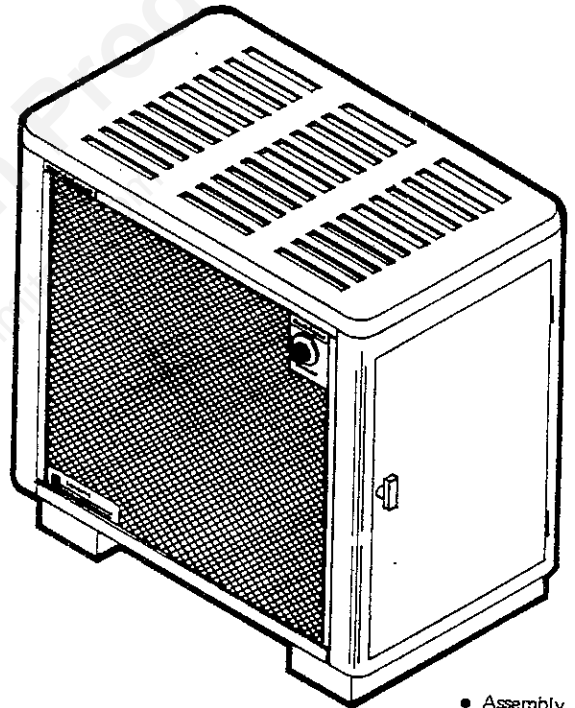


Model 2721  
owners manual  
*Wonder Wood*

**AUTOMATIC WOOD BURNING CIRCULATOR**

**SAFETY NOTICE:**  
If this heater is not properly installed, a house fire may result. For your safety, follow the installation directions. Contact local building or fire officials about restrictions and installation inspection requirements in your area.



**CAUTION:**  
Read All Instructions Carefully Before Starting The Installation or Operating The Heater.

Improper Installation  
Could Void Your  
Warranty!

- Assembly
- Installation
- Operation
- Repair Parts



Save This Manual  
For Future Reference

**DO NOT USE THIS HEATER  
IN A MOBILE HOME OR TRAILER**



**UNITED STATES STOVE COMPANY**

P. O. Box 5349  
3500 N. Hawthorne Street  
Chattanooga, Tennessee 37406

FORM 85382H 6/86

# CONGRATULATIONS!

You've purchased one of America's Finest Woodburning Heaters.

By heating with wood you're helping CONSERVE AMERICA'S ENERGY!

Wood is our Renewable Energy Resource. Please do your part to preserve our wood supply.

Plant at least one tree each year. Future generations will thank you.

---

## tools and materials needed

### TOOLS

Pencil  
6 Foot Folding Rule or Tape  
Tin Snips  
Drill, Hand or Electric  
Drill Bit (For Sheet Metal Screws)-1/8" dia.  
Screw Driver (Blade-Type)  
Gloves  
5/16" Nut Driver or  
5/16" Socket w/Ratchet

### MATERIALS

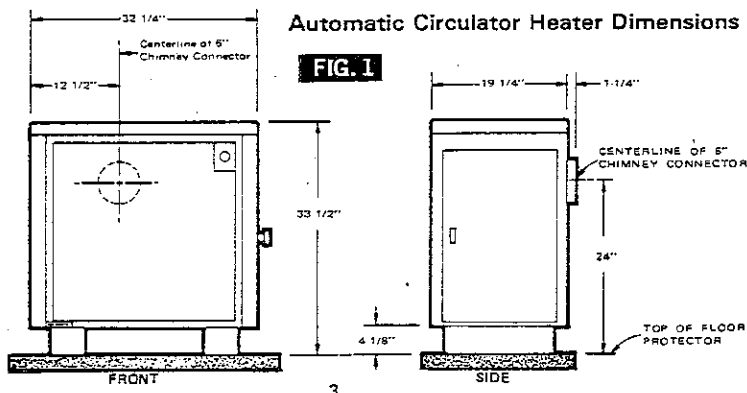
Chimney connector - 6" dia. Black or Blued Steel  
(24 GA. minimum): straight or elbow (as required)  
1/2" Sheet metal screws (10A x 1/2")  
6" Inside diameter Underwriters Laboratories (UL)  
Listed Residential Type and Building  
Heating Appliance Chimney  
or existing masonry chimney.  
Floor Protector Material 3'-0" x 4'-6"  
as specified on Page 4.  
Furnace Cement (Manufacturer recommends:  
Rutland Black-Code 78 or equivalent).

## Safety Rules

Read these rules and the instructions carefully.

**SAFETY NOTICE:** If this heater is not properly installed, a house fire may result. For your safety, follow the installation directions. Contact local building or fire officials about restrictions and installation inspection requirements in your area.

1. Check your local codes. The installation must comply with their rulings.
2. Do not install this heater in a mobile home or trailer.
3. Always connect this heater to a chimney and vent to the outside. Never vent to another room or inside a building. Make sure the chimney is high enough to give a good draft.
4. Do not connect a wood burning heater to an aluminum Type B gas vent. This is not safe and is prohibited by the National Fire Protection Association Code. This heater requires a masonry or a UL Listed Residential Type and Building Heating Appliance Chimney.
5. Inspect chimney connector and chimney twice monthly during the heating season for any deposit of creosote or soot which must be removed (see CHIMNEY MAINTENANCE, page 12).
6. Provide air for combustion from outside the house into the room where the heater is located. If the intake is not in the same room, air must have free access to the room.
7. **CAUTION** - The special paints used on your heater may give off some smoke while they are curing during first few fires. Build small fires at first. The metals used in construction of the heater has a light coating of oil. This could give off smoke and/or odors when heater is used for the first couple of times. This should disappear after a short period of time. Once this burn-off has occurred, it should not reoccur.  
**CAST IRON PARTS MUST BE "SEASONED"**
8. **CAUTION:** Do not touch the heater until it has cooled.
9. **TO AVOID CRACKING. BUILD ONLY SMALL FIRES ON FIRST USE.**
9. To prevent injury, do not allow anyone who is unfamiliar with the operation to use the heater.
10. For further information on using your heater safely, obtain a copy of the National Fire Protection Association (NFPA) publication "Chimneys, Fireplaces, Vents and Solid Fuel Burning Appliances" NFPA No. 211. The address of the (NFPA) is Batterymarch Park, Quincy, MA 02269.
11. **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 noncombustible 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.
12. **CARING FOR PAINTED PARTS** -This heater has a painted outside jacket. Paint baked onto the steel or iron is very durable but it will not stand rough handling or abuse. When installing your heater, use care in handling. Clean with soap and warm water when heater is not hot. **DO NOT** use any acids or scouring soap, as these wear and dull the finish. **PAINT DISCOLORATION WILL OCCUR IF THE HEATER IS OVERFIRED. FOLLOW OPERATING INSTRUCTIONS CAREFULLY.**
13. Keep the ashpit section free of excess ashes.



## Locating the heater

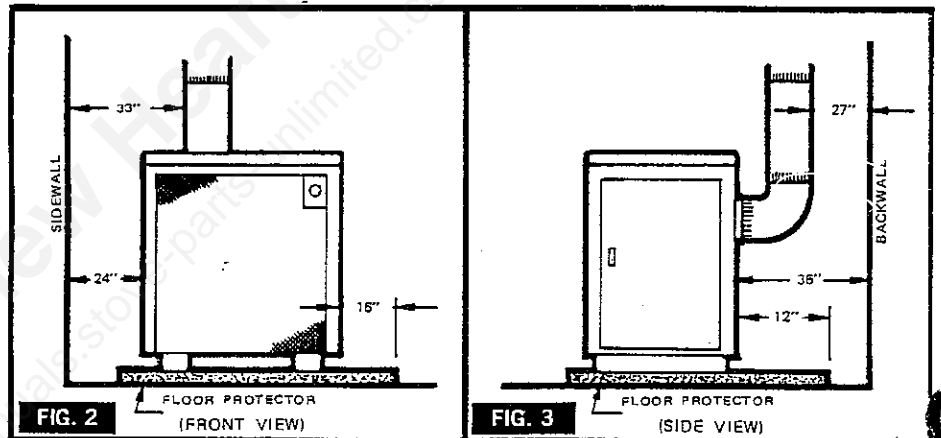
### AS A LOCATION IS SELECTED, KEEP THE FOLLOWING IN MIND:

1. The chimney connection should be as short as possible. The heater must have its own chimney. Do not connect any other appliance to the same flue.  
If there is no chimney near where you wish to place the heater, you can use a UL Listed Residential Type and Building Heating Appliance Chimney (Fig. 6).
2. Place the heater on solid masonry or solid concrete. When the heater is used on a combustible floor, use a non-combustible floor protector 3/8" thick millboard having a thermal

conductivity of  $K=0.84$  BTU in./ft.<sup>2</sup> hr. deg. F. with 28-gauge sheet metal or a UL listed floor protector. Have the floor protector extend 16" beyond the door side of the heater and under the connector pipe in the back. (Fig. 4).

3. Check Figures 2, 3 and 4. Be sure you have the clearances shown from the heater and the connector pipe to combustible surfaces. If you have a solid brick or stone wall behind your heater, you can place the heater as close as you wish to the wall. If the wall is only faced with brick or stone, treat it as a combustible wall.

### MINIMUM CLEARANCE TO COMBUSTIBLE WALLS

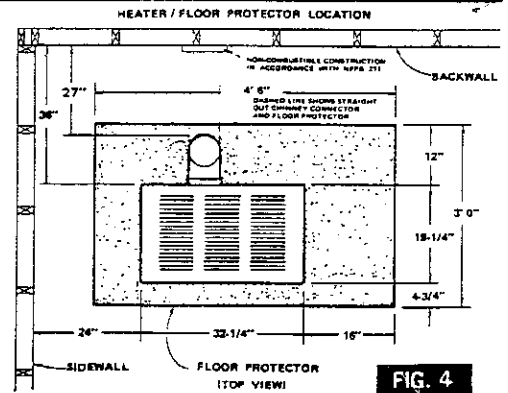


### NOTE: BEFORE FIRING HEATER

1. Remove plastic knob from cabinet door and install on outside (Refer to page 13).
2. Slide firebricks toward the rear so no gaps remain between them.

### CAUTION

Keep furnishings and other combustible materials away from the appliance.



## venting into a fireplace

Many people may wish to convert an existing fireplace to wood heater use. Usually, safe connection of stovepipe to a masonry chimney requires more effort than connection to a prefabricated chimney. There are two methods (Type A and Type B) to accomplish this. No matter which method you choose, the fireplace must be tightly closed and sealed at the damper in the flue. Good sealants are high-temperature caulking, ceramic wool, and furnace cement. Always remember to inspect the masonry chimney and fireplace. If necessary, clean the flue and smoke shelf before beginning your installation. Install the wood heater into the fireplace so that the system can be dismantled for cleaning and inspection.

Before deciding to convert your fireplace, keep in mind that some fireplaces and existing chimneys are unsafe. They must be structurally sound, and the flue liner must be in good condition. Clearances to combustibles are explained in the previous section on masonry chimneys. If you have any question regarding the condition of the chimney, consult a qualified engineer, competent mason, or knowledgeable inspector.

**CAUTION**

NOT ALL FIREPLACES ARE SUITABLE FOR INSTALLATION OF A WOOD HEATER.

Many prefabricated fireplaces fall into the "zero-clearance fireplace" category. This is a factory-built metal fireplace with multilayered construction. It is designed to provide enough insulation and/or air cooling so that the base, back, and sides can be safely placed in direct contact with combustible floors and walls. Although many prefabricated fireplaces have been tested by nationally recognized organizations for use as fireplaces, they have not been tested to accept airtight wood heaters. In fact, their use as such may void the manufacturer's warranty.

Steel-lined fireplaces, on the other hand, can be used with airtight wood heaters. These units use a 1/4-inch firebox liner and an air chamber in connection with 8 inches of masonry to meet code. They contain all the essential parts of a fireplace; firebox, damper, throat, smoke shelf, and smoke chamber. Many of them look exactly like a masonry fireplace and must be checked closely for above requirements before installing a wood heater into them.

Another method frequently used by some people to vent the wood heater directly into the fireplace. This does not meet code since the heater is being vented into another appliance—the fireplace. This method should not be attempted because combustion products will deposit and build up in the firebox or fireplace. Be certain not to install a hazard in your house.

## Type A Installation

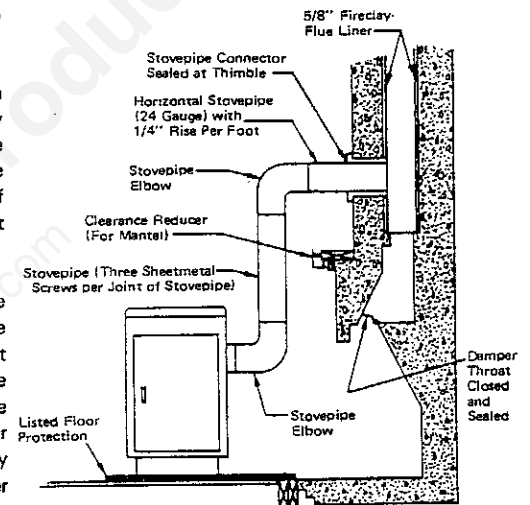
Connection of the stovepipe directly into the existing masonry chimney over the fireplace opening is the most desirable method. This installation performs better, yielding more heat and better draft; it is also easy to clean and inspect for creosote. Before beginning this type of installation plan carefully; a high degree of skill is required to insure safety.

An entry port for the stovepipe must be cut through the chimney with minimum damage to the fireclay liner. Some involved measurements may be required to locate the flue liner exactly. Before cutting, take time to mark the size and position of the entry port. Position the entry port so that at least 8 inches of the flue liner remain below the port.

Keep in mind that wood mantels and combustible trim around the fireplace must have adequate clearances from the heater and stovepipe or must be protected in an approved manner. Also, be sure to leave at least an 18-inch clearance between the top of the stovepipe and the combustible ceiling or other combustibles. Placing the center of the entry port 2 feet below the ceiling will insure proper clearance for 6-inch, 8-inch, and 10-inch stovepipes.

Next, install a fireclay (at least 5/8 inch thick) or metal thimble, being sure that the thimble is flush with the inner flue lining; secure the thimble in place with refractory mortar. The thimble should be surrounded on all sides with 8 inches of brickwork (solid masonry units) or 24 inches of stone.

Install the stovepipe as far as possible into the thimble, but not past the inside of the flue lining. There should be a small airspace (approximately 1/2 inch) between the stovepipe and thimble, allowing for expansion of the stovepipe. Seal this airspace with high-temperature caulking or ceramic wool. Finally, be sure to wire the damper closed and apply the same sealant you used at the stovepipe and thimble junction.

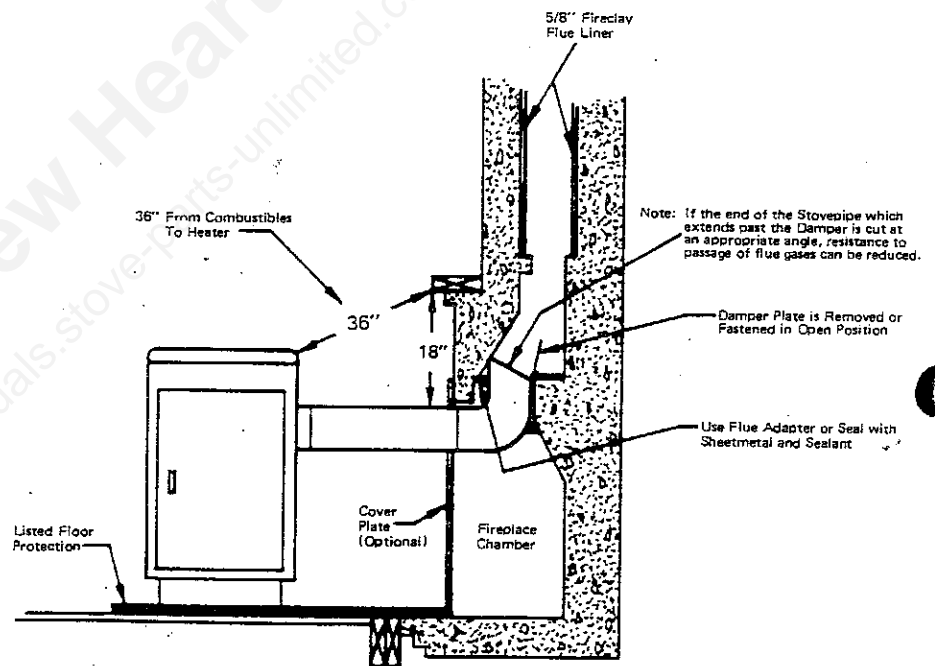


TYPE A **FIG. 7**  
FIREPLACE CONVERSION

## Type B Installation

The next method, Type B, is acceptable but is more difficult to operate and maintain than Type A. Remove the damper and cut a piece of 24 gauge sheet metal to rest on the damper frame. Cut a hole in the sheet metal to accept the stovepipe. Insert the stovepipe as far as possible into the flue past the throat or damper plate. (If the end of the stovepipe which protrudes past the damper is cut at an appropriate angle, resistance to passage of flue gases can be minimized.) Finally, fasten all junctions

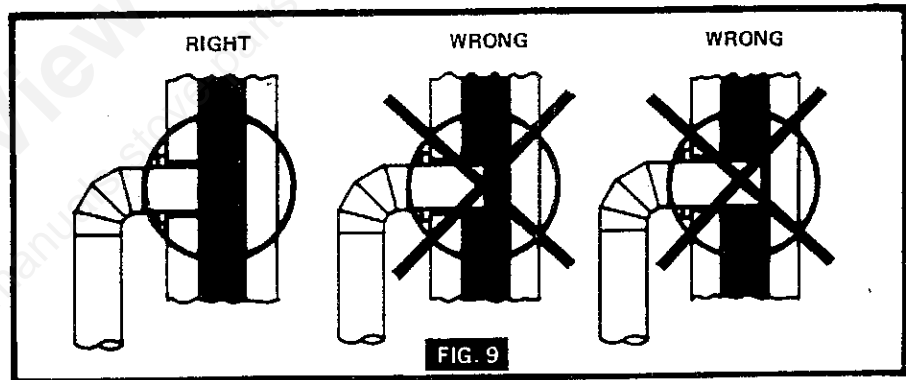
between the sheet metal and damper frame and between the sheet metal and stovepipe. For an airtight system, be sure to seal these junctions with high-temperature caulking, ceramic wool, or furnace cement. Instead of a sheet metal closure at the damper, a prefabricated flue adapter or 12 gauge, low-carbon steel or stainless steel may be sealed into place to accept the stovepipe. Be sure to fasten and seal the stovepipe to the flue adapter.



TYPE B **FIG. 8**  
FIREPLACE CONVERSION

## Rules For Connector Pipe Installation

1. The crimped end of the stovepipe fits inside the heater flue collar. Install additional pipe and elbow with the CRIMPED END TOWARD THE HEATER. This will allow any condensation in the flue to run back into the heater.
2. Slope any horizontal pipe upward toward the chimney at least  $\frac{1}{4}$  inch for each foot of horizontal run.
3. You must have at least 18 inches of clearance between any horizontal piping and the ceiling.
4. The pipe cannot extend into the chimney flue (Fig. 9).
5. Seal each connector pipe joint with furnace cement. Also seal the pipe at the chimney.
6. Use 3 sheet metal screws at each joint to make the piping rigid.
7. It is recommended that no more than two 90° bends be used in the stovepipe installation as more than two may decrease the amount of draw and possibly cause smoke spillage.



## operating instructions

### FUEL

Hardwood, 20" to 24" should be split and air dried (seasoned) for 6 months to obtain maximum burning efficiency.

Use wood or wood-like materials only. Do not use coal. Coal or charcoal will destroy the Grates or Fire Box.

### LIGHTING

1. Set the thermostat on "HIGH" to provide maximum draft.
2. Open the feed door and place paper and kindling on the grate for starting the fire.
3. Light fire and close feed door.
4. Add fuel after fire is burning briskly. Use care not to smother the kindling fire.
5. Set thermostat to maintain desired temperature. "MEDIUM" setting is normally satisfactory. Set higher or lower for your comfort.

### ADDING FUEL

When possible, add small amounts of fuel each hour or so instead of adding large quantities of fresh fuel every 8 to 10 hours. This will give more complete combustion and less build-up of tars or soot in the chimney.

1. Set Thermostat to HIGH before opening feed door.
2. Empty ash pan regularly. Do not allow ashes to build up to grate as grate will warp and burnout will occur, and you might spill the ashes when removing the pan. Dispose of hot ashes properly (see Note 11 on Page 3).

### MINIMUM FIRE

The rate of burning at the low setting can be further adjusted by opening or closing the minimum fire air shutter (Fig. 10) on the draft control door.

1. Partially close the shutter to make the fuel burn longer.
2. Open the shutter, exposing a larger opening, to reduce the formation of creosote or soot (see notes on Chimney Maintenance).

### CAUTION

OVERFIRING THE APPLIANCE MAY CAUSE A HOUSE FIRE. IF A UNIT OR CHIMNEY CONNECTOR GLOWS, YOU ARE OVERFIRING.

### CAUTION

DO NOT OPERATE THE HEATER WITH THE MINIMUM FIRE AIR SHUTTER COMPLETELY CLOSED.

### CAUTION

DO NOT OPERATE WITH FEED OR ASH DOOR OPEN. THIS HEATER IS DESIGNED FOR THERMOSTATIC OPERATION. OPERATION WITH EITHER DOOR OPEN WILL OVERHEAT AND DAMAGE THE HEATER.

### WARNING

NEVER USE GASOLINE, GASOLINE-TYPE LANTERN FUEL, KEROSENE, CHARCOAL LIGHTER FLUID, OR SIMILAR LIQUIDS TO START OR "FRESHEN UP" A FIRE IN THE HEATER.

### WARNING

KEEP ALL FLAMMABLE LIQUIDS, ESPECIALLY GASOLINE, FROM THE VICINITY OF THE HEATER WHETHER IN USE OR IN STORAGE.

### CAUTION

BUILD A FIRE ON INTEGRAL GRATE THAT IS PROVIDED WITH THE HEATER.

## adjusting the thermostat

The thermostat control was adjusted at the factory. The operation of the heater may require a change in calibration. Calibration adjustments should be made at room temperature.

If the thermostat adjustment is not satisfactory, the thermostat operating range may be changed as follows:

- A. To increase the amount of heat at a "HIGH" setting, adjust the wire linkage to increase the draft damper opening (Fig. 15).
1. Unhook linkage wire at Point "C".
  2. Take Point "A" in left hand and "B" in right hand, then turn "B" clockwise about 3 turns.
  3. Then hook linkage wire back to draft control damper door at Point "C".
- B. To decrease the amount of heat at "LOW" setting:
1. Check feed and ash doors to be sure that they are closed tightly.
  2. Check the connector pipe to see that it is sealed at all connecting points.
  3. If no air leaks are found, adjust linkage as above except turn "B" counterclockwise about 3 turns.
- C. Adjusting the minimum air shutter (The minimum air shutter has an infinite number of settings. Several adjustments may be necessary for the unit to work most effectively for your particular installation):
1. The minimum air shutter may be adjusted to the closed position in installations where the draft is "above normal," generally, .06 w.c. or above would be considered "above normal."
  2. In installations where the draft is "below normal," the minimum air shutter should be adjusted toward the open position.

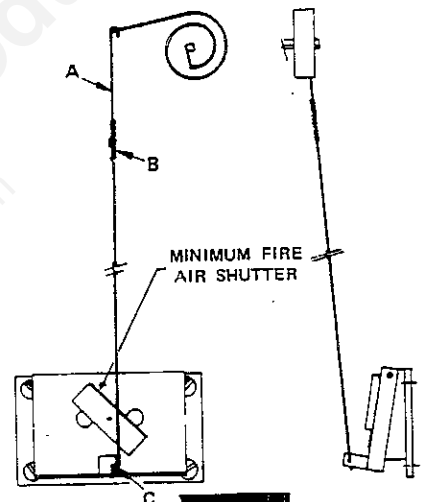


FIG. 10

**NOTE:** More than one readjustment may be necessary. At room temperature (72° F) and "LOW" setting, the draft damper door should be closed.

## How To Lift The Top

**CAUTION - DO NOT OPEN OR CLOSE TOP WHEN HEATER IS HOT!** To open, lift the front edge of the cabinet top to the full open position. Then gently lower the TOP until the TOP SUPPORT ROD latches in the Top Support seat, to hold the top. (Fig. a)—To close, lift TOP until the TOP SUPPORT ROD is unlatched. Pull the ROD forward and lower the TOP (Fig. b).

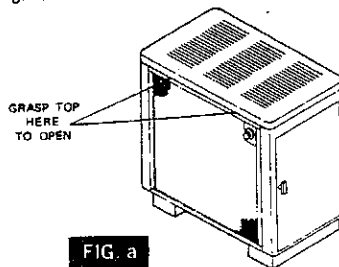


FIG. a

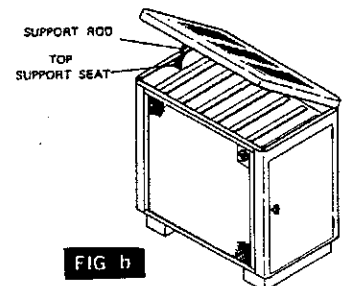


FIG. b

## service hints

Do not expect a heater to draw. It is the chimney that creates the draft. Smoke spillage into the house or excessive build-up of water or creosote in the chimney are warnings that the chimney is not functioning properly. Correct the problem before using heater. Possible causes are:

1. The connector pipe may be pushed into the chimney too far, stopping the draft (Fig. 9).
2. Do not connect two heaters into the same chimney flue.
3. The chimney used for a heater must not be used to ventilate the cellar or basement. If there is a cleanout opening at the base of the chimney, it must be closed tightly.
4. If the chimney is too cool, water will condense in the chimney and run back into the stove. Creosote formation will be rapid and may block the chimney. Operate the heater at a high enough fire to keep the chimney warm preventing this condensation.
5. If the fire burns well but sometimes smokes or burns slowly, it may be caused by the chimney top being lower than another part of the house or a nearby tree. The wind blowing over a house or a tree falls on top of the chimney like water over a dam, beating down the smoke. The top of the chimney should be at least 3 feet above the roof and be at least 2 feet higher than any point of the roof within 10 feet (Fig. 6).

### NOTE:

A draft reading of .05 to .06 W.C. is suggested for proper burning of this unit.

## chimney maintenance

### 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 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.

Failure to remove creosote or soot may cause house fire. Creosote may be removed by using a chimney brush or other commonly available materials.

Chimney fires burn very hot. If the chimney connector should glow red, immediately call the fire department, then reduce the fire by closing the inlet air control and pour a large quantity of coarse salt, baking soda or cool ashes on top of the fire in the firebox. **CAUTION:** A chimney fire may cause ignition of wall studs or rafters which you thought were a safe distance from the chimney. If you have a chimney fire, have your chimney inspected by a qualified person before using again.

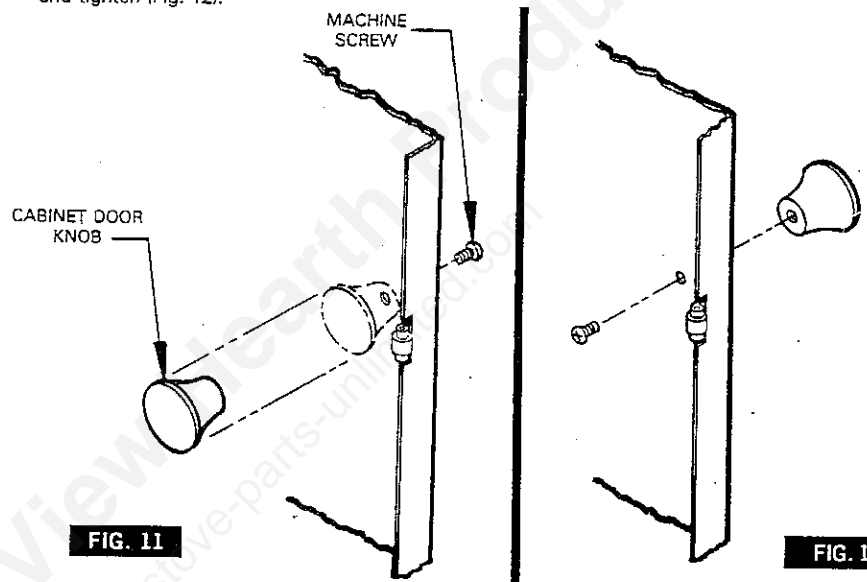
## Cabinet Door Catch Assembly

The door knob is mounted inside of the cabinet door to facilitate shipping and must be reversed for proper usage.

To get cabinet door open, place hand under cabinet frame (right hand side — cabinet door side) and push door out.

**INSTALL THE CABINET DOOR KNOB USING THE STEPS BELOW:**

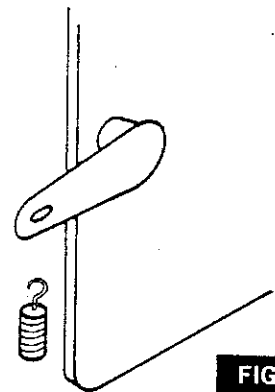
1. Remove the machine screw and door knob (Fig. 11).
2. Place door knob on outside of cabinet door. Then place machine screw through hole and into door knob and tighten (Fig. 12).



## Feed / Ash Door Handle Assembly

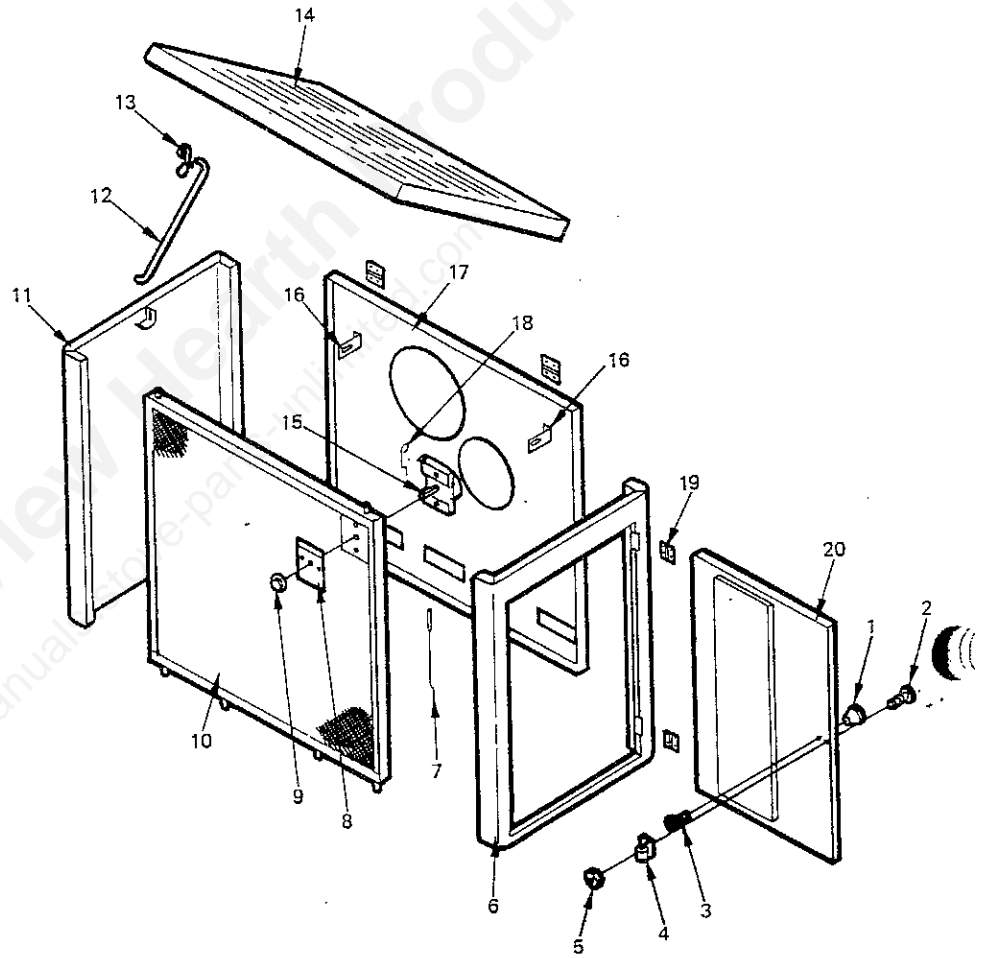
Read and complete before firing unit

1. Remove wooden handle from inside of the ash pan.
2. Place the metal hook of the wooden handle through the hole in the end of the cast iron door handle. (Fig. 13).
3. Using pliers close the metal hook so the wooden handle cannot be removed.



# repair parts

AUTOMATIC WOODBURNING CIRCULATOR  
MODEL NUMBER 2721



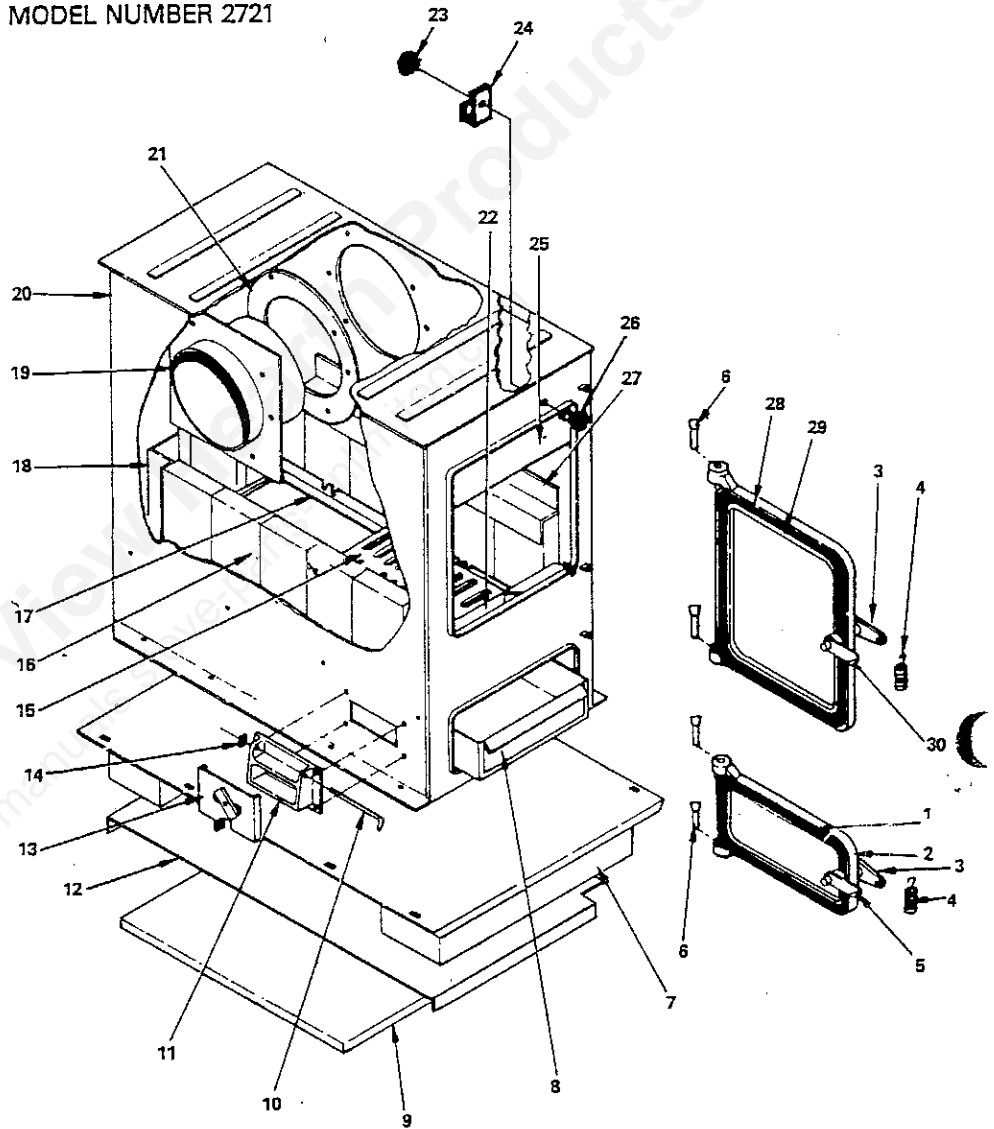
## repair parts

AUTOMATIC WOODBURNING CIRCULATOR  
MODEL NUMBER 2721

Key No.	Part No.	Description
1	89062	Door Knob
2	83033	Machine Screw (8-32 x 1/4")
3	83005	Machine Screw (10-24 x 1/2")
4	83093	Spring Latch
5	83244	Nut (KEPS, 10-24 Plain)
6	67968	Cabinet Door Frame
7	86191	Thermostat Linkage Adjuster ✓
8	85389	Control Panel Plate
9	89142	Thermostat Knob
10	67902	Cabinet Front
11	67967	Cabinet Left Side
12	21593	Hinge Support
13	83833	Hinge Clip
14	67966	Cabinet Top
15	67743	Thermostat ✓
16	21063	Back Brace (2 Req'd)
17	87514	Cabinet Back
18	86192	Thermostat Linkage ✓
19	89065	Door Hinge (4 Req'd)
20	67969	Cabinet Door

# repair parts

AUTOMATIC WOOD BURNING CIRCULATOR  
MODEL NUMBER 2721



# repair parts

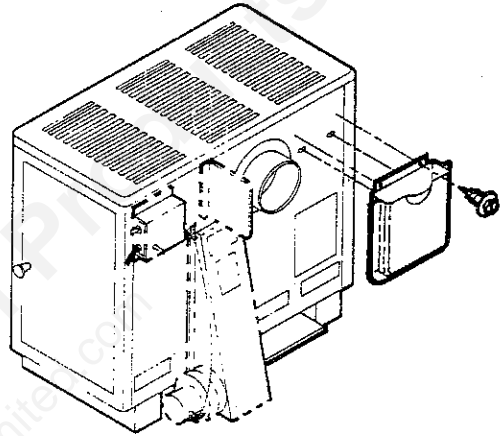
## AUTOMATIC WOODBURNING CIRCULATOR MODEL NUMBER 2721

Key No.	Part No.	Description
1	21803	Ash Door Gasket <i>3/8"</i>
2	40187	Ash Door
3	40091	Door Handle (2 Req'd)
4	67567	Wood Handle (2 Req'd)
5	22108	Latch, Ash Door
6	83114	Hinge Pin (4 Req'd)
7	67859	Base
8	67444	Ash Pan
9	22110	Heat Shield
10	17200	Draft Damper Pin
11	40075	Draft Damper Frame
12	67806	Second Floor Shield
13	67132	Draft Damper
14	83818	Clip Pin
15	40076	Fire Grate (2 Req'd)
16	89066	Fire Brick (10 Req'd)
17	66080	Grate & Liner Support (2 Req'd)
18	17130	Back Liner
19	40246	Flue Collar
20	67858	Heat Jacket
21	88032	Flue Collar Gasket
22	17120	Front Liner
23	83250	Nut, Keps (1/4-20) (2 Req'd)
24	<del>22247</del>	Bracket, Smoke Curtain (2 Req'd)
25	22090	Smoke Curtain
26	83035	Screw, Machine (1/4 - 20 x 1/2 PH TH 2) (2 Req'd)
27	17350	Fire Brick Retainer (2 Req'd)
28	40186	Feed Door
29	21804	Feed Door Gasket <i>3/8"</i>
30	21047	Latch, Feed Door
*	67775	Feed Door Assembled (Inc. Handle and Gasket)
*	67781	Ash Door Assembled (Inc. Handle and Gasket)
*	85382H	Owner's Manual

\* Not Shown

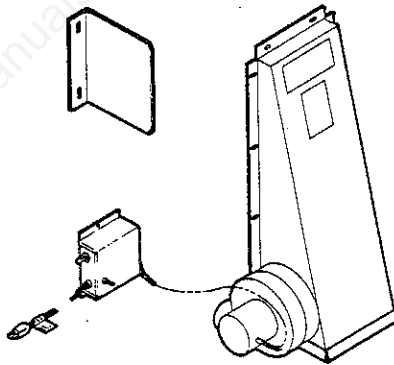
## Options for Model 2721 Wonderwood

### HU26 Humidifier



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### (100CFM) (200CFM) F36 or F56 Blower



**NOTE**

If you decide to order any of the "options" shown above, either:

- A) Contact your dealer or
- B) Contact the factory as listed on the back cover.



## LIMITED WARRANTY

**WARRANTY:** The United States Stove Company warrants its solid fuel heaters against burn-out or cracking of any steel or cast iron parts.

**TIME PERIOD:** The warranty period extends 3 years from date of purchase by original owner, except on electrical components of blower for which the warranty period is one year.

**CLAIM PROCEDURE:** Any defects relating to the above should be reported to United States Stove Company, giving description and pertinent data. Include proof of purchase, which will be returned on request.

**OUR RESPONSE:** Providing the heater has been installed and used in accordance with the owners manual supplied with the heater, The United States Stove Company will either:

- (1) Replace the defective part free of charge, including payment of any labor charges, or
- (2) Replace the heater free of charge, including payment of any labor charges.

**NOT COVERED:** Smoking problems are not covered under this warranty. Inadequate draft is generally due to the design or installation of the flue system.

**WARRANTOR:** United States Stove Company, P. O. Box 5349, Chattanooga, Tennessee 37406

**NOTE:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

## owners manual

# HOW TO ORDER REPAIR PARTS

THIS MANUAL WILL HELP YOU TO OBTAIN EFFICIENT, DEPENDABLE SERVICE FROM THE HEATER, AND ENABLE YOU TO ORDER REPAIR PARTS CORRECTLY.

KEEP IN A SAFE PLACE FOR FUTURE REFERENCE.

WHEN WRITING, ALWAYS GIVE THE FULL MODEL NUMBER AND SERIAL NUMBER WHICH IS ON THE NAMEPLATE ATTACHED TO THE INSIDE OF THE CABINET DOOR OF THE HEATER.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST:

1. The PART NUMBER
2. The PART DESCRIPTION
3. The MODEL NUMBER: 2721
4. The SERIAL NUMBER: \_\_\_\_\_

BEFORE INSTALLING YOUR CIRCULATOR, FILL IN THE SERIAL NUMBER OF YOUR CIRCULATOR IN THE SPACE PROVIDED ABOVE.

**UNITED STATES STOVE COMPANY**  
3500 N. Hawthorne Street  
Chattanooga, Tennessee 37406 — (615) 698-3435