Installation and Operating Instructions For

SENECA

SMALL & MEDIUM SIZE WOOD STOVES

SAVE THESE INSTRUCTIONS

PLEASE READ THIS ENTIRE MANUAL BEFORE YOU INSTALL AND USE YOUR NEW ROOM HEATER. FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY, OR EVEN DEATH.

SAFETY NOTICES

When this room heater is not properly installed, a house fire may result. To reduce the risk of fire, follow the installation instructions. You must contact local building, fire officials, or authority having jurisdiction about restrictions, permit and installation inspection requirements in your area.

DO NOT INSTALL IN A MOBILE HOME.

DO NOT USE CHEMICALS OR FLUIDS TO START THE FIRE.

DO NOT BURN GARBAGE OR FLAMMABLE FLUIDS SUCH AS GASOLINE, NAPHTHA OR ENGINE OIL.

UNITS ARE HOT WHILE IN OPERATION. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS.

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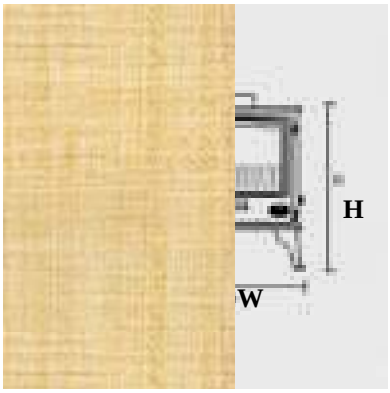
SPECIFICATIONS

Dimension	**Small Seneca**	**Med. Seneca**
Width	25 in.	27 3/4 in.
Depth	23 in.	23 1/4 in.
Flue Center to Rear	7 in.	7 1/8 in.
Flue Center to Side	12 3/8 in.	14 3/4 in.
Height	25 5/8 in.	28 3/8 in.
Chamber (DxWxH)	14 x 17 5/8 x 9	14 x 20 1/2 x 11 1/4
Log Size	17 in.	19 in.
Approx. Heated Area	1200 sq. ft	2200 sq. ft.



FLOOR PROTECTION

The main precaution when installing a wood stove is to leave sufficient space between the stove (top, sides, back, front, and under stove pipes) and any other material that can catch fire.

If the stove is to be installed on a combustible floor, it must be placed on an approved 1/2" non-combustible hearth pad with k = 0.84 BTU/in ft^2 hr ^oF. In the USA, the floor protector must extend 8" beyond each side of the flue loading door and 16" to the front.

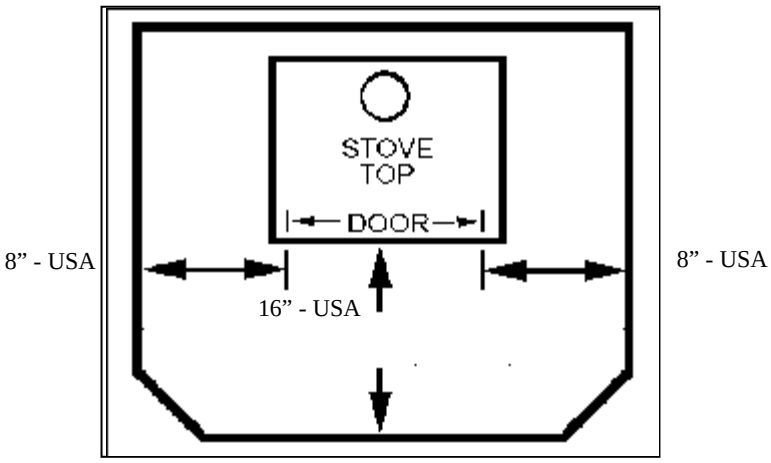


Fig. 4

In a rear vent installation the floor protection must also extend under the stovepipe a minimum of 2" beyond either side of the pipe.

Although it is recommended that homeowners purchase pre-manufactured hearth boards for floor protection, there are acceptable alternative materials that may be used.

YOU DETERMINE IF ALTERNATE FLOOR PROTECTION MATERIALS ARE ACCEPTABLE.

All floor protection must be non-combustible (i.e., metals, brick, stone, mineral fiber boards, etc.). Any organic materials (i.e., plastics, wood paper products, etc.) are combustible and must not be used. The floor protection specified includes some form of thermal designation such as R-value (thermal resistance) or k-factor (thermal conductivity). Use the formulas and charts below to make determine if alternate materials are acceptable.

PROCEDURE TO DETERMINE ALTERNATE FLOOR PROTECTION:

1. Convert specification to R-value:

    i. R-value given - no conversion needed.

    ii. k-factor is given with a required thickness (T) in inches: $R = \frac{1}{k} \times T$

    iii. K-factor is given with a required thickness (T) in inches: $R = \frac{1}{K \ x \ 12} \times T$

    iv. r-factor is given with a required thickness (T) in inches: **R = r x T**

2. Determine the R-value of the proposed alternate floor protector.

    i. Use the formula in step (1) to convert values not expressed as “R”.

    ii. For multiple layers, add R-values of each layer to determine overall R-value.

3. If the overall R-value of the system is greater than the R-value of the specified floor protector, the alternate is acceptable.

Common K and R Values Charts

Material	Thickness	R-Value
Ceramic Board (Fibrefrax)	1/2"	1.100
Ceramic Board (Micore)	1/2"	1.100
Common Brick	4"	0.800
Common Brick	2-1/4"	0.450
Gypsum or Plaster Board	1/2"	0.450
Cement Board (Wonderboard)	1/2"	0.200
Durorock	1/2"	0.200
Limestone	1"	0.153
HardiBacker Cement Board	1/4"	0.130
Cement Mortar	1/2"	0.100
Slate	1"	0.100
Concrete	1"	0.095
Marble	1"	0.090
Granite	1"	0.083
Ceramic Pavers	1"	0.080
Flagstone	1"	0.079
Sandstone	1"	0.079
Ceramic Tile	1/4"	0.020

SOURCE:
1) The Chimney Sweep On-line Library http://www.chimneysweeponline.com/horvalue.htm

Material	K value	R Value | inches	K value .84 | inches	R value of 1 per inch
Micore 300	0.43	2.33	0.5	0.43
Wonderboard (cement board)	1.92	0.52	2.3	1.92
Common Brick	5	0.20	6.0	5
Cement Mortar	5	0.20	6.0	5
Ceramic Tile	12.5	0.08	14.9	12.5
Marble	11	0.09	13.1	11
Air Space (ventilated)	0.7	1.43	0.8	0.7
sand and gravel	1.7	0.59	2.0	1.7
Drywall (gypsum)	1	1.00	1.2	1

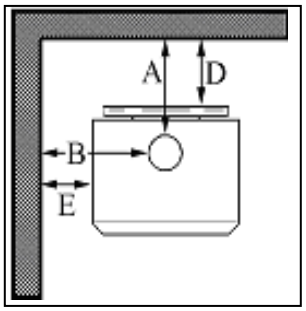
SOURCE:
http://hearth.com/econtent/index.php/articles/k_values_what_does_it_all_mean?id=64_0_1_0_M1

INSTALLATION CLEARANCES

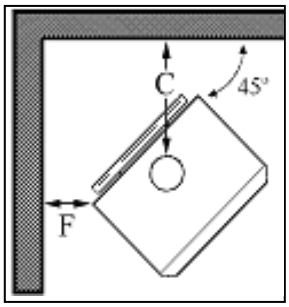
It is extremely important that you respect required installation distances and that you respect local installation regulations. This is for your safety! The manufacturer is not responsible for the product, if it is not installed following these recommendations. These clearances may only be reduced by means approved by the regulatory authority.

A combustible surface is anything that can burn (i.e. sheet rock, wall paper, wood, fabrics etc.) These surfaces are not limited to those that are visible and also include materials that are behind non-combustible materials. If you are not sure of the combustible nature of a material, consult your local fire officials.

Parallel Installation



Corner Installation



Clearances for Small Seneca	**Single Wall Pipe**	**Double Wall Pipe**
A - Chimney connector to back wall	20"	20"
B - Chimney connector to sidewall	25"	24"
C - Chimney connector to corner wall	22"	22"
D - Unit to back wall	16"	16"
E - Unit to sidewall	16"	15"
F - Unit to corner wall	13"	13"

Clearances for Medium Seneca	**Single Wall Pipe**	**Double Wall Pipe**
A - Chimney connector to back wall	19"	12"
B - Chimney connector to sidewall	26"	24"
C - Chimney connector to corner wall	19"	16"
D - Unit to back wall	17"	10"
E - Unit to sidewall	15"	13"
F - Unit to corner wall	8.5"	5.5"

WARNING: DO NOT MAKE COMPROMISES DURING INSTALLATION. FOLLOW ALL CLEARANCE REQUIREMENTS AND CHIMNEY INSTRUCTIONS CAREFULLY. FAILURE TO FOLLOW THESE REQUIREMENTS MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY, OR EVEN DEATH.

CHIMNEY CONNECTION

The chimney connector is a single walled pipe used to connect the stove to the chimney. For use with the appliance the chimney connector MUST be 6” in diameter, with a minimum thickness of 24gauge black steel or 26gauge blued steel.

Aluminium and galvanized steel pipe is not acceptable for use with the appliance. These materials cannot withstand the extreme temperatures of a wood fire and can give off toxic fumes when heated.

DO NOT USE THE CONNECTOR PIPE AS A CHIMNEY.

Each chimney connector or stovepipe section must be installed to the stove flue collar and to each other with the male (crimped) end toward the stove. See fig 5.

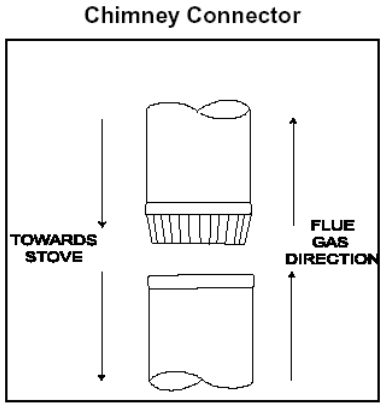


Fig. 5

This prevents any amount of condensed or liquid creosote from running down the outside of the pipe or the stovetop. All joints, including the flue collar connection must be secured with three sheet metal screws to ensure that the sections do not separate.

For the best performance the chimney connector should be as short and direct as possible, with no more than two 90° elbows. The maximum horizontal run is 36” and a recommended total length of stovepipe should not exceed 10 feet. Always slope horizontal runs upward ¼” per foot toward the chimney.

No part of the chimney connector may pass through an attic or roof space, closet or other concealed space, or through a floor ceiling. All sections of the chimney connectors must be accessible for cleaning. Where passage through a wall or partition of combustible construction is desired, the installation must conform to NFPA 211 or CAN/CSA-B365, and is also addressed in this manual.

CHIMNEY INSTALLATION:

DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE. DO NOT CONNECT TO ANY AIR DISTRIBUTION DUCT OR SYSTEM.

This room heater must be connected to a 6" factory built UL 103 HT chimney (ULC S629, in Canada) or a code-approved masonry chimney with a flue liner. These flues and required chimney connector must be in good condition and kept clean.

Factory Built Chimney

When a metal prefabricated chimney is used, the manufacturer's installation instructions must be followed. You must also purchase (from the same manufacturer) and install the ceiling support package or wall pass-through and "T" section package, firestops (where needed), insulation shield, roof flashing, chimney cap, etc. Maintain proper clearance to the structure as recommended by the manufacturer. The chimney must be the required height above the roof or other obstructions for safety and proper draft operation. See page 8 for chimney termination requirements.

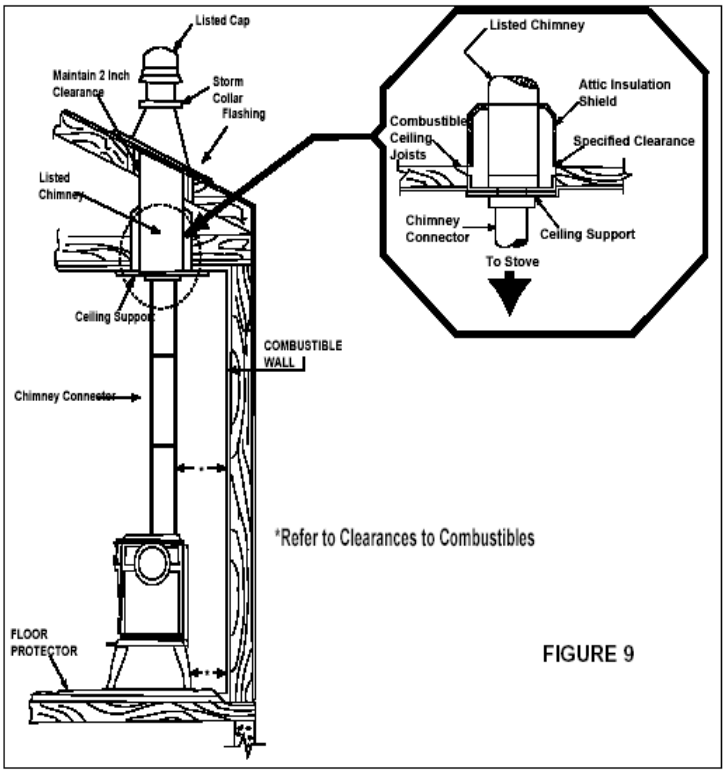
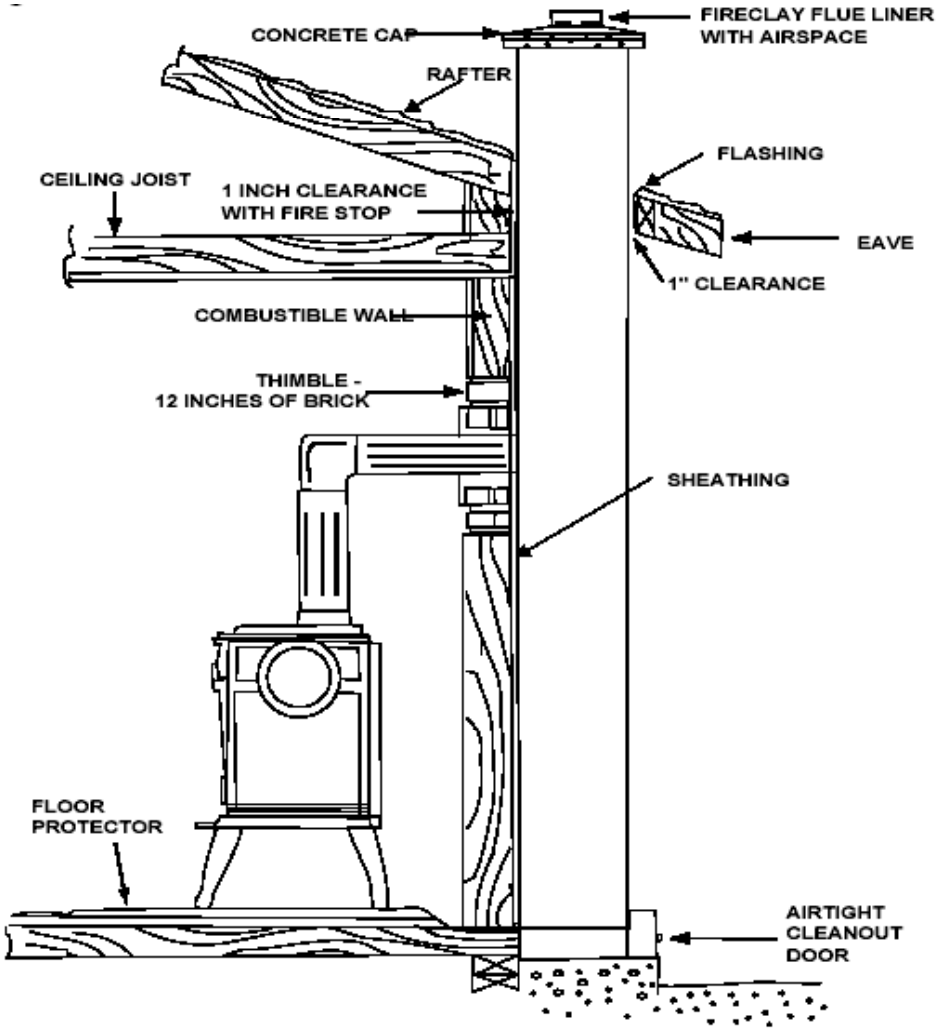


FIGURE 9

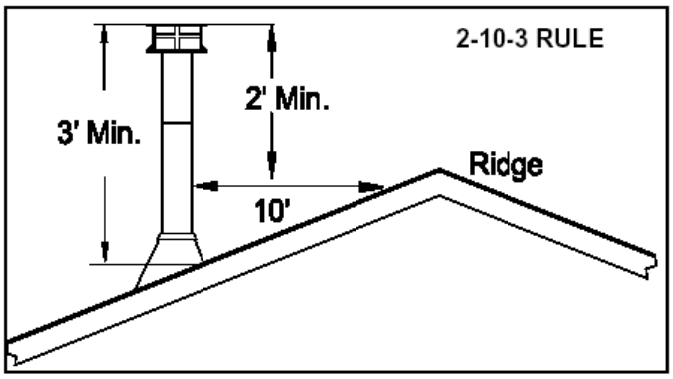
MASONRY CHIMNEY

Ensure that a masonry chimney meets the minimum standards of the National Fire Protection Association (NFPA) by having it inspected by a professional. Make sure there are no cracks, loose mortar or other signs of deterioration and blockage. Have the chimney cleaned before the stove is installed and operated. When connecting the stove through a combustible wall to a masonry chimney, special methods are needed. Refer to Combustible Wall Chimney Connector Pass-Throughs on page 9.

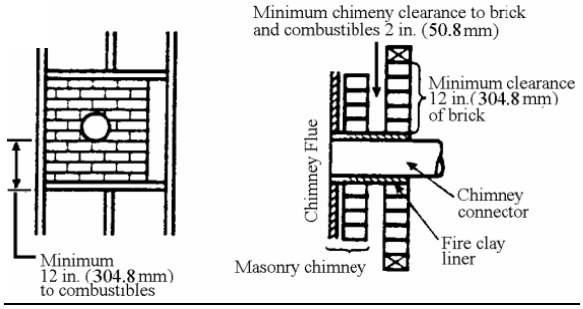


CHIMNEY HEIGHT

A masonry chimney or a listed factory-build chimney must be the required height above the roof and any other nearby obstructions. The chimney must be at least 3’ (90 cm) higher than the highest point where it passes through the roof and at least 2’ (60 cm) higher than the highest part of the roof or structure that is within 10’ (305 cm) of the chimney, measured horizontally.

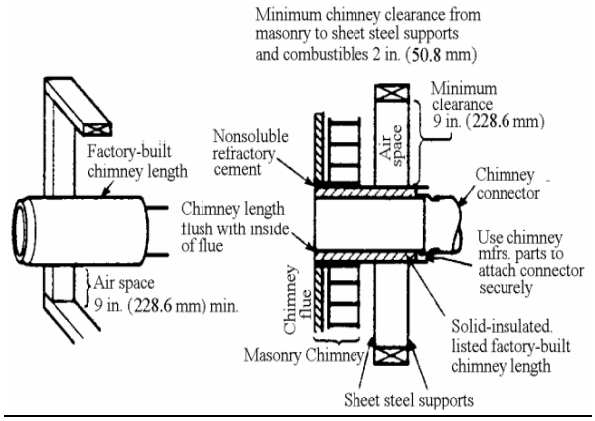


COMBUSTIBLE WALL CHIMNEY CONNECTOR PASS-THROUGH



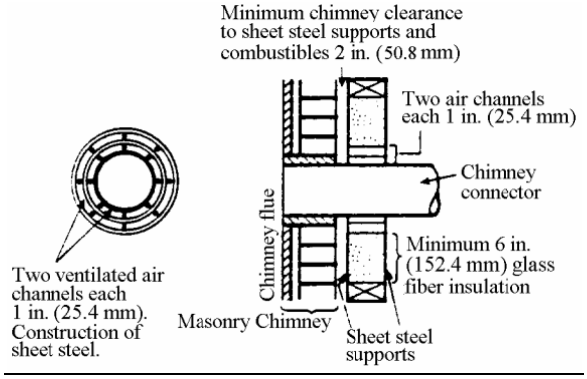
Method A. 12” (304.8 mm) Clearance to Combustible Wall Member: Using a minimum thickness 3.5” (89 mm) brick and a 5/8” (15.9 mm) minimum wall thickness clay liner, construct a wall pass-through. The clay liner must conform to ASTM C315 (Standard Specification for Clay Fire Linings) or its equivalent. Keep a minimum of 12” (304.8 mm) of brick masonry between the clay liner and wall combustibles. The clay liner shall run from the brick masonry outer surface to the inner surface of the chimney flue liner but not past the inner surface. Firmly grout or cement the clay liner in place to the chimney flue liner.

B

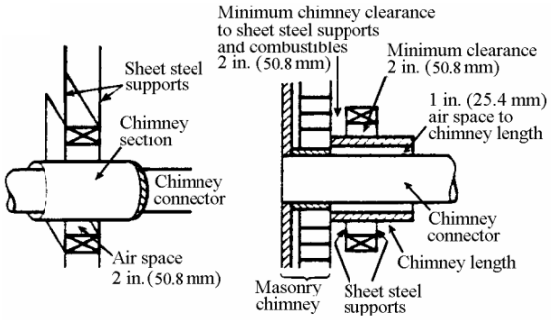


Method B. 9” (228.6 mm) Clearance to Combustible Wall Member: Using a 6” (152.4 mm) inside diameter, listed, factory-built Solid-Pak chimney section with insulation of 1” (25.4 mm) or more, build a wall pass-through with a minimum 9” (228.6 mm) air space between the outer wall of the chimney length and wall combustibles. Use sheet metal supports fastened securely to wall surfaces on all sides, to maintain the 9” (228.6 mm) air space. When fastening supports to chimney length, do not penetrate the chimney liner (the inside wall of the Solid-Pak chimney). The inner end of the Solid-Pak chimney section shall be flush with the inside of the masonry chimney flue, and sealed with a non-water soluble refractory cement. Use this cement to also seal to the brick masonry penetration.

C



Method C. 6" (152.4 mm) Clearance to Combustible Wall Member: Starting with a minimum 24 gage (.024" [.61mm]) 6" (152.4 mm) metal chimney connector, and a minimum 24 gage ventilated wall thimble which has two air channels of 1" (25.4 mm) each, construct a wall pass-through. There shall be a minimum 6" (152.4) mm separation area containing fiberglass insulation, from the outer surface of the wall thimble to wall combustibles. Support the wall thimble, and cover its opening with a 24-gage minimum sheet metal support. Maintain the 6" (152.4 mm) space. There should also be a support sized to fit and hold the metal chimney connector. See that the supports are fastened securely to wall surfaces on all sides. Make sure fasteners used to secure the metal chimney connector do not penetrate chimney flue liner.



Method D. 2" (50.8 mm) Clearance to Combustible Wall Member: Start with a solid-pak listed factory built chimney section at least 12" (304 mm) long, with insulation of 1" (25.4 mm) or more, and an inside diameter of 8" (2 inches [51 mm] larger than the 6" [152.4 mm] chimney connector). Use this as a pass-through for a minimum 24-gage single wall steel chimney connector. Keep solid-pak section concentric with and spaced 1" (25.4 mm) off the chimney connector by way of sheet metal support plates at both ends of chimney section. Cover opening with and support chimney section on both sides with 24 gage minimum sheet metal supports. See that the supports are fastened securely to wall surfaces on all sides. Make sure fasteners used to secure chimney flue line

NOTES:
1. Connectors to a masonry chimney, excepting method B, shall extend in one continuous section through the wall pass-through system and the chimney wall, to but not past the inner flue liner face.
2. A chimney connector shall not pass through an attic or roof space, closet or similar concealed space, or a floor, or ceiling.

OPERATION INSTRUCTIONS

Use clean and dry wood only. Higher efficiencies and lower emissions generally result when burning air dried seasoned hardwoods, as compared to softwoods or to green or freshly cut hardwoods. Do not burn treated wood, driftwood, solvents, trash, coal, garbage, cardboard, or coloured papers. Pile and store wood outdoors under cover. Do not place or store wood within stove installation clearances or within the space required for loading and ash removal.

NEVER USE GASOLINE, GASOLINE TYPE LANTERN FUEL, KEROSENE, CHARCOAL LIGHTER FLUID, OR SIMILAR LIQUIDS TO START OR FRESHEN UP A FIRE IN THIS HEATER. KEEP ALL SUCH LIQUIDS WELL AWAY FROM THE HEATER WHILE IT IS IN USE.

Before lighting your appliance ensure that the chimney is clear from obstructions and free of creosote buildup. Also ensure that the steel ash pan door is closed firmly and the cast iron ash grate is in the closed position.

To light your stove, first make sure that the air control on the firebox front left is open to its full extent. Do not elevate the fire; build wood fire directly on firebox hearth. **Do not use grates, andirons, or other fuel support methods.** Light a fire using finely chopped wood and establish it so that it has plenty of flames. As soon as the fire is going briskly adjust the air control to the desired setting. Keep the fire burning briskly until the stove is up to temperature. **DO NOT OPERATE THE STOVE WITH THE DOOR OPEN. DO NOT OVERFILL THE STOVE SO THE WOOD LEANS ON THE DOOR, OR PREVENTS THE DOOR FROM CLOSING PROPERLY.**

WARNING: STOVES EQUIPPED WITH DOORS SHOULD BE OPERATED ONLY WITH DOORS FULLY OPEN OR DOORS FULLY CLOSED. IF DOORS ARE LEFT PARTLY OPEN, GAS AND FLAME MAY BE DRAWN OUT FO THE FIREPLACE STOVE OPENING, CREATING RISKS FROM BOTH FIRE AND SMOKE.

WARNING: DO NOT OVER FIRE. IF THE STOVETOP OR CHIMNEY CONNECTOR PIPE GLOW RED, YOU ARE OVER FIRING.

The air draft control on the firebox front will control the rate of burn in the firebox. The more it is open the faster the fire will burn. The more it is closed the slower it will burn:
AIR CONTROL SETTINGS:

DESIRED BURN SETTINGS	*INLET AIR SETTING*
LOW	CLOSED FULLY
MED/LOW	¼ OPEN
MED/HIGH	¾ OPEN
HIGH	FULLY OPEN

Good draft also depends on a sufficient supply of air to the stove. The chimney can't pull in more air than is available to it. Sluggish draft can be caused by a house that is tight enough to prevent the ready flow of air to the stove, or by competition between the stove and other appliances that vent indoor air to the outside; i.e., exhaust fans for range hoods, clothes dryers, bathroom fans, etc.

If the chimney draws well when all such equipment is turned off (or sealed, in the case of fireplaces and/or other stoves), you need to be attentive in timing the use of the other appliances. If you need to crack a nearby window or door to enable the chimney to pull well, you should install an outside-air intake to bring combustion air into the room.

BUILDING A FIRE

- Open inlet air control fully.
- Place a small amount of crumpled paper in the stove.
- Cover the paper with a generous amount of kindling wood in a teepee fashion and a few small pieces of wood.
- Ignite the paper and close door. If fire dies down substantially, open door slightly.
- Add larger pieces of wood as the fire progresses being careful not to overload. Do not fill firebox beyond firebrick area. An ideal coal bed of 1" (25mm) or 2" (50mm) should be established to achieve optimum performance.
- This unit is designed to function most effectively when air is allowed to circulate to all areas of the firebox. An ideal means of achieving this is to rake a slight (1: to 2" wide) trough in the center of the ember bed from front to back prior to loading the fuel.
- Once fuel has been loaded, close door and open air inlet control fully above door until fire is well established (approx. 10 minutes) being careful not to over fire.
- Re adjust air inlet control to desired burn rate. If excessive smoke fills firebox, open air inlet control slightly until flames resume and wood is sufficiently ignited.
- When refueling, adjust air control to the fully open position. When fire brightens, slowly and carefully open the door. This procedure will prevent gases from igniting causing smoke and flame spillage.
- Add fuel being careful not to overload.

DO NOT OPERATE THE STOVE WITH THE ASH DOOR OPEN. Operation with the ash door open can cause an over firing condition to occur. Over firing the stove is dangerous and can result in property damage, injury or loss of life.

IF YOU HAVE A CHIMNEY FIRE:

- Call the fire department immediately.
- If all the stovepipe joints are tight and no other appliance is connected to the same flue, close all openings, and draft controls if you have an airtight stove. Close the stovepipe damper in a non airtight stove.
- If you have a leaky stove, you may have to wait for the fire to burn out.
- Get everyone out of the house, and put them to work watching for sparks or signs of fire on the roof or nearby. One adult should stay in the house to check the attic and upper floors for signs of fire.
- Discha**r**ge a class ABC dry chemical fire extinguisher or throw baking soda into the stove if the chimney is not sound or there is a danger of the house or surroundings catching on fire. The chemical travels up the chimney and often extinguishes the flame. Special fire extinguishers are also available for stove and chimney fires. They give off intense smoke and smother the fire.
- Throwing water in a stove will cause the metal to warp, but if it's a choice between the house or the stove, use water.
- Make sure the chimney is inspected after a fire. A chimney fire can cause deterioration of metal or cause masonry to weaken.

MAINTENANCE

The Eco Burn requires little maintenance; however the flue and oven base should be periodically checked for cleaning. Inside the oven is a removable base plate. This plate should be lifted off and any soot underneath it removed. You can also remove the hotplates on cooking surface of the appliance and scrape the sides of the oven. The glass on the firebox and oven door can be cleaned with glass cleaner. You can also use a damp cloth and ash. Do not use a cleaner that contains caustic and/or abrasive cleaners.

DISPOSAL OF ASHES:

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.

CREOSOTE – FORMATION AND NEED FOR REMOVAL

When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow burning fire. As a result, creosote residue accumulates on the flue lining. When ignited this creosote makes an extremely hot fire.

Check your chimney and chimney connector for creosote and soot buildup weekly, until a safe frequency for cleaning is established. If creosote has accumulated it should be removed to reduce the risk of a chimney fire. If accumulation is excessive, disconnect the stove and clean both the chimney and the stove. You may want to call a professional chimney sweep to clean them. Both have to be cleaned at least once a year, or as often as necessary.

GASKETS:

Air leaks can be caused by low spots in the door gaskets. To locate such low spots, close each door on a slip of paper and attempt to pull the paper free. If the paper slips out without tearing, the gasket isn't snug enough at that spot. If the seal cannot be improved by adjusting the door latch, try shimming the gasket. Pack a small quantity of cement or a smaller diameter gasket into the channel beneath the gasket to lift the main gasket and thereby improve its contact with the door frame. If shimming does not improve the seal, replace the gasket.

GLASS CARE:
You will find that most of the carbon deposits on the glass will burn off regularly during hot fires. You can wipe fly ash from the glass when hot using a crumpled piece of dry newspaper. **NEVER USE LIQUID CLEANING AGENTS ON HOT GLASS**. If you wish to clean the glass more thoroughly, follow this procedure:

Be sure the glass is completely cool
Use a glass cleaner especially made for this purpose
Dry the glass completely

The glass is very strong but do not let burning fuel rest against it and always close the door gently. If the glass should ever crack while the fire is burning, do not open the door until the fire is out and do not operate the stove again until the glass has been replaced with a new 5mm thick plate of ceramic glass, available from your Hudson River Stove dealer. **DO NOT SUBSTITUTE MATERIALS.**

TO REMOVE THE GLASS: When the unit is cool, open the door and remove the screws and brackets holding the glass in place. Remove all broken glass. Wrap the edges of the new glass with a U-shaped strip of fiberglass gasket, covering ¼" on each side. Place the glass with the fiberglass gasket in position and replace the brackets and screws. When finished, you should be able to move the glass slightly, horizontally and vertically.

FIREBRICK
The insulating material in the fire chamber is firebrick. Your stove is shipped direct from the factory with the firebrick in place. If the need arises to replace damaged or cracked firebrick, see below for proper firebrick placement.

BLOWER OPERATION

The electrical rating for the fan is 120 volt 60 cycle. The fan is already installed on your stove. Plug into a 120 volt power source, and use the line switch to turn off/on. Route the power cord away from heater. **DO NOT PERFORM MAINTENANCE ON BLOWER WITHOUT REMOVING PLUG FROM POWER SOURCE.**

REPLACEMENT PARTS

STOVE BODY	*PART #*
A. BAFFLE INSULATION BLANKET	*6035*
DOOR	
A. HINGE PINS	*6085*
B. GLASS	*6005*
C. GLASS CLIPS	*6045*
D. GLASS GASKET	*6055*
E. DOOR GASKET	*6065*
F. DOOR HANDLE PARTS	*6075*
LEGS	
A. (4)	*6095*
ASH PAN	*6115*
BLOWER	*6125*

ECO BURN 12 MONTH WARRANTY

Manufacturer warrants this stove to be able to operate under normal use and service and within 12 months from date of the original purchase on the terms herein shall repair or replace without cost to the original customer any part thereof which shall be returned to our factory, transportation charges prepaid and which our inspection shows would prevent operation. This warranty does not apply to firebricks, brick retainer, baffle, door seal, glass or discoloration of the surface or tarnishing of gold fittings all of which require normal service to maintain them.

Under the terms of this warranty, Manufacturer assumes no responsibility for the labor costs involved in removing or replacing the stove. Nor shall Manufacturer be liable for any injury, loss, or damage (direct, indirect or consequential) arising out of the use or inability to use the product, or its removal and replacement. All other stove warranties, expressed or implied are excluded to the extent possible at law. Consumers also have rights under relevant State and Commonwealth Laws.

The Retailer does not have the authority to alter this warranty.

For **further information,** contact:

Hudson River Stove Works
1871Route 9H Hudson NY 12534
www.hudsonriverstoves.com