



Installation & Operation Instructions

Models 2100 / 4100 / 7100

**Read thoroughly before starting installation.
Save this manual for future reference.**

SAFETY NOTICE

If this stove is not properly installed, a house fire may result. For safety follow the installation directions.

Contact your local building or fire officials about restrictions and installation requirements in your area.

Retain this information for future reference.

MODEL# _____ **SERIAL#** _____ **MFG. DATE** _____

Working With Nature to Warm Your World
MANUFACTURED BY NESCO, INC. U.S.A.
Natural Energy Systems Company
Cookeville, TN

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GENERAL SAFETY REQUIREMENTS

- **SAFETY NOTICE: If this stove is not properly installed, a house fire may result.** For your safety, follow the installation directions. Contact your local building or fire officials about restrictions and installation requirements in your area.
- The manufacturer assumes no responsibility for equipment installed in violation of either this manual or local codes and ordinances.
- During the first start up, curing of the heat exchanger and paint will take place. You may have some smoke and odor for a short period. Open windows for ventilation until process is complete.
- Use clean shelled corn for fuel only. Do not use seed corn. **DO NOT USE ANY OTHER TYPE FUELS!**
- Never burn the unit without the burner box in place.
- **WARNING: DO NOT CONNECT STOVE'S FLUE TO A CHIMNEY FLUE SERVICING ANOTHER APPLIANCE.**
- Do not install a flue damper in the exhaust venting of this unit.
- Inspect and clean flues and chimney regularly. Inspections should be conducted once a month during heating season.
- **CAUTION: NEVER USE GASOLINE TYPE FUELS, LANTERN FUELS, KEROSENE, DIESEL FUEL OR SIMILAR LIQUID FUELS TO START A FIRE. KEEP ALL SUCH FLAMMABLE LIQUIDS AWAY FROM THE UNIT WHILE IN USE.**
- Use smoke detectors around the unit and locate a fire extinguisher rated for class 'A' fires nearby.
- At the end of the heating season, remove all corn from hopper and auger system.
- Do not extend Direct Vent Flue more than 15 feet without consulting the manufacturer. Do not have more than two offsets in the flue. Intake air could become restricted or overheated. Use U.L. listed type L pipe for extending flue, **DO NOT USE ALUMINUM LINERS.**
- Always set POWER switch to "RUN/AUTO OFF" position and rotate FUEL switch to "OFF" position (a *click* will be heard) for timed shut down, or smoke may spill into home as the fire dies out. During a power failure, smoke may spill into the home as the fire dies out.
- NESCO, Inc. is not liable for any smoke or soot damage.
- **CAUTION: Due to the risk of electrical shock, unplug unit before removing any access panel covers for servicing.**

General Freestanding Installation/ Direct Horizontal Venting Instructions

- NOTE:** For direct horizontal venting, use only manufacturer's zero-clearance venting system.
- SAFETY:** Carefully read and follow all safety requirements previously set forth under the **SAFETY REQUIREMENTS** before continuing with the following information.
- CAUTION:** When cutting through walls make sure you do not interfere with wiring or pipes.

Do not extend Direct Vent Flue more than 15 feet without consulting the manufacturer. Do not have more than two offsets in the flue. Intake air could become restricted or overheated. Use U.L. listed type L pipe for extending flue. Do not use aluminum liners. Spacers may be required when extending direct vent flue if using flexible liner. These can be purchased from your dealer or the stoves manufacturer.

Contact your local building or fire officials about restrictions and installation requirements in your area.

A. LOCATION PREPARATION

- For this type of installation, the stove must be located near an exterior wall and should be located for the best heat circulation throughout the home. Also consider wind conditions in your area. If possible, the exhaust vent should not be placed on a wall that receives strong winds on a regular basis.

WARNING: See individual model sections for each model's minimum clearance to combustibles. This is also noted on the Underwriters Laboratory label affixed to every stove.

- Review the location inside the home and check outside where the vent pipe will be passing through the wall for any obstructions that may prevent proper exhausting.
- Consider the design and construction of the building so as to minimize the need to pass through existing structural supports such as wall studs, etc.
- Be sure that the exit termination of the direct vent (combined) intake air/exhaust system is located in accordance with the following:
 - Not less than 3 ft. above any forced air inlet located within 10 ft. to either side.
 - Not less than 4 ft. below, 4 ft. horizontally to either side, or 1 ft. above any door, window, or gravity air inlet into any building.
 - Not less than 2 ft. away from an adjacent building and not less than 7 ft. above grade when located adjacent to public walkways.

General Freestanding Installation/ Direct Horizontal Venting Instructions Continued

B. MARKING & CUTTING HOLE IN EXTERIOR WALL

1. Attach adjustable glides to bottom corners of stove (not available on model 4100), and set at 1" in height, or if using any accessories such as a freestanding base or leg set, these items should be installed on stove before proceeding on to the next step. See the model details for instructions.
2. Temporarily position the stove on the floor protector in its final location. **Be sure to adhere to minimum clearance to combustibles.** For minimum clearance requirements, and floor protection requirements, for Model 2100 see page 15, for Model 4100 see page 19, and for Model 7100 see page 25.
3. Level stove by adjusting the 4 adjustable glides.
4. Project both a horizontal and a vertical centerline of the stove's combustion air intake pipe. (See Figure 1.) For a corner application, determine by measuring the horizontal centerline location of the elbow. (See Figure 2) On the same centerline mark a center point on the wall. Using the point marked on the wall as a center point, cut a 5 inch hole (or 6 inch, depending on model) through the exterior wall. This can be accomplished with a variety of tools. Your needs will vary depending upon what type of material you'll be going through.
5. After cutting hole through wall, next move on to installing the vent kit from the outside of the building.

CAUTION: WHEN CUTTING THROUGH WALLS MAKE SURE YOU DO NOT INTERFERE WITH WIRING OR PIPES, ETC.

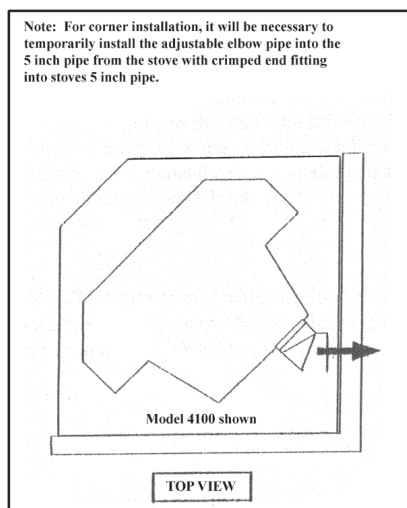


Figure 2.

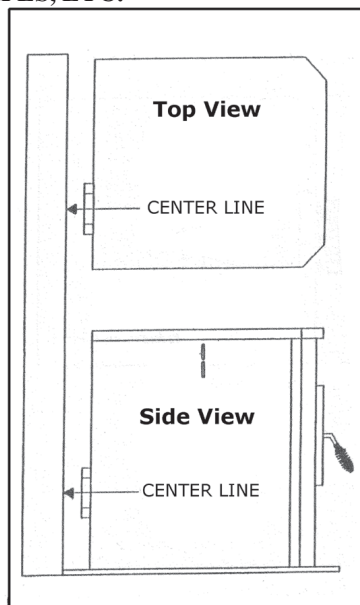
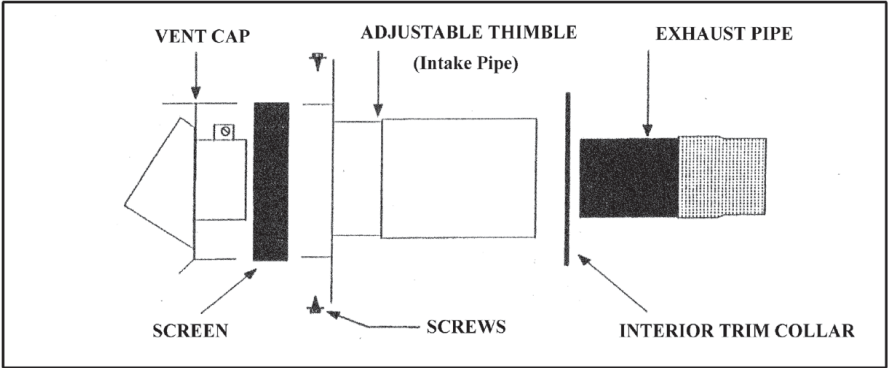


Figure 1 (Model 2100 shown)

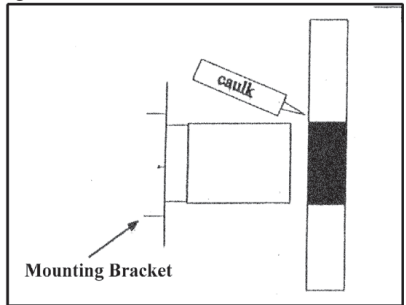
**General Freestanding Installation/
Direct Horizontal Venting Instructions Continued**

C. VENT KIT INSTALLATION PROCEDURES

Note the placement of the parts in order to facilitate reassembling.



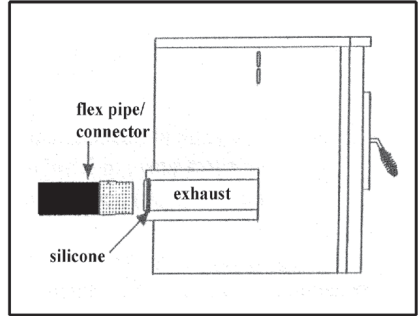
1. From outside the building, caulk around the hole to ensure a durable seal to prevent air and moisture from passing through.
2. Insert adjustable thimble with vent cap mounting brackets located at top and bottom. Mount thimble to the wall with screws. The type of screws you use or need for wall anchors will depend on the material you are mounting to. (wood, brick, etc.).
3. Remove vent cap.



CAUTION: Be careful while handling flex pip - Exposed end is very sharp. Wearing heavy gloves is recommended while handling flex pipe.

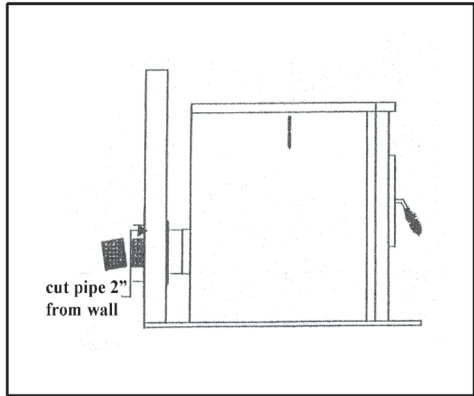
General Freestanding Installation/ Direct Horizontal Venting Instructions Continued

- Now back inside, apply a small bead of silicone around the outside of the stove's 3 inch exhaust pipe; apply bead about 1/4 inch or less from end of pipe. (If this is a corner installation, remove elbow temporarily installed in Section B Step 4.) Slide the flex pipe connector over the stove's exhaust pipe. It will be a snug fit, so twist and push the connector. It may be helpful to start with the seam first.



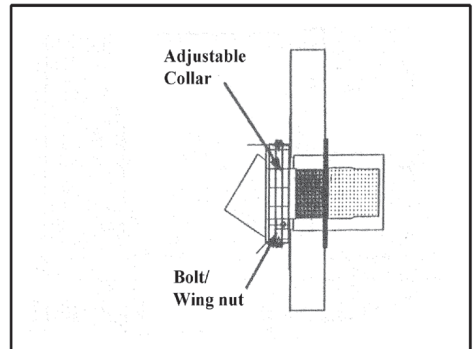
NOTE: For corner installation, at this time slide adjustable elbow pipe over flex pipe and into stove's intake pipe.

- Move stove into final position while guiding flex pipe into wall thimble. In final position, stove's intake pipe should be slipped over wall thimble's intake pipe at least 1 1/2 inch.
- From outside, use a hacksaw to cut flex pipe 2 inches (minimum) from wall surface. Be careful of all sharp edges. Wearing heavy gloves is recommended while handling flex pipe.



Do not cut the pipe too short, a little extra is OK.

- Loosen wing nut on vent cap and slip adjustable collar completely over flex pipe. Push vent cap over mounting brackets on wall thimble. (Note: Be sure screen is between mounting bracket and vent cap on top.) While holding in place insert top mounting screw. Then tighten adjustable collar to flex pipe. Wrap screen around bottom of cap and install bottom mounting screw and washer.



Important: Flex pipe must extend inside collar full depth to vent cap for proper sealing, or exhaust can be pulled in with intake air.

Mobile Home Installation

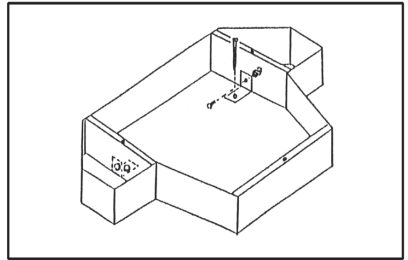
When installing the unit in a mobile home or pre-manufactured home, in addition to the installation instructions previously set forth, there are requirements mandated by the Housing and Urban Development (HUD) of the Federal Government, which apply.

These requirements are as follows:

- The structural integrity of the home must be maintained. In other words, you cannot cut a floor joist, wall stud or rafter truss when installing your stove.
- Outside air must be vented to the combustion chamber. (As is when using manufacturers direct vent kit.)
- The stove cannot be installed in any room used for sleeping.
- The stove must be anchored to the floor of the home. This may be accomplished by using the following instructions.

Model 4100 - Freestanding Installation

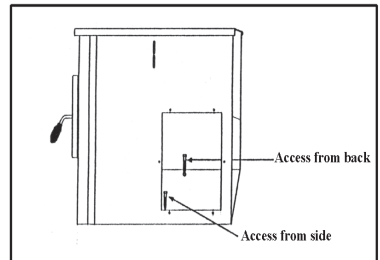
- Position angle brackets to pedestal (See Illustration) and mark hole location. Then drill a $9/32$ " hole through the base.
- Secure brackets to base using $1/4$ -20 x $3/4$ " bolts, lock washers and nuts.
- Position base exactly in its pre-determined position and anchor to floor using $1/4$ " diameter lag screws. (Length of screw will vary depending on thickness of floor protector.)
- Attach stove to base using hardware supplied with base kit, through the 3 holes in the bottom of the stove. (One in each room air blower compartment and one in rear compartment)



Model 4100 - Fireplace Installation

WARNING: To use Model 4100 as a fireplace insert in a pre-manufactured home, the existing fireplace must be U.L. listed for use in premanufactured homes.

- Anchor to hearth using $1/4$ " diameter lag screws through the 2 holes in the bottom of the stove. (One in each room air blower compartment.)



Model 2100 and 7100

- The stove must be anchored to the floor of the home. This may be accomplished by using the $11/32$ " holes located at the bottom of the stove.
- Anchor to the floor using minimum $1/4$ " diameter lag screws. Length of screw will vary depending upon the thickness of floor protector, and whether or not you are using the base kit option. (If using the leg set option, bolt leg directly through floor protector to the floor using the hole in the foot of the leg.)

General Operating Instructions

NOTE: Stove is designed to burn clean - pieces of stalk or cob can block auger and reduce feed rate of corn. Too much dust can cause blockage at feed tube opening over burner box.

A. CONTROL DESCRIPTIONS AND FUNCTIONS

POWER SWITCH

- **START position** - turns on the combustion air blower and energizes the stove's electrical system.
- **OFF position** - turns the power supply off immediately to all components
- **RUN/AUTO OFF position** - applies main electrical power to an AUTO OFF thermostat. This can be put into effect once the room air blower motor/motors start. This will allow the stove to shut down automatically any time the fire dies out (i.e. the hopper runs out, clinker not removed in a timely manner).

CAUTION: Improper shutdown can result in smoke seeping in the hopper and home. Read and follow the SHUT DOWN PROCEDURES carefully. (See page 10, section D).

FUEL KNOB

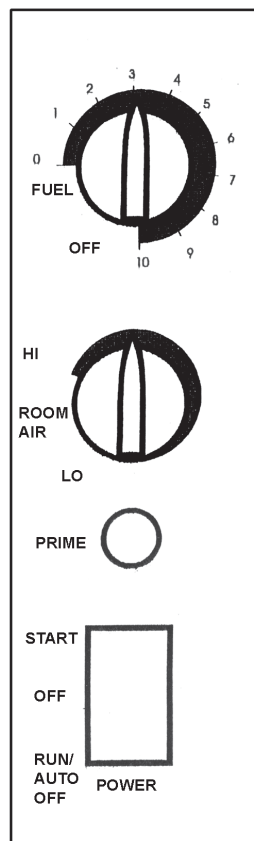
- A rotary ON/OFF switch and fuel feed combination
- When set to "OFF" position (turned to maximum counter-clockwise - a *click* will be heard), the switch turns off power to the auger motor only. This prevents fuel from feeding to the burner box.
- When turned clockwise from the OFF position, the switch is turned on and supplies power to the auger motor. The fuel feed rate increases as the switch is turned clockwise, from a 1 through 10 setting.

ROOM AIR KNOB

- This is a rotary switch which controls the speed of air flow that circulates through the heat exchanger. The higher the fan speed, the more efficiently the heat exchanger operates.

PRIME BUTTON

- A push button switch that is off when the button is not pressed. When pressed it will manually operate the auger system.
- This control is used mostly when the hopper is completely empty. Fill the hopper with corn, press and hold prime button until corn is delivered to burner box. Auger is now primed for operation.



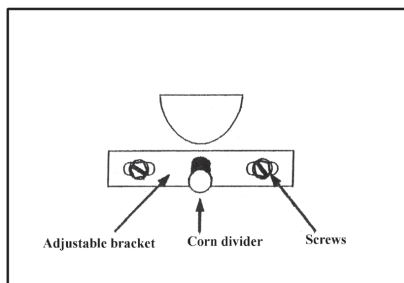
General Operating Instructions Continued

B. NEW INSTALLATION/FIRST TIME START UP

1. Fill hopper with clean shelled corn.

NOTE: Stove is designed to burn clean corn only - pieces of stalk or cob can block auger and reduce feed rate of corn.

2. Set POWER switch to “START” position.
3. Prime feed system by pressing and holding the PRIMER button until corn feeds into the burner box. Release button.



NOTE: Corn should distribute evenly to both sides of the burner box as it hits corn divider. If adjustment is required, loosen screws slightly (requires 5/16” nut driver, socket wrench, or equivalent tool) slide divider left or right towards side feeding more heavily. Press and hold the PRIME button in order to check adjustment, then retighten. If corn feeds to the front or rear of box too heavily, bend divider up or down slightly.

IMPORTANT: Proper adjustment of the corn divider is necessary for the efficient operation of your stove. If the corn is feeding too heavily towards the back side of the burner box, as the clinker/ash builds up, excessive heat can travel up the feed tube to the hopper, causing it to sweat. Also, it can eventually block the corn dropping out of the feed tube opening, causing the corn to jam in the feed tube and the fire to die out.

TIP: It is hard to see the effect of the adjustment without some clinker/ash buildup. For accurate adjustment, re-check after stove has been burning for a couple of hours. If readjustment is necessary, turn off power and fine tune by bending the divider left, right, up or down. Once divider is properly set, no re-adjustment should be required. The more accurately the corn feeds to the center of the burner box, the better the quality of the fire, heat output, and length of time between clinker removal will be.

4. Set POWER switch to “OFF” position and empty the burner box before following LIGHTING PROCEDURE below.

C. LIGHTING PROCEDURE (For first time startup, see above.)

1. Fill hopper with clean shelled corn. Remove corn or ashes from burner box if any are present. If hopper was empty, set POWER switch to “START” position, then press and PRIME button until corn starts to feed into the burner box. Set POWER switch back to “OFF” position.

General Operating Instructions Continued

2. Fill burner box half full with easy-light solid fire starter blocks with starter log pieces. (Can be purchased at grocery stores, or see coupon in samples supplied with stove.) **NOTE:** More starter may be required on colder days to preheat the intake air and warm the stove body to operating temperature.
3. Ignite solid fire starter blocks and close the door.
4. Set POWER switch to "START" position.
5. Set FUEL control to "2" and set ROOM AIR control halfway between LO and HI.
6. When heat exchanger reaches preset temperature, auger will begin to feed corn. Approximately 5 minutes after corn starts to flow, the room air fan will come on. When it does, you can reset the FUEL and ROOM AIR controls for comfort, and set POWER switch to RUN/AUTO OFF position.

TIP: Sometimes solid fuel fire starter blocks will leave a haze on glass. The brand you choose should burn fast and hot and be completely burned away in 5 minutes, leaving no residue that will interfere with air flow to corn. Give blocks a twist to expose more raw edges for faster burn. To clean glass, set POWER switch to "OFF" position, open door & carefully wipe glass with dry paper towel. Close door & set POWER switch to "RUN/AUTO OFF" position. Normal operation will resume. If unit shuts off, set POWER switch to "START" position and try again anytime later.

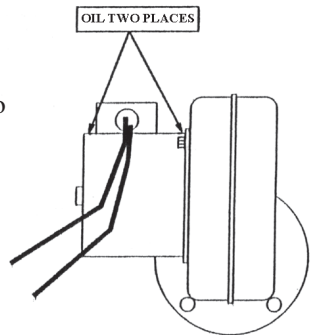
D. SHUT DOWN PROCEDURE

1. Set POWER switch to "RUN/AUTO OFF" position.
2. Rotate FUEL switch past *click* to "OFF" position. All fans will automatically shut off when heat exchanger temperature lowers to preset lever.

WARNING: Setting POWER switch to OFF while a fire is burning can cause smoke to rise into hopper and home.

E. SEASONAL SHUT DOWN/MAINTENANCE

- Burn stove until hopper runs empty or otherwise remove all corn from hopper. Assure auger tube is empty by use of the PRIME button.
- Oil the combustion blower motor (model 4100's two room air blower motors will require oil as well) with ANDEROL OIL 465. (See individual models section End of Season Maintenance for more information & where you can purchase this oil.)
- Clean stove's combustion chamber & burner box. (See Routine Maintenance, pg. 14)
- Clean stove's exhaust track. (See individual models section Bimonthly Maintenance for this procedure.)



WARNING: Due to risk of electrical shock, always unplug power cord before removing the access panel covers and servicing the blower or working with the unit for any reason.

General Operating Instructions Continued

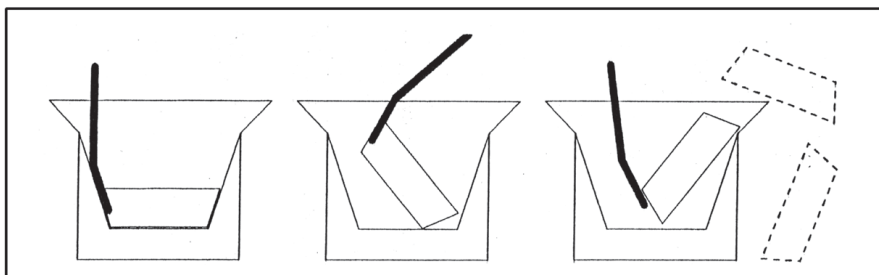
F. REMOVING THE CLINKER

During the combustion of corn, what is known as a clinker will form in the bottom of the burner box. A clinker is best described as a solid chunk of fused ash, conforming to the shape of the bottom of the burner box. If not removed, it will eventually block air flow to the fire, extinguishing it. For best results, remove the clinker every 12-24 hours of use, depending on the amount of corn burned. This can be accomplished while a fire is burning, but it must be done quickly (about a minute) to restore fuel and air to the burner box or the fire will go out.

CAUTION: Never open the door of the stove when it is in operation without turning the POWER switch to the “OFF” position, or hot ash can be blown into your home. Turning POWER switch to “OFF” position when the stove is burning can cause smoke in hopper and home. Do not open door when smoke can be seen through the window. Leave POWER switch on “RUN/AUTO OFF” or “START” position until smoke clears.

1. Set POWER switch to OFF position then open door.
2. Quickly remove clinker by placing point of clinker tool in the front corner of the burner box. Push down to bottom of box, making sure that the tool point slips underneath the clinker.
3. Turn clinker on its side so that the burnable ashes and corn fall back into the burner box. Lift clinker out of the burner box. (Barbeque tongs work well for lifting clinker out.)
4. Close door and set POWER switch to “RUN/AUTO OFF” position.

This procedure may take a few times before learning. If you lose the flame, simply shut down stove and relight.



CAUTION: Ashes should only be emptied into a metal container and must be completely cooled before discarding!

TIP: Clinker can be broken down into small pieces after it cools and be used as fertilizer on house plants or flower beds.

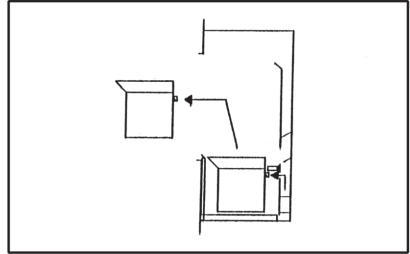
Routine Maintenance Instructions

A. GLASS DOOR CLEANING

Although the stove is equipped with a glass wash system, and burns clean, the glass will cloud up over time. For best results when hot, use dry paper towel to clean glass. (Using liquid cleaner or a wet rag when the glass is hot will cause the ash to sear to the glass.) For best results when cold, use a glass cleaner. Heat from the fire will not break the glass. However, the glass should be handled as any other breakable glass. Rough handling may cause damage.

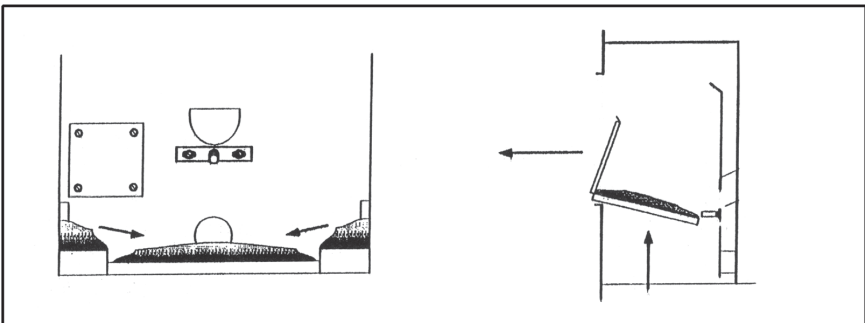
B. REMOVING AND CLEANING THE BURNER BOX

1. If stove is burning, shut it down. Be sure POWER switch is set to "RUN/AUTO OFF" position, rotate FUEL switch to "OFF" position (Rotate counter clockwise until the switch clicks.)
2. Wait until heater shuts down and completely cools off.
3. The Burner box hooks to inner wall. To remove, lift box up and pull forward.
4. Empty ashes out of burn area of burner box as well as out of the plenum area in the bottom of the box through the hole on the back wall of box. **CAUTION:** Ashes should only be emptied into a metal container and must be completely cooled before discarding! Also, check for any holes that may be plugged and unplug them.



C. REMOVING ASHES FROM THE COMBUSTION CHAMBER

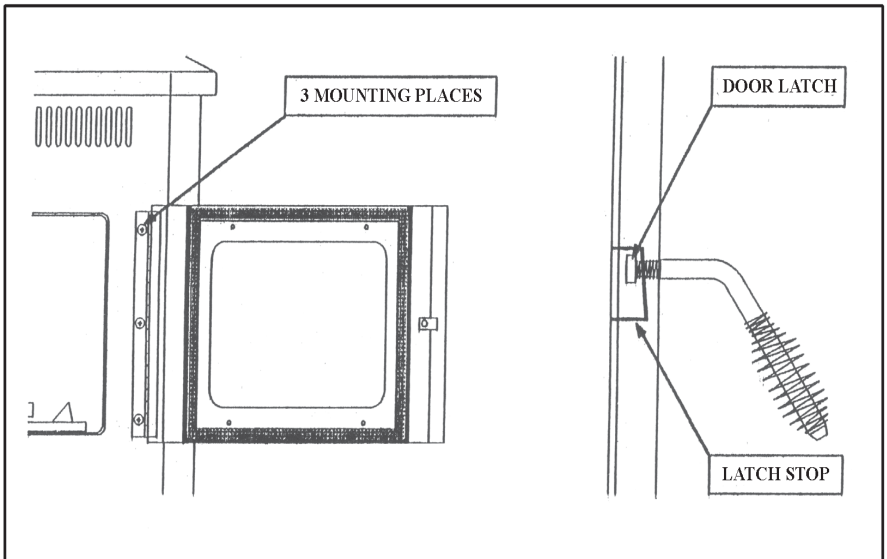
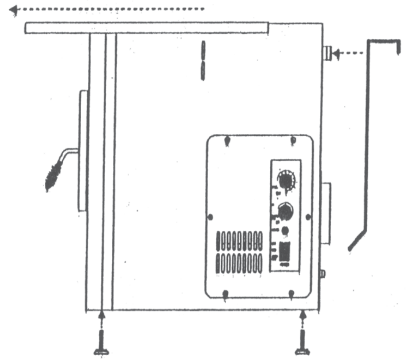
1. Shut down stove. (See procedure above.) Wait until the stove completely cools off, open door and remove burner box.
2. Using a brush (a stiff paint brush or nylon utility brush) brush ashes from the walls of the combustion chamber and heat exchanger.
3. Vacuum loose ashes from the floor of the chamber. See individual model sections for bimonthly cleaning of the exhaust track.



Model 2100 Unpacking/Unit Preparation

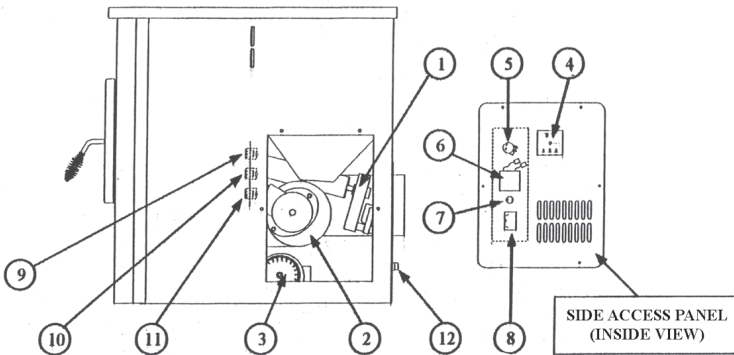
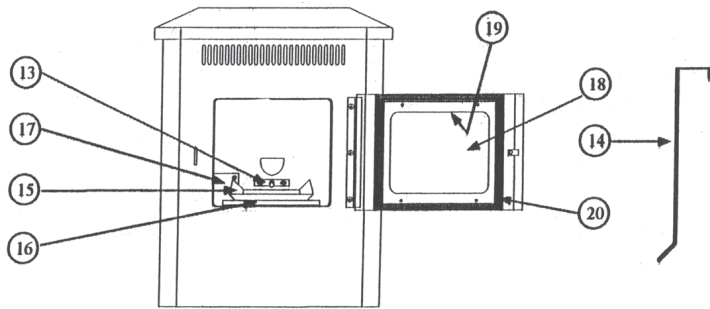
Check stove for possible shipping damage. If damage is found, notify the dealer from whom the stove was purchased.

1. Remove all protective materials which have been applied to the stove for shipment.
2. Open hopper (slide top forward). Remove all items from hopper.
3. Obtain leveling bolts from the burner box. Screw into holes located at each corner of bottom of stove.
4. Store clinker tool on clip, located on back wall.
5. Using predrilled holes on front, install door (screws supplied, requires #2 Phillips screwdriver).
6. Close door and check for proper seal. In order to adjust, rotate the door handle clockwise to loosen and counter clockwise to tighten.
7. If door handle turns completely around, loosen screws and lift up in order for door latch to catch the latch stop.



Model 2100 Replacement Parts List

KEY #	PART #	DESCRIPTION	KEY#	PART#	DESCRIPTION
1	P-0200	AUGER MOTOR	11	P-0210	AUTO/OFF THERMOSTAT
2	P-0201	COMBUSTION BLOWER	12	P-0213	FUSE HOLDER
3	P-2202	ROOM BLOWER	13	P-2032	CORN DIVIDER
4	P-0204	TIMER RELAY	14	P-0070	CLINKER TOOL
5	P-0206	FUEL CONTROL	15	P-2077	BURNER BOX
6	P=0207	RHEOSTAT	16	P-2068	GLASS WASH/ASH PAN
7	P-0208	PRIMER BUTTON	17	P-0069	CLEAN OUT COVER
8	P-0209	POWER SWITCH	18	P-2112	DOOR GLASS
9	P-0210	AUGER THERMOSTAT	19	P-0116	GLASS SEAL GASKET
10	P-0210	ROOM AIR THERMOSTAT	20	P-0115	DOOR SEAL GASKET



Model 2100 Specifications

A = 20.5 INCHES
B = 4.25 INCHES
C = 23.0 INCHES
D = 24.0 INCHES
E = 8.0 INCHES

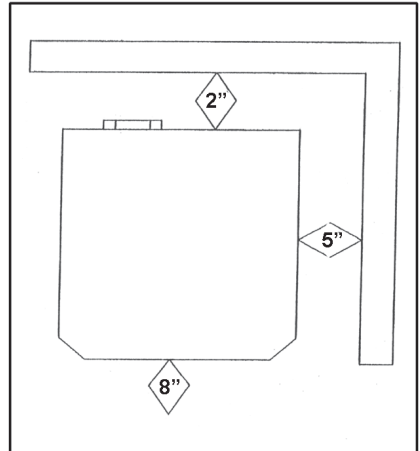
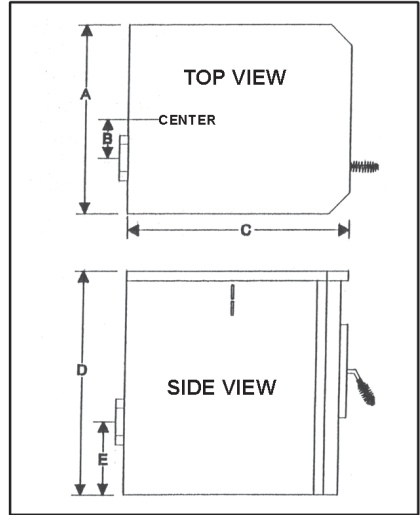
EXHAUST - 3 INCHES
WEIGHT - 150 POUNDS

MINIMUM CLEARANCE TO COMBUSTIBLES

Sides	5 inches
Back	2 inches
Front	8 inches
Above	12 inches

FLOOR PROTECTOR REQUIREMENTS

The floor protector should be 20 x 30 inches minimum and must extend 8 inches in front of stove. Material must be 3/8 inch minimum thickness, non-combustible, and meet UL standards.

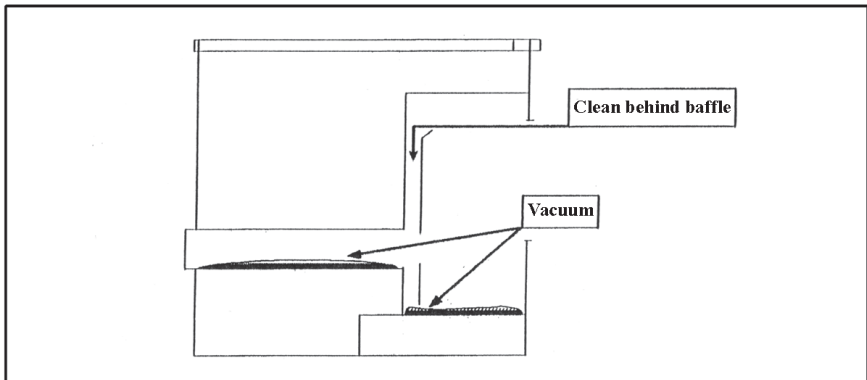
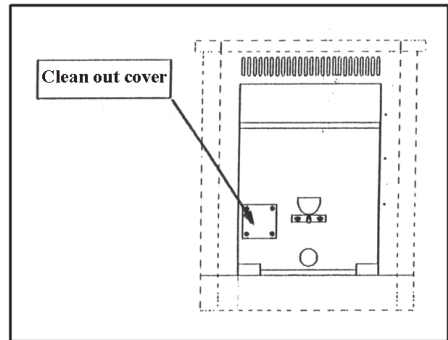


Model 2100 Bimonthly Maintenance

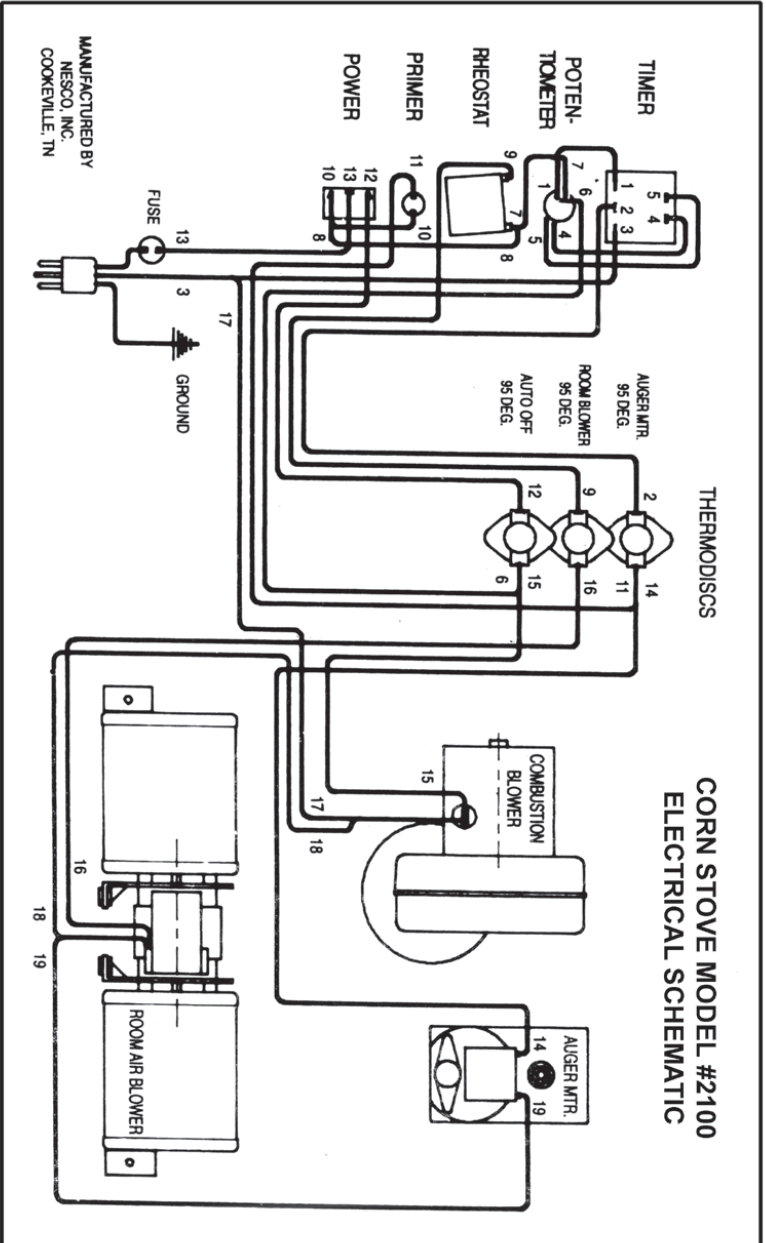
NOTE: The frequency for the following cleaning will depend on the usage.

CLEANING THE HEAT CHAMBER AND EXHAUST PIPE

1. Shut down the stove. Wait until stove completely cools off.
2. Remove burner box and ash pan.
3. Using 5/16" socket wrench or equivalent tool, remove clean out cover.
4. Loosen debris from behind baffle with a coat hanger wire or something similar.
5. Brush heat exchanger walls using a paint brush, etc.
6. Vacuum loose debris from exhaust pipe and heat chamber.



Model 2100 Electrical Wiring Diagram



Wire numbers shown on diagram can be found printed on the end of each actual wire.

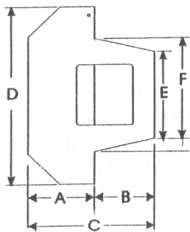
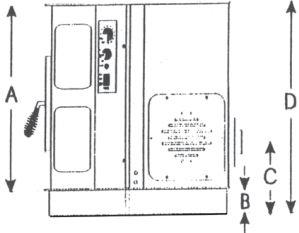
Model 4100 Unpacking/Unit Preparation

Check stove for possible shipping damage. If any damage is found, notify the dealer from whom the stove was purchased.

Open door, remove brass knob, then assemble to hopper lid.

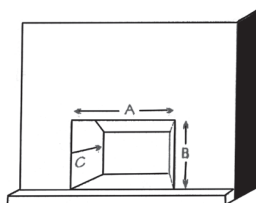
Remove clinker tool from hopper. Use the hole on top left side of stove to store clinker tool when not in use.

Model 4100 Specifications

Weight = 240 pounds	Rating=20 volts, 60 Hz, AC only, 3.0 amps
TOP VIEW DIMENSIONS	SIDE VIEW DIMENSIONS
A = 15 INCHES	A = 21 3/4 INCHES
B = 13 INCHES	B = 5 INCHES
C = 28 INCHES	C = 10 11/16 INCHES
D = 41 INCHES	D = 26 3/4 INCHES
E = 20 INCHES	
F = 27 INCHES	
 <p style="text-align: center;">TOP VIEW</p>	 <p style="text-align: center;">SIDE VIEW</p>

FIREPLACE DIMENSIONS MINIMUM REQUIREMENTS

WIDTH (A) = 27 INCHES
HEIGHT (B) = 22 INCHES
DEPTH (C) = 19 INCHES
The use of the chimney cap is recommended to prevent rain, birds, etc. from entering chimney.



Model 4100 Specifications Continued

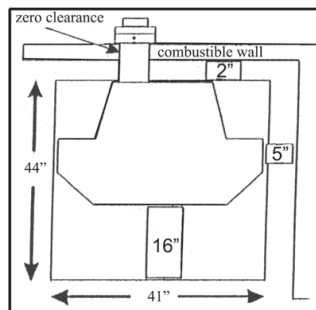
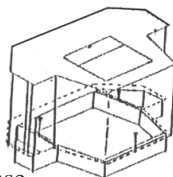
MODEL 4100 MINIMUM CLEARANCES TO COMBUSTIBLES

Sides	5 inches
Back	2 inches
Front	16 inches
Above	12 inches

Floor Protection Requirements

The floor protector should be 40 x 48 inches minimum and must be 3/8 inch minimum thickness non-combustible material and has been listed to UL standards.

Update NOTE for rugs, etc.



ATTACHING A PEDESTAL

1. Position stove on freestanding base.
2. Open front access doors and remove rear access panel.
3. Align mounting holes provided in stove over mounting nuts on freestanding base. Using 1/4 x 20 bolts to attach base to stove.

Model 4100 Fireplace Installation

SAFETY: Carefully read and follow all safety requirements set forth under SAFETY REQUIREMENTS before continuing with the following information.

WARNING: THIS PRODUCT MUST BE INSTALLED IN THE FIREPLACE WHICH SATISFIES THE NATIONAL FIREPLACE PROTECTION ASSOCIATION.

MINIMUM FIREPLACE DIMENSIONS:

WIDTH = 27 INCHES, HEIGHT = 22 INCHES

DEPTH = 19 INCHES

FIREPLACE PREPARATION

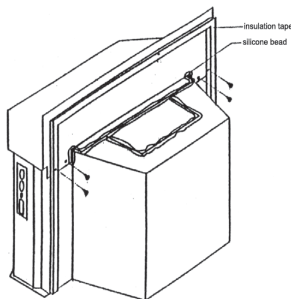
1. Examine the masonry fireplace and chimney for serious damage caused by normal deterioration or chimney fires. Repair if necessary.
2. The hearth must extend at least 16 inches in front of the stove's fire chamber opening. If the hearth needs extending, use hearth extension that has been tested to UL standards.
3. If your fireplace has a wooden mantel, it must be located so there is at least 12 inches between the top of the stove and any part of the trim of the mantel.
4. Remove or block open the existing fireplace damper plate.

Model 4100 Fireplace Installation Continued

ATTACHING A FIREPLACE KIT

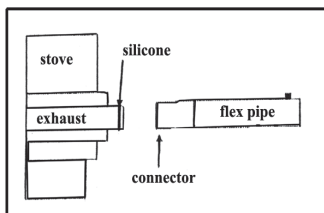
NOTE: Before attaching the upper trim panel to the stove, measure to be sure that the trim panel will cover the opening of the fireplace. If the trim panel does not cover the entire opening, a panel of greater height or width is available. Contact the location from which you purchased the stove for the special panel.

- A. Position and center trim panel onto the stove.
Align slots or holes in trim panel with the holes on the back side of the stove. Using the self-tapping screws, attach the trim panel to the stove.
- B. Using a high temperature silicone adhesive, seal along the back edge of the trim panel where the panel and the stove join. Also, seal the hopper lid seams that will insert into the fireplace.
- C. In order for the stove to seal against the face of the fireplace, apply the self-adhesive insulation tape across the top and both sides of the trim panel and stove.



MODEL 4100 ATTACHING FLEX PIPE

1. Apply a small bead of silicone around outside of stove's three inch exhaust pipe, about 1/4 inch or less from end of pipe.
2. Fit the flex pipe connector over stove's exhaust pipe. It will be a snug fit, so twist and push the connector at least as far as the edge of the five inch pipe.

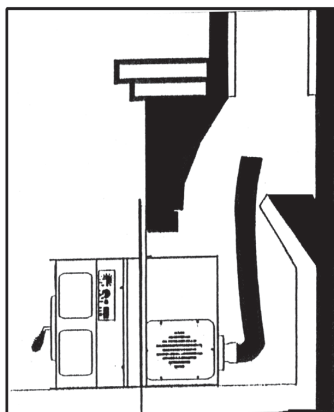


INSERTING INTO FIREPLACE

1. Position the stove on the fireplace hearth.
Slowly slide the stove into the fireplace opening. At the same time, you must assure that the flex pipe is guided through the fireplace damper.

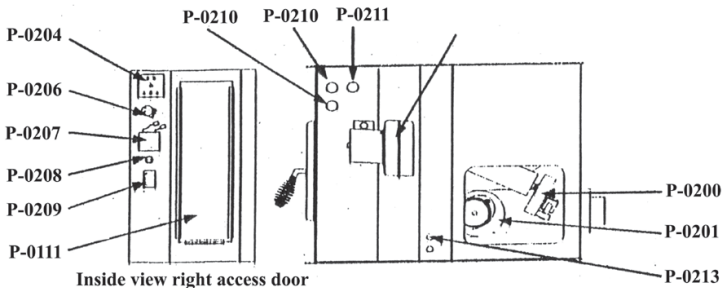
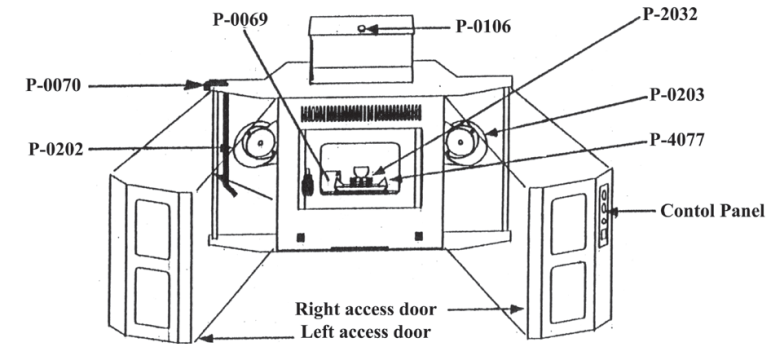
NOTE: The cardboard top protector that was applied for shipping purposes can be used to protect the hearth surface while sliding the stove into the fireplace opening.

2. When the fireplace and trim panel are flush with the fireplace facing, check around the edges for proper seal.



Model 4100 Replacement Parts List

PART #	DESCRIPTION	PART#	DESCRIPTION
P-0200	AUGER MOTOR	*P-0212	POINTER CONTROL KNOB
P-0201	COMBUSTION BLOWER	P-0213	FUSE HOLDER
P-2202	ROOM BLOWER-LEFT SIDE	*P-0214	FUSE - 7 AMP
P-0203	ROOM BLOWER-RIGHT SIDE	P-2032	CORN DIVIDER
P-0204	TIMER RELAY	P-0070	CLINKER TOOL
P-0206	FUEL CONTROL	P-4077	BURNER BOX
P-0207	RHEOSTAT	P-4068	GLASS WASH/ASH PAN
P-0208	PRIMER BUTTON	P-0069	CLEAN OUT COVER
P-0209	POWER SWITCH	*P-0112	DOOR GLASS
P-0210	AUGER THERMOSTAT 95	*P-0116	GLASS SEAL GASKET
P-0211	ROOM AIR THERMOSTAT 110	*P-0115	DOOR SEAL GASKET
P-0210	AUTO-OFF THERMOSTAT 95	P-0106	BRASS HOPPER KNOB
	* = Not shown	P-0111	DUST FILTER



Model 4100 Bimonthly Maintenance

NOTE: The frequency for the following cleaning will depend on the usage.

HEAT EXCHANGER/EXHAUST CLEANING

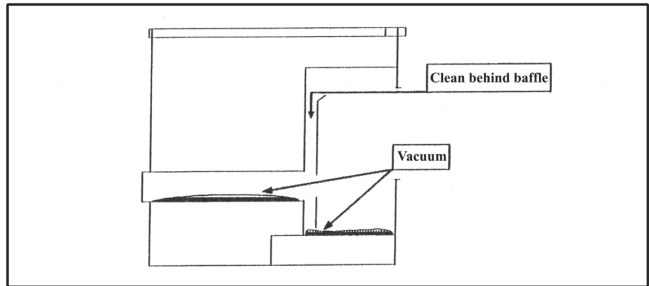
1. Shut down the stove. Wait until stove completely cools off.
2. Open door, remove burner box.
3. Remove clean-out cover plate.
4. From inside the combustion chamber, using a brush, brush the heat exchanger tubes and all walls of the combustion chamber. Using the clinker tool, tap the rear wall of the combustion chamber to loosen any debris that may be trapped there. Vacuum loose debris thoroughly from floor of chamber and exhaust pipe.

MODEL 4100 END OF SEASON MAINTENANCE

IMPORTANT:

Using the prime button, remove all corn from hopper and auger.

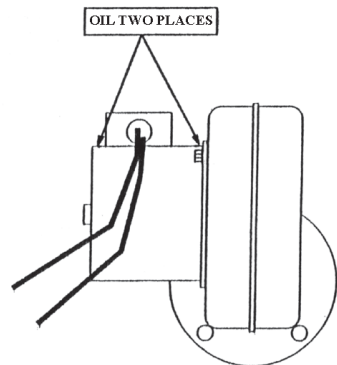
BLOWER LUBRICATION



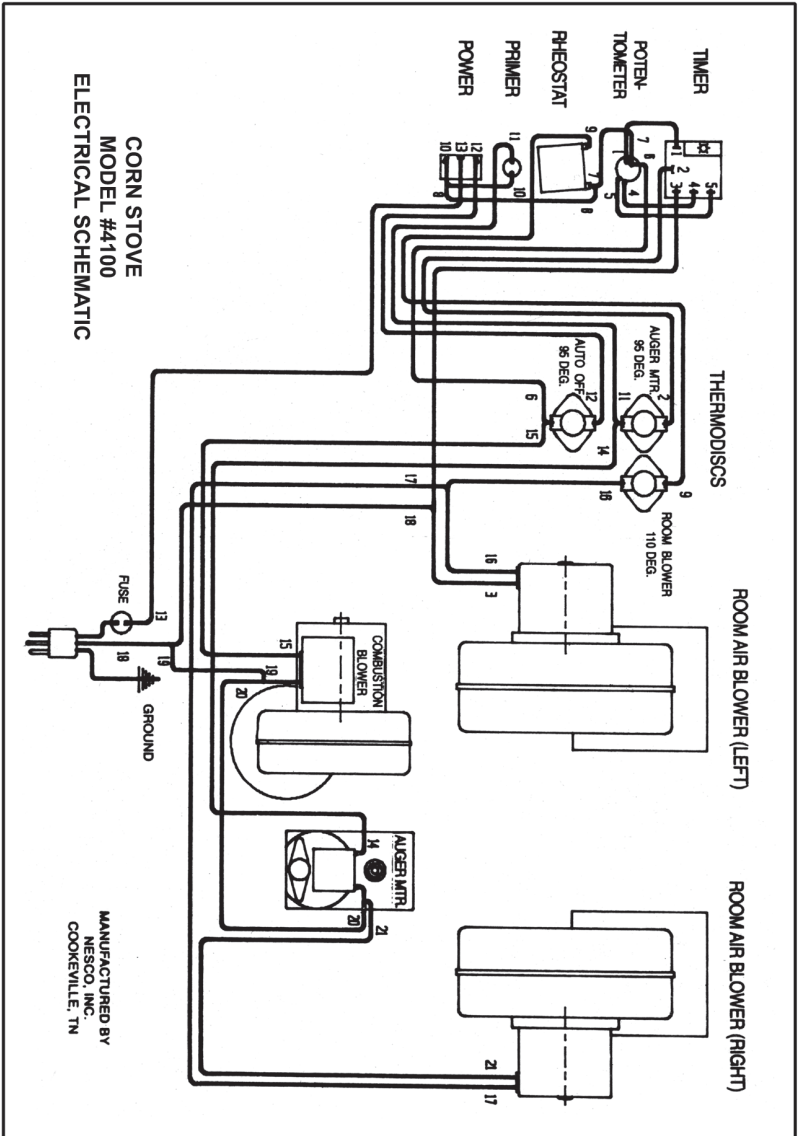
SAFETY: Unplug the stove before performing the following instructions. Always disconnect the power supply before servicing the blower or working with the unit for any reason.

The motor bearings should be re-lubricated every 6 months with drops of SAE 10W or 20W non-detergent oil (ML-TYPE) or with electric motor oil.

***Detail how to get to blowers.



Model 4100 Electrical Wiring Diagram

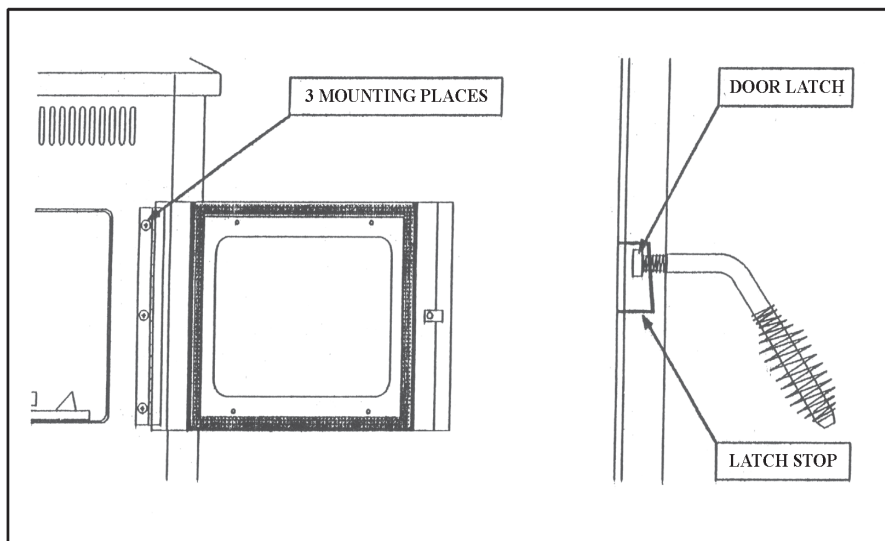


Wire numbers shown on diagram can be found printed out the end of each actual wire.

Model 7100 Unpacking/Unit Preparation

Check stove for possible shipping damage. If damage is found, notify the dealer from whom the stove was purchased.

1. Remove all protective materials which have been applied to the stove for shipment.
2. Open hopper. Remove the clinker tool and all other items from the hopper.
3. Obtain leveling bolts from the burner box. Screw into holes located at each corner in bottom of stove. (Disregard this step if using base kit or legs set.)
4. Store clinker tool on clip, located on back wall of stove.
5. Close door and check for proper seal. In order to adjust seal tension, rotate the door handle clockwise to loosen and counter clockwise to tighten.
6. If door handle rotates completely around, open door, loosen top and bottom screws slightly (keep tension on center screw), swing door to almost closed position, and lift up on the bottom of the door near the handle in order for door latch to catch the latch stop. Re-open door and re-tighten screws.



Model 7100 Unit Specifications

A = 29 1/4 inches

B = 37 1/2 inches

C = 29 1/8 inches

D = 6.25 inches

E = 20 inches

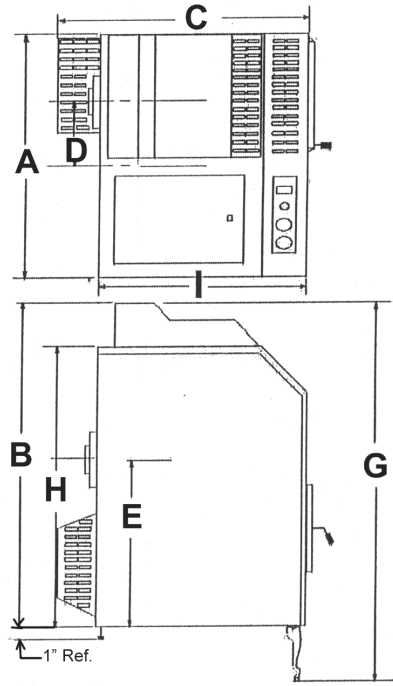
F = N/A

G = 45 1/2 inches (optional)

H = 32 3/8 inches

I = 24 1/4 inches

Diagram of top and side view of stove



MINIMUM CLEARANCE TO COMBUSTIBLES

Sides 5 inches

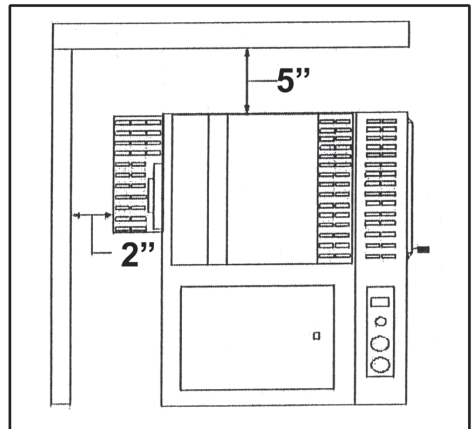
Back 2 inches

Front 8 inches

Above 12 inches

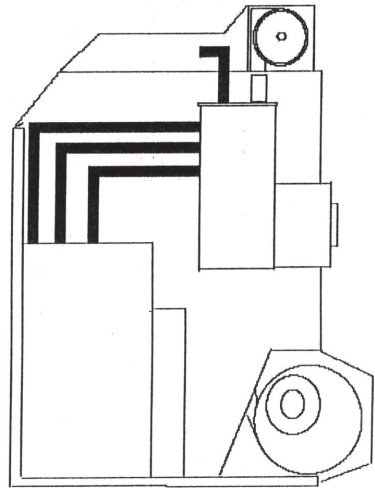
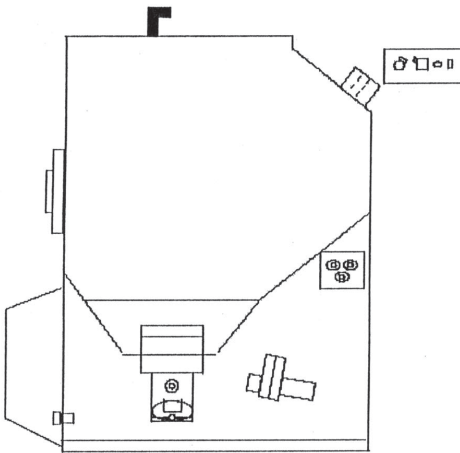
FLOOR PROTECTOR REQUIREMENTS

The floor protector should be 30 inches wide by 32 inches deep and must extend 8 inches in front of the stove. Material must be 3/8 inch minimum thickness, non-combustible and meet UL standards.



Model 7100 Replacement Parts List

PART #	DESCRIPTION	PART#	DESCRIPTION
P-0200	AUGER MOTOR	P-0210	SECONDARY R.A. THERMOSTAT 95°
P-0201	COMBUSTION BLOWER	P-0212	POINTER CONTROL KNOB
P-2202	MAIN ROOM AIR BLOWER	P-0213	FUSE HOLDER
P-7202	SECONDARY HEAT EXCHANGER ROOM AIR BLOWER	P-0214	FUSE - 7 AMP
P-0204	TIMER RELAY	P-2032	CORN DIVIDER
P-0206	FUEL CONTROL	P-0070	CLINKER TOOL *NOT SHOWN
P-0207	RHEOSTAT	P-4077	BURNER BOX
P-0208	PRIMER BUTTON	P-2012	DOOR GLASS (SPECIFY LOGO)
P-0209	POWER SWITCH	P-0116	GLASS SEAL GASKET
P-0210	AUGER THERMOSTAT 95	P-0115	DOOR SEAL GASKET
P-0210	AUTO-OFF THERMOSTAT 95°	P-0106	BRASS HOPPER KNOB - HOPPER (1) AIR DEFLECTOR (2)



Model 7100 Bimonthly Maintenance

NOTE: The frequency for the following cleaning will depend on the frequency of the usage of the stove and/or the amount of corn burned per month. As soot builds up, it will insulate the heat exchanger, causing it to be less efficient. It can also block the exhaust track, causing poor burn quality and possibly forcing exhaust into the corn hopper.

HEAT EXCHANGER TUBES/COMBUSTION CHAMBER CLEANING

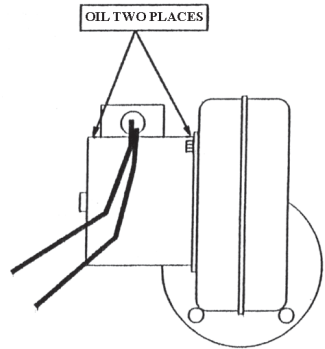
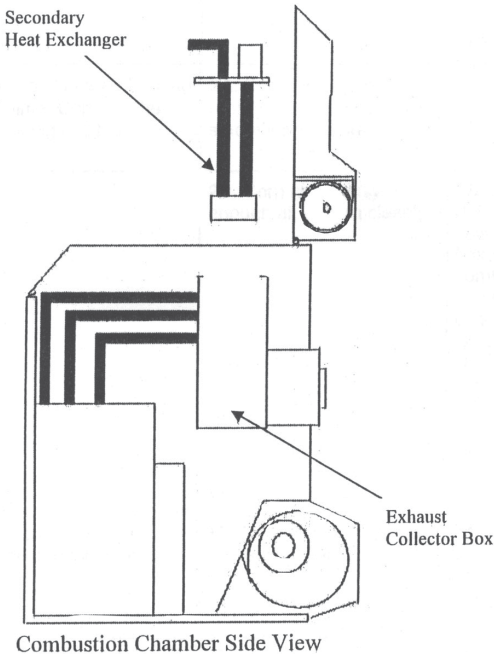
1. Shut down stove. Wait until stove completely cools off. (See routine maintenance chapter for proper shutdown procedure and burner box cleaning.)
2. Open door, remove burner box. Place paper in bottom of combustion chamber. (If using vacuum, omit placing paper.)
3. Using a brush, (a stiff paint brush or nylon utility brush) brush the walls of the combustion chamber clean.
4. Using a pellet stove vent brush on a flexible shaft, push brush through each heat exchanger tube individually to brush soot from inside of tubes. (Some types of brushes attach to an electrical drill for easier cleaning.)
5. Lift out paper to discard soot, or simply vacuum loose soot from the floor of the chamber.
6. Re-install cleaned burner box.

Model 7100 End of Season Maintenance

EXHAUST TRACK/COLLECTOR BOX CLEANING

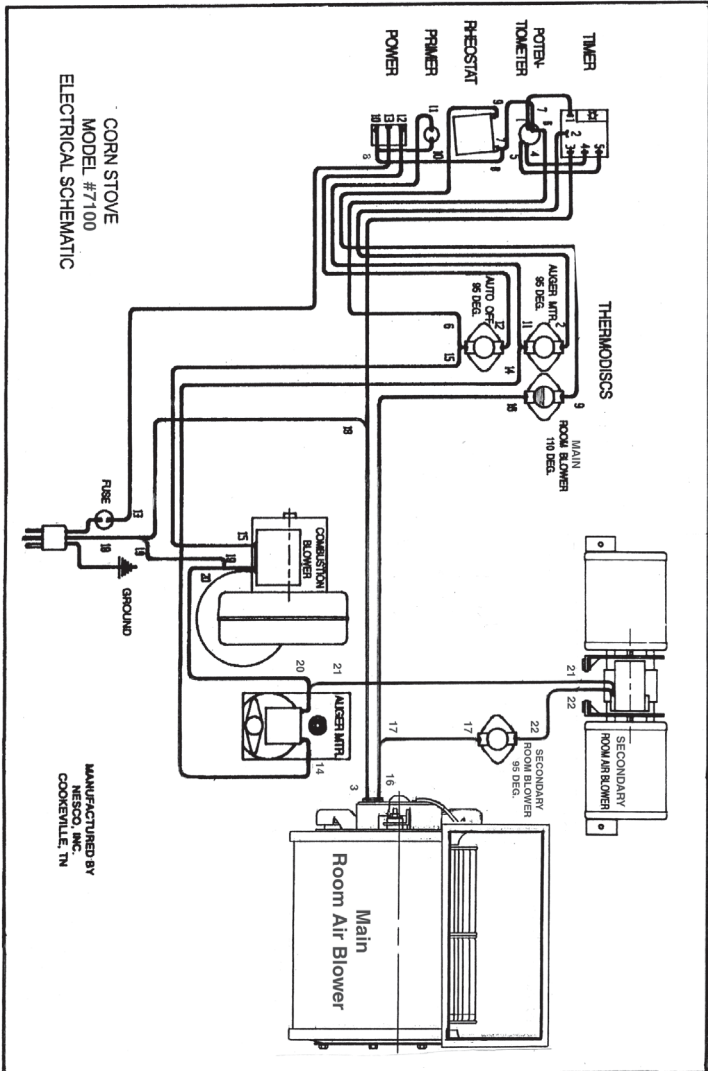
NOTE: Perform bimonthly maintenance steps before proceeding to these steps.

1. Open secondary heat exchanger hood.
2. Using a 5/16" allen wrench or nut driver, remove the 3/8"-16 socket head bolt and washer holding secondary heat exchanger onto exhaust collector box. (An anti-seize compound has been applied to these bolts, do not remove this compound or fresh anti-seize compound should be reapplied.)
3. Lift secondary heat exchanger out of exhaust collector box. Brush or vacuum soot off the outside of heat exchanger tubes, then set aside. Vacuum or otherwise remove soot from exhaust collection box. (Also check for soot build-up in exhaust pipe exiting out the back of the stove.)
4. Inspect gasket for proper sealing.
5. Re-install secondary heat exchanger. (Only enough torque to achieve gasket seal is required, do not over-tighten..)



6. Oil the combustion blower motor through the two oil holes provided in the motor's body. Use just 2 or 3 drops in each hole, once per year of ANDEROL OIL 465. A tube of this oil can be purchased directly from Fasco Motors by calling 1-800-325-8313. Using the wrong oil can break down the high temperature grease applied by the factory and shorten the motor's life. Once oil has been applied, set POWER switch to "START" position and let the motor run for about 30 seconds to draw the oil into the bearings.

Model 7100 Electrical Schematic



Wire numbers shown on diagram can be found printed on the end of each actual wire.

Problems/Troubleshooting

PROBLEM/CONDITION	POSSIBLE CAUSES	REMEDY
1. Fire goes out after fire starter burns up. Corn does not start feeding into burner box.	1A. Hopper Empty	1A. Fill Hopper with clean shelled corn. (See also step 8.)
	1B. Auger feed tube not full of corn.	1B. Hold PRIME button down until corn starts falling into burner box.
	1C. Start up fire not large enough to heat up thermo disc heat sensors.	1C. Use 4 to 6 squares (model 2100) or 6 to 8 squares (model 4100) of fire starter blocks. (The colder the outside temperature the more squares required.) Give each square a twist to expose more raw edges. This will help them burn faster to increase flame size and burn away quicker. NOTE: Other brands of fire starters are acceptable but they must burn up quickly and not leave any ash residue that will block air flow to the corn falling in the burner box.
2. Fire goes out after burning a short time. Corn can be seen feeding into burner box.	2A. Corn feeding too rapidly into burner box and smothering out fire.	2A. Set FUEL control to lower setting (2 or 3), and let burner box heat up and build up an ember bed. You can turn up feed rate after about 10 or 15 minutes.
	2B. Corn not getting enough air to burn cleanly	2B. Be sure fire starter blocks are completely burned up and no residue is left blocking air flow into burner box. Check to be sure burner box is properly attached to back wall of combustion chamber. If stove has been used previously, remove burner box from combustion chamber and check that ash has not built up in the air supply hole on back such that enough air is not getting into the bottom of the box.
	2C. Corn not feeding evenly into burner box. (more in one area, not evenly throughout.)	2C. Adjust corn divider rod until corn feeds evenly. See owner manual page <u>9</u> to properly adjust divider rod.
3. Fire goes out after a prolonged burning time.	3A. Air supply not enough to sustain clean burn.	3A. Clinker built up to the point of reducing air flow through corn. Remove clinker. NOTE: The denser the corn used the sooner the clinker will need to be removed. (See also 2B above.)
	3B. See 2 C.	3B. See 2C.
	3C. Auger motor over heating and shutting down.	3C. Replace auger motor.

Limited Warranty

PLEASE READ CAREFULLY WARRANTY IS NOT TRANSFERABLE

PRODUCTS NOT COVERED

This warranty does not cover the following: Standard or optional gold, glass, gasket material, and will not cover damage and/or failure caused by abuse or improper use or improper installation of the product covered.

(A) Period I

For the period of the first one (1) year from the date of purchase, we will replace or repair, at our option, any part defective in materials or workmanship affecting the operation of the heating system. The costs of parts only are included. The customer pays any labor or transportation charges.

(B) Period II

For the period of three (3) years from the date of purchase, we will replace or repair, at our option, any portion of the firebox which has been damaged due to heat thereby affecting the heating system operation. The costs of parts only are included. The customer pays any labor or transportation charges.

PROCEDURE

Should you feel your heating system is defective, please contact your nearest heating system dealer who will instruct you on the proper procedure, depending on which warranty time period (A or B) applies.

CONDITIONS AND EXCLUSIONS

(A) There is no other expressed warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this limited warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

(B) The manufacturer is not liable for indirect, incidental, or consequential damages in connection with the use of this product including any cost or expense of providing substitute equipment or service during periods of malfunction or non-use. Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion or limitation may not apply to you.

(C) This warranty applies only to parts or components which are defective and does not cover repairs necessary due to normal wear, misuse, accident, or lack of proper maintenance.

OTHER RIGHTS

This warranty gives you specific legal rights, and you may have other rights, which vary from state to state.

Warranty Registration Form

The owner registration form must be completed and mailed within 20 days from the date of purchase in order for warranty coverage to begin. All required information must be completed.

Last Name _____ First Name _____

Address _____

City _____ State _____ ZIP _____

Phone (____) _____

Model #: 2100 4100 7100 (Circle one)

Style: Freestanding Insert (Circle one)

Dealer Name _____

Address _____

City _____ State _____ ZIP _____

Phone # (____) _____ Dealer Signature _____

Installer's Name _____

Was stove installed by customer? Yes No

Product Serial # _____

To further serve you, the customer, please fill in the following information.

1. Where did you first see or hear of this brand of corn-burning units?

Dealer showroom State, county, or local fair TV Radio Newspaper

2. What specific feature or features attracted you to this brand unit?

Safety Convenience Economical fuel supply Other _____

3. Is your family's residence located in a city or in a rural area? City Rural

4. Will you grow and use your own corn supply? Yes No

5. Will you purchase corn from another source? Yes No

Customer Signature _____ Date of Purchase _____

Please complete and mail to:

NESCO, Inc.
P.O. Box 3498
Cookeville, TN 38502-3498