



# Hand Fired Hopper Stove

Operating instructions and maintenance enclosed  
Thoroughly read and understand instructions  
Always leave this manual with stove owner

Follow the instructions within this manual. If instructions are not followed, a fire may result causing property damage, personal injury, or even death.

A carbon monoxide detector has been supplied with your stove. You must plug it in.

Danger risk of fire or explosion. Do not burn garbage, gasoline, drain oil, or other flammable liquids. Do not use chemicals or fluids to start fire.

Burn Nut and Pea anthracite coal only

Stoves surfaces may be hot while in operation. Keep children away. Do not touch during operation

Do not connect this unit to a chimney flue serving another appliance.

Follow all local building and Zoning ordinances

# KEYSTOKER INSTALLATION INSTRUCTIONS

## 70,000 – 90,000 HAND FIRED HOPPER STOVE

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. Clearance 16” from stove pipe in rear and 12” clearances on sides. Clearances refer 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. The floor protector must extend 16” beyond front of stove and 8” beyond both sides and rear of stove. A carpet **may not** be left under floor protector.

Keep furniture, curtains, drapes, papers, and any other combustible at 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 adhered to.

Your stove has been carefully designed to burn coal. **DO NOT BURN** other fuels or trash.

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

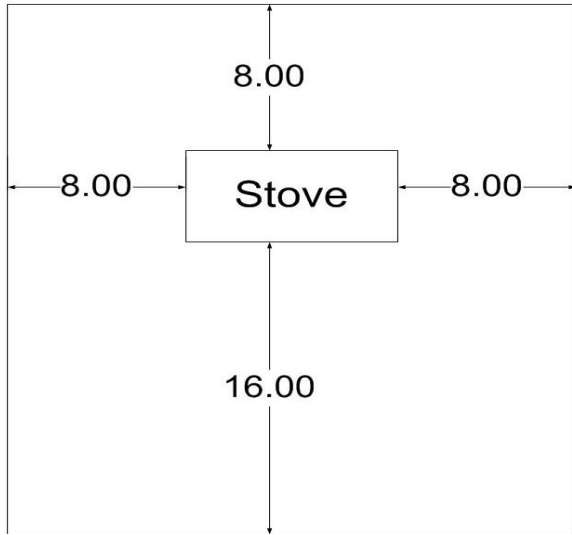
Stove should be placed as close to chimney as possible using as little pipe and elbows as practical.

After selecting a safe location for stove, connect blower to back of stove with screws provided. Be sure power 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.

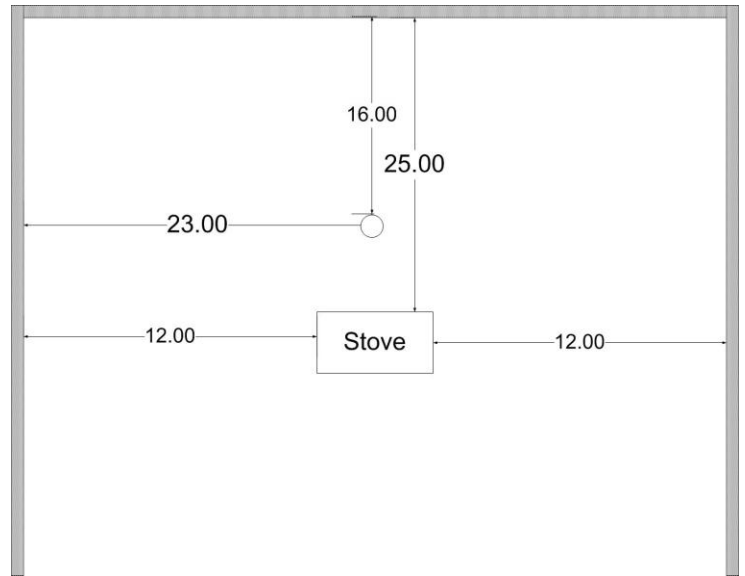
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## 70,000 – 90,000 HAND FIRED HOPPER STOVE

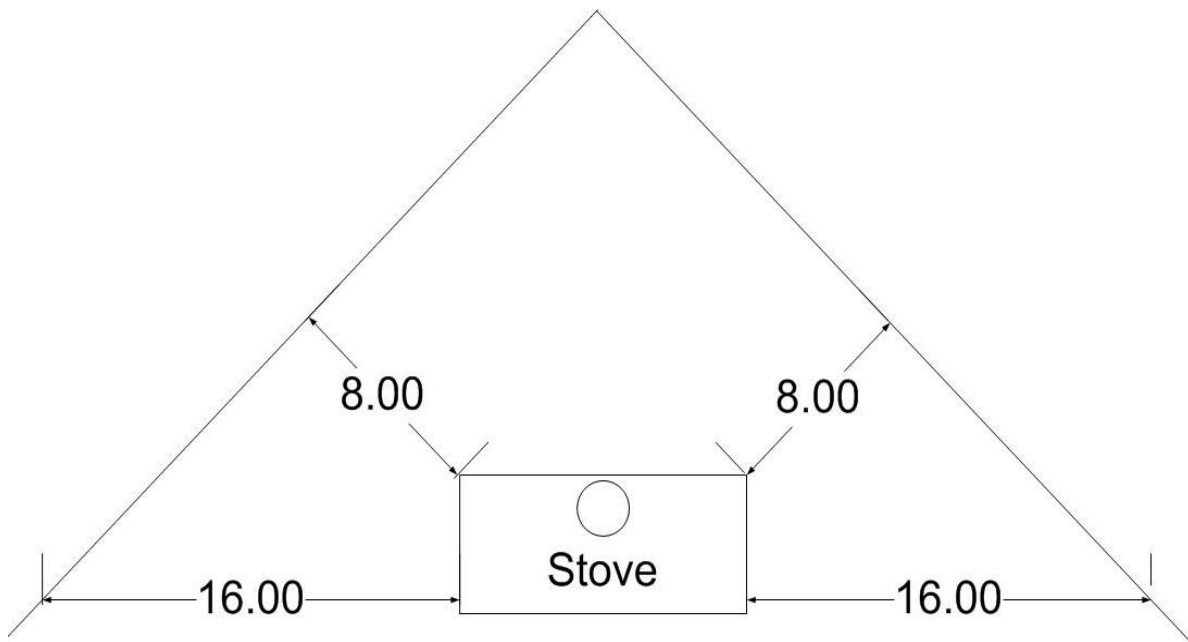
**Approved Floor Protector**



**Rear Vent Clearance against Combustible walls**



**Corner Clearance against Walls**



# KEYSTOKER INSTALLATION INSTRUCTIONS

## 70,000 – 90,000 HAND FIRED HOPPER STOVE

Stove outlet and stove pipe is 6". Pipe to 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. A barometric draft regulator **must** be installed in stove pipe, it is provided with stove.

**MANUAL BI-METAL THERMOSTAT**- Your stove is equipped with a bi-metal manual thermostat, which will act as your automatic heat regulator. This thermostatic dial is located on back side of stove. To attain desired heat output of stove, place selector dial to a number from 1 to 5. This will open combustion shutter flap on bottom of stove and allow more air flow through fire bed. This will burn coal hotter and increase heat output of stove. As stove temperature increases, the bi-metal thermostat will begin to close the combustion shutter flap on lower part of stove. When stove begins to cool, combustion shutter flap will begin to reopen. This will assure a steady even heat from stove at all times. To increase heat output, turn selector dial to a higher number. On days when only a small amount of heat is required, turn dial to a lower number.

**ASH DOOR DIAL** – On ash door of your stove is a dial that will turn clockwise or counterclockwise. The purpose of this dial is twofold.

1. Your new stove is quality built as an air tight stove. On mild days when bi-metal thermostat flap is completely closed, chimneys with low drafts may have a tendency to cause fire to go out, because of lack of oxygen going through fire bed. By turning ash door dial counterclockwise direction; there will be a steady flow of oxygen to keep fire burning. Exactly how much to turn dial for more oxygen is a matter of trial and error, depending upon your chimney draft.
2. The Ash Door Dial may be used as the primary heat output adjustment. You may choose not to use the bi-metal thermostat and use only the Ash Door Dial. Simply turn the Dial COUNTERCLOCKWISE for more heat (allowing more oxygen for combustion) or turn Dial CLOCKWISE for less heat (allowing less oxygen for combustion).

**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 grate will cause overheating of grates and reduce life of grates. Leaving a thin layer of ash on grates will protect grates and extend life of grates.

## **KEYSTOKER INSTALLATION INSTRUCTIONS**

### **70,000 – 90,000 HAND FIRED HOPPER STOVE**

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 grate. Burning coal may stay hot for hours. Always wear gloves when removing ash pan. Ashes should always be removed before shaking grates.

**LOADING COAL:** Coal loading door on top of stove should be cracked open slightly to allow oxygen to enter and burn any combustion gases that are present in stove **BEFORE** fully opening loading door. It is recommended that coal should be added before hopper is allowed to go completely empty. Before shaking grate, load coal into hopper, the weight of coal will assist in ash falling into ash pan. Also, adding coal before hopper is empty will prevent any sparks from coming up through hopper.

**IT IS MOST IMPORTANT** After hopper is filled, be sure there are no small pieces of coal under loading door which may prevent loading door from closing to an airtight position. **FAILURE** to properly close and seal loading door could cause fire to burn into coal hopper.

Opening ash door to burn coal faster can cause overheating of stove and void warranty. If stove or stove pipe glows red, stove is being over fired. Close all combustible air intakes in ash door or heat regulator dial and allow stove to cool down.

**DURING NORMAL OPERATION, FIRE AND ASH DOORS MUST REMAIN CLOSED.**

### **TIPS ON STARTING A HAND-FIRED ANTHRACITE STOVE**

Take about eight sheets of newspaper crumble into a ball and place on top of grates. Next, lay fine kindling on top of the newspaper. This kindling must be dry and no larger than ¾” in diameter. Layer the kindling in a crisscross fashion to allow good air flow. Open the draft control fully and light the newspaper just inside the door. Next, 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 coal is preferred when starting) small amounts at a time. Keep the draft control open.

## **KEYSTOKER INSTALLATION INSTRUCTIONS**

### **70,000 – 90,000 HAND FIRED HOPPER STOVE**

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 satisfactory than a shallow bed.

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

### **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 coal, it is best to add small amounts of coal at first.

### **INCREASING HEAT FROM 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 a low fire.

Open the draft control wide open or open the ash cleanout door to get 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 stove 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 over shake.

# **KEYSTOKER INSTALLATION INSTRUCTIONS 70,000 – 90,000 HAND FIRED HOPPER STOVE**

## **OPERATION OF HAND-FIRED ANTHRACITE STOVES**

### **INCREASING HEAT FROM LOW FIRE**

After shaking, keep the bottom draft control open until you are sure the fire is continuing to burn hot, and 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 RUNS FOR EXTENDED PERIODS WITH ASH DOOR OPEN).**

### **SHAKING**

Shaking should be done only when the stove 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, but factory recommends 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, can result on the extinguishing of fire due to air flow, the proper amount normally occurs when red coals first start to drop through onto the bed of ashes.

### **DRAFT CONTROLS**

The heat output of the coal is controlled by the automatic draft control, usually found on the back of the stove. Experience will dictate the proper settings for heat output.

Adjusting the manual draft control on the front of the ash door, turn the big knob clockwise to close draft down and counter clockwise to open draft.

Coal responds very slowly to changes in the draft settings. Due to this slow response time, overcorrecting 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 should never be allowed to accumulate in the ash pit, so that they in any way impede the flow of combustion air into fire. Excessive ash accumulation can cause severe damage to the grates due to the absence of a cooling flow of air beneath them.

# **KEYSTOKER INSTALLATION INSTRUCTIONS**

## **70,000 – 90,000 HAND FIRED HOPPER STOVE**

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 the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial into the soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have been thoroughly cooled outside of the dwelling.

**CAUTION! ASHES SHOULD NEVER BE ALLOWED TO ACCUMULATE ABOVE TOP OF THE ASH PAN. ASHES IN CONTACT WITH THE BOTTOM OF THE GRATES CAN 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.**

Annual cleaning and maintenance should be done at end of each heating season. Brush interior sides and top of stove. 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 as indicated on motor with a light 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 threads on door latches to prevent rust from building up and causing failure of free movement of door hinges and door latches next fall.

### **SAFETY**

**Whenever a loading door is opened, it should always 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 excessive 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 consequence.

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.



## **KEYSTOKER INSTALLATION INSTRUCTIONS**

### **70,000 – 90,000 HAND FIRED HOPPER STOVE**

**SERIOUS DAMAGE TO THE STOVE CAN OCCUR FROM OVERHEATING.**

Coal stoves should not be installed in any chimney that had a history of back-drafting or flow reversal. These conditions can cause improper draft, resulting in Carbon Monoxide entering the dwelling rather than being drawn up the chimney.

**REMEMBER! Coal, like all fossil fuel, contains gases that are toxic.**

**CAUTION: ASH PAN IS HOT**-Always Use Gloves to Remove Ash Pan

Open ash door. Use a good pair of gloves, to remove ash pan. Place filled ash pan on a non-combustible surface. Slide an empty ash pan into stove. Close ash door.

Manufactured by KEYSTONE MANUFACTURING COMPANY

**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.

<p><b>THIS HEATER COMPLIES WITH FEDERAL REGULATION 40 CFR 60.</b></p>
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# KEYSTOKER INSTALLATION INSTRUCTIONS

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### Warranty

Keystone Manufacturing company extends the following warranties to the original owner from the date of purchase.

Five Years Workmanship on stove body

Two years on grates and side rails

One year all electric controls and motors.

Warranty does not apply if damage occurs because of improper handling, operation, abuse, rust, corrosion, misuse or use beyond rated capacity.

This warranty does not apply if the product has been altered in any way after leaving the factory.

All warranty claims should be made through dealer where the appliance was originally purchased. Model, and original copy of the sales receipt need be presented to dealer.

If a consumer chooses to make a warranty claim directly through Keystone Manufacturing Company model, and copy of the original sales receipt are required. Customer must provide a credit card which will be charged for the full retail price for the product plus shipping and handling. When defective part is returned to the company and found to be a defect within warranty period the consumer's credit card will be credited back the cost of part.

Keystone Manufacturing Company assumes no responsibility for any labor expenses, for service, product removal, reinstallation or any freight charges for parts returned to the company.

If defective in material or workmanship and if removed by the owner with in warranty period Keystone manufacturing will at their opinion repair or replace the product.

This warranty is limited to defective parts, repair, or replacement at our opinion and excludes any incidental and consequential damages connected there with.

Warranty exclusions, labor, door gasket, ash tub, and paint

### Stove Information

Dealer \_\_\_\_\_

Date of purchase \_\_\_\_\_

Stove Model \_\_\_\_\_