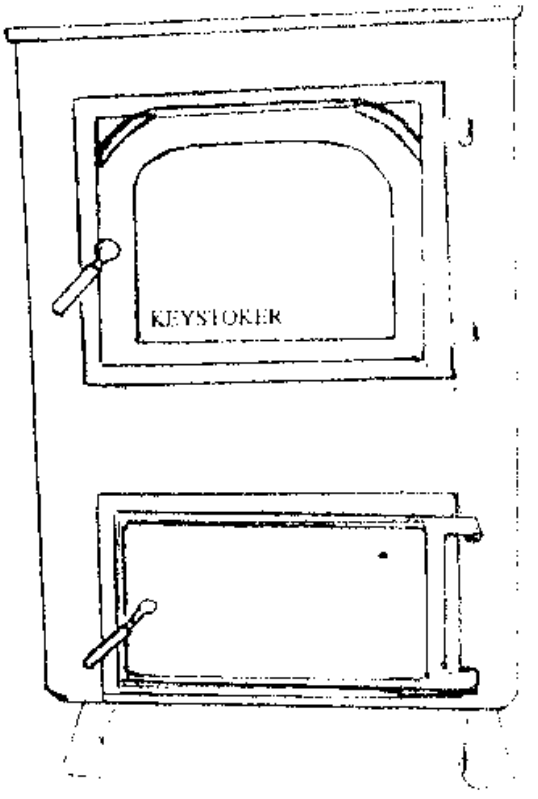
KEYSTOKER

DIRECT VENT WITH THERMOSTAT



NOTICE TO

INSTALLERS:

INSTRUCTIONS

MUST BE GIVEN

TO HOMEOWNER

IMPORTANT:

FOR SAFE AND PROPER
INSTALLATION:

Read this manual before installing stove

Follow all local building and zoning ordnances

USE RICE COAL ONLY

A carbon monoxide detector has been supplied
With your new stove: PLUG IT IN

KEYSTOKER DIRECT VENT WITH THERMOSTAT

1. Safety inspection of a venting system should be performed before and after installing your new stove. Procedures to follow are those recommended by National Fuel Gas Code. ANSI Z223.1 or refer to local codes or ordinances.

2. Plan the vent system layout before installation to avoid possibility of accidental contact with concealed wiring or plumbing inside walls.

3. Select a position on a solid level surface. On non-masonry floors, use an approved fireproof protector under stove. Maintain **12"** clearance from sides of stove to combustibles. Maintain **6"** clearance from **4"** pipe to combustibles. Clearance from **6"** black wall pass thru pipe is **0"** to combustibles.

4. Plumb hopper end of stove.

5. Install coal hopper and bend down small flange into throat of stoker unit.

6. No barometric draft control is required.

7. After determining location of stove, (if you are going through a frame wall,) cut a hole through exterior wall slightly larger than the 6" black pipe. Put stove into position to determine stove pipe length needed to have **at least 6"** of pipe extending past exterior wall.

8. From outside of home, insert 4" stainless steel pipe through opening in wall... through #5 blank plate, ..and through #4 (which is the 6" cap with 4" hole) .. and slide pipe over exhaust air tube. Secure with screw. Seal pipe with high temperature silicone or equivalent. Secure #7 screened plate to outside wall. See Page # 9
It is not necessary to use 6" black pipe **if** 4" pipe is going through a non-combustible wall Such as concrete or block.

9. On outside of home, place 4" stainless steel tee on exhaust pipe. Place 4" stainless steel rain cap on top of 4" tee. Secure with screws. Leave bottom of stainless tee open.

10. Depending on location of exhaust venting to outdoors, varying draft and wind conditions may cause occasional tripping of reset button, causing fire to go out.

11. Draft and air intake settings are preset as factory, and it is usually not necessary to change for installations going straight out through wall. It is still recommended to check draft settings with draft gauge after starting fire.

12. If extra stove pipe must be added inside home to achieve necessary height to go above outside grade level, it may be necessary to adjust combustion air intake shutter located on combustion motor, to achieve proper draft setting of .-02 to .-04.

13. The continuous running of exhaust fan is necessary to expel fumes from stove to outside of home, eliminating need for a chimney.

14. Timer **MUST** be mounted on the side of coal hopper, or, on rear of coal hopper. DO NOT MOUNT TIMER ON STOVE BODY.

15. On all **top vent** direct vent models, the wire to exhaust motor **may not** be allowed to come in contact with stove body. This would cause damage to electrical wires.

16. On all top vent direct vent models, the exhaust motor is equipped with a rheostat. When draft is checked with a draft gauge, sometimes it is necessary to adjust speed of exhaust motor to obtain required draft readings.

17. Mount remote Honeywell thermostat on a wall, according to instructions packed with it. Use thermostat wire (not included) to connect to terminals in RA89 relay marked T.T. Be sure to securely snug the captive screws in thermostat to the plastic wall plate.

18. Plug power cord into 115V outlet. Start Fire. **USE RICE COAL ONLY**

Before Starting Fire

Locate coal feed adjuster (white nut) on stoker unit. Turning white nut clockwise will increase Coal feed. Turning white nut counter-clockwise will reduce amount of coal being pushed onto Grate. USE FINGERS ONLY TO ADJUST COAL FEED... NEVER USE A WRENCH.

Starting fire.....Fill hopper with coal, slide coal down onto grate, so that coal covers entire grate. Place kindling in center of grate. Light kindling, and plug cord in. When kindling is burning well, throw a few hands full of coal onto fire.

When stoker unit is running to satisfy thermostat, you should have a full grate of fire, except for the bottom two inches of grate. The lower part of grate should have ash covering it.

When thermostat is satisfied, the gear motor will not run continuously, gear motor will only run intermittently. During the time when thermostat does not call for heat, the timer will turn feed motor on, to maintain a small fire about 2" in length. Settings of timer may be adjusted.

KEYSTOKER DIRECT VENT WITH THERMOSTAT

To increase size of fire bed, or to reduce coal feed, adjust white nut (coal feed adjustment nut.) To start another fire, it is not necessary to adjust coal feed. Some smoke may be visible when starting a fresh fire, but should not persist.

After a fire has been established, and the stove is warmed up, a draft reading should now be taken. Remove set screw in ash door, and insert draft gauge. Draft gauge should read between -.02 to -.04. The combustion air shutter is preset at factory.
If any further adjustment is needed to obtain proper draft reading... slide adjusting rod (located in rear of venter) in or out to obtain proper draft. Secure adjusting rod with set screw.

CAUTION Failure to install, maintain and/or operate the venting system in accordance with Manufacturer's instructions could result in conditions which may produce injury And/or property damage.

The stove is equipped with a safety fume switch. If hot coal gasses are not vented outdoors, the safety switch will trip out on reset, which will shut off stoker unit. The fire will go out and cannot be restarted until reset button on safety switch cools down. Then the button must be manually reset. If safety switch trips out frequently, it may be caused by:

1. Restricted or blocked vent tube between stove and exhaust fan. Solution: Pull power plug from receptacle, remove ash pan, and using brush supplied with stove, reach brush Into exhaust pipe. Move brush in a circular motion to clean pipe and exhaust area. Plug power cord back in.

2. Restricted or blocked exhaust pipe from stove to outside of home. Solution: clean Exhaust pipe.

3. Accumulation of dust on exhaust fan blade. Solution: Remove screws on motor Mounting bracket and thoroughly clean fan blade on exhaust motor.

4. Extreme windy condition outside of home blowing against exhaust air.

5. Safety switch defective. Solution: Replace safety switch.

Do not allow ashes to overflow out of ash pan, this can cause blockage in exhaust system. Causing safety switch to trip, resulting in loss of fire. Blockage will have to be cleared before pushing reset button and restarting fire.

Keystoker Direct Vent with Thermostat

VENT TERMINATOR LOCATION

Vent Terminator may not be located:

1. Less than 1 foot above grade

2. Above or within 3 feet horizontally of oil tank or gas meter.

3. Closer than 3 feet to inside corner of home.

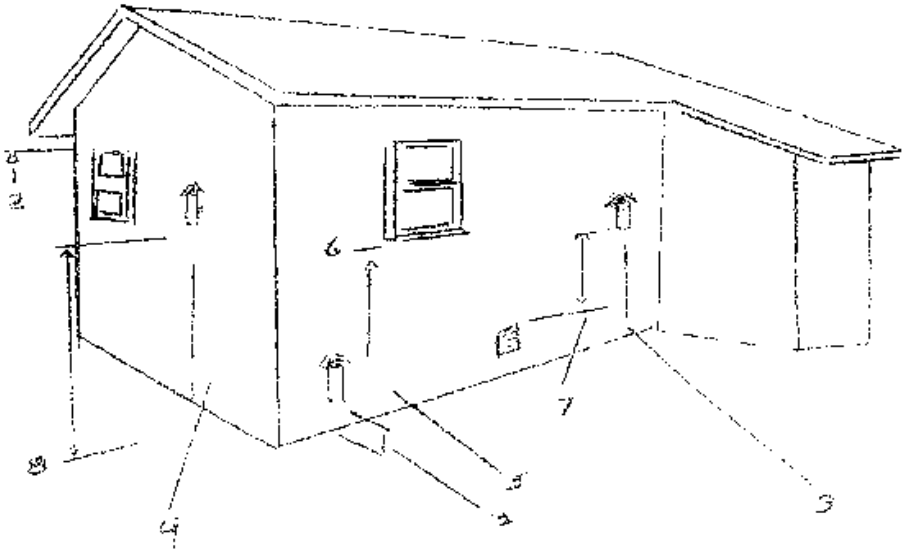
4. Closer than 1 foot from any opening that gases could re-enter home.

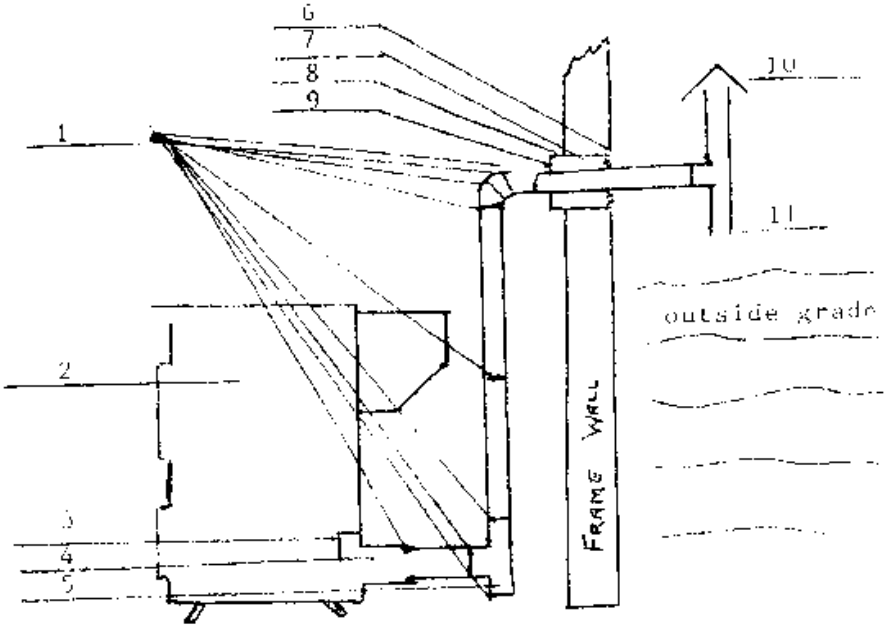
5. Less than 4 feet below windows.

6. Less than 1 foot horizontally of door or window.

7. Less than 3 feet above any forced air inlet located within 10 feet.

8. Less than 7 feet above grade when adjacent to public walkways.





1. SEAL ALL JOINTS _When it becomes necessary to run exhaust pipe up the interior wall of home, every joint must be sealed with a high temperature silicone or equivalent. This will prevent fumes from escaping into home.

2. STOVE.

3. HANGING BAFFLE(removable)

4. DRAFT PORT.... It may be necessary to clean draft port (located inside exhaust outlet) every several weeks to keep the stove from tripping out on safety reset. Using the brush (furnished with stove) remove ash pan, reach into 6" exhaust pipe, and by using a swirling or circular motion, remove dust.

5. A tee or elbow may be used at this location. A tee will prevent any dust accumulation during heating season.

6. OUTSIDE SCREEN with 4" hole.

7. 6" X 12" black pipe must be used when installing exhaust pipe through frame wall.

8. INTERIOR wall blank plate with 4" hole

9. 6" cap with 4" hole

10. STAINLESS STEEL RAIN CAP

11. Bottom of outside tee to remain open.

Cleaning and Lubrication

Under severe operating conditions, exhaust system may need to be cleaned more frequently, however under normal conditions, the stove and exhaust system only need to be cleaned once during the heating season. When the stove is being turned off for summer, it is then necessary to clean inside stove, stove pipe, and exhaust motor. And inspect stove pipe.

Remove dust from inside walls of stove with brush
Remove flyash from under grate annually be methods A. or B below.

A. Remove combustion motor. Vacuum flyash from under grate chamber.
B. Remove nut and bolt from bottom of grate, tap grates in upward direction. Lift grate out. vacuum chamber. Clear unit of old furnace cement. Any blocked holes in grate may be opened with 1/8" punch. Gently tap punch with hammer. Re-cement grates to create an air tight fit from start of holes, to top of grate.

Oil exhaust motor, convection motor, and combustion motor, with a light grade of S.A.E. motor oil.

Guidelines for cleaning of ROBAX glass

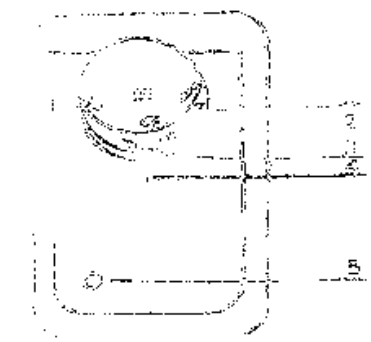
All cleaning procedures should be done at room temperature, cleaning of hot surfaces should be avoided. The reason is.. that cleaning solutions may dry rapidly enough before thorough removal, which may result in creating a film or deposit that can react with combustion by-products.

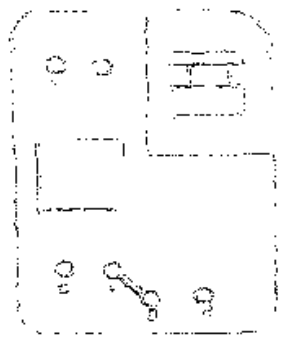
If white deposits are found to be on surface of glass, these should be scraped off using a sharp bladed scraper, and wiped away with a dry cloth prior to any wet cleaning. Scraping should be down at a low angle below 30 degrees.

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

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

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





FAN LIMIT SWITCH

#1 is High limit pointer – shuts gear motor off if internal air temperature reaches 200 degrees. (should not be changes)

#2. is Center pointer – Turns convection blower on when internal air temperature rises to this setting. (adjustable, starting position is 160)

#3. is Low Limit pointer – Turns convection blower off when internal air temperature falls to this setting. (adjustable, starting position is 120)

#4 Records current internal temperature with corresponding number on silver dial directly above.

#5. White Button – pull out for automatic operation of convection blower. Push in for constant running of convection blower.

HONEYWELL RA – 89 RELAY

Terminals marked 1 & 2 are power supplied to relay. Terminal # 4 is power from relay to stoker unit. Terminals marked T.T. are for thermostat wire from thermostat.

TIMER ... is normally factory set to run 1 ½ minutes every 10 minutes. Purpose of timer is to maintain a small fire during periods when thermostat is not calling for heat. Each clip in timer equals approximately 15 seconds of running time. Clips may be changed if necessary. To increase running time, add more slips to yellow wheel. To reduce running time, remove clips from yellow wheel. Do not remove too many clips from timer at once, or fire may go out.

MAINTENANCE:

1. Motor: Inspect and oil motor at least once a year - motor should rotate freely.

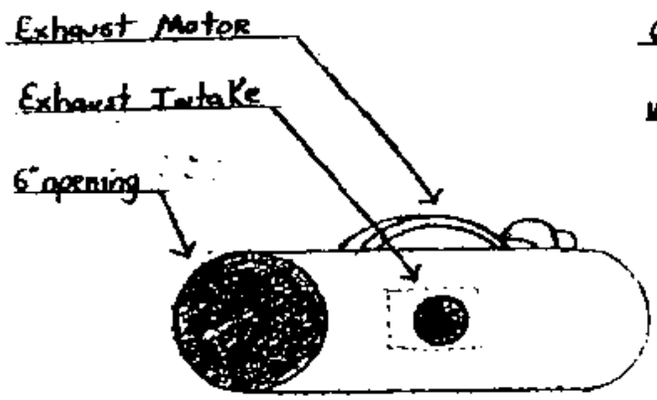
2. Wheel: Inspect venter and exhaust wheel at least annually to thoroughly clean any soot, ash, dust, or coating which may inhibit either rotation or air flow.

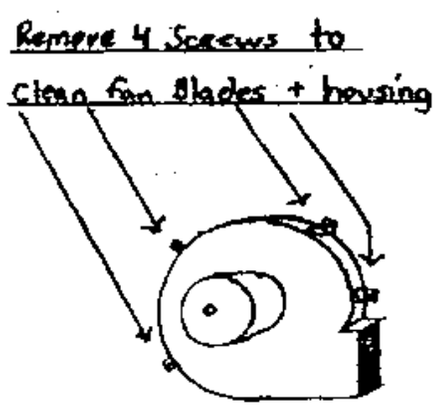
3. Vent System: Inspect all vent connections annually for looseness, evidence of corrosion and for flue gas leakage. Replace seal or tighten pipe as necessary.

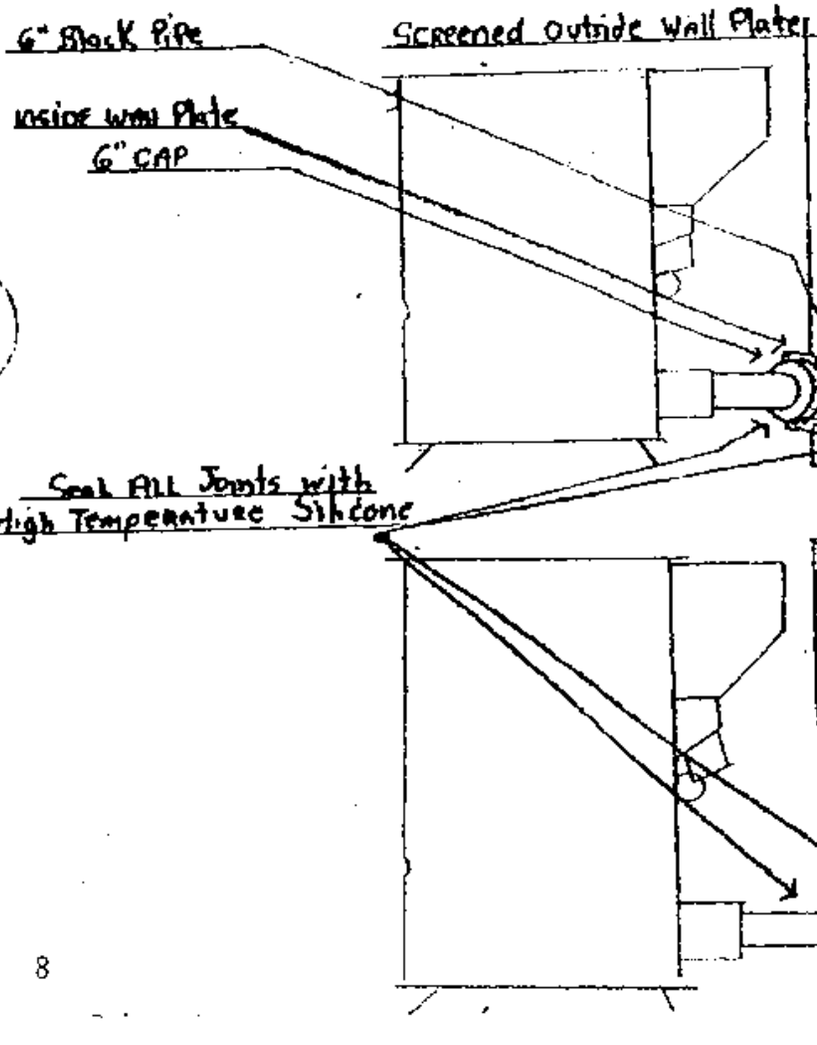
It may be necessary to clean exhaust system and stove pipe during heatin season. Remove hanging baffle above 6" exhaust outlet inside stove. Brush pipe in circular motion and vacuum stove pipe. To clean exhaust motor and radial fan blade, remove 4 screws on mounting bracket of exhaust fan and clean fan and housing.

During annual maintenance, the ¼" tube on safety fuse switch must be cleaned out by vacuuming or by use of a small brush. Vacuum or brush from inside of stove.

It is most important to perform the annual maintenance at the end of heating season. Residue left on fan blade and exhaust system may cause rapid deterioration during non-use.

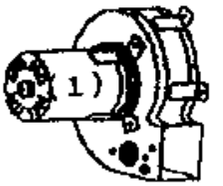




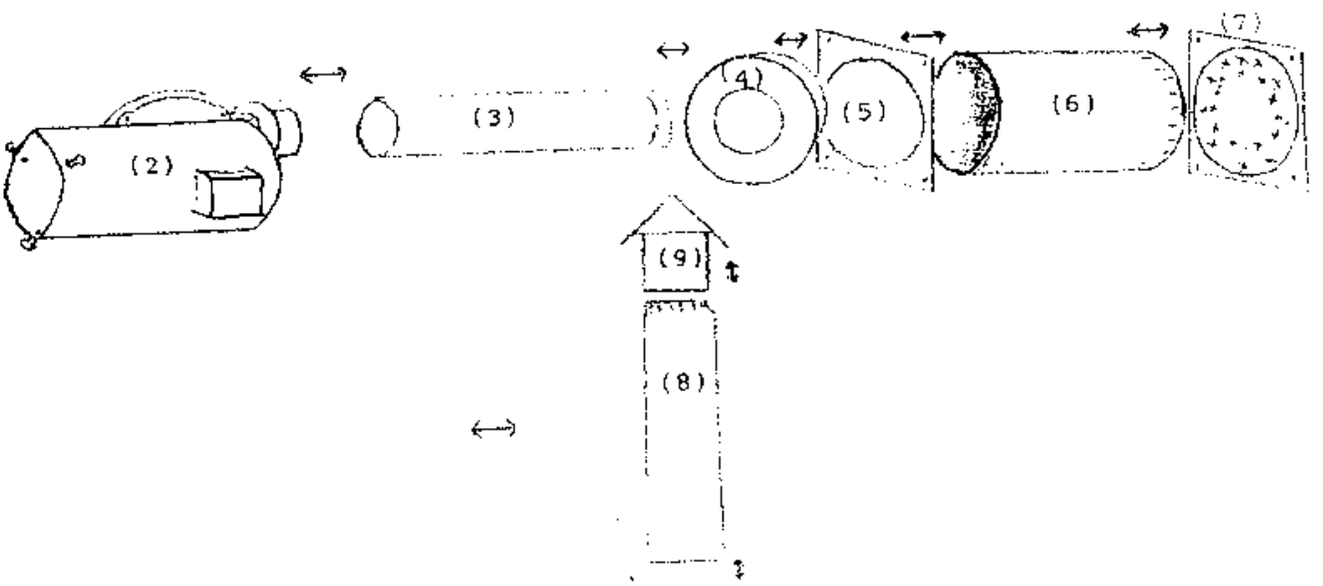


DIRECT VENT COMPLETION KIT

1. Exhaust Motor
2. Exhaust System
3. 4" Stainless Steel Pipe
4. 6" Cap
5. Inside Plate
6. 6" 24 Ga. Black Pipe
7. Outside Plate
8. 4" Tee
9. 4" Chimney Cap



MODEL NO.
A082



Pusher bar is activated by cam on gear motor to force coal from coal hopper onto grate, while also pushing ash into pan. Length of stroke is adjustable

#1 on Diagram. White coal feed adjustment nut – turn clockwise for more coal feed. Turn counter-clockwise for less coal feed.

#2 on Diagram. Nylon adjusting screws. To eliminate too much side to side play, and to prevent metal to metal contact during feeding process.

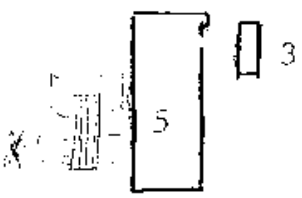
#3 on Diagram. Nylon cam – located on Gear Motor. To give reciprocating movement to pusher bar.

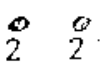
#4 on Diagram. Air Shutter – Located on Combustion Motor.

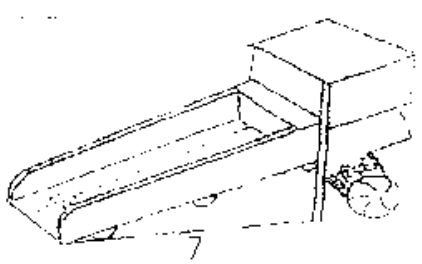
#5 Gear Motor – pushes coal from coal hopper onto fire grate.

#6 Combustion motor – Forces air through holes in grate to burn coal hotter and more completely.

#7 Complete stoker unit for burning of coal







DIRECT VENT WITH THERMOSTAT CONTROLS AND THEIR FUNCTIONS

Thermostat Top pointer is to be set at desired room temperature. Bottom pointer is thermometer. When room temperature drops below desired temperature, gear motor will be activated to increase size of fire. When room temperature rises, gear motor will shut off.

RA 89 Relay See page 7

Convection blower Located on back of stove. When stove is hot enough, blower will turn on to blow room air, through internal heat chambers of stove, to force heated air into room. Blower is energized by Fan and Limit Control.

(Optional) Convection Blower rheostat. To adjust fan speed and sound of convection blower.

Fan & Limit Switch See page 7

Gear Motor Function is to drive feed mechanism (pusher bar) to slide coal from hopper onto grate. To move the fire forward and push ash into receptacle. (see page 10)

Combustion Blower To force air through stoker unit to burn coal (see page 10)

Exhaust blower To force coal gas fumes from stove to outside of home. (see page 8)

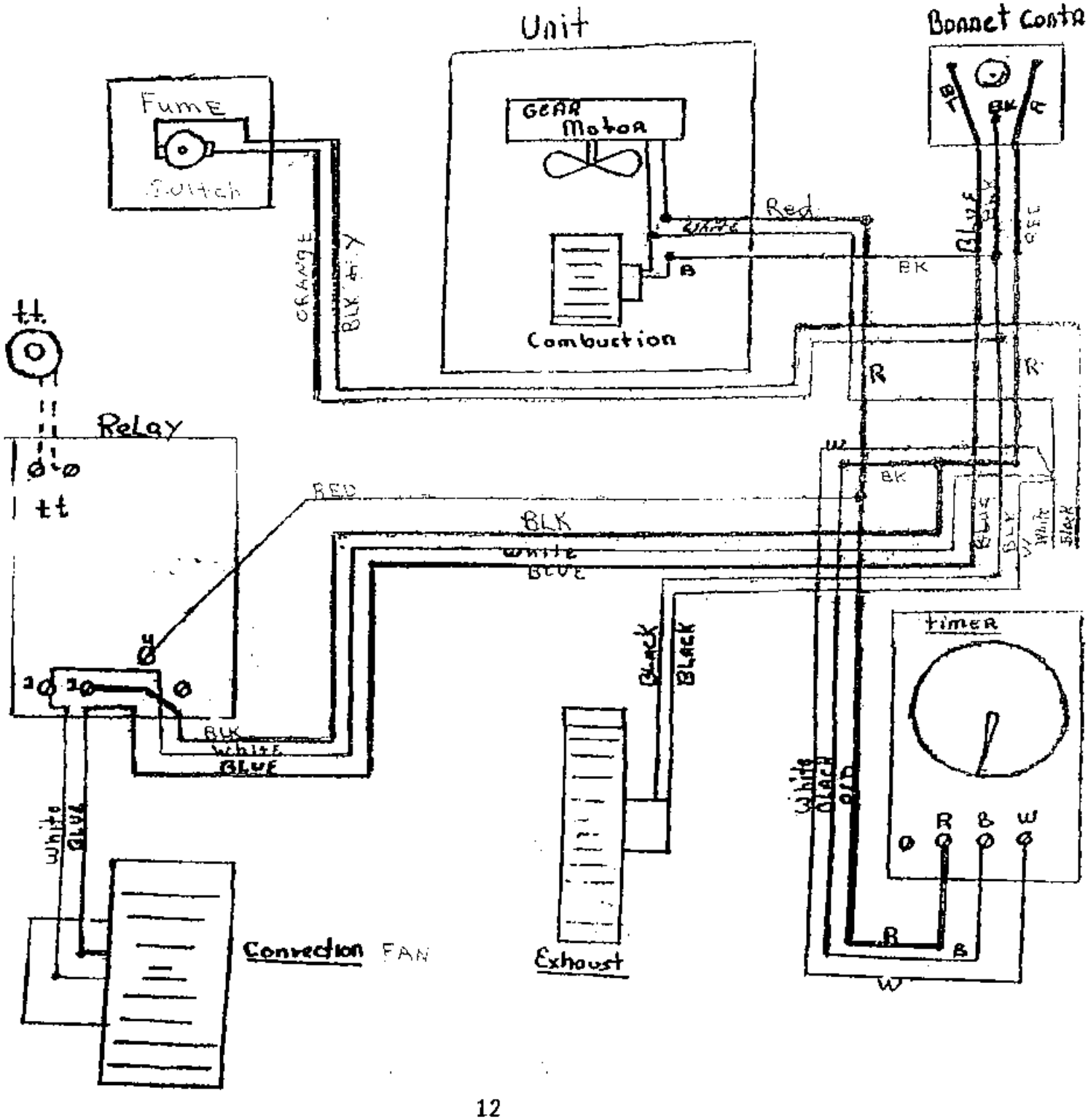
Timer See page 7

Safety Fume Switch If hot coal gasses are not vented to outside of home, safety switch will shut off all power to motors and blowers. This will cause fire to be extinguished in a short period of time. Safety switch must cool off before it can be manually reset to start a new fire. (See Page 3)

WARRANTY

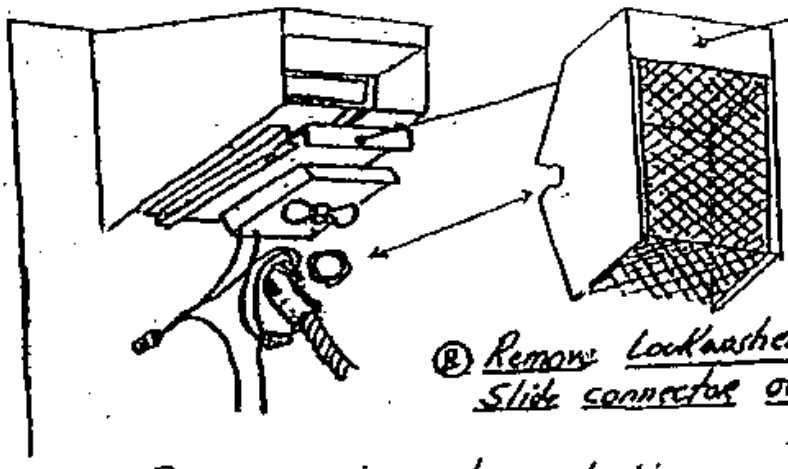
Ten year warranty on stove body.
Two Year warranty on grates and side reils.
One Year warranty on electrical controls and motors.
There is no warranty on glass, paint, or labor
Warranty parts do not include labor costs.

Direct Vent w/TT



How to change a Gear Motor.

Step 1

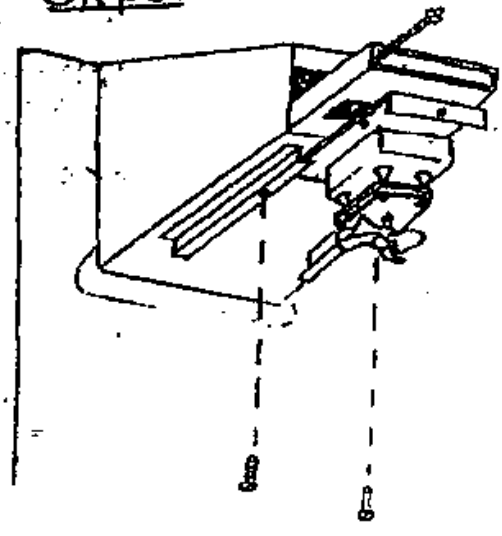


(A) Remove Screw From C

(B) Remove Lockwasher from inside cage and slide connector out of slot.

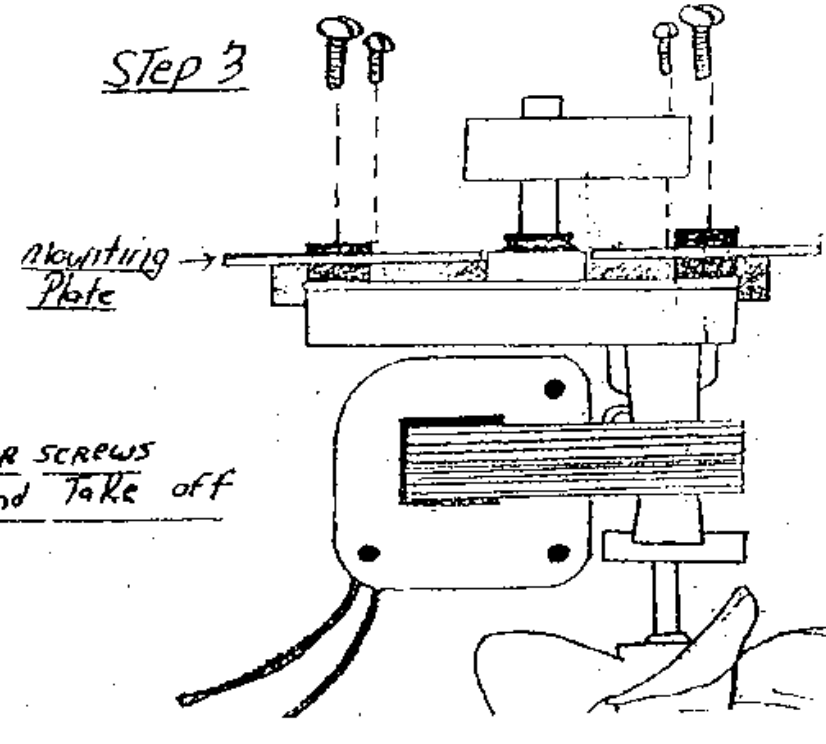
(C) Remove wire nuts and disconnect Gear Motor wires.

Step 2



(A) Remove two screws and pull m
toward you. Pusher Bar will s
out Also.

Step 3



(A) Remove four screws from plate and take off Motor.

TROUBLE SHOOTING GUIDE

Fire goes out
Increase coal feed, as necessary, to maintain approximately two inches of red burning coals on grate, when
Thermostat is not call for heat.
Increase length of running time on timer by adding additional clips to yellow wheel in timer

Coal gas smell
Clean internal heat exchanger tubes, stove and exhaust pipe, chimney, or (fan blades on exhaust motor on dir
Vent models)
Close combustion air shutter as necessary
Hearth models, open ash door, remove ash pan, vacuum or brush out elbow at bottom of stove going into
Chimney
If problem persists, shut stove off, call your dealer for assistance.

Stoker Unit doesn't feed coal
Pusher bar may be jammed. Remove all coal from coal hopper and stoker unit. Work pusher bar inward
and outward, not side ways. Pusher bar is free when it has a slight inward and outward movement
If gear motor will not run, replace it. (see page 2 & 13.)

Convection blower runs constantly
Pull white button on fan limit switch out for automatic blower operation.

Convection blower not blowing hard
Clean screen and fan blades on convection blower

Stoker unit shuts off on Hi-limit
High limit pointer in fan limit switch is designed to shut stoker unit off, when internal air temperature reaches
Safety setting of 200 degrees. If internal air temperature stays on high reading, convection blower is not
Cooling stove off quickly enough. Clean screen on convection blower, or fan blades.

Nylon cam melted
Under normal operating conditions, nylon cam will not melt. Melting of cam can only be caused by a draft
Problem. Such as a blockage in chimney, chimney connector, stove pipe, or stove, or exhaust motor

Excessive draft, caused by high chimney, large flue, or high winds. Clean and adjust barometric damper on
Chimney models and adjust with a draft gauge.
On direct vent models, adjust draft with draft gauge. Remove set screw in ash door, insert draft gauge, norma
Draft readings should be between .-02 to .-04.

To order parts for stoker unit.
Find the 1 ½" X 3" Keystoker label fastened to stoker unit body. The four or
Five diget number will be required to get proper replacement parts from your dealer

SAFETY

THE BURNING OF ALL FOSSIL FUELS GENERATES CARBON MONOXIDE GASES. CARBON NOMOXIDE GASES ARE TOXIC, CAN CAUSE SICKNESS OR BE FATAL

To prevent toxic carbon monoxide gases from entering the home, certain precautions must be taken.

Ash tub must be emptied on a regular basis to prevent ashes from overflowing into ash pit area. Ash accumulation in ash pit area may impede air flow to chimney.

Fire door and ash door must be kept closed at all times during normal operation.

It is necessary to keep coal in hopper while stove is in operation.

In most applications it is sufficient to clean stove and stove pipe twice during heating season. Under extreme operation conditions, it may become necessary to clean more often.

CAUTION -- Ash Pan is Hot -- Always Use Gloves To Remove Ash Pan

When removing ash pan, place filled ash pan on a non-combustible surface. Slide an empty ash pan into stove.

ON DIRECT VENT MODELS

It is important on occasion to use long brush supplied with stove, to reach into exhaust pipe and with a circular motion, brush inside 6" exhaust pipe. This may be necessary once or twice a month.

Fan blade and fan blade chamber may have to be cleaned several times during heating season. (see instructions)

The 4" exhaust pipe going through outside wall of home should also be cleaned when fan chamber is being cleaned.

It Is ESSENTIAL.. That every 4" pipe joint or connection be sealed with a high temperature silicone or equivalent. All adjustable joints on elbows must also be sealed with silicone. Failure to seal all joints could allow carbon monoxide to leak into home.