Installation and Operation Instructions
For
Warm Morning COAL HEATERS

Warm Morning Coal Heaters operate on an advance principle. Patented firebrick flue which Warm Morning pioneered, give better performance and more economical heating with all kinds of coal. However, to insure the full benefits of this exclusive design, your Warm Morning heater should be carefully installed and certain simple operating rules followed.

INSTALLATION

1. An Adequate Chimney Needed

A chimney of proper construction and adequate size, and in good condition, is absolutely essential for a satisfactory and safe installation of a Warm Morning coal heater.

a. The chimney should be of brick or masonry construction, with tile or mortar lining, or it may be a Class "A" prefabricated-type chimney approved by the Underwriters Laboratories as suitable for the high temperature combustion products from coal or wood.

b. The overall height of the chimney from the flue outlet of the heater to the top of the chimney will determine how well it will "draw". This height should be no less than 10 feet if there are no elbows in the flue connection, and at least 15 feet if there is an elbow. No more than two elbows should be used under any circumstances!

c. The chimney should be straight from top to bottom, without offsets or obstructions,

d. It should extend at least 3 feet above the roof at the point it emerges and at least 2 feet above any eave or portion of the house within 10 feet.

e. The inside of the chimney should be at least equal in area at the narrowest point to the inside area of the coal heater flue-pipe plus one-half of the combined inside areas of the other flue-pipes venting into it.

IMPORTANT! Therefore, for reasons stated above, a necessary first step is a careful inspection of the chimney. Look for loose bricks or mortar, flyash or soot accumulation, or other obstructions. If necessary, have chimney cleaned or repaired before installing Warm Morning coal heater.

2. Location and Placement

a. Locate the heater as close to the chimney inlet as possible to provide for these minimum clearances:

(1) If your heater is of the circulator type (Model 400) allow at least 24 inches clearance between the back of the heater and the wall, and at least 18 inches clearance between the sides of the heater cabinet and the nearest wall or combustible surface.

(2) If your heater is a radiant type (Model 617 or 523-R), allow at least 36 inches clearance between the heater and any wall or combustible surface.

b. Place the heater on a non-combustible stove-board or hearth.

Important! For your safety, observe these precautions:

1. **Be sure your heater is vented to a proper type and size of chimney that meets The National Board of Fire Underwriters Code and any applicable local codes.**
2. **Place the heater on a non-combustible stoveboard or hearth.**
3. **Because of the high surface and radiant temperatures generated by this heater, it should be located out of traffic and away from furniture, curtains and drapes.**
4. **Children and adults should be alerted to the hazard of high surface temperatures and should be kept away to avoid burns or clothing ignition.**
5. **Young children should be carefully supervised when they are in the same room with the heater.**
6. **Do not place clothing or other flammable material on heater, or use flammable cleaning fluids near it.**
7. **Do not operate heater in tightly closed room. Combustion of any fuel requires oxygen. Adequate ventilation is a must.**
8. **Installation and repair should be done only by a qualified service person. The heater should be inspected before use at the beginning of each heating season.**

CAUTION: Do not set the coal heater directly on a wooden or other type of combustible floor. The National Fire Code requires that the stove sit on a stoveboard of non-combustible material or a fireproof hearth made of concrete, slate, brick, or other non-combustible material a minimum of 3/8" thick.

Check the interior to make sure grates are in place and all firebrick linings are in proper position.

3. Making the Flue Connection

It is very important that the flue-pipe connection between a coal heater and the chimney be tight and secure.

The model 400 circular is equipped with a rear, 6" round flue collar. A cast iron elbow is furnished with the heater. If used, seal elbow connection with furnace cement for air-tight fit.

Model 617 radiant heater is equipped with a 6″ oval top flue collar.

Model 523-R has a 7″ reversible, oval-shaped flue collar. A 7 to 6″ reducing joint may be used if this model is to be connected to 6″ flue pipe.

Install hand turn damper in first straight joint of flue-pipe above stove (See illustration).

If the stove is being vented through a combustible wall or ceiling, an approved, non-combustible insulated flue inlet must be used.

If the circulator model 400 is being vented into a fireplace or connected to the chimney at a point directly back of the flue-outlet, install a section of straight heavy-duty flue-pipe and secure and seal with furnace cement.

A barometric draft control should be installed in the second section of straight flue pipe above the heater (unless the natural draft of the chimney is barely adequate).
See back page.

This is important. To insure a strong, rigid flue connection, secure each joint with at least three sheet metal screws.

Do not use more than two 90° elbows between the heater outlet and the chimney inlet. Avoid long horizontal runs and where the flue pipe runs horizontally it should slant upward toward the chimney inlet at least one inch for each section of flue-pipe.

OPERATION

1. Selection of Coal

Your Warm Morning coal heater will satisfactorily burn coal, coke, briquets, or short lengths of wood. The size of coal used is more important than the kind of coal used.

Any size of coal can be used, but best results will be obtained with the smaller sizes, such as stove, nut or chestnut — that is, coal ranging from the size of a walnut to the size of an orange. A small amount of fines or slack in the coal is not objectionable.

By-products or petroleum coke can be used only if precautions are taken to *keep draft low to prevent damage to grates from intense heat.*

2. Starting Fire

(See special instructions for Model 400 circulator)

To start a fire, first place some paper and dry kindling on the grates, then add a small amount of coal on top of the kindling. Turn hand damper in flue-pipe wide open. Open draft slide on ash door, and the slide register on coal feed door for secondary air. Light the paper and close the coal feed door.

To add coal, after fire is burning well, close draft slide on ash door, but leave turn damper in flue-pipe and feed door draft slide open. Then open coal feed door and add more coal. In building a fresh fire it is better to fill the magazine gradually — that is, a half bucketful at a time — until the coal bed is within one inch but not above the tops of the firebrick flues.

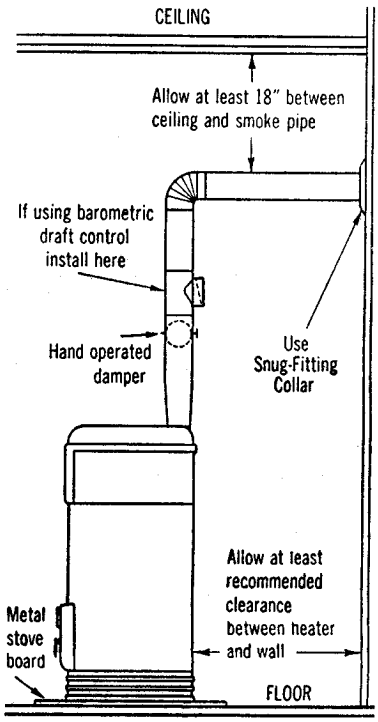
After filling magazine with coal, wait until flames are coming up the firebrick flues. Then close secondary draft slide on feed door and adjust ash door draft slide and hand turn-damper in flue-pipe to maintain desired burning rate.

CAUTION: Be careful to avoid over heating of the stove. Some kinds of coal require very little draft for burning in a Warm Morning heater. (A few trial settings should determine the proper point to develop the heat desired.)

To hold fire, close ash door draft slide.

The Warm Morning principle of burning is slow combustion of a large mass of coal, making coke out of the coal and then burning the coke without smoke or soot. After the fire is burning well, only a minimum of attention is required for controlled operation of the heater. The coal feeds down gradually of its own weight. It need never be out during the entire winter. Additional coal can be added gradually as the bed of coke burns down in the magazine.

To shake down ashes, first be sure hand turn-damper in flue-pipe is wide open. Do Not Open The Ash Door, but insert shaker handle through draft slide opening in ash door — then shake grate back and forth. Stop when the first red sparks appear in the ash pan. Leave some ash on grates to protect them from intense heat. **Always Empty Pan When Level Full.** The space between the ash pan and the grate is needed for circulation of air to prevent burning out or warping the grate castings.



Special Instructions for Circulator Model 400 Equipped with Built-In Automatic Draft Control

To start a fire, first place some paper and dry kindling on the grates, then add a small amount of coal on top of the kindling. Turn hand damper in flue-pipe wide open and set automatic draft regulator knob on side of cabinet half-way between the marking "LO" and "HI" for primary air. Open slide register on coal feed door for secondary air. Light the paper and close the coal feed door.

When fire is burning well, move regulator knob to "LO" position, open coal feed door and follow same procedure as for radiant models for adding coal. Leave draft slide on feed door open. After coal feed door is closed, reset regulator knob halfway between "LO" and "HI".

When flames are coming up firebrick flues, close draft slide on feed door and adjust hand turn damper and regulator knob to maintain desired burning rate. (A few trial settings should determine the proper point to develop the heat desired).

To hold fire, set knob on "LO".

Before shaking down ashes, be sure automatic regulator knob is on "LO".

Keep humidifier pan on back of Model 400 filled with water.

SAFETY PRECAUTIONS

1. Provide Air for Combustion

Combustion of any type fuel requires oxygen. Be sure adequate make-up air is provided to the room where the heater is located. If necessary, a window should be opened an inch or two slightly to insure proper outside air supply and to prevent oxygen exhaustion below a safe level to support life.

2. Avoid Contact With Hot Surface

The surface of any properly functioning space heater will be HOT and can set combustible material, like clothing

or drapes on fire. It can also seriously burn you if it is touched. Babies and young children should be kept away from the heater, or carefully supervised when they are in the same room with it.

OPERATING PROBLEMS

The most common problems are the result of too little chimney draft or a "down-draft" — either of which may cause smoke to escape out the coal feed-door at time of refueling. After refueling, smoke and gases may accumulate in the top of the heater faster than the chimney draft will carry them away and, when ignited, cause a "puff-pack".

Therefore, if you have followed carefully the HOW TO FIRE instructions above and yet your heater does not operate satisfactorily, look first for the cause and remedy in:

1. Firebrick Flue Passages

The firebrick flues are to a large extent self-cleaning, but should be checked occasionally to make certain they are clean. If coal or ashes have accumulated in the flues, clean them out with a piece of stiff wire.

2. Chimney

The chimney must provide adequate draft for your heater to burn satisfactorily. Check the stove pipe and chimney for leaks and/or obstructions.

Chimney down-drafts are usually caused when the top of the chimney is lower than the peak of the roof or adjoining buildings or objects. The chimney ventilating cap (if there is one) should not be smaller than the chimney opening. The flue should run full-size all the way up to the top. Broken mortar joints, chimney, and too many appliances connected to the chimney will also restrict chimney draft. Adequate chimney draft is the primary and most important requirement for any heating appliance. (See drawing — "Check These Common Causes of Trouble").

3. Protecting the Grates

The grates in your heater will last indefinitely if given proper care, but can be burned out in a short time if subjected to overheating.

When the heater is new, or when new grate castings have been installed, operate the heater at a moderate rate for several days. This "Tempers" the grates for normal usage.

Do not shake the fire too much; it isn't necessary. Stop when the first red sparks appear in the ash pan. (Be sure to read paragraph headed, "To shake down ashes".

4. Porcelain Finish

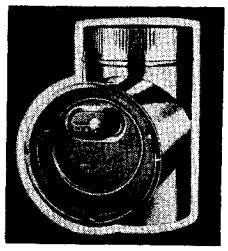
The model 400 circulator has a porcelain enamel finish which, with proper care, will last for years. All the cleaning usually necessary is dusting with a soft cloth. Do not apply varnish or furniture polish. Do not use a damp cloth to clean the enamel while heater is warm, as this might cause the enamel to crack.

You may wash the enameled finish when the heater is cool. Use a mild soap and water. Dry thoroughly before starting a fire. To remove stains, use Triple 000 steel wool and non-inflammable solvent.

BAROMETRIC DRAFT CONTROL

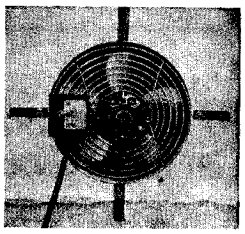
A barometric draft control is recommended for nearly all installations to maintain a steady chimney draft, to prevent overheating and to save fuel. It is not necessary if the flue draft is barely adequate.

Your Warm Morning dealer can supply a Barometric Draft Control for a small additional cost. The control should be installed as the second joint of pipe and above the hand turn damper. If it is more convenient to install it in the horizontal section of flue-pipe, then follow instructions included with control.



"BOOSTER" FAN

Model F-8 With Two-Speed Switch.
For Model 400 Circulator



Get better heat circulation — more heat into adjoining rooms-by installing a Booster Fan on your Warm Morning Cabinet Circulator by means of Special "noise-free" spring suspended method.

Model F-8 has precision-built 60-Cycle Electric Motor — 1550 RPM — 35 watts — 115 volts A.C. — 8" blades safeguarded by sturdy, protective grills. Equipped with two-speed on-and-off switch housed in metal box.

Customer's Warranty
Warm Morning Coal Heater

Locke Stove Company warrants each new Warm Morning Coal Heater to be free of factory defects of materials or construction for a period of NINETY (90) days from date of installation, provided that it is installed and operated in accordance with the printed instructions furnished with each heater.

This 90-day warranty applies to all parts of the coal heater, except as noted below:

(a) Cast Iron Grates may be warped or damaged by over-firing, especially when the heater is new; therefore the grates are not warranted against such damage.

(b) Porcelain Enamel Finish on Model 400 circulator may chip if struck by a hard object, or may crack if water is splashed on it while hot; therefore porcelain finish is not warranted against such damage.

REPLACEMENT OF DEFECTIVE PARTS

If any part of your Warm Morning Coal Heater appears to be defective during the Warranty Period, consult the dealer from whom the heater was purchased. If he does not have the replacement part in stock, he will order it from the factory. If, for any reason, your dealer is unable to handle the warranty service or replacement, write to Service Department, LOCKE STOVE COMPANY, 114 West 11th Street, Kansas City, Missouri 64105, and include in your letter the following information:

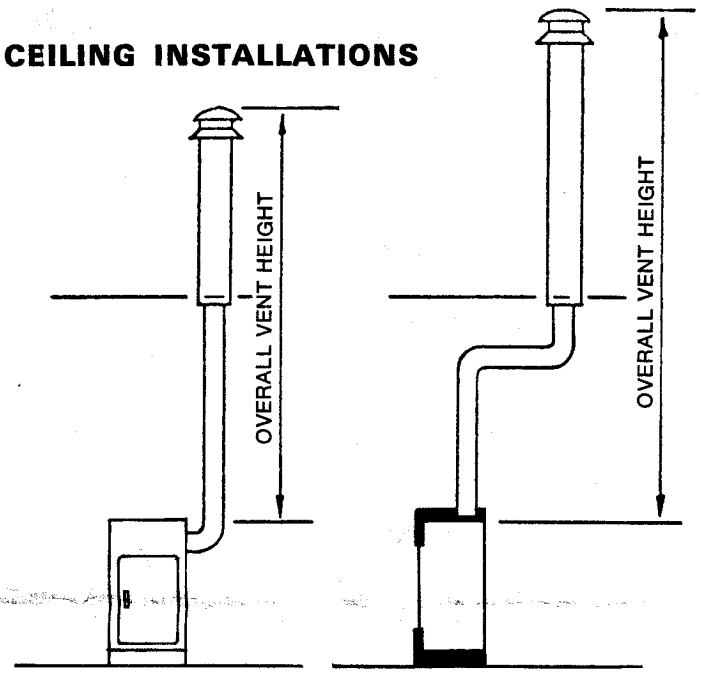
1. **Model number and serial number of your heater.**
2. **Description of operating problem and part that appears defective.**
3. **Name and address of Dealer from whom purchased.**
4. **Date heater was installed.**

Do not, under any circumstances, return a defective part to Locke Stove Company without written authorization! In some cases, return of the defective part will not be necessary!

LOCKE STOVE COMPANY
114 West 11th Street, Kansas City, Missouri 64105

VARIOUS TYPES OF INSTALLATIONS

CEILING INSTALLATIONS

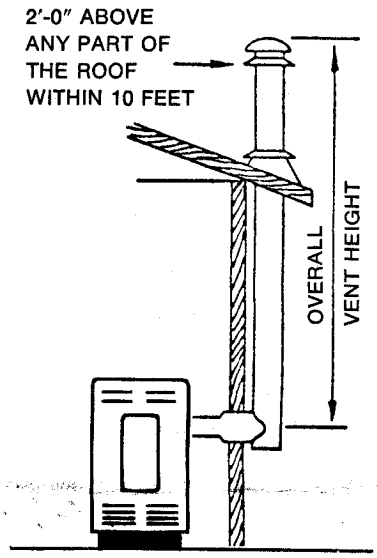


STRAIGHT VENT VENT WITH ELBOWS

If you use several elbows, your chimney must be higher or larger. Overall Vent Height for 6″ Chimney:

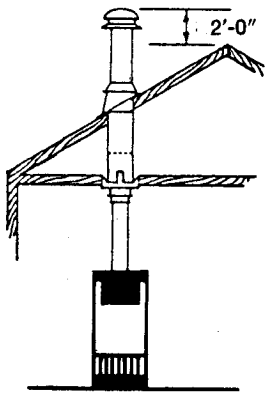
Straight Vent	Vent with Elbows
10 feet or more	15 feet or more

VENT THROUGH OUTSIDE WALL

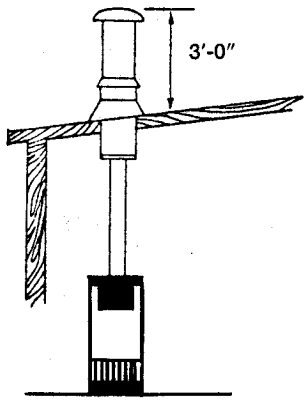


Chimney Size	Overall Height
6″	15 feet or more
7″	15 feet or more

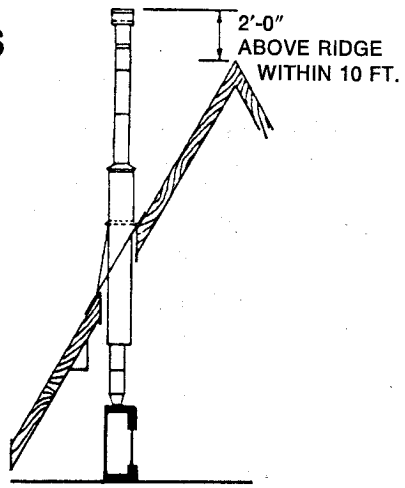
VARIOUS ROOF REQUIREMENTS



RIDGE ROOF WITH ATTIC



FLAT OR GENTLY SLOPED ROOF



A-FRAME

VENTING INTO A BRICK CHIMNEY