

Sears

**owners
manual**

**MODEL NUMBER
143.840821**

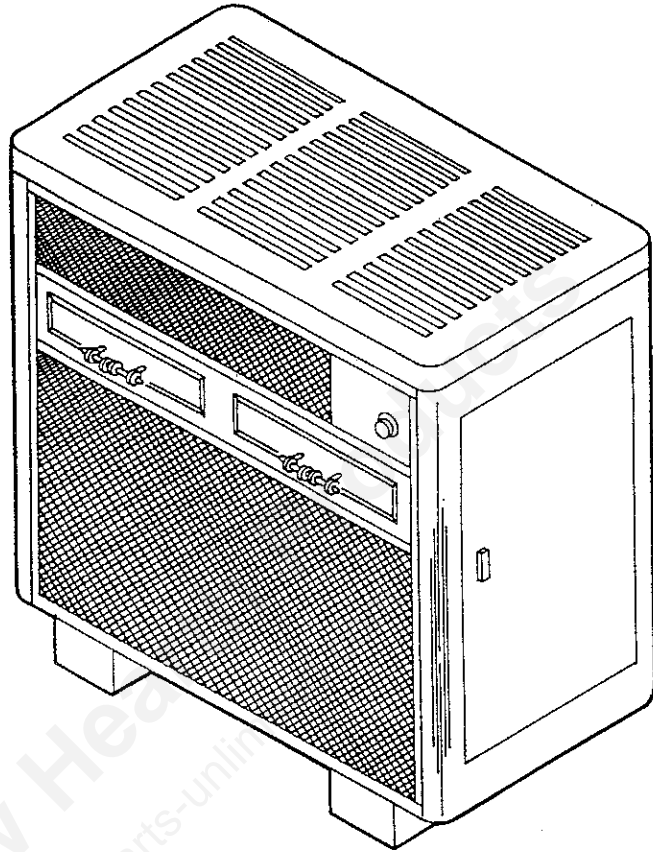


**U.L. FILE NUMBER
MH 10475**

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 COAL OR 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 85337-A 1/82

introduction!

Please read our instructions before you install and use your new Coal or 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)

MATERIALS

6" Pipe, 6" Elbow, Collar and Thimble;
as required (24 Gauge min.)
1/2" Sheet metal screws
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

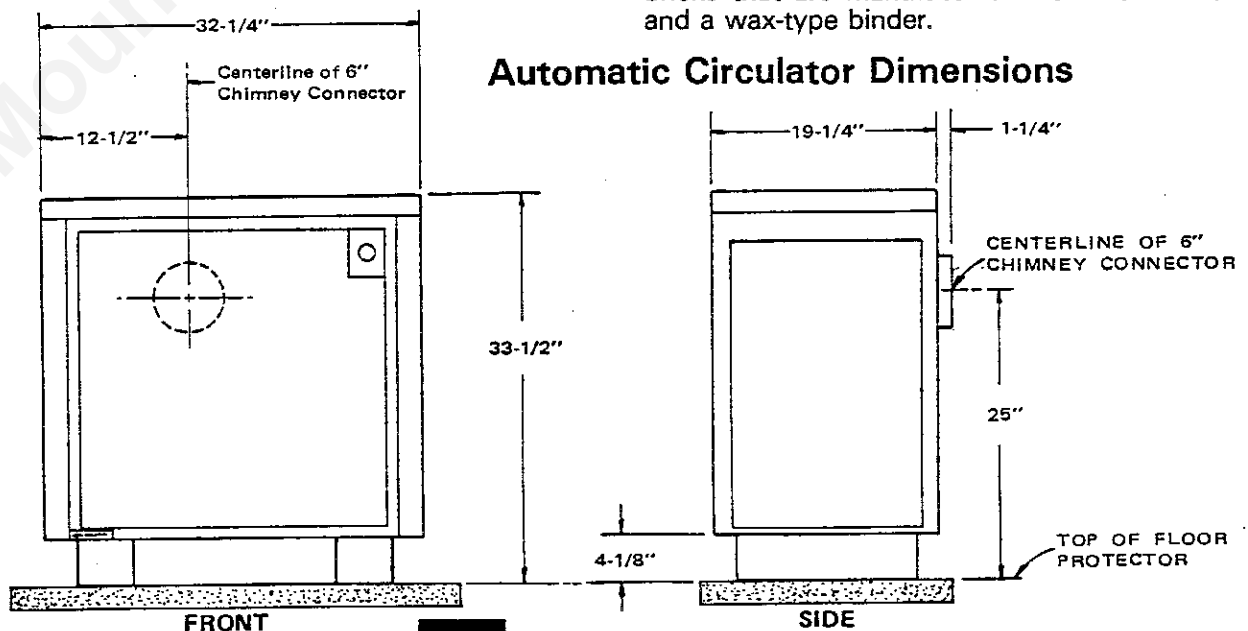
rules for safe installation and operation

Read these rules and the instructions carefully. Failure to follow them will cause a hazard that could result in death, serious bodily injury, and/or property damage.

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.
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. Use a 6" diameter Chimney or larger, that is high enough to give a good draft.
5. Be sure that your Chimney is safely constructed and in good repair. Have the chimney inspected by the Fire Department or a qualified inspector. Your insurance company may be able to recommend a qualified inspector.
6. Inspect chimney connector and chimney before and frequently during the heating season for any deposit of creosote or soot which must be removed (see Chimney Maintenance, page 11).
7. 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.
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 to use this heater who is unfamiliar with the correct operation of 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 Battery Match Park, Quincy, MA 02269.
11. Keep the ashpit section free of excess ashes. Do not allow ashes to stack higher than the sides of the ash pan.
12. **DISPOSAL OF ASHES-** Place ashes in a metal container with a tight fitting lid. Keep the closed container on a noncombustible floor or on the ground, well away from all combustible materials. Keep the ashes in the closed container until all cinders have thoroughly cooled. The ashes may be buried in the ground or picked up by a refuse collector.
13. **CAUTION-** The special enamels used on your heater may give off some smoke while they are curing during first few fires. Build small fires at first.
14. **CARING FOR ENAMELED PARTS -** This heater has an enameled 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. **ENAMEL DISCOLORATION WILL OCCUR IF THE HEATER IS OVERFIRED. FOLLOW OPERATING INSTRUCTIONS CAREFULLY.**
15. Keep the feed door, ash door, cabinet door closed at all times except while tending the heater.
16. Use wood or coal only. **DO NOT USE** the coal bricks that are manufactured from coal dust and a wax-type binder.

CAUTION:

Do not touch the heater until it has cooled.

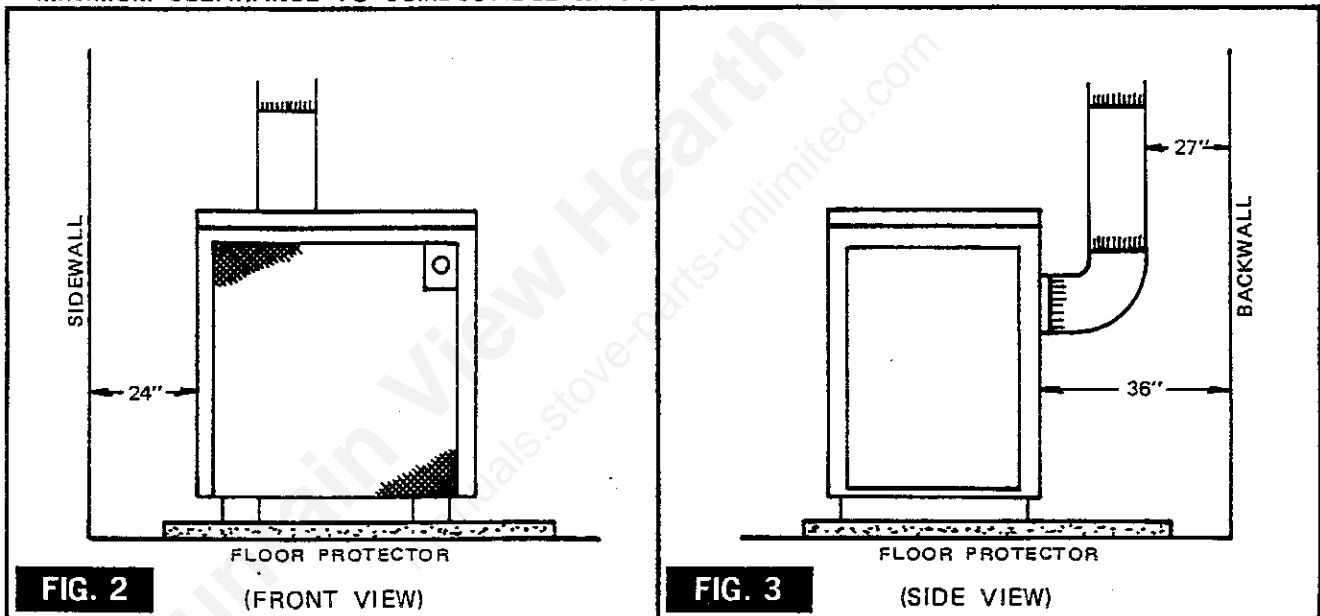


locating the heater

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

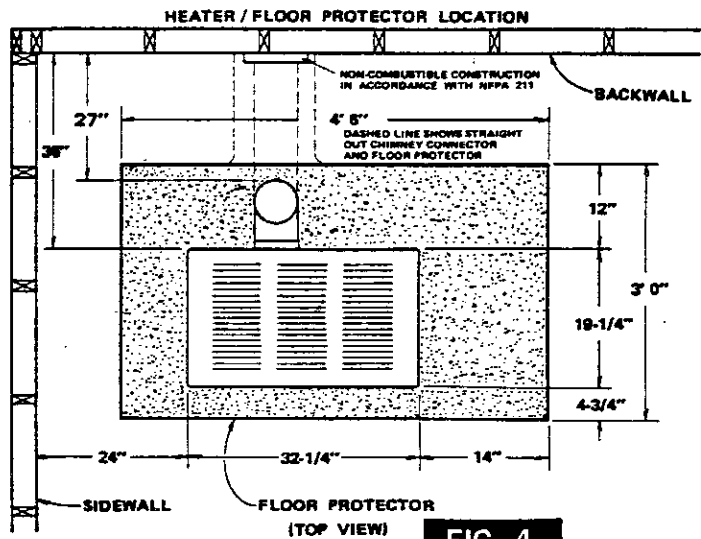
1. The chimney connection should be as short as possible. The heater must have its own chimney. Do not connect this unit to a chimney flue, serving another appliance. If there is no chimney near where you wish to place the heater, you can use a UL Listed Residential Type and Building Heating Appliance 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 or a U.L. Listed Floor protector. Have the floor protector extend 18" beyond the door side of the heater and under the connector pipe in the back (Fig. 4, 5, and 6).
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.
2. Slide firebricks toward the rear so no gaps remain between them.



chimney connection

MASONRY CHIMNEY

Before using an existing masonry chimney, clean the chimney. 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.

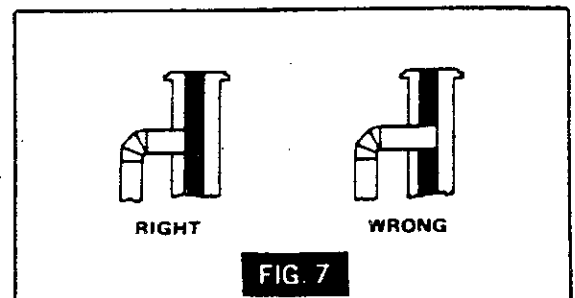
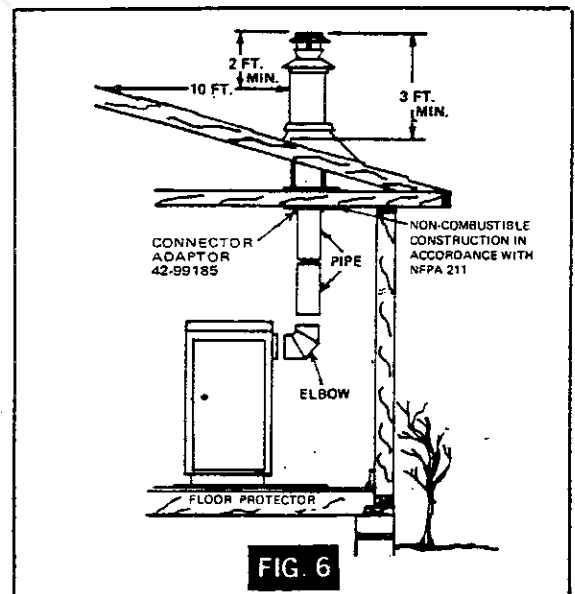
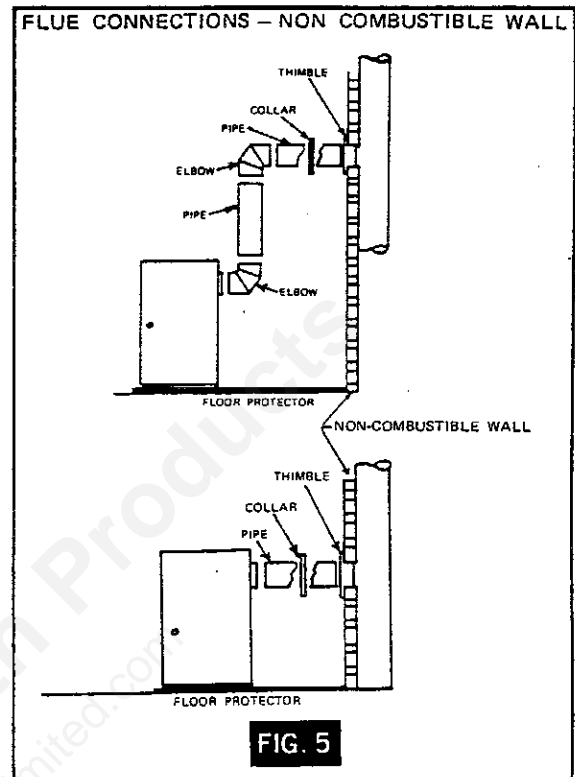
UL LISTED CHIMNEY

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 adaptor 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).

RULES FOR CONNECTOR PIPE INSTALLATION

1. The crimped end of the connector pipe fits inside the heater flue collar. Install additional pipe and elbow **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. 7).
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.



Installation: Cabinet Door Latch Assembly

Remove handle assembly from ash pan. Items in bag should include: (SEE FIG. 8).

- (1) Latch
- (1) Spring
- (1) Set Screw
- (1) Hex Socket Wrench
- (1) Knob

Install the latch assembly using the steps shown below.

- STEP 1: Open cabinet door
- STEP 2: Put spring on latch.
- STEP 3: Put latch through bracket on the inside of the cabinet door.
- STEP 4: Slide handle on latch.
- STEP 5: Insert and tighten set screw in handle with hex socket wrench.

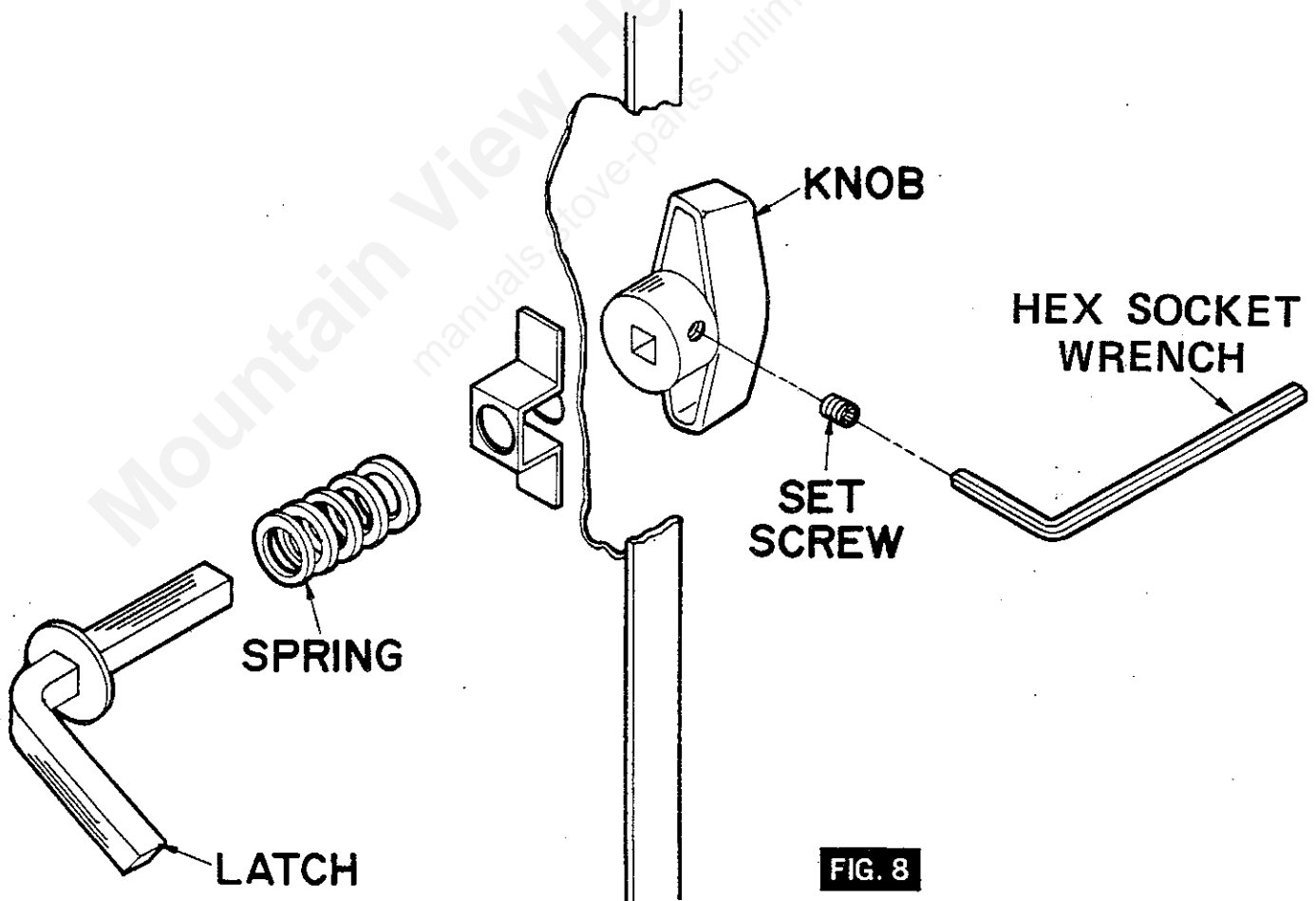


FIG. 8

How To Use Your Heater

FUEL

Egg size (1-3/16 or larger) coal for residential furnaces. Coal with a low ash content (2% to 6%) is recommended. Do not use Cannel Coal. Hardwood, 18" to 22" should be split and air dried (seasoned) for 6 months.

LIGHTING

1. Set the thermostat on "HIGH" for 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 wood or about 15 lbs. of coal after fire is burning briskly. Be careful not to smother the kindling fire.
5. Set thermostat for 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 over long periods of time. 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. Wood Fire - Do not add fuel above firebox liners.
3. Coal Fire - Never smother the fire when adding coal (see CAUTION below). Gas accumulation and a mild smoky explosion will occur.
 - a. Add fresh kindling if the bed of coals has cooled.
 - b. Add up to 20 lbs. of coal. Never add coal above top of fire brick.
 - c. Stir the coal and watch the fire. Be sure the new coal is burning briskly before you close the doors

- and turn the thermostat down.
- d. Adjust air shutter on feed door damper from closed to open position for better burning. (See Fig. 9).
4. Shake grates vigorously 1/2" towards and away from the ash door opening to dump ashes into the ash pan. Do this at least once every 12 hours of operation. Empty ash pan regularly. Do not allow ashes to build up to grate as grate will warp and burnout, and you might spill the ashes when removing the pan. Dispose of hot ashes properly (see Note 12 on Page 3).

CAUTION

DO NOT OPERATE THIS HEATER 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

NEVER STORE FLAMMABLE LIQUIDS, ESPECIALLY GASOLINE, IN THE VICINITY OF THE HEATER.

CAUTION

GASES THAT ARE DRIVEN FROM FRESH COAL MUST BE BURNED OR THEY WILL ACCUMULATE AND EXPLODE. NEVER SMOTHER A FIRE WHEN ADDING FRESH COAL.

WARNING

NEVER USE THE MANUFACTURED COAL BRICKS THAT ARE MADE FROM COAL DUST AND A WAX TYPE BINDER.

SUGGESTIONS FOR BURNING ANTHRACITE COAL

1. Anthracite coal may be burned in the Model 143.840821. Always follow instructions that are shown in the Owners Manual.
2. With coal, as with wood, it is important to maintain a clean chimney. The chimney connector and chimney should be inspected at least twice monthly during heating season.
3. Keep the grate clear of ash and cinders. Use the shaker grate to keep the ashes from building up in the firebox.
4. Do not operate the unit with the ash door, feed door, or cabinet door open.
5. Anthracite coal burns with a short, blue flame with the coals having a glowing, red color. Before adding coal, when starting the fire, have a good hot log fire burning.
6. After having a log fire burning, add small amounts of coal until a bed of coal is built up.
7. Adjust air shutter on feed door damper from closed to open position for better burning. (See Fig. 9).
8. A draft reading of $-.05$ to $-.06$ in w.c. is required for anthracite to burn.

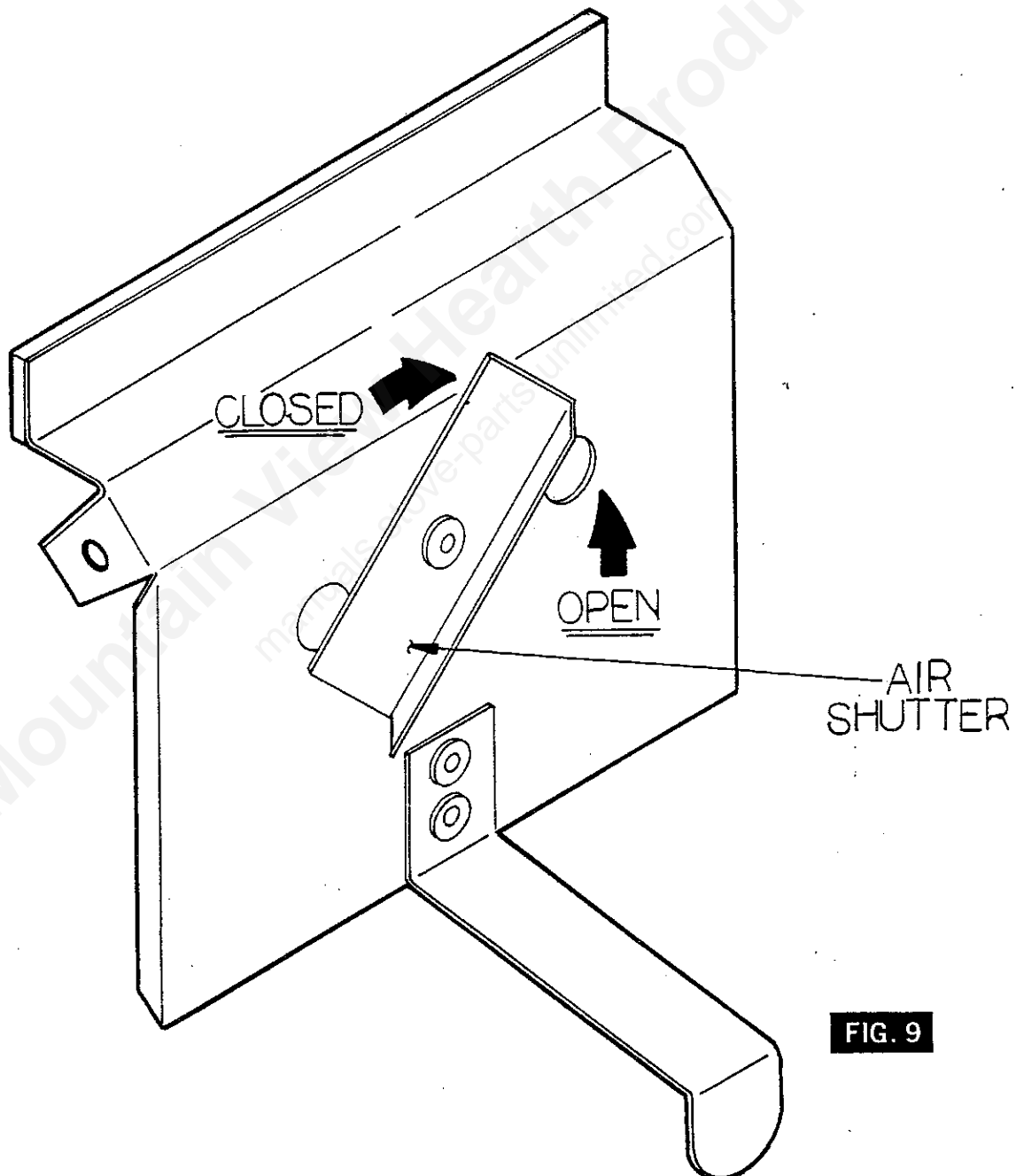


FIG. 9

CAUTION

THIS HEATER IS DESIGNED WITH A FLUE COLLAR DAMPER WHICH OPERATES AUTOMATICALLY WHEN THE FEED DOOR IS OPENED AND CLOSED. IF THE UNIT SMOKES WHEN THE FEED DOOR IS OPEN, CHECK THE FLUE COLLAR DAMPER TO SEE THAT IT IS OPEN ALSO. FAILURE OF THE DAMPER TO OPERATE PROPERLY MAY CAUSE SMOKE AND FLAME TO ESCAPE THROUGH THE FEED DOOR IN THE OPEN POSITION. (FIG. 10)

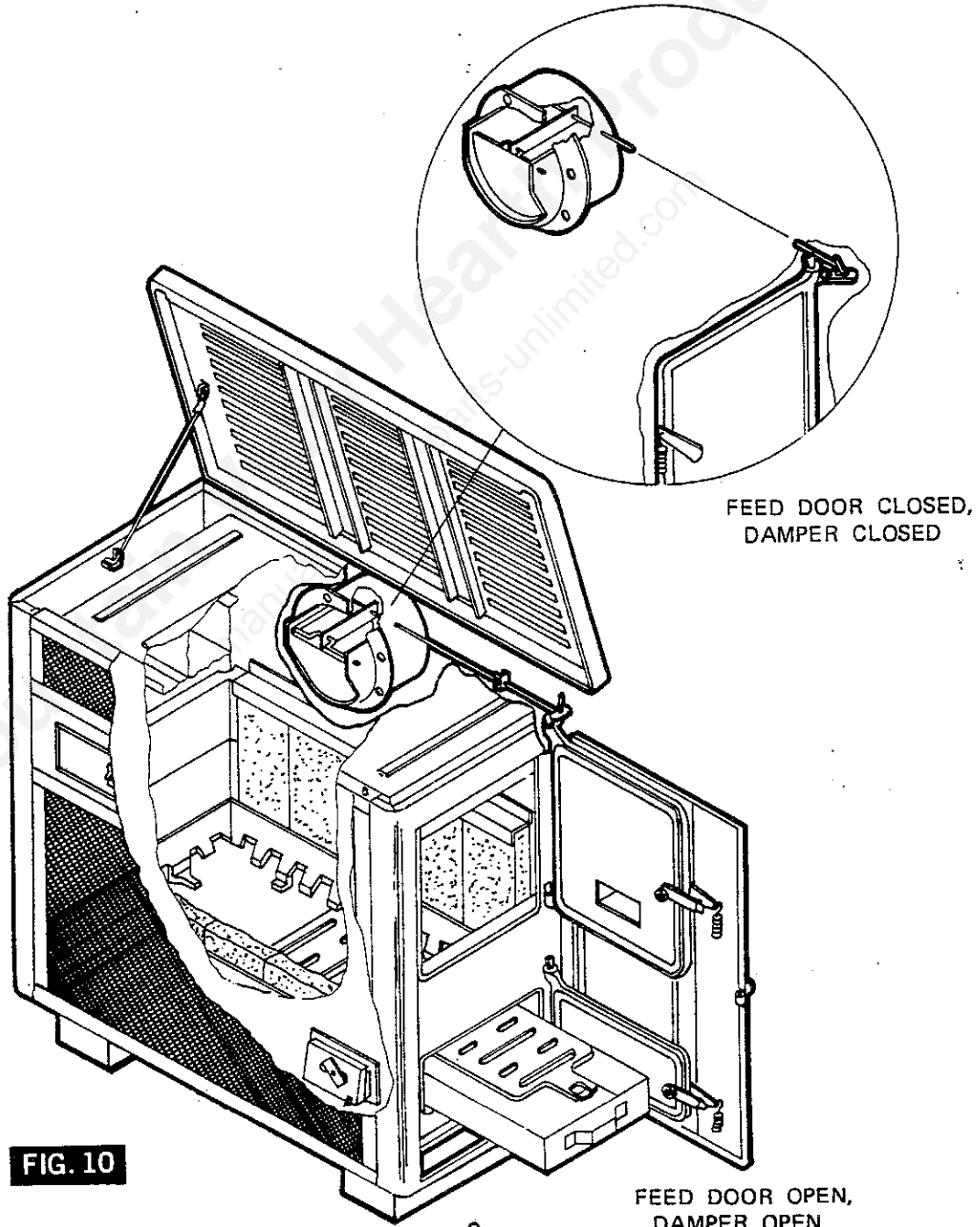


FIG. 10

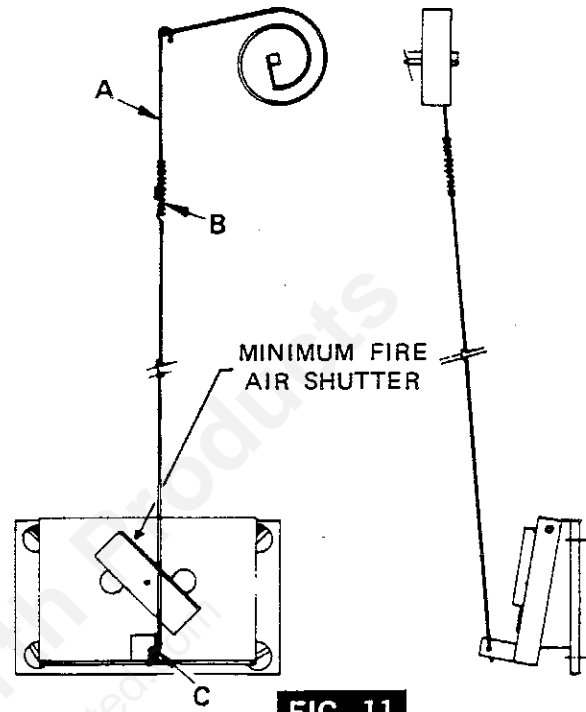
adjusting the thermostat

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:

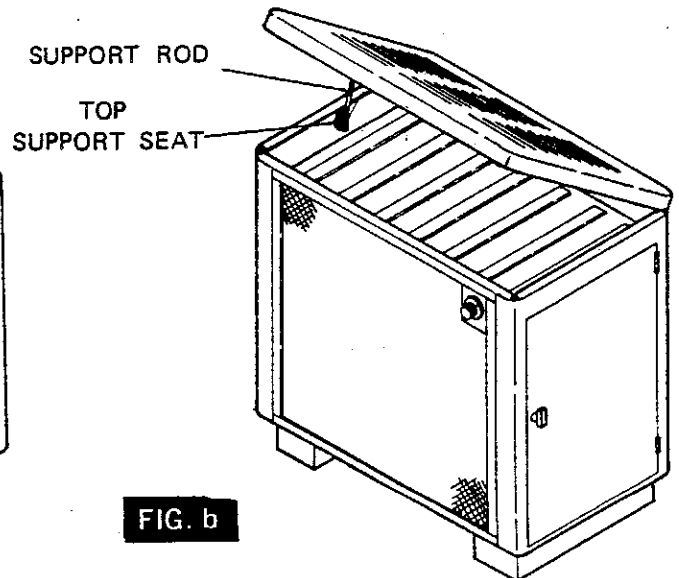
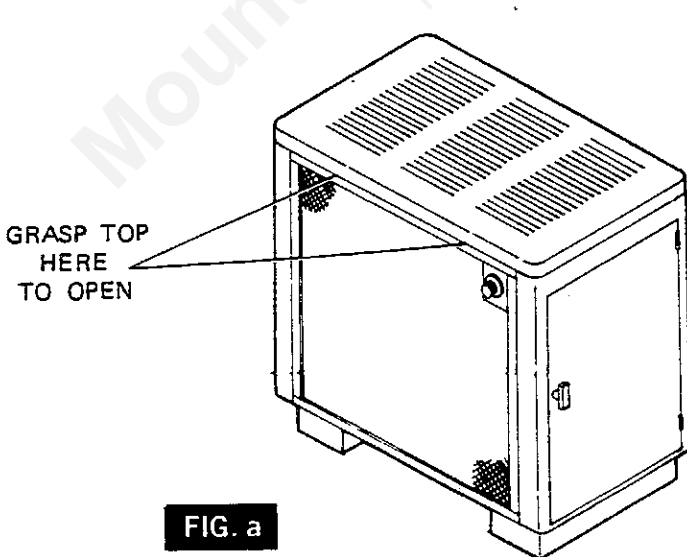
- A. To increase the amount of heat at a "HIGH" setting, adjust the wire linkage to increase the draft damper opening (Fig. 11).
 1. Unhook linkage wire at Point "C".
 2. Take Point "A" in left hand and "B" in right hand, then turn "B" clockwise about 3 turns.
 3. Then hook linkage wire back to draft 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.

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).



minimum fire

The burning rate at the low setting can be further adjusted by opening or closing the minimum fire air shutter (Fig. 11) on the draft control door.

1. Partially close the shutter to make the fuel burn longer.
2. Open the shutter, exposing a large opening, to reduce the formation of creosote or soot (see notes on Chimney Maintenance).
3. Do not operate the heater with the minimum fire air shutter completely closed.

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 drawing 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. 8).
2. Do not connect two heaters into the same chimney flue.
3. Do not use the chimney to ventilate the cellar or basement. If there is a cleanout opening at the base of the chimney, close it tightly.
4. If the chimney is too cool, moisture will condense in the chimney and run back into the heater. Creosote formation will be rapid and may block the chimney. Build your heater fire large enough to keep the chimney warm to prevent 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).

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.

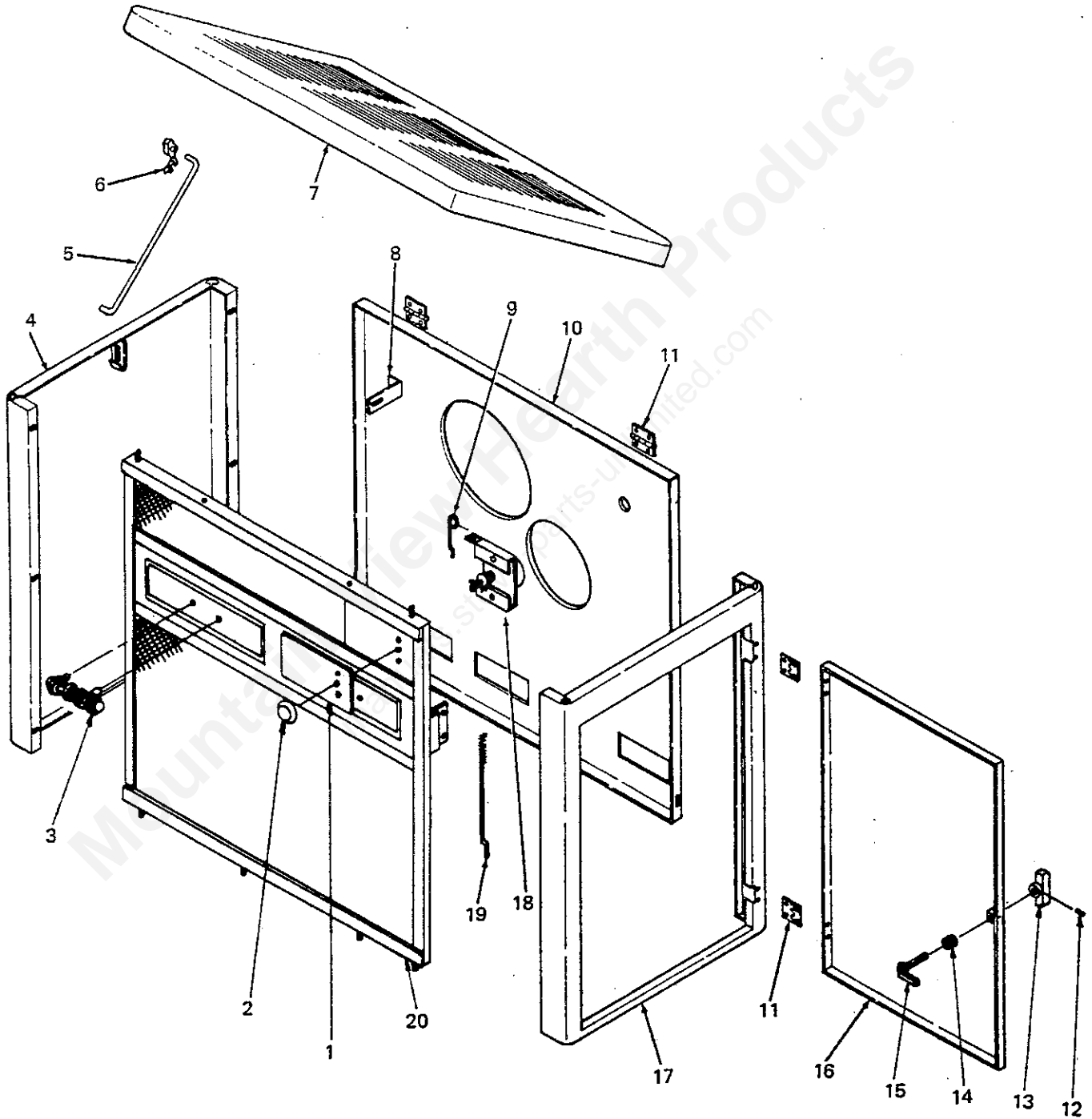
The chimney connector and chimney should be inspected at least twice monthly during the heating season to determine if a creosote buildup has occurred.

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

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 COAL OR WOOD BURNING
CIRCULATOR MODEL NO. 143.840821



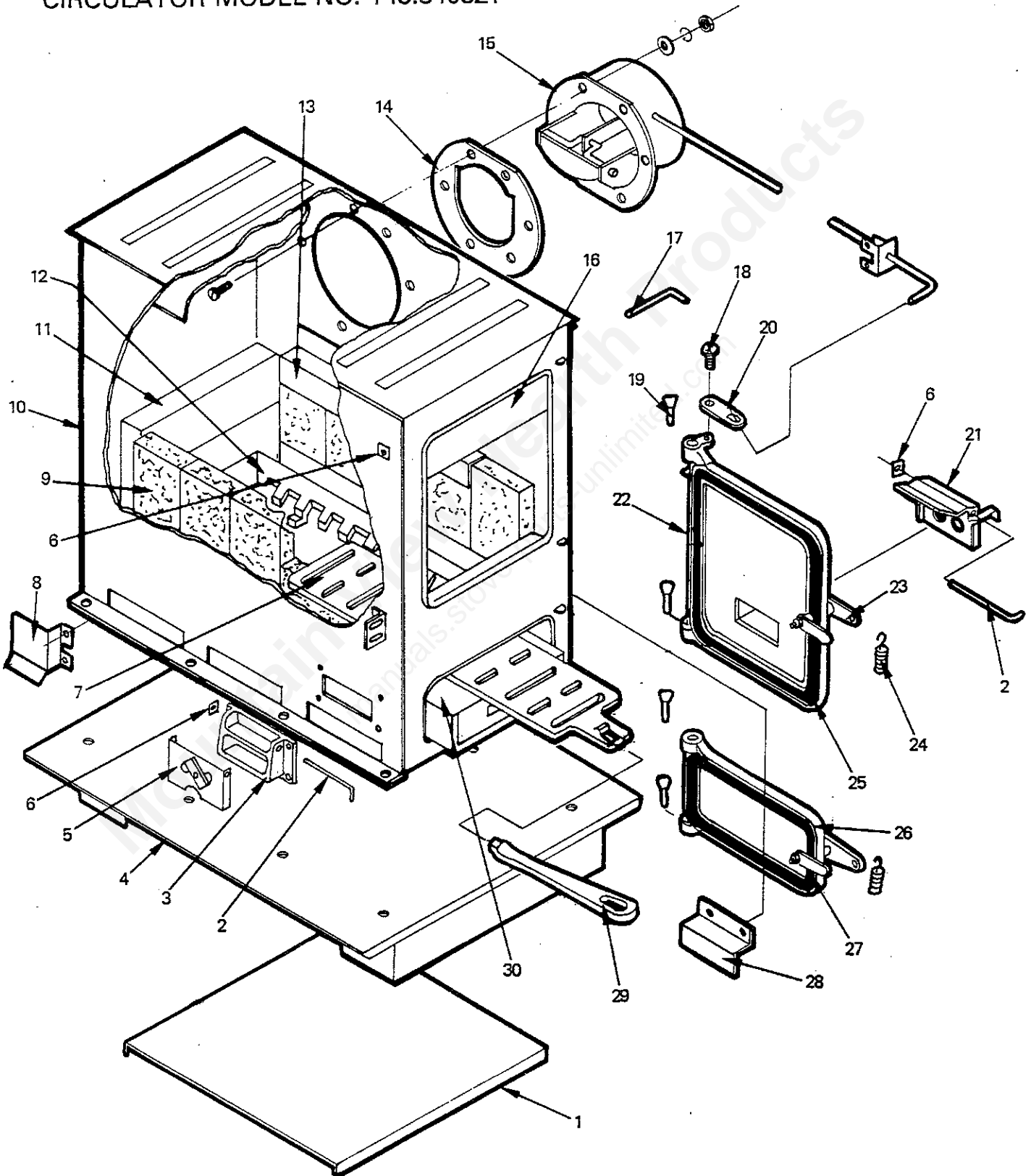
repair parts

SEARS AUTOMATIC COAL OR WOOD BURNING
CIRCULATOR MODEL NUMBER - 143.840821

Key No.	Part No.	Description
1	85339	Label, Cabinet Panel
2	89175	Knob, Thermostat
3	89176	Handle, Cabinet Front (2 Req'd.)
4	67758	Cabinet Left End
5	21593	Hinge Support
6	83833	Hinge Clip
7	67757	Cabinet Top
8	21063	Back Brace
9	86246	Thermostat Linkage Wire
10	67514	Cabinet Back
11	89065	Hinge (4 Req'd.)
12	83210	Set Screw
13	89173	Handle, Door
14	89041	Spring
15	67724	Door Latch
16	67760	Door, Cabinet
17	67759	Door Frame
18	67743	Thermostat
19	86191	Thermostat Linkage
20	67753	Cabinet Front

repair parts

SEARS AUTOMATIC COAL OR WOOD BURNING
CIRCULATOR MODEL NO. 143.840821



repair parts

SEARS AUTOMATIC COAL OR WOOD BURNING
CIRCULATOR MODEL NO. 143.840821

Key No.	Part No.	Description
1	21887	Shield, Heat
2	17200	Pin, Draft Damper Hinge (2 Req'd.)
3	21809	Frame, Draft Damper
4	67664	Base
5	67668	Damper, Draft Control
6	83818	Clip (3 Req'd.)
7	40101	Grate, Coal
8	17060	Baffle, Thermostat
9	89066	Firebrick (10 Req'd.)
10	67780	Firebox
11	40100	Liner (3 Req'd.)
12	40102	Frame, Coal Grate
13	40172	Retainer, Top Firebrick (LH) (2 Req'd.)
14	88051	Gasket, Flue Collar
15	67642	Flue Collar Assembly
16	21548	Curtain, Smoke
17	17210	Pin, Smoke Curtain Hinge
18	83119	10-24 x 1 Machine Screw
19	83117	Rivet (4 Req'd.)
20	21842	Arm, Control Rod
21	67687	Damper, Feed Door
22	21834	Door, Feed (Includes Handle & Gasket)
23	LK-26	Door Latch Kit (Includes Handle & Gasket)
24	67567	Handle, Wood (2 Req'd.)
25	21804	Gasket, Rope Feed Door
26	67781	Door, Ash (Includes Handle & Gasket)
27	21803	Gasket, Rope Ash Door
28	40173	Retainer Firebrick Top (RH) (2 Req'd.)
29	40045	Shaker
30	67444	Pan, Ash
*	85337A	Owner's Manual (F642-22681)

* Not Illustrated

Sears

**owners
manual
service**

**MODEL NUMBER
143.840821**

**HOW TO ORDER
REPAIR PARTS**

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

AUTOMATIC COAL OR WOOD BURNING CIRCULATOR HEATER

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

The Model Number will be found on a plate mounted on the back 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
4. The SERIAL NUMBER

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.