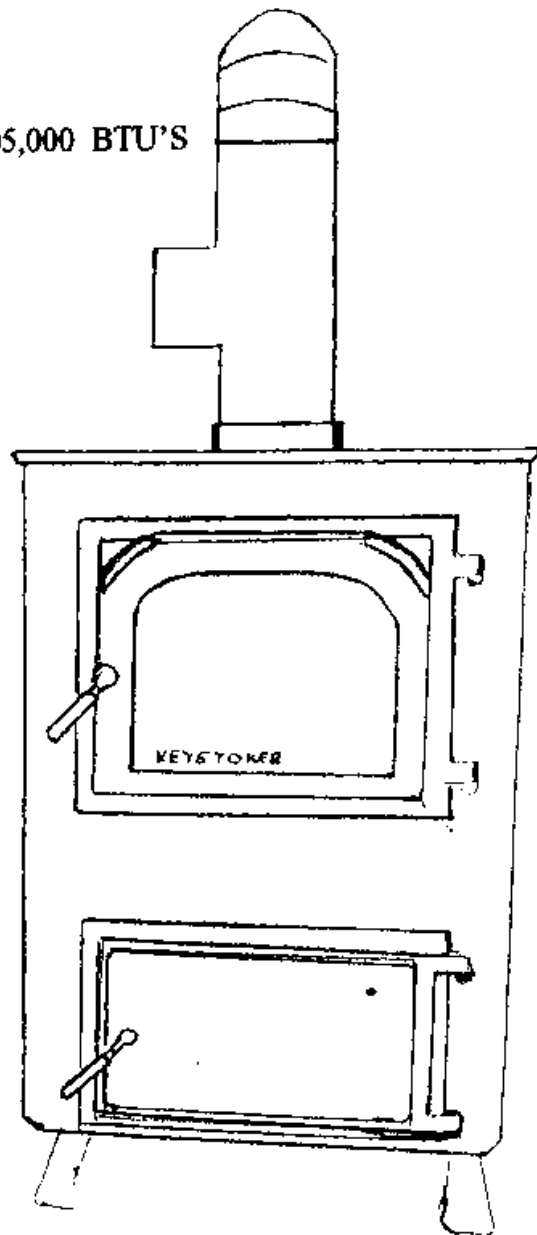


90,000 BTU'S — 105,000 BTU'S

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 ordinances

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

KEYSTOKER INSTALLATION INSTRUCTIONS 90,000 – 105,000 STOVES WITH THERMOSTAT

Select a position on a solid level surface with direct access to chimney. On non-masonry Floors, use an approved fireproof floor protector under stove. Maintain 12" clearance on sides of stove to combustibles. 2" clearance on rear, and 16" clearance on front of stove. Clearance from corners of stove is 8". See label on stove.

Plumb hopper end of stove, with level. Hopper end of stove must be vertical.

On bottom vent models, mount timer on side or rear of coal hopper.

Mount hopper in place and fasten securely. Reach down into bottom of inside of hopper, and bend flange of hopper into throat of stoker unit.

Locate thermostat in an area where heat from stove can freely flow reach. Mount plastic wall plate of thermostat. Connect thermostat wires to screws on lower portion of wall plate. Run thermostat wires to Relay on stove, and connect wires to terminals marked T.T. (Color coding of thermostat wires is unimportant.) Be sure to securely snug the 3 captive screws in thermostat to plastic wall plate.

Install stove pipe, from stove to chimney and secure with screws. On top vent models, place the crimped end of pipe of barometric damper down inside 6" exhaust outlet on stove. Swinging door on barometric damper may face any direction, but the hinges must be horizontal.

High chimneys or high winds could cause stove to operate inefficiently, and could possibly damage stove mechanism. It is therefore necessary that you install the barometric damper that is supplied with your stove. All top vent stoves are required to use an automatic damper.

Plug power cord into 115 volt grounded wall outlet. Combustion motor should be running and you are ready to start a fire.

To start a fire, fill hopper with coal, reach in through fire door, and pull coal down to cover entire grate area. Place kindling (charcoal supplied) in a full sheet of newspaper, crumble paper, and dig kindling deep into coal in center of grate. Light newspaper with match, and plug power cord into outlet. (NEVER USE GASOLINE OR LIGHTER FLUID TO START FIRE) When kindling is burning well, place a few hands full of coal onto fire.

(NOTE) The coal feeder adjustment nut is PRESET and may not need to be changed If it becomes necessary to adjust coal feed. The white nut on stoker unit may be turned CLOCKWISE for MORE coal feed, and COUNTER-CLOCK WISE for LESS coal feed. NEVER USE A WRENCH ON COAL FEED ADJUSTMENT NUT (FINGERS ONLY)

Installation instructions for 90,000 - 105,000 with thermostat

CHECK DRAFT After starting a fire, and a good fire is established, the chimney will be warm enough to check draft. Remove allen screw located in ash door and insert draft gauge into hole in ash door. The draft range should not go lower than -.02, nor above -.03. The air shutter on combustion motor and/or the barometric damper on stove pipe may be used to obtain proper draft readings.

If draft goes above -.03 adjust barometric damper to open a little wider.
If draft goes below -.02 close air shutter on combustion motor.

If you do not have a draft gauge, a homeowners safety check can be performed.
When chimney is warmed up, remove allen screw in ash door, light a match and hold it about 1" below hole in ash door. Flame should come up and make a 90 degree bend into draft check hole. If flame goes straight up past draft check hole, or flame blows out toward you. The air shutter on combustion motor must be closed until flame is drawn into stove or **DANGEROUS TOXIC GASES WILL ENTER YOUR HOME.** If closing air shutter does not cause flame of match to be drawn into stove. **SHUT STOVE OFF**
Call a trained technician, there may be an obstruction or blockage in chimney.

CLEANING AND LUBRICATION Stove pipe and exhaust tubes must be cleaned once during the heating season. On top exhaust stoves, brush exhaust tubes out with a flexible brush. Keep base and interior floor of stove clean by regular brushing or vacuuming, especially at base of openings below interior exhaust tubes.
Clean under grates annually by removing combustion motor and vacuuming under grates. Or, you may remove the bolt holding grates, then remove grate and vacuum. Grates must then be re-cemented back into their place. Upper portion of grates must be sealed (air tight) with furnace cement, from the upper portion of grate (close to hopper) down to where 1/8" holes are drilled in grates.

Lubricate combustion motor and convection fan motor with a light grade of regular motor oil.

Oil fire door and ash door hinges. Oil threads on fire door and ash door handles to prevent freeze up over summer.

To minimize corrosion of stove and accessories, it is important to clean stove thoroughly at end of heating season. Completely remove all coal from hopper. Remove and clean stove pipe. Check chimney and base of chimney for obstructions or blockage. Clean under grate. Spray an anti-seizing agent on both sides and top of pusher bar to prevent pusher bar freeze up during summer.

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

ALL cleaning procedures should be done at room temperature. CLEANING OF HOT GLASS SHOULD BE AVOIDED. Cleaning solutions applied to hot glass may dry before cleaning agent is removed, which may result in creating a film or deposit that can react with combustion by-products. Dried on cleaning solutions may react with surface causing discoloration or a permanent film.

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 done at a low angle below 30 degrees.

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

Soft cloths should be used for all cleaning steps. The cloths should be free of any abrasive agents from previous uses.

Dried on cleaning solutions may react with glass surface causing discoloration or a permanent film.

While ROBAX glass is the best glass for use on anthracite burning coal stoves, the manufacturer of glass offers no warranty.

To Clean glass, first turn down thermostat to allow stove to cool. Assemble fire door shield, using metal plate (approx 16" x 14") and wooden dowel with threaded rod. Remove nut from threaded rod, push threaded rod through hole in metal shield and tighten nut to hold wooden dowel onto metal shield. See Diagram below.

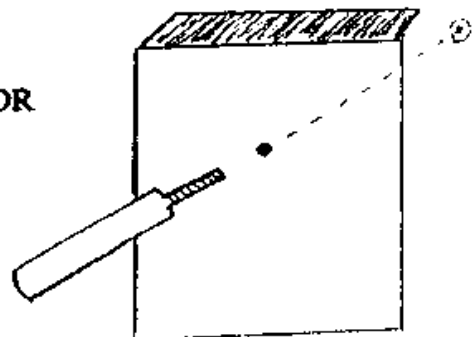
WARRANTY

10 Years on stove body against manufacturing defects.

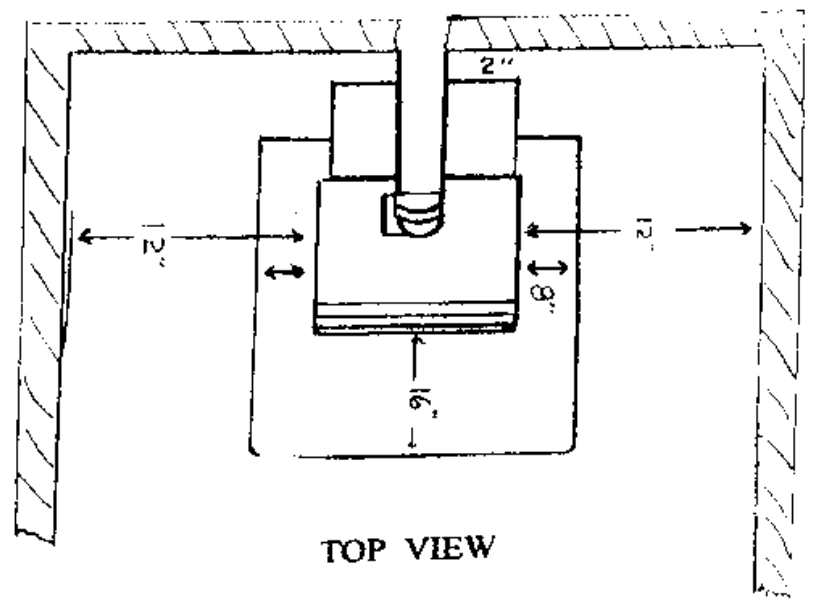
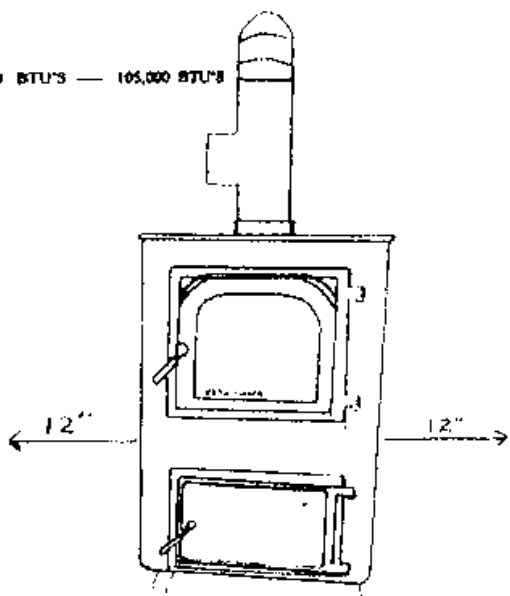
2 Years on grates and side rails.

1 Year on all electrical controls and motors.

There is **NO WARRANTY** on **GLASS, PAINT, or LABOR**.
Warranty parts **DO NOT** include labor costs.

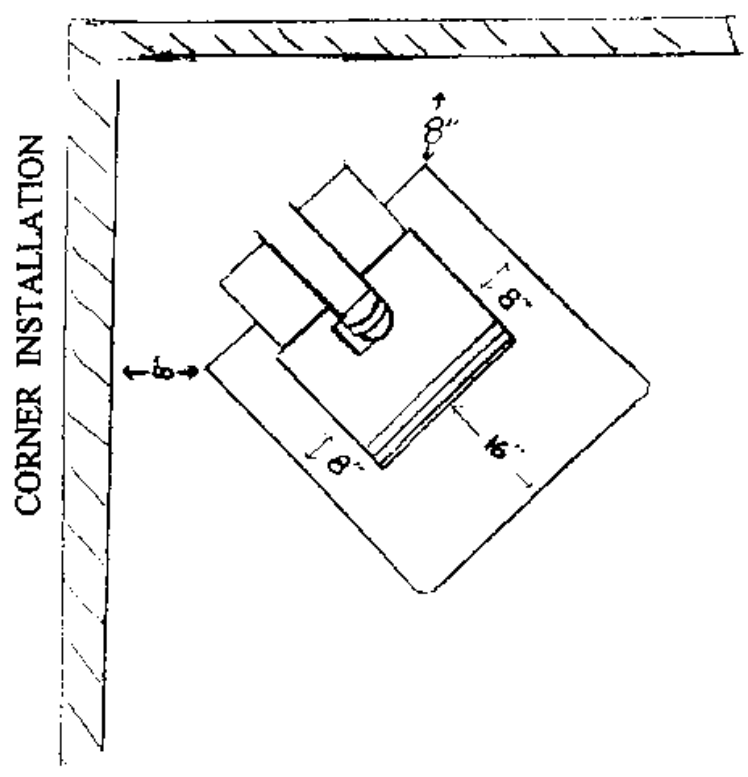


0,000 BTU'S — 105,000 BTU'S



TOP VIEW

TOP VIEW



CORNER INSTALLATION

DIAGRAM (1)

When thermostat calls for heat for extended period.

- A. Unburned fresh coal supply from coal hopper
- B. Burning Coals
- C. Ash on lower end of grate (about 2")

The actual length of burning coals will vary as heat demand increases or decreases. If burning coals fall off grate, reduce coal feed. (turn white adjuster nut in a counter clock-wise direction 1 or 2 full turns) Wait at least 1 hour before making any more adjustments.

When thermostat is calling for heat, the gear motor will be in continuous run, but if the fire bed remains small, increase coal feed. (turn white adjuster nut clock-wise)

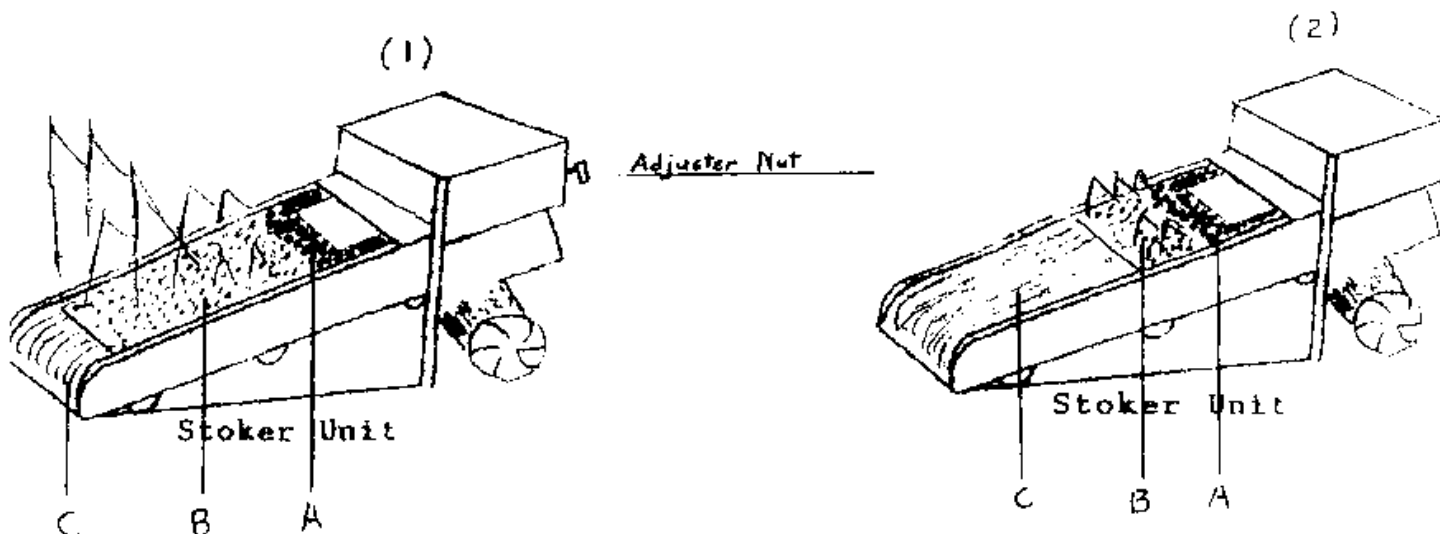
Under normal draft conditions, when fire bed has reached its maximum length (with 2 inches of ash) flames should be touching top of interior stove plate. If flame is not reaching top of stove

- A. Fire bed may be too thick.
Reduce coal feed
Hopper end of stove is not plumb
Burrs may be stuck on grate (scrape grate smooth)
Not enough air flow (adjust air intake shutter on combustion motor) (see check draft)
Coal fusing together (perhaps poor quality of coal)
Holes in grates may be blocked

DIAGRAM (2)

When thermostat has not called for heat for extended period

- A. Unburned fresh coal supply from hopper
- B. Burning coal (about 1-1/2" to 2") (low flames)
- C. Ash on lower end of grate

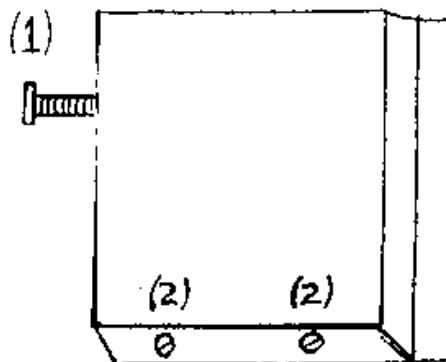
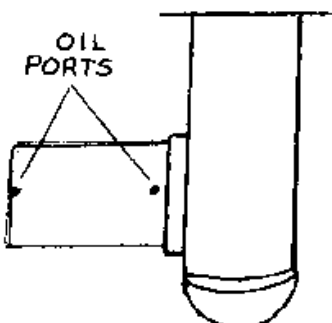
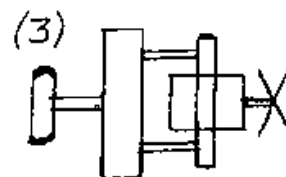
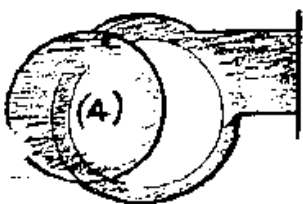


PUSHER BAR Moves in a reciprocating motion. Activated by cam on gear motor to force coal, from hopper, onto grate, which will also push ashes off the bottom of grate, into ash pan. Length of stroke is adjustable by turning coal feed adjustment nut.

- (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 metal to metal contact. There Are 4 nylon screws on the pusher bar, 2 on each side. The 2 nylon screws not pictured on diagram are threaded in all the way. The two nylon screws that are pictured on diagram are used to adjust The amount of sideward movement of pusher bar. When nylon screws Are properly adjusted, the pusher bar will slide in and out freely, and Have only a slight sideward movement.
- (3) on Diagram Nylon cam – located on gear motor. To give reciprocating motion to Pusher bar.
- (4) on Diagram Air Intake Adjustment Shutter. adjusts amount of air flow through fire

GEAR MOTOR The drive shaft turns approximately 1 RPM. The nylon cam on drive shaft will, when moving inward, force coal from hopper onto grate. When withdrawing, will allow coal to fall in front of pusher bar for preparation of next inward stroke. The gear motor will only run when activated by a call for heat from thermostat, or when timer turns it on.

COMBUSTION MOTOR Combustion motor will run all the time to force air through holes in grates to burn coal hotter. The constant running of motor will assure the maximum amount of heat is gained and will aid in a more complete burning of coal. The motor has an adjustable air shutter for regulating air flow through fire.



TIMER

Unless your stove has been a special order, it will be equipped with our patented flat grate stoker unit and a timer.

The purpose of a timer is to maintain a minimum fire when thermostat is not calling for heat.

The timer is factory set to run 1-1/2 minutes every 10 minutes. The timer activates the gear motor, which will cause the pusher bar to move in a reciprocating motion, forcing coal onto grate.

The timer has a large yellow wheel that makes 1 revolution every 30 minutes. Pins can be inserted or removed from yellow wheel. Each pin equals about 15 seconds. If needed, extra pins can be added to the present groups of pins, or pins can be inserted anywhere in yellow wheel.

This section ONLY pertains to periods when thermostat is not calling for heat. If the fire goes out, you will have to add more pins to timer OR increase coal feed.

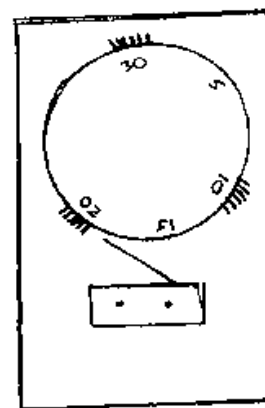
The burning coals should be the width of the grate and about 1-1/2" to 2" in length. If the burning coals gets any less than 1-1/2" the fire may go out. Solution: Increase coal feed.

A weak draft can also cause the fire to go out, if fire appears to be very dull, add as many extra pins to timer as needed, until fire stays lit.

If fire stays lit, but stove is too hot

If convection blower cycles on and off often and produces too much heat, either the fire bed is too long, or timer is running too long. If you reduce coal feed or remove timer pins, do not make radical changes. Reduce coal feed 1 or 2 turns, OR Remove 1 pin from timer. Then wait several hours before making any more reductions. A sudden radical change may be too much and cause fire to go out.

Once the coal feed and timer are set, and fire stays lit, without convection blower running too much, it is usually not necessary to make any more changes.



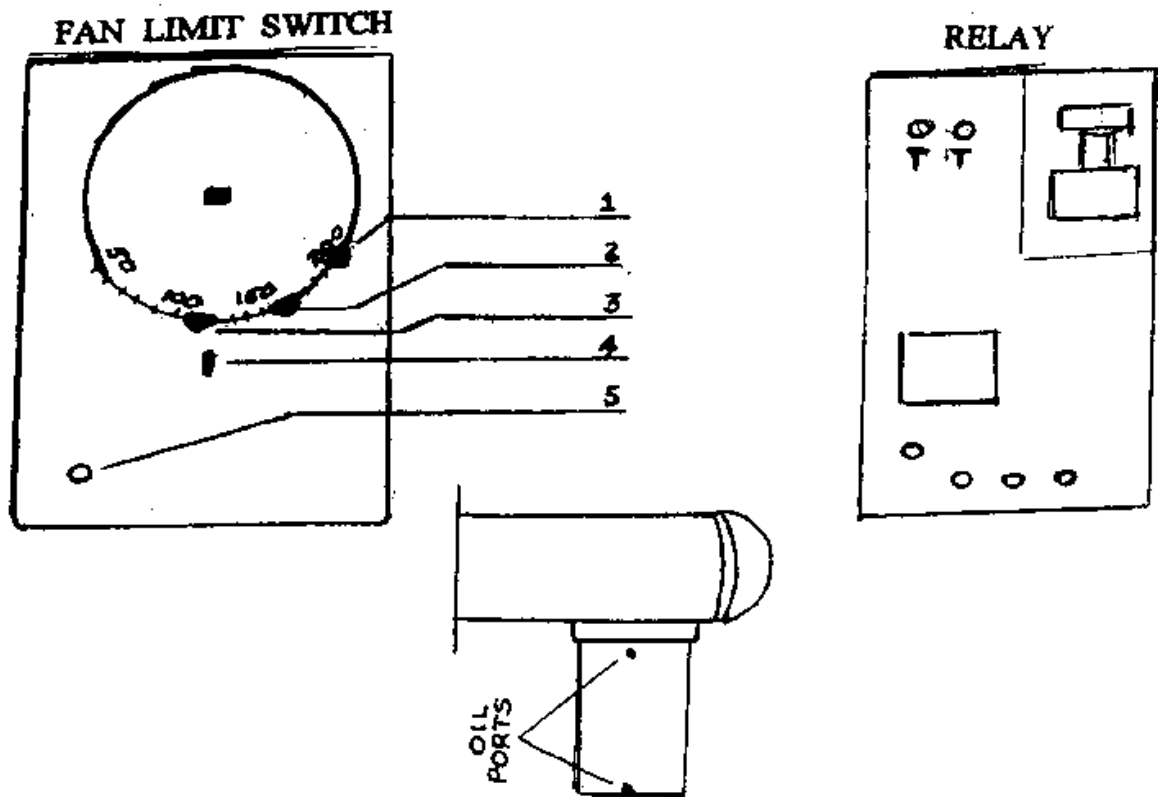
THERMOSTAT Top pointer is to be set at warmth desired in home. Bottom pointer is the present temperature in room. When room temperature (bottom pointer) falls below Desired room temperature, (top pointer) this will send a signal to the Relay control to activate gear motor to push fresh coal onto grate.

FAN LIMIT SWITCH

1. High limit pointer - stops gear motor from pushing coal onto grate at 200 degrees. (If stove gets too hot, this switch will turn off gear motor)
2. Center pointer, - turns convection blower on when internal air temperature reaches this setting. (normally set around 160 degrees, but is adjustable)
3. Low pointer - turns convection blower off when internal air temperature falls to this setting (normally set around 120 degrees, but is adjustable)
4. Whatever number on silver dial is directly above this point is temperature of internal air
5. White button - pull out for automatic operation of convection blower. Push in for constant running of convection blower.

RELAY - Receives signal from 24V Thermostat to turn on, or turn off gear motor.

CONVECTION BLOWER - When running, it will take cool air from room, and force it through heated air chambers inside stove, and return heated air into room. Blower can only be activated by Fan Limit Switch.



CONVECTION BLOWER

HOW TO REMOVE OR REPLACE GEAR MOTOR

First... Pull power cord plug from 115V outlet.

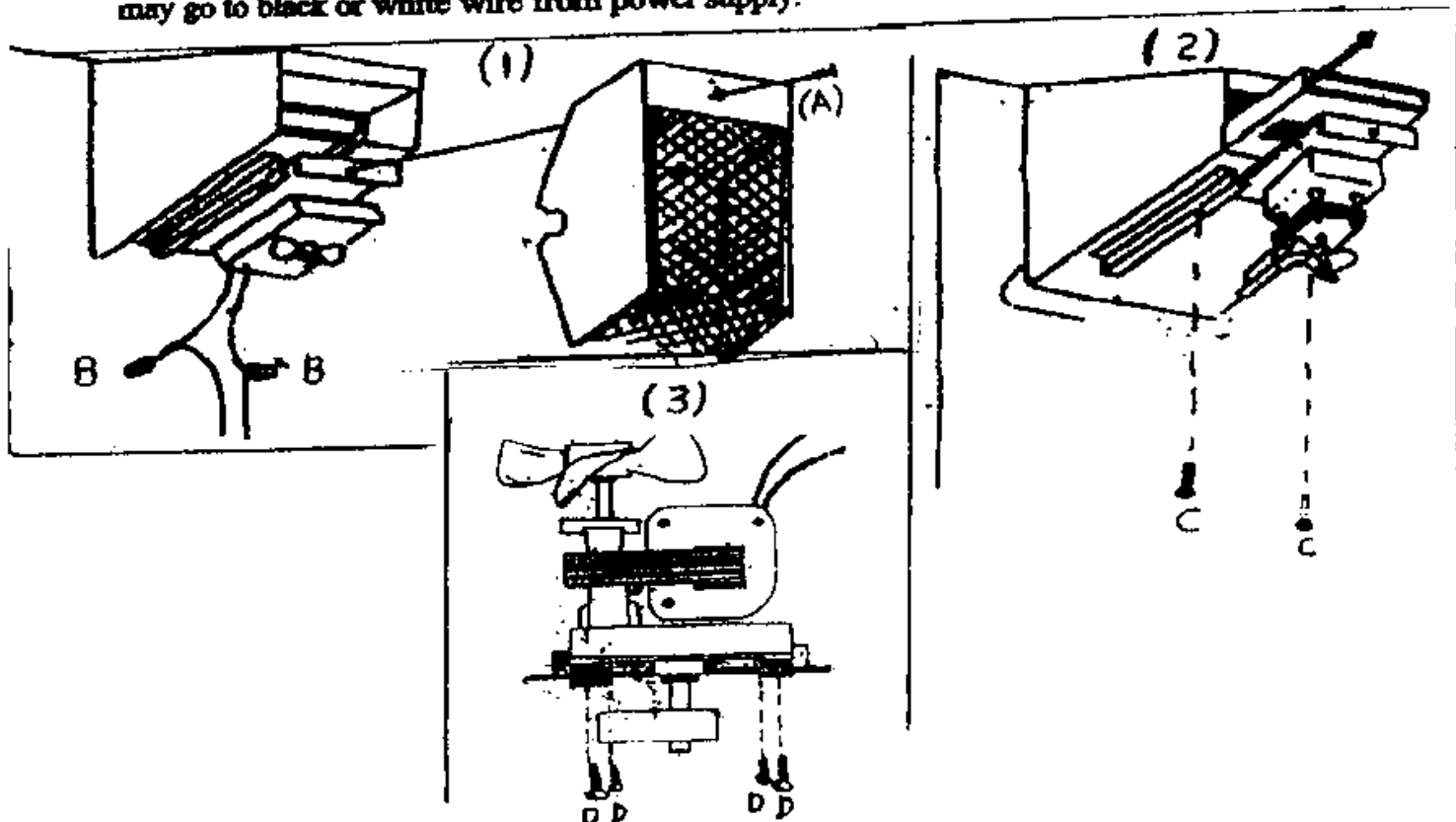
Figure (1)
Remove screw (A) and then remove protective cage
Remove both blue wire nuts marked (B)

Figure (2)
Remove both screws (C) from mounting bracket
Slide gear motor out of its track toward you, pusher bar will also come out with Gear motor.

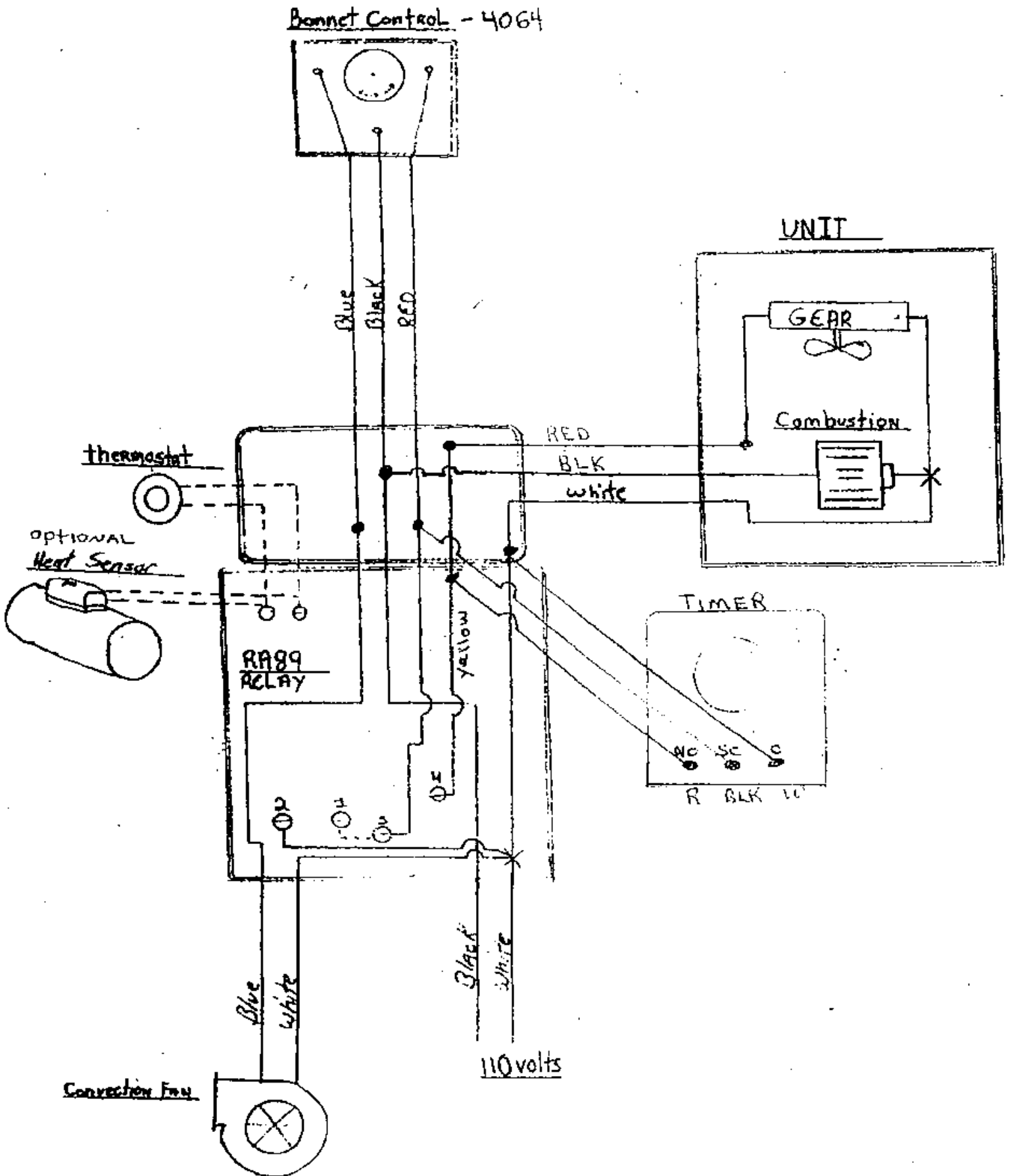
While pusher bar is out of its chute, Clean chute area and remove any obstructions
Check nylon screws on pusher bar (2 on each side) for wear or breakage. (Replace if necessary)
Slide pusher bar in and out of chute (should move freely) check for sideward movement.
Adjust nylon screws on right side to allow only a slight sideward movement

Figure (3)
To replace gear motor, - remove 4 screws (D) that hold gear motor onto mounting bracket. Before removing gear motor from bracket, look at position of gear motor, install new motor in exact same position before reinstalling screws (D)
Then reverse procedures shown in figures (2) and (1)

When replacing gear motor with a new one, both gear motor wires are black, either wire may go to black or white wire from power supply.



Stoves With Thermostat



90,000 - 105,000 Trouble Shooting Guide

Fire Goes Out See Page 7 (Timer) And Page 5 Diagram (2)

Coal klinkering or fusing together See page 5 Diagram (1) & (2)

Sulfur smell See page 2 (Cleaning & Lubrication)

Stoker unit doesn't feed coal See page 6 (pusher bar)

Pusher Bar is not moving straight See page 6 (pusher bar)

Convection blower runs too often See lower section of page 7 (Timer)

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

Thermostat calls for heat, but convection blower off too long See page 5 Diagram (1)

Fire is lit but not enough heat

If gear motor only runs short cycles, timer is working. When thermostat calls for heat, gear motor should run steady. If gear motor is running steady, but fire is small, increase coal feed (See pages 5 & 6.)

If gear motor is not running steady, check for loose wire in Thermostat or in Relay. Check for broken thermostat wire between Thermostat and Relay.

Gear motor runs constantly making too much heat

Gear motor can only be activated by thermostat or timer. Remove thermostat wires from T.T. terminals in Relay, if gear motor shuts off, replace thermostat wire or Thermostat. Check timer to see if yellow wheel is turning, if not replace timer motor. Check timer switch. (See page 7 Timer)

Convection blower not blowing much air Clean screen and fan blades on blower.

Gear motor shuts off on Hi-limit

High limit pointer in Fan Limit Switch is designed to shut gear motor off when internal air temperature reaches 200 degrees. If internal air temperature stays on 200 degrees, Convection blower is not cooling stove off quickly enough. Clean screen and fan blades on blower (or See page 8, Fan Limit Control)

Big Fire but not much heat

Fan blades on combustion blower motor dirty. Brush off.
Accumulated flyash under grate. Remove combustion motor and clean under grate.
Holes blocked in grate. Open holes with 1/8" center punch.
See page 5 Diagram (1)

To clean under or replace grate See page 2 (Cleaning and Lubrication)

Nylon cam melts

Under normal operating conditions, nylon cam will not melt. Melting of nylon cam can only be caused by a draft problem.

A blockage in chimney, chimney connector, stove pipe, or stove. Inspect and clean.

Or excessive draft, caused by high chimney, large flue, or high winds. Clean and adjust barometric damper. (Set barometric damper with a draft gauge to obtain a draft reading of -.02 to -.03. See Page 2 Draft check)

To order parts

Find the metal 1-1/2" X 3" Keystoker label fastened to stoker unit body. (near gear motor) The four or five digit number will be required to get proper replacements parts from your dealer.

SAFETY

THE BURNING OF ALL FOSSIL FUELS GENERATES CARBON MONOXIDE GASES. CARBON MONOXIDE GASES ARE TOXIC, CAN CAUSE SICKNESS, CAN 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. Excessive ash accumulation may impede air flow to chimney, preventing gases to be drawn up chimney.

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

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

In most applications it is sufficient to clean stove and stove pipe twice during the heating season. However, under extreme weather conditions, or high demand on stove running periods, the stove and stove pipe may need more frequent cleaning. Clean as often as necessary.

CAUTION ASH PAN IS HOT - ALWAYS USE GLOVES TO REMOVE ASH PAN

Before removing ash pan, turn switch off, or pull power cord plug from 110V outlet. Open ash door. Use a good pair of gloves, to remove ash pan. Place ash pan on non-combustible surface. Slide an empty ash pan into stove. Close ash door. Turn switch on or plug power cord back into 110V outlet.

ON DIRECT VENT MODELS

After removing ash pan, using long brush supplied with stove. Reach brush straight back into 6" exhaust pipe and with a circular motion, sweep brush around inside of pipe. Sweep excess toward bottom of stove and remove or vacuum dust out of stove. This procedure may only be required once or twice a month during heating season. Place empty ash pan into stove and turn switch on or plug power cord into 110V outlet.

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

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

If 4" exhaust pipe is not going straight out through outside wall and 4" pipe is in a vertical position to access an area above outside grade, the 4" elbow is a likely location for dust to accumulate and restrict exhaust air flow to outside of home. A 4" tee may also be used in place of a 4" elbow. This will allow the bottom of tee to be used as a collection point (out of the flow of exhaust gases) providing an easier access for cleaning and less chance for restriction or blockage.

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 in to home.

STOVE CONTENTS

TT MODELS

Manual _____

Carbon Monoxide
Tester _____

Glass Cleaner _____

Charcoal _____

Thermostat _____

2-Handles & Bolts _____

Brass Handle/Koker _____

Brass Trim-90/105 _____

Clamp & Screw
BV & Koker _____

Damper
TV Only _____

Top Plate
Stoves with Cut _____

Heat Control Models

Manuals _____

Carbon Monoxide
Tester _____

Glass Cleaner _____

Charcoal _____

2-Handles & Bolts _____

Brass Handle/Koker _____

Brass Trim 90/105 _____

Clamp & Screw
BV & Koker _____

Damper
TV Only _____

Top Plate
Stoves with Cut _____

PACKED BY: