stores in the vicinity of your stove. Never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or "freshen up" a fire in this stove. Keep all such liquids well away from the stove while it is in use.

### 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.

### COMBUSTIBLE MATERIAL

Combustible material should NEVER be heated to a point where you cannot rest your hand on it indefinitely. Draperies, furniture, wood, papers, etc., should be a minimum of thirty inches from your stove.

### CREOSOTE

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.

Creosote is generally first noticed as a dark brown or black molasses-like material seeping from the seams of the stovepipe accompanied by an odor much like that of smoked ham.

If this condition persists, the creosote may build up gradually from a thin, shellac-like coating to one of considerable thickness. This is a highly flammable substance.

The chimney connector and chimney should be inspected at least twice monthly during the heating season to determine if a creosote buildup has occurred. If creosote has accumulated, it should be removed to reduce the risk of a chimney fire.

Incomplete combustion, the major cause of creosote, is primarily a result of:

1. Lack of adequate oxygen due to low draft settings or poor chimney draft.
2. Low fire temperatures produced by inadequate draft, unseasoned, cold or wet wood.
3. Improper fuel that is soft and resinous and contains an overabundance of the the creosote-forming chemicals.

Cold, exterior masonry chimneys and uninsulated stovepipe give the creosote vapor an excellent place on which to condense.

NOTE: Under no circumstances should an uninsulated stovepipe run up the outside wall of a building.

#### CREOSOTE PREVENTION

All airtight woodstoves produce creosote at one time or another, especially in the low fire ranges. The best method of prevention is to fire the stove in its medium to upper ranges using hard, well-seasoned wood.

A properly tended stove in which hard, dry wood is burned with a brisk fire will have little or no creosote problem.

#### CHIMNEY FIRES

##### *WHAT TO DO IF ONE OCCURS:*

1. Shut the draft off with a SLOW AND EVEN MOTION.
2. Get everyone out of the house.
3. Call the fire department.
4. If closing the draft has not greatly reduced or extinguished the fire, large quantities of coarse salt may be thrown into the fire chamber and the door closed.

CAUTION: Never throw water on or into a hot stove.

##### *CAUSE:*

If a chimney fire does occur, it is usually after a considerable amount of creosote has built up and the stove is being fired within its uppermost range. When creosote reaches its ignition temperature (approximately 1000° F) with an adequate supply of oxygen, it will ignite with a roar, sounding very much like a jet plane. The stovepipe, and even the whole house, may vibrate.

**PREVENTION:**

Fire the stove in the mid to upper range of the draft control using dry, hardwood that has been allowed to warm up to room temperature.

If you fire your stove at the medium to low draft settings - for example, holding a fire overnight - fire the stove in the mid to upper ranges during the daytime to aid in harmlessly drying out and flaking off any creosote that may have built up during the period of low firing.

Creosote buildup may be checked in standard stovepipes by tapping the pipe with your fingernail at the time of installation. Remember - it will have a clear, metallic sound. This test should be made on a weekly basis after the stove is first installed and at a minimum of twice a month thereafter. If the sound begins to change to a dull thud, it indicates that creosote formation is taking place. The sections of stovepipe should be unscrewed and taken apart, visually inspected and cleaned.

All chimney installations should be checked at least once or twice a year by an expert - more often if required. Additional information about this service may be obtained from either your local fire company or stove store.

You should have at least one, preferably two universal ABC fire extinguishers of five pounds or more. Your local fire department will be glad to give you additional information about the type and number of fire extinguishers to get, and where to place them in your particular situation.

For further information on using your stove safely, obtain a copy of the National Fire Production Association publication "Using Coal and Wood Stoves Safely", NFPA No. HS-8-1974. The address of the NFPA is 470 Atlantic Avenue, Boston, MA 02210.

Other NFPA booklets that we have found to be informative are:

Heat Producing Appliance Clearances  
NFPA No. 89M 1976

Chimneys, Fireplace and Vents  
NFPA No. 211 1972

Before beginning any construction, check local fire codes, and building and zoning ordinances, and consult your insurance company.

## CAUTIONS

1. Do not over fire your stove to such an extreme that any portion becomes "red hot".
2. The installation of the stove must comply with state and local requirements and be inspected by the state or local building inspector, if required.
3. The Model 500 stove is approved for use in mobile homes only with the use of the Mobile Home Package.
4. Do not use a grate to elevate the fire from the firebox.

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