

Sears

owners
manual

MODEL NUMBER
143.840901

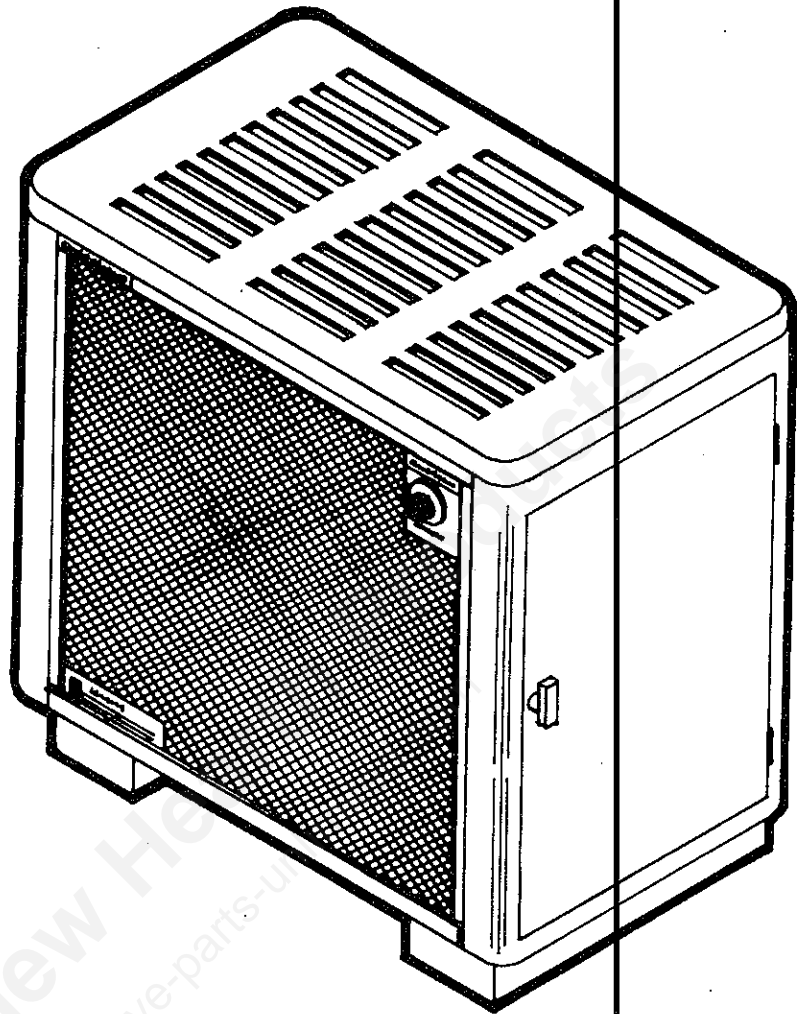


U. L. FILE NUMBER
MH 10475

CAUTION:
Read All Instructions
Carefully Before Starting the
Installation or Operating the
Heater

Do Not Use This
Heater in Mobile
Homes or Trailers

Save This Manual
For Future Reference



AUTOMATIC Wood Burning CIRCULATOR HEATER

- Assembly
- Installation
- Operation
- Repair Parts

Sears, Roebuck and Co., Chicago, Ill. 60684 U.S.A.

PRINTED IN U.S.A.

FORM 85482A 6/85

introduction!

Please read our instructions before you install and use your new Wood Burning Circulator Heater. This will help you obtain the full benefits from your heater.

If you want your heater professionally installed, contact your SEARS SALESPERSON. They will arrange for prompt, quality installation by SEARS AUTHORIZED INSTALLERS.

SEARS INSTALLATION POLICY

All installation labor arranged by SEARS shall be performed in a neat, workman-like manner in accordance with generally accepted trade practices. Further, all installations shall comply with all local laws, codes, regulations, and ordinances. The customer shall also be protected, during installation, by insurance relating to property damage, workmen's compensation and public liability.

SEARS INSTALLATION WARRANTY

In addition to any warranty extended to you on the Sears merchandise involved, which warranty becomes effective the date the merchandise is installed, should the workmanship of any Sears arranged installation prove faulty within one year, Sears will, upon notice from you, cause such faults to be corrected at no additional cost to 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.
Screwdriver (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.

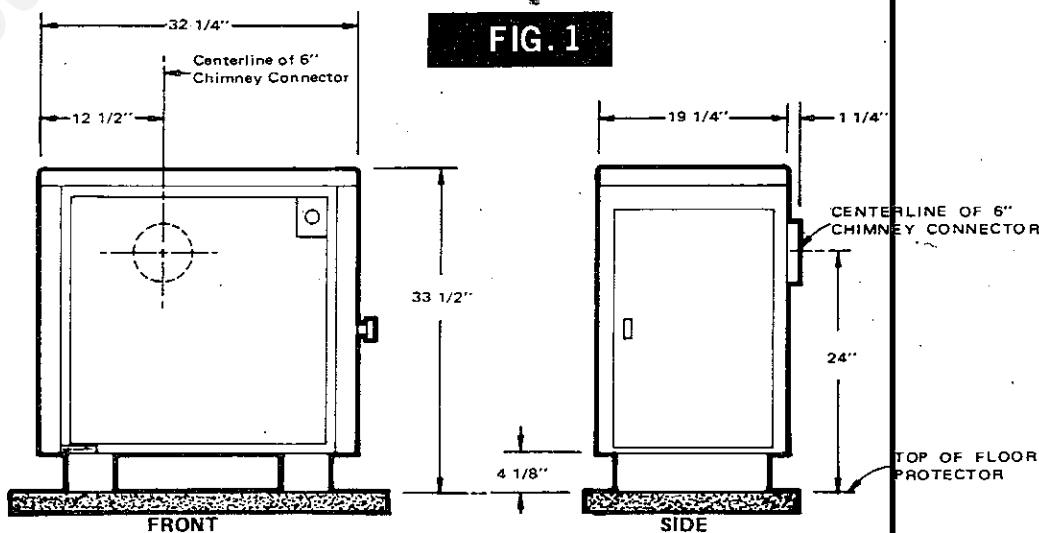
SAFETY NOTICE: If this heater is not properly installed, a house fire may result. For your safety, follow the installation directions. Contact local building or fire officials about restrictions and installation inspection requirements in your area.

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 Solid Fuel Factory-Built 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 15).
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.
8. **CAST IRON PARTS MUST BE "SEASONED" 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 "Using Coal and Wood Stoves Safely" NFPA No. HS-10-1978. 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, which is 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 feed, ash door, cabinet door closed at all times except while tending the heater.

CAUTION:

Do not touch the heater until it has cooled.

Automatic Circulator Heater Dimensions



locating the heater

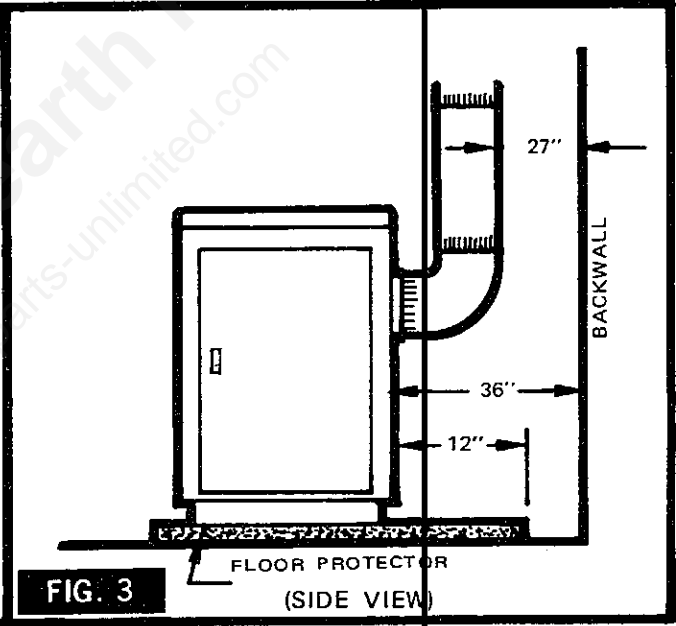
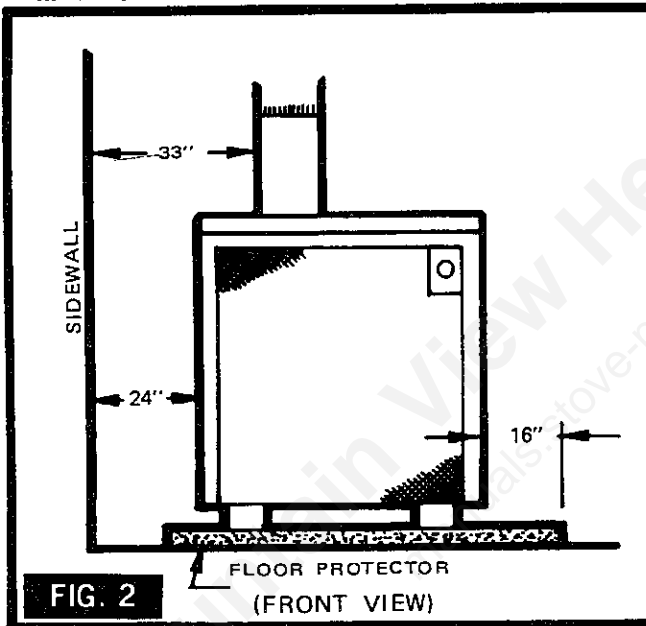
AS A LOCATION IS SELECTED, KEEP THE FOLLOWING IN MIND:

1. The chimney connection should be as short as possible. The heater must have its own chimney. Do not connect this unit to a chimney flue serving another appliance. If there is no chimney near where you wish to place the heater, you can use a UL Listed Residential Solid Fuel Factory-Built 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" millboard having a thermal

conductivity of $K=0.84$ BTU in/ft.² hr. deg. F with 28 gauge sheet metal or a U.L. 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.

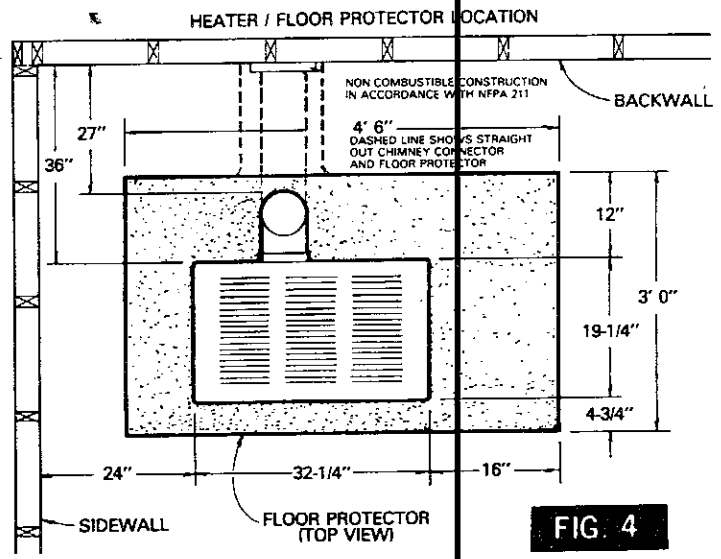
MINIMUM CLEARANCE TO COMBUSTIBLE WALLS



NOTE: BEFORE FIRING HEATER

1. Remove plastic knob from inside of cabinet door and install on outside. (See Page 11).
2. Slide firebricks toward the rear so no gaps remain between them.

CAUTION
Keep furnishings and other combustible materials away from the heater.



chimney connection

MASONRY CHIMNEY

Before using an existing masonry chimney, clean the chimney and inspect the flue liner to be sure it is safe to use. Make repairs before attaching the heater.

Look at Fig. 5. The connector pipe and fittings you will need to connect directly to a masonry chimney are shown.

If the connector pipe must go through a combustible wall before entering the masonry chimney, consult a qualified mason or chimney dealer. The installation must conform to local fire codes.

Do not connect this heater into the same chimney flue as the fireplace or flue from another heater.

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, close it tightly.

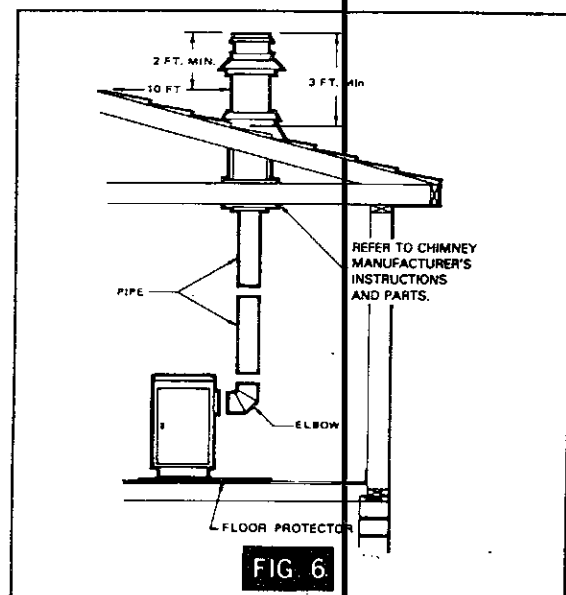
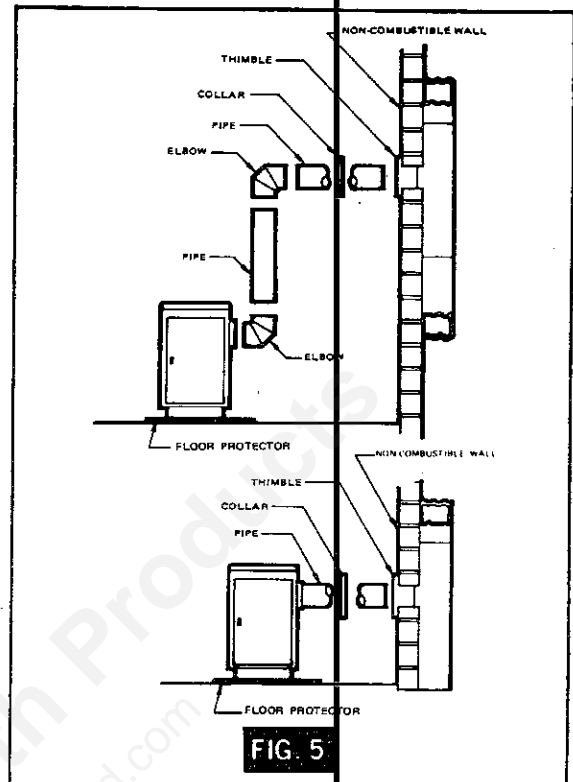
UL LISTED CHIMNEY

Carefully follow chimney manufacturer's instructions. Use only a UL Listed Residential Type and Building Heating Appliance Chimney. If your chimney starts at the ceiling (Fig. 6), you will need a 6" elbow and enough 6" pipe to reach the ceiling. You will also need the connector adapter Sears Stock No. 42-99185.

The top of the chimney must 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).

BAROMETRIC DRAFT REGULATOR (Optional)

In some installations, it may be desirable to install a barometric draft regulator in the chimney connector. A barometric draft regulator should be located in the same room (pressure zone) as the heater, when installing a barometric draft regulator, follow the manufacturing instructions.



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. (See pages 8 and 9) 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 is 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.

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. Do not put a damper in a connector pipe.
8. 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.

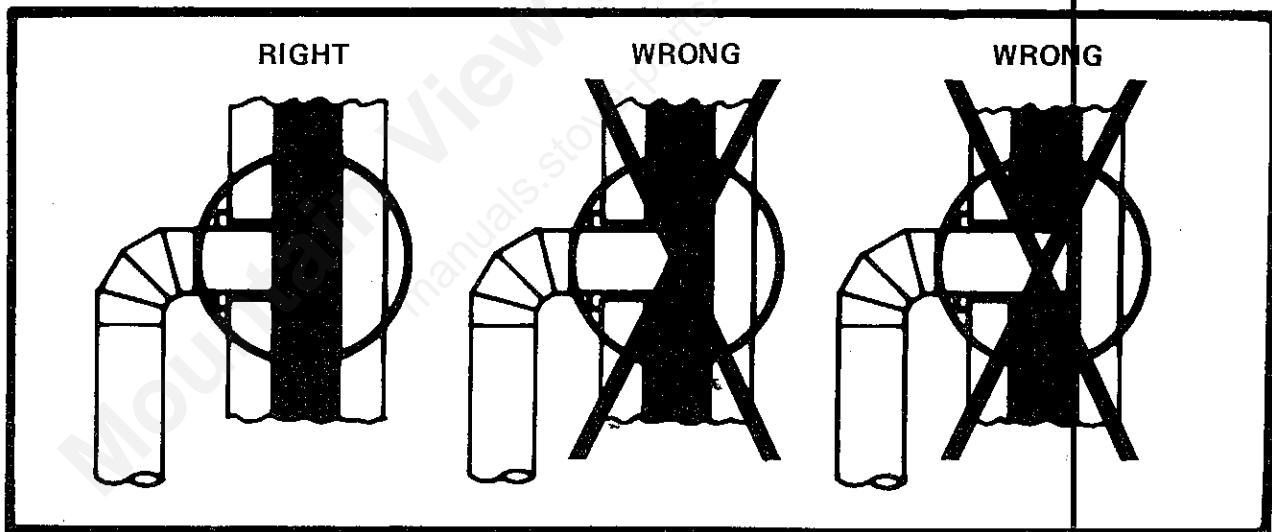


FIG. 9

How To Use Your Heater

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.**

CAUTION

**Build Fire on integral grate provided
with the heater.**

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. Do not add fuel above firebox liners.
3. 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 4).

NOTE

During opening and closing of the feed and ash doors of this heater, it may seem that the fit of the doors are "too tight". As the heater is fired, the gasketing "settles" or "seats" itself in the doors. The tight fit at the factory and before the heater's initial firing is to insure a good seal after the gasketing "settles".

MINIMUM FIRE

The rate of burning at the low setting can be further adjusted by opening or closing the minimum fire air shutter (Fig 15) 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

**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 DE-
SIGNATED FOR THERMOSTATIC OPERA-
TION. OPERATION WITH EITHER DOOR
OPEN WILL OVERHEAT AND DAMAGE
THE HEATER.**

CAUTION

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

CAUTION

**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.**

CAUTION

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

FEED / ASH DOOR HANDLE ASSEMBLY

Read and Complete Before Firing Unit

1. Remove wooden handle from inside of ash pan.
2. Place the metal hook of the wooden handle through the hole in the end of the cast iron door handle. (Fig. 12).
3. Using pliers close the metal hook so the wooden handle cannot be removed.

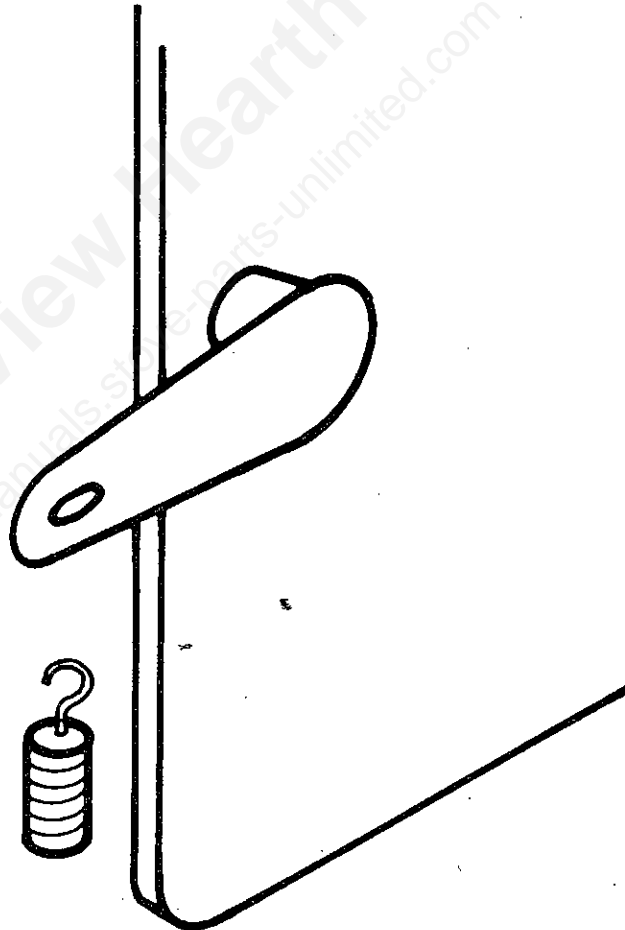


FIG. 12

adjusting the thermostat

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

If the room temperature 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 in the flue collar and at all joints.
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.

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

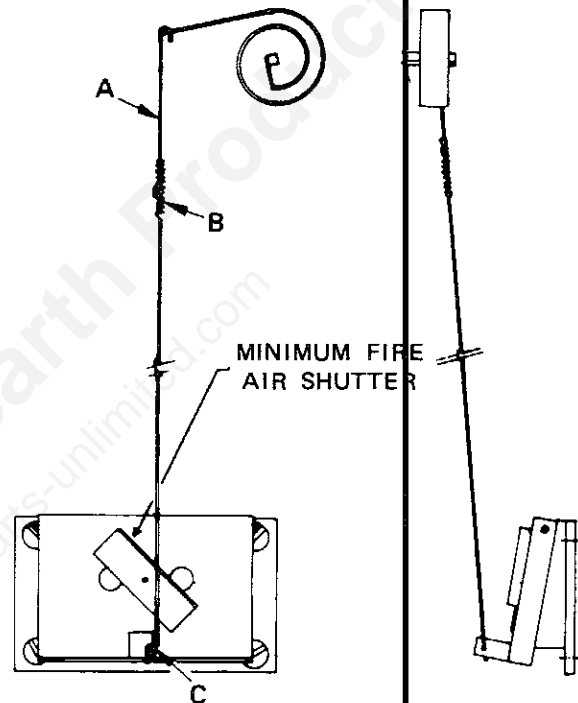


FIG. 15

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 a house fire. Creosote may be removed by using a chimney brush or other commonly available materials.

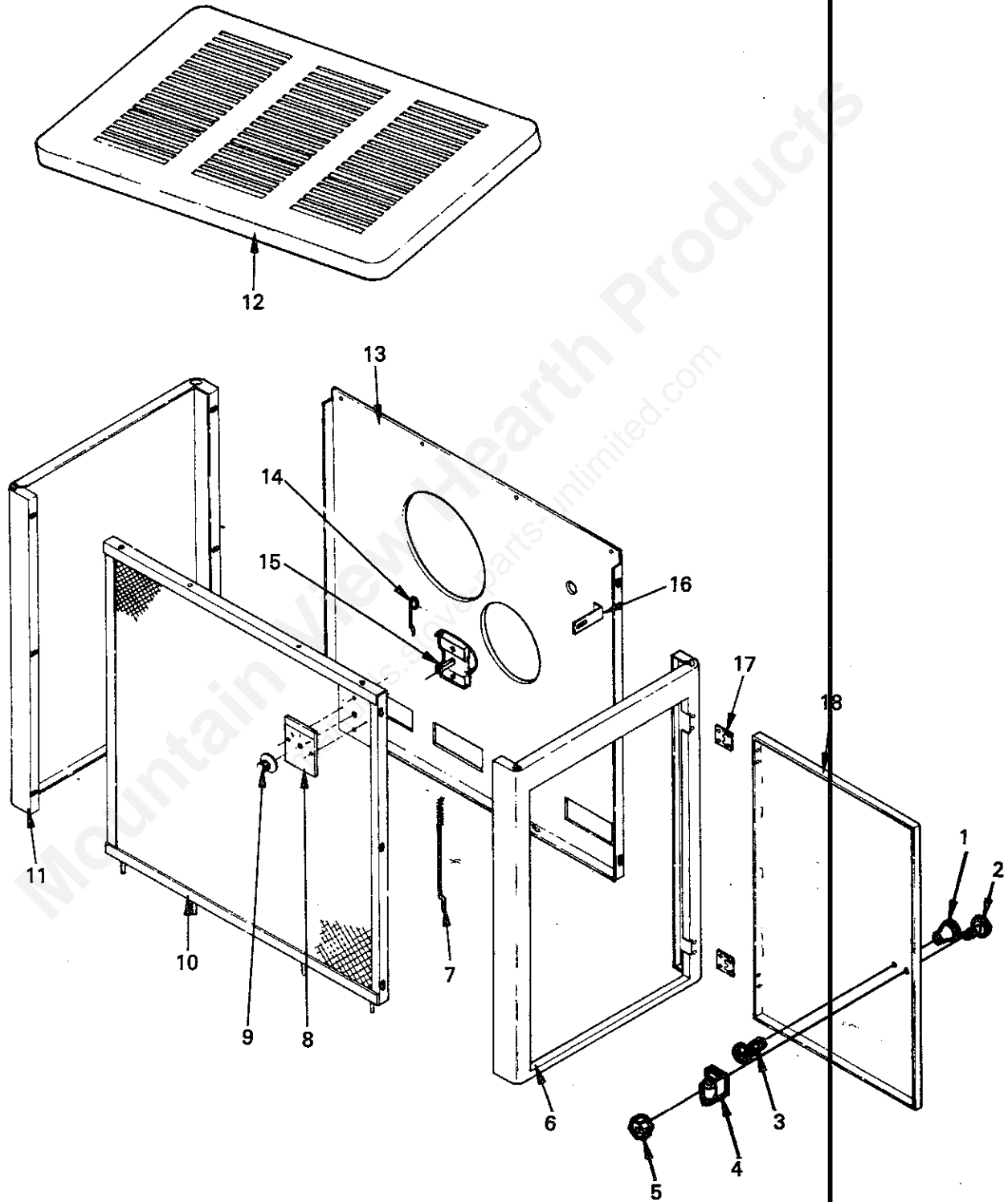
Chimney fires burn very hot. If the chimney connector should glow red, immediately call the fire department, then reduce the fire by closing the inlet air control and pour a large quantity of coarse salt, baking soda or cool ashes on top of the fire in the firebox.

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.

repair parts

SEARS AUTOMATIC WOODBURNING
CIRCULATOR MODEL NO. 143.840901



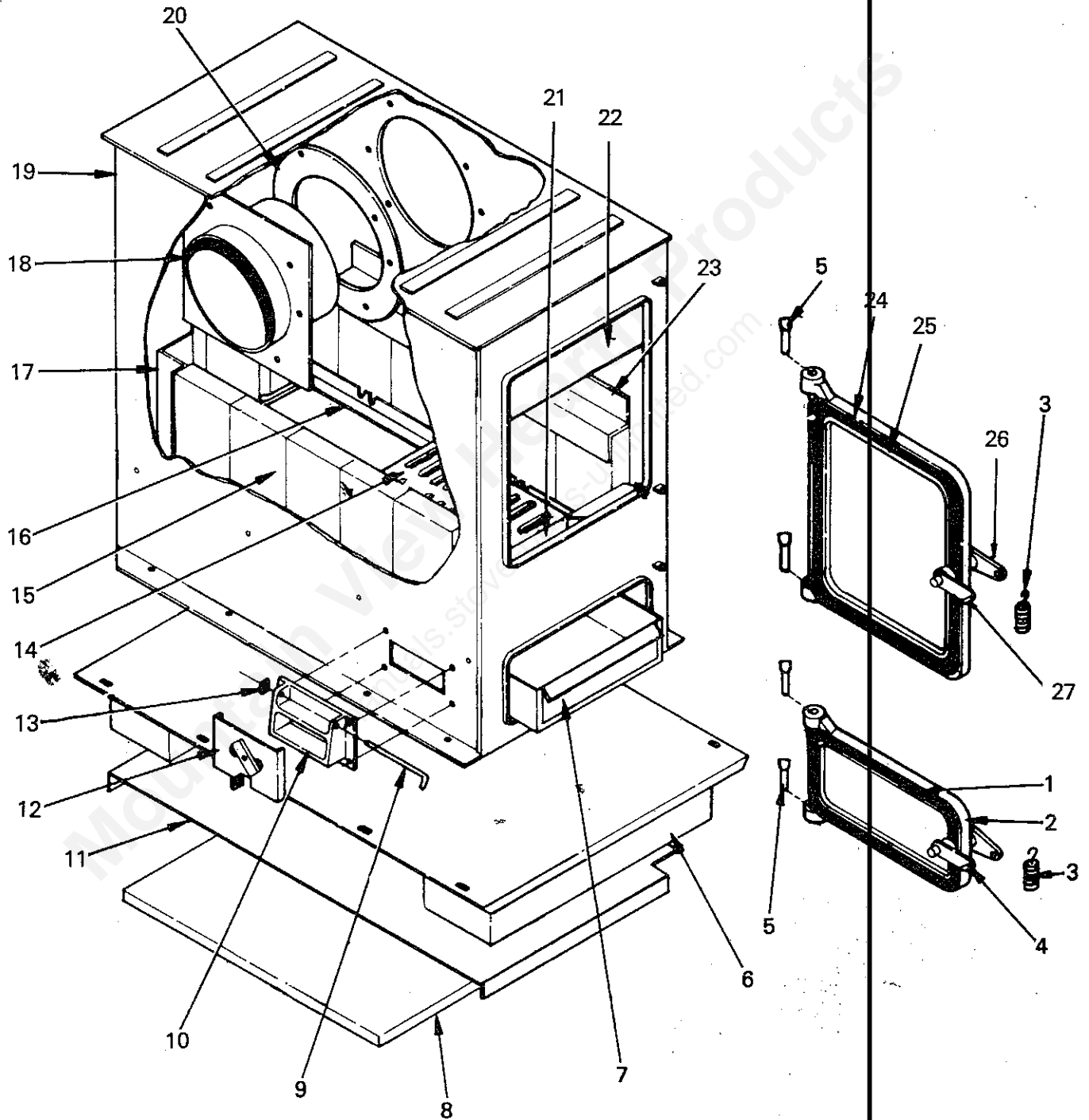
repair parts

SEARS AUTOMATIC WOODBURNING CIRCULATOR MODEL NO. 143.840901

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 PLN)
6	67968	Cabinet Door Frame
7	86191	Thermostat Linkage Adjuster
8	85431	Control Panel Plate
9	89142	Thermostat Knob
10	67902	Cabinet Front
11	67967	Cabinet Left Side
12	67966	Cabinet Top
13	66440	Cabinet Back
14	86192	Thermostat Linkage
15	67743	Thermostat
16	21063	Back Brace
17	89065	Door Hinge (2 Req'd)
18	67969	Cabinet Door

repair parts

SEARS AUTOMATIC WOODBURNING
CIRCULATOR MODEL NO. 143.840901



repair parts

SEARS AUTOMATIC WOODBURNING CIRCULATOR MODEL NO. 143.840901

Key No.	Part No.	Description
1	21803	Ash Door Gasket
2	67781	Ash Door (Includes Handle & Gasket)
3	67567	Wood Handle
4	22108	Latch, Ash Door
5	83114	Hinge Pin (4 Req'd)
6	67859	Base
7	67444	Ash Pan
8	22110	Heat Shield
9	17200	Draft Damper Pin
10	40075	Draft Damper Frame
11	67806	Second Floor Shield
12	67132	Draft Damper
13	83818	Clip Pin
14	40055	Fire Grate (2 Req'd)
15	89066	Fire Brick (10 Req'd)
16	66080	Grate & Liner Support
17	17130	Back Liner
18	66960	Flue Collar
19	67858	Heat Jacket
20	88032	Flue Collar Gasket
21	22247	Front Liner
22	22090	Smoke Curtain
*	22171	Bracket (Smoke Curtain) (2 Req'd)
*	83035	Screws Machine (1/4 - 20 x 1/2) (2 Req'd)
*	83250	Nut, Keps (1/4 - 20) (2 Req'd)
23	17350	Fire Brick Retainer (2 Req'd)
24	67775	Feed Door (Includes Handle & Gasket)
25	21804	Feed Door Gasket
26	40091	Handle, Door (2 Req'd)
27	21047	Latch, Feed Door
*	85482	Owner's Manual (F642-4685)

* Not Shown

Sears

**owners
manual**

**MODEL NUMBER
143.840901**

**HOW TO
ORDER
REPAIR PARTS**

**TELL SEARS YOU
WANT IT
INSTALLED ---
THEN RELAX**

**AUTOMATIC
Wood Burning
CIRCULATOR HEATER**

Now that you have purchased your Automatic Wood Circulator Heater should a need ever exist for repair parts or service, simply contact any Sears Service Center. Be sure to provide all pertinent facts when you call or visit.

The Model Number will be found on a plate mounted inside of cabinet door of the heater. Always mention the Model Number when requesting service or repair parts for your 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: 143.840901
4. The NAME OF ITEM: **Automatic
Wood Burning Circulator Heater**

If the part you need is not stocked locally, your order will be transmitted to a Sears Repair Parts Distribution Center for quick handling.

When Sears arranges the installation, you can be sure the job is done right. We will arrange for professional workmanship... and we'll take care of the entire project. What's more, during installation you get insured protection... against property damage and also against accidents to workmen. All you have to do is talk to your Sears salesperson or call your nearest Sears store today for detailed information.

Sears, Roebuck and Co., Chicago, Ill. 60684 U.S.A.