KEYSTONE
HAND FIRED STOVE INSTALLATION

Your Keystone hand fired stove is designed for safe, efficient and economical operation. It has been safety tested by Arnold Greene Testing Laboratory to ANSI UL 1482 standards. With proper use and maintenance you will enjoy many years of low cost heating comfort.

Proper installation with clearances from combustibles to stove and stove pipe is critical for safety. Clearances 16" from stove pipe in rear and 12" clearances on sides. Clearance refers to the distance of empty space between stove and any material that will burn.

An approved protector or non-combustible pad must be placed under the stove if stove is installed on a combustible surface and floor protector must extend 16" beyond front of stove and 8" beyond both sides and rear of stove. A carpet may <u>not</u> be left under floor protector.

Keep furniture, curtains, drapes, papers and other combustibles a safe distance from stove.

Contact your local building code officer about chimney inspection or any other ordinance restrictions.

The stove may be placed closer to a wall, if it is non combustible or if wall is protected by a U.L. approved wall shield.

For your safety and protection all clearances as stamped on stove must be strictly adheared to.

Your stove has been carefully designed to burn coal. Do not burn other fuels or trash.

Stove must be connected to a masonary chimney or an approved prefabricated metal chimney. If stove is to be connected to a chimney serving another appliance, check local building codes.

Stove should be placed as close to chimney as possible using as little pipe and elbows as practical.

After selecting a safe location for stove, if you have purchased the optional variable speed 265 CFM blower, connect blower to back of stove with screws provided. Be sure power supply cord does not touch any hot surfaces which could cause electrical fire. Rheostat on blower can be adjusted to increase or decrease fan speed, depending on amount of heat desired.

Stove outlet and stove pipe is 6". Use 24 gauge blue or black steel. Install at least 9" from side wall and 18" from ceiling. Special methods are required when passing through a wall or ceiling. Check local building codes. All connections and joints should be secured using 3 screws in each joint. Horizontal runs of stove pipe should be on a slight upward grade from stove to chimney thimble. Stove pipe may not enter chimney beyond inside wall of chimney. This will adversely affect draft. Either or both a barometric or manual damper should be installed in stove pipe.

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The manual air control slide knob is located on ash door. Sliding knob to the left will increase opening in ash door, allowing more flow of combustion air through fire. This will increase burn rate of coal and produce higher heat output. Sliding knob right will close combustion air and reduce heat output of stove and increase burn time of stove.

If your stove is equipped with an automatic heat regulator dial on back of stove, it will not be necessary to adjust burn rate of coal by using slide on ash door.

To attain desired heat output of stove, place selector dial to a number from 1 to 5. This will open combustion shutter on bottom of stove to allow more air flow through fire bed for a faster burn rate. When stove temperature rises, to setting on selector dial, combustion shutter will close until stove cools enough to allow combustion shutter to reopen.

NOTE Hot coals may not be allowed to burn above stove fire brick. Fire brick is designed to contain fire. Hot coals above fire brick may cause permanent damage to stove. When fire bed becomes too high it is time to shake down ashes into ash pan. The fire may be raked until hot coals begin to fall through grates. Stop shaking when hot coals fall into ash pan, hot coals burning on grates will cause overheating of grates and reduce life of grate. Leaving a thin layer of ash on grates will protect grates and extend life of grates.

Do not allow ash pan to become overfull. This will reduce air flow through fire and cause poor burning of coal. Do not allow ash accumulation closer than 2" below shaker grates. After raking fire, never discard ashes into a combustible container. Burning coal may stay hot for hours. Always wear gloves when removing ash pan. Ashes should always be removed before shaking grates.

Opening Ash Door To Burn Fire Faster Can Cause Overheating Of Stove And Void Warranty. If stove or stove pipe glows red, Stove is overfired. Close off all combustible air intakes in ash door or heat regulator dial and allow stove to cool down.

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DURING NORMAL OPERATION, FIRE DOOR AND ASH DOOR MUST REMAIN CLOSED

Annual cleaning and maintenance should be done at end of each heating season. Brush interior sides and top of stove, remove baffle if desired, and brush off. Remove stove pipe and vacuum. Clean base of chimney and inspect chimney. Examine stove pipe. If your stove is equipped with a blower, oil motor at both ends of motor as indicated on motor with #20 non-detergent motor oil. Clean fan blades and screen.

When allowing fire to go out at the end of heating season, place a few drops of oil on door hinges and door latches to prevent rust from building up and causing failure of free movement next fall.

WARRANTY

Five Year pro-rated warranty on stove. One year warranty on blower. One year warranty on grates. No warranty on glass. No warranty on paint.

The following instructions are meant to serve as guidelines for proper cleaning and care of ROBAX glass-ceramic windows

Cleaning Techniques:
All cleaning procedures should be done at room temperature, cleaning of hot surfaces should be avoided. The main reason is that cleaning solutions may dry rapidly enough before thorough removal which may result in creating a film or deposit that can react with combustion by-products.

If white deposits are found to be on surface of glass, these should be scraped off using a sharp bladed scraper, and wiped away with a dry cloth prior to any wet cleaning. Scraping should be down at a low angle below 30 degrees.

Although glass is extremely hard and is very scratch resistant, it is not scratch-proof. The use of abrasive cleaners (i.e. any cleaners containing grit) and scouring pads (i.e. steel wool, plastic with embedded grit) should be strictly avoided.

Soft cloths should be used for all cleaning steps. The cloths should be free of any abrasive agents. The use of sponges should be avoided since they have a tendency to retain abrasive agents from previous uses.

When cleaning, it is not advisable to allow cleaners to dry on glass surface. Dried on cleaning solutions may react with surface causing discoloration or a permanent film.

TIPS ON STARTING A HAND-FIRED ANTHRACITE STOVE

Take about eight sheets of newspaper, crumble into balls and place on top of grates. Next, lay fine kindling on top of the paper. This kindling must be dry and no larger than 3/4" in diameter. Layer the kindling in a criss-cross fashion to allow good air flow. Open the draft control fully and light the paper just inside 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 is burning hot. Keep the draft controls fully open to establish a hot fire quickly. The ash door also may be opened during start-up to accelerate the initial burn.

When a substantial bed of red wood coals is built up, start adding coal (pea or nut is preferred over stove when starting) small amounts at a time. Keep the draft control 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 the next load is put in. When a substantial bed of burning coals has been established, fill the stove to the top of the firebrick. A deep bed of coal always will burn more satisfactorily then a shallow bed.

When most of the wood is burned and the coal is completely ignited (usually 5-10 minutes or less after filling the stove), 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 overfiring, which can cause dangerously high temperatures.)

OPERATION OF HAND-FIRED ANTHRACITE STOVES

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 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.

Increasing Heat From a Low Fire

Every effort should be made not to let a coal fire burn too long so that the fire has started to die. This will cause the reloading process to be 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 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. 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 do not overshake).

OPERATION OF HAND-FIRED ANTHRACITE STOVES

Increasing Heat From a Low Fire

After shaking, keep the bottom draft control open until you are sure the fire is continuing to burn hot, then turn the draft control down to the proper operating level. IF THE ASH DOOR HAS BEEN OPENED, BE SURE TO SHUT IT (SERIOUS DAMAGE CAN RESULT IF THE STOVE IS RUN FOR EXTENDED PERIODS WITH ASH DOOR OPEN).

For stoves with the 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

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, either can result in the extinguishing of a fire due to air flow. The proper amount normally occurs when red coals first start to drop through onto the bed of ashes.

OPERATION OF HAND-FIRED ANTHRACITE STOVES

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.

Coal responds very slowly to changes in the draft settings. Because of this slow response time, 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, so that they in any way 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 to the grates because of the absence of a cooling flow of air beneath them.

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 outside the dwelling

OPERATION OF HAND-FIRED ANTHRACITE STOVES

Ashes

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 AN INSULATOR, INTENSIFYING THE HEAT ON THE GRATES, AND COULD CAUSE THEIR WARPAGE. WITH AN EXCESSIVE ASH BUILDUP, PRIMARY COMBUSTION AIR IS RESTRICTED. THUS, THE UNIT'S OUTPUT COULD BE REDUCED.

GRATES WARPED IN THIS WAY ARE EASILY RECOGNIZED BY THE EXTREME DAMAGE CAUSED TO THE GRATES.

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.

A stove should never be filled with excess coal, so 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.

OPERATION OF HAND-FIRED ANTHRACITE STOVES

Safety

WITH THE EXCEPTION OF THE START-UP PERIOD, THE ASH PIT DOOR SHOULD NEVER BE LEFT OPEN. ALSO NOTE THAT A STOVE SHOULD NEVER BE LEFT UNATTENDED WITH THE ASH PIT DOOR OPEN.

Serious damage to the stove can be occur from overheating.

Coal stoves should not be installed in any chimney that has had a history of back-drafting or flow reversal. These conditions can cause improper draft, resulting in carbon monoxide entering the house rather than being drawn up the chimney. REMEMBER! COAL, LIKE ALL FOSSIL FUELS. CONTAIN GASES THAT ARE TOXIC!

Manufactured by KEYSTONE MANUFACTURING COMPANY Model

U.S. ENVIRONMENTAL PROTECTION AGENCY

COAL-ONLY HEATER

This heater is only for burning coal. Use of any other solid fuel except coal ignition purposes is a violation of Federal law.

THIS HEATER COMPLIES WITH FEDERAL REGULATION 40 CFR 60.