

***INSTALLATION
&
OPERATING
MANUAL***



***MODELS #KLS-2K NATURAL GAS
#KLS-2K1 LP GAS***

***KLS 2000
GAS LOG CONVERSION SET***

PATENT PENDING

PATENT #5,931,154

***FOR INSTALLATION ONLY IN
KOZY HEAT MODELS #231 ZC* & #241 ZC****

Warnock Hersey



****CONSULT YOUR DEALER FOR SPECIFIC MODEL INFORMATION***

OCTOBER 1999

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IMPORTANT:

READ THIS MANUAL BEFORE INSTALLING
AND USING THIS GAS LOG SET

**GAS LOG SET MODEL KLS-2K (NAT) & KLS-2K1(LP)
INSTALLATION INSTRUCTIONS**

Installation and/or repair of this appliance should only be done by a qualified installer.

This appliance has been tested to and complies with ANSI Z21.60-1991. Installation must conform with local building codes, or, in the absence of local building codes, with the national fuel gas code, ANSI Z223.1-1992 NFPA 54 (current edition).

FOR YOUR SAFETY

WHAT TO DO IF YOU SMELL GAS

- * Do not try to light any appliance.
- * Do not touch any electrical switch.
- * Do not use any phone in your building.
- * Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- * If you cannot reach your gas supplier, call the fire department.
- * Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

INSTALLATION AND SERVICE MUST BE PERFORMED BY A QUALIFIED INSTALLER, SERVICE AGENCY OR THE GAS SUPPLIER.

WARNING: Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control which has been under water.

WARNING:

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual for assistance. For additional information, consult a qualified installer, service agency or the gas supplier.

WARNING: NEVER BURN THIS APPLIANCE WITH THE FIREPLACE DOORS OPEN! EXHAUST FANS OPERATING FROM OTHER ROOMS MAY CAUSE THIS UNIT TO BACK DRAFT AND EMIT CARBON MONOXIDE INTO YOUR HOME.

WE RECOMMEND THAT A CARBON MONOXIDE DETECTOR BE PLACED IN THE ROOM WITH THE FIREPLACE TO ALERT YOU IF ACCIDENTAL DOOR OPENING HAS OCCURRED.

This appliance is for use only with Kozy Heat fireplace models 231 ZC & #241 ZC.

A) **RUN THE GAS LINE.** See Figure 1.

NOTE: This millivolt board is equipped with a 3/8" flexible gas line, 18" long.

CAUTION: Installation of the gas line must only be done by a qualified person in accordance with local building codes.

NOTE: The gas line should be run to the point of connection where the manual shut-off valve and flexible gas tubing will attach.

1. Run the gas line. An accessible shut off valve (provided) must be installed up stream from the regulator.

NOTE: NATURAL GAS ONLY:
 The minimum inlet gas supply pressure is 5.0 inches W.C.
 The maximum inlet gas supply pressure is 10.5 inches W.C.

LP GAS ONLY:
 The minimum inlet gas supply pressure is 11.0 inches W.C.
 The maximum inlet gas supply pressure is 13.0 inches W.C.

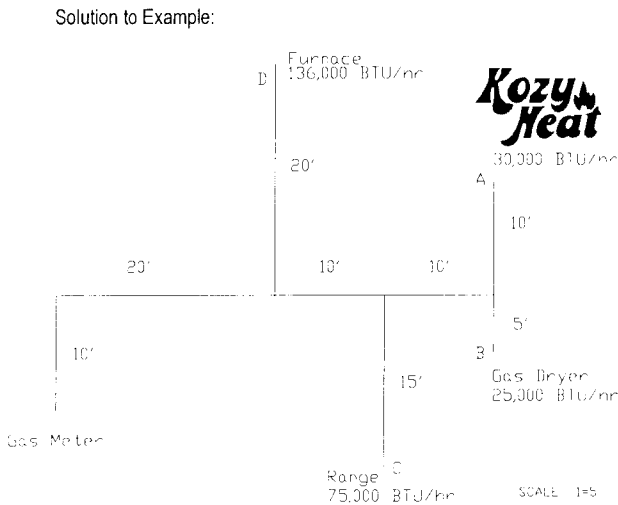
2. This unit is designed to accept either a 3/8" or 1/2" gas line approved for gas appliances. Consult local building codes to properly size the gas supply line leading to a 3/8" reduction. Also, see the chart below for proper supply line sizing.

3. Connect the gas line to the manual shut-off valve.

4. Complete installation of the gas line.

Input 45,000 BTU's NAT	Tubing Size	Max. Run
Input 45,000 BTU's LP	3/8"	10'
	1/2"	70'
	5/8"	100'
	3/4"	125'

FIG. 1



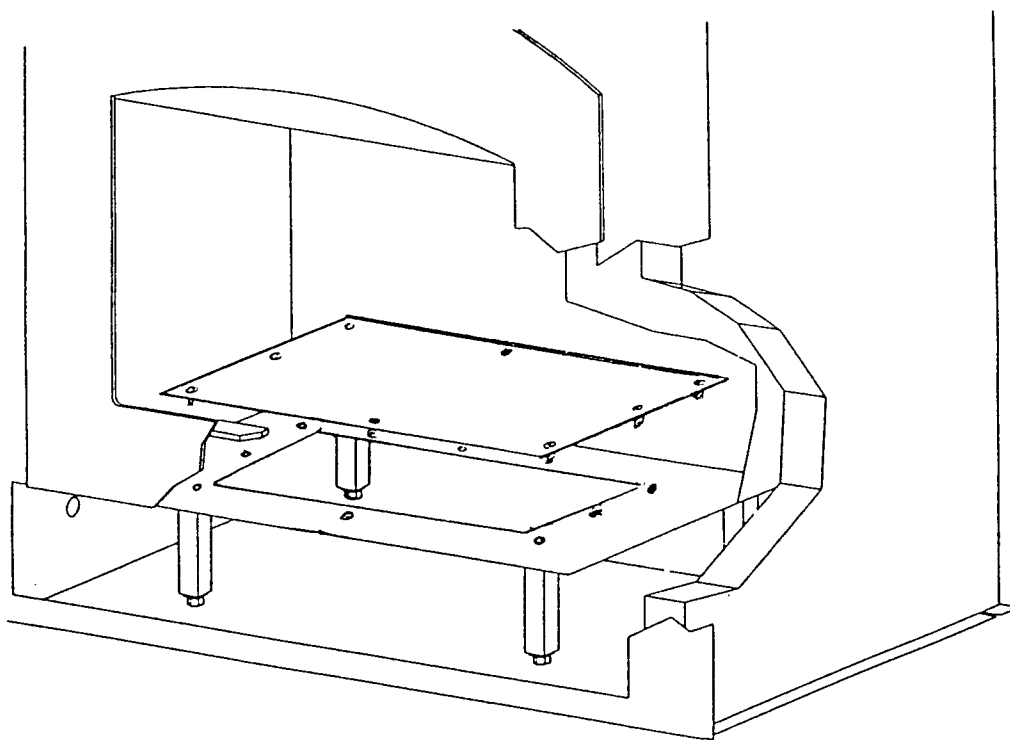
(1) Maximum demand for outlet	"A"	30 CFH
" "	"B"	25 CFH
" "	"C"	75 CFH
" "	"D"	136 CFH
TOTAL DEMAND		266 CFH

(2) The length of pipe from the gas meter to the most remote outlet (Outlet "A") is 60'. THIS IS THE ONLY DISTANCE USED.

(3) Using horizontal line marked 60', Outlet "A" supplying 30 cubic feet an hour requires 1/2 inch pipe. Outlet "B" supplying 25 cubic feet an hour requires 1/2 inch pipe. Section 1 supplying outlets "A" and "B", 55 cubic feet an hour required 1/2 inch pipe.

B) PREPARE THE OPENING. See Figure 2.

1. Thoroughly clean all ashes from the Kozy Heat unit. Vacuum as necessary.
2. Remove all firebrick from the bottom of the unit. Removal of the back & side firebrick is optional.
3. Remove the lower grill for easier installation.
4. Loosen and remove the (8) nuts securing the cover plate underneath the bottom of the firebox.
5. From inside the firebox, pull the cover plate up and remove from unit. Refer to the Figure 2 below.



Model #231 ZC shown

FIG. 2

C) **PRIMARY AIR / CHIMNEY DAMPER CONTROLS.**

1. The air intake damper may be in either the opened or closed position when the KLS is in operation.
2. The chimney damper of the fireplace should be kept closed during operation for maximum heat efficiency.
3. The round chimney plate, included with this conversion, should be placed at the top of the chimney to reduce the chimney outlet to 4".
 - A. Remove the chimney cap.
 - B. Position the chimney plate into the chimney. If desired secure with sealant.

NOTE: It may be necessary to trim the plate to fit properly.

- C. Replace the chimney cap.

D) **MILLIVOLT BOARD INSTALLATION. See Figure 3.**

1. Loosen the (2) nuts securing the burner plate assembly on the millivolt board and remove from the board.
2. Position the millivolt board inside the firebox, aligning the holes in the board to the holes in the firebox bottom.

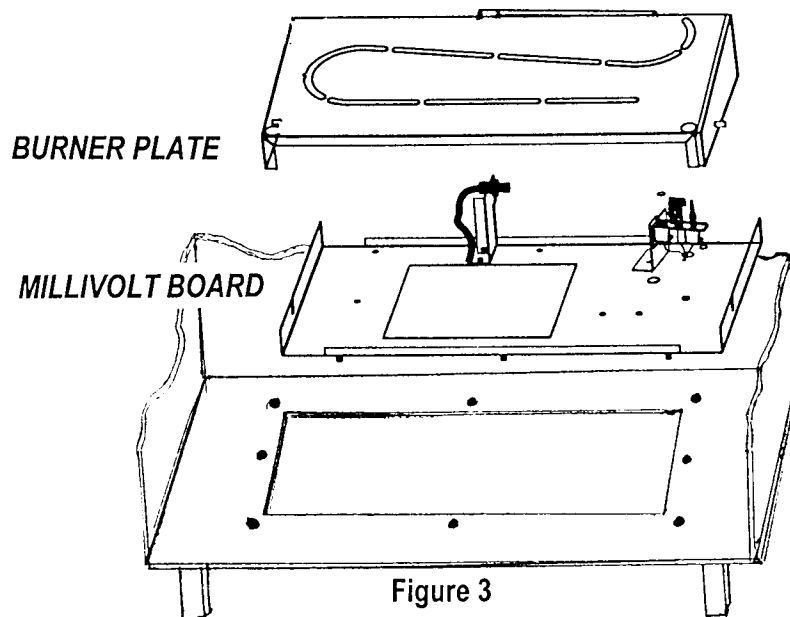


Figure 3

CAUTION: Before securing the board into place, make sure that all of the wires (attached under the board) are clear and unobstructed.

3. Install one 3/4" bolt into each of the (8) holes from inside the firebox and secure each with a 1/4" nut from underneath the firebox.

4. Replace the burner plate, aligning the slots in the plate to the corresponding studs.

IMPORTANT: Ensure that the burner tube is properly seated over the burner orifice.

5. Secure with the remaining (2) 1/4" nuts.
6. Connect the flexible gas line to the manual shut off valve.

IMPORTANT: This appliance is equipped with a safety shut-off switch which must be installed and grounded on the combustion air pipe sleeve and properly connected to the valve. The burner will automatically shut off should a backdraft occur. Follow instructions below referring to figure 4.

E) CONNECT THE SAFETY SHUT-OFF SWITCH:

1. Remove the upper grill by lifting it up far enough to clear the bottom holes and pull the bottom of the grill out.
2. Locate the aluminum tape sealing the safety switch mounting hole in the 4" combustion air pipe and remove.
3. Position the safety switch into the mounting hole aligning the holes in the switch bracket to the pre-drilled holes in the combustion air pipe. Secure with the 2 screws provided.
4. Run the wires down along the right side of the fireplace.
5. Remove the rocker switch wire(A) from the top terminal on the valve and slide it into the male connector (B) on the safety shut-off switch wire.
6. Slide the remaining safety shut-off switch wire (C) onto the top terminal on the valve.
7. Replace the upper grill.

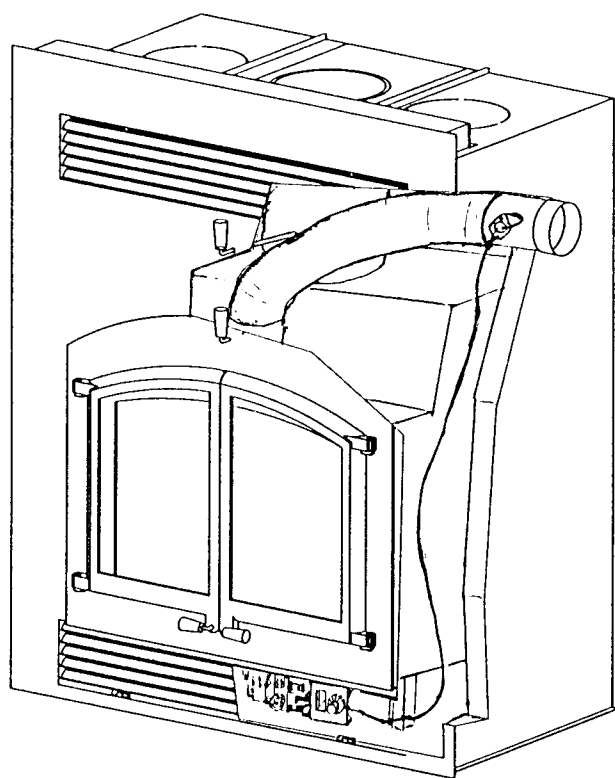
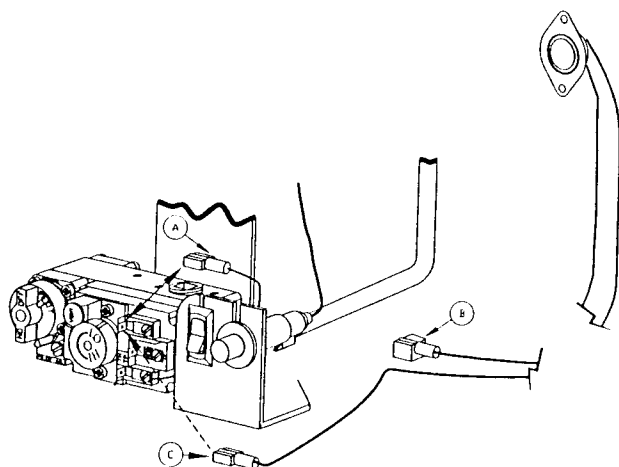


Figure 4

WARNING:
OPERATION OF THIS APPLIANCE WHEN NOT CONNECTED TO A PROPERLY INSTALLED VENTING SYSTEM OR TAMPERING WITH THE SAFETY SHUT-OFF SYSTEM CAN RESULT IN CARBON MONOXIDE (CO) POISONING AND POSSIBLE DEATH.

F) LOG INSTALLATION

This log set includes:

(1) XAH - Log	(1) AP Log	(1) J-Log (2 pc.)
(1) AC-Log	(1) C Log	(1) L-Log
(1) AO-Log	(1) G-Log	(1) N-Log
		(1) Klinkers

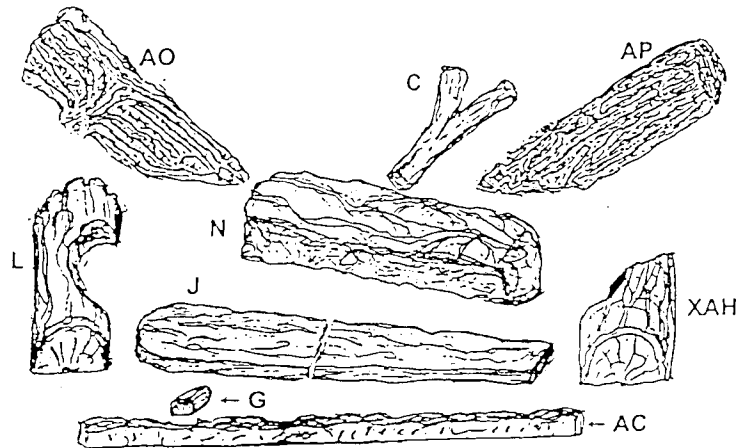


Figure 5A

1. Place the 2 pc. 'J' log onto the center of the burner cover aligning the curved left end to the curve on the burner plate and centering the log between the front and back slots. Press firmly onto the pins.
2. Place the 'N', 'L' AND 'XAH' logs into position on the burner cover aligning the holes in the bottom of the logs to the corresponding pins in the burner cover.
3. Position top logs 'AO', 'C', and 'AP' onto the previously positioned logs as shown*.
4. Position the 'AC' log behind the log grate and set the 'G' log onto the 'AC' log.
5. Place klinkers as desired on the left & right open areas in the firebox after the millivolt board and log set have been installed.

CAUTION: DO NOT PLACE KLINKERS ON THE MILLIVOLT BOARD, BUNER COVER OR BETWEEN LOGS!

ATTENTION HOMEOWNER / INSTALLER:

TO ACHEIVE OPTIMUM GLOW AND FLAME APPEARANCE, IT MAY BE NECESSARY TO SLIGHTLY ADJUST THE VENTURI SHUTTER POSITION AND/OR THE LOG POSITIONS.

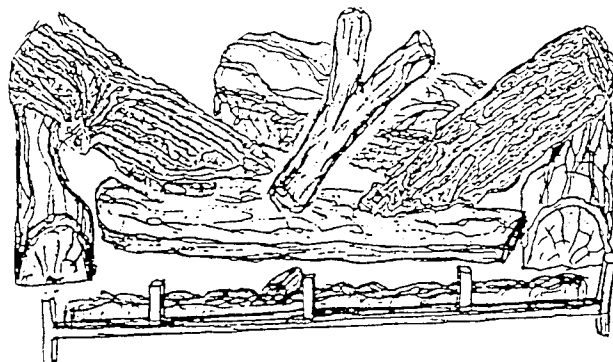


Figure 5B

COMPLETED LOG SET

G) WALL SWITCH - REMOTE CONTROL INSTALLATION (opt.) See Fig 6.

CAUTION: DO NOT CONNECT HIGH VOLTAGE WIRE TO THE SWITCH!

1. If desired, a wall switch, or remote control unit may be used to turn the unit off and on. Only one of these may be installed.

Connect the wall switch or remote control wires to the valve by following the wiring instructions below. Alternate wiring methods will interfere with proper operation of the safety shut-off switch.

NOTE: Installation of a wall switch or remote control should only be done by a qualified installer.

2. **WALL SWITCH:** Run low-voltage (thermostat) wire from the valve, to the desired location of the wall switch. Do not run wire more than 30'.

NOTE: If too heavy of wire is used or run more than 30', the electricity generated by the unit's generator will not be sufficient to make the regulator work properly.

REMOTE CONTROL: Wires are included with the remote control system. Refer to the instructions included for connecting the wire to the receiver.

IMPORTANT: No high voltage (115v) is required to operate any of these systems.

3. **CONNECT THE WIRES TO THE VALVE:**

1. Disconnect the safety shut-off wire (B) from the on/off switch wire (A).
2. Connect one of the remote control wires into the safety shut-off wire (B).
3. Slide remaining remote control wire onto the bottom terminal on the valve (D).

NOTE: DO NOT DISCONNECT THE TOP TERMINAL WIRE (C).

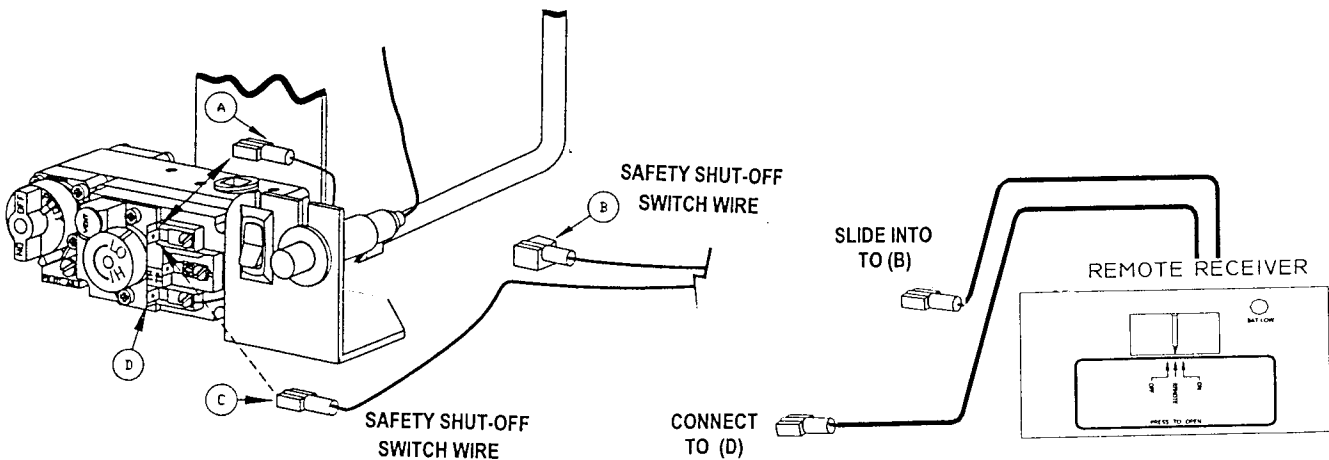


FIG. 6

The on/off rocker switch on the millivolt board must be in the 'off' position if any of the above systems are installed on the unit.

Note: The fireplace must be turned 'on' and 'off' by the same method. For example: If the fireplace is turned 'on' by the remote, it must be turned 'off' by the remote.

G) LIGHTING AND SHUTDOWN. See Figure 7.

NOTE: Prior to lighting, check all fittings for leakage. This is accomplished by applying soapy water on all connections made. If there is any leakage bubbles will appear at the point of connections. If bubbles occur, tighten the fittings until the bubbles no longer appear.

IMPORTANT: All connections, whether field or factory made, must be checked for leaks! at the factory have been previously tested.


NOTE: The appliance and its individual shut off valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures in excess of 1/2 psi.

NOTE: The appliance must be isolated from the gas supply piping system by closing its individual manual shut off valve during any pressure testing of the gas line at test pressures equal to or less than 1/2 psig (3.5 kPa).

Pressure check taps for both the manifold (outgoing) and inlet (incoming) pressures are located in front of the gas valve. The top pressure tap is the manifold pressure and the bottom pressure tap is the incoming pressure. Follow instructions on page 11 for checking these pressures.

NOTE: The chimney damper of the fireplace must be kept closed during operation.

NOTE: Read 1-7 before lighting the unit for the first time.

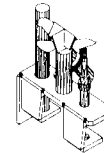
1. Turn off all electric power to the appliance.
2. Push in gas control knob (A) slightly and turn clockwise  to "OFF"


Gas control knob
shown in "on" position




NOTE: Knob cannot be turned from "PILOT" to "OFF" unless knob is pushed in slightly. Do not force.

3. Wait five (5) minutes to clear out any gas. If you then smell gas, **STOP!** Follow the safety information on page 2 of this installation manual. If you don't smell gas, go to the next step.



4. Find the pilot - follow metal tube from gas control. The pilot is behind the burner cover assembly.
5. Turn knob on gas control counterclockwise  to "PILOT"
6. Push in control knob all the way and hold in. Press the **RED** igniter button (C). The pilot will generally light with two or three pushes on the igniter. Hold for about one (1) minute after the pilot is lit. Release knob and it will pop back out. Pilot should remain lit. If it goes out, repeat steps 2 through 6.

- * If knob does not pop out when released, stop and immediately call your service technician or gas supplier.
- * If the pilot will not stay lit after several tries, turn the gas control knob to "OFF" and call your service technician or gas supplier.

7. Turn gas control knob counterclockwise  to "ON".

8. Flip the on/off switch (B) to the "on" position, the red is exposed.

NOTE: When the unit is initially lit, condensation will appear on the glass, this is normal in all gas fireplaces, and will disappear in one to three minutes.

9. If you wish to turn the burner off, flip the on/off switch. If a wall switch has been installed, simply turn it off.

NOTE: The pilot will stay lit.

10. To turn off the pilot, push in and turn the valve to the off position.

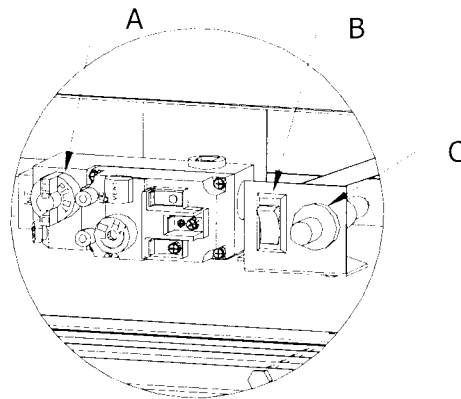


FIG. 7

NOTE: CHILDREN AND ADULTS SHOULD BE ALERTED TO THE HAZARDS OF HIGH SURFACE TEMPERATURE AND SHOULD STAY AWAY TO AVOID BURNS OR CLOTHING IGNITION. YOUNG CHILDREN SHOULD BE CAREFULLY SUPERVISED WHEN THEY ARE IN THE SAME ROOM AS THE APPLIANCE.

CLOTHING OR OTHER FLAMMABLE MATERIAL SHOULD NOT BE PLACED ON OR NEAR THE APPLIANCE.

H) PRESSURE TESTING : MANIFOLD & INLET PRESSURE

TO CHECK THE MANIFOLD PRESSURE:

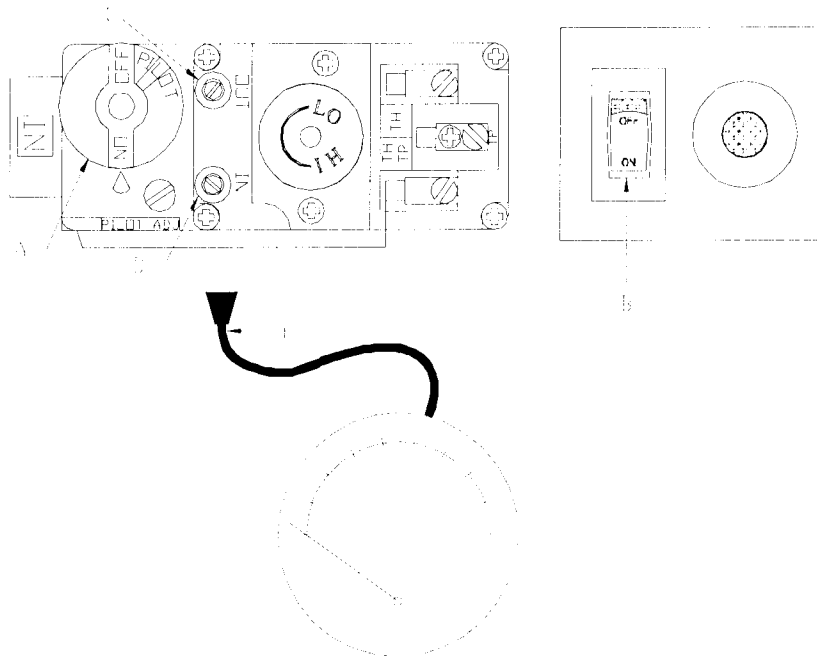
1. Light pilot .
2. Loosen the manifold pressure tap [C] by turning the screw counter-clockwise.
3. Attach manometer to pressure tap using a 5/16" I.D. hose [E].
4. Turn black control knob [A] to the 'on' position.
5. Turn the burner on by depressing the rocker switch [B] to expose the 'red' and note manometer reading.
5. Turn the rocker switch [B] to the 'off' position.
6. Disconnect manometer hose and tighten screw (clockwise).
Screw should be snug, do not over tighten.
7. Attach manometer to manifold pressure tap to verify that it is completely sealed.
Manometer should read no pressure when the rocker switch is turned on.

NOTE: If manifold pressure reading is within the normal range, an incoming pressure check is not necessary. A too high or too low pressure reading warrants an inlet (incoming) gas pressure check.

TO CHECK THE INLET PRESSURE:

1. Loosen Inlet pressure tap screw [D] by turning screw counter-clockwise.
2. Attach manometer using a 5/16" I.D. hose [E].
3. Light the pilot.
4. Turn the black control knob [A] to the 'on' position. (burner should not come on) and note manometer reading.
5. Turn the pilot to the 'off' position.
6. Disconnect hose and tighten screw (clockwise). Screw should be snug, do not over tighten.
7. Relight pilot and turn the control knob [A] to the 'on' position. Attach manometer to the inlet pressure tap to verify that it is completely sealed. Manometer should read no pressure.

NOTE: If Inlet pressure reading is too high or too low, contact the gas company. Only a qualified gas service technician should adjust the incoming gas pressure.



I) MAINTENANCE REQUIREMENTS

1. The appliance should be inspected at least once a year by a professional service person.

NOTE: INSTALLATION AND REPAIR SHOULD BE DONE BY A QUALIFIED SERVICE PERSON. THE APPLIANCE AND ITS CHIMNEY SYSTEM SHOULD BE INSPECTED BEFORE USE AND AT LEAST ANNUALLY BY A QUALIFIED SERVICE PERSON. MORE FREQUENT CLEANING MAY BE REQUIRED DUE TO EXCESSIVE LINT FROM CARPETING, BEDDING MATERIALS, ETC. IT IS IMPERATIVE THAT CONTROL COMPARTMENTS, BURNERS AND CIRCULATION AIR PASSAGEWAYS OF THE APPLIANCE BE KEPT CLEAN.

2. The compartment below the firebox (behind the lower grill) must be cleaned at least once a year, more frequent cleaning may be required due to excessive lint from carpeting, bedding materials, or other fibrous materials. It is imperative that the burner be cleaned once a year.

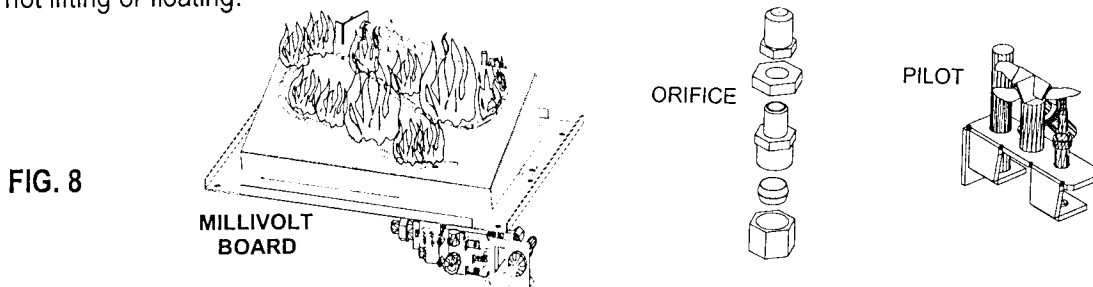
3. Annual cleaning of the burner is required. The burner tube /cover may be removed for easier access. Refer to page #5.

4. Remove the logs.

5. Remove the burner tube / cover by loosening the two nuts securing it to the board.

6. Visually check for blocked port holes, especially near the pilot. Blocked port holes may cause delayed ignition.

7. Visually check the pilot light and burner when they are burning. See Figure 8. The flames should be steady, not lifting or floating.



NOTE: ANY SAFETY GUARD REMOVED FOR SERVICING AN APPLIANCE MUST BE REPLACED PRIOR TO OPERATION OF THE APPLIANCE.

CAUTION: LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING CONTROLS. WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION. VERIFY PROPER OPERATION AFTER SERVICING.

CAUTION: Keep the appliance area clear of combustible materials, such as gasoline and other flammable vapors and liquids.

WARNING: NEVER BURN THIS APPLIANCE WITH THE FIREPLACE DOORS OPEN! EXHAUST FANS OPERATING FROM OTHER ROOMS MAY CAUSE THIS UNIT TO BACK DRAFT AND EMIT CARBON MONOXIDE INTO YOUR HOME.

WE RECOMMEND THAT A CARBON MONOXIDE DETECTOR BE PLACED IN THE ROOM WITH THE FIREPLACE TO ALERT YOU IF ACCIDENTAL DOOR OPENING HAS OCCURRED.

J) WOOD CONVERSION

Your unit can be converted back to a woodburning fireplace by the use of the following instructions.

1. Disconnect and cap off the gas line.
2. Remove the millivolt board and safety shut-off switch by reversing the steps in item D & E, pages 5 - 6.
3. Replace the cover plate removed in step 4, page 4 and secure with the 8 nuts.
4. Cover the safety shut-off switch mounting hole with aluminum tape.
5. Use mason sand to smooth and level the bottom of the firebox.
6. Replace the bottom firebrick. Replace the back & side firebrick if removed.
7. Remove 8" round chimney plate from the chimney.

K) TROUBLE SHOOTING GUIDE

NOTE: The millivolt board includes the following items: Valve with hi/lo regulator, generator, pilot assembly, piezo, electrode, rocker switch, burner, orifice and orifice holder. If any of these items are defective, contact your dealer for the appropriate repair / replacement procedures to follow.

The gas line running to the appliance may need to be purged of air before ignition will occur. The time required for this is in direct relationship to the length of the gas line run. This can be accomplished by turning the black control knob to the 'pilot' position, the push and hold in the control knob for several minutes while pressing the piezo button every few seconds.

1. If the unit fails to ignite a qualified service person should check the unit installation.
2. It is imperative that the control compartment, burner and circulation air passageways of the unit be kept clean. This is necessary to provide adequate combustion and ventilation air.
3. All of the working parts of this unit can be removed at one time. Before removing regulator board, check for loose wires.

PROBLEM	CAUSE	SOLUTION
No spark when piezo button is depressed.	The nut which holds the piezo in place is loose.	Tighten nut.
	Wire on back of piezo button is loose or off.	Put wire back into place.
	Wire from piezo to electrode is loose at electrode.	Reconnect wire.
	Electrode moved out of position.	Re-align electrode with 1/8" space between it and the pilot.
Pilot won't light	Gas shut off.	Turn gas on.
	Gas line not purged.	Must be purged by a qualified service technician.
	Not holding black control knob in long enough.	Hold in longer.
Pilot won't stay lit	Not holding black control knob (in "pilot" position) in long enough.	Hold black control knob in long enough to heat generator
	Thermocouple wire loose at valve connection.	Check connection on valve.
	Pilot hood misdirecting pilot flame from thermocouple.	Check pilot flame location. Flame must be burning on generator and thermocouple.

PROBLEM

CAUSE

SOLUTION

Burner won't light.

Pilot not lit.

Relight pilot.

Black control knob not turned to 'on'.

Turn control knob to 'on'.

Rocker switch not turned on.

Press bottom of switch exposing the 'red' or 'on' indicator.

Rocker switch wires not connected.

Check wiring diagram below and ensure that all wires are secure.

Generator wires loose at valve due to pinching of wires.

Reposition wires and tighten
See figure below.

Wall switch, remote control not connected properly or turned to wrong setting. See figure 6.

Connect properly or disconnect and use on/off rocker switch only.

Burner won't stay lit.

Wall switch, remote control wires too thick or run more than 30 ft.

Disconnect wire from valve.
If burner stays lit, change location or use on/off rocker switch only.

Flame too blue after 15 minutes of operation.

Burner tube venturi open too far.

Contact qualified service person to adjust venturi.

Carbon build up inside of unit.

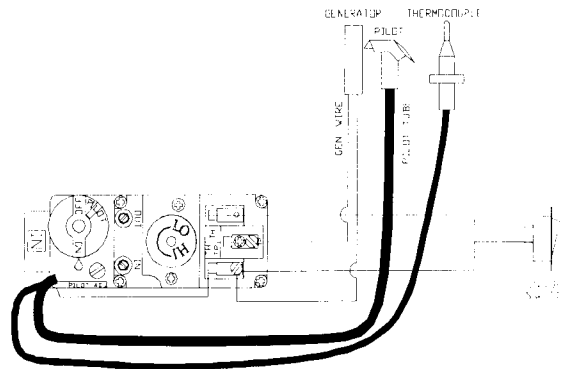
Incorrect log placement.

Check log placement, adjust.

Burner tube venturi closed too far.

Contact qualified service person to adjust venturi.

Figure 9



REPLACEMENT PARTS LIST

The following replacement parts are available through your local Kozy Heat dealer. Please contact them for availability and pricing.

<u>Description</u>	<u>Item No</u>
KLS Millivolt Board - Natural Gas	545-400
KLS Millivolt Board - LP Gas	545-401
Piezo Ignitor	700032
On/Off Switch	700033
Millivolt Generator	700036
Hi/Lo Adjustable Regulator (Natural Gas)	700039
Hi/Lo Adjustable Regulator (LP Gas)	700040
Pilot/Generator/Thermocouple Assy - Nat. Gas	700055
Pilot/Generator/Thermocouple Assy - LP Gas	700056
Pilot Tube with Fitting (valve to pilot)	700060
18" Flexible Gas Line (Gas Line connection)	700213
3/8" Flexible Gas Line (Valve to burner orifice)	700224
Natural Gas Orifice	700230
LP Gas Orifice	700247
Pilot Orifice - Natural Gas	700267
Pilot Orifice - LP Gas	700266
Burner Tube / Cover Assembly	936135
Safety spill switch and wire assembly	700285
Natural Gas Conversion Kit	OCK-330
LP Gas Conversion Kit	OCK-347
Log set	93650B
Klinkers (1 packet)	900-KLK

**FOR INSTALLATION ONLY IN KOZY HEAT MODELS #231 ZC / #241 ZC* MANUFACTURED AFTER JULY 1999.
SEE DEALER FOR MORE INFORMATION.**

Patent #5,931,154

Patent Pending

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October 1999

www.kozyheat.com