LENNOX™
HEARTH PRODUCTS

Service Manual

Lennox Electric Fireplaces

Merit Series

MPE36

MPE33

⚠ CAUTION

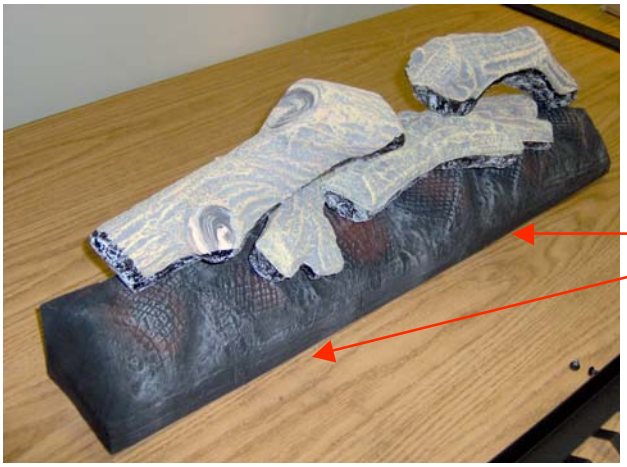
Disconnect power before attempting any maintenance or cleaning to reduce the risk of fire, electrical shock or personal injury.

Contents

- **Read this first**
- This manual is provided as a tool to assist professional service personnel working on Lennox Electric Fireplaces.
- Do not attempt to service this electrical appliance if:
  - You have not been trained how to safely service electrical appliances.
  - You are not familiar with the use of electrical diagnostic tools.
- Disconnect the power supply prior to attempting any service.
- **Electrical Shock Hazard**
- Read this manual and the installation and operation instructions for this appliance before attempting any service.
- **If you have any questions regarding this appliance contact Lennox Technical Service at: (800) 655-2008**

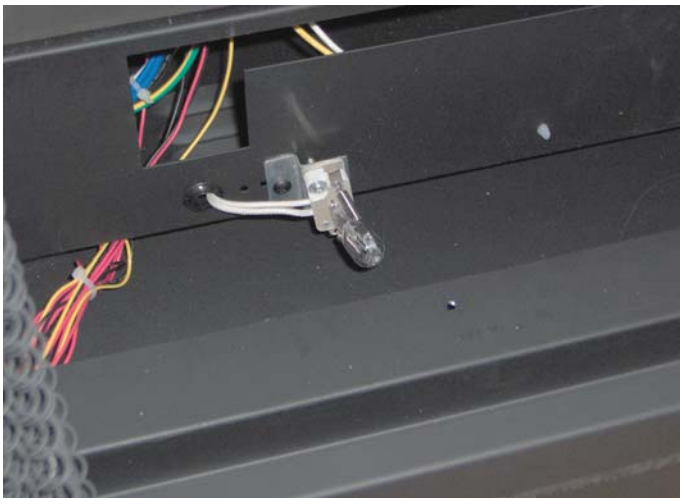
Remove Grate and Log Set

- The grate must be removed before removing the log set.
- Remove the two screws that secure the grate in place and remove the grate.



- Place your thumbs on the front edge of the ember base approximately 1/3 of the way in from the ends of the log set.
- Push towards the back causing the ember base to flex. As you push gently lift the front edge of the ember base. The log set and ember base may be lifted up and out of place.

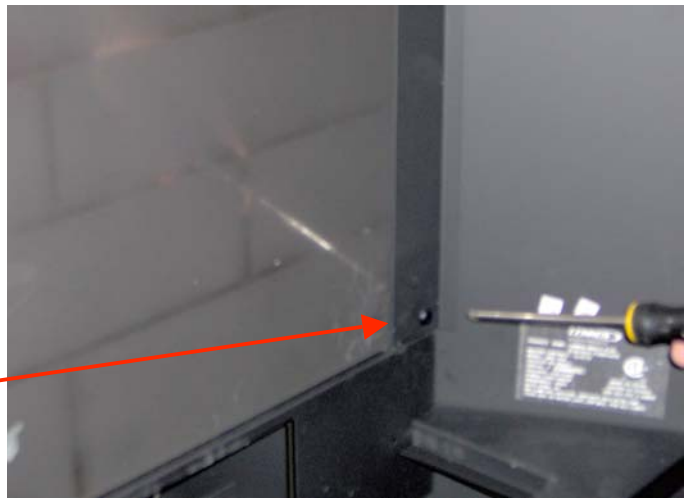
Changing ember bulbs



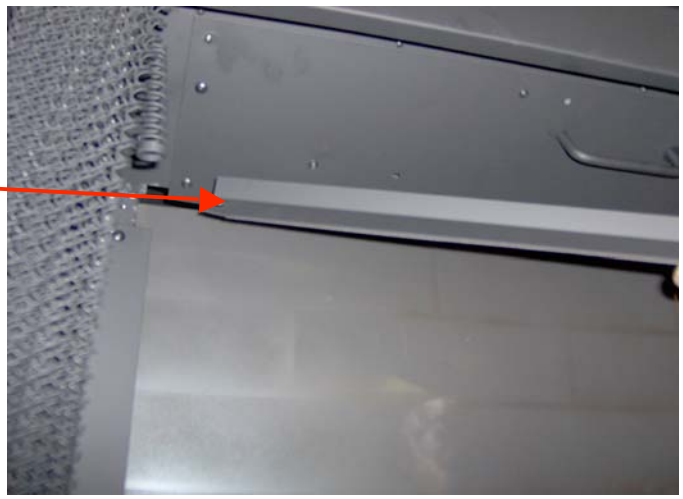
- Remove logs and grate (see page 3)
- On MPE36R replacement bulbs will be found in a pocket in the log set
- Lift at the front of the plastic ember bed to “pop” it up and release it.
- Remove ember bed.
- Remove spring retainer from bulb.
- Remove defective bulb.
- Using plastic gloves or a small plastic bag to prevent oils from your hands from coating the bulbs, insert the replacement bulb in the socket and replace the retaining spring.
- Replace ember bed
- Replace logs and grate.

Removal of rear glass panel

- Remove logs and grate
- Remove ember bed
- Remove screws from right and left retaining brackets

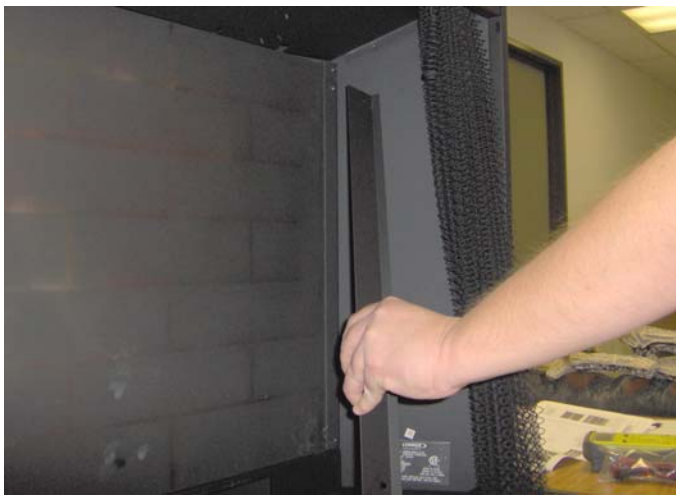


- Remove screws from top retaining bracket



Caution: wear protective gloves when removing or handling the glass panel.

Gloves will help prevent cuts and will also prevent the oils from your hands from staining the surface of the glass panel

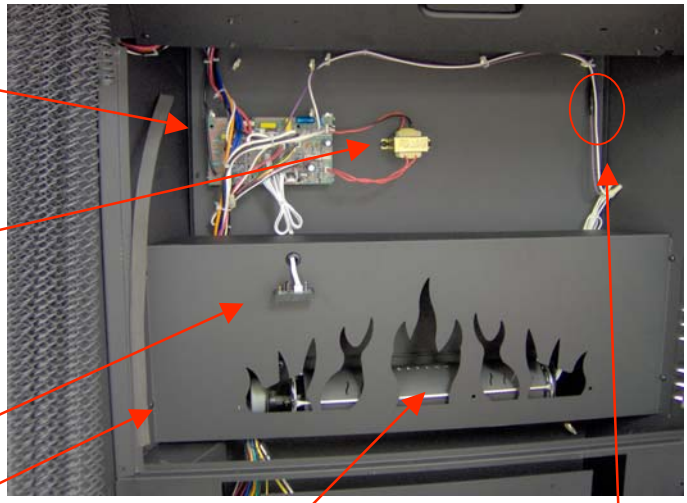


Removal of rear glass panel (continued)

- Grasp glass panel at top and tip forward.
- With panel loose, grasp on top and bottom edges to remove from fireplace.

Components

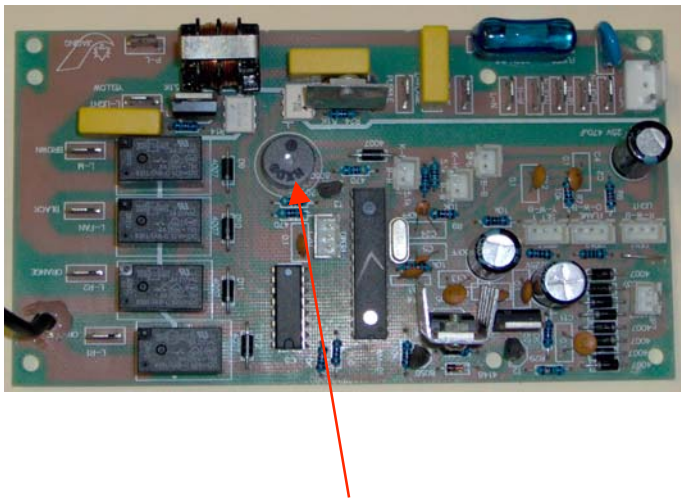
- Control board
- Transformer
- Remote control receiver
- Flame cover panel
- Motor and Flame cylinder



Fuse location

Power supply

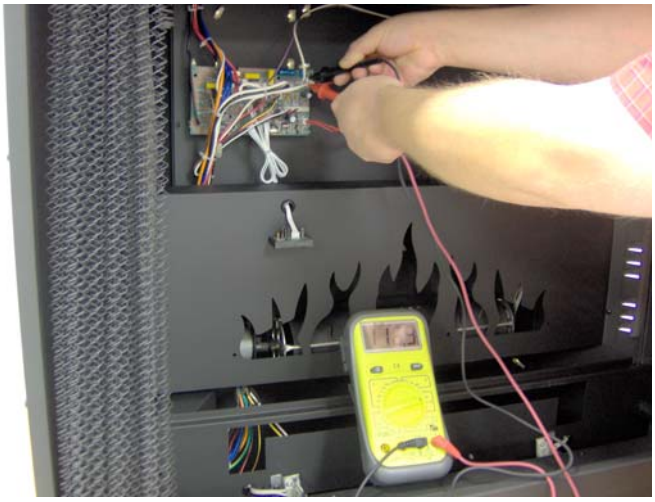
- **When the electric fireplace is initially connected to a power supply:**
  - By plugging in the power cord to a receptacle
  - By turning on the circuit breaker (hard wired connection at the junction box)
- The control board will emit two loud “beeps” to confirm “power up”.
- If you do not hear these ‘beeps”:
  - Confirm that the circuit breaker is “on”
  - Confirm power to the receptacle.
  - Is an external switch controlling the power to the fireplace? If so it must be on.
- If power is available to the fireplace and the two “beeps” are not sounded at”power up”, look for:
  - Transformer failure (page 9)
  - Control board failure

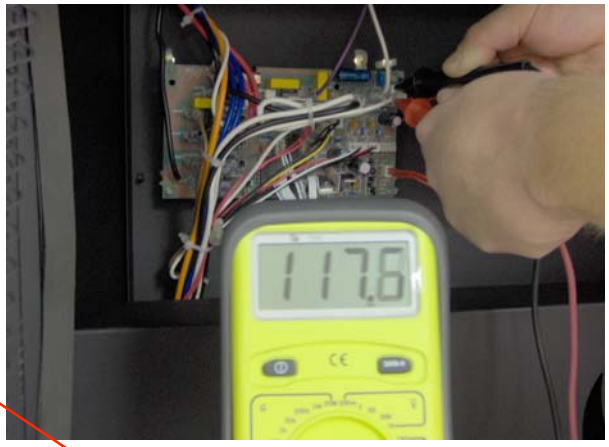


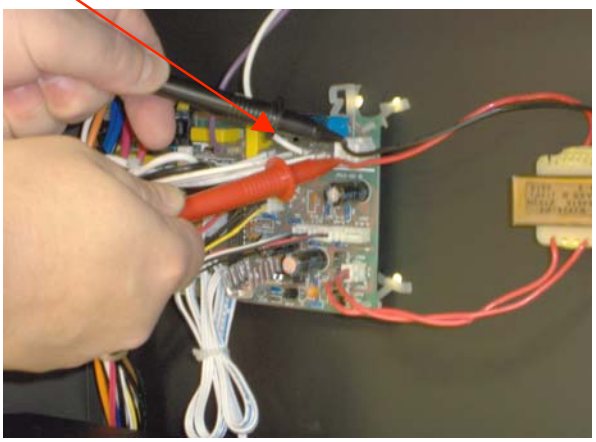
Control Board- beeps twice to confirm “power up”

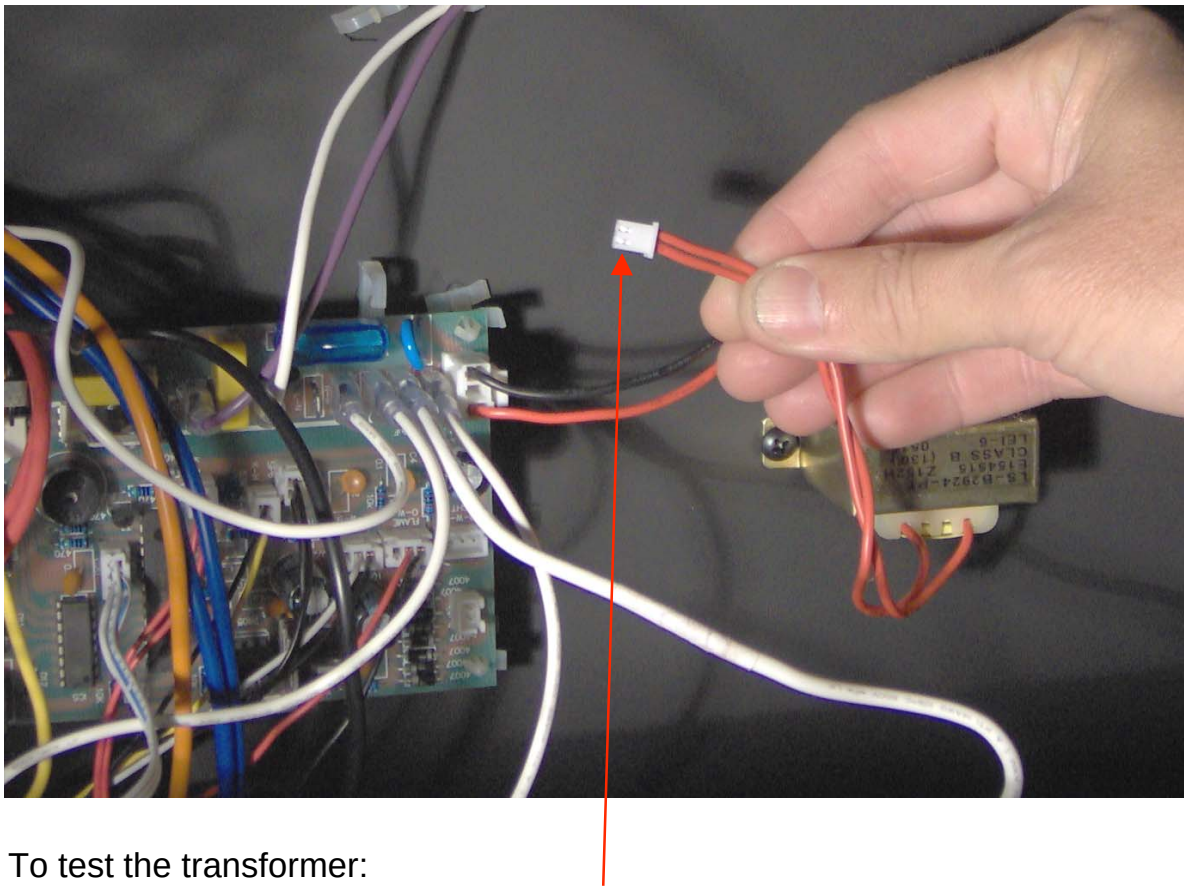
Testing Transformer

- Caution: electrical shock hazard!
- This tests confirms that line voltage 120 VAC is available to power the transformer.
- Place multimeter leads on control board terminals as shown.
- Line voltage should be between 105 VAC – 127 VAC.







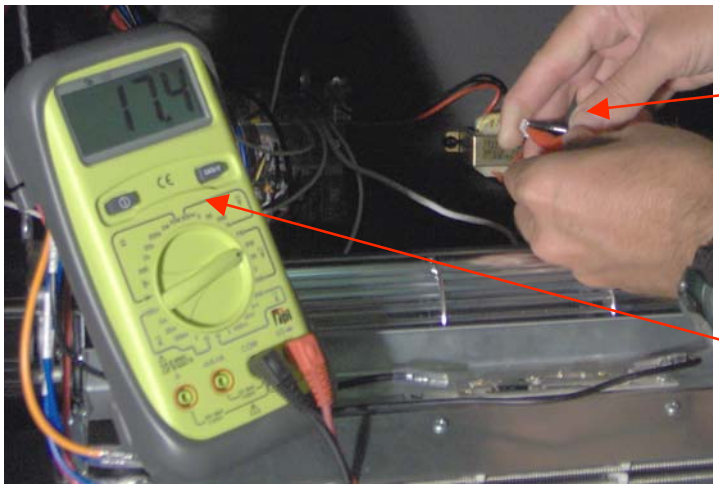


To test the transformer:

•Remove the low voltage connector (two red wires) from the control board as shown. On the side of the connector two silver terminals will be visible.

•Set your Multimeter to test AC voltage. Touch the probes to the two silver connectors on the transformer wires. Voltage should between 16 – 18 VAC

•When the transformer is reconnected to the board there should be two “beeps” should be heard confirming “power up” of the control board.

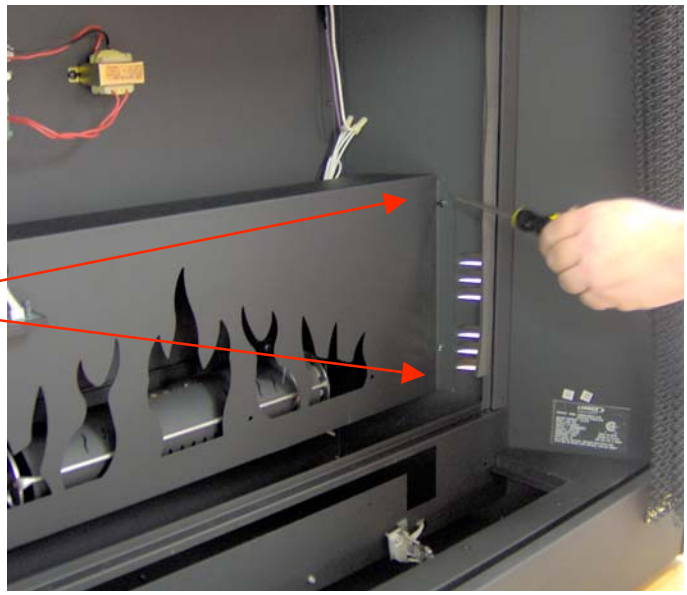


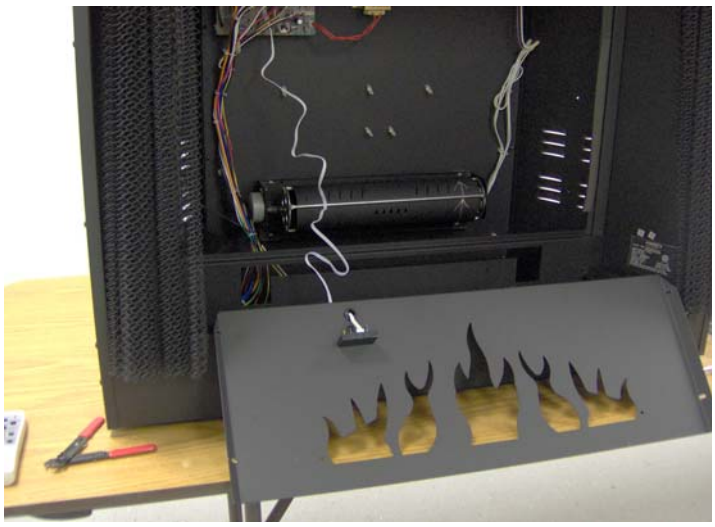
Probes connected to transform wire terminals

16-18 VAC

Removal of flame panel

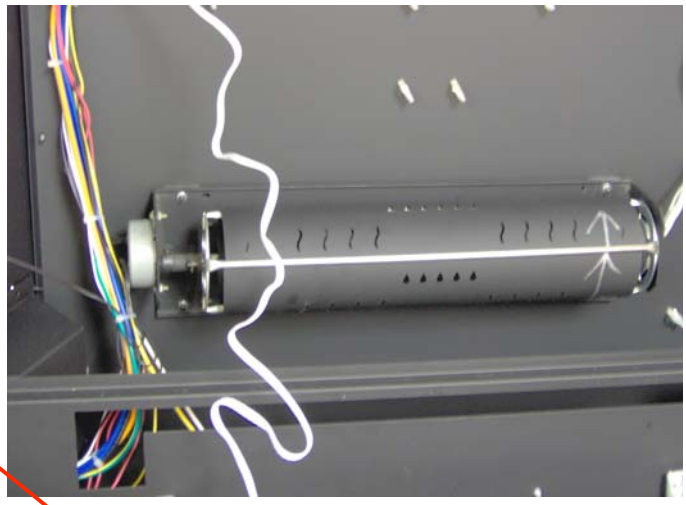
- Use wire cutters to clip the plastic wire tie binding the remote control receiver wire.
- Use a screwdriver to remove the screws on the right and left edges of the flame cover panel.
- The panel may be placed upon the floor in front of the fireplace during service

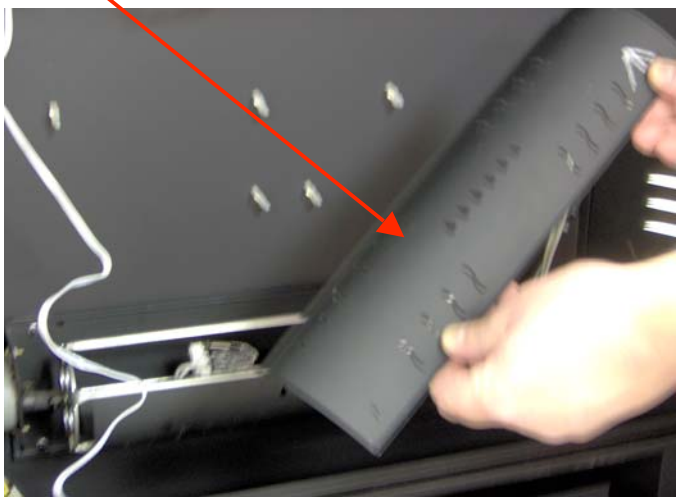




Changing bulbs in flame cylinder

- Grasp the top of the flame cylinder and squeeze gently disengaging the flame cylinder cover.
- Lift the cover off to expose the two flame bulbs.

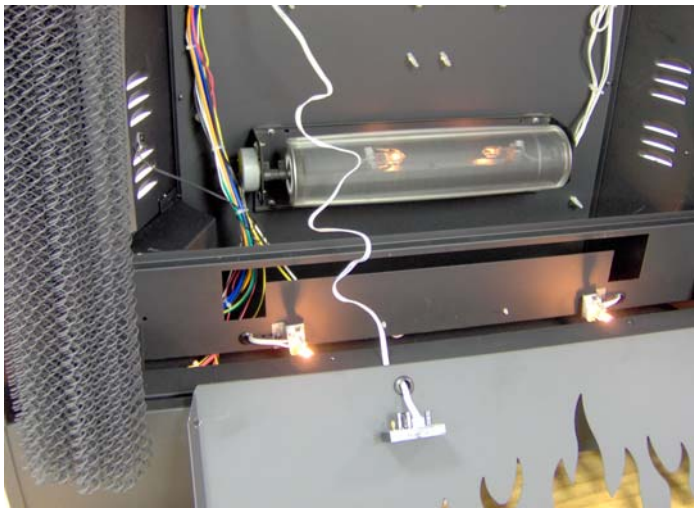




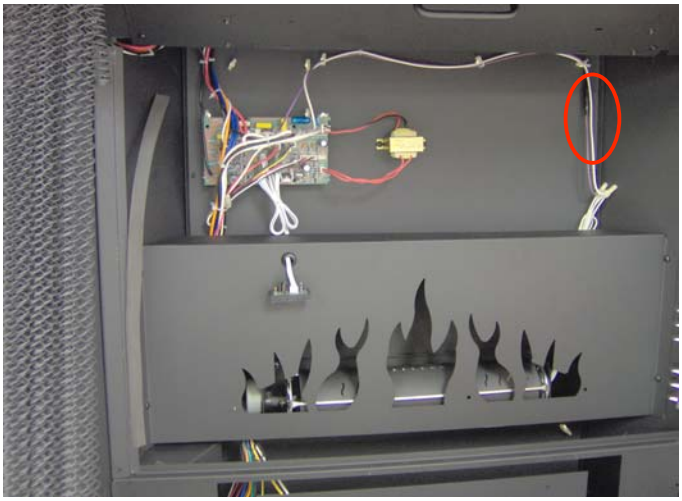
Caution: The edges of the flame cylinder may be sharp! Wear protective gloves to prevent injury

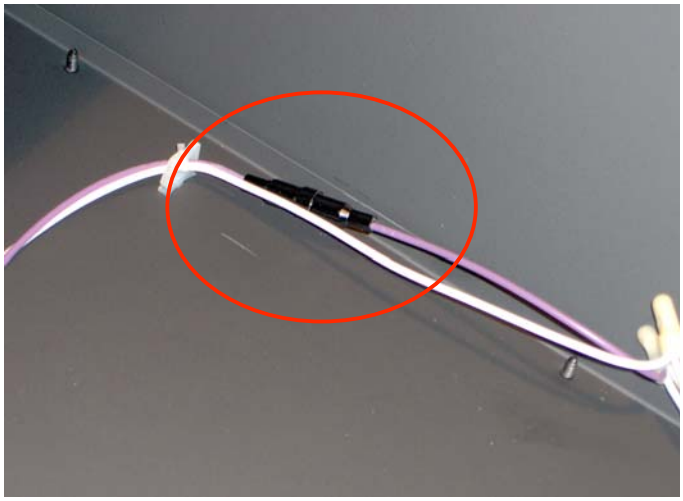
Lights: Flame and Ember

- With the flame cylinder cover removed, the two bulbs are visible.
- When the flame switch is activated the bulbs should light and the flame wheel should turn.
- Use the remote control to brighten and to dim the flame bulbs and the ember bed bulbs.
- When testing voltage to the ember and flame lights:
  - If the lights are activated by the control panel switch voltage will be approximately 114VAC
  - If the lights are activated by the remote control the dimmer function will vary the voltage from approximately 4 VAC (low) to 114 VAC at the high setting.



If ember and flame lights fail to operate





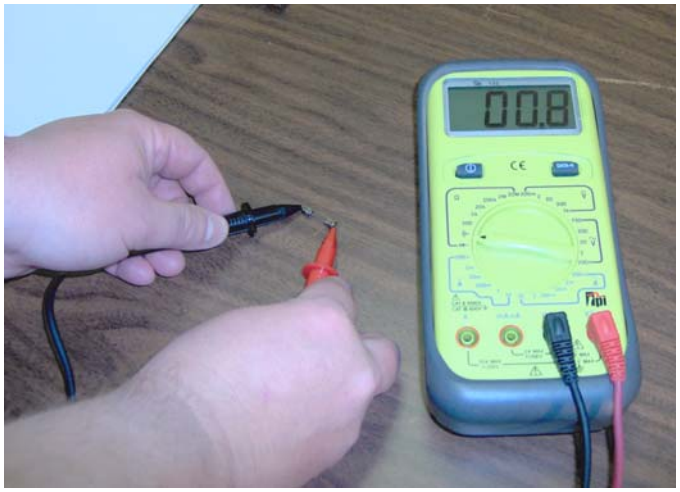
•Check the in-line fuse located to the right of the control board.

•Perform a continuity test on the fuse. If the multimeter displays “1” the fuse has blown and must be replaced.

•If the bulbs and fuse test “OK” , check the continuity of the control panel switch (power On/Off) and (lights On/Off)

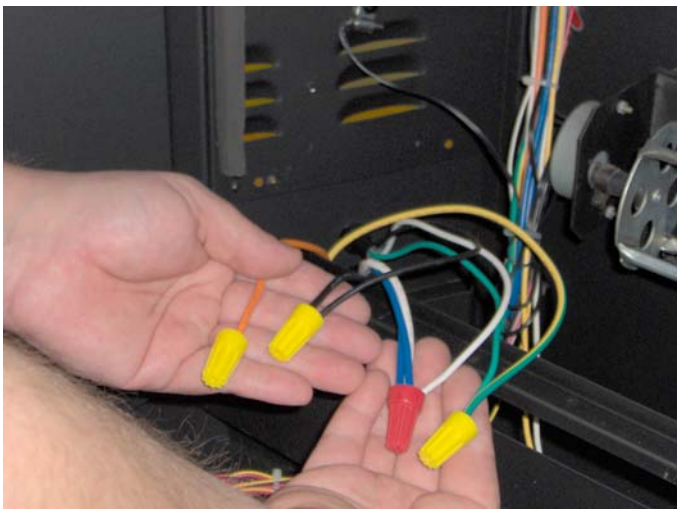
•If switches test OK then test control board.

- •L- Light to N-Light =114VAC
- •L-Flame to N-Flame = 114VAC



Access to electrical junction box

- Turn off power to the fireplace by either unplugging the power cord or setting the circuit breaker in the home's electrical panel to the "off" position.
- Remove screws in junction box cover.

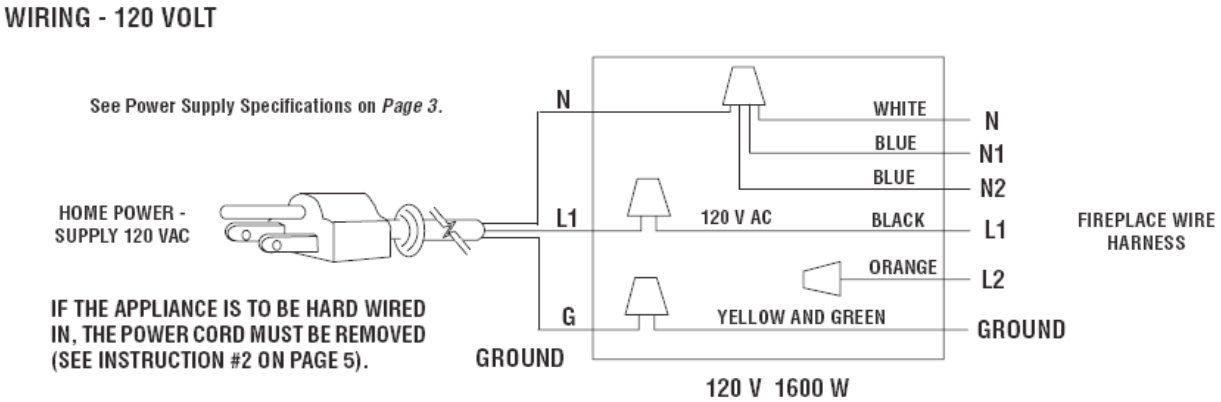


Wire connections to a) factory supplied power cord or b) Romex power supply should be as follows:

120VAC line	fireplace
black	black
white	blue N1
	blue N2
	white
	green green/yellow

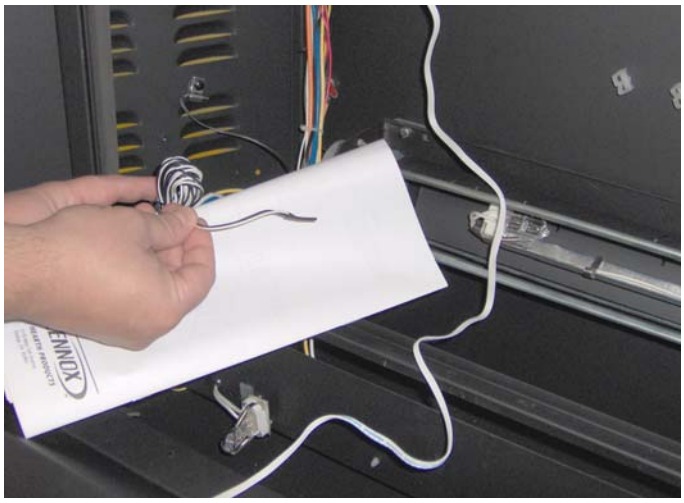
120VAC wiring shown

For 240 VAC wiring see page 42



Wires for optional controls

- The junction box contains two wires that may be used for an **optional wall switch to control the flame and/or an optional thermostat to control the heater.**
- A length of black and white wire is provided for the connection of an optional wall mounted thermostat kit.



WALL THERMOSTAT WIRING (24 VAC):

Install Wall Thermostat per instructions provided with kit and per the following information:

1. Turn off circuit breaker.
2. Remove cover plate located on the left side of appliance.
3. Locate the the black and white wires and pull out the length needed to reach wall thermostat (15 feet max.).
4. Connect the wires to the wall thermostat as shown in *Figure 25*. Follow instructions provided with wall switch kit.

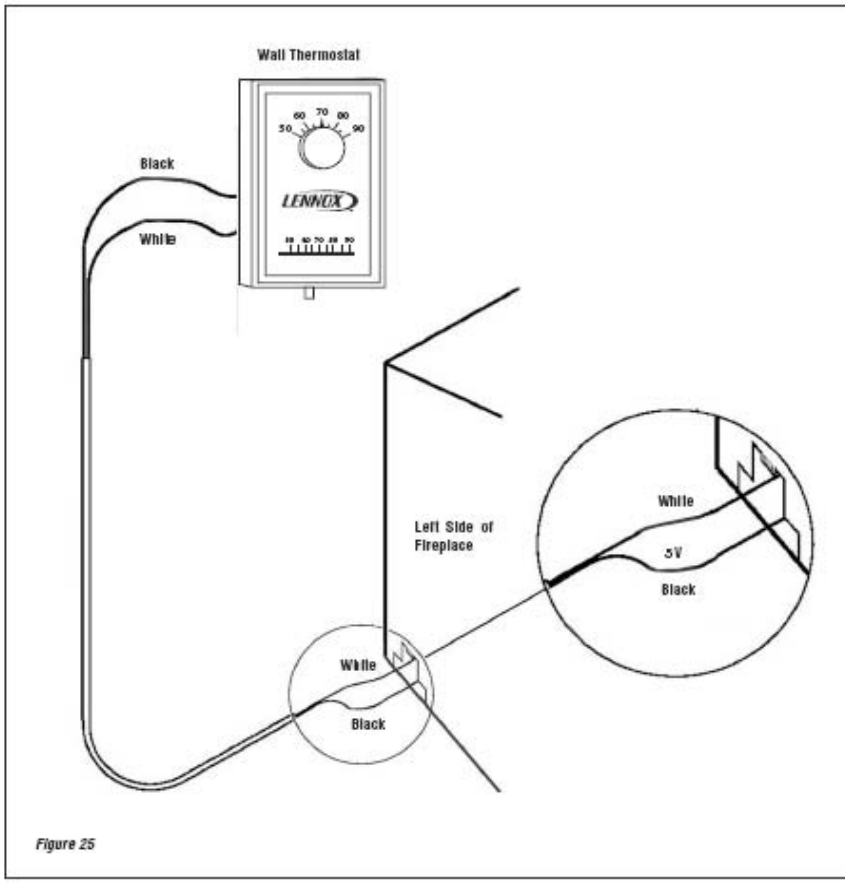
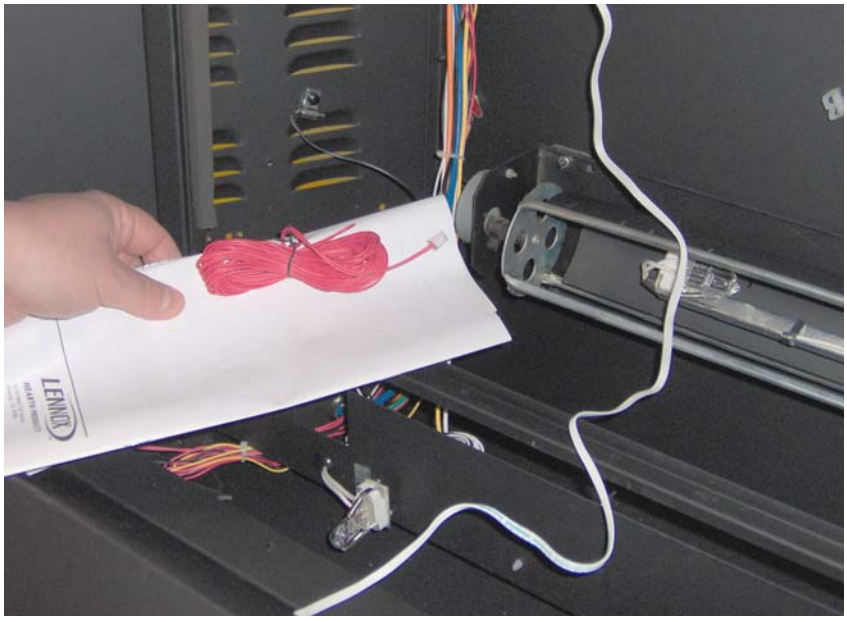
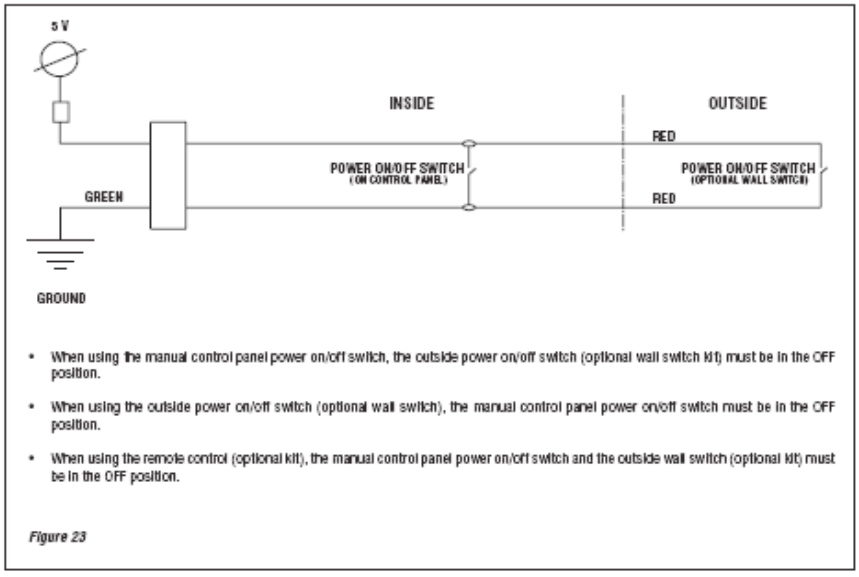


Figure 25

Electrical junction box

- A length of red wire may be bundled in the bottom of the junction box.
- This allows operation of the fireplace from an optional wall mounted switch.
- See the drawing for proper wiring
- Note: to operate the fireplace from the wall switch the unit mounted power switch must be in the ‘off’ position.



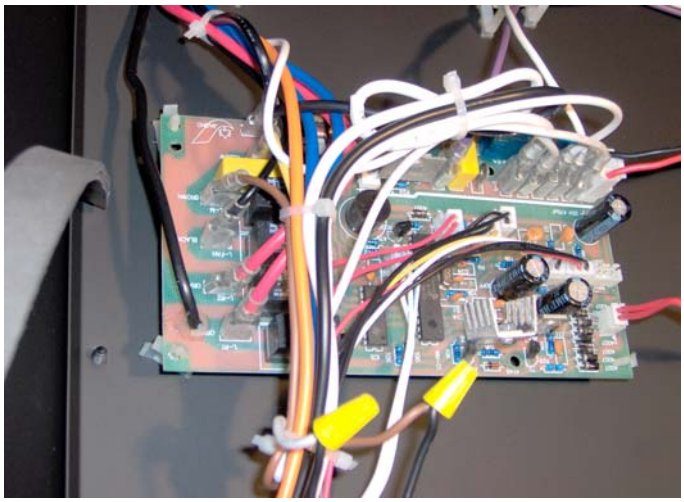


⚠ WARNING

Do not install or operate this fireplace through a switch wired in the 120 VAC or 240 VAC circuits. The only approved wiring for a switch is through the low voltage circuit (24 VAC) as shown on *Page 14*.

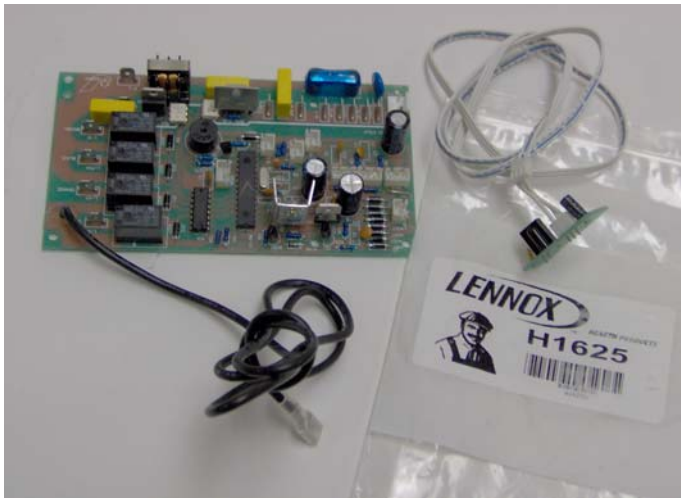
Control board

- Replacement part # H1625
  - Contains:
  - Control Board
  - Remote Receiver

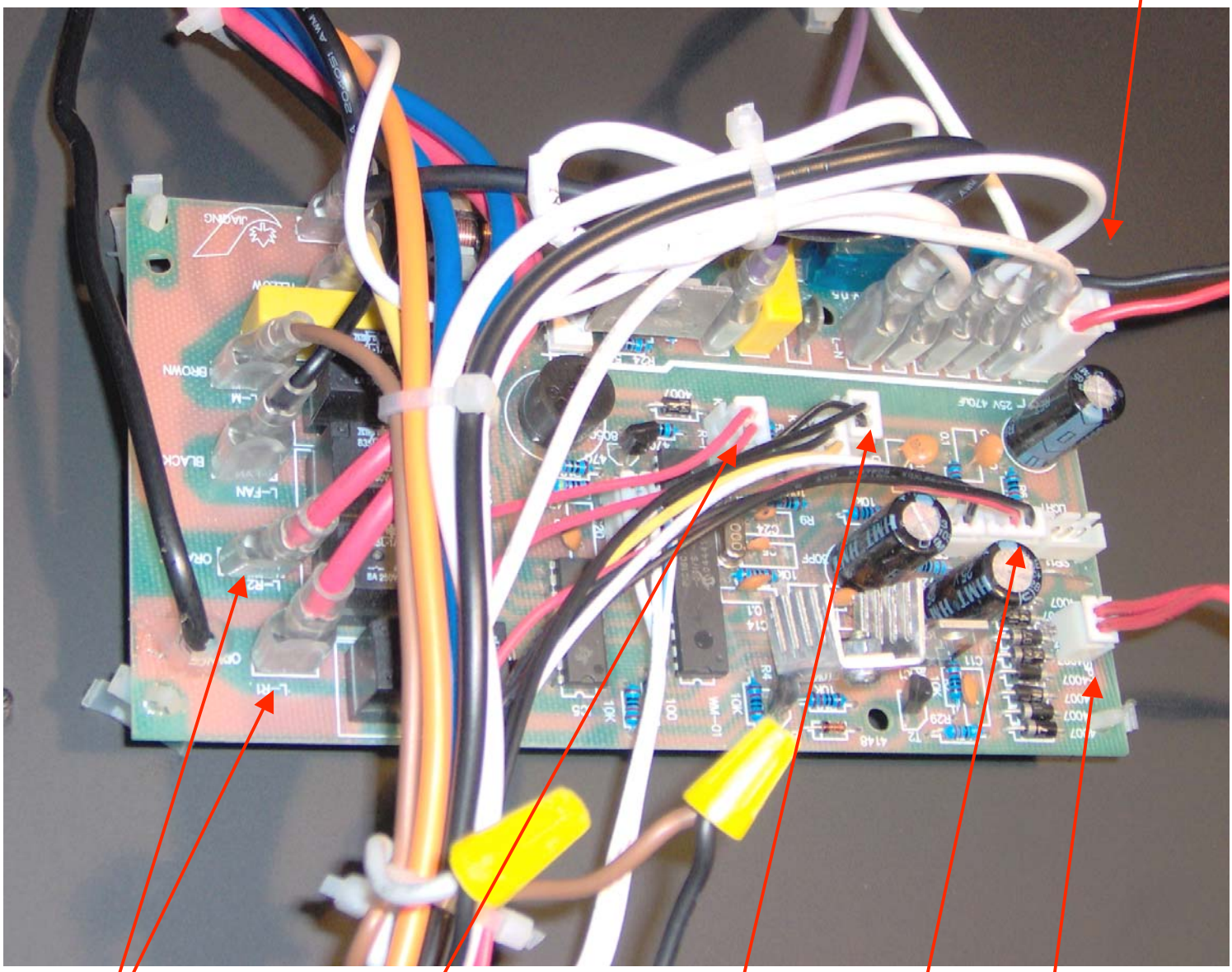


Procedure for replacing control board:

- **Disconnect Power Supply by unplugging power cord or turning off circuit breaker.**
- Orient replacement board to match defective board.
- Hold replacement board directly below defective board.
- Remove one wire at a time from the defective board and connect it to the replacement board.
- Repeat until all wires have been transferred.
- Use needle nose pliers to squeeze the plastic corner fasteners to release the defective board. Remove defective board
- Place replacement board over corner fasteners and push to lock in place.
- Confirm all connections with the wiring diagram.
- Restore power and test fireplace functions.



Control board wiring



120 VAC to transformer

Line voltage to Heater Elements

Red

Control Panel Switch

Main Power on/off (also to optional wall switch)

Red/Red

Temperature sensor-heater

Black/Black

24 VAC from transformer to board

Flame/Ember on/off switch

Red/Black

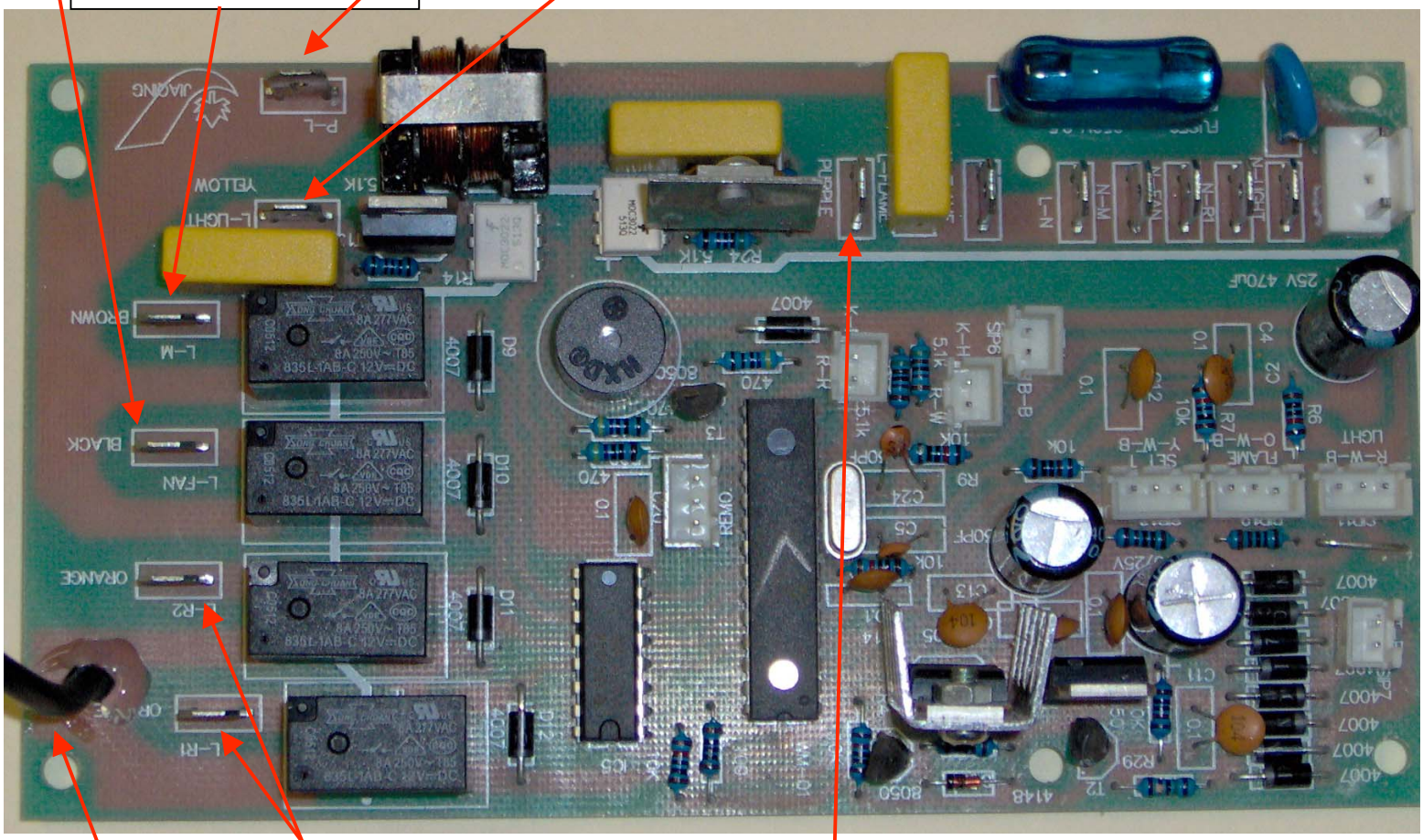
Control Board Wiring (Hot)

L-FAN: Black wire (hot) to fan motor

P-L: Black wire (hot) from junction box- to board- to fusible link

L-M: Brown wire (hot) to flame motor

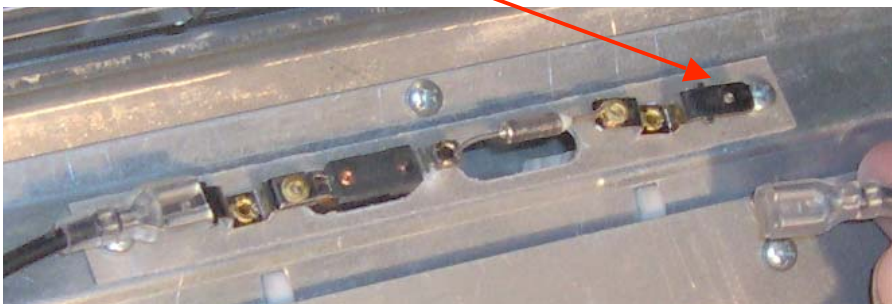
L-Light: Yellow wire (hot) to ember lights



L-R1 & L-R2: Red wires (hot) to heater element

L-Flame: Purple wire(hot) to flame wheel lights

Black wire from board to fusible link

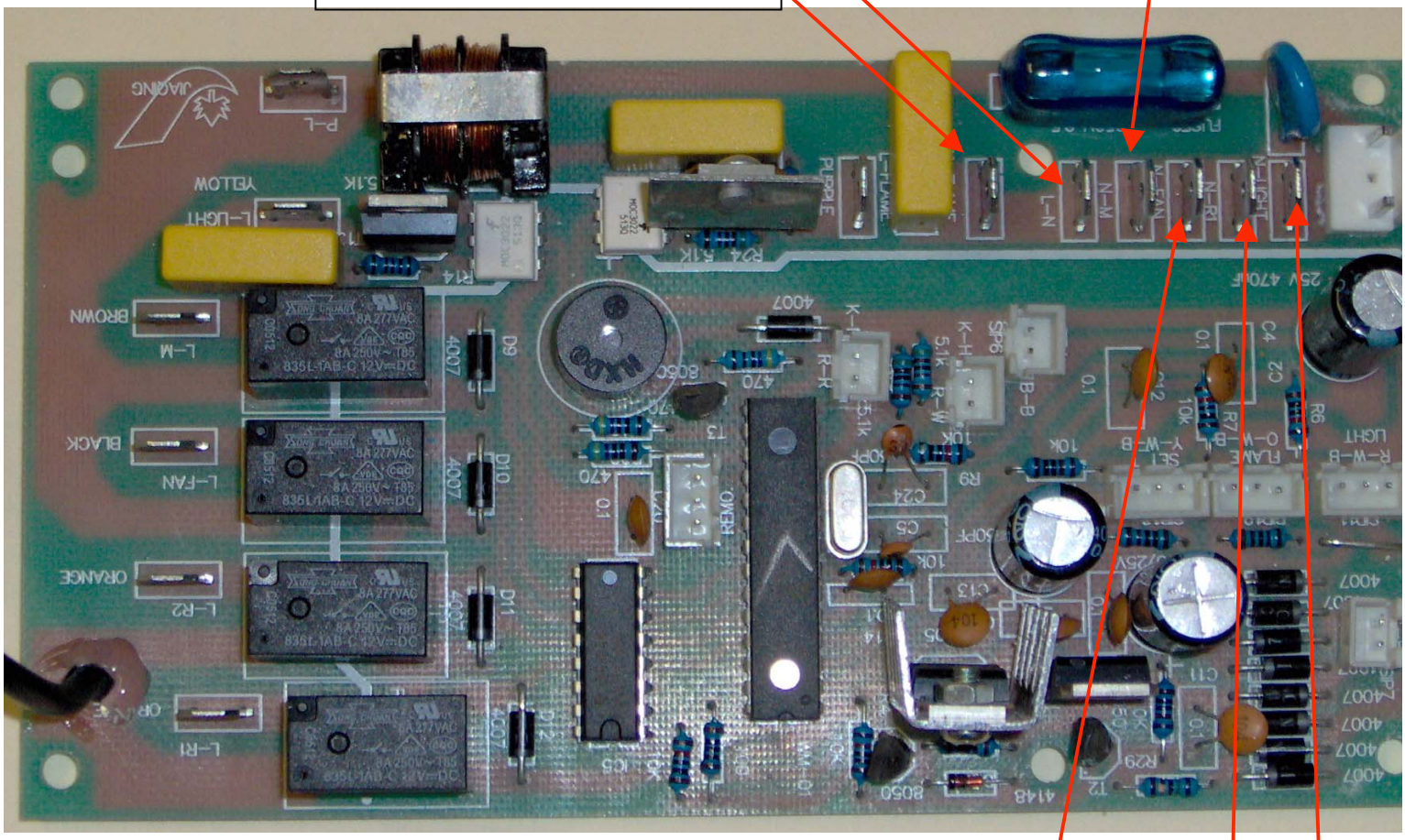


Control board wiring (neutral)

L-N: Not used

N-M: White wire (neutral) from flame wheel motor

N-Flame: White (neutral) from flame wheel lights

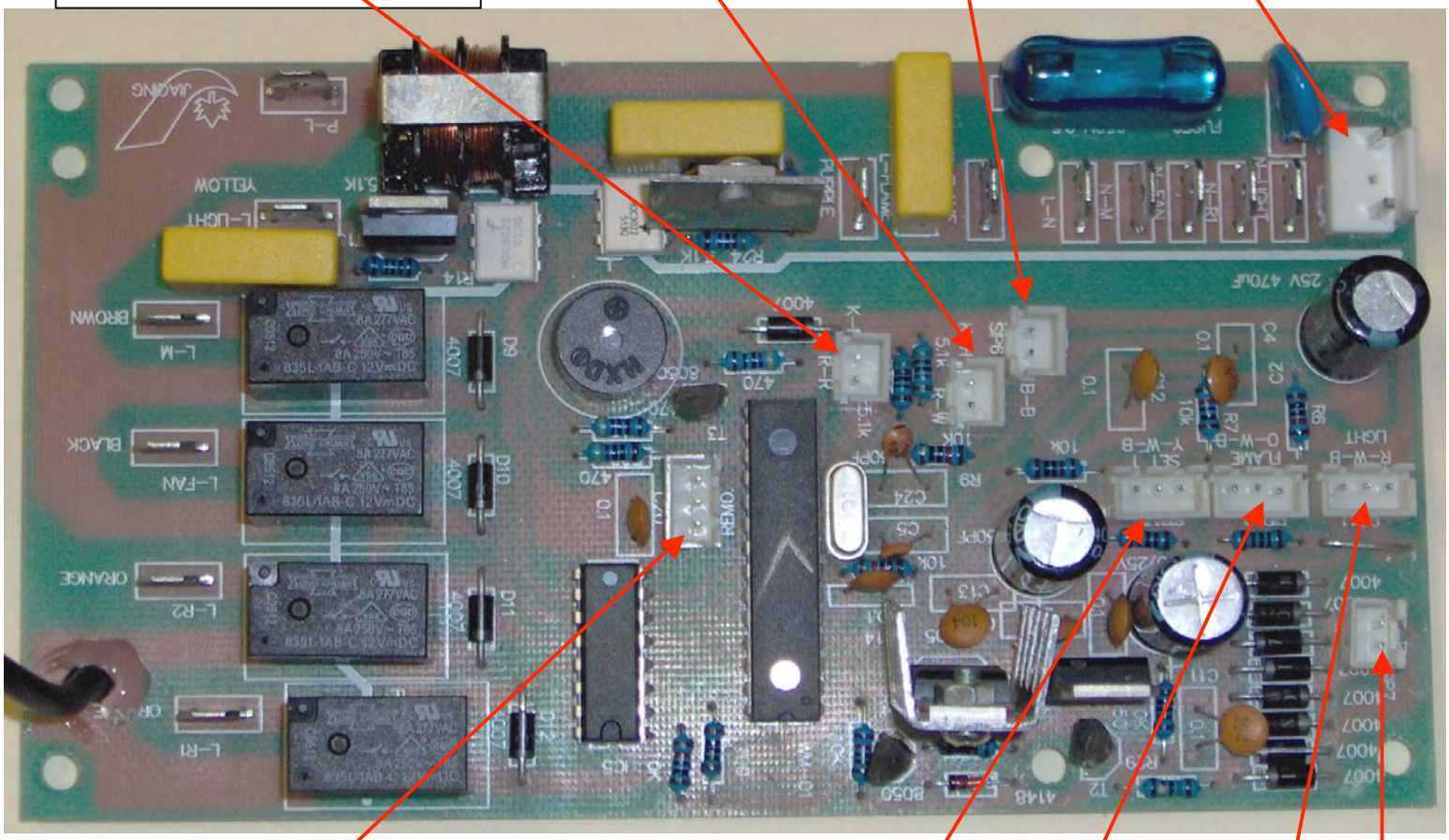


N-Fan: White wire(neutral) from fan motor

N-Power: White wire(neutral) from junction box to control board

N-Light: white wire (neutral) from ember lights

Transformer/ Sensors/ Switches



Heater switch
black/yellow

Temperature sensor
black/black

120 VAC to transformer
black/red

Main power switch red/red

Wire for optional wall thermostat
black/white (stored in junction box)

Not used

Flame/Embers on-off switch
red/black

Remote control sensor
white

24 VAC from
transformer red/red

Remote control sensor

MANUAL CONTROL PANEL

Main Power On/Off *(rear most switch)*

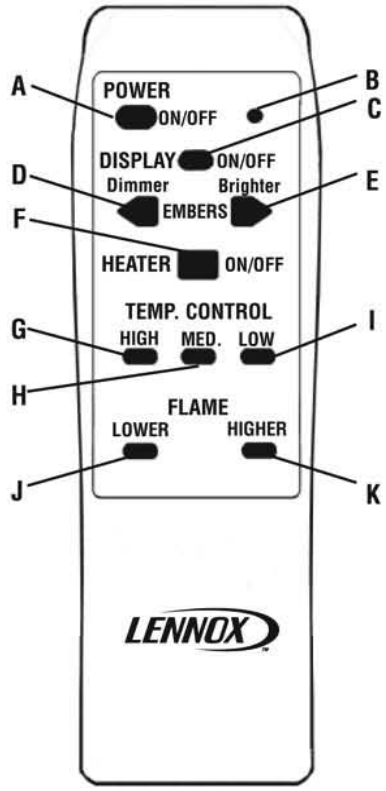
Heater On/Off *(center switch)*

Flame / Ember On/Off *(front most switch)*

- When using the main *power on/off switch* inside the manual control panel, the *power on/off switch* outside the manual control panel (optional wall switch kit) must be in the OFF position.
- When using *power on/off switch* outside the manual *control panel (optional wall switch)*, the *power on/off switch* inside the manual control panel must be in the OFF position.
- When using the *remote control*, the *power on/off switch* inside the manual control panel and the *wall switch* (optional kit) must be on the OFF position.

Figure 4

REMOTE CONTROL OPERATION:



- When using the *remote control*, the *power on/off switch* inside the body and the *wall switch* (optional kit) must be on the OFF position.

Figure 6

⚠ CAUTIONS

• Do Not Use Old Batteries With New Ones.
• Do Not Use Batteries Other That The Type Specified (2 Ea. AA).
• Ensure Batteries Are Correctly Installed In Remote Control.

The Merit Plus Electric Fireplace is provided with an Infrared light Remote Control. All functions of the fireplace can be controlled through the remote control. Note: The Effective range of the remote control is up to approximately 26 feet (8 meters).

The functions identified on the remote (see ***Figure 6)*** are as follows:

A. POWER BUTTON
Press once to turn on power to fireplace.
B. INDICATING LIGHT
Illuminates when signal is sent.
C. LIGHT BUTTON
On/off switch for flame and ember light.
D. LIGHT ADJUSTING BUTTON (DIM)
Reduces brightness of embers.
E. LIGHT ADJUSTING BUTTON (BRIGHTEN)
Increases brightness of embers.
F. HEATER ON/OFF
This button will turn the heater ON and OFF independent of the main button.
G. TEMPERATURE ADJUSTMENT BUTTON (HIGH)
Highest heat output, up to 86° F.
H. TEMPERATURE ADJUSTMENT BUTTON (MED.)
Medium heat output, up to 75° F.
I. TEMPERATURE ADJUSTMENT BUTTON (LOW)
Lowest heat output, up to 64° F.
J. FLAME ADJUSTING BUTTON (LOWER)
Reduces flame intensity.
K. FLAME ADJUSTING BUTTON (HIGHER)
Increases flame intensity.

Remote Control Operation Steps:

1. To control the electric fireplace by remote control, the main power on/off switch should be in the off position. This switch is located on the front left floor of firebox (see ***Figures 4 & 5)***.

2. When operating the remote control, it must be pointed at the logs inside the electric fireplace and a beep must be heard each time you press a function button. The beep lets you know the remote control is operating the function button you are pressing.

3. Remote On/Off Button - The button on the top left (see A) is the on/off power button. When pressing this button you will hear a beep, this will activates the power to the fireplace. You must then press the display button (C) to activate the lights.

Note: If the flame does not come on immediately, adjust brightness and intensity (buttons E & K).

4. To increase the brightness, press and release the light brighten button (see E). Each time you press this button you will hear a beep, and the brightness will increase slightly until the maximum brightness is achieved. To decrease the brightness, press and release the light dimming button (see D). Each time you press this button you will hear a beep, and the brightness will decrease slightly until the minimum brightness is achieved.

5. Heater Button - To activate the heater, press the heater button (see F), then press HI (G),

   MED (H), or LO (I). The heater is preset to the following temperatures:

   • HIGH will shut off when room reaches approximately 86° F (30° C).

   • MED. will shut off when room reaches approximately 75° F (24° C).

   • LO. (Low) will shut of when room reaches approximately 64° F (18° C).

6. Flame Button - Press the Flame Adjusting Buttons to achieve a higher or lower flame intensity (see J & K).

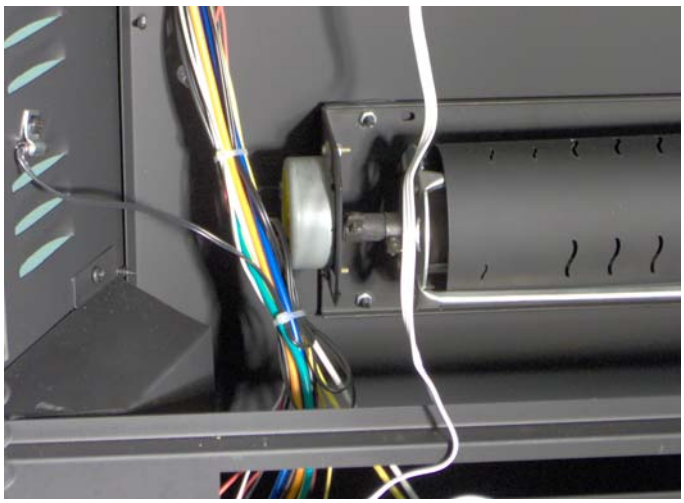
7. To Increase Flame Brightness press and release the (K) button. Each time you press this button you will hear a beep and the brightness of the flame will increase slightly, until the maximum setting is reached. To Decrease Flame Brightness press and release the (J) button. Each time you press this button you will hear a beep and the brightness of the flame will decrease slightly, until the minimum setting is reached.

8. To turn the electric fireplace off, Press the On/Off button once (A), when you hear the beep the fireplace will be completely off. When you restart your fireplace with the remote control, all settings will restart at the high settings programmed at the factory. You may also simply press the (C) button to turn off the flame and still use the heater.

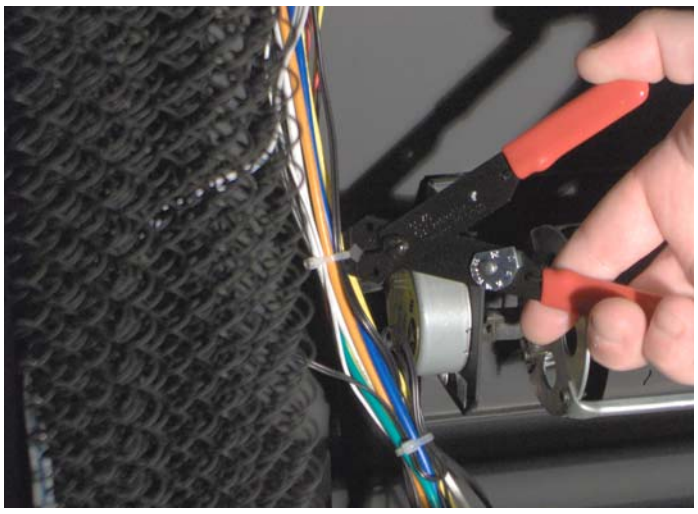
NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

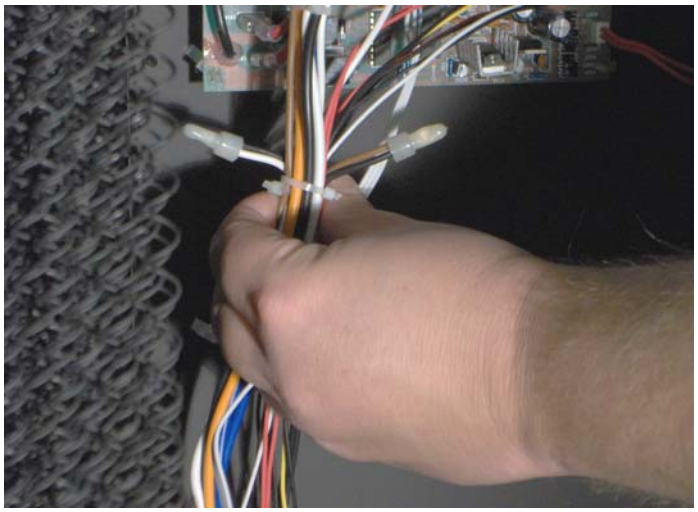
Replacement of flame cylinder motor

- Use wire cutter to remove plastic wire ties as shown



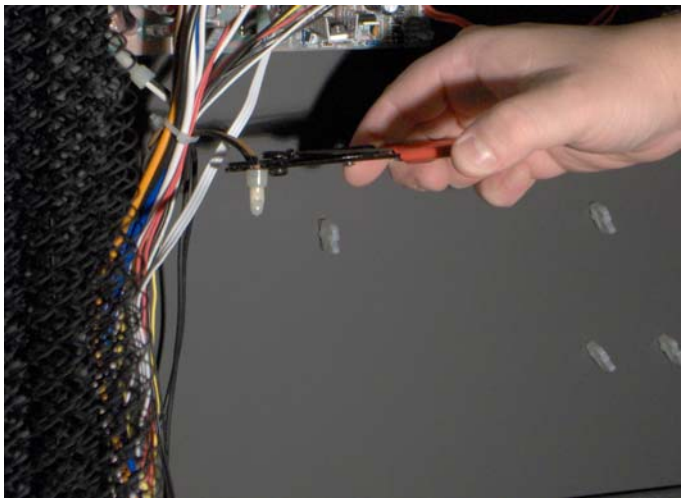
- Expose two crimp on wire nuts (white to black) and (brown to black) leading to the motor



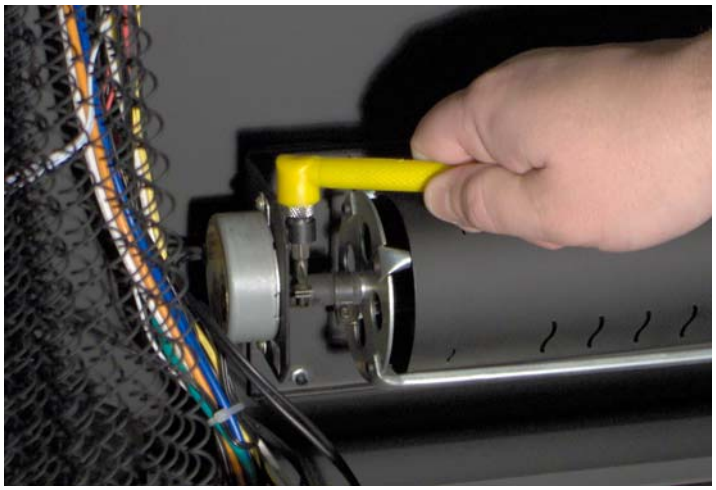


Motor removal

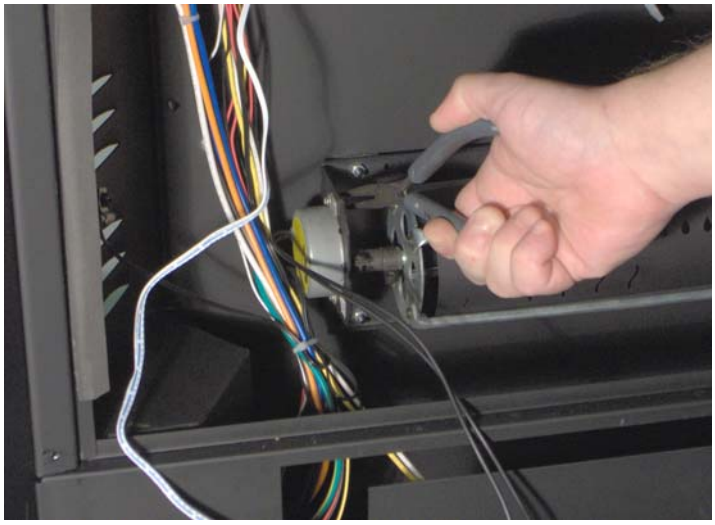
- Cut crimped on wire nuts to allow removal of the motor,



- Use a small Phillips head screw driver to loosen the linkage clamp.

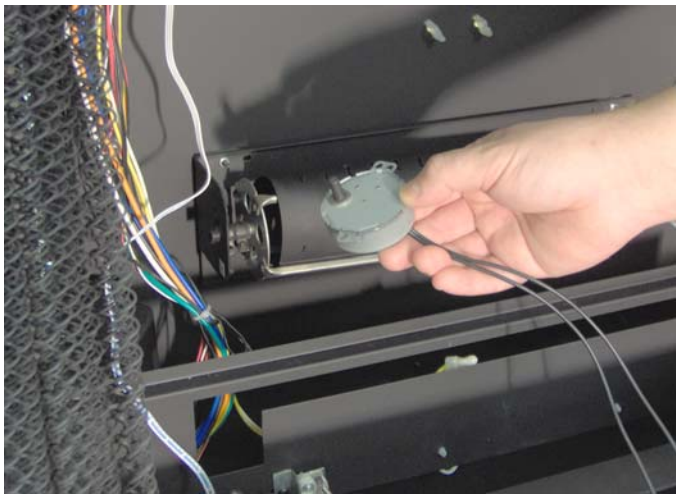


- Use needle-nose pliers to loosen the nuts securing the motor to its mounting bracket



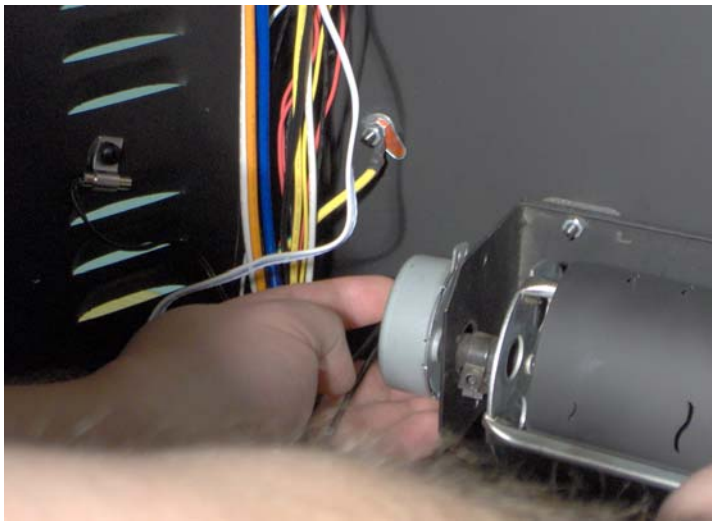
Motor removal

- Remove the defective motor.

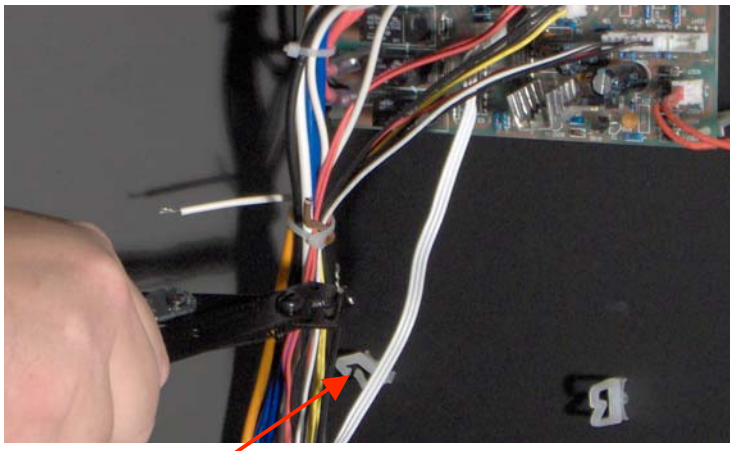


Replacement motor

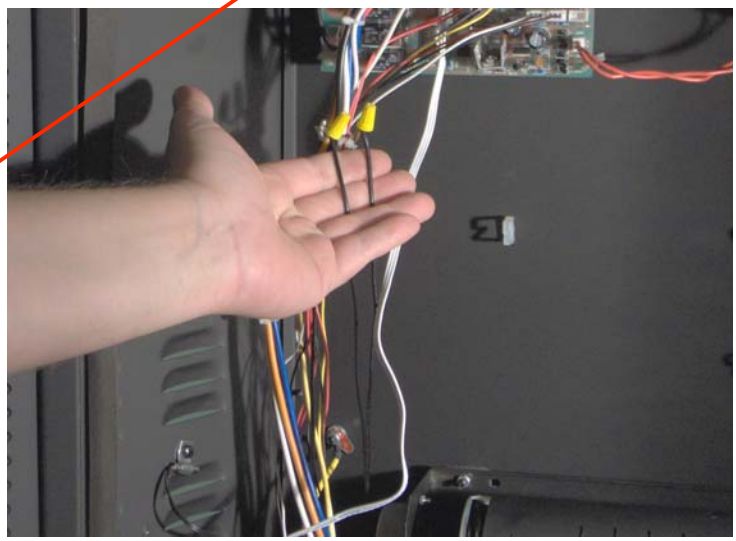
- Slide the replacement motor into the rubber linkage and tighten.
- Reinstall motor mounting screws and tighten the two hex nuts



- With wire strippers strip the ends of the replacement motor wires and also of the brown and white wires as shown.

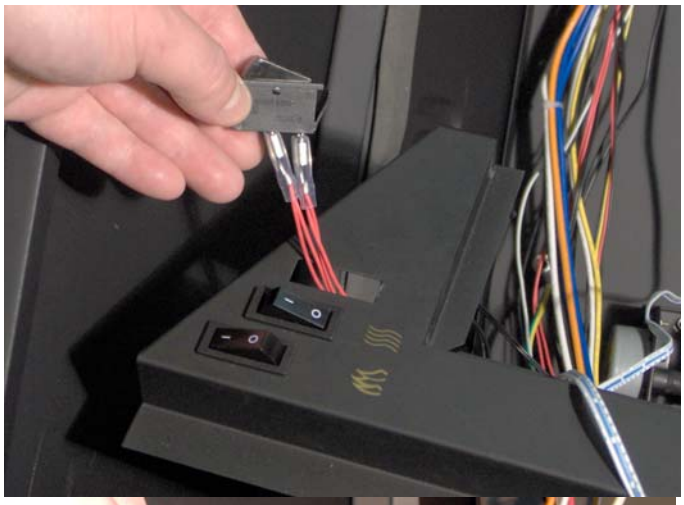


- Using wire nuts secure the connections. Use wire ties to re-bundle the wires. Tuck wires into plastic retainers



Control switches

- Top photo: Main power switch (note 4 red wires are connected to this switch to allow for the use of an optional wall switch)



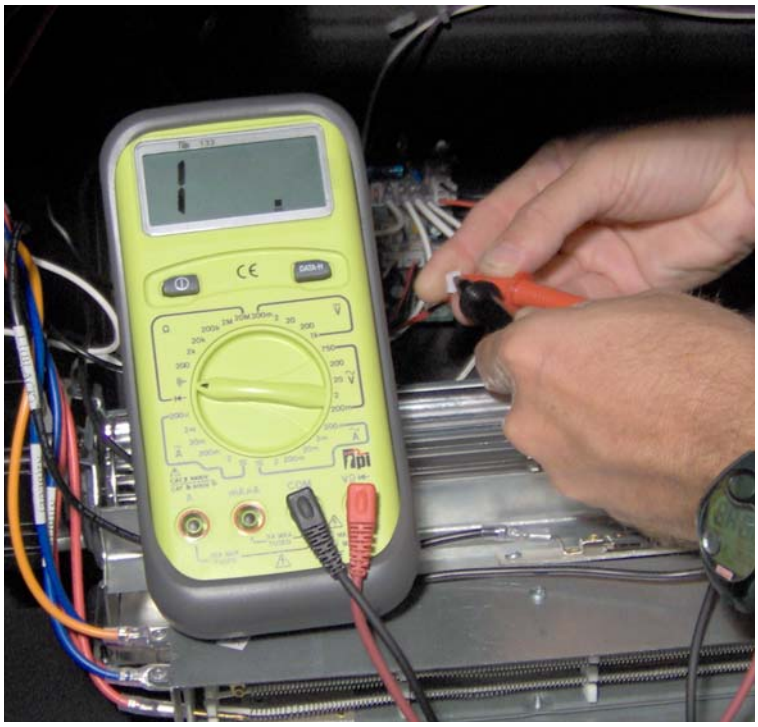
- Middle photo: Heater switch (Black and yellow wires)

- Lower photo: Flame switch (Red and black wires)

- Perform a continuity test to confirm that switches are functioning properly. Disconnect one wire from each switch before conducting the test.

Continuity test: control panel switches

- **Earlier production models of the MPE-36R have switches that were soldered to their wires rather than the push on connector that are used on later models.**
- To test these soldered switches:
  - See page 21 of the manual for the location of the switch connector at the control board.
  - Remove the connector from the control board.
  - Set your multimeter to Ohms and conduct a continuity test of the wires and switch.
  - When the switch is “off”/open the multimeter will display “1” .
  - When the switch is “on”/closed the multimeter should display a measure of resistance (0.1 approx.)
- If the multimeter displays “1” with the switch in the “on” setting, the switch is defective and must be replaced.
- **If you suspect a defective switch, test the switch 6 – 10 times to confirm proper operation and reliability.**



Remote control does not function

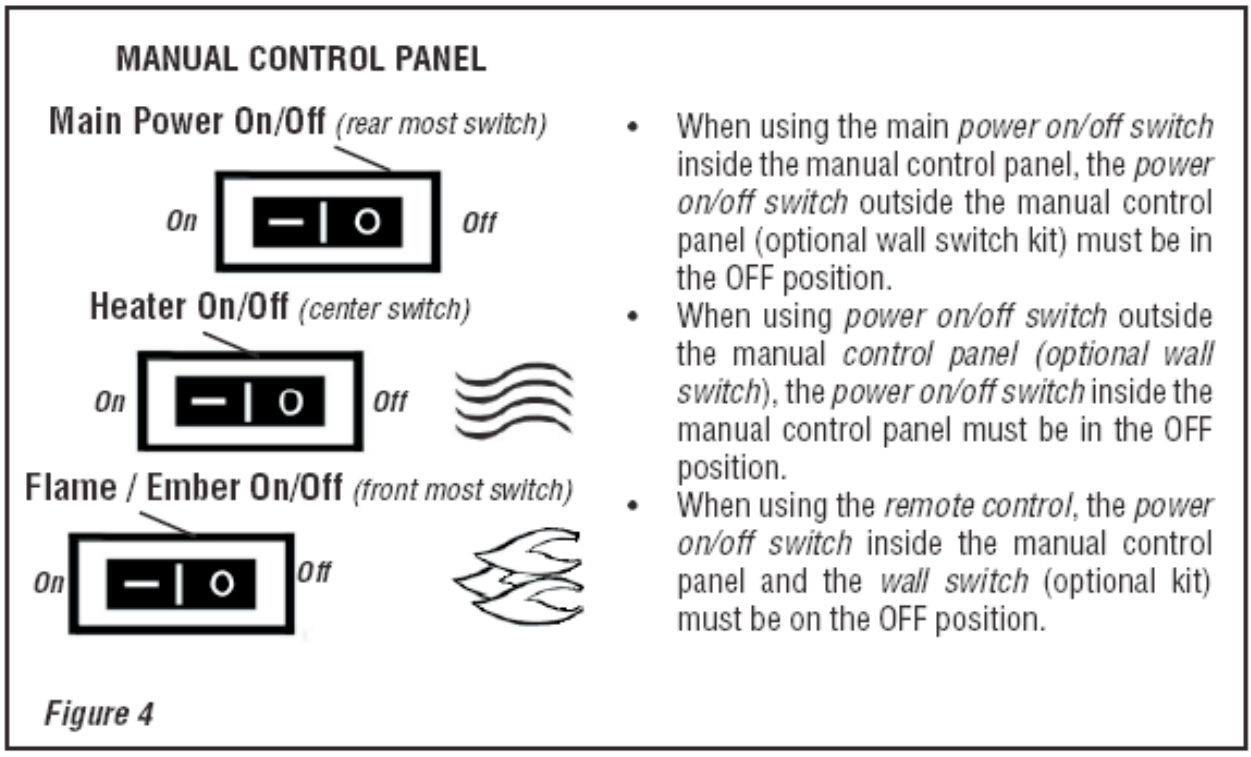
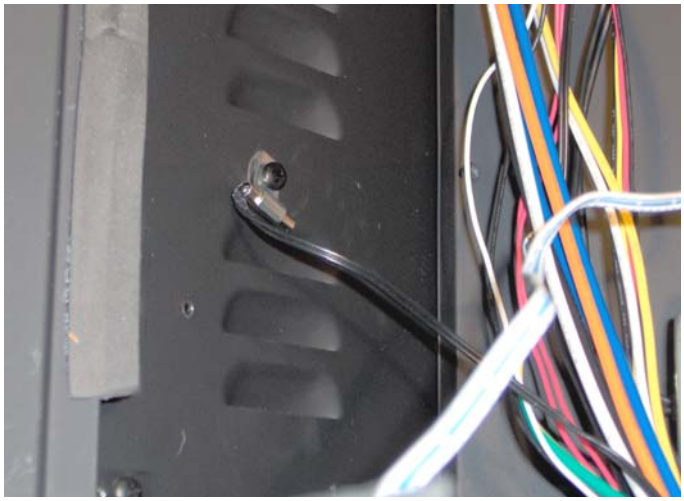


Figure 4

- Power switches must be correctly set to allow remote control operation.
- When the switches are correctly set, a “beep” will be heard whenever a button on the remote control is depressed.
- If no sound is heard test in this order:
  - Check switch settings
  - Check batteries in remote control
  - Test operation with another remote control transmitter
  - Test operation with a replacement remote receiver connected to the board
  - Replace control board

Heater sensor

- The heater sensor measures the air temperature and turns the heater and blower on and off based upon the setting of the remote control.



- If the heater does not turn on, the remote may have been set to a temperature lower than the current room temperature.
- Set the remote to “high” if the room temperature is lower than 86 degrees, the heater should turn on.

5. Heater Button - To activate the heater, press the heater button (see F), then press HI (G),

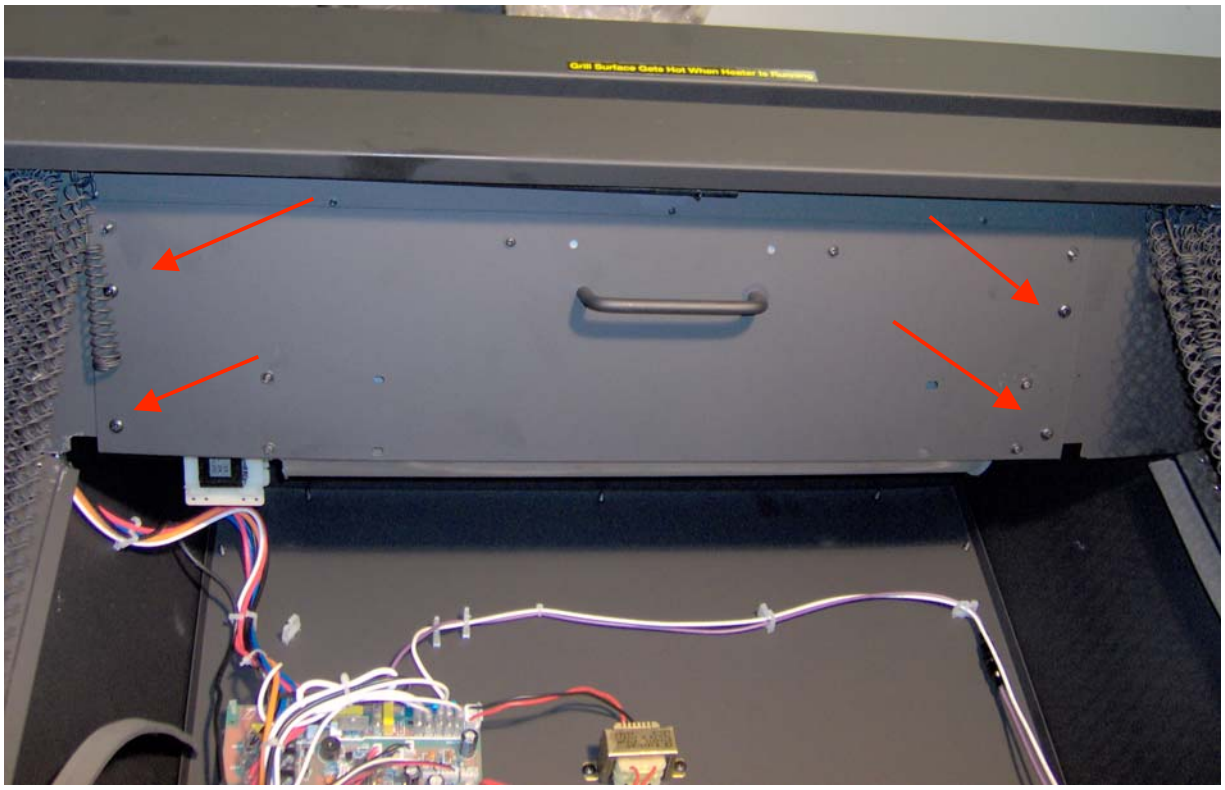
   MED (H), or LO (I). The heater is preset to the following temperatures:

   • HIGH will shut off when room reaches approximately 86° F (30° C).

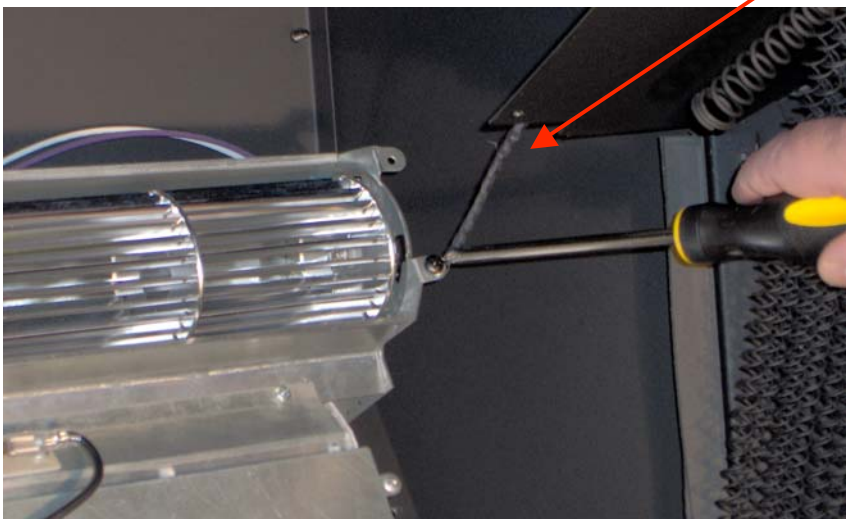
   • MED. will shut off when room reaches approximately 75° F (24° C).

   • LO. (Low) will shut of when room reaches approximately 64° F (18° C).

Heater Access



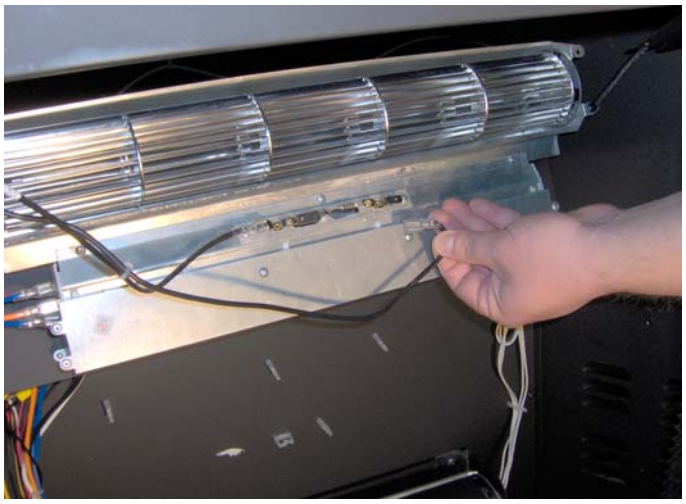
- Remove screws to release heater panel
- Grasp handle and lower heater to the service position.
- The heater will be suspended by two wire cables



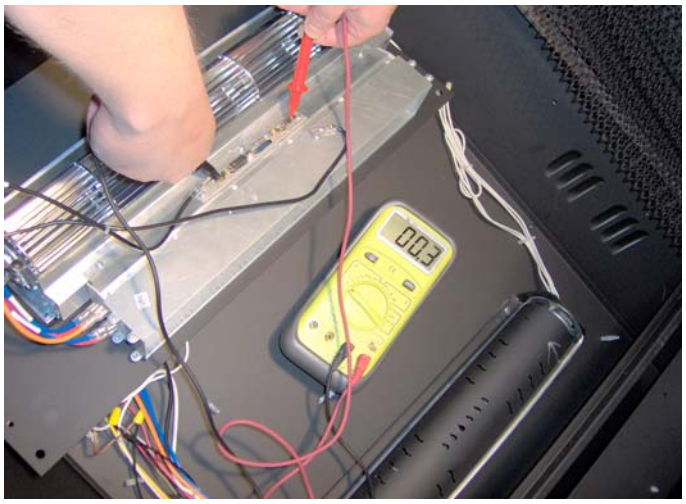
Testing the heater

- Testing the fuse plate assembly
- Unplug the fireplace or turn off the power at the circuit breaker.

- Remove one black wire lead to the fuse plate assembly as shown

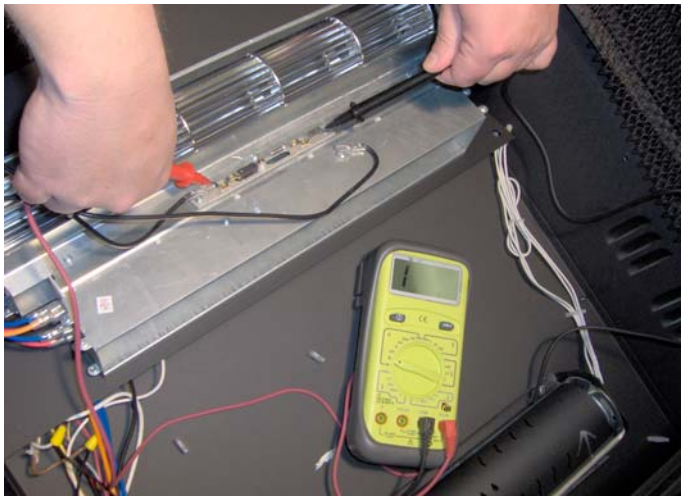


- Perform a continuity test with the multimeter set to Ohms. (picture to the right indicates a good fuse plate assembly)



Testing the heater (continued)

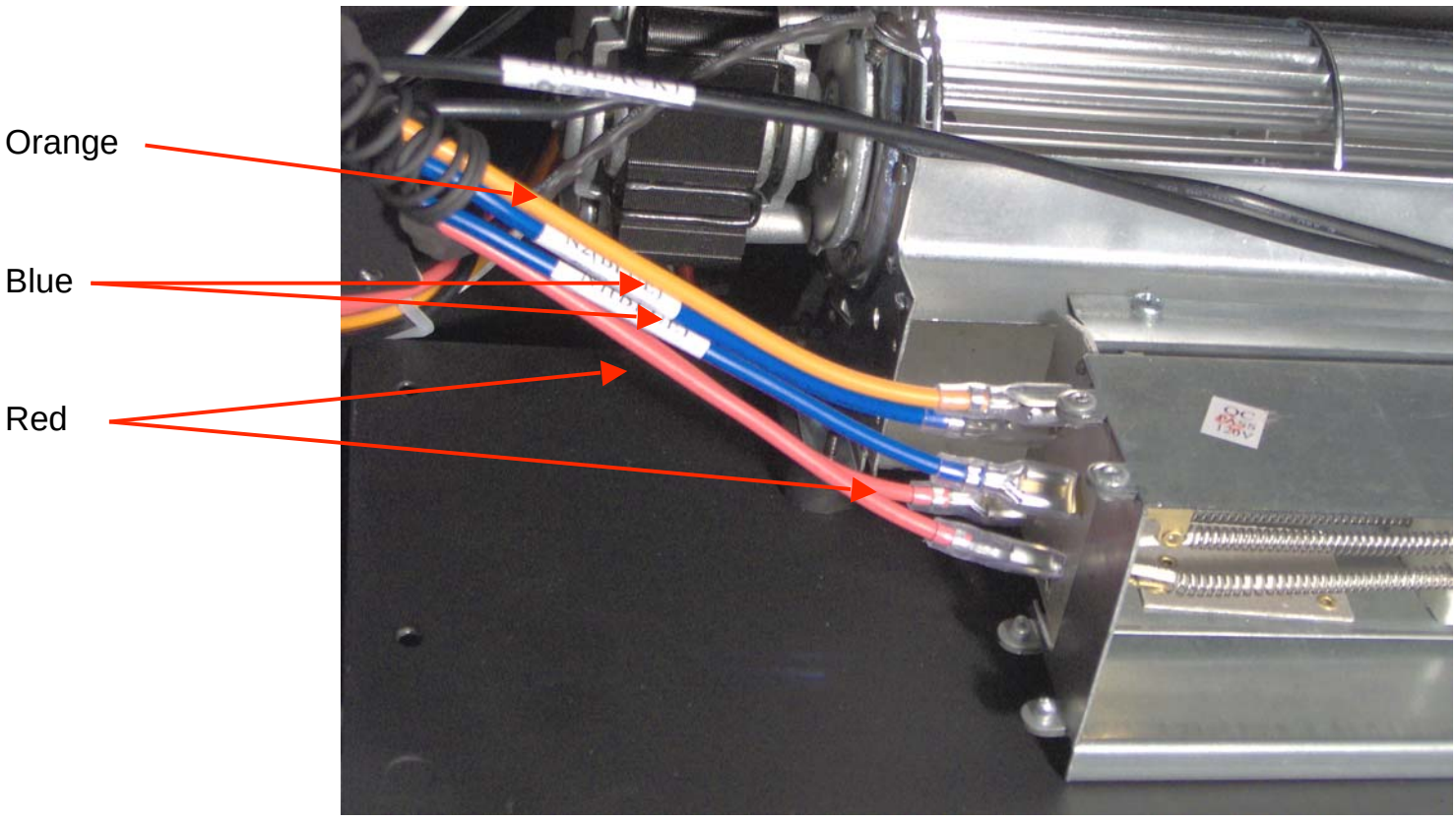
- Continuity test Fuse Plate Assembly
- Remove one black lead as shown.
- Set multimeter to “Ohms” to measure resistance.
- Touch probes to spade connectors on fuse plate assembly as shown.
- If multimeter displays “1” the fuse plate assembly has failed and must be replaced.
- **Failure of the fuse plate assembly may indicate incorrect wiring in the junction box or of the heater element, or the possibility of a short circuit .**
- **Check and confirm all wiring before reactivating power supply.**



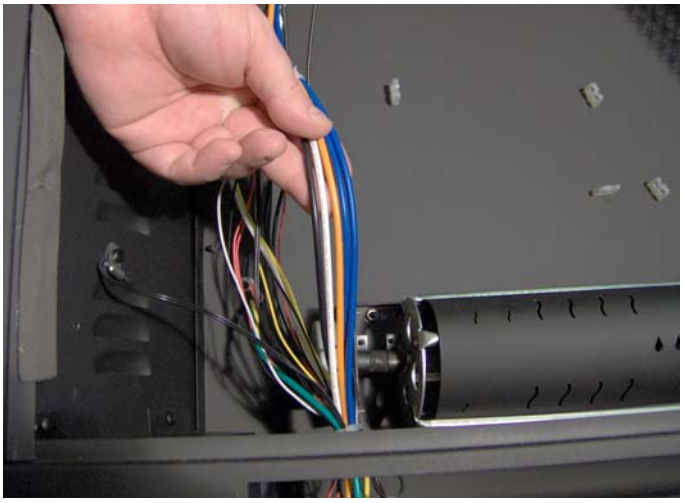
To replace “fuse plate assembly”

- Disconnect wires as shown above.
- Remove screws from end of fuse plate assembly
- Replace with part # H5043

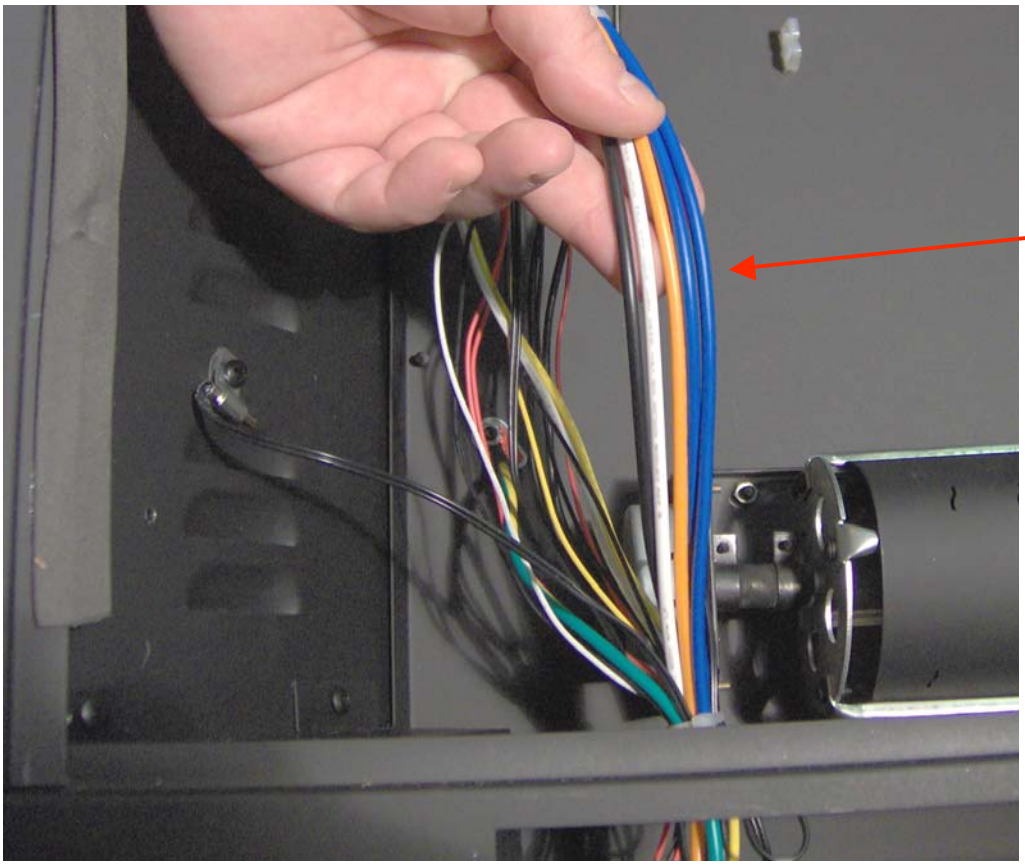
Heater element wiring



- **Heating element wiring:**
- Orange : Top center terminal
- Blue wires N1 & N2: Middle terminals
- Red wires (from control board): lower terminals



Blower wiring 120VAC



From Left:

Black

White

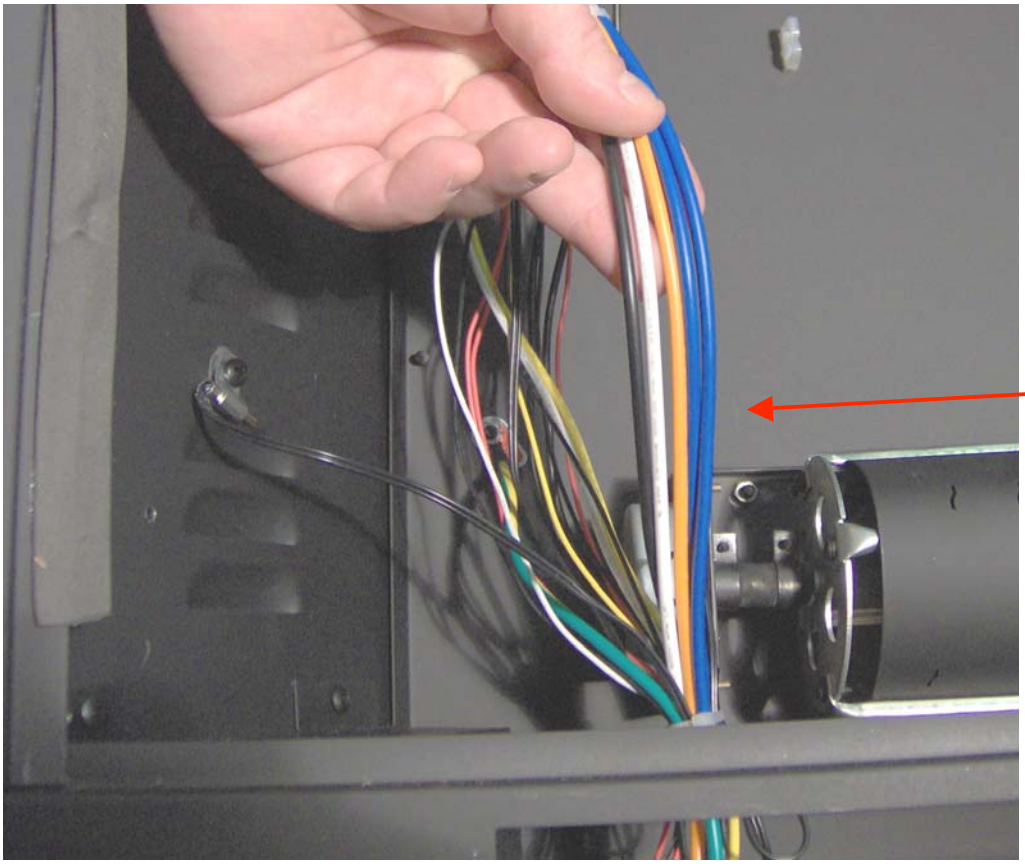
Orange

Blue

Blue

- **Note: 120 VAC operation:**
- Blue wires N1 & N2 run directly from electrical junction box to the heater element.
- Orange wire (dummy wire in 120 VAC installation) also runs directly from the electrical junction box to the heater element. Orange wire must be capped in the junction box.
- Black (hot) wire runs from junction box to the control board and then to the fusible link for the heater
- White (neutral wire) runs from the junction box to the control board,

Blower wiring 240 volt



From left:

Black

White

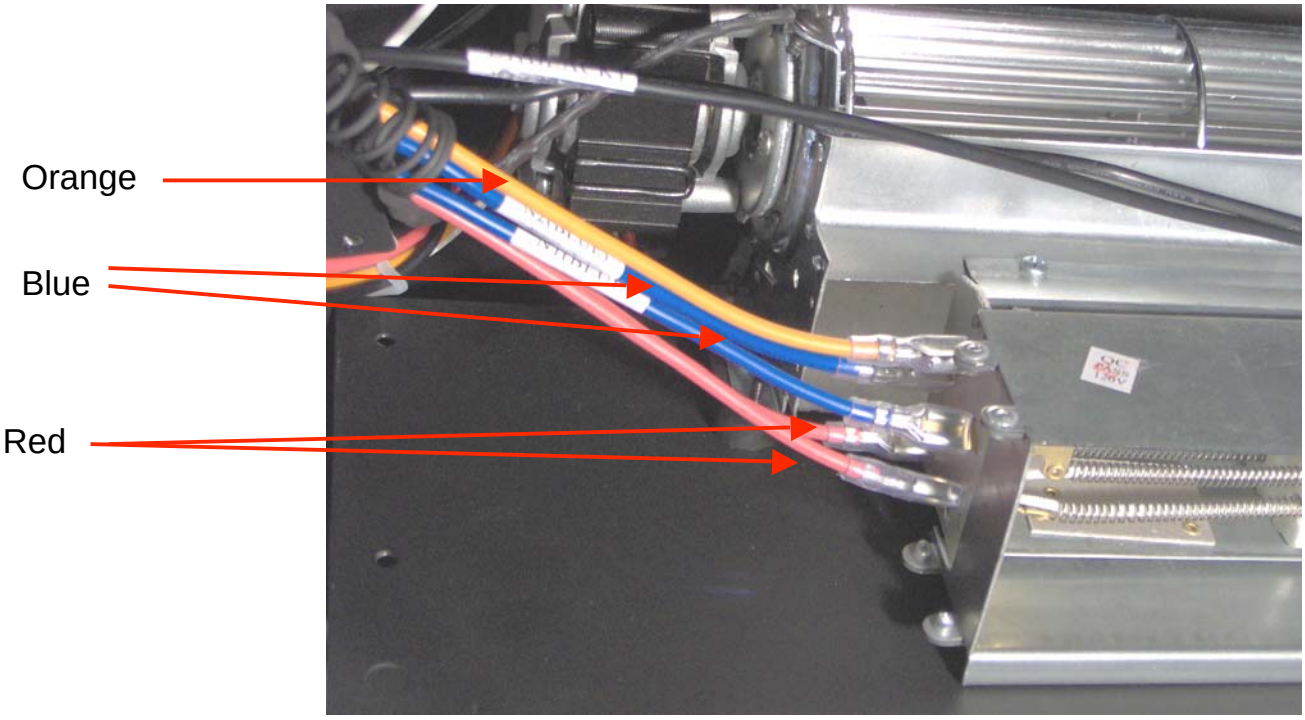
Orange

Blue

Blue

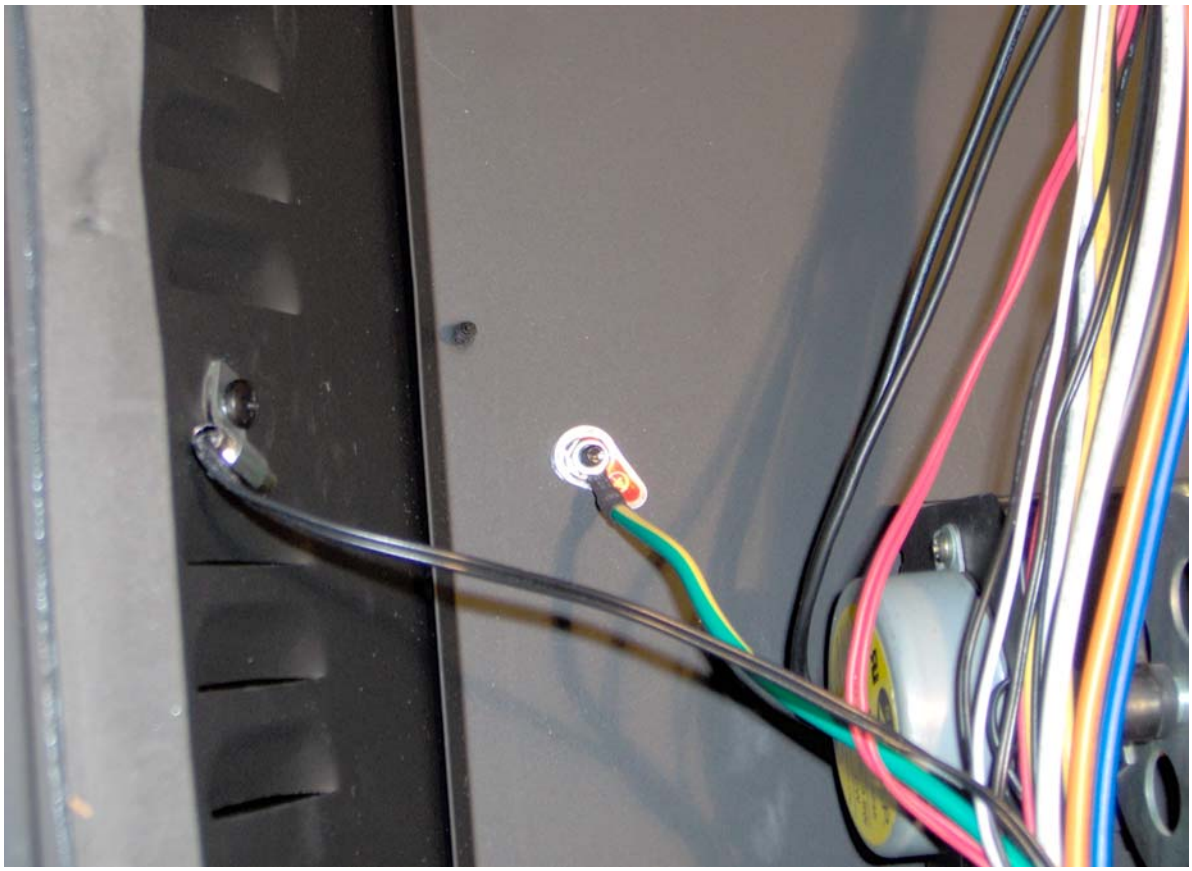
- **Note: 240 VAC operation:**
- Blue wires N1 & N2 run directly from electrical junction box to the heater element. **(Blue wires are not used in 240VAC and must not be connected to a power source in the junction box. Blue wires should be capped with wire nuts to prevent accidental contact with power supply)**
- Orange (hot) wire also runs directly from the electrical junction box to the heater element. Orange wire is connected to Hot (Red or Black power supply in the junction box)
- Black (hot) wire runs from junction box to the control board and then to the fuse plate assembly for the heater Black wire is connect to Hot (Red or Black power supply in the junction box)
- White (neutral wire) runs from the junction box to the control board.

Heater element wiring



- **To test the heater element:**
- Turn off all power at the circuit breaker or unplug the power cord (120VAC)
- Remove orange wire, both blue wires, and both red wires from the heater element.
- With the multimeter set to Ohms: touch the probes to the terminals from which the red wires were removed.
- If the multimeter displays “1” the heating element has failed and must be replaced.
- Normal Ohm readings for the heater coil (red to red) is between 65 Ohms and 90 Ohms.
- Be careful to replace all wires as shown in this picture.

Electrical grounding

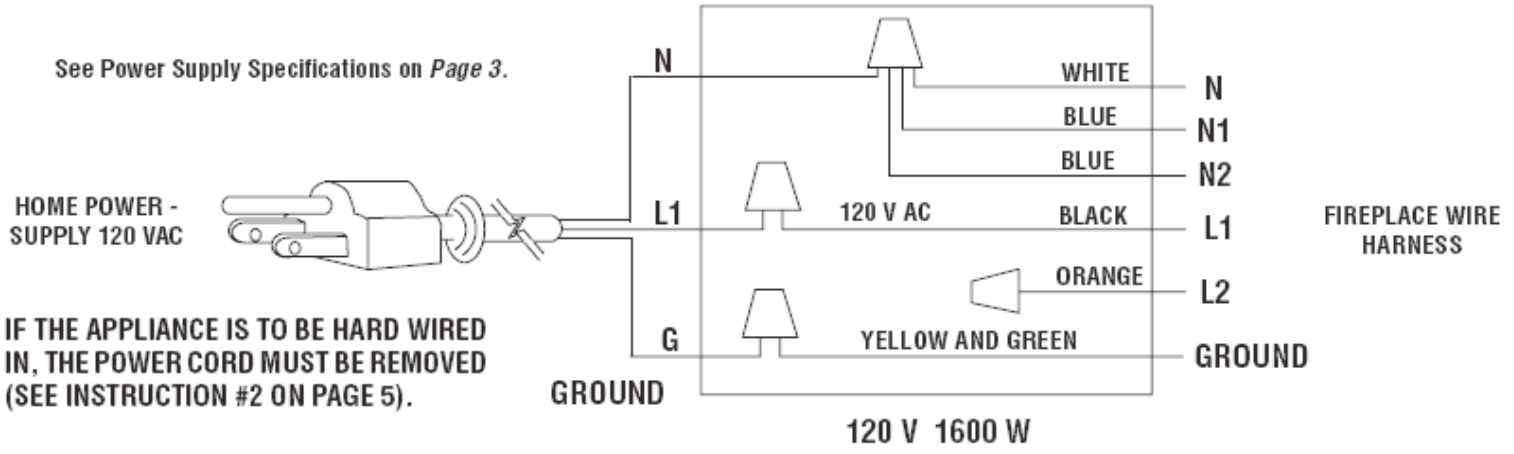


- For safe operation the fireplace must be grounded.
- In electrical junction box the green ground wire from the power supply must be firmly connected to the green and yellow wire shown here. Confirm that the ground wire is properly and securely fastened to the ground screw located to the left of the flame wheel motor.
- Inspect the power cord to make certain that the ground plug is in place and has not been removed.
- Using a multimeter confirm that the electrical outlet has proper polarity and is properly grounded.

Junction box wiring

WIRING - 120 VOLT

See Power Supply Specifications on *Page 3*.

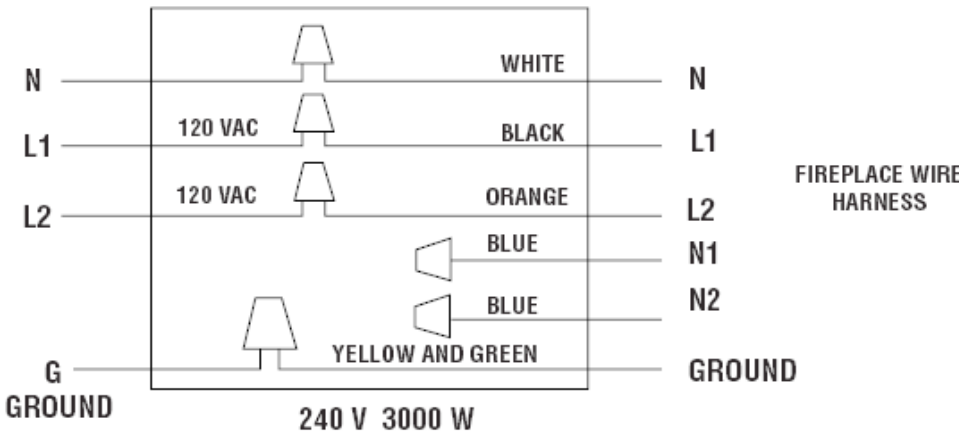


IF THE APPLIANCE IS TO BE HARD WIRED IN, THE POWER CORD MUST BE REMOVED (SEE INSTRUCTION #2 ON PAGE 5).

WIRING - 240 VOLT

See Power Supply Specifications on *Page 3*.

HOME POWER SUPPLY
240 VAC
120 V (L1) + 120 V (L2) = 240 V



THE 120 VOLT POWER CORD INSTALLED ON THIS APPLIANCE MUST BE REMOVED (SEE INSTRUCTION #2 ON PAGE 5).

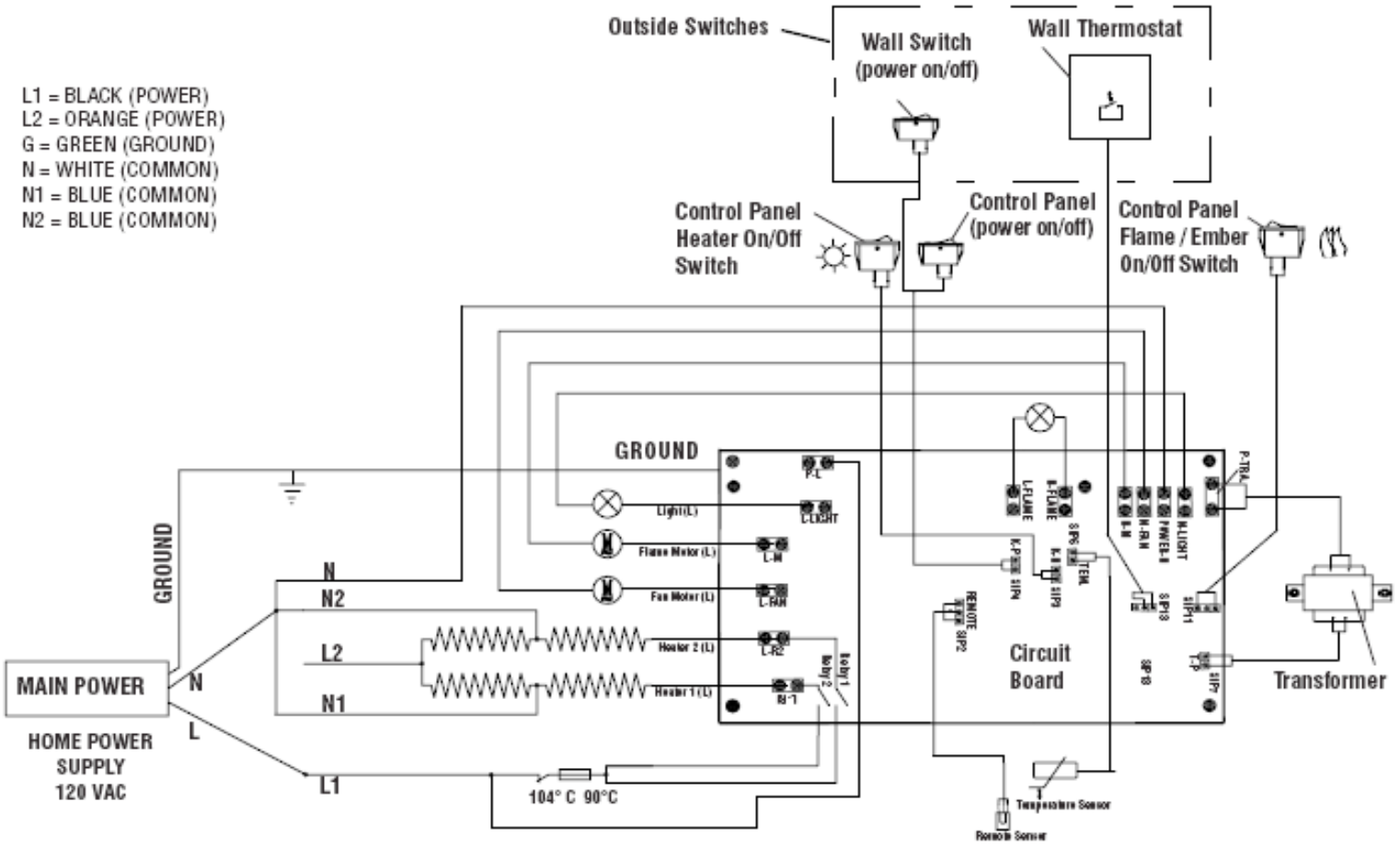
Figure 22

Wiring diagram 120 Volt

WIRING DIAGRAM - 120 VOLT

Wiring diagrams are provided here for reference purposes only. This information is also provided on schematics attached directly to the appliance on the left side.

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



Wiring diagram 240 Volt

WIRING DIAGRAM - 240 VOLT

Wiring diagrams are provided here for reference purposes only. This information is also provided on schematics attached directly to the appliance on the left side.

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

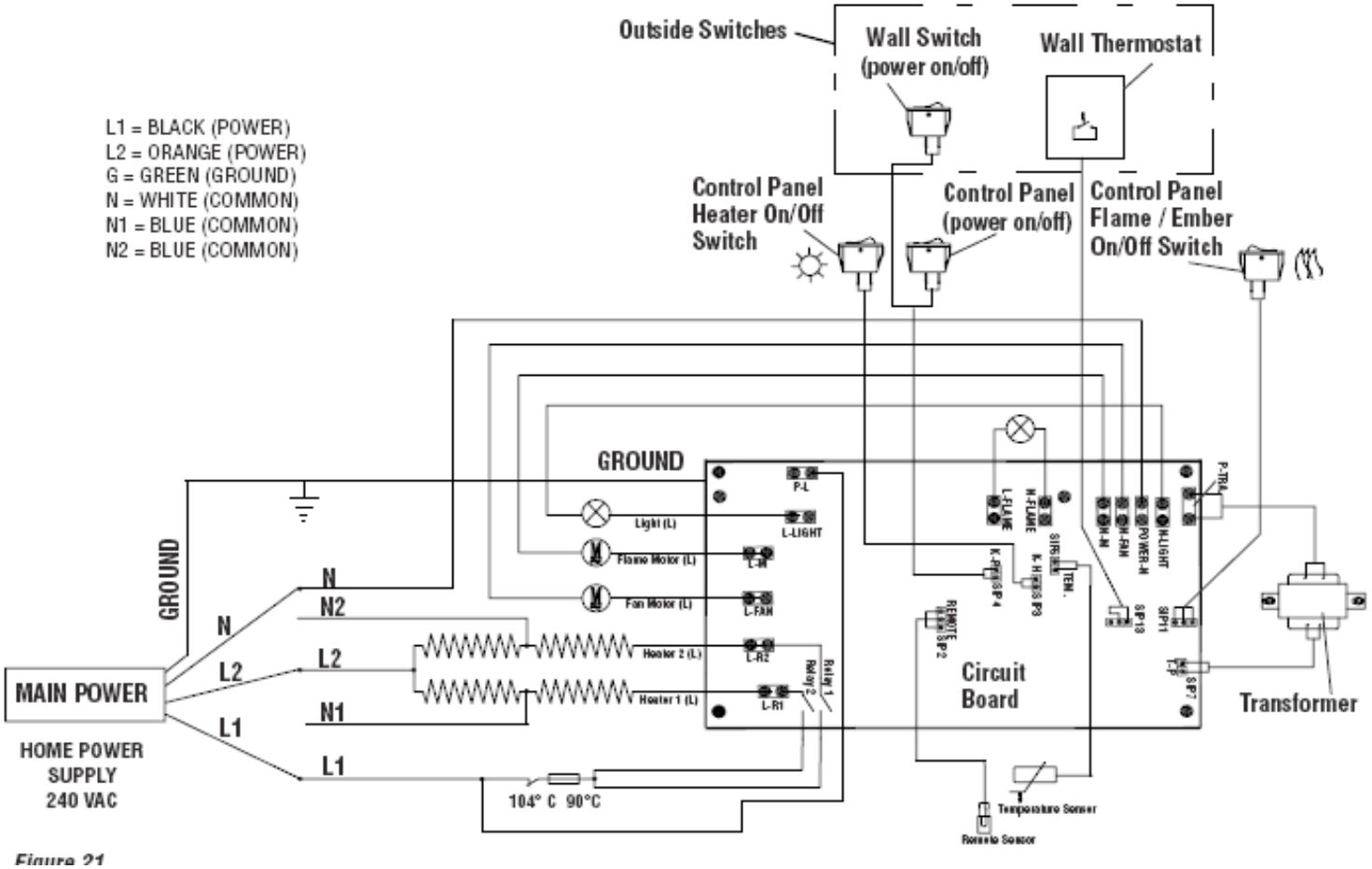


Figure 21

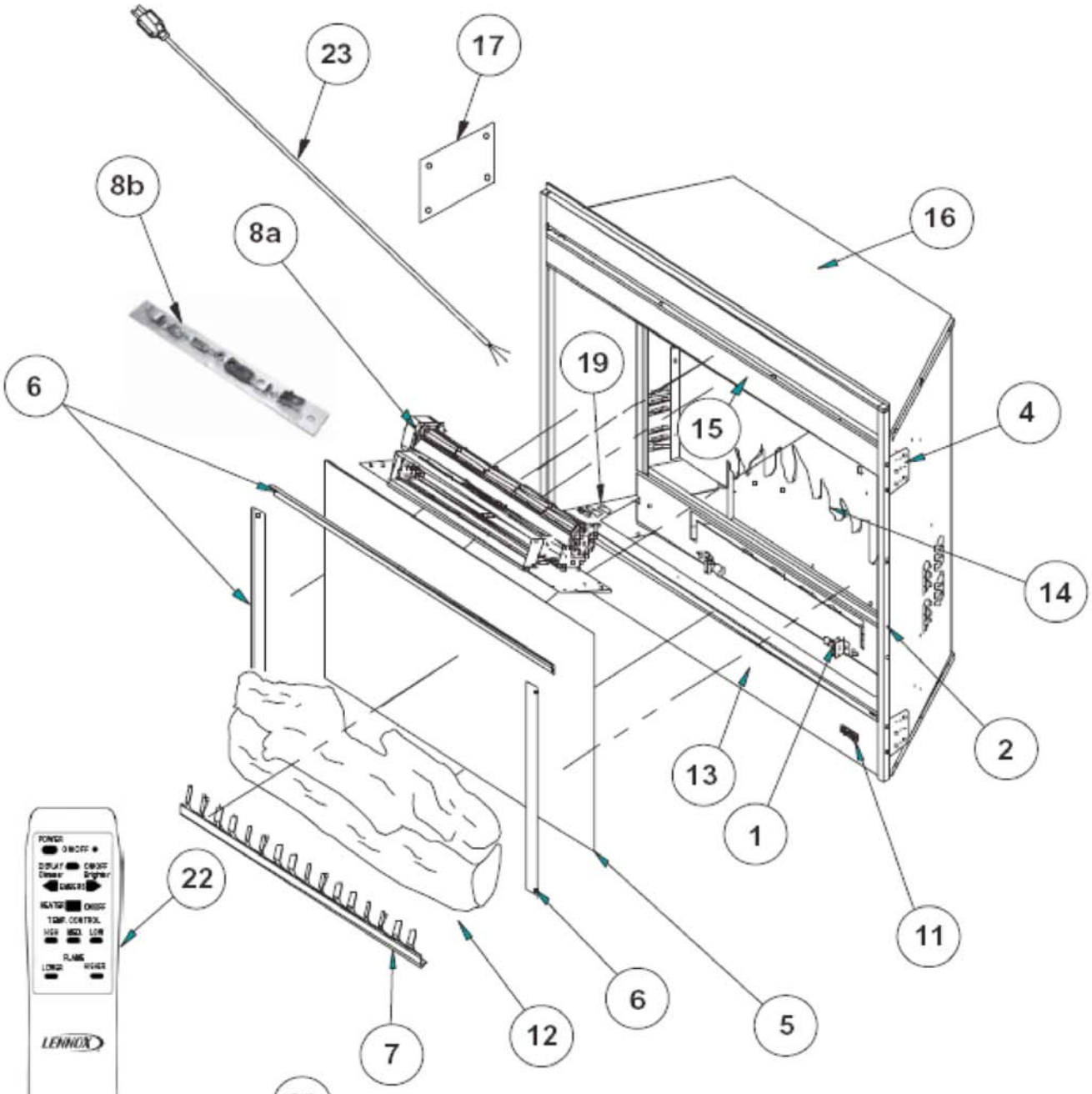
MPE-33R

REPLACEMENT PARTS

ITEM NO.	DESCRIPTION	MPE-33R	
		CAT. NO.	QTY
1	Bulb Kit, (10 Each 35w Halogen)	H1623	1
2	Side Frames, 1 Left And 1 Right	H1942	1
3	Circuit Board	H1625	1
4	Nailing Flange Kit, (4 Each)	H1626	1
5	Glass Brick Panel	H1943	1
6	Glass Retaining Bracket Kit: Left, Right, & Top	H1628	1
7	Grate Assembly	H1944	1
8a	Blower, Heating Element & Access Panel Assembly	H1630	1
8b	Fuse Plate Assembly (5 each)	H5043	1
9	Flame Cylinder Assembly	H1631	1
10	Flame Motor	H1632	1
11	Lennox Logo Kit (1 Each)	12L15	1
12	Log / Ember Bed Assembly	H1945	1
13	Panel, Bottom, Front	H1946	1
14	Panel, Flame Cover	H1947	1
15	Panel, Louver, Upper Front	H1948	1
16	Panel, Upper Frame Top	H1949	1
17	Electrical Outlet Cover Plate	H1639	1
18	Screen Set, Pull	H1640	1
19	Switch, Toggle (1 Each)	H1641	1
20	Transformer Assembly	H1642	1
21	Wire Harness	H1643	1
22	Remote Control, Electric	H1644	1
23	Power Cord (110 V only)	H1645	1

Note: If touch-up paint is needed, use Rust-oleum®, Painter's Touch, Flat Black (part number 1976) available at most stores which sell aerosol touch-up paint.

REPLACEMENT PARTS COMPONENT DIAGRAMS - MPE-33R



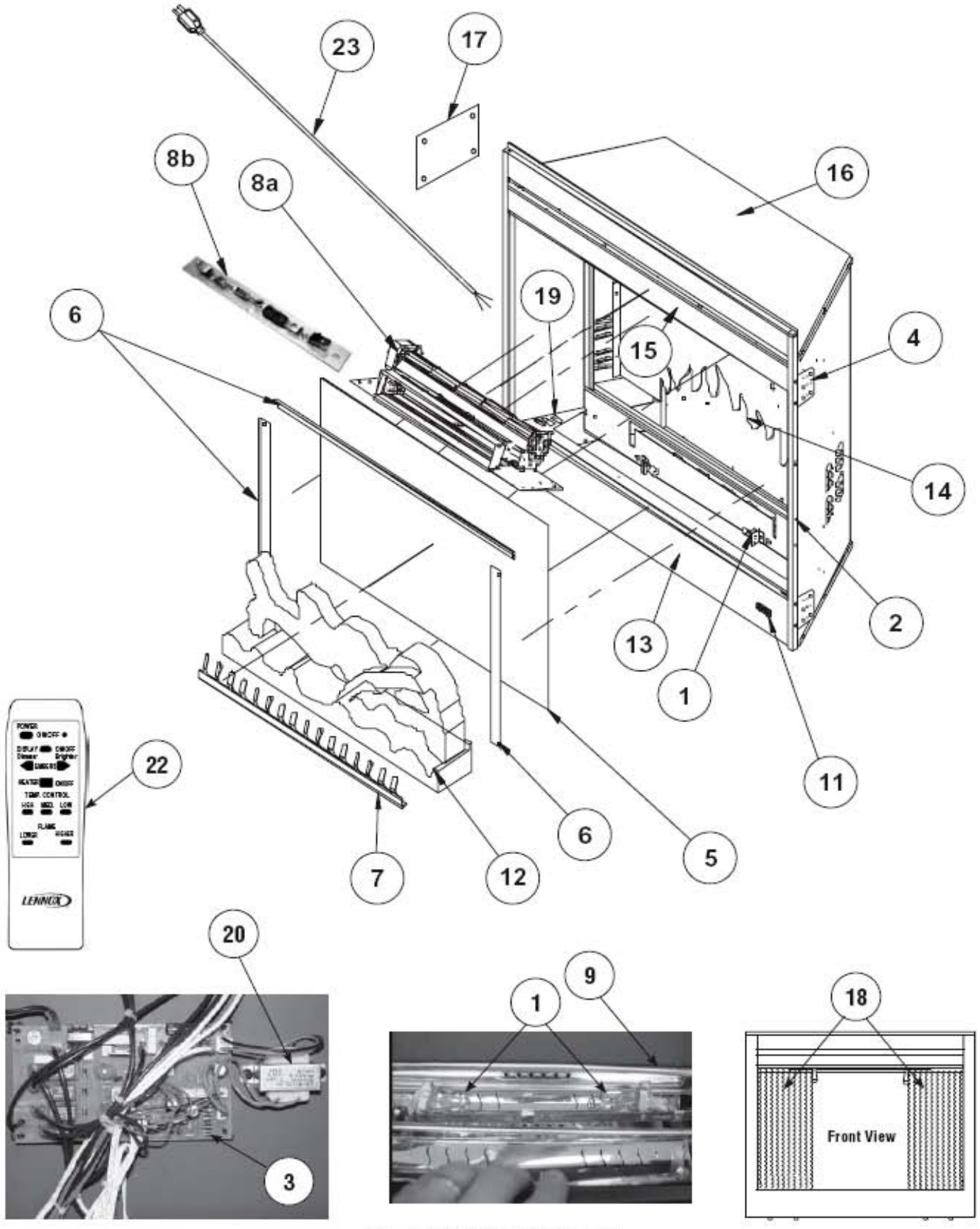
NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.

MPE-36R

REPLACEMENT PARTS

ITEM NO.	DESCRIPTION	MPE-36R	
		CAT. NO.	QTY
1	Bulb Kit, (10 Each 35w Halogen)	H1623	1
2	Side Frames, 1 Left And 1 Right	H1624	1
3	Circuit Board	H1625	1
4	Nailing Flange Kit, (4 Each)	H1626	1
5	Glass Brick Panel	H1627	1
6	Glass Retaining Bracket Kit: Left, Right, & Top	H1628	1
7	Grate Assembly	H1629	1
8a	Blower, Heating Element & Access Panel Assembly	H1630	1
8b	Fuse Plate Assembly (5 each)	H5043	1
9	Flame Cylinder Assembly	H1631	1
10	Flame Motor	H1632	1
11	Lennox Logo Kit (1 Each)	12L15	1
12	Log / Ember Bed Assembly	H1634	1
13	Panel, Bottom, Front	H1635	1
14	Panel, Flame Cover	H1636	1
15	Panel, Louver, Upper Front	H1637	1
16	Panel, Upper Frame Top	H1638	1
17	Electrical Outlet Cover Plate	H1639	1
18	Screen Set, Pull	H1640	1
19	Switch, Toggle (1 Each)	H1641	1
20	Transformer Assembly	H1642	1
21	Wire Harness	H1643	1
22	Remote Control, Electric	H1644	1
23	Power Cord (110 V only)	H1645	1

REPLACEMENT PARTS COMPONENT DIAGRAMS - MPE-36R



NOTE: DIAGRAMS & ILLUSTRATIONS NOT TO SCALE.