
Foreword

This service manual is the result of the dedication of The Dometic Corporation and its engineers in giving service people the necessary instruction for making accurate analyses of certain conditions. Provided is a diagnostic chart leading a qualified mechanic into the service manual pages to locate and solve symptoms which may occur. Dometic has continued its commitment in providing service people with this, the most up-to-date information about servicing Dometic RV accessories.

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This program will address the most common system problems associated with Manual Refrigerators supplied by The Dometic Corporation. Our intent is to provide you with a guideline of checks to make, should you encounter one of the following symptoms.

SYMPTOM	CAUSE	REFER TO SECTION	STEP
1. No operation.	Operation Wiring Switch	1.1 8.1 or 8.2 5.1	A or B A or B
2. No electric operation.	Operation AC Volts Heating Element Thermostat Switch Wiring	1.1 2 3.1 7.3 5.1 8.2	A or B B A or B
3. No gas operation — no spark.	Operation DC Volts Igniter Electrode High Voltage Cable Switch Wiring	1.1 4 5.2 5.3 5.4 5.1 8.2	A or B A or B A or B
4. No gas operation — sparks but no flame.	Operation LP gas Filter Orifice Burner Shut-off Valve Safety Valve Thermocouple Thermocouple Adapter, (Top Mount Controls Only)	1.1 6 7.2 7.12 7.8 7.1 7.5 7.6 7.7	A or B
5. No cooling on any mode.	Operation Level Ambient Temperature Cooling Unit	1.1 9.1 9.5 9.6	A or B
6. No cooling on gas — cools properly on other mode(s).	LP Gas Thermostat Filter Orifice Burner Flue Baffle Flue Tube	6 7.3 7.2 7.12 7.8 7.9 7.11	A
7. No cooling on electric — cools properly on other mode(s).	AC Volts Heating Element Thermostat Switch Wiring	2 3.1 7.3 5.1 8.2	B A or B

SYMPTOM	CAUSE	REFER TO SECTION	STEP
8. Insufficient cooling on all modes.	Operation Level Ventilation Ambient Temperature Air Leaks Thermostat Cooling Unit	1.1 9.1 9.2 9.3 9.4 7.3 9.6	A or B A or B
9. Insufficient cooling on electric — cools properly on other mode(s).	AC Volts Heating Elements Thermostat	2 3.1 7.3	B
10. Insufficient cooling on gas. Cools properly on other mode(s).	LP Gas Pressure Thermostat Filter Orifice Burner Flue Baffle Flue Tube	6 7.3 7.2 7.12 7.8 7.9 7.11	A
11. Freezes on electric — cools properly on other mode(s).	Thermostat Wiring	7.3 8.2	B
12. Freezes on gas — cools properly on other mode(s).	Bypass Screw Thermostat	7.4 7.3	A
13. Won't stay lit on gas.	LP Gas Safety Valve Thermocouple Thermocouple Adapter, (Top Mount Controls Only) Flame Failure Meter (Top Mount Controls Only) Flue Baffle Flue Cap (Bottom Mount Controls Only) Orifice Burner	6 7.5 7.6 7.7 7.9 7.10 7.12 7.8	
14. Rapid formation of frost.	Food Storage Air Leaks Interior Liner Seal to Frame High Humidity	9.7 9.3 9.9 9.8	
15. No DC operation — cools properly on AC and gas.	DC Volts Heating Element Switch Wiring Relay (RM2610/RM2810)	4 5.6 5.1 8.2 5.5	A or B
16. Insufficient cooling on DC— cools properly on AC and gas.	DC Volts Heating Element Relay (RM2610/RM2810)	4 5.6 5.5	
RM2510/RM2610/RM2810			
17. On gas mode, sparks while flame is lit.	Electrode LP Gas Bypass Screw Filter	5.3 6 7.4 7.2	

SECTION 1

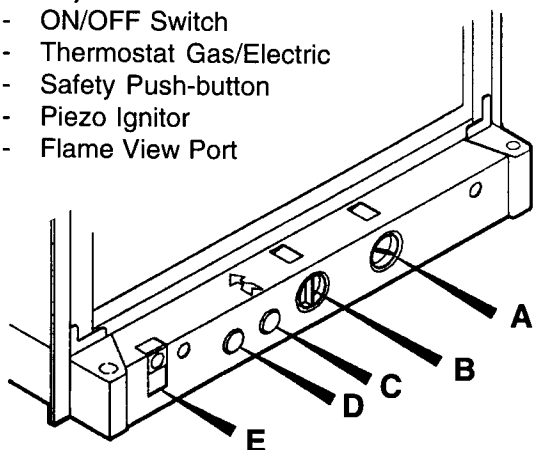
1.1A OPERATION

REFRIGERATORS WITH BOTTOM MOUNT CONTROLS

CONTROLS

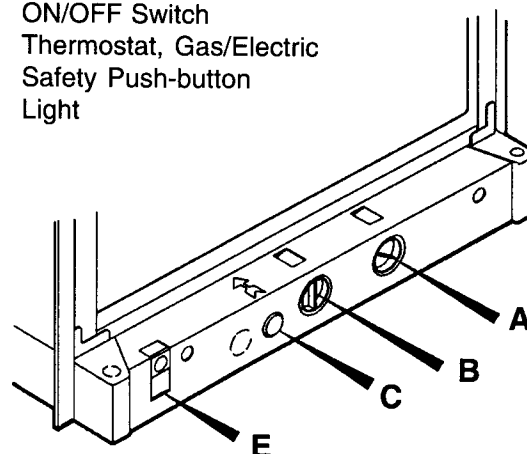
Refrigerators with Piezo Ignitors (RM2310 & RM2410)

- A - ON/OFF Switch
- B - Thermostat Gas/Electric
- C - Safety Push-button
- D - Piezo Ignitor
- E - Flame View Port



Refrigerators with Automatic Reigniters (RM2510/RM2610/RM2810)

- A - ON/OFF Switch
- B - Thermostat, Gas/Electric
- C - Safety Push-button
- E - Light



A. GAS OPERATION

■ Refrigerators with Piezo Ignitor (RM2310 & RM2410)

To start the refrigerator, turn knob "A" to the "GAS" position.

Turn the thermostat knob "B" one-quarter (1/4) of a turn from the "OFF" position.

Push button "C" in until it bottoms out—and hold. While holding button "C", push button "D" for the piezo ignitor several times to light the burner. This can be observed through the flame view port, "E", on the refrigerator.

After the flame lights, continue to hold button "C" for an additional fifteen (15) seconds. Release the button "C" and check the flame view port "E" to make sure the burner does not go out. If the burner goes out, repeat the lighting procedure.

To shut off the refrigerator, turn Knob "A" to the "OFF" position.

■ Refrigerators with Automatic Reigniters (RM2510/RM2610/RM2810)

To start the refrigerator, turn knob "A" to the "GAS" position.

Turn the thermostat knob "B" one-quarter (1/4) of a turn from the "OFF" position.

Push button "C" in until it bottoms out—and hold. When lamp "E" stops flashing, hold push-button "C" an additional 15 seconds. Release button "C". If the lamp "E" starts to flash again, repeat lighting procedure. If flame blows out, the reigniter will automatically relight the flame.

NOTE: After changing an LP tank, or after a long shut off period, the gas line is likely to be filled with air. You may have to repeat the lighting procedure several times to purge the air out of the gas lines.

B. ELECTRIC OPERATION

Check to be sure the power cord is properly connected to the power supply. If the refrigerator is equipped for 12 volt DC operation, the tow vehicle engine should be running to prevent discharging the battery.

Turn knob "A" to the position marked "ELEC" for 120 volt AC operation or "12V" for 12 volt DC operation.

Turn the thermostat knob "B" one-quarter (1/4) of a turn from the "OFF" position.

To shut off the refrigerator, turn knob "A" to the "OFF" position.

C. THERMOSTAT

The refrigerator is equipped with a thermostat that can be adjusted by turning knob "B" to a different setting to maintain the desired cabinet temperature.

"OFF" Setting of the Thermostat: In gas operation,

the thermostat closes its main valve and the burner runs continuously at the bypass rate or pilot. In electrical operation, the contacts in the thermostat are open and the heating elements are off.

"MAX" Setting of the Thermostat: In gas operation, the thermostat allows the burner to remain on high flame continuously. In electric operation, the heating element is "ON" continuously.

The thermostat can be adjusted between "MAX" and "OFF" to obtain the desired cabinet temperature. The closer the knob is to "MAX", the colder the cabinet temperature. The closer the knob is to "OFF", the warmer the cabinet temperature.

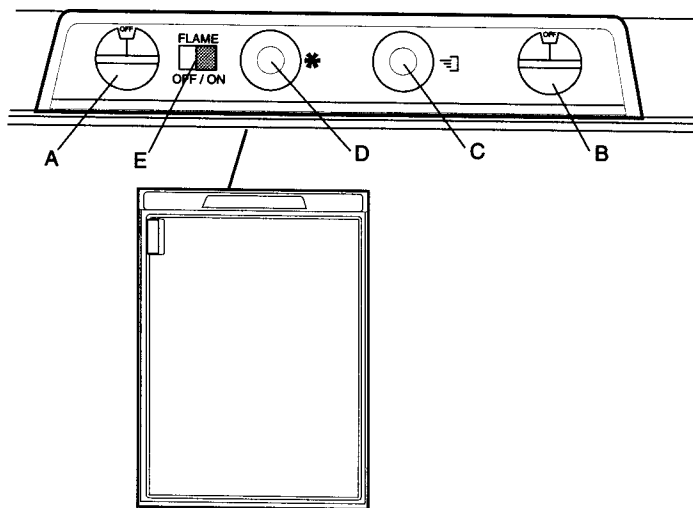
When the thermostat reaches the set temperature, it will cut the burner back to bypass or, in electric operation, shut off the heating element.

SECTION 1

1.1B OPERATION

REFRIGERATORS WITH TOP MOUNT CONTROLS

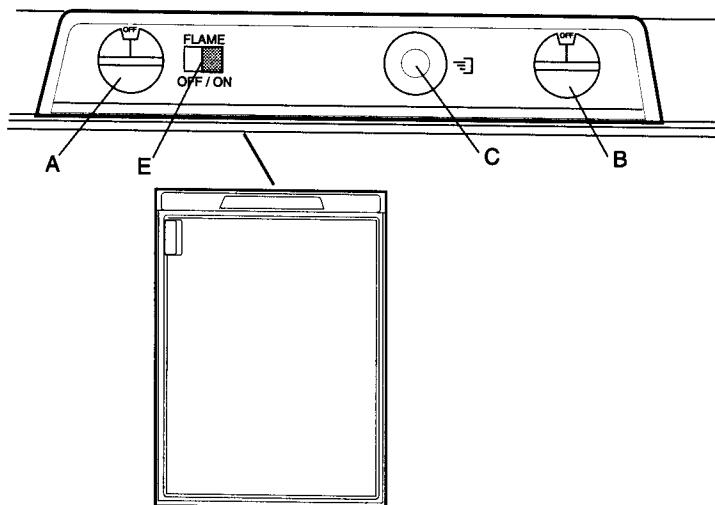
**REFRIGERATORS WITH
PIEZO IGNITORS:
RM2452 AND RM2453**



LEGEND:

- A** Energy Selector Knob
- B** Thermostat Knob
- C** Flame Failure Safety Valve Push Button
- D** Piezo Ignitor
- E** Flame Indicator

**REFRIGERATORS WITH
AUTOMATIC IGNITION:
RM2552 AND RM2553**



A. GAS OPERATION

REFRIGERATORS WITH PIEZO IGNITOR (RM2452 & RM2453)

1. To start the refrigerator, turn knob "A" to the "GAS" position.
2. Turn the thermostat knob "B" one-quarter (1/4) of a turn from the "OFF" position.
3. Push button "C", push button "D" for the piezo ignitor several times to light the burner. This can be observed on the flame indicator "E", on the refrigerator.
4. After the flame lights, continue to hold button "C" for an additional ten (10) seconds. Release the button "C" and check the flame indicator "E" to make sure the burner does not go out. If the burner goes out, repeat the lighting procedure.
5. To shut off the refrigerator, turn knob "A" to the "OFF" position.

REFRIGERATORS WITH AUTOMATIC REIGNITORS (RM2552 AND RM2553)

1. To start the refrigerator, turn knob "A" to the "GAS" position.
2. Turn the thermostat knob "B" one-quarter (1/4) of a turn from the "OFF" position.
3. Push button "C" in until it bottoms out – and hold. When flame indicator "E" shows the flame is on, hold push button "C" an additional 15 seconds. Release button "C". If the flame indicator "E" starts to move toward off, repeat lighting procedure. Should flame blow out, the reignitor will automatically relight the flame.

NOTE: After changing an LP tank, or after a long shut-off period, the gas line is likely to be filled with air. You may have to repeat the lighting procedure several times to purge the air out of the gas lines.

B. ELECTRIC OPERATION

Check to be sure the power cord is properly connected to the power supply. If the refrigerator is equipped for 12 volt DC operation, the tow vehicle or caravan engine should be running to prevent discharging the battery. Turn knob "A" to the position marked "ELEC" for 120 volt AC operation or "12V" for 12 volt DC operation. Turn the thermostat knob "B" one-quarter (1/4) of a turn from the "OFF" position. To shut off the refrigerator, turn knob "A" to the "OFF" position.

C. THERMOSTAT

The refrigerator is equipped with a thermostat that can be adjusted by turning knob "B" to a different setting to maintain the desired cabinet temperature.

"OFF" Setting of the Thermostat: In gas operation, the thermostat closes its main valve and the burner runs continuously at the bypass rate or pilot. In electrical operation, the contacts in the thermostat are open and the heating elements are off.

"MAX" Setting of the Thermostat: In gas operation, the thermostat allows the burner to remain on high flame continuously. In electric operation, the heating element is "ON" continuously.

The thermostat can be adjusted between "MAX" and "OFF" to obtain the desired cabinet temperature. The closer the knob is to "MAX", the colder the cabinet temperature. The closer the knob is to "OFF", the warmer the cabinet temperature.

When the thermostat reaches the set temperature, it will cut the burner back to bypass or, in electric operation, shut off the heating element.

The setting of the thermostat is not critical, but we recommend it be adjusted to maintain a dry frost on the cooling fins. Adjust the thermostat knob closer to "MAX" when the outside temperature becomes warm.

SECTION 2

AC VOLTAGE REQUIREMENTS

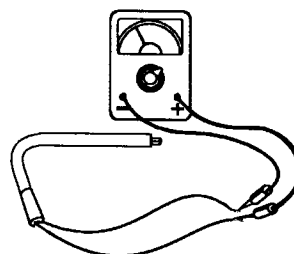
The refrigerator is a 120-volt AC, 60 Hz appliance. The proper operating range is 100 to 132 volts. Check the AC volts at the receptacle where the refrigerator is attached. If voltage drops below 100 volts, cooling efficiency will decrease with voltage decrease. If voltage is outside of the proper operating range, correct the power source problem.

SECTION 3

AC COMPONENTS

3.1 HEATING ELEMENT

The heating element is designed to deliver a predetermined amount of heat to the cooling unit. To check a heating element, remove the heater leads from the terminal block and measure for proper resistance across the two leads with a properly calibrated ohm meter. This check is to be done with the heating element at room temperature.



You should obtain the following readings, plus or minus 10%:

RM2310	92
RM2410	92
RM2510	75
RM2610	48
RM2810	44
RM2452	69
RM2453	69
RM2552	69
RM2553	69

SECTION 4

DC VOLTAGE REQUIREMENTS

For the refrigerator to operate, igniter (gas mode) and DC volt operation (3-way models only), DC voltage must be supplied to the terminal block or blocks (2 terminal blocks on 3-way models) at the rear of the refrigerator. The operational range is 10.5 to 15 volts DC. Connecting the refrigerator to an unregulated converter can result in improper operation of the refrigerator. Check for proper voltage at the terminal block or blocks at the back of the refrigerator. If power is outside the operational range, correct the power supply problem. The power supply to the refrigerator must be fused. The igniter will draw about 1 amp at 12 volts DC.

The DC heating element (on 3-Way Models ONLY) will draw the following amps at 12 volts:

RM2310	10.4 AMPS
RM2410	10.4 AMPS
RM2510	14.6 AMPS
RM2610	17.9 AMPS
RM2810	17.9 AMPS
RM2453	14.6 AMPS
RM2553	14.6 AMPS

The maximum fuse size is as follows:

RM2310	15 AMPS
RM2410	15 AMPS
RM2510	20 AMPS
RM2610	25 AMPS
RM2810	25 AMPS
RM2452	15 AMPS
RM2453	15 AMPS
RM2552	20 AMPS
RM2553	20 AMPS

SECTION 5 -

DC COMPONENTS

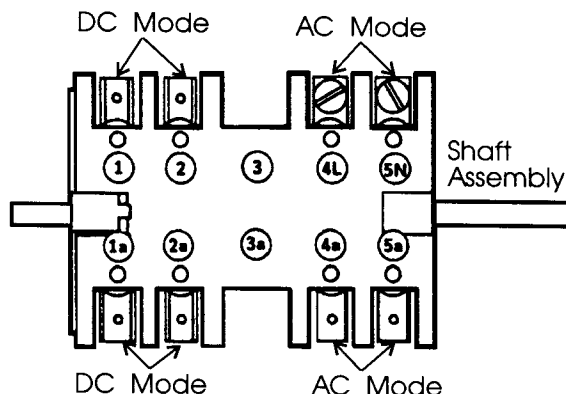
5.1A SWITCH (BOTTOM MOUNT CONTROLS)

A. The selector switch should be checked for continuity in the following manner. Remove all wires from the assembly.

For the DC mode, continuity should exist between terminals 1 and 1A and 2 and 2A. (3-Way Models Only)

For the AC mode, you should have continuity between 4L and 4A and 5N and 5A. If you lack continuity in any mode when making these checks, the switch is defective and should be replaced.

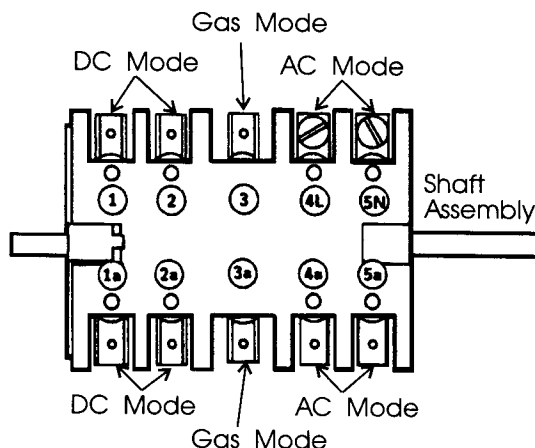
RM2310 & RM2410 SWITCH ASSEMBLY



B. The RM2510/RM2610/RM2810 selector switch should be checked for continuity in the following manner. Remove all wires from the assembly. **For the DC mode**, continuity should exist between terminals 1 and 1A and 2 and 2A. **For the gas mode**, you should have continuity between 3 and 3A.

For the AC mode, you should have continuity between 4L and 4A and 5N and 5A. If you lack continuity in any mode when making these checks, the switch is defective and should be replaced.

RM2510/RM2610/RM2810 SWITCH ASSEMBLY



5.1B SWITCH (TOP MOUNT CONTROLS)

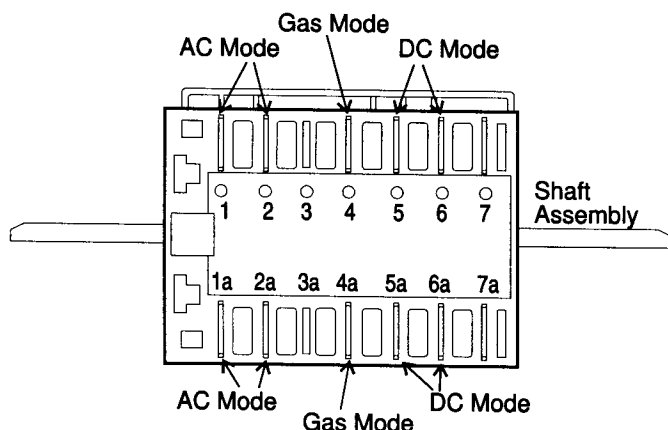
The Selector Switch should be checked for continuity in the following manner. Remove all wires from the assembly.

For the DC Mode (3-Way Models ONLY), continuity should exist between terminals 5 and 5a and 6 and 6a.

For the AC Mode, continuity should exist between terminals 1 and 1a and 2 and 2a.

For the Gas Mode (on refrigerators equipped with automatic reignitors ONLY), continuity should exist between terminals 4 and 4a.

RM2452/RM2453/RM2552/RM2553 SWITCH



5.2 IGNITER

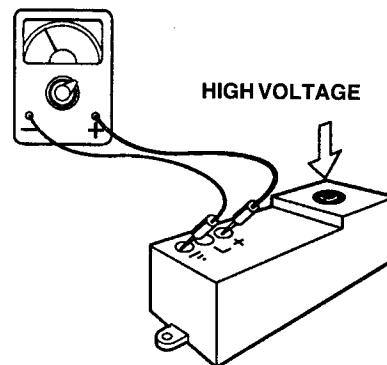
A. MODEL RM2310, 2410, 2452, 2453

The piezo lighter is a self-contained assembly which generally does not need maintenance. When the button is pushed, a spring loaded striker creates a spark. If there is no resistance when pressing the button, the piezo igniter is defective and must be replaced. If the piezo snaps or has resistance when the button is pushed, but there is no spark, the problem lies in the electrode (see Sec. 5.3) or electrode wire (see Sec. 5.4).

B. MODEL RM2510, 2610, 2810, 2552, 2553

The igniter is an electronic device that produces high voltage to create a spark at the burner, only on gas mode. First, check that the switch is in the gas mode and is completing the circuit (See Sec. 5.1B). Next, verify proper voltage at the positive (+) and ground (-) terminals of the igniter. The reading should be within one volt of incoming voltage at the terminal block. A voltage drop of more than one volt would indicate a loose connection (See Sec. 8.2). No voltage would

indicate an open circuit, check switch (See Sec. 5.1B), wiring (See Sec. 8.2) and DC voltage requirements (See Sec. 4).



Next, disconnect DC power at the terminal block. Remove high voltage cable from igniter. Reconnect DC power, the igniter should produce a sparking sound. If not, replace the igniter.

ON MODEL RM2510, 2610 AND 2810: Next, with the igniter producing spark, set the meter on 20 volts DC or lower scale, connect meter leads to L and ground terminals on the igniter. The meter should read a pulsating voltage. If not, replace the igniter.

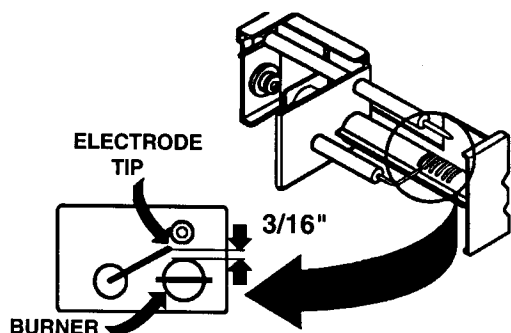
If all of the previous checks are correct, the igniter is good, **DO NOT REPLACE**. The pulsating voltage allows a lamp to illuminate on the front of the refrigerator to advise the customer spark has been produced. To check the lamp, first, verify it is wired correctly. Next, verify the lamp receptacle is receiving the signal, if so, and lamp is not illuminating (flashing), replace the lamp.

NOTE: Do not supply DC power to the lamp. It will **NOT** illuminate with normal DC power. For the lamp to illuminate it must receive an increased DC signal.

5.3 ELECTRODE

To check the electrode, first do a visual inspection for cracks or breaks on the ceramic insulator. Also, verify the mounting bracket is attached properly to the electrode. If either of the above conditions are found, replace the electrode. Next, check the spark gap. It must be set at three sixteenths (3/16) of an inch and the tip of electrode above the slots in the burner.

NOTE: If igniter (See Sec. 5.2A or B) and high voltage cable (See Sec. 5.4) are good and there is no spark at the tip of the electrode, REPLACE THE ELECTRODE.



5.4 HIGH VOLTAGE CABLE

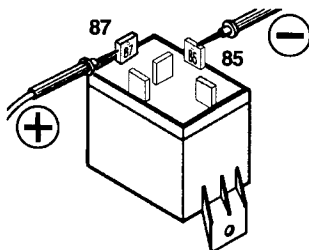
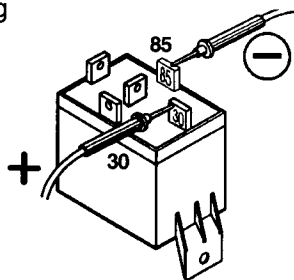
NOTE: Be sure switch (See Sec. 5.1A or B) and igniter (See Sec. 5.2A or B) are good before checking the high voltage cable and the switch is in the gas mode. To check the high voltage cable, first disconnect DC power at the terminal block. Next, disconnect high voltage cable from electrode. Then reconnect DC power to the terminal block. If sparking starts, cable is good, DO NOT REPLACE, check the electrode (See Sec 5.3). If no sparking, disconnect DC power at the terminal block and then disconnect high voltage cable at the igniter. Reconnect DC power to the terminal block. If sparking sound from igniter, replace the high voltage cable.

5.5 RELAY (RM2610/RM2810 3-WAY MODEL ONLY)

The relay controls the circuit to the DC heating element. The load (amps) of the DC heating element goes through the relay.

To check the relay, first verify the selector switch is on DC mode (See Sec. 5.1A or B) and the thermostat (See Sec. 7.3B) is NOT completing the circuit. Next, verify voltage is present between terminals 85 and 30. If voltage is not present, check wiring to both terminals. (See Sec. 8.2)

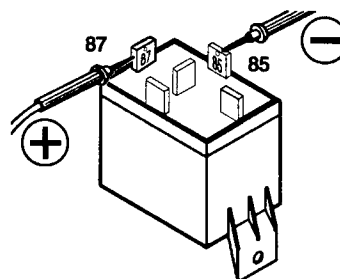
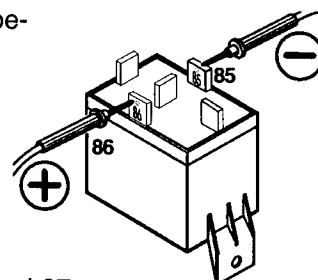
Next, check for voltage between terminals 85 and 87. If voltage is present, the relay is defective and needs to be replaced.



Second, verify the selector switch is on DC mode (See Sec. 5.1A or B) and the thermostat (See Sec. 7.3B) is completing the circuit.

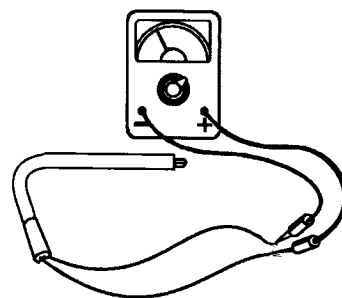
Next, verify voltage is present between terminals 85 and 86. If no voltage is present, check wiring and connections (See Sec. 8.2).

Next, if voltage is present, between 85 and 86 terminals, then voltage should be present between terminals 85 and 87. If no voltage is present, the relay is defective, replace it.



5.6 HEATING ELEMENT (3-WAY MODELS ONLY)

The heating element is designed to deliver a predetermined amount of heat to the cooling unit. Check the heating element with ohms resistance using a properly calibrated ohm meter. This check is to be done with the element at room temperature.



You should obtain the following readings, plus or minus 10%:

RM2310	1.15 OHMS
RM2410	1.15 OHMS
RM2510	.82 OHMS
RM2610	.67 OHMS
RM2810	.67 OHMS
RM2453	.83 OHMS
RM2553	.83 OHMS

If the heating element is outside the tolerance range, replace it.

NOTE: It will take a very precise ohm meter to accurately read this measurement. If a precise ohm meter is not available, a continuity reading will indicate an open or complete circuit. If an open circuit is the test result, replace the element.

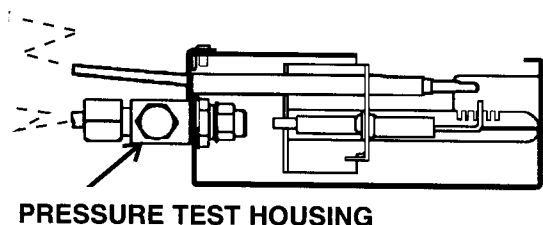
5.7 FLAME INDICATOR METER

The flame indicator meter is basically a DC volt meter. It reads DC millivolts coming from the thermocouple. If the millivolts from the thermocouple are 5 millivolts or more, the red needle in the meter should be in the green section.

If the blue wire to the meter is shorted to ground or if the blue and red wires are shorted together, a flame failure condition could result.

SECTION 6 LP GAS REQUIREMENTS

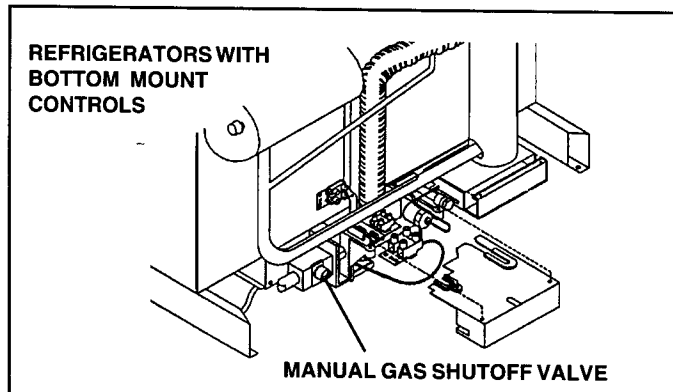
The LP gas pressure to the refrigerator should be 11 inches water column with half of all BTU's of the RV turned on. With all other appliances turned off, the pressure to the refrigerator should not exceed 12 inches water column. To check the gas pressure when the refrigerator is operating, there is a pressure test housing located just prior to the orifice.



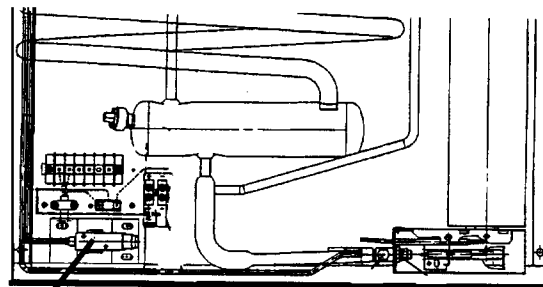
SECTION 7 LP GAS COMPONENTS

7.1 SHUT-OFF VALVE

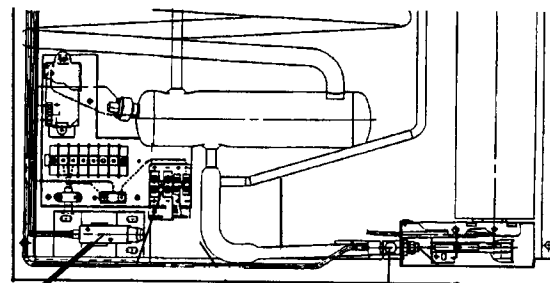
It is the valve where the incoming LP gas supply is attached. This valve is direct coupled to the selector switch. When the selector switch is turned to the electric mode, the shut-off valve is automatically closed. When this same switch is turned to the LP gas mode, the valve opens and allows gas flow and the electric circuit to the heating elements is also automatically interrupted. To check the shut-off valve, remove and inspect for any obstructions.



REFRIGERATORS WITH TOP MOUNT CONTROLS



MANUAL
GAS VALVE



MANUAL
GAS VALVE

7.2 FILTER

A filter is located in the inlet fitting to the thermostat. It protects the internal valve portion of the thermostat by collecting any particles and/or oil that could get into the LP gas line. The filter can become saturated and cause a restriction to gas flow. This could cause a lack of cooling on gas mode. If you suspect a restriction, first verify the thermostat (See Sec. 7.3A) and bypass screw (See Sec. 7.4) are good. If these components are good, and filter is restricted, replace thermostat.

7.3 THERMOSTAT

A. LP GAS MODE

On the LP gas mode, full line pressure is directed through the thermostat to the burner until the thermostat senses that the refrigerator cabinet has reached proper cooling temperature. At that time an internal valve closes and redirects the gas flow through the bypass screw. This reduces the amount of LP gas going to the burner assembly. The gas flow remains in this "bypass" mode until the thermostat senses that the refrigerator

cabinet needs more cooling. Again, the thermostat directs LP gas flow through the thermostat at full line pressure until the cabinet temperature is sufficient. The thermostat is calibrated by the manufacturer so that at mid-range the cabinet temperature should be approximately 40 degrees Fahrenheit. **To check the calibration of the thermostat**, place a container of water in the cabinet of the refrigerator and operate at mid-range setting until the thermostat is satisfied. Then, check the temperature of the water. It should be approximately 40 degrees. We do not recommend any calibration in the field. If calibration is not correct, replace the thermostat.

To check the thermostat for proper gas flow, set the thermostat to maximum and check the gas pressure at the pressure test port. It should be line pressure, between 11 to 12 inches water column. If you have less than 11 inches of water column pressure, the next step would be to shut off the gas supply and remove the bypass screw. Then install a bypass screw that does not have the small o-ring on it. Next, turn on the gas supply and take a reading. If the manometer now reads 11 inches of water column, the thermostat is defective and must be replaced. If the bypass screw test shows no change in pressure, the problem lies in the filter (See Sec. 7.2), the shut-off valve (See Sec. 7.1) or the gas supply (See Sec. 6). Shut off the gas supply, remove the bypass screw, replace it with a proper one that has an o-ring and turn the gas on.

NOTE: The RM2310, RM2410, RM2510, RM2610 and RM2810 thermostats, have o-ring type fittings. The RM2452, RM2453, RM2552 and RM2553 thermostats have threaded fittings.

NOTE: Check for leaks with an approved LP gas leak solution whenever any part of the gas system has been worked on or the system has been separated.

B. ELECTRIC MODE

On 2-way models it controls the AC heating element. On 3-way models it controls the DC heating element as well as the AC heating element. The thermostat regulates the cabinet temperature by making and breaking the heat source circuit. The internal mechanism breaks contact (continuity) when adequate cabinet temperature has been reached. Check the thermostat for continuity or use a jumper wire with insulated clips and bypass the thermostat.

NOTE: Care should be used. Do not short to thermostat casing. Also remove the jumper after testing is completed.

If the above test allows the refrigerator to operate, replace the thermostat.

7.4 BYPASS SCREW

The bypass screw is a small brass screw located on any Dometic gas thermostat that regulates gas flow in the low flame mode. There are three common sizes of this screw: S-17 (350 BTU), S-14 (325 BTU) and S-11 (300 BTU). To check the bypass screw, connect a manometer at the pressure test housing. The pressure on low flame mode should be 2 to 4 inches water column. Above 5 inches water column on low flame mode could cause an over-cooling situation. The bypass screw used on the Manual Refrigerators is S-14.

7.5 SAFETY VALVE

The safety valve is an assembly that shuts off the supply of LP gas to the burner if the flame goes out for any reason. This is to ensure that a concentration of unburned gas does not accumulate in the refrigerator vent area. To check the safety valve, use a known good thermocouple (See Sec. 7.6) and install into the safety valve. Next, supply flame to the tip of the thermocouple for 2 to 3 minutes while holding in on the safety valve stem. Next, remove flame from thermocouple tip and release safety valve stem. The safety valve should hold in for at least 30 seconds. If it releases earlier than 30 seconds, replace the safety valve.

7.6 THERMOCOUPLE

The thermocouple is a component extending above the burner assembly so the tip is in the path of the flame. It will produce 14 to 30 millivolts DC in normal operation. To check the thermocouple, use a known good safety valve (See Sec. 7.5) and attach to the thermocouple. Next, supply flame to the tip of the thermocouple for 2 to 3 minutes while depressing the safety valve. Remove the flame and release the safety valve. The valve should hold for at least 30 seconds. If it does not hold the safety valve open for 30 seconds, replace the thermocouple. If it does hold for 30 seconds or more, the thermocouple is good, do not replace it.

NOTE: Be sure the tip on the thermocouple is clean.

7.7 THERMOCOUPLE ADAPTER

Located between the thermocouple and the safety valve, the thermocouple adapter is a device that allows the flame indicator meter to read DC millivolts from the thermocouple.

To test the thermocouple adapter, remove it from its location and do a continuity test from the terminal to the center post. Continuity should exist. Next, check for continuity between the terminal and casing. No continuity should exist. If either check is incorrect, **REPLACE THE ADAPTER.**

7.8 BURNER

The burner is a slotted metal tube located below the flue tube on the cooling unit. It should be level and the slots, in the burner, should be directly below the flue tube.

The burner should be cleaned periodically, at least once a year. To clean the burner, remove from the refrigerator and check for any foreign residue that could cause a deflection of the gas flow or the flame. Next, soak the burner in an alcohol based solvent and allow to air dry. After cleaning, reinstall in the refrigerator.

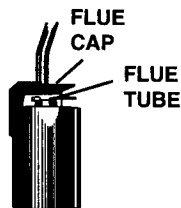
7.9 FLUE BAFFLE

The flue baffle is designed to concentrate the heat, from the gas flame, at a certain area of the flue tube. It should be cleaned periodically, at least once a year. To clean, remove from the flue tube and check for any damage, then clean thoroughly. See the following chart for dimensions and position:

Model	Length of Flue Baffle Assembly (Flue Baffle & Wire)	Flue Baffle	Proper Baffle Position (from Burner to Bottom of Baffle)
RM2310 RM2410	18-3/4"	5/8"W x 4"L	3-1/4"
RM2510	21-3/4"	13/16"W x 4"L	3-1/8"
RM2610	31-9/16"	3/4"W x 5-1/4"L	1-5/8"
RM2810	37-1/8"	3/4"W x 6"L	1-3/4"
RM2452 RM2453	22-1/2"	3/4" x 3-7/8"L	1-1/2"
RM2552 RM2553	25-1/2"	3/4" x 3-7/8"L	1-1/2"

7.10 FLUE CAP BOTTOM MOUNT CONTROLS

The flue cap is located at the top of the flue tube and is attached with a screw. It must be properly attached or flame outage could occur.



7.11 FLUE TUBE

The flue tube is a component of the cooling unit. It must be cleaned periodically, at least once a year. To clean, remove flue cap and flue baffle, then cover the burner and clean by using a flue brush. Dometic Part Number 0151404001. If the flue tube becomes coated with scale or residue from combustion of LP gas, the efficiency of gas operation decreases.

NOTE: After cleaning be sure to reinstall the flue baffle and flue cap (if equipped).

7.12 ORIFICE

The orifice is a small brass fitting that has a ruby membrane that is laser beam drilled and is mounted on the gas line just prior to the burner. The orifice should be cleaned periodically, at least once a year, by using

an alcohol based solvent and allowing to air dry. Never use a drill bit or jet tip cleaner to clean any orifice as these devices will damage the factory machined part and create a potentially dangerous condition.

The correct size orifice for the manual refrigerator is as follows:

RM2310	#39
RM2410	#39
RM2510	#43
RM2610	#53
RM2810	#58
RM2452	#43
RM2453	#43
RM2552	#43
RM2553	#43

NOTE: Always use the proper orifice. Never use a larger orifice as this could cause a lack of cooling problem.

SECTION 8 WIRING

8.1 EXTERNAL WIRING

- 120 Volts AC Connection:** The refrigerator is equipped with a three prong (grounded) plug for protection against shock hazards and should be plugged directly into a properly grounded three prong receptacle. DO NOT cut or remove the grounding prong from this plug.
- 12 Volt Connection for Igniter:** The connection is made to the terminal block marked 12 volts DC REIGNITER. The igniter must be connected to a battery circuit and will draw about 1 amp at 12 volts DC.
- 12 Volt DC Connection for Heater (3-Way Models Only):** This connection is made to the terminal block marked DC VOLT HEATER. The refrigerator must be connected to the battery circuit with two wires of adequate capacity to avoid voltage drop. The wire gauge should be chosen with consideration to the wire length in accordance with the Table on the next page.

MAXIMUM TOTAL CONDUCTOR WIRE LENGTH IN FEET/METERS				
MODEL	AWG			
	14	12	10	8
RM2310	10ft.	17ft.	27ft.	43ft.
	3 m	5.2m	8.2m	13m
RM2410	9ft.	15ft.	25ft.	40ft.
	2.7m	4.6m	7.6m	12.2m
RM2510	7ft.	12ft.	19ft.	31ft.
	2.1m	3.6m	5.8m	9.5m
RM2610	6.5ft.	10.5ft.	17ft.	27ft.
	2m	3.2m	5.1m	8.1m
RM2810	6.5ft.	10.5ft.	17ft.	27ft.
	2m	3.2m	5.1m	8.1m
RM2453	9 ft.	15 ft.	25 ft.	40 ft.
	2.7m	4.6m	7.6m	12.2m
RM2553	7ft.	12 ft.	19 ft.	31 ft.
	2.1m	3.6m	5.8m	9.5m

8.2 INTERNAL WIRING

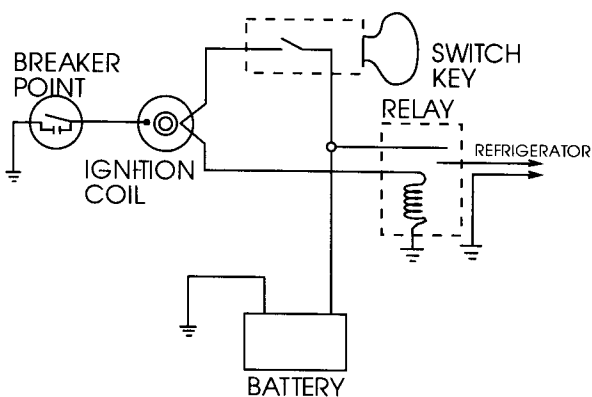
Check all wires and the connectors to ensure a proper and tight connection. Also verify the refrigerator is wired per the wiring diagram for the model you are working on. (See wiring diagrams on the following pages.)

Do not use the body or chassis of the vehicle as a substitute for either of the two conductors. No other electrical equipment or lighting should be connected to the refrigerator circuit.

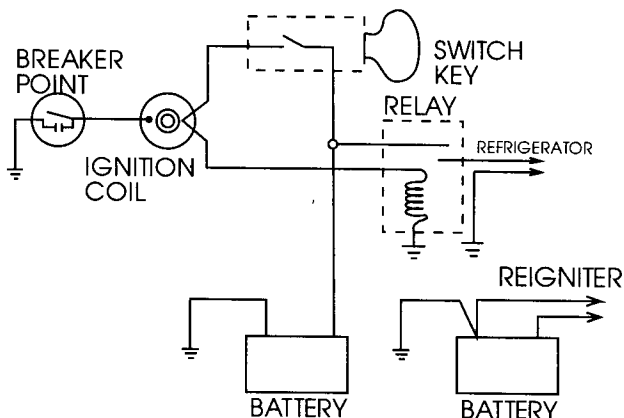
⚠ CAUTION

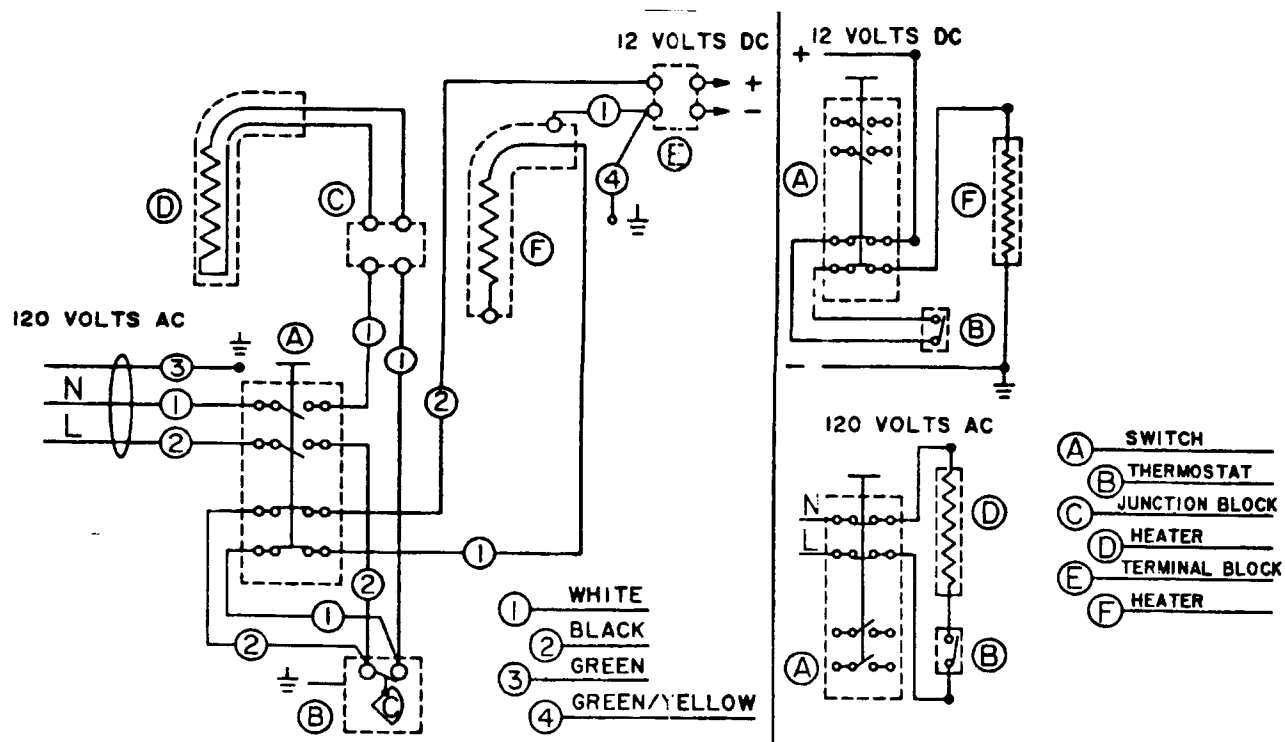
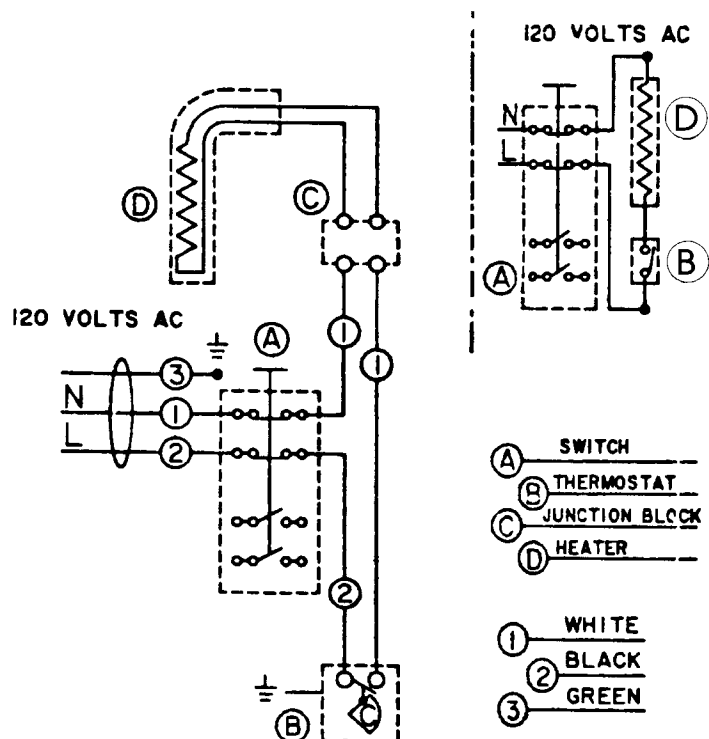
DO NOT OPERATE THE REFRIGERATOR ON 12-VOLT WHEN THE VEHICLE IS PARKED. THE CUSTOMER WILL RUN OUT OF BATTERY IN A RATHER SHORT TIME. IF POSSIBLE, THE INSTALLATION OF A 12-VOLT OPERATED REFRIGERATOR SHOULD BE COMPLETED WITH A RELAY MOUNTED EITHER IN THE TOW VEHICLE OR IN THE RECREATIONAL VEHICLE. THIS RELAY WILL AUTOMATICALLY CUT OUT THE REFRIGERATOR WHEN THE MOTOR IS STOPPED.

RM2310/RM2410/RM2453

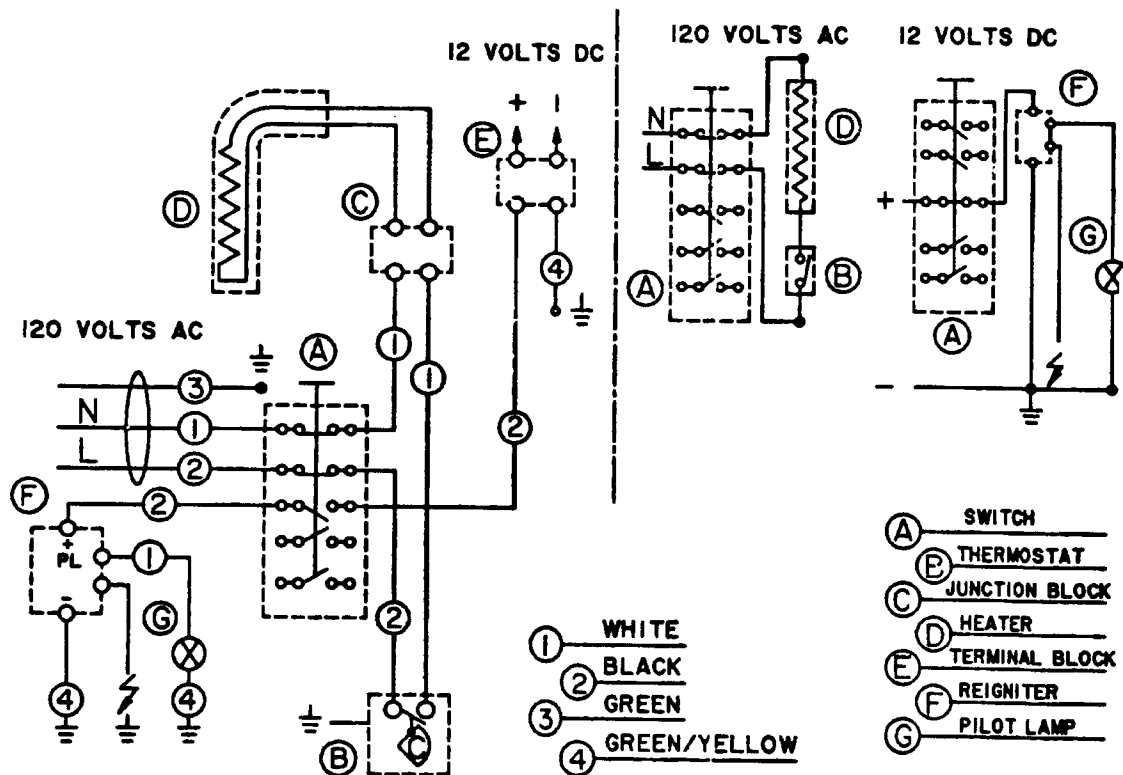


RM2510/RM2610/RM2810/RM2553

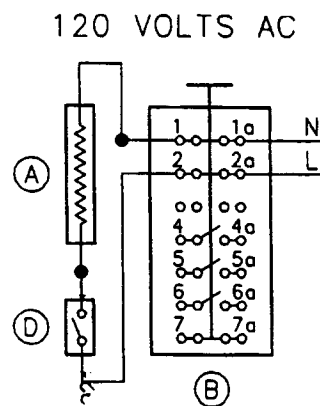
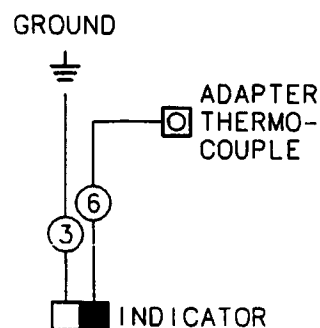




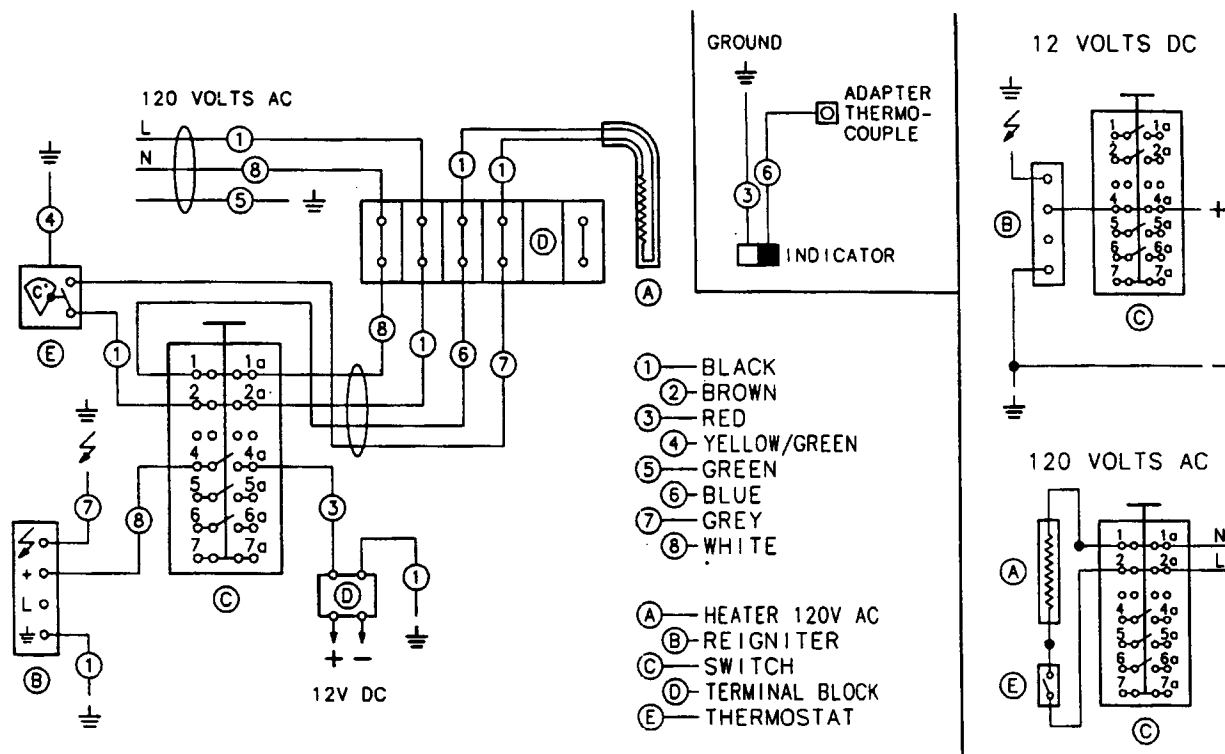
TYPICAL 2-WAY WITH REIGNITER **FOR REFRIGERATORS WITH BOTTOM MOUNT CONTROLS**



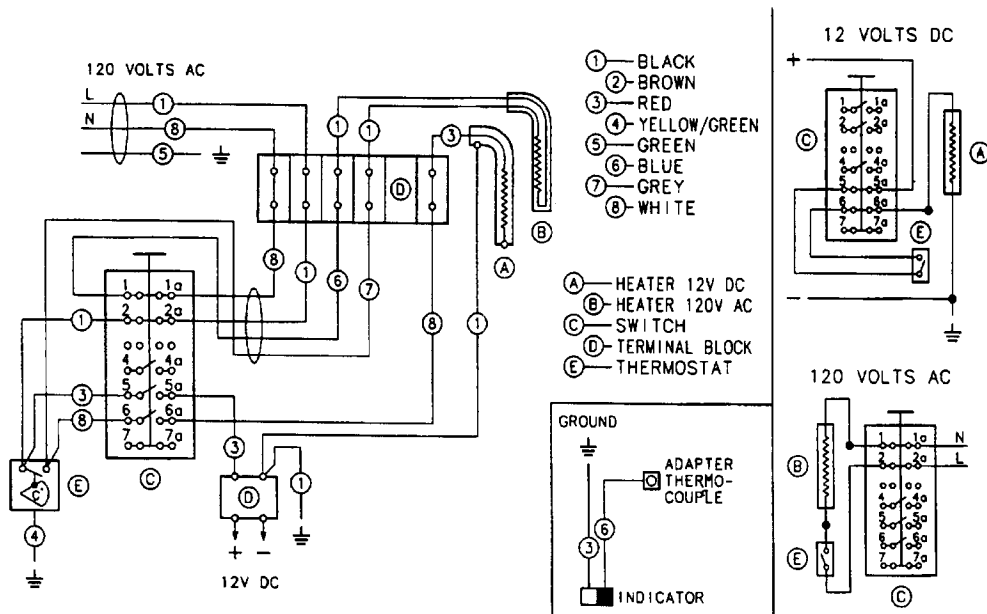
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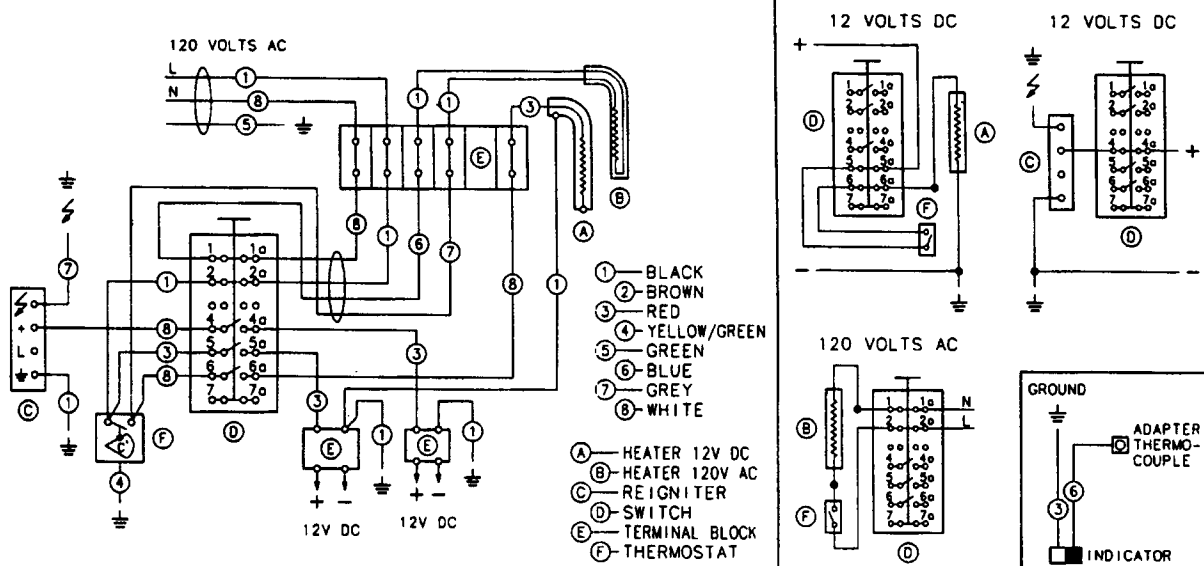
TYPICAL 2-WAY WITH REIGNITOR FOR REFRIGERATORS WITH TOP MOUNT CONTROLS



TYPICAL 3-WAY WITH PIEZO IGNITOR FOR REFRIGERATORS WITH TOP MOUNT CONTROLS



TYPICAL 3-WAY WITH REIGNITOR FOR REFRIGERATORS WITH TOP MOUNT CONTROLS



SECTION 9

OTHER

9.1 LEVELING

Leveling is one of the requirements for proper operation with absorption refrigerators. The absorption design utilizes no mechanical pumps or compressors to circulate the refrigerant within the system, so proper leveling must be maintained to provide the correct refrigerant flow. Without proper leveling, refrigerant within the cooling unit will collect and stagnate at certain areas. Without proper refrigerant flow, the cooling process will stop. Refrigerators have a type of cooling unit that utilizes an enclosed pump tube surrounded by a solution to protect the assembly. To ensure proper leveling with these models, the vehicle needs to be leveled so it is comfortable to live in. (No noticeable sloping of floor or walls). When the vehicle is moving, leveling is not critical as the rolling and pitching movement of the vehicle will pass to either side of level, keeping the refrigerant from accumulating in the piping.

9.2 VENTILATION

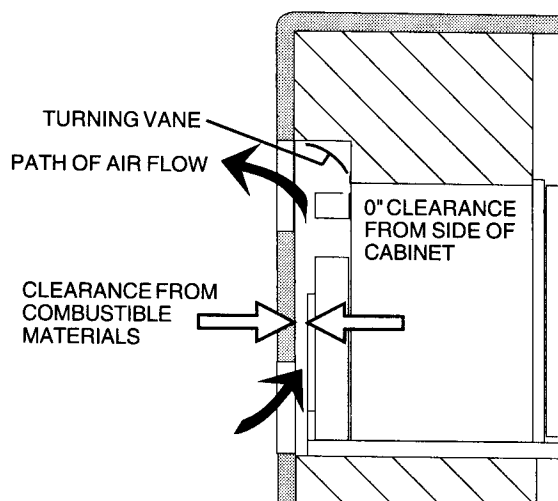
Ventilation is one of the requirements for proper cooling unit operation. The coach vent system must be able to provide a way to direct the hot air, produced by the action of the cooling unit, out away from the installation of the refrigerator. The refrigerator extracts heat from the interior of the refrigerator cabinet and dissipates the heat out through the vent system. In a proper installation there should be zero (0") clearance surrounding the sides and top of the refrigerator to achieve proper air flow. All potential dead air pockets should be blocked or baffled to ensure that heat won't be trapped in these spaces and reduce efficiency.

In addition, the cooling unit should have the following clearances to the nearest surface made of combustible material:

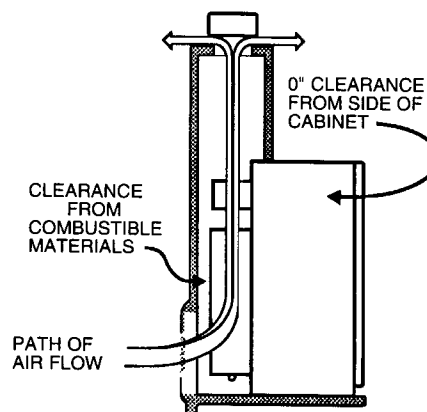
RM2310	1	INCH
RM2410	1/2	INCH
RM2510	1/2	INCH
RM2610	1/2	INCH
RM2810	1/2	INCH
RM2452	0	INCH
RM2453	0	INCH
RM2552	0	INCH
RM2553	0	INCH

NOTE: Refrigerators should be installed in accordance with appropriate installation instructions received with the refrigerator.

RM2310/RM2410



RM2510/RM2610/RM2810/ RM2452/RM2453/RM2552/RM2553



9.3 AIR LEAKS

Check the gasket on the doors to be sure of a positive air seal. A simple method to check gaskets is to close the door on a dollar bill, then pull the dollar bill out. If no resistance is felt, the gasket is not sealing properly. This should be done on all four sides of the door. If a gasket is not sealing properly, first warm the gasket material with a hair dryer.

⚠ CAUTION

**DO NOT OVERHEAT
AS YOU CAN MELT THE MATERIAL.**

Then close the door and the magnetic strip should pull the gasket to the metal frame. Leave door closed until the material has cooled. Then recheck for a positive seal. If a positive seal cannot be achieved, replace the door gasket. Also check that the cooling unit is installed properly. The cooling unit's foam block, the portion that surrounds the evaporator coils, must be flush to the cabinet at the back of the refrigerator and have a positive seal. If the cooling unit is not installed properly, remove and install properly.

NOTE: Air leaks will cause insufficient cooling as well as rapid formation of frost.

9.4 DOOR POSITION

The door position can be checked by observing any misalignment of the door in relation to the frame.

To correct an alignment of the door, loosen the hinge screws slightly, and reorient the door in the proper position. Hold the door in its new position and carefully retighten the hinge screws.

If the door needs more adjustment than is available through the hinge adjustment, the base can be repositioned to reorient the door. Turn the refrigerator on its side to gain access to the two front base screws. Loosen both screws slightly. Reposition the base until the door is reoriented. Retighten the base screws while holding the base in its new position.

9.5 AMBIENT TEMPERATURE

This is the temperature surrounding the recreational vehicle, as well as the temperature of air at the back of the refrigerator. As the ambient temperature increases, the air temperature in the area of the cooling unit increases. Improper venting at this point, will cause the cooling unit to have reduced efficiency.

9.6 COOLING UNIT

The cooling unit is a self-contained, hermetically sealed set of coils where the refrigeration process takes place. The chemicals involved in the cooling process include hydrogen, ammonia, water and a rust inhibiting agent. There are no repairs recommended on the cooling unit. If it is defective, replace with a new cooling unit. To check the cooling unit, first verify the AC heating element is good (See Sec. 3.1). Then place approximately one gallon of water inside the refrigerator and place a thermometer in one of the containers of water. Next, supply 115 volts direct to the AC heating element and operate for at least 12 hours. Then check the temperature on the thermometer. It should be at 45 degrees or lower depending on test conditions (See

ambient temperature Sec. 9.5). If so, the cooling unit is good. If the temperature of the water is above 45 degrees, replace the cooling unit.

9.7 FOOD STORAGE

Proper refrigeration requires free air circulation within the food storage compartment. Restricted air circulation within this compartment will cause higher cabinet temperatures. To remedy this situation, simply rearrange your foodstuffs. It is also essential that the shelves are not covered with paper or large storage containers. Always remember to allow for proper air circulation. Odorous or highly flavored foods should always be stored in covered dishes, plastic bags or wrapped in foil or waxed paper to prevent food odors. Vegetables, lettuce, etc., should be covered to retain their crispness. **NEVER PUT HOT FOOD INTO THE REFRIGERATOR.** To reduce frost formation in and on the freezing compartment, cover stored liquids and moist foods and do not leave the door open longer than necessary. When the refrigerator is heavily loaded, it takes a longer time for refrigerator temperatures to lower, also increasing the ice making time. A very heavy load may also cause defrosting.

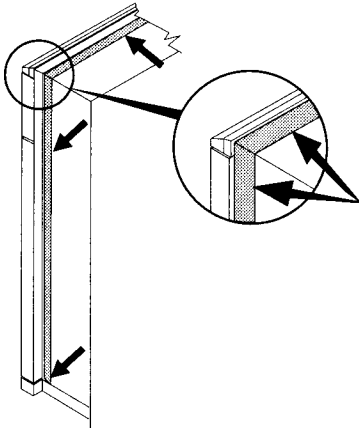
9.8 HIGH HUMIDITY

High humidity may cause a small amount of condensation to form on the frame of the refrigerator. In some cases it can develop to such a degree that it will run off the frame. As the humidity is reduced, the sweating will decrease. High humidity can also be a factor in rapid formation of frost.

9.9 INTERIOR LINER SEAL TO FRAME

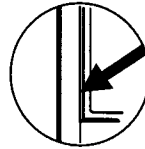
There is a seal that is applied to the liner in the area where the metal frame makes contact with the interior liner. If this seal is incomplete, cold air can migrate out to the metal frame. If this happens, condensation could form on the frame and could promote rapid formation of frost. If you suspect an improper seal, apply a small bead of silicone all the way around the perimeter where the frame meets the interior liner.

Remove all screws securing the refrigerator into the cabinet and slide the refrigerator out approximately 2–4 inches. Clean the metal frame and foil-backed insulation around the refrigerator. Apply a foil-backed adhesive tape to the joint between outer frame and foil-backed refrigerator insulation. Refer to illustration top of page 22.

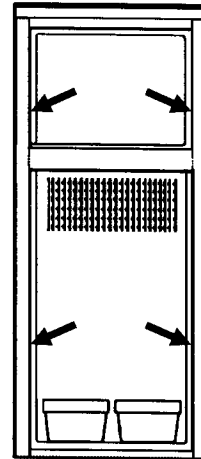


Make sure the refrigerator is dry and that the surface temperatures are above 50°F. Use a clear silicon caulking compound and seal the seam between the refrigerator's plastic liner and the metal frame. Apply the silicon in a continuous bead around both the refrigerator freezer and food compartments.

NOTE: TO FORM A PROPER SEAL, IT IS IMPORTANT NOT TO LEAVE ANY GAPS.



**CAULK SEAM
BETWEEN
PLASTIC LINER
AND METAL
FRAME**



**DOUBLE DOOR
REFRIGERATOR
SHOWN WITH
DOORS
REMOVED**