

Tips for Starting a Hand-Fired Anthracite Coal Stove

Welcome to the world of coal burning where there are equal amounts of art and science involved in keeping yourself warm. I've heard it said that you might stay "hot" just from the experience of starting and keeping a coal fire going for more than a couple days. It is, however, worth the effort for the long even heat you will experience.

Starting a new fire

Keep in mind that during the start-up phase you are working to establish a bed of very hot hardwood coals turning into coal coals about 3" deep.

Take several sheets of uncolored newspaper (colored paper pollutes), loosely crumble the paper and place on top of grates.

Lay fine kindling on top of the paper. This kindling must be dry and no larger than about 3/4" in diameter.

Layer the kindling in a criss-cross fashion to allow good air flow.

Open the flue damper at the rear of the stove and the draft control on the bottom of the stove fully. ***Coal needs as much air as possible to establish a good glowing bed.***

WITH THE EXCEPTION OF THE START-UP PERIOD, THE ASH PIT DOOR SHOULD NEVER BE LEFT OPEN.

A STOVE SHOULD NEVER BE LEFT UNATTENDED WITH THE ASH PIT DOOR OPEN.

Do not be afraid to use lots of kindling to build a deep bed of coals as coal is much denser than wood, so the temperature needs to be hotter to ignite the coal initially (approximately 900 degrees for anthracite).

Being sure the draft control and flue damper are fully open, light the paper just inside the door then close the loading door and allow the kindling to catch fire. This will not only start the kindling but will also warm the chimney starting the draft you need for good operation. After a few minutes, open the loading door an inch or two for a few seconds before opening completely. This will allow smoke to clear away from the door opening before the loading door is completely opened.

Add small pieces of hardwood when the kindling is burning hot. Keep the draft controls fully open to establish a hot fire quickly. The ash door may also be opened during start-up to accelerate the initial burn.

When a substantial bed of red wood coals is built up, start adding small amounts of coal at the rate of one or two small shovelfuls at a time. The draft control is still open.

Continue adding small amounts of coal until there is a solid bed of burning coal. ***Do not add too much at one time.*** Allow sufficient time between each small loading (at least 5-10 minutes), so that each loading has time to ignite thoroughly before adding more coal. When a substantial bed of burning coals 3" deep has been established, fill the stove to the top of the firebrick. ***Remember, the coals must be deep and hot to establish a good fire.*** A deep bed of coal will *always* burn more satisfactorily than a shallow bed.

When most of the wood is burned and the coal is completely ignited the draft control should be turned down to the proper operating level. ***If the ash door has been opened, it must be closed to prevent over-firing, which will cause dangerously high temperatures and damage to the stove.***

Loading

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

If the fire is burning hot and there is a deep bed of coals, full loads of coals 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 to re-establish the hot bed.

Increasing heat from a low fire

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

Do not shake or stir with a low fire.

To re-establish a fire open the draft control wide or open the ash cleanout door to get the maximum draft. Run the stove with the draft control or ash door fully open until the fire is reasonably hot.

Start adding small amounts of coal. *Only* after the new coal is thoroughly ignited or there is a substantial bed of hot coals should the stove may be shaken thoroughly. Be sure to shake down all ashes but do not over shake to the point where more than a few red coals fall into the ash pan.

After shaking, keep the bottom draft control open until you are sure the fire is continuing to burn hot and turn the draft control down to the proper operating level. If the ash door has been opened be sure to shut it. ***If the ash door has been opened, it must be closed to prevent over-firing, which will cause dangerously high temperatures and damage to the stove.***

For stoves with screw type draft control, count the exact number of turns from full shut to the normal operating positions so that you can adjust the stove to the exact level of heat output and length of burn you desire.

Shaking (this is what you'll do if you don't keep the fire going)

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

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

Best results from shaking with most grates will occur if short, "choppy" strokes are used rather than long, even strokes.

The amount of shaking is critical. Too little or too much will result in the extinguishing of the fire due to loss of air flow. The proper amount normally occurs when red coals first start to drop into the ash pan.

Once the stove has been burning for several days it is a good idea to use a poker rod from underneath to run between the grates. This will let more air flow through and loosen burned coals that may have become wedged in the grates. Use the poker rod only occasionally; using it too frequently will cause clinkers to form, shutting off the air flow. It is best not to use a poker on top of the coal bed as this also may cause clinkers.

Draft Controls

The heat output of the coal is controlled by the primary draft control, usually found on the bottom door. Experience will dictate the proper settings for heat requirements (that's one of the places where the "art" comes in).

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

Ashes

Ashes should never be allowed to accumulate in the ash pit in such a way that they will impede the flow of combustion air to the fire. Excess ash accumulation can cause the fire to go out and also can cause severe damage (warping) to the grates because of the absence of a cooling flow of air beneath them. (Note: The grates on many stoves can be removed from the stove and turned over so as to get even warpage over time.)

CAUTION: ASHES SHOULD NEVER BE ALLOWED TO ACCUMULATE AT THE TOP OF THE ASH PAN. ASHES ALLOWED TO ACCUMULATE TO THE POINT OF COMING INTO CONTACT WITH THE BOTTOM OF THE GRATES ACT AS AN INSULATOR, INTENSIFYING THE HEAT ON THE GRATES AND COULD CAUSE THEIR WARPAGE. PRIMARY COMBUSTION AIR IS ALSO SEVERELY RESTRICTED AND THE UNIT'S OUTPUT WILL BE REDUCED.

Waste 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 or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled. *Hot coals can stay hot inside an ashcan for days and days. You must store your ashes outside the dwelling, too many houses have burned from what people thought were cold ashes.*

SAFETY

WITH THE EXCEPTION OF THE START-UP PERIOD, THE ASH PIT DOOR SHOULD NEVER BE LEFT OPEN.

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

A stove should never be filled with so much coal that the flue gas exit is blocked or impeded in any way. **Burning coal generates carbon monoxide. If the flue gas exit is blocked, the carbon monoxide can be forced out of the stove into the room, with possible fatal consequences.**

Coal stoves should not be installed in any chimney that has had a history of back-drafting, down-drafting or flow-reversal. This condition can cause improper draft resulting in carbon monoxide entering the house rather than being drawn up the chimney.

REMEMBER! COAL, LIKE ALL FOSSIL FUELS, CONTAINS GASES THAT ARE TOXIC!