

## ! WARNING

**Electrical Shock Hazard**

**Disconnect power before servicing.**

**Replace all panels before operating.**

**Failure to do so could result in death or electrical shock.**

### IMPORTANT

#### Electrostatic Discharge (ESD) Sensitive Electronics

Do not open package until it is time to install the electronic board.

ESD problems are present everywhere. ESD may damage or weaken the electronic board. The new board may appear to work well after repair is finished, but failure may occur at a later date due to ESD stress.

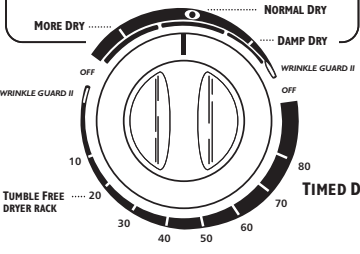
- Use an anti-static wrist strap. Connect wrist strap to green ground connection point or unpainted metal in the appliance,

-OR-

- Touch your finger repeatedly to a green ground connection point or unpainted metal in the appliance.
- Before removing the part from its package, touch the anti-static bag to a green ground connection point or unpainted metal in the appliance.
- Avoid touching electronic parts or terminal contacts; handle electronic board by edges only.
- When repackaging failed electronic board in anti-static bag, observe above instructions.

**EVEN HEAT**

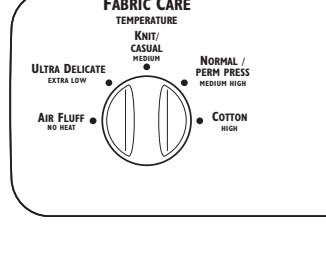
AUTO MOISTURE SENSING PLUS



TOTAL CARE SYSTEM with EVEN HEAT

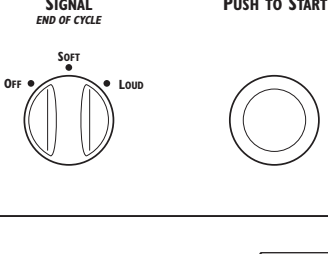
**FABRIC CARE**

TEMPERATURE

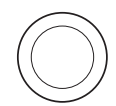


**SIGNAL**


END OF CYCLE



**PUSH TO START**



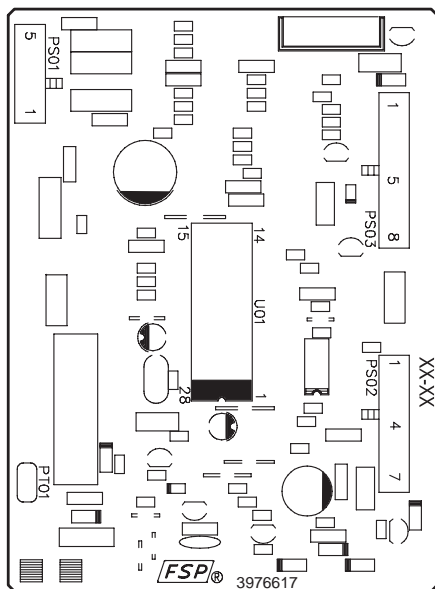
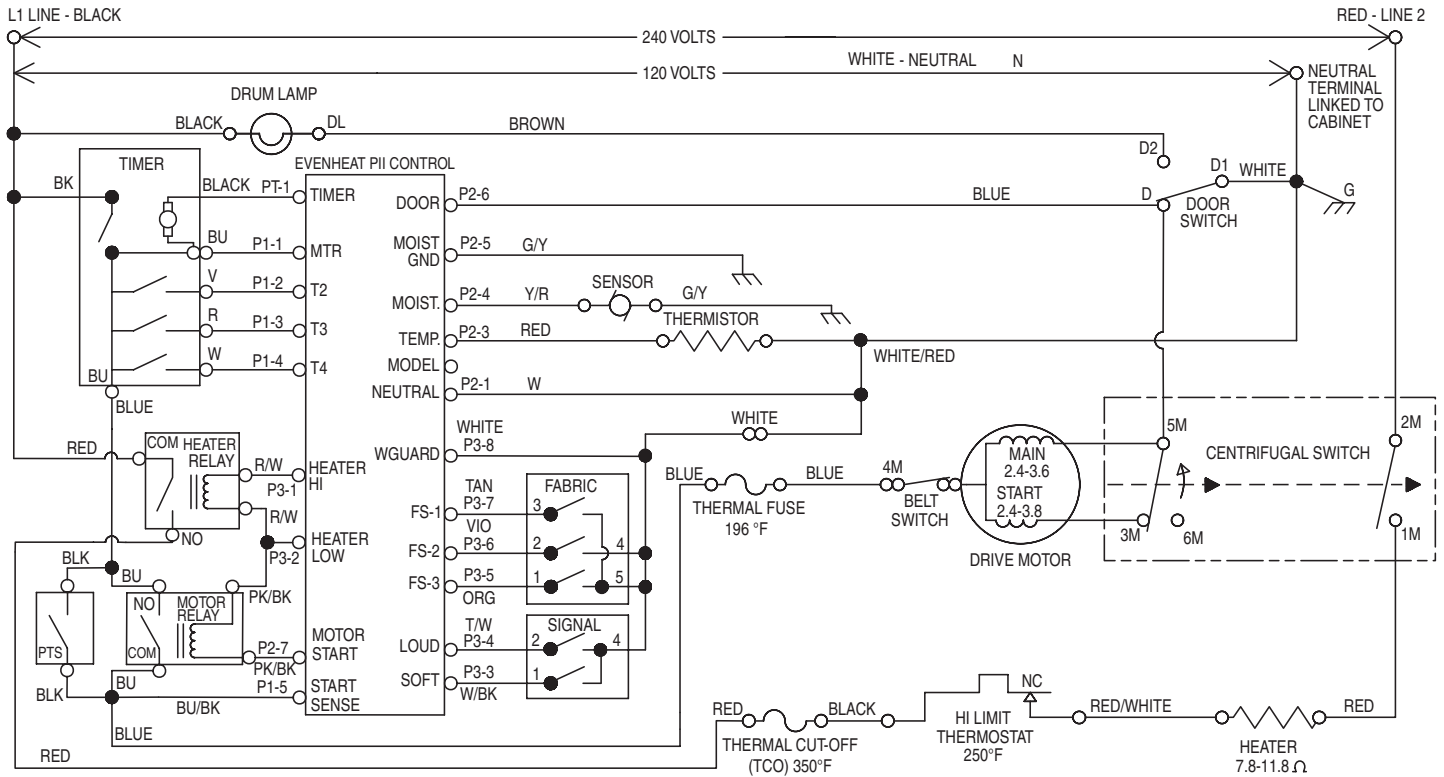
Heavy Duty • KING Size Capacity • Quiet Pak II



### Electric Dryer Wiring Diagram

CAUTION: Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing.

**IMPORTANT:** Electrostatic (static electricity) discharge may cause damage to electronic control assemblies. See page 1 for details.

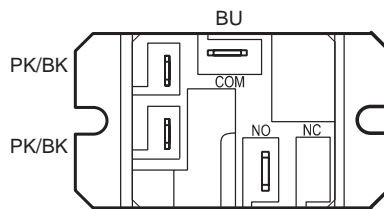


**Even Heat Electronic Control Assembly**

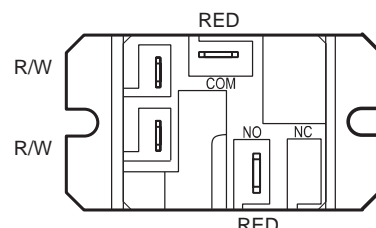
		CONTACTS				
FUNCTION		1M	2M	3M	5M	6M
START				●	●	
RUN		●	●		●	

● = CONTACTS CLOSED

**Centrifugal Switch (Motor)**

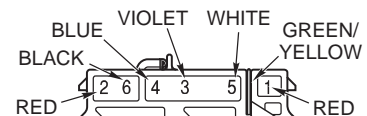


**Motor Relay**

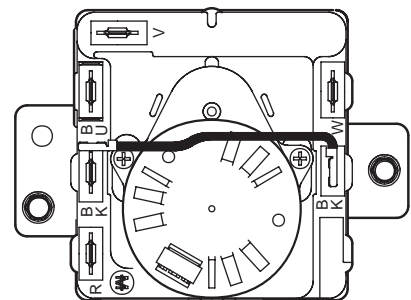


**Heater Relay**

**Drum Size:** 7.2 cubic feet  
**Drum Speed:** 51.5 ± 3 RPM CW

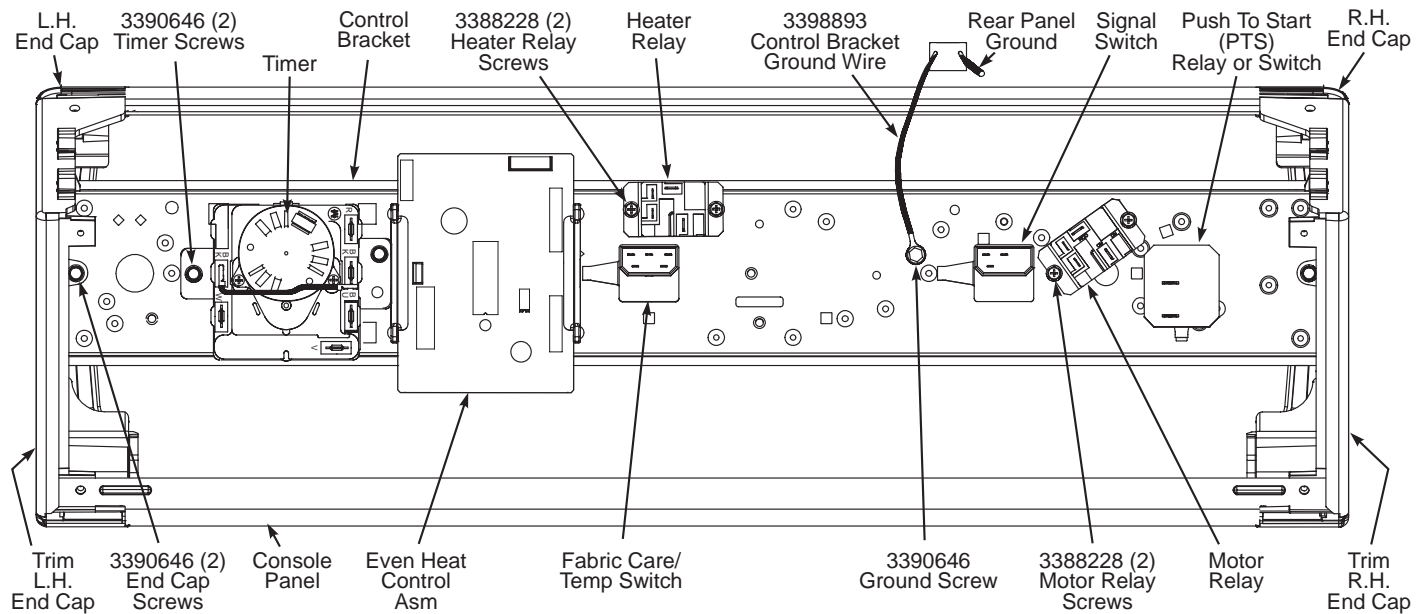


**Pluggable Drive Motor Switch**



**Timer**

**Component Location**



COMPONENT	PART NUMBER		
	MODEL NOS. 60932 60942 60952 (White)	MODEL NO. 60957 (Almond)	MODEL NOS. 60936 60956 (Graphite)
Console Panel for White Models:	60932 60942 60952	3977561 3977564 3977567	- - -
for Almond Model:	60957	-	3977568
for Graphite Models:	60936 60956	- -	3977563 3977569
End Cap - R. H.	3949274	3949275	3949277
End Cap Trim - R. H.	3951009	3951010	3953667
End Cap - L. H.	3949280	3949281	3949283
End Cap Trim - L. H.	3951013	3951014	3953668
P.T.S. Switch	3395382	3395382	3395382
P.T.S. Knob *	3402566	3402568	3402567
Control Knob *	3402572 (2)	3402574 (2)	3402573 (2)
Signal Switch	3405151	3405151	3405151
Fabric Care/Temperature Switch	3399643	3399643	3399643
Motor Relay	3405281	3405281	3405281
Heater Relay	3405281	3405281	3405281
Even Heat Control Assembly	3976617	3976617	3976617
Timer Knob *	3402594	3402596	3402595
Console Harness *	3406729	3406729	3406729
Main Harness *	3976591	3976591	3976591
Door Switch *	3392266	3392266	3392266
Thermal Cut-Off *	3977394	3977394	3977394
Thermal Fuse *	3390719	3390719	3390719
Heat Element Assembly *	3392661	3392661	3392661
Hi-Limit Thermostat *	3390291	3390291	3390291
Drive Motor *	3395654	3395654	3395654
Thermistor - NTC 10K Ohms *	3976615	3976615	3976615
Timer	3976585	3976585	3976585

\* not shown

**Damp Dry Test**

Begin with an empty dryer and clean lint screen.

- Set the following configuration:
  - Timer - DAMP DRY
  - Fabric Care/Temperature switch - COTTON HIGH
  - Signal switch - LOUD
  - Door - must be closed
- Press the PUSH TO START switch. After approximately 16 seconds, the Timer will start to advance to the OFF position, and the "End of Cycle" signal will sound. If one or more of these functions do not occur, proceed to the Factory Test.

**Factory Test**

The Factory Test allows factory/service personnel to test and verify all inputs to the Even Heat control. The basic operation of this test is to notify the operator with an audible beep every time the status of an input to the control changes state.

**Activating the Test Mode**

- Set the following configuration:
  - Door - must be open
  - Signal switch - LOUD
  - Timer - TIMED DRY or AUTO MOISTURE SENSING PLUS selection
- Turn the Fabric Care/Temperature switch from AIR FLUFF to ULTRA DELICATE three times within a five second period. A single beep will sound to indicate that the factory test mode is activated.

**NOTE:** If any of these initial conditions are not satisfied, the control will not enter the test mode.

### Test Mode Functionality

When the control is in the Factory Test mode, every input change of state will result in a beep (with the exception of the Signal switch). This includes:

- Door switch
- Moisture Sensor (short/open Sensor will result in a beep) **NOTE:** A moistened finger or damp cloth may also be used.
- Fabric Care/Temperature switch
- Push To Start (PTS) switch (with the door switch closed)
- Timer (any cam input change will result in a beep) **NOTE:** Timer will advance during test.

If any of the inputs do not result in a beep, proceed to the following component tests.

### Timer Test

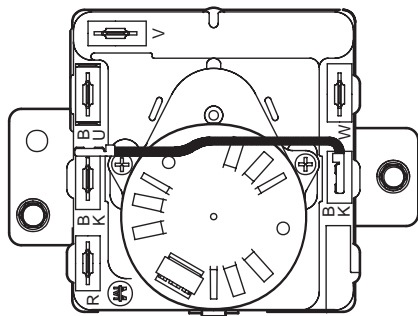
Perform the Factory Test to determine that the timer motor advances (should run continuously).

To determine if the Even Heat control board is sending the required pulse sequences to the timer motor:

1. Set the Volt/Ohmmeter to read up to 120VAC.
2. Place the probes at PT01 and P1-1 on the Even Heat control Board.
3. Operate the dryer in the TIMED DRY cycle. Meter should read ON 7 sec., OFF 113 sec.

Remove the wires from timer terminals to complete this test.

Reference contact continuity to Timer - BK.



**Timer Encoding Table**

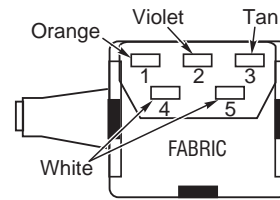
TIMED DRY MODE					
TIMER CONTACTS	TIMED DRY	COOL DOWN	WRINKLE GUARD	OFF	
W to BK	O	O	O	O	
R to BK	X	X	O	O	
V to BK	O	X	X	O	
BU to BK	X	X	X	O	
AUTO MOISTURE SENSING PLUS MODE					
TIMER CONTACTS	MORE DRY	NORMAL DRY	DAMP DRY	WRINKLE GUARD	OFF
W to BK	X	X	O	O	O
R to BK	O	O	O	O	O
V to BK	X	O	O	X	O
BU to BK	X	X	X	X	O

O = OPEN X = CLOSED

### Fabric Care/Temperature Switch Test

Remove the wires from the switch to complete this test.

Reference contact continuity to Pin 4 (White).



**Fabric Care Switch Table**

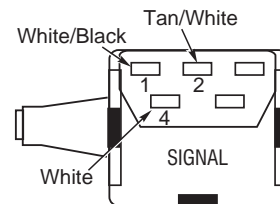
SWITCH POSITION	CONTACTS			FUNCTION
	3	2	1	
9 O'clock	O	O	O	AIR FLUFF
10 O'clock	O	O	X	DELICATE
12 O'clock	O	X	O	KNITS
2 O'clock	O	X	X	PERM PRESS
3 O'clock	X	O	O	COTTON

O = OPEN X = CLOSED

### "End of Cycle" Signal Switch Test

Remove the wires from the switch to complete this test.

Reference contact continuity to Pin 4 (White).



**Signal Switch Table**

SWITCH POSITION	CONTACTS		FUNCTION
	1	2	
Ten O'clock	O	O	OFF
Twelve O'clock	X	O	SOFT End of Cycle Signal
Two O'clock	O	X	LOUD End of Cycle Signal

O = OPEN X = CLOSED

### Heater Box High-Limit Thermostat Test

Remove the thermistor from the fan housing and plug the hole. Protect the thermistor and leads from grounding against any metal parts. See Figure 1. Completely block the exhaust outlet. Turn dryer on and allow the high-limit thermostat to cycle once, then measure the time elapsed until the high-limit thermostat trips. It should trip between 21 and 38 seconds.

**IMPORTANT:** Be sure to reinstall the thermistor after testing thermostat.

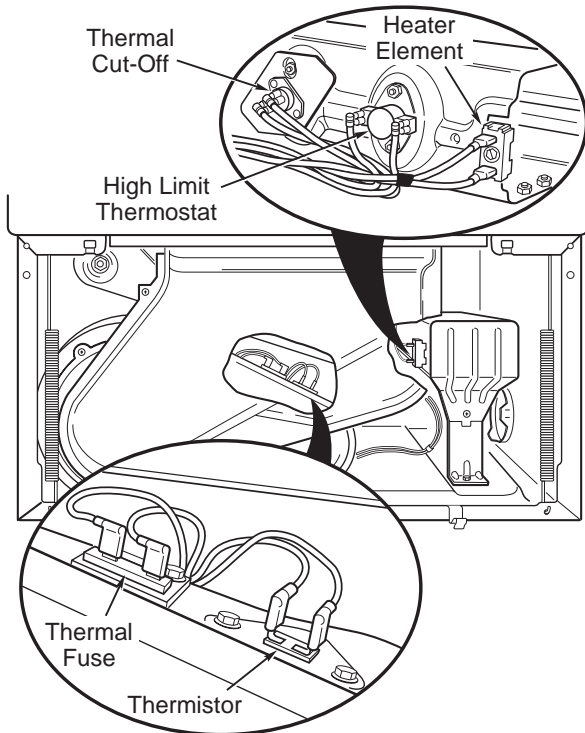


Figure 1

**Thermal Fuse Test**

A thermal fuse is used on this model. The thermal fuse is wired in series with the dryer drive motor. If the thermal fuse opens, power is shut off to the motor. (Centrifugal switch in motor also opens heater circuit.)

Once the thermal fuse has opened, it must be replaced. Check for failed thermistor, shorted heat element, or other causes of failure. Replace failed parts. See Figure 1.

**Thermistor Test or Dryer Beeps 3 Times When PTS Pressed**

An electronic temperature sensor called a thermistor is used in this model in place of an operating thermostat. The Even Heat control monitors the exhaust temperature using the thermistor and cycles the heater relay on and off to maintain the desired temperature.

**Procedure**

Begin with an empty dryer and a clean lint screen.

1. Set the following configuration:
  - Timer Dial - TIMED DRY
  - Fabric Care/Temperature switch - COTTON HIGH
  - Signal switch - LOUD
  - Door - must be closed
2. Press the Push To Start switch.

- a. If you hear three short beeps and the dryer shuts off after several seconds, the thermistor or wire harness is either shorted or open. Check wire connections at Even Heat control and thermistor. If wiring is functional, replace the thermistor: Unplug the dryer and remove the front toe panel. Remove the two wires and replace the thermistor as shown in Figure 1.
  - b. If the dryer appears to operate correctly, proceed to step 3.
3. Remove exhaust vent and start the dryer.

- a. Turn Fabric Care/Temperature switch to desired temperature to be tested, and select 20 minutes on the Timed Dry dial. Hold a glass bulb thermometer capable of reading from 90°F to 180°F in the center of the exhaust outlet. Measure exhaust temperatures with heater off and on. The correct exhaust temperatures are as follows:

FABRIC CARE/TEMP. SWITCH SETTING	HEAT TURNS OFF	HEAT TURNS ON
COTTON HIGH	150° ± 10°F	10° - 15°F below heat off
NORMAL/PERM PRESS MEDIUM HIGH	140° ± 10°F	10° - 15°F below heat off
KNIT/CASUAL MEDIUM	125° ± 10°F	10° - 15°F below heat off
ULTRA DELICATE EXTRA LOW	115° ± 10°F	10° - 15°F below heat off

- b. If the exhaust temperature is not within specified limits, check the resistance of the thermistor.

THERMISTOR RESISTANCE			
TEMP. ° F	RES. K Ω	TEMP. ° F	RES. K Ω
50°	19.9	100°	5.7
60°	15.3	110°	4.7
70°	11.9	120°	3.7
80°	9.2	130°	3.1
90°	7.4	140°	2.5

- c. If the thermistor resistance checks within normal limits, replace the Even Heat control.

**Thermal Cut-Off**

This unit is equipped with a “one-shot” thermal cut-off. See Figure 1. If the dryer does not heat and there are 240 Volts to the dryer, disconnect the dryer from its electrical source and check thermal cut-off for continuity. If continuity is open, thermal cut-off has failed and must be replaced.

**NOTE:** If the heater box thermal cut-off has failed, replace the cut-off and high-limit thermostat. In addition, check for failed heater element, or blocked or improper exhaust system.

**PROBLEM: Dryer Will Not Run**

(Refer to Motor Strip Circuit, page 8)

If the motor will not start, check the following:

- LINE VOLTAGE
- HARNESS/CONNECTION
- MOTOR RELAY
- PUSH TO START SWITCH
- THERMAL FUSE
- BELT/BELT SWITCH
- MOTOR
- DOOR SWITCH
- EVEN HEAT CONTROL

**IMPORTANT:** Electrostatic (static electricity) discharge may cause damage to electronic control assemblies. See page 1 for details.

**Procedure:**

1. Set the following configuration:
  - Door - must be closed
  - Timer - TIMED DRY
  - Fabric Care/Temperature switch - AIR FLUFF
2. Check connector pins in P2 at the Even Heat control to make sure they are making contact.
3. Check the voltage at the Timer (reference Neutral):
  - a. At Timer BK voltage should be 120VAC. If not, check the input voltage line (L1).
  - b. If voltage is okay at BK, check Timer voltage at BU. If voltage is not 120VAC, replace Timer.
4. Check for 120VAC at the PTS switch and Motor Relay. 120VAC (reference Neutral) should be present at:
  - one side of the PTS switch
  - one side of the Motor Relay contacts (large terminals)

If 120VAC is not present at these locations, check the harness connections. If harness connections are good, go to Step 5.
5. Press and hold the PUSH TO START switch.
  - a. Check the voltage at the PTS switch. If 120VAC is not present at both terminals, replace PTS switch.
  - b. Check the voltage at the Motor Relay: Both sides of the Motor Relay contacts (large terminals) should be 120VAC with reference to Neutral.
 

If 120VAC is not present at one of the Motor Relay contacts, then check for 48VDC from P2-7 to P3-2. If 48VDC is correctly shown, replace the Motor Relay. If not 48VDC, then replace the Even Heat control.
6. If the motor does not start, check the Door switch (D to D1). There should be continuity when the door is closed. If not, replace the Door switch.

7. Press the PUSH TO START switch. If the motor starts but does not continue to run, replace the Even Heat control.
8. Press and hold the PUSH TO START switch. If motor does not start, replace motor.

**PROBLEM: Dryer Will Not Heat (Refer to Heater Strip Circuit, page 8)**

If the heat will not turn on, check the following:

- LINE VOLTAGE (240V)
- HARNESS/CONNECTION
- HEATER RELAY
- THERMAL CUT-OFF
- HI LIMIT THERMOSTAT
- HEATER
- CENTRIFUGAL SWITCH
- THERMISTOR
- EVEN HEAT CONTROL

**IMPORTANT:** Electrostatic (static electricity) discharge may cause damage to electronic control assemblies. See page 1 for details.

**Procedure:**

1. Set the following configuration:
  - Door - must be closed
  - Fabric Care/Temperature switch - COTTON
  - Timer - TIMED DRY
2. Press the PUSH TO START switch. The dryer will start, and the heater will take several seconds to turn on.
3. Check the voltage at the Heater Relay:
  - P3-1 to P3-2 should be 48VDC
  - COM to NO should be ~0VAC
  - a. If the voltage is 48VDC at the P3-1 to P3-2 terminals, and ~240VAC at the COM and NO terminals, replace the Relay.
  - b. If the voltage is 0VDC at the P3-1 to P3-2 terminals, replace the thermistor.
  - c. If, after replacing the thermistor, the voltage is still 0VDC at the P3-1 to P3-2 terminals, replace the Even Heat control.

**PROBLEM: Dryer Heats During Air Fluff/ No Heat Cycle (Refer to Heater Strip Circuit, page 8)**

If the dryer heats when the Fabric Care/Temperature switch is set to AIR FLUFF (No Heat), check the following:

- HARNESS/CONNECTION
- HEATER RELAY
- FABRIC CARE SWITCH
- EVEN HEAT CONTROL

**IMPORTANT:** Electrostatic (static electricity) discharge may cause damage to electronic control assemblies. See page 1 for details.

**Procedure:**

1. Perform the Fabric Care/Temperature Switch Test on page 4.
2. Set the following configuration:
  - Door - must be closed
  - Fabric Care/Temperature switch - AIR FLUFF
  - Timer - TIMED DRY
3. Press the PUSH TO START switch.
  - a. Check voltage on Heater Relay. If P3-1 to P3-2 is 0VDC, replace the Heater Relay.
  - b. If P3-1 to P3-2 is 48VDC, replace the Even Heat control.

**PROBLEM: Dryer Won't Shut Off (Refer to Motor and Moisture Sensor Strip Circuits, page 8)**

If the dryer will not shut off, check the following:

- PUSH TO START (PTS) SWITCH
- HARNESS/CONNECTION
- MOTOR RELAY
- MOISTURE SENSOR
- EVEN HEAT CONTROL

**IMPORTANT:** Electrostatic (static electricity) discharge may cause damage to electronic control assemblies. See page 1 for details.

**Procedure:**

1. Set the Timer to OFF. If the dryer starts running as soon as it is plugged in, replace the Timer.
2. Set the following configuration:
  - Dryer - power cord plugged in
  - Door - must be closed
  - Fabric Care/Temperature switch - COTTON
  - Timer - TIMED DRY for less than 10 minutes
3. If the dryer starts running before the PUSH TO START switch is pressed, replace the PTS switch.
4. If, after replacing the PTS switch, the dryer still starts before the PUSH TO START switch is pressed, replace the Motor Relay.
5. If the dryer does not stop after the set time elapses, check the Motor Relay.
  - a. If the voltage is 0VAC at COM to NO, replace the Motor Relay.
  - b. If the voltage is 120VAC at COM to NO, replace the Even Heat control.
6. If the dryer will not terminate its cycle when set to AUTO MOISTURE SENSING PLUS, check the Moisture Sensor.
  - a. If there is continuity to Ground for Yellow/Red (Y/R) wire with no load, look for a short in the Sensor or Y/R wire. Verify harness connections both at the Sensor and the Even Heat control.

- b. If the Sensor and Y/R wire are good, replace the Even Heat control.

**PROBLEM: Dryer Shuts Off Before Clothes Are Dry (Refer to Thermistor Test, page 5, and Moisture Sensor Strip Circuit, page 8)**

If the dryer shuts off too soon when set to the AUTO MOISTURE SENSING PLUS cycle, check the following:

- HARNESS/CONNECTION
- MOISTURE SENSOR
- THERMISTOR
- EVEN HEAT CONTROL

**IMPORTANT:** Electrostatic (static electricity) discharge may cause damage to electronic control assemblies. See page 1 for details.

**Procedure:**

1. Test the Moisture Sensor by following the procedure outlined in "Factory Test", beginning on page 3. If the Moisture Sensor fails the "Factory Test" (does not produce a beep sound), check the Moisture Sensor.
  - a. If there is continuity to Ground for Yellow/Red (Y/R) wire with no load, look for a short in the Sensor or Y/R wire. Verify harness connections both at the Sensor and the Even Heat control.
  - b. If the Sensor and Y/R wire are good, replace the Even Heat control.
2. If Factory Test is passed, verify thermistor by performing test procedures outlined in "Thermistor Test".
3. If problem persists after replacing Moisture Sensor and thermistor, replace the Even Heat control.

**PROBLEM: Timer Continuously Advances (Refer to Timer Drawing, page 2, and Motor Strip Circuit, page 8)**

If the dryer continues to advance past the OFF position, check the following:

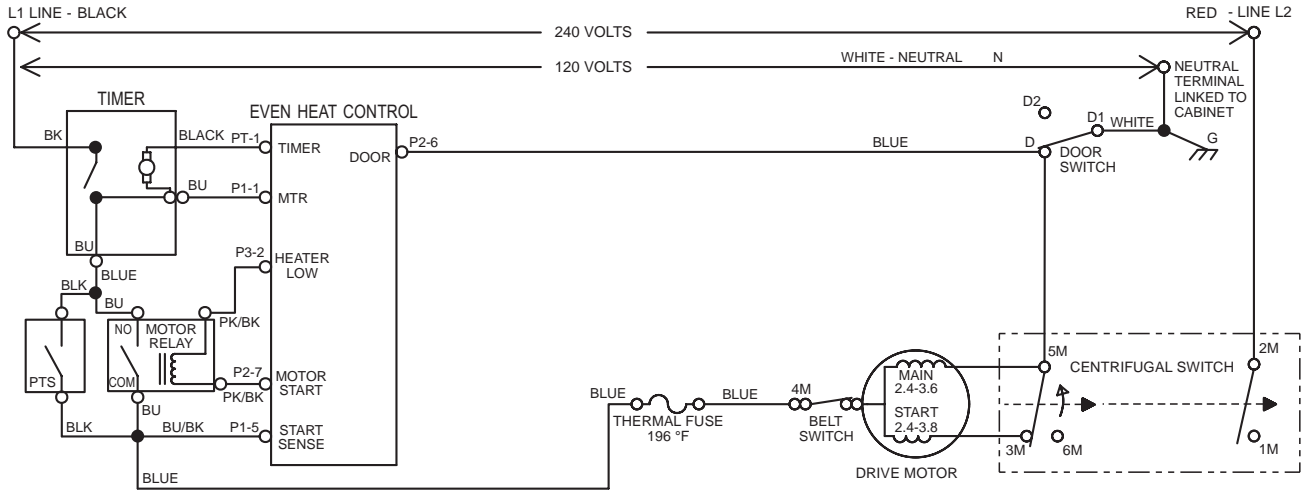
- HARNESS/CONNECTION
- TIMER

**IMPORTANT:** Electrostatic (static electricity) discharge may cause damage to electronic control assemblies. See page 1 for details.

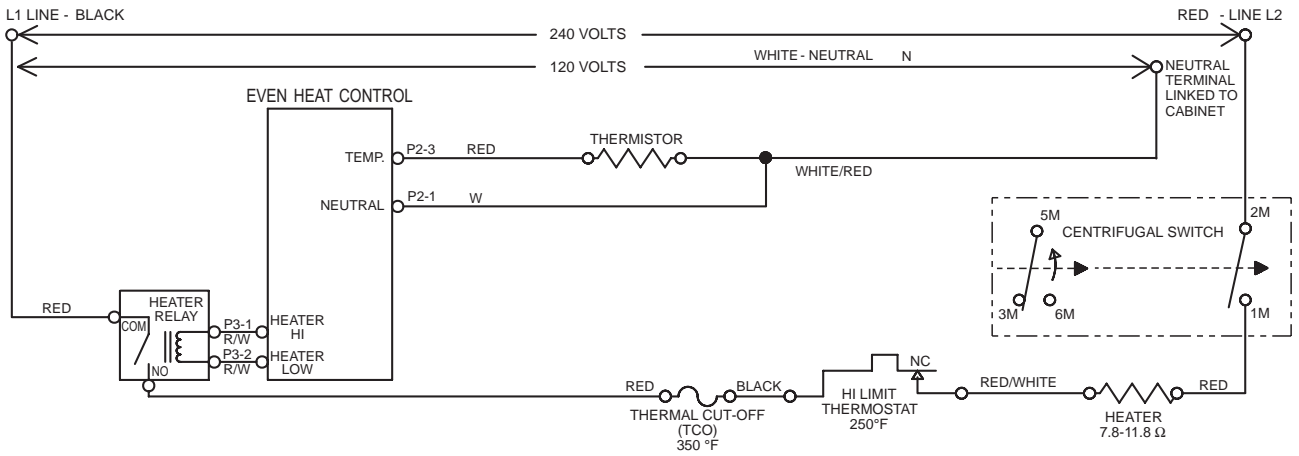
**Procedure:**

1. Verify the Blue wire and the Black L1 wires are in the correct positions: The Black wire goes next to the Red wire, and the Blue wire is located on the three terminals that are close to each other.
2. Test the Timer by following the procedure outlined in "Factory Test", beginning on page 3.
3. If the Timer continues to advance past OFF, then replace the Timer.

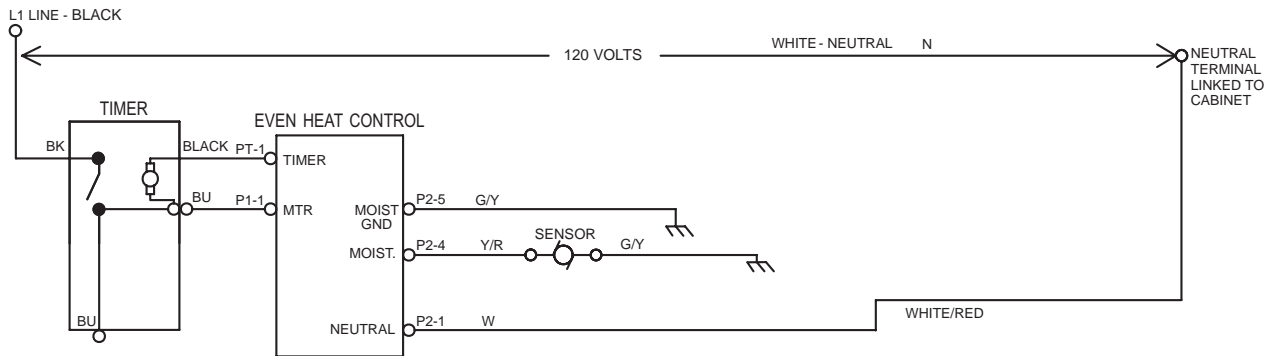
**MOTOR STRIP CIRCUIT**



**HEATER STRIP CIRCUIT**



**MOISTURE SENSOR STRIP CIRCUIT**



MANUFACTURED UNDER ONE OR MORE OF THE FOLLOWING U.S. PATENTS:

4,385,452	4,720,925	4,899,264	5,560,120
4,430,809	4,754,556	4,899,464	5,636,453
4,663,861	4,821,535	4,908,959	5,651,188
4,669,200	4,840,285	5,066,050	5,664,339
4,700,495	4,865,366	5,243,771	D314,261

D314,262

**PART NO. 3977696 REV. B**

NOTE: This sheet contains important Technical Service Data

**FOR SERVICE TECHNICIAN ONLY  
DO NOT REMOVE OR DESTROY**