

Operation of Hand-Fired Anthracite Stoves

Information Provided by Hitzer Inc.

Starting a coal fire takes time and patience. Take around eight sheets of newspaper, crumble into balls and place on the top of grates. Next, lay fine kindling on top of the paper. The kindling must be dry and no larger than $\frac{3}{4}$ " in diameter. Layer the kindling criss-cross fashion to allow good air flow. Open the draft control fully, this can be found on the back of the free standing units and the ash door slide on the door. Now, close the loading door and allow the kindling to catch fire. After a few minutes, open the loading door an inch or two for a few seconds before opening completely. This method will allow smoke to clear away from the door opening before the loading door is completely opened.

Add small, compact pieces of hardwood when the kindling fire is burning hot. Keep the draft controls fully open to establish a hot fire quickly.

When there is a well-established wood kindling fire going, start adding coal (pea or nut is preferred over stove size) small amount at a time covering the entire grate area. If the entire grate area is not covered, the coal will not ignite. Keep the draft controls open.

Another method for starting a coal fire is by using charcoal briquettes. First, start by making a substantial mound of briquettes in the center of the grates. Light the mound of briquettes. Allow the mound to burn until the charcoal has turned white. Once the charcoal fire has reached this stage it should be spread out over the entire grate area. Small amounts of anthracite coal can now be added in layers, over the entire grate area. Once a layer has started to burn and turn red, another layer can be added.

Continue adding small amounts of coal until there is a solid bed of burning coal. Adding too much coal at one time can put the fire out. Allow sufficient time between each small loading (at least 5-10 minutes), so that each loading has time to ignite thoroughly before the next load is put in. When a substantial bed of burning coal has been established, fill the stove to approximately to the top of the firebrick. In the gravity fed hopper units (503, 50-93, 30-95), fill the hopper at this time. A deep bed of coal will always burn more satisfactory than a shallow bed. Control the heat output of the stove by the amount of air (draft controls), not by the amount of fuel in the unit.

When the deep bed of coal is completely ignited, the draft control should be set to desired heat output.

Loading

Coal should never be added unless there is a reasonable hot fire. The coal bed should be burning bright and vigorous.

If the fire is burning hot and there is a deep bed of coals, full loads of coal can be added at any time. However, if there is not a deep bed of coals, it is best to add small amounts of coal at first.

When loading with coal do not bury all the hot coals with new coal. As new coal begins to ignite, it produces a lot of volatile gas. This gas builds up in the upper part of the firebox. As the fire burns up through the new coal it can flash ignite those volatile gases, causing the stove to puff. To help minimize this, leave a small area of hot red coals uncovered in a corner. This will act as a pilot light and will prevent flash ignition or puffing. This is not uncommon occurrence.

Increasing Heat from A Low Fire

Every effort should be made not to let a coal fire burn too low so that the fire has started to die. This will cause the reloading process to take much longer, and there is a good possibility of losing the fire.

Do not shake or stir with a low fire.

Open the draft control to full open to get maximum draft.

Run the stove with the draft control open until the fire is reasonably hot.

Start adding small amounts of coal. When the new coal is thoroughly ignited or there is a substantial bed of hot coals, the stove may be shaken thoroughly. Be sure to shake down all ashes (but so not over shake).

After shaking, keep the draft control open until you are sure that the fire is continuing to burn hot, and then return the draft control down to the proper operating level.

Shaking

Shaking should be done only when there is a hot fire.

The frequency of shaking will depend on the degree of burning. Shaking should be done at least once a day and preferable twice a day.

Best results from shaking will occur when short "choppy" strokes are used rather than long, even strokes.

The amount of shaking is critical. Too little or too much shaking can result in the extinguishing of a fire due to air flow. The proper amount normally occurs, when small red coals start to drop through the ash pan, the entire length of the grate.

In the gravity fed hopper units (503, 50-93, 30-95) dead spots will start to develop over time in the firebox. In the 503 hopper insert, the dead spots will occur along the very front firebrick (below the door). In 50-93 and 30-95 freestanding units the dead spots will occur along the side firebricks. Ash tends to build up in these areas because they do not have the weight of fresh coal pushing down, which forces the ash into the ash pan

during shaking. This over time causes a reduction in the size of the burning firebox which in turn, reduces heat output. To maintain a clean firebox, before shaking take a poker and push down on the developing dead spots. This helps the ash in the dead spots to be shaken out more easily. This should be done several times a week, depending upon your burning rate.

Draft Controls

The heat output of the coal is controlled by the primary draft control, which is found on the back of the unit and on the ash door slide of the free standing units. On the fireplace units it will be found on the ash door slide. Experience and trial and error will dictate the proper settings for your heat requirements.

Coal responds very slowly to changes in the draft settings. Because of the slow response time, over correcting is a common problem. When changes in the heat output are needed, make only small changes in the draft setting and wait for the temperature to stabilize.

A poor drafting chimney could result in reduced heat output of the unit. Hard pulling chimneys may require a damper to be installed in the stove pipe, on free standing units.

Ashes

Ashes should never be allowed to accumulate in the ash pan, so that they do not in any way impede the flow of combustion air to the fire. Excess ash accumulation can cause the fire to go out and cause severe damage to the grates and grate carrier. This happens because of the absence of a cooling air flow beneath them.

Ashes should be put into 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.

CAUTION! ASHES SHOULD NEVER BE ALLOWED TO ACCUMULATE ABOVE THE TOP OF THE ASH PAN. ASHES IN CONTACT WITH THE BOTTOM OF THE GRATES ACT AS INSULATOR, INTENSIFYING THE HEAT ON THE GRATES, AND COULD CAUSE THEM TO WARP. WITH AN EXCESSIVE ASH BUILDUP, PRIMARY COMBUSTION AIR IS RESTRICTED, THUS THE UNITS OUTPUT COULD BE REDUCED.

GRATES WARPED IN THIS WAY ARE EASILY RECOGNIZED.

Safety

Whenever a loading door is opened, it always should be cracked slightly to allow oxygen to enter and burn any combustion gases that are present before fully opening. Failure to do this could result in sudden ignition of the unburned gases when the door is opened.

The ash door should never be left open and unattended, as this will result in over firing. Serious damage can occur from over firing.

Coal stoves should always be installed into a CLASS A chimney. REMEMBER! COAL, LIKE ALL FOSSIL FUELS, CONTAIN GASES THAT ARE TOXIC. YOU SHOULD HAVE A CARBON MONOXIDE DETECTOR IN THE HOUSE.

Trouble Shooting

Problem	Causes
Cannot get the coal to light.	The entire grate area is not covered. Draft controls are not in the full open position.
Cannot keep a coal fire going.	There is not a deep bed of burning coal. Shaking the grates too little. Too much ash built up. Not adding enough coal. Poor drafting chimney.
There is a good established fire but no heat.	Poor quality of coal. Hard pulling chimney. Too much ash builds up.