TROUBLE SHOOTING

LIGHTS:

1. The **12 VOLT GAS, CHECK AND DC LAMPS** can be checked with an ohmmeter for continuity.

   A. Remove the two screws from the eyebrow. Pull the eyebrow up out of the connector and read across the two leads. It should read about 50 OHMS. If not, replace the bulb.

2. If the **BLUE LIGHT** is always on, replace the interface board.

3. **BLUE LIGHT** on when in electric mode.

   A. Wires to eyebrow not hooked up correctly.

4. If the refrigerator runs on gas operation but the **BLUE LIGHT** does not work, hook up a temporary jumper from pin 10 of the interface board to ground. If the light turns on, the interface board is bad.

5. **BLUE GAS LIGHT** does not light.

   A. Check 12VDC supply.

   B. Check fuse.

   C. With a voltmeter across pin #8 and #10 of the interface board, check for 12VDC. If you have +12VDC, replace the bulb.

6. **BLUE AND RED LIGHT. BLUE LIGHT** should come on. If you have ignition failure, then 10 seconds later the RED LIGHT should come on. If both come on at the same time, the interface board or ignition module is bad. Check by removing the +12VDC from terminal J-9 of the interface board. After 5 - 10 seconds, replace the 12VDC to J-9. If the unit functions OK, the interface board is bad. If both lights still are on, the ignition module is bad.

7. No **RED LIGHT.** Check light failure.

   A. Shut off gas cock to simulate lock-out.

   B. Check pin #9 to chassis ground. It should read 12VDC. If not, ignition module is bad.

   C. If wiring harness is OK, replace bulb.

8. If the **GREEN LIGHT** is on during gas operation, this means that the polarity is wrong at the coach's 110VAC plug.

9. **GREEN AC LIGHT** does not come on during electric mode.

   A. Check for 120VAC between pins 5 and 9 of eyebrow and terminals going to the **GREEN LIGHT**. If you have 120 VAC, replace the light.

IGNITION: 1. Sparking and not lighting.

   A. Sparking to sensor, not to burner.

   B. Ignition wires off or loose.

   C. Gas valve turned off manually at the gas cock.

   D. 12VDC gas valve not opening.

2. Sparking and lighting, then goes off.

   A. Interface board is bad.

   B. Less than 10VDC.

   C. Ignition module is bad.

   D. Bad connections.

3. If sparking continues after the burner is lit.

   A. The ignition module is bad.

   B. The interface board has moisture on the back.

   C. Cracked ceramic insulator of sensing electrode.

4. No 12VDC on valve side of Ignition module.

   A. Bad connections in the 5 wire plug.

   B. Refrigerator may be in lock-out mode.

5. With power off and everything still connected, and the ohmeter on the RX 10,000 scale, check for continuity between the sensing electrode and ground (touch one lead to sensor electrode wire, the other lead to the burner bracket). If meter

has a reading, remove the sensor wire from the sense electrode and repeat the test. If the meter still reads, replace the sense electrode. If no reading, go to #6.

6. With everything disconnected from the interface board, read between terminals J-9 and J-10. With the ohmeter on the RX 10,000 scale, if you get a reading, the board is bad. If no reading, replace ignition module.

7. You can also check the sensor and ignition electrodes by measuring from the electrodes to ground with the ohmeter on the RX 10,000 scale. A reading will indicate a bad electrode.

ELECTRIC MODE CHECKOUT, EG2

STEP ONE:

A. Turn on thermostat.

B. Push rocker switch to electric.

C. Green light should come on and the refrigerator should work. If not, go to step two.

STEP TWO:

A. Check for 110V AC on the following pins of the interface board.

B. With the volt meter on the VAC scale and the scale selector higher than 120 volts, check pins 1, 4, and 8. For 110VAC, pin 5 is neutral and one lead of the volt meter should be connected to pin 5 while making the voltage checks on the interface board. If you have 110VAC on all the pins, go to check #5. If not, proceed to check #1.

CHECK #1. With a volt meter, check the wall plug for 110VAC. From the wall plug, current goes through the 110VAC power cord to pin 4 & 5 of the interface board. Pin 4, **HOT**. Pin 5, **NEUTRAL**. If you do not have 110VAC at pins 4 and 5, replace the interface board. You should now have 110VAC on pins 4 and 5 of the interface board.

CHECK #2. Check for 110VAC at pin 8 of the interface board. If OK, go to check #3. If not, proceed as follows: check the connections between pin 4 of the interface board and pin 10 of the eyebrow. You can do this by removing the two screws from the eyebrow, pulling it up and looking at the pins in the connector. If some are pushed down lower than the others, push them back up into the connector. If you have 110VAC between pins 10 and 9 **NEUTRAL** of the eyebrow, check for 110VAC at pin 5 of eyebrow. If no voltage at pin 5 check the yellow wire from the eyebrow to the rocker switch. If no voltage, replace the eyebrow. If there is voltage on the yellow wire to the switch, check the blue wire from the switch. If no voltage, replace the switch. If there is 110V at the blue wire and no voltage at pin 5 of the eyebrow, replace the eyebrow. Pin 5 of the eyebrow goes to pin 8 of the interface board through the wire harness.

CHECK #3. Check for 110VAC on pin 1 of the interface board, (pin 5 on interface board, **NEUTRAL**). If there is 110VAC on pin 1, go to check #4. If not, replace

the interface board. If you have 110VAC, go to check #4.

CHECK #4. Check for 110VAC at pin 11 of the eyebrow. If no 110VAC make sure that the thermostat is on and that the connections to the thermostat are good. You should now have 110VAC on pin 11 of the eyebrow. If not, replace the thermostat. Now check for 110VAC on pin 8 of the eyebrow. If there is voltage, proceed to check #5. If not, proceed as follows: check for 110VAC at the white wire on the eyebrow going to the rocker switch. If no voltage, replace the eyebrow. If there is voltage, check the black wire from the rocker switch to the eyebrow. If no voltage, replace the rocker switch. If there is voltage, check pin 8 of the eyebrow for 110VAC. If no voltage, replace the eyebrow. If there is voltage, go to check 5.

CHECK #5. At this point, you should have 110VAC across the two leads of the AC heater. If no voltage, check the connections to the AC heater. If they are OK and you still do not have 110VAC on the heater terminals, replace the interface board. If there is voltage but the refrigerator still does not run, proceed as follows: unplug the refrigerator from the 110VAC power source. Check the heater for proper placement and size. Disconnect the heater leads, and, with an ohmmeter on the RX 1 or lowest OHM scale, check the resistance of the heater; it should be approximately 50 OHMS. If the heater has a high resistance reading, replace the heater. Also check from both leads to chassis ground. If either lead shows a short, replace the heater. Plug the refrigerator back into the 110VAC source. The refrigerator should now operate.

GAS MODE CHECK-OUT, EG2

STEP ONE: A. Turn on thermostat.

B. Place rocker switch in gas mode. The **BLUE LIGHT** should come on and stay on if everything is working right. If not, the **RED LIGHT** will also come on. Now check to see if the gas valve on the back of the refrigerator is turned on. If it is, place the rocker switch to off. Wait for ten seconds and turn the rocker back to gas and see if the refrigerator works. If not, go to step two.

STEP TWO: A. Set the voltmeter selector switch to + volts DC and the range scale to a scale higher than 12VDC. Use the black lead of the meter for the ground lead and it can be hooked up to any chassis ground. Use the red lead to check for +12VDC.

B. Check for 12VDC at the following pins: 1, 7, 8 and 11. Terminal J-10 is ground. If all are OK go to check #6. If not, proceed as in Check #1.

CHECK #1. The +12VDC is supplied from the battery or converter and is connected to terminals J-9 +12V and J-10 ground on the interface board. Check with the voltmeter to be sure you have +12VDC on terminal J-9. If you have 12VDC, go to check #2. If no 12VDC, remove the 3 amp fuse from the interface board and check terminal J-9 for 12VDC. If still no voltage, the problem is other than the refrigerator. If you have 12VDC, then there is a short circuit somewhere in the system. The best way to check for a short is to remove the wires going to terminal J-4. Also, remove the two wires going to the gas valve and the two plugs; one to the wiring harness and one to the ignition module (gray box). Now be sure that the fuse is not blown. Now check for 12VDC. If there is no 12VDC replace the interface board. If there is 12VDC, hook up the external units, one at a time, and check the fuse after each one. Replace the unit that blows the fuse and the 12VDC should now be on terminal J-9.

CHECK #2. Check for 12VDC on pin 7 of the interface board. If you have 12V, go to check # 3. If no 12VDC, replace the interface board.

CHECK #3. Check for 12VDC on pin 8 of the interface board. If OK, go to check #4. If not, check the connections between the interface board and the eyebrow to be sure they are making good contact. You can do this by removing the two screws from the eyebrow, pull up on the eyebrow and look at the pins in the connector. If some are pushed down farther than the others, push them back up. Also, check at the interface board. Now check 12VDC on pin #6 at the

eyebrow. If the connections are good, you should have 12VDC. Now check for 12VDC at the orange wire going from the eyebrow to the rocker switch. If no 12VDC, replace the eyebrow. If you have 12VDC, check the blue wire from the rocker switch to the eyebrow. If no 12VDC replace the switch. If you have 12VDC check pin 5 of the eyebrow. If no 12VDC replace the eyebrow. You should have 12VDC now on pin 5 of the eyebrow and pin 8 of the interface board.

CHECK #4. Check for 12VDC on pin 1 of the interface board. If no 12VDC, replace the interface board. If you have 12VDC on pin 1, check for 12VDC on pin 11 of the interface board. If you have 12VDC, proceed to check #6, if no 12VDC go to check #5.

CHECK #5. Check for 12VDC on pin 11 of the eyebrow. If no 12VDC be sure that the thermostat is on and that the connections for the thermostat are good. If you still do not have 12VDC, replace the thermostat. Now check pin 2 of the eyebrow. If you have 12VDC, go to check #6. If you do not have 12VDC, check the white wire from the eyebrow to the rocker switch. If no 12VDC replace the board. If you have 12VDC check the red wire from the rocker switch to the eyebrow. If no 12VDC replace the rocker switch. If you have 12VDC replace the eyebrow. If you have 12VDC on pin 2, you should also have 12VDC on pin 11 of the interface board. Go to check #6.

CHECK #6. Check for 12VDC on the ignition module. To do this you may have to remove the plug connector and check at pin 1 of the plug. If no 12VDC, replace the interface board. If you have 12VDC, replace the plug connector and check for 12VDC across the two wire leads on the gas valve. Be sure that the connection is good. If no 12VDC, replace the ignition module. If you have 12VDC the refrigerator should now work.

AC ELECTRIC MODE CHECKOUT, EG3

STEP ONE:

A. Turn on thermostat.

B. Push the right-hand rocker switch to electric.

C. Push the left-hand rocker switch to AC.

D. The green light should come on and the refrigerator should run. If not, go to step two.

STEP TWO:

A. Check for 110VAC on the following pins of the interface board.

B. With the voltmeter on the VAC scale and range selector set higher than 120VAC, check for 110VAC on pins 1, 4 and 8 of the interface board. Terminal J-5 is neutral and one lead of the voltmeter should be connected to pin 5 when making checks on the board. If you have 110VAC on the pins, go to check #5. If not, proceed to check #1.

CHECK #1. With a voltmeter, check the wall plug for 110VAC. From the wall plug, current flows through the 110VAC power cord to the interface board. The hot side then goes through a 5 amp fuse to pin 4. The neutral side goes directly to terminal J-5 and through a resistor to pin 5. If you do not have 110VAC at pin 4, check to be sure the power cord is plugged in and that the cord is not cut somewhere. Also, check to be sure the fuse is not blown. If you still do not have 110VAC at pin 4 , replace the interface board. You should now have 110VAC on pin 4 of the board. Now check for 110VAC on pin 8 of the interface board. If you have voltage, go to check #4. If you do not have 110VAC, proceed to check #2.

CHECK #2. Check for 110VAC on pin 10 of the eyebrow board. Pin 9 of the eyebrow is neutral, provided the resistor in the neutral line is not open. If no 110VAC, check the wiring harness between the interface board and the eyebrow to make sure the connections are good. You can do this by removing the two screws from the eyebrow, pulling it up, and looking at the pins in the connector. If some are pushed down lower than the others, push them back up into the connector. Also check the connector to the interface board. You should now have 110VAC at pin 10 of the eyebrow. Now check for 110VAC at pin 5 of the eyebrow. If you have 110VAC, go to check #3. If no 110VAC, proceed as follows: check for 110VAC at the orange wire going to the left-hand rocker switch. If no voltage, replace the board. If you have voltage, check the blue wire from the switch. If no voltage, replace the switch. Now check pin 5 of the eyebrow for 110VAC. If no voltage, replace the eyebrow. You should now

have 110VAC on pin 5 of the eyebrow and pin 8 of the interface board. Now check for 110VAC across the two leads of the green light. If OK, go to check #3. If no 110VAC replace the eyebrow.

CHECK #3. Check for 110VAC at pin 1 of the interface board. If no voltage replace the board. Now check for 110VAC across the leads of the AC heater. If you have 110VAC, go to check #5. If not, proceed to check #4.

CHECK #4. Check for 110VAC on pin 11 of the eyebrow. If no 110VAC, be sure that the thermostat is on and that the connections are good to the thermostat. If you do not have 110VAC on pin 11 at this time replace the thermostat. Now check for 110VAC on pin 8 of the eyebrow. If you have voltage, go to check #5. If no voltage, check the white wire going from the eyebrow to the left-hand rocker switch. If no 110VAC, replace the eyebrow. Now check the red wire from the switch to the eyebrow. If no 110VAC replace the switch. Now check pin 8 of the eyebrow for 110VAC. If no voltage, replace the eyebrow. You should now have 110VAC across the two wire leads at the AC heater.

CHECK #5. Now that there is 110VAC to the AC heater, if the refrigerator still does not run, proceed as follows: unplug the refrigerator from the 110VAC power source. Check the heater for proper placement and size. Disconnect the heater leads from terminals J-5 and J-6 of the interface board with an ohmmeter on the RX 1 or lowest OHM scale. Check the resistance of the heater; it should be approximately 50 OHMS. If the heater has a high resistance reading, replace the heater, also check from both leads to chassis ground. If either lead shows a short, replace the heater. Plug the refrigerator back into the 110VAC source. Refrigerator should now operate.

GAS MODE CHECKOUT, EG3

STEP ONE: A. Turn on thermostat.

B. Place the two rocker switches to the gas position. The blue lamp should come on and stay on if everything is working alright; If not, the red light should also come on. If it does, check to see if the gas cock on the back of the refrigerator is turned on. If it is, place the DC/Gas switch to the off position and wait for 10 seconds, then push the rocker switch back to gas. The refrigerator should now work. If not, go to step two.

STEP TWO: A. Set the voltmeter selector switch to +DC and the range selector to a scale higher than 12VDC. Use the red lead of the meter to check for 12VDC and the black lead from the meter can be connected to any chassis ground.

B. Check for +12VDC at the following pins on the interface board: 1, 7, 8 and 11. If all are at 12VDC, go to check #7. If not, proceed to check #1.

CHECK #1. The 12VDC is supplied from the battery or converter and is connected to terminals J-9 +12V and J-10 ground on the interface board. Check with the voltmeter to be sure you have +12VDC on terminal J-9. If you have 12VDC, go to check #2. If no 12VDC, remove the 3 amp and 20 amp fuses from the interface board and check terminal J-9 for 12VDC. If still no voltage, then the problem is other than the refrigerator. If you have 12VDC then there is a short circuit somewhere in the system. The best way to check for a short is to remove the wires going to terminal J-4. Also remove the two wires going to the gas valve, and the two plugs, one to the wiring harness and the other to the ignition module, (gray box), and remove the relay from the interface board. Now be sure that the fuse is not blown. Now check for 12VDC. If there is no 12VDC, replace the interface board. If there is 12VDC, hook up the external units, one at a time, and check the fuse after each one. Replace the unit that blows the fuse and the 12VDC to J-9 should be OK.

CHECK #2. Check for 12VDC on pin 7 of the interface board. If you have 12V, go to check #3. If no 12VDC replace the interface board.

CHECK #3. Check for 12VDC on pin 8 of the interface board. If OK go to check #5. If not, check the connections between the interface board and the eyebrow to be sure they are making good contact. This can be done by removing the two screws from the eyebrow, pulling up on the eyebrow and

seeing if some of the pins in the connector are pushed down too far. If so, push the pins back up into the plug connector. Now check 12VDC on pin 6 of the eyebrow. If the connections are good, you should have 12VDC on pin 6.

CHECK #4. Check for 12VDC on pin 5 of the eyebrow board. If you have voltage, go to check #5. If you do not have 12VDC proceed as follows: check for 12VDC at the yellow wire going from the eyebrow to the left-hand rocker switch. If no 12VDC replace the eyebrow. If you have 12VDC, check the blue wire from the rocker switch to the eyebrow board. If no 12VDC, replace the switch. If you have 12VDC, check pin 5 again. If still no 12VDC, replace the board. You should now have 12VDC on pin 5. Now check for 12VDC at the blue wire going from the board to the right hand switch on the eyebrow assembly. If no 12VDC, replace the board. If you do have 12VDC check the orange wire from the switch to the board. If no 12VDC, replace the switch. Now check the terminal where the blue light hooks to the board, (the first terminal on the right), for 12VDC. If no 12VDC replace the eyebrow board. Go to check #5.

CHECK #5. Test for 12VDC on pin 1 of the interface board. You should have 12VDC. If no 12VDC, replace the interface board. You should now have 12VDC on pin 1. Go to check #6.

CHECK #6. Check pin 11 of the eyebrow board for 12VDC. If no 12VDC, check to be sure the connections to the thermostat are good and that the thermostat is on. If you still do not have 12VDC replace the thermostat. Now check pin 2 of the eyebrow for 12VDC. If you have voltage, go to step #7. If no voltage, proceed as follows: check the white wire going to the left-hand rocker switch from the board. If no 12VDC, replace the board. If you have 12VDC, check the black wire from the switch to the board switch. If no voltage, replace the switch. Now check the white wire going from the board to the right-hand rocker switch. If no 12VDC, replace the eyebrow board. Now check the red wire from the rocker switch to the board. If no 12VDC, replace the switch. Now check for 12VDC on pin 2 of the eyebrow. If no 12VDC, replace the board. If you have 12VDC you should also have 12VDC on pin 11 of the interface board. Go to check #7.

CHECK #7. Check for 12VDC on the ignition module. To do this, you may have to remove the plug connector and check at the pin that connects to the power pin of the ignition module. If no 12VDC, replace the interface board. Now replace the plug connector and check across the two leads going to the gas valve. If no 12VDC, replace the ignition module. Also check for 12VDC at the burn sense electrode. Use the sensor bracket as ground. If no 12VDC replace the

ignition module. If you have 12VDC, the refrigerator should work.

DC ELECTRIC MODE CHECKOUT, EG3

STEP ONE:

A. Turn on thermostat.

B. Place the two rocker switches to electric and DC/Gas mode.

C. The refrigerator should run and the amber light should turn on. If not, go to step two.

STEP TWO:

A. Set the voltmeter selector to + volts DC and the range selector to a scale higher than 12 volts. The +12VDC is supplied from either the battery or converter to terminals J-9 and 12VDC and terminal J-10 ground. Any chassis ground can be used while checking the DC circuits.

B. Check for +12VDC at the following pins of the interface board: 1, 7, 8 and 12. If all are at 12VDC, go to check #6. If not, proceed to check #1.

CHECK #1. With the voltmeter check for +12VDC on terminal 9 of the interface board. If you have 12VDC, go to check #2. If no 12VDC, remove the wires from terminals J-9 and J-10; with the positive meter lead on the wire that was on J-9 and the negative lead on the wire that was on J-10, check for 12VDC. If no voltage, the problem is in the 12 volt line feeding the refrigerator. If there is 12VDC at the wires, there is a short circuit somewhere in the system. To check this, remove the two plug connectors from the interface board. Remove the wires from terminals J-3, J-4, J-5, J-12 and J-13. Remove the relay from the board and unplug the AC power cord. Also remove the three fuses from the board. Now hook the wires back up to terminals J-9 and J-10. Now replace the 3 amp fuse first and check both sides of the fuse for 12VDC. If no 12VDC replace the interface board. If you have 12 volts on both sides of the fuse, replace the 5 amp and 20 amp fuse. If you do not have 12VDC on both sides of the fuse, replace the interface board. If you have 12VDC, reconnect the external units, one at a time and the one that blows the fuse is the bad unit. You should now have 12VDC on terminal 9. Go to check #2.

CHECK #2. Check for 12VDC on pin 7 of the interface board. If no voltage, replace the interface board. If you have 12VDC, go to check #3.

CHECK #3. Check for 12VDC on pin 8 of the interface board. If you have 12VDC, go to check #4. If not, proceed as follows: Make sure the connections are good between the interface board and the eyebrow. To do this, remove the connectors and look at the pins. If some of the pins

are lower than the others, push the pins back up into the connectors. You should now have 12VDC at pin 6 of the eyebrow. Now check for 12VDC at the yellow wire going from the eyebrow to the left-hand rocker switch. If no 12VDC, replace the eyebrow. If you have 12VDC, check the blue wire from the switch to the eyebrow. If no 12VDC replace the switch. If you have 12VDC, check pin 5 of the eyebrow for 12VDC. If no voltage, replace the eyebrow. If you do have 12VDC, check the blue wire from the eyebrow to the right-hand rocker switch. If no 12VDC replace the eyebrow. If you have 12VDC check the yellow wire going from the switch to the eyebrow. If no 12VDC, replace the switch. If you have voltage, check the two terminals going to the amber light. You should have 12VDC on one side and zero on the other, (see trouble shooting). If not, replace the eyebrow. Go to check #4.

CHECK #4. Check for 12VDC on pin 1 at the interface board. If 12 volts is present go to check #5. If you do not have 12VDC replace the interface board. Now check pin 11 of the eyebrow. If you have 12VDC go to check #5. If no 12VDC, proceed as follows: first make sure that the leads to the thermostat are good and that the thermostat is on. If you still do not have 12VDC, replace the thermostat. You should now have 12VDC on pin 11 of the eyebrow.

CHECK #5. Check for 12VDC on pin 1 of the eyebrow. If you have 12VDC, go to check #6. If you do not have 12VDC, check the white wire from the eyebrow to the left hand rocker switch for 12VDC. If no 12VDC, replace the eyebrow. Now check the black wire from the switch to the eyebrow. If no 12VDC, replace the switch. Check for 12VDC at the white wire going from the eyebrow to the right-hand rocker switch. If no 12VDC, replace the eyebrow. Now check the black wire from the rocker switch to the eyebrow for 12VDC. If no voltage, replace the rocker switch. Check pin 1 of the eyebrow for 12VDC. If you have 12VDC proceed to check #6. If no 12VDC replace the eyebrow.

CHECK #6. You should now have 12VDC on pin 12 of the interface board. Check for 12VDC on the two terminals going to the DC heater, J-12 plus 12VDC, J-13 ground. If you have 12VDC, the refrigerator should work, if not remove the 20 amp fuse. Now hook an ohmmeter between J-12 terminal and the top fuse clip. You should read a short circuit across the relay contact. If not, replace the relay. Now if you still do not have a short across the relay contacts replace the interface board. If you have 12VDC across terminals J-12 positive and J-13 negative, replace the heater.