

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.

CONTENTS

PAGE NO.

RM7130/RM7832 DIAGNOSTIC FLOW CHART	1
---	---

SECTION 1

OPERATION

1.1 RM7130 Refrigerator Operation	4
1.2 RM7832 Refrigerator Operation	5

SECTION 2

AC VOLTAGE

AC Voltage Requirements	6
-------------------------------	---

SECTION 3

AC COMPONENTS

Heating Element	6
-----------------------	---

SECTION 4

DC VOLTAGE

DC Voltage Requirements	6
-------------------------------	---

SECTION 5

DC COMPONENTS

5.1 Climate Control Heater	7
5.2 Thermistor	7
5.3 Thermistor Adjuster	8
5.4 Solenoid Valve	8
5.5 Igniter	8
5.6 High Voltage Cable	9
5.7 Electrode	9
5.8 Upper Circuit Board	9
5.9 Lower Circuit Board	10
5.10 Door Switch	11
5.11 Fuses	11

SECTION 6

LP GAS

LP Gas Requirements	12
---------------------------	----

SECTION 7

LP GAS COMPONENTS

7.1 Manual Gas SHUTOFF Valve	12
7.2 Orifice	12
7.3 Thermocouple	13
7.4 Burner	13
7.5 Flue Baffle	13
7.6 Flue Cap (RM7130 Only)	13
7.7 Flue Tube	13

CONTENTS

PAGE NO.

SECTION 8

WIRING

8.1	External Wiring	13
8.2	Internal Wiring	15

SECTION 9

OTHER

9.1	Leveling	15
9.2	Ventilation	15
9.3	Air Leaks	16
9.4	Door Position	17
9.5	Ambient Temperature	17
9.6	Cooling Unit	17
9.7	Food Storage	18
9.8	High Humidity	18
9.9	Interior Liner Seal to Frame	18

SECTION 10

ICE MAKER

Ice Maker Operation	18
---------------------------	----

SECTION 11

ICE MAKER COMPONENTS

11.1	Switch, On/Off	19
11.2	Start Device & Overload	19
11.3	Compressor	19
11.4	Fan Motor	20
11.5	Mold Heater	20
11.6	Ice Ejector	20
11.7	Mold Thermostat	20
11.8	Shutoff Arm	20
11.9	Mold Switches	21
11.10	Timing Motor	21
11.11	Water Valve	21
11.12	Ice Maker Assembly	21
11.13	Condenser	21

SECTION 12

ICE MAKER – OTHER

12.1	Air Flow	24
12.2	Water Fill Adjustment	24
12.3	Weight of Ice	24
12.4	Installation	24
12.5	Wiring	25
12.6	Refrigerant System	26
12.7	Water Supply	26

This program will address the most common system problems associated with the Dometic RM7130/RM7832 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	STEP
REFRIGERATOR SECTION			
1. No operation – no panel lights	Operation DC Volts Fuse Wiring Upper Circuit Board Lower Circuit Board	1.1 or 1.2 4 5.11 8.1, 8.2 5.8 5.9	A
2. No operation – has panel lights	Operation DC Volts Thermistor Fuses Upper Circuit Board Wiring Lower Circuit Board	1.1 or 1.2 4 5.2 5.11 5.8 8.2 5.9	A,B,C
3. No AC operation – operates on gas	Operation AC Volts Fuse Heating Element Upper Circuit Board Wiring Lower Circuit Board	1.1 or 1.2 2 5.11 3 5.8 8.2 5.9	A,B
4. No Gas operation – operates on AC	Operation LP Gas Manual Gas Valve Igniter High Voltage Cable Electrode Solenoid Upper Circuit Board Wiring Lower Circuit Board	1.1 or 1.2 6 7.1 5.5 5.6 5.7 5.4 5.8 8.2 5.9	A,C
5. Insufficient cooling on all modes.	Ventilation Leveling Ambient Temperature Air Leaks Thermistor Cooling Unit Thermistor Adjuster	9.2 9.1 9.5 9.3 5.2 9.6 5.3	
6. Insufficient cooling on AC – cools properly on gas.	AC Volts Heating Element Lower Circuit Board	2 3 5.9	A,B

SYMPTOM	CAUSE	REFER TO	STEP
7. Insufficient cooling on gas – cools properly on AC.	LP Gas Orifice Flue Baffle Flue Tube Flue Cap (RM7130 Only) Burner Lower Circuit Board	6 7.2 7.5 7.7 7.6 7.4 5.9	A,C
8. Freezes on all modes.	Thermistor Thermistor Adjuster Lower Circuit Board Upper Circuit Board	5.2 5.3 5.9 5.8	A,B,C
9. Changes preset mode.	Operation DC Volts Wiring Upper Circuit Board Lower Circuit Board	1.1 or 1.2 4 8.1 5.8 5.9	A
10. Check light on.	DC Volts Wiring LP Gas Manual Gas Valve Solenoid Orifice Burner Thermocouple Lower Circuit Board	4 8.2 6 7.1 5.4 7.2 7.4 7.3 5.9	A,C
11. Interior light ON when door is closed.	Wiring Door Switch Door Position	8.2 5.10 9.4	
12. Rapid formation of frost.	Food Storage Interior Liner to Frame High Humidity Air Leaks	9.7 9.9 9.8 9.3	
13. Water on frame.	Interior Liner to Frame High Humidity Air Leaks Climate Control Heater	9.9 9.8 9.3 5.1	
<u>ICE MAKER SECTION</u>			
14. Ice Maker fails to start.	Operation Arm in UP Position AC Volts Switch On/Off	10, 11.12 11.8 2 11.1	
15. Fan Runs – No compressor.	Wiring Starting Device Compressor	12.5 11.2 11.3	

SYMPTOM	CAUSE	REFER TO	STEP
16. Compressor runs but kicks ON and OFF.	Starting Device Refrigerant System	11.2 12.6	
17. Compressor runs – no fan.	Fan Motor	11.4	
18. Ice maker trips breaker.	Low Voltage High Amperage Compressor Breaker	2 2 11.3 2	
19. Ice maker won't make ice.	Ice Maker Assembly Blade Frozen in Ice Switch AC Voltage Water Valve	11.12 12.2 11.1 2 11.11	
20. Water in bucket.	Level Water fill adjustment Water Valve	12.2 12.2 11.11	
21. Ice is too soft and wet.	Air Flow Condenser Fins	12.1 11.13	
22. Keeps making ice and won't shut off.	Shut-Off Arm Shut-Off Switch	11.8 11.9	
23. Not making enough ice.	Operation Thermostat, Mold Cube Size Air Flow Condenser Fins Fan Motor	10 11.7 12.2 12.1 11.13 11.4	
24. Too much water is coming out.	Water Fill Adjustment Water Valve	12.2 11.11	
25. Ejector blade frozen into ice cubes.	Water Fill Adjustment Water Valve	12.2 11.11	
26. Unit is hooked-up – no water comes in.	Water Supply Water Valve	12.7 11.11	
27. Ice maker is running but won't make any cubes.	Water Supply Shutoff Arm Thermostat, Mold Hold Switch	12.7 11.8 11.7 11.9	

SYMPTOM	CAUSE	REFER TO	STEP
28. Will not eject ice.	Ice Ejector Mold Heater Timing Motor	11.6 11.5 11.10	
29. Unit leaks water.	Installation	12.4	

SECTION 1

OPERATION

1.1 RM7130 REFRIGERATOR OPERATION

- A 12 volt DC supply must be available for the electronic control to function.
- Press the main power ON/OFF button (1) to the DOWN position.
- Press the TEMPERATURE SELECTOR BUTTON (3) until the lamp at the desired setting is illuminated.

"C" will illuminate depending on the energy source selected by the control system. If the control system is operating with AC energy and it then becomes unavailable, the system will automatically switch to GAS. As soon as AC becomes available again, the control will switch back to AC regardless of the status of GAS operation.

GAS MODE

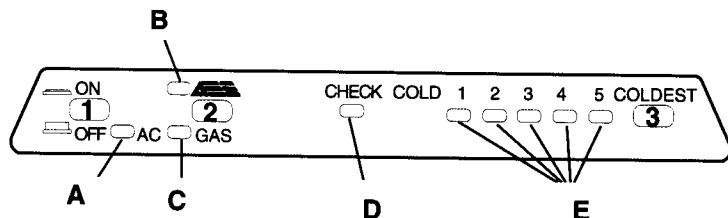
- Move the AES mode selector button (2) to the UP position. The GAS mode indicator lamp "C" will illuminate. After 45 seconds the burner should be ignited and operating normally.
- On the initial refrigerator start-up, it may take longer than 45 seconds to allow air to be purged from the gas line. If the gas does not ignite within 45 seconds, the CHECK indicator lamp "D" will illuminate and the GAS mode indicator lamp "C" will go off. To reset when the CHECK indicator lamp "D" is illuminated, press the main power ON/OFF button (1) to the OFF then ON position.

If the control is switched to AC operation while the CHECK indicator lamp is on, it will function properly, but the CHECK indicator lamp will not go off until the main power ON/OFF button is pressed to the OFF then ON position.

NOTE: Do not continue to reset GAS operation if the CHECK indicator lamp continues to be illuminated after several tries. If repeated attempts fail to start the LP gas operation, check to make sure that the LP gas supply tanks are not empty and all manual shut-off valves in the lines are open.

- Press the TEMPERATURE SELECTOR button (3) until the lamp at the desired position is illuminated.

AES DISPLAY PANEL



AES MODE

- Move the AES mode selector button (2) to the DOWN position. If 120 volts AC is available, the AC mode indicator lamp "A" will illuminate indicating AC operation. If 120 volts AC is not available, the GAS mode indicator lamp "C" will illuminate and the control system will automatically switch to GAS operation.
- If the CHECK indicator lamp "D" illuminates and the GAS mode indicator lamp "C" is off, the controls have failed to ignite the burner in the GAS mode. GAS operation may be reset by pressing main power ON/OFF button (1) to the OFF then ON position.
- Press the TEMPERATURE SELECTOR button (3) until the lamp at the desired position is illuminated.
- When operating in the AES mode, the AES mode indicator lamp "B" will illuminate. The control system will automatically select between AC and GAS operation with AC having priority over GAS. Either the AC indicator lamp "A" or the GAS indicator lamp

THERMOSTAT

The thermostat on the refrigerator controls both the gas and electric operation, thereby eliminating the necessity of resetting each time a different energy source is employed.

After the initial start-up, the thermostat should be moved from "COLDEST" to the desired temperature setting, usually about mid-setting.

STANDBY MODE OF OPERATION

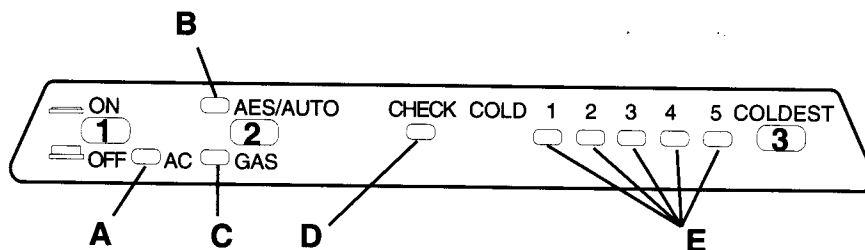
This control system contains a feature where it will continue to operate the cooling system in the event of a failure of a major operating component. Two different modes of operation can occur in this category.

If for some reason the display module becomes non-

functional, the control system will revert to fully automatic operation – selecting the best energy source available with AC and GAS priority. The temperature of the refrigerator will be maintained at the MID position within normal temperature tolerances. The power module will continually attempt to reestablish operation of the display module.

The second standby mode of operation will execute when a failure of the temperature sensing device or associated electronic circuitry occurs. If this should occur, the control system will operate on the energy source selected via the control panel. The cooling unit will run continuously on the selected energy source. The refrigerator will continue to operate in this mode indefinitely or until a new sensor is installed and the system is reset.

2-WAY DISPLAY PANEL



1.2 RM7832 REFRIGERATOR OPERATION

AES/AUTO MODE

1. Press the AES/AUTO/GAS mode selector button (2) to the DOWN position. If 120 volts is available, the AC mode indicator lamp (A) will illuminate indicating AC operation. If 120 volts AC is not available, the GAS indicator lamp (C) will illuminate, indicating the control has automatically switched to the GAS mode.
2. If the CHECK indicator lamp (D) illuminates and the GAS mode indicator lamp (C) is off, the controls have failed to ignite the burner in the GAS mode. GAS operation may be reset by pressing the main power ON/OFF button (1) to the OFF then ON position. (See Step 2, under GAS MODE).
3. Press the TEMPERATURE SELECTOR button (3) until the lamp at the desired position is illuminated.

GAS MODE

1. Move the AES/AUTO/GAS mode selector button (2) to the UP position. The GAS mode indicator lamp (C) will illuminate. Within 45 seconds the burner should be ignited and operating normally.
2. On the initial refrigerator start-up, it may take longer than 45 seconds to allow air to be purged from the gas

line. If the gas does not ignite within 45 seconds the CHECK indicator lamp (D) will illuminate and the GAS mode indicator lamp (C) will go off.

To reset when the CHECK indicator lamp (D) is illuminated, press the main power ON/OFF button (1) to the OFF and then ON position.

NOTE: Do not continue to reset GAS operation if the CHECK indicator lamp continues to be illuminated after several tries.

3. Press the TEMPERATURE SELECTOR button (3) until the lamp at the desired position is illuminated.

THERMOSTAT

The thermostat on the refrigerator controls both the gas and electric operation, thereby eliminating the necessity of resetting each time a different energy source is employed. After the initial start-up, the thermostat should be moved from "COLDEST" to the desired temperature setting, usually at mid-setting.

TO SHUT OFF THE REFRIGERATOR

The refrigerator may be shut off while in any mode of operation by pressing the main power ON/OFF button to the UP (OFF) position. This shuts off all DC power to the refrigerator, including the interior light.

DESCRIPTION OF OPERATION

MODES:

AES/AUTO MODE

When operating in the AES/AUTO mode, the AES/AUTO mode indicator lamp (B) will illuminate. The control system will automatically select between AC and GAS operation with AC having priority over GAS. Either the AC indicator lamp (A) or the GAS indicator lamp (C) will illuminate depending on the energy source selected by the control system. If the control system is operating with AC energy and it then becomes unavailable, the system will automatically switch to GAS. As soon as AC becomes available again the control will switch back to AC regardless of the status of GAS operation.

GAS MODE

When operating in the GAS mode the AES/AUTO mode indicator lamp (B) will be off and the GAS mode indicator lamp (C) will be illuminated.

This mode provides LP gas operation only. The control system will activate the ignition system and will attempt to light the burner for a period of approximately 45 seconds. If unsuccessful, the CHECK indicator lamp (D) will illuminate and the GAS mode indicator lamp (C) will turn off.

To restart GAS operation, press the main power ON/OFF button (1) to the OFF then ON position. The control system will attempt a new 45-second ignition sequence.

If the refrigerator has not been used for a long time or the LP tanks have just been refilled, air may be trapped in the supply lines. To purge the air from the lines may require resetting the main power ON/OFF button (1) three or four times. If repeated attempts fail to start the LP gas operation, check to make sure that the LP gas supply tanks are not empty and all manual shutoff valves in the lines are open.

If the control is switched to AC operation while the CHECK indicator lamp is on, it will function properly, but the CHECK indicator lamp will not go off until the main power ON/OFF button is pressed to the OFF then ON position.

STANDBY MODE OF OPERATION

This control system contains a feature where it will continue to operate the cooling system in the event of a failure of a major operating component. Two different modes of operation can occur in this category.

If for some reason the display module becomes non-functional, the control system will revert to fully automatic operation – selecting the best energy source available with AC and GAS priority. The temperature of the refrigerator will be maintained at the MID position

within normal temperature tolerances. The power module will continually attempt to reestablish operation of the display module.

The second standby mode of operation will execute when a failure of the temperature sensing device or associated electronic circuitry occurs. If this should occur, the control system will operate on the energy source selected via the control panel. The cooling unit will run continuously on the selected energy source. The refrigerator will continue to operate in this mode indefinitely or until a new sensor is installed and the system is reset.

SECTION 2

AC VOLTAGE REQUIREMENTS

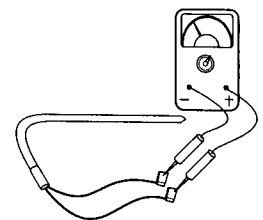
The refrigerator is a 120 volt AC, 60 Hz appliance. The proper operating range is **100 to 132 volts**. Check the AC volts at the receptacle where the refrigerator is attached. If voltage is outside of the proper operating range, correct the power source problem.

If voltage drops below 100 volts, cooling efficiency will decrease with voltage decrease. The refrigerator will not switch to another mode of operation until all **AC power is lost**.

SECTION 3

AC COMPONENTS—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 printed circuit board 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. The proper ohms for each of the two RM7130 and RM7832 heating elements is 69, with a tolerance of ten percent. If the resistance is outside the tolerance range, replace the heating element.

SECTION 4

DC VOLTAGE REQUIREMENTS

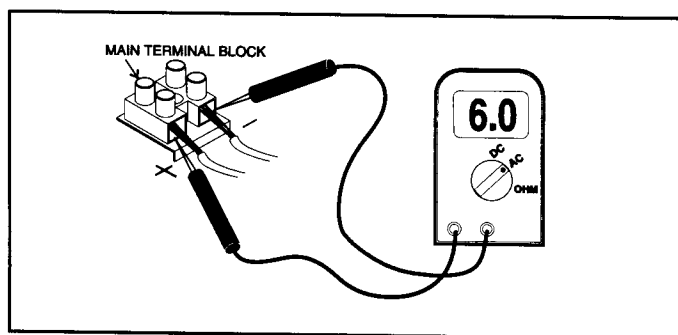
For the refrigerator to operate on any mode, DC voltage must be supplied to the terminals at the rear of the refrigerator.

Clean Direct Current (DC) power is mandatory for high-tech circuits to operate as designed. The sources for DC power are a battery and a converter.

A battery will provide straight line DC power, but extended operation will require recharging of the battery by the converter or the alternator.

The converter and alternator produce DC power by a series of diodes that rectify alternating current to DC. A battery or capacitors can be used to clean up the AC ripple that is present after AC voltage has been rectified.

AC ripple can be measured by a digital voltmeter set on the AC scale at the main terminal block connections. Six volts AC or less is acceptable.



NOTE: A brief interruption of the DC power supply while refrigerator is operating on gas can cause a check light; for example:

Turning the refrigerator OFF-ON while operating in the gas mode can cause a check light. The switching of relays from converter power to battery power when unplugging from shore power or shutting down of the generator could interrupt DC power long enough to cause a check light.

The thermocouple produces 25-35 MVDC when operating. When DC power is interrupted and restored, the thermocouple may not have sufficient time to cool. If the power module sees above 6 MVDC, when power is restored the power module will assume a problem in the gas mode and immediately turn on the check light.

The operational range of the unit is a minimum of 9.6V DC to a maximum of 22V DC. At 22V DC, the unit will automatically shut down until voltage has decreased to 18V DC for proper operation; however, the panel lights will continue to illuminate until voltage has dropped to 4V DC or below.

Connecting the refrigerator to an unregulated converter can result in improper operation of the refrigerator. Do not use the body or chassis of the RV as a substitute for either of the two conductors. Proper polarity is crucial for refrigerator operation. Check for proper DC voltage at the positive and negative terminals at the back of the unit. If the voltage is outside the operational range, correct the power supply problem.

SECTION 5 DC COMPONENTS

5.1 CLIMATE CONTROL HEATER

The climate control is a switch-operated DC electric heater. Its primary function is to warm the frame of the refrigerator during high temperature/high humidity conditions. This prevents the formation of condensation on the metal frame.

To check the switch, disconnect the wires and do a continuity check. In the OFF position, there should be no continuity. In the ON position, there should be a continuity reading.

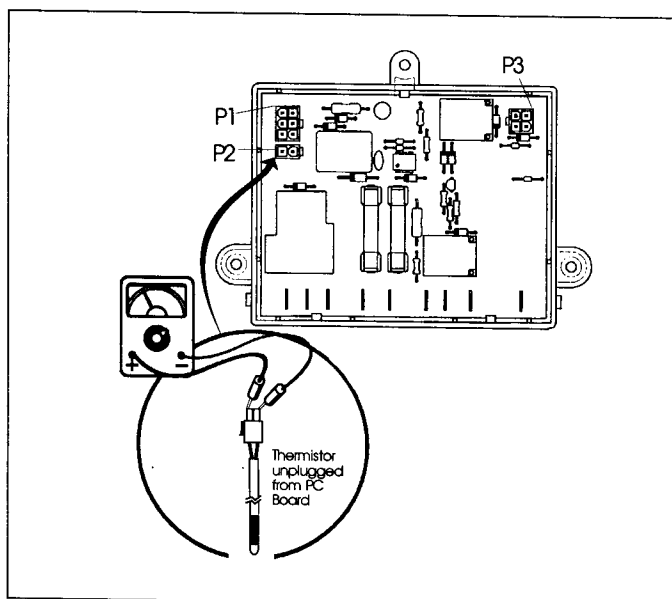
To check the heater itself, do an ohms resistance reading on the heater wire by using a properly calibrated ohm meter. The proper ohms reading is 34 ohms $\pm 10\%$. The approximate amp draw is less than .5 (1/2) amp.

NOTE: The climate control will draw DC power continuously. It should be turned off when charging source is not available.

5.2 THERMISTOR

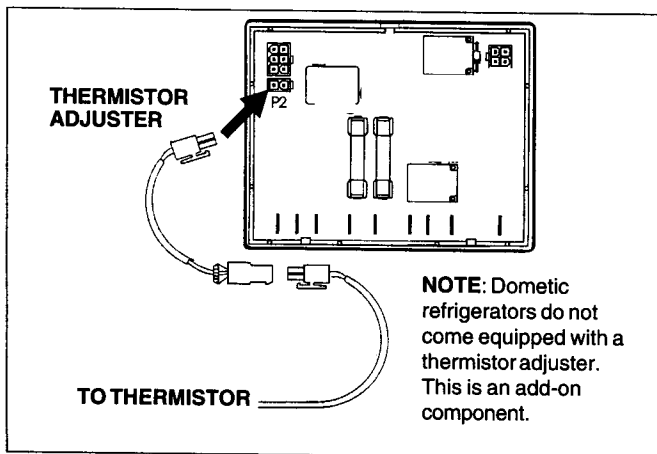
To determine if the thermistor is functioning properly, perform the following test.

Remove the cover from lower circuit board. Disconnect the thermistor harness from the P2, 2-pin terminal on the lower circuit board. Place the thermistor in a glass of ice water, approximately 33°F to 35°F. Wait 2 to 3 minutes. Using a properly calibrated ohm meter, place a probe on each terminal point. You should get a reading of approximately 7,000 to 10,000 ohms. Normal failure for this type of device is to have a very high resistance. A defective thermistor could cause an over-cooling condition on all modes.



5.3 THERMISTOR ADJUSTER

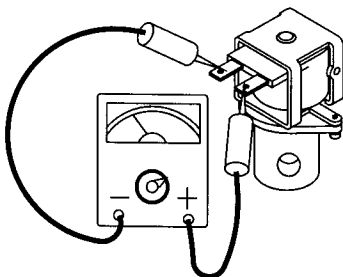
The thermistor adjuster is a resistor-type component that attaches between the thermistor and the lower board. Its function is to allow the refrigerator to reach temperatures below the normal 46° to 35°F. range (setting 1 through 5 on upper circuit board). To determine if the thermistor adjuster is operating properly, do an ohms resistance check across the terminals. Proper ohms reading is approximately 23,200 ohms $\pm 10\%$.



5.4 SOLENOID VALVE

When the refrigerator selects LP gas operation, DC volts are sent to the solenoid coil which opens the internal valve.

Check the solenoid coil with a properly calibrated ohm meter. Remove the connector from the solenoid and measure the resistance across the terminals. The proper reading would be 49 ohms with tolerance range of ten percent.

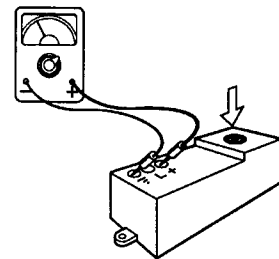


Next, hook up a manometer at the test port. Then check for DC volts at gas valve terminals while the unit is in trial-for-ignition. If DC volts are present and pressure is low, replace the valve. If DC volts are not present at the valve while the unit is in trial-for-ignition, verify that the wires at Plug 3, Terminal 1 and 2 on lower circuit board have DC volts (9 or more). If the valve chatters, check for low input voltage to the valve (below 9 volts DC).

5.5 IGNITER

The igniter is an electronic device that produces high voltage to create a spark at the burner, only on gas mode.

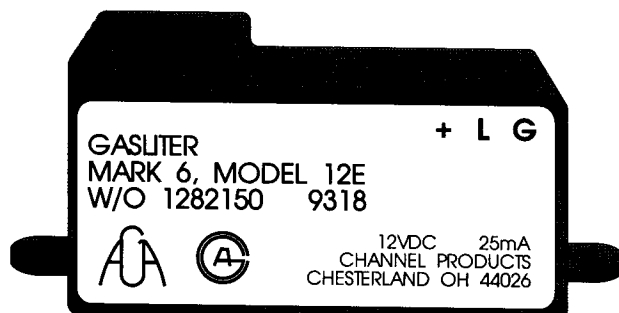
First verify proper voltage at the positive (+) and ground (-) terminals of the igniter. The reading should be within one volt of incoming voltage at the main terminal block during trial-for-ignition. A voltage drop of more than one volt would indicate a loose connection (see Sec. 8.2) or a circuit board problem (see Sec. 5.9A and 5.9C).



Next, disconnect DC power at refrigerator main terminal block. Remove high voltage cable from igniter. Reconnect DC power – the igniter should produce a sparking sound, during trial-for-ignition. If not, replace the igniter. If sparking sound, the igniter is good.

The igniter installed on the refrigerators as original equipment is part number 2931132019 (RV Gas Model 679). This igniter is rated 50 MA. This igniter may also be used on any other model.

DO NOT install the Channel Mark 6, Model 12E igniter (shown below) as a service replacement part.



Installing the Channel Mark 6, Model 12E, rated 25 MA can result in failure to ignite on gas if the DC power supply is below 12.5 volts DC. The igniter will see low voltage and not produce a spark, resulting in flame failure lockout.

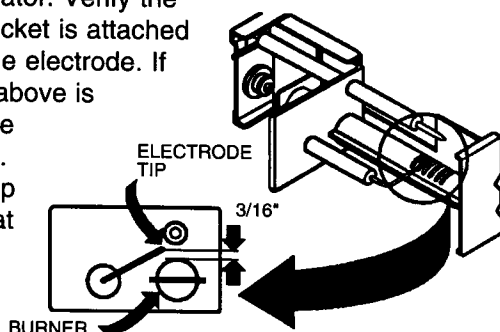
Installation of the Channel Products, Inc., Gasliter Mark 6, Model 12E, will **VOID** the Warranty on the refrigerator.

5.6 HIGH VOLTAGE CABLE

Disconnect DC power at the refrigerator terminal block. Disconnect high voltage cable from electrode. Reconnect DC power. If sparking starts during trial-for-ignition, the cable is good (see Sec. 5.7). If there is no sparking during trial-for-ignition, disconnect DC power and disconnect high voltage cable at the igniter. Reconnect DC power. If there is a sparking sound from the igniter during trial-for-ignition, then replace high voltage cable.

5.7 ELECTRODE

First, do a visual check for cracks or breaks on the ceramic insulator. Verify the mounting bracket is attached properly to the electrode. If either of the above is found, replace the electrode. The spark gap must be set at three sixteenths (3/16") of an inch and tip of electrode above the slots in the burner.

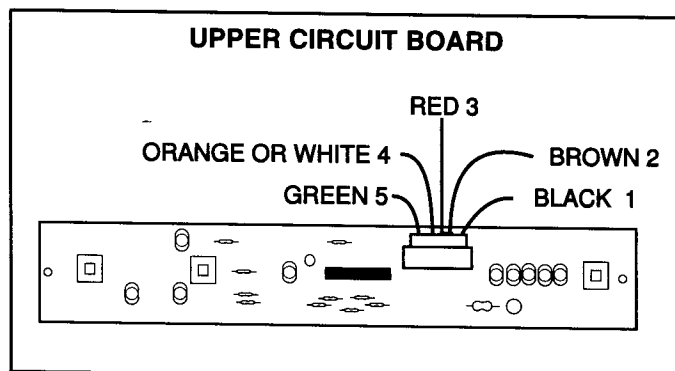


If igniter (see Sec. 5.5) and high voltage cable (see Sec. 5.6) are good and there is no spark at the tip of the electrode, replace the electrode.

5.8 UPPER CIRCUIT BOARD

NOTE: The PAL tester will allow for proper testing of the integrity of the upper and lower circuit boards. PAL is available from your Dometic parts distributor.

NOTE: Each of the following tests should be done according to pin locations. The wire colors may vary.



With main ON/OFF switch on display panel in OFF position:

Check for DC voltage at Plug 1, Terminal 4 (orange or white wire) and terminal 5 (red wire) negative (-) DC on the lower circuit board. If no voltage, then check fuse condition. Replace if blown.

Check for DC voltage between J4 and J10 terminals on the lower circuit board. If fuse is good and there is battery voltage at J4, remove and replace lower circuit board.

Next, check for DC voltage at the upper circuit board between terminal 4 (orange or white wire) and terminal 3 (red wire) which is negative (-) DC. If no voltage, and your previous check proved voltage at the lower circuit board between these wires, replace the cable assembly. If DC volts are present, proceed to the next check.

With main ON/OFF switch on display panel in ON position:

Check for DC volts between terminal 3 (red wire), (-) negative and terminal 5 (green wire) and terminal 1 (black wire). If there is no voltage, the ON/OFF switch on upper circuit board is defective. Replace the upper circuit board. If voltage is present, the ON/OFF switch is good.

Next, do the same voltage test at the lower circuit board. (-) negative plug 1, terminal 5 (red wire), plug 1, terminal 1 (green wire) and plug 1, terminal 3 (black wire). If there is no voltage and you had voltage on previous test, the cable assembly is defective and you must replace it. If voltage is present, the ON/OFF switch on the upper circuit board and cable assembly is good.

DIAGNOSTIC MODE

NOTE: The PAL tester will allow for proper testing of the integrity of the upper and lower circuit boards. PAL is available from your Dometic parts distributor.

This control system has an integral Diagnostic/Test sequence.

Access to the diagnostic sequence unit is by means of the ON/OFF Power Switch and the Temperature Selector Switch. With the Power Switch in the OFF position, hold the Temperature Selector Switch in the DOWN position. While keeping the Temperature Selector Switch in the DOWN position, move the main power ON/OFF Switch to the ON (DOWN) position. Hold the Temperature Selector Switch DOWN for three (3) seconds. The control will indicate that the diagnostics have been entered by illuminating each of the Mode Indicator Lamps and the Temperature Indicator Lamps one at a time in sequence. Each

lamp is illuminated twice. The Check Lamp will then flash ON and OFF and #1 position Temperature Indicator will remain illuminated. The test sequence can be operated automatically or manually. For AUTO step sequence, press the AUTO/GAS Mode Selector Switch to the DOWN position. The AUTO Mode Indicator will illuminate.

If each lamp illuminates during the check, the display circuit board is good.

In automatic test mode, each load is activated for approximately four (4) seconds then released. The control system will automatically exit the diagnostic sequence in approximately four (4) minutes or when power is turned OFF.

The Temperature Indicator Lamps are used to indicate which part of the control system is being tested. When position #1 is illuminated, the control is in an idle position with all output loads off. To activate the first load simply push the Temperature Selector Switch.

All of the checks listed below are done on the lower circuit board.

The manual test sequence is as follows:

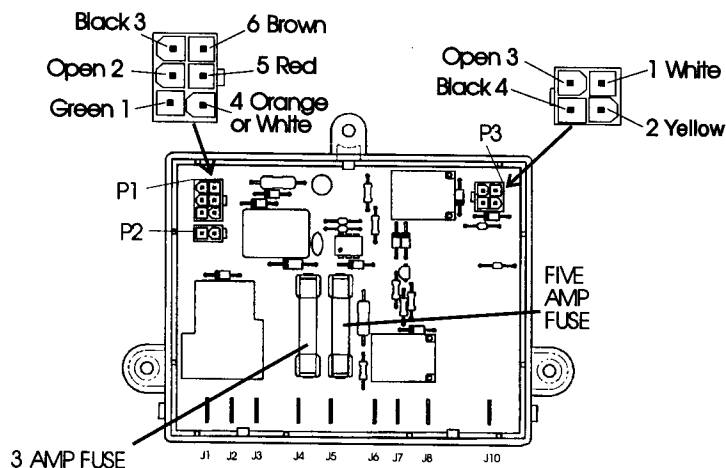
- Position #1: Idle Position, all loads off.
- Position #2: Activate AC Heater. Check for AC volts at terminals J7 and J8.
- Position #3: Activate Gas Solenoid. Check for DC volts at Gas Solenoid white wire) and yellow wire (+).
- Position #4: Idle position, all loads off.
- Position #5: Activate spark ignition system.
Check for DC volts to (+) terminal of igniter and ground.

If you experience a problem on any of the above checks, verify the fuses on the lower circuit board are good.

If all checks prove to be good, and the refrigerator does not operate on-electric mode, replace the lower circuit board. It has been damaged by AC volts in excess of 180 volts.

5.9 LOWER CIRCUIT BOARD

NOTE: The PAL tester will allow for proper testing of the integrity of the upper and lower circuit boards. PAL is available from your Dometic parts distributor.



A. DC VOLT: ALL TESTS ARE TO BE DONE WITH THE REFRIGERATOR IN THE COOLING MODE.

Before any checks are made, make sure the board is receiving proper DC volts (see Sec. 4). Measure volts between terminal J4 and J10. Voltage should be the same as at the positive (+) and negative (–) on the terminal block. If not, check for loose connections.

B. AC MODE: NOTE: The PAL tester will allow for proper testing of the integrity of the upper and lower circuit boards. PAL is available from your Dometic parts distributor.

ALL TESTS ARE TO BE DONE WITH THE REFRIGERATOR IN THE COOLING MODE.

For AC heating element operation, check that incoming AC voltage is present at terminals J5 and J6 on the circuit board. If voltage is below 100 volts, see Sec. 2.

Check for voltage at the heating element connection terminals J7 and J8 on the circuit board. If no voltage is present, check the 5 amp AC and 3 amp DC fuses. If fuse is defective, replace the fuse. If fuses are good, replace the circuit board.

NOTE: Before installing a new circuit board, determine and correct the cause of the failure. If voltage is present, do not change the circuit board. Check the AC heating elements (see Sec. 3).

- C. **GAS MODE:** NOTE: The PAL tester will allow for proper testing of the integrity of the upper and lower circuit boards. PAL is available from your Dometic parts distributor.

ALL TESTS ARE TO BE DONE WITH THE REFRIGERATOR IN THE COOLING MODE.

Before checking the circuit board for gas operation, verify that the following components are good: Upper Circuit Board (see Sec. 5.8), Thermistor (see Sec. 5.1) and 3 Amp Fuse (See Sec. 5.9)

NOTE: Each of the following tests should be done according to pin locations. The wire colors may vary.

First, check for voltage during trial-for-ignition (approximately 45 seconds) at Plug 3, Terminals 1 (white wire) and 2 (yellow wire) to the solenoid. If no voltage is present, change the circuit board. If voltage is present, check for voltage at the solenoid. If voltage is not present, check the wires and connections.

Next, check for voltage to the igniter. If no voltage is present, check the wires. If good, then change the circuit board. If voltage is present, this portion of the board is good.

NOTE: When millivolts to the lower circuit board are 10 ± 3 , the power to Plug 3, Terminal 4 (blue wire) will be shut off. If flame extinguishes during the cooling mode, the circuit board will not supply voltage to Plug 3, Terminal 4 (blue wire) again until the millivolts have decreased to 10 ± 3 . This process could take up to 15 seconds or longer.

To check the flame sense circuit of the lower circuit board, operate the refrigerator on GAS mode, then measure the millivolts between J3 terminal and the other wire connection from the thermocouple. The millivolt meter should read between 25 to 35 millivolts with the gas flame burning. Next, turn the manual shutoff valve to OFF and watch the millivolt reading as it drops. Note the millivolt reading when Plug 3, Terminal 4 (blue wire) receives power. It should be 10 ± 3 millivolts or 7 to 13.

Repeat this test several times. If the igniter fails to spark on any test sequence, it should be replaced.

If the millivolt readings vary more than 1 to 2 MV from one test to the other when power is supplied to Plug 3, Terminal 4 (blue wire), replace the lower circuit board.

NOTE: Verify all connections are clean and tight before replacing either component.

5.10 DOOR SWITCH

The door switch is an open switch when the switch arm is depressed (interior light should be off). When the refrigerator door is open the switch is closed (interior light should be on). Check that the switch assembly is properly aligned and that it is not broken. Check the switch assembly for continuity.

NOTE: To do a continuity check, first be sure all power is disconnected or OFF to the refrigerator. Second, remove all wires from the switch assembly, then check the switch. After the check, be sure the switch assembly is wired properly per the wiring diagram.

When the switch arm is depressed, there should not be continuity. When the switch arm is **NOT** depressed, there should be continuity. If any of these checks are incorrect, replace the switch.

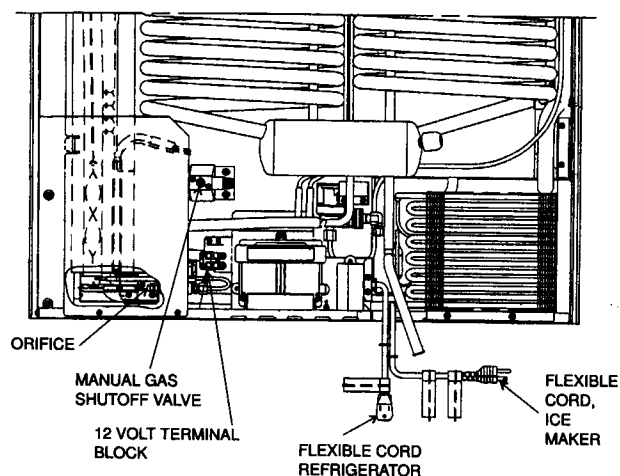
5.11 FUSES

The fuses are to protect the circuit board and the integrity of the heater circuit(s) against shorts. They are located on the lower circuit board.

The 3-amp DC fuse is designed to protect the circuit board from internal shorts. The 5-amp AC fuse is designed to protect the integrity of the AC heater circuit from shorts.

To check the fuses, remove from the holder and do a continuity check. If no continuity, replace with a proper amperage fuse.

NOTE: Determine the cause of the fuse failure and correct before replacing fuse.



SECTION 6 LP GAS REQUIREMENTS

The 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 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 port on the solenoid.

SECTION 7 LP GAS COMPONENTS

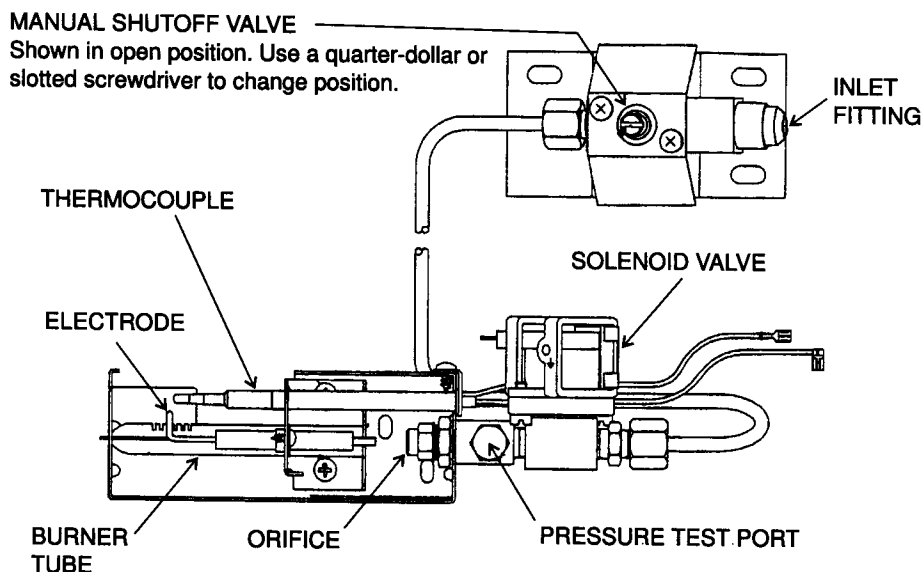
7.1 MANUAL GAS SHUTOFF VALVE

The manual gas shutoff valve is where the incoming LP gas supply is attached. To check the shutoff valve, remove and inspect for any obstructions. The valve must be turned to "ON" before any gas operation can occur. **NOTE:** If gas pressure is within proper range at test port (see Sec. 6), the shutoff valve is good.

7.2 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 is cleaned by using an alcohol based solvent and allowing to air dry.

GAS EQUIPMENT ASSEMBLY



! WARNING

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.

If there is a lack of cooling on gas operation, verify the orifice is the proper size (#73).

7.3 THERMOCOUPLE

The thermocouple is a component extending above the burner assembly so the tip is in the path of the flame. During normal gas operation, the thermocouple should produce 25 to 35 millivolts when connected to the lower circuit board. The lower circuit board reads the millivolts for a flame sense circuit (see Sec. 5.9C). Any reading below 18 millivolts could cause erratic gas operation.

NOTE: A reading of 18 or less could be caused by low gas pressure or improper thermocouple location.

7.4 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.

7.5 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.

The length of the flue baffle assembly (flue baffle and wire) should be 39 inches on RM7130 and 40 inches on RM7832. The flue baffle itself should measure 13/16 inch wide and 6 inches long on the RM7130 and RM7832. The proper position of the baffle above the burner is 1 inch.

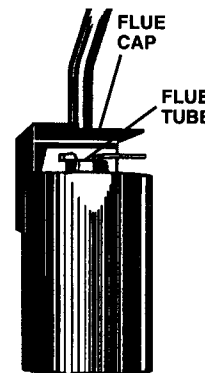
7.6 FLUE CAP (RM7130 ONLY)

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.

7.7 FLUE TUBE

The flue 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 No. 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.



SECTION 8 **WIRING**

8.1 EXTERNAL WIRING

1) 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.

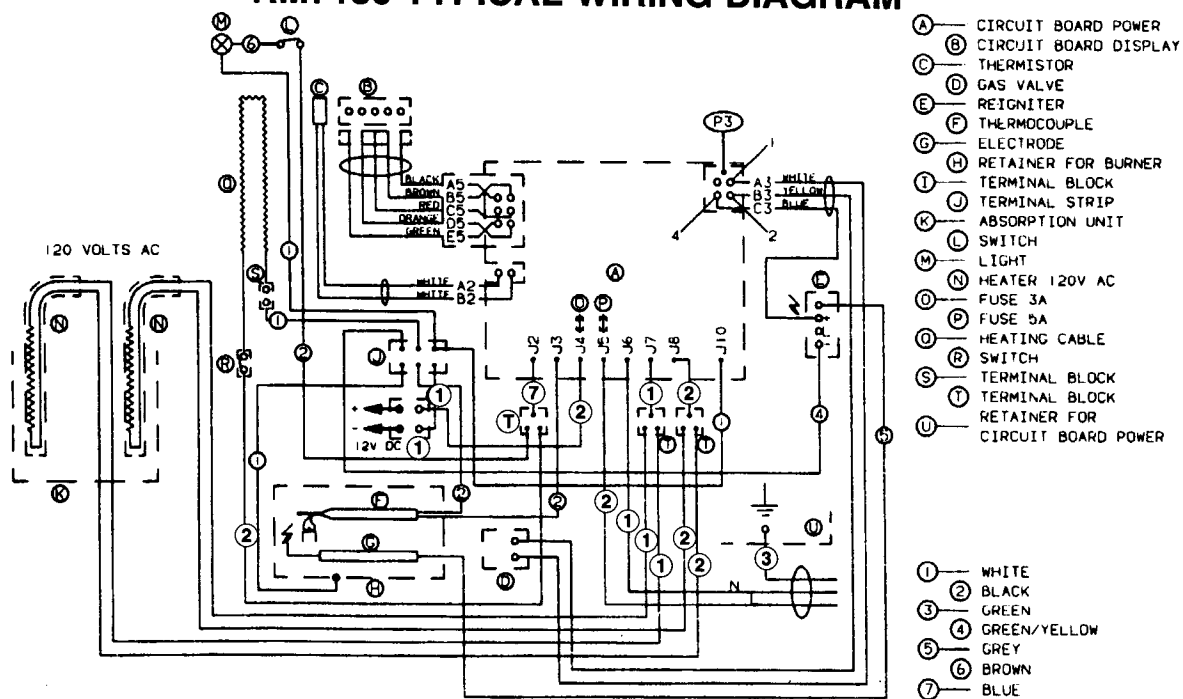
2) 12 Volt DC Connection

Connection is made to the main terminal block. The refrigerator must be connected to the battery circuit with two wires of adequate capacity to avoid voltage drop. The wire gauge should be a minimum of 14 gauge.

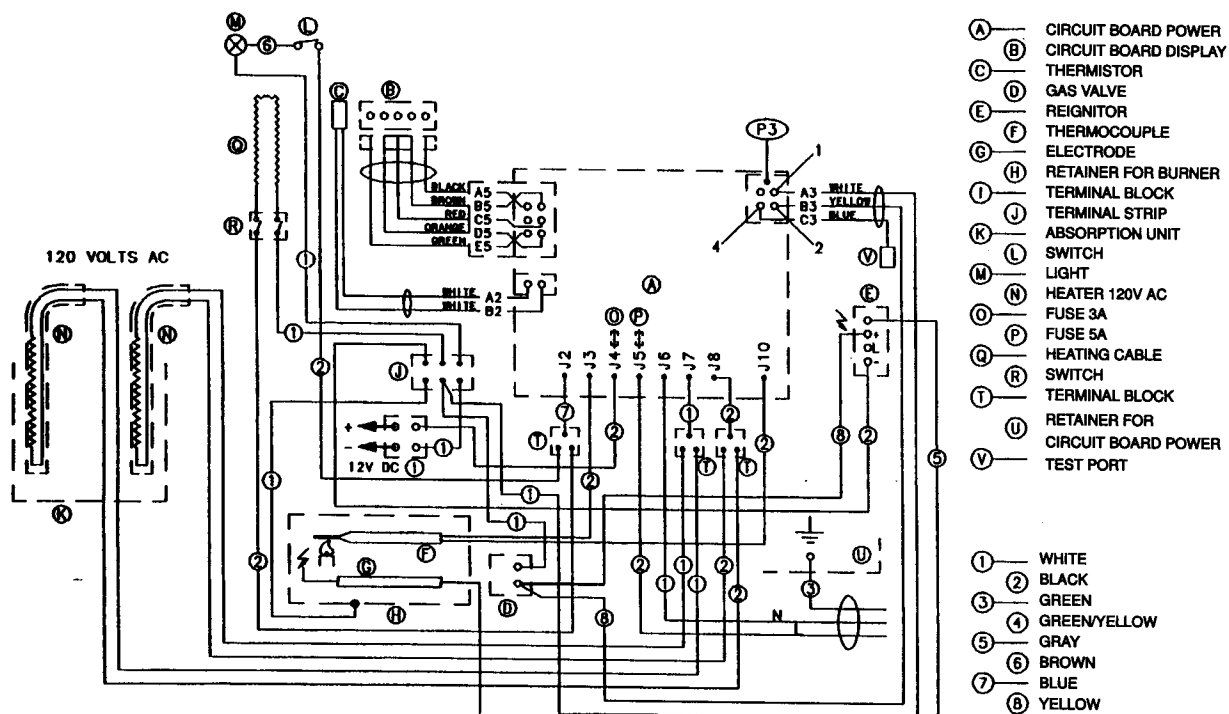
Do not use the body or chassis of the vehicle as a substitute for either of the two conductors. No other electrical equipment or lighting should be connected to the refrigerator circuit.

At 12 volts DC, a refrigerator equipped with a climate control and interior light will draw approximately 1.2 amps maximum with the climate control and interior light on.

RM7130 TYPICAL WIRING DIAGRAM



RM7832 TYPICAL WIRING DIAGRAM



8.2 INTERNAL WIRING

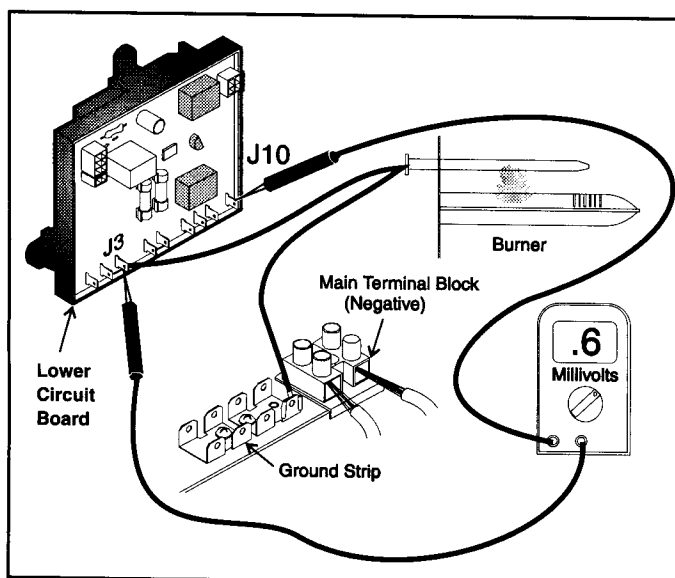
Check all wires at the connectors to be sure of a proper and tight connection. Also verify the refrigerator is wired per the wiring diagram for the exact model you are working on. See the typical wiring diagrams.

NOTE: Improper wiring at the lower circuit board could cause erratic operation and lower circuit board failure.

A loose, corroded or improper ground connection will cause erratic operation such as erratic check light on display panel.

A quick, easy way to test for ground problems can be done with a digital millivolt meter and the refrigerator in GAS MODE.

- A. Connect a digital millivolt meter to J3 and J10 of the lower circuit board. Next turn manual shutoff valve to OFF.



- B. Pull one of the wires off the gas solenoid valve. The millivolt reading should be 1–2 or less.
- C. Put the wire back on the gas solenoid valve and with the reigniter sparking, the digital millivolt meter should read 5 millivolts or less at this time. If the millivolt meter shows more than six (6), a ground problem exists. Clean and tighten all connections.
- D. The millivolt meter should register between 25–35 millivolts with the gas flame burning.
- E. Shut the manual gas shutoff valve to OFF and watch the millivolt reading as it drops. Note the millivolt reading when the igniter starts sparking (7–13MV). Repeat Step E several times. If igniter fails to spark or sparks continuously, it is defective. (See Sec. 5.5 & 5.9C)

- F. Check all connections on the 6-terminal ground bus bar for tightness and corrosion. Make sure that the connection to the refrigerator's 4-pole main DC terminal block are clean and tight. The same checks should be made to the coach's connection at the battery and converter.

SECTION 9

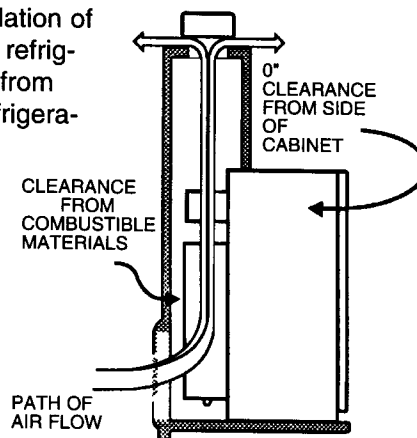
OTHER

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. Dometic brand 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 as little open space as possible 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. **NOTE:** Refrigerators should be installed in accordance with appropriate installation instructions received with the refrigerator.

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 drier.

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 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.

RM7130:

The refrigerator is secured in the enclosure with screws and they must be installed in the following order:

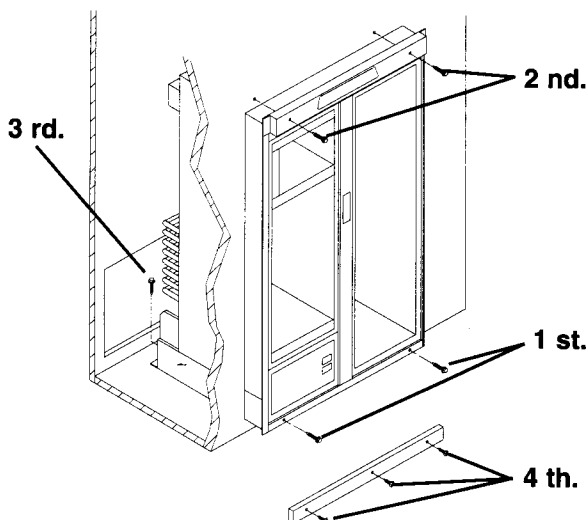
First Two Screws installed on front base;

Second Two Screws installed in the top frame;

Third Two Screws installed in the rear base;

Fourth – The refrigerator is provided with a lower front strip (shipped as a loose part). The front strip is to be attached after the refrigerator is set into the cutout opening and secured with 3 screws.

Failure to follow the sequence in securing the refrigerator in the enclosure can cause leakage between the frame and cabinet.



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

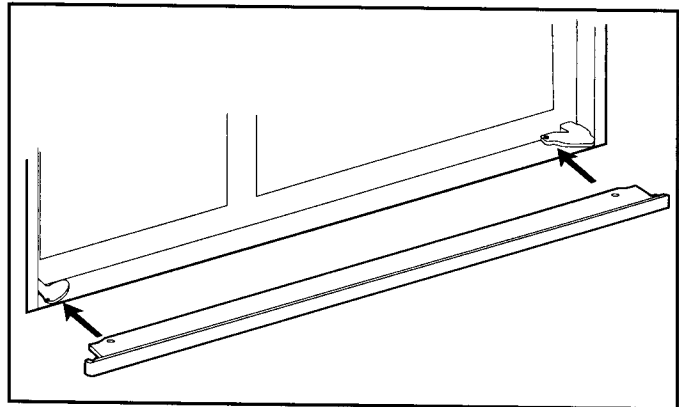
RM7832:

After the refrigerator is mounted in place, ensuring a combustion seal at the front frame, secure the refrigerator in the enclosure with six screws. The screws have to be installed in the following order:

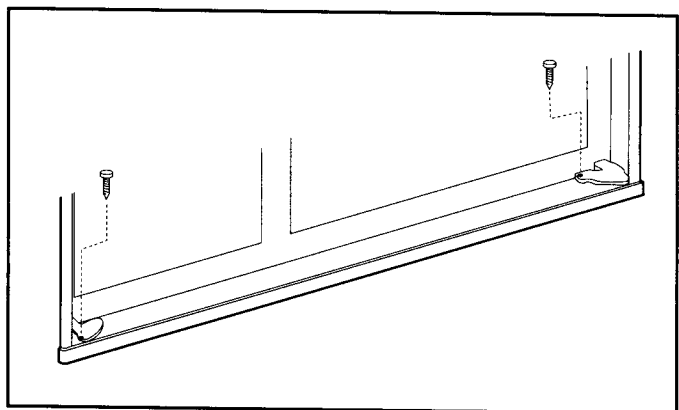
First: Two screws installed through the front base, which includes the lower front strip installation.

The refrigerator is provided with a lower front strip (shipped as a loose part). The front strip is to be attached after the refrigerator is set into the cutout opening.

1. Install the lower front strip by maneuvering it under the bottom hinge plates, as shown in below.



2. Secure the refrigerator and the lower front strip with two screws: One screw through each hinge. See figure below.

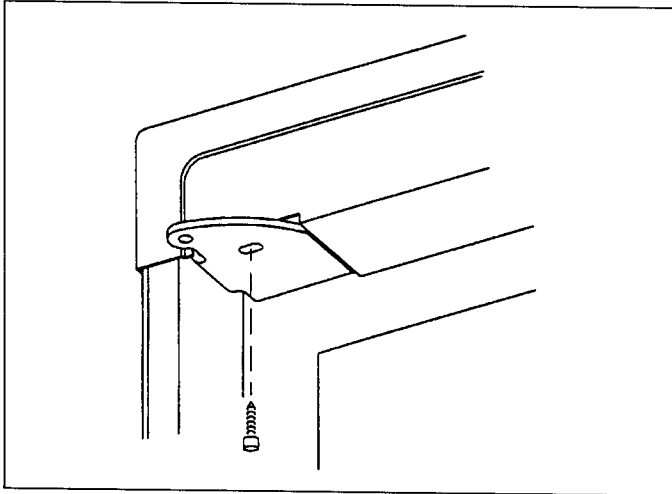


Second: Two screws installed in the top frame.

Note: The upper part of the recess, where the wall meets the top frame of the refrigerator, must be equipped with a wooden crossbar in which the two screws can be installed.

Before the screws can be mounted, the top decoration panel has to be removed.

Open the doors and remove the screws holding the top decoration panel (both sides). The screws are accessible from beneath. See figure below.

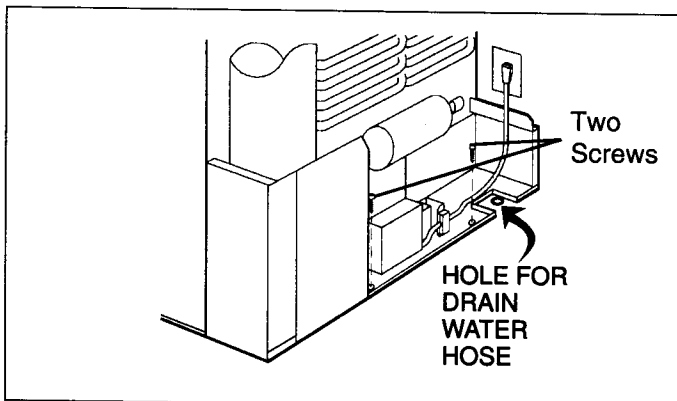


Carefully tilt the top decoration panel up then remove the top decoration panel outward, being careful not to damage the circuit board and wires.

Install the two screws in the top frame, the holes are accessible from beneath.

Replace the top decoration panel with its two screws, being careful not to pinch the wires behind the panel.

Third: Two screws installed in the rear base. Refer to figure below.

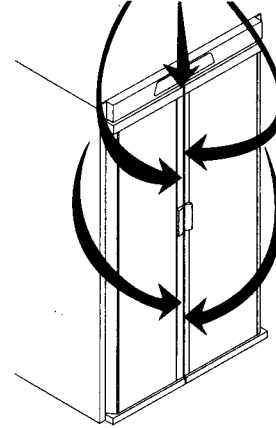


Failure to follow the sequence in securing refrigerator in enclosure can cause leakage between the frame and cabinet. Any space between the counter, storage area or ceiling and top of the refrigerator greater than 1-1/2 inches should be blocked. The heat produced at the rear of the refrigerator will become trapped in this space, making the top of the refrigerator hot and reduce the efficiency of the refrigerator.

9.4 DOOR POSITION

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

SMOOTH FIT, PROPER SEAL



NOTE: Improper position of the refrigerator door can cause the interior light to stay on when the door is closed.

To adjust either door, loosen the hinge bracket screws, reposition the door then tighten the hinge bracket screws.

To adjust up or down, remove the door and add or remove washers from the lower hinge pin. Reinstall door and check for correct clearances.

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. The RM7130 and RM7832 will maintain approximately 43 degrees food storage temperature at 110 degree ambient temperature. As the ambient temperature increases, it is possible for the interior temperature of the refrigerator to increase. This means proper installation, ventilation and leveling are important for proper operating temperature of the refrigerator.

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 elements are good (see Sec. 3). 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 directly to the AC heating elements 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 Sec. 9.2 and 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 the compartment will cause higher cabinet temperatures. To remedy this situation, simply rearrange your food items. It is also essential that the shelves are not covered with paper or large storage containers. Always remember to allow for proper air circulation.

Odors 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 longer to lower the refrigerator temperature, and longer to make ice. 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 extreme cases, the condensation may actually 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.

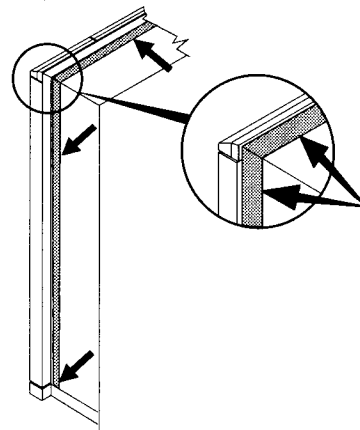
The RM7130 and RM7832 refrigerators have climate controls installed (see Sec. 5.1). Use of the climate control will reduce the formation of condensation on the frame.

9.9 INTERIOR LINER SEAL TO FRAME

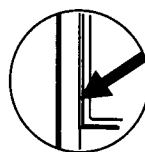
There is a seal that is applied to the liner in the area where the metal frame makes contact with the interior liner. If this seal is incomplete, cold air can migrate out to the metal frame. If this happens, condensation could form on the frame and could promote rapid formation of frost. If you suspect 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.

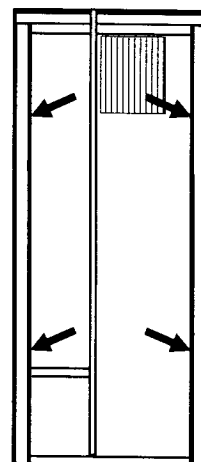
Make sure the refrigerator is dry and that the surface temperatures are above 50°F. Use a clear silicon caulking compound and seal the seam between the refrigerator's plastic liner and the metal frame. Apply the silicon in a continuous bead around both the refrigerator freezer and food compartments.



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



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

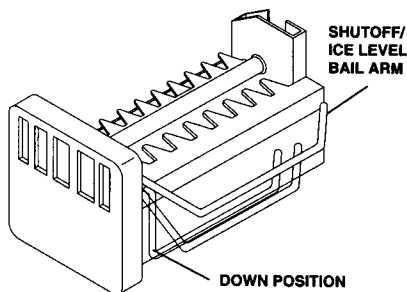


(Refrigerator
shown with
doors removed)

SECTION 10 ICE MAKER OPERATION

The refrigerator has to be connected to 120 volts AC before the ice maker can operate. The water valve supplying the refrigerator must be turned on and the shutoff ice level bail arm in fully down position. Turn on the ice maker switch, starting the compressor. The compressor operation lowers the temperature in the ice maker compartment. When the ice maker thermostat senses the preset temperature for ejection

of the ice cubes, the fingers will start to rotate dumping any ice cubes and filling the mold with water. When the storage container is full of ice, the ice level bail arm can not return to the down position. This will stop further production of ice until the container is emptied and the bail arm is returned to the start position.



Turn on the ice maker switch, starting the compressor. The compressor operation lowers the temperature in the ice maker compartment. When the ice maker thermostat senses the preset temperature for ejection of the ice cubes, the fingers will start to rotate dumping any ice cubes and filling the mold with water.

When the storage container is full of ice, the ice level bail arm can not return to the down position. This will stop further production of ice until the container is emptied and the bail arm is returned to the start position.

The compressor will still function and keep the ice maker compartment at the proper temperature for storage of ice.

To prevent water from splashing out of the ice maker while traveling, raise the ice maker bail arm to the "UP" position about 1-1/2 hours before departing. This will allow any water in the mold to freeze.

NOTE: IF THE ICE MAKER WAS CLEANED AND DRAINED, NO ICE CUBES WILL BE DUMPED INTO THE STORAGE CONTAINER DURING THE FIRST CYCLE.

The first few cycles may have small cubes due to air trapped in the water lines. The first container of ice cubes should be dumped if the water system has been winterized or not used for several weeks.

SECTION 11

ICE MAKER COMPONENTS

11.1 SWITCH, ON/OFF

This switch is located on the lower front panel inside the freezer door. To check for continuity, unplug the appliance, and disconnect the wires to the switch. With the switch in the "ON" position, you should have continuity between terminals 1 and 2.

With the switch in the "OFF" position you should have no continuity between the terminals. Any other results indicate a defective switch and it must be replaced.

11.2 START DEVICE AND OVERLOAD

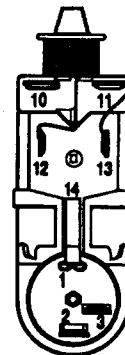
The start device and overload are two separate components, but they work together in starting and allowing the compressor circuit to be completed.

WARNING

THIS IS AN ENERGIZED CIRCUIT. ELECTRICAL SHOCK CAN OCCUR. BEFORE CHECKING THESE COMPONENTS, BE SURE THERE IS NO POWER TO THE APPLIANCE.

To test the starting device, remove the wires from the terminals. Check for continuity between terminals 10 and 12, and between terminals 11 and 13.

To test the overload, check for continuity between terminals 1 and 3. If you do not get continuity in any of these checks, either the starting device or the overload is defective and both must be replaced.



11.3 COMPRESSOR

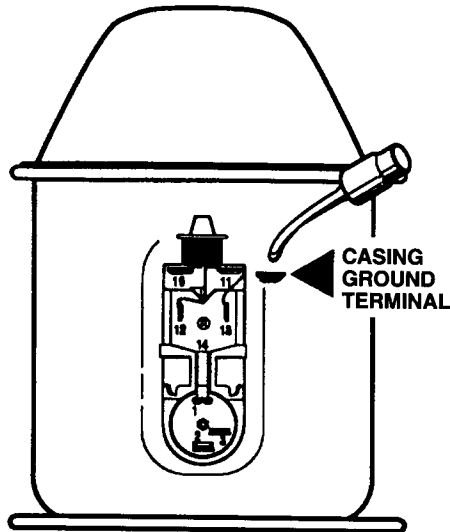
WARNING

THIS IS AN ENERGIZED CIRCUIT. ELECTRICAL SHOCK CAN OCCUR. BEFORE CHECKING THESE COMPONENTS, BE SURE THERE IS NO POWER TO THE APPLIANCE.

To check the compressor, unplug the appliance or otherwise be sure all power is off to the appliance. Remove the wires on the start device and overload. Check for continuity on terminal 14 to 12 and terminal 14 to 13 and terminal 12 to 13. Continuity should be present.

Next, check each terminal (12, 13 and 14) for continuity to the compressor casing ground terminal. Continuity should NOT be present.

If continuity test results are proper the compressor is good electrically and does not need to be replaced. If continuity test results are outside of the described checks, the compressor is defective electrically and needs to be replaced.

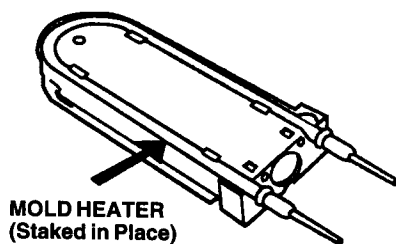


11.4 FAN MOTOR

There are two wires to the fan motor. Disconnect power to the appliance, and check for continuity between the two terminals. There should be continuity. Scrape a spot of paint off the motor housing. Check for continuity between the motor housing and each of the leads. If there is continuity, the motor is defective and it must be replaced. If the motor checks are proper, do not replace it.

11.5 MOLD HEATER

The mold heater uses 165 watts to thaw the ice free from the mold. It is wired in series with the thermostat which also acts as a safety device. With power to the appliance off, check for resistance between the two leads to the heater element. You should obtain a reading of approximately 80 ohms. If the heater is found to be defective, the manufacturer recommends replacement of the entire ice making unit for proper operation. (See Sec. 11.12)

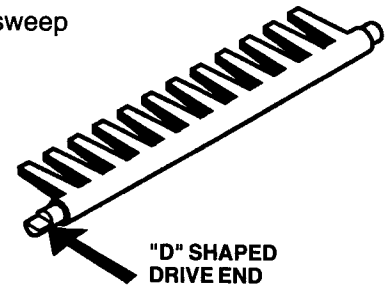


11.6 ICE EJECTOR

The ice ejector blades sweep the ice from the mold cavities during the ejection cycle.

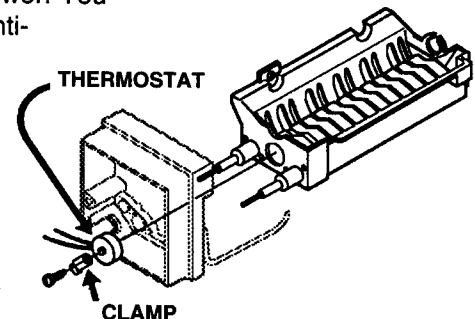
The drive end of the ejector is "D" shaped for positive coupling. The bearings at both ends are lubricated

with silicone grease. If the ejector blades are frozen into the ice, defrost the ice maker and manually cycle the ice making unit, making sure the ejector stops at the right location. (See Sec. 11.12)



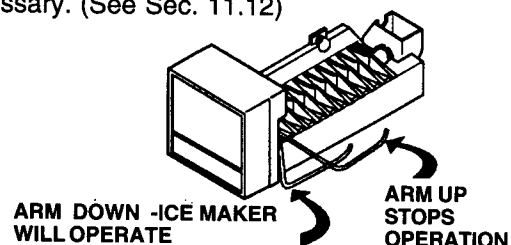
11.7 MOLD THERMOSTAT

This is a single-pole, single-throw, bimetal switch. It starts an ejection cycle by closing at $18^{\circ}\text{F} \pm 5^{\circ}$. The reset temperature is $50^{\circ}\text{F} \pm 5^{\circ}$. The thermostat is in series with the mold heater and acts as a safety against overheating in case of a mechanical failure. To check the thermostat, disconnect one wire and do a continuity check. The temperature surrounding the ice maker must be at 20°F . or lower. You should get a continuity reading. If the thermostat is defective, replace it. (See Sec. 11.12)



11.8 SHUTOFF/ICE LEVEL BAIL ARM

The shut-off arm is cam driven. It operates a switch to control the quantity of ice produced. During the ejection cycle the arm is raised and lowered during each of the two revolutions of the timing cam. If the shut-off arm comes to rest on top of the ice in the storage bin during either revolution, the switch will remain open and stop the ice maker at the end of that revolution. The arm has a manual shut-off built into the linkage; by raising the arm as high as possible, it will lock in that position until forced down. If the arm and switch do not operate properly, check for damage and repair or replace parts as necessary. (See Sec. 11.12)



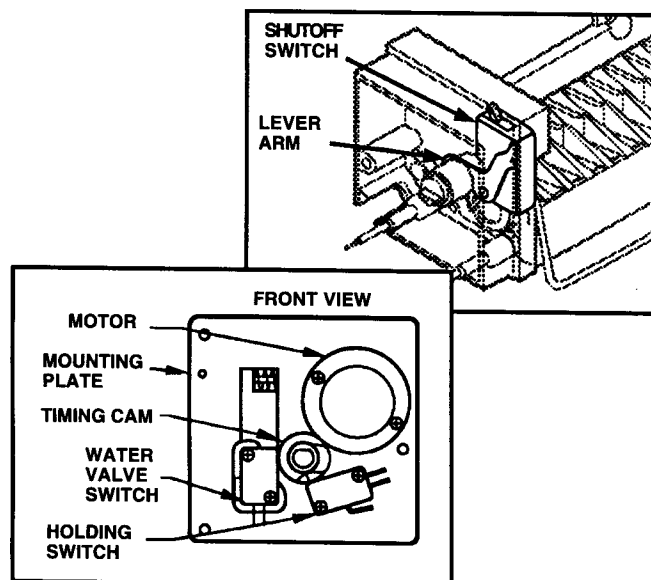
11.9 MOLD SWITCHES

These three switches are single-pole, double-throw style. They are identical and interchangeable.

The holding switch assures completion of a revolution once a cycle has started.

The water valve switch opens the water valve during the fill stage of the cycle. NOTE: This is the only adjustable component of the ice maker. If you use a double-throw switch, DO NOT use the N.O. terminal.

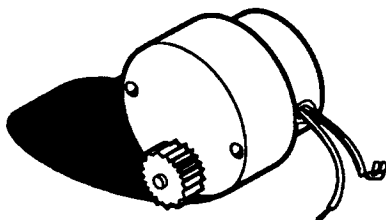
The shut-off switch stops the ice maker's operation when the storage bin is full. (See Sec. 11.12)



11.10 TIMING MOTOR

This is a low-wattage, stall-type motor which is geared to the timing cam and ice ejector. It is a one RPM motor.

To check the motor, disconnect power to the appliance and test for continuity between the two leads. If you DO NOT have continuity, replace the motor. If you have continuity and the motor runs, DO NOT replace. (See Sec. 11.12)



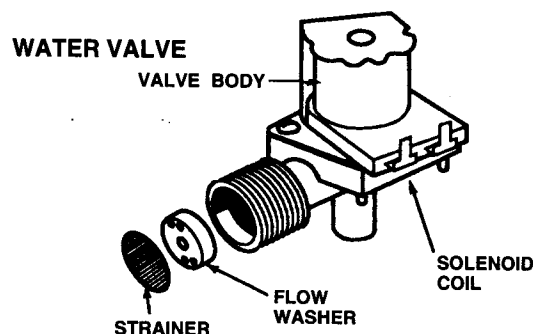
11.11 WATER VALVE

This valve is solenoid operated. When it is open, it releases water from the source to the mold. The amount of water is proportional to the length of time the water valve switch is held closed by its timing cam.

Disconnect power to the appliance, remove the wires to the valve solenoid coil, and check for continuity between the two terminals. If you have continuity, the solenoid is good. It takes 10-15 watts to energize the solenoid coil.

The mold heater and coil are in series. When the mold heater is activated, this causes the voltage to drop to about 105 VAC at the coil.

The valve has a flow washer inside which acts as a pressure regulator. A strainer is installed to prevent dirt, rust, etc. from entering the valve. Check for any debris which might obstruct the flow of water, or prevent the valve from closing completely when the circuit is not energized. Remove any obstructions. If the valve still fails to operate properly, replace it.



11.12 ICE MAKER ASSEMBLY

It may be necessary to replace the entire ice maker assembly. Follow replacement instructions supplied with the new ice maker assembly

OPERATION

While the operation of the ice maker is fairly simple, an understanding of its cycle is necessary for the service technician to diagnose specific problems. The following series of electrical schematics will show a typical cycle, and the positions of various components during the cycle: The mold and its contents, the ejector, the shutoff arm and the storage bin.

NOTE: If you have difficulty in reading schematics and circuit diagrams, please enroll in a basic electrical course at your local school or college.

(Schematics on Pages 22 through 24)

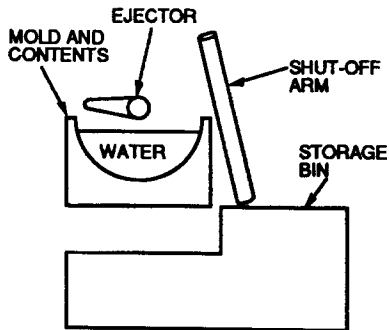
11.13 CONDENSER

If the ice maker is producing soft, wet ice or if it is not making enough ice, the problem may be air flow restriction in the condenser.

Check the condenser coil fins to be sure they are straight, allowing full air flow across the coils. If any fins are bent, carefully straighten them.

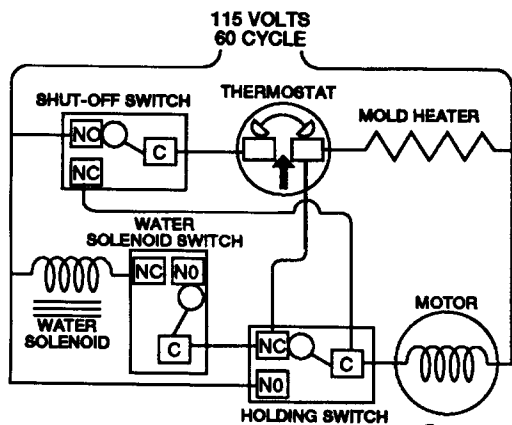
Inspect the coil and fin assembly for dirt, lint, etc. Using a soft bristle brush, remove all such debris and vacuum up the residue. Any restriction to air flow across the condenser coil fins will reduce the efficiency drastically.

NOTE THE RELATIVE POSITION
OF THESE COMPONENTS IN THE
FOLLOWING SCHEMATICS



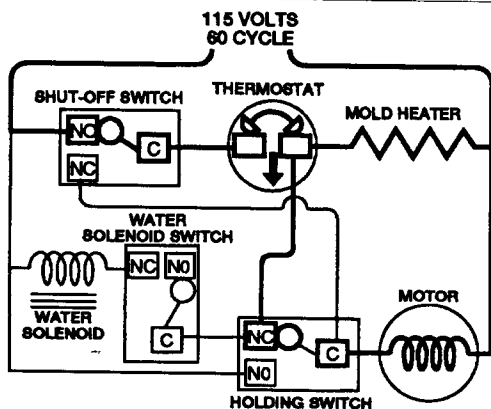
1

NON ENERGIZED CIRCUIT
ENERGIZED CIRCUIT



2

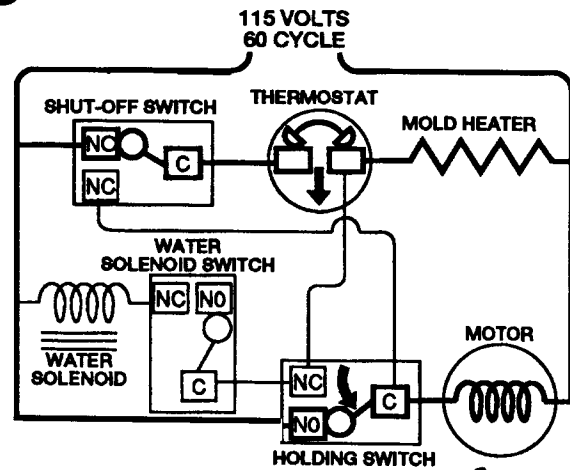
This is a freeze cycle. The mold is filled with water. The thermostat is open. All components are de-energized.



3

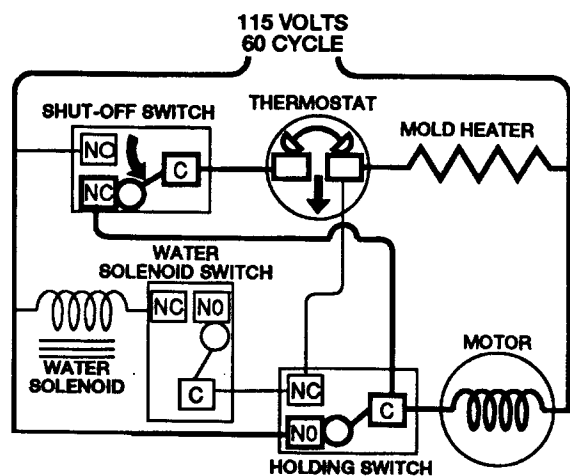
This is the start of an ejection cycle. The thermostat switches to its closed position after being sufficiently cooled by the ice in the mold. The mold heater and motor are now energized. The ejector blades begin to turn

4



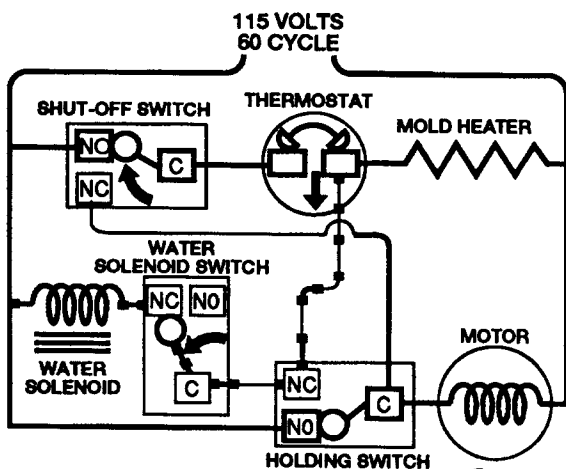
After a few degrees of motor rotation, the timing cam switches the holding switch to its normally open position; this assures completion of the cycle. The mold heater remains energized through the thermostat circuit. During the first half of the cycle, the shut-off arm is raised and lowered by the timing cam and operates the shut-off switch.

5

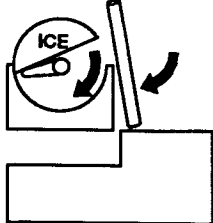


When the ejector blades reach the ice in the mold, the motor will stall. It will remain in this position until the ice has thawed loose. During this time the mold heater remains energized.

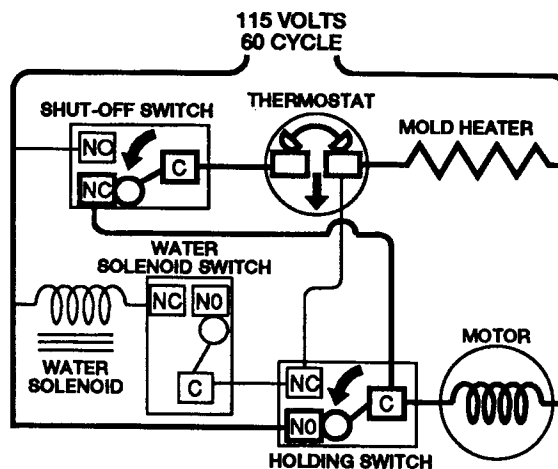
6



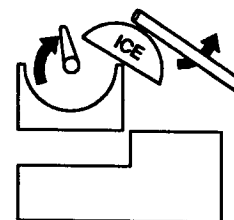
Near the completion of the first revolution, the timing cam closes the water valve switch. However since the thermostat is still closed the mold heater circuit is energized. Current will not pass through the water valve solenoid and its switch. (Electrical current follows the path of least resistance.)



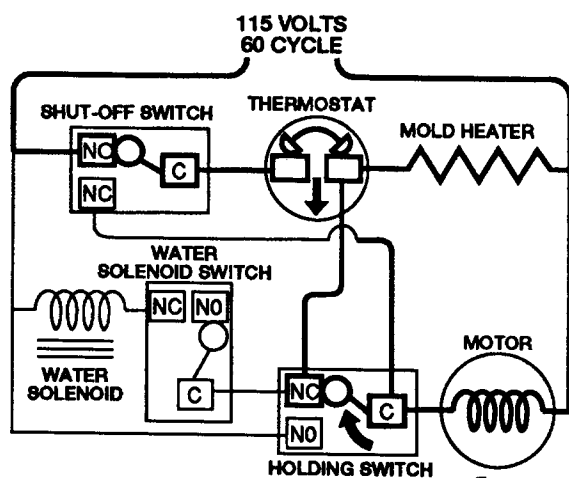
8



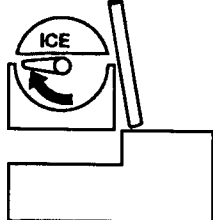
Once again after a few degrees of rotation the timing cam closes the holding switch providing a circuit to the motor that will assure completion of this revolution. The mold heater remains energized. The shut-off arm will raise and lower again operating its switch. The ice that was ejected during the first revolution is dumped into the storage bin.



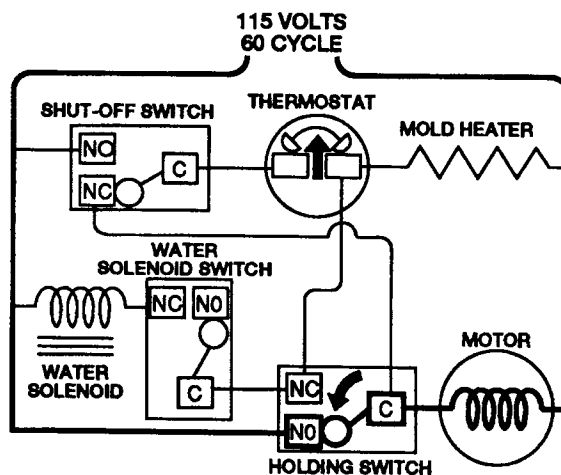
7



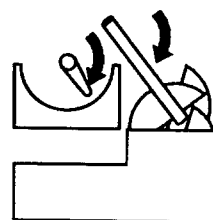
At the end of the first revolution the timing cam opens the holding switch. However, since the thermostat is still closed a second revolution begins.



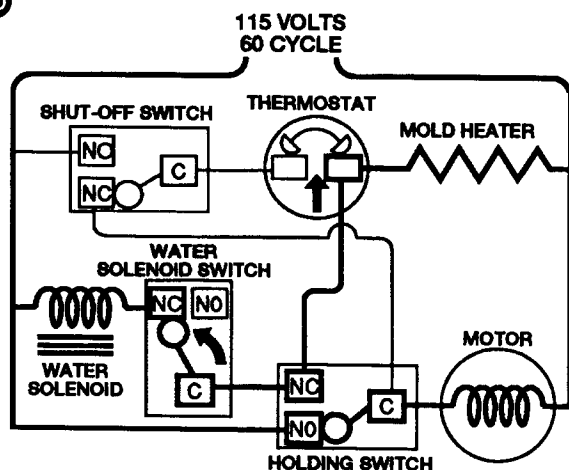
9



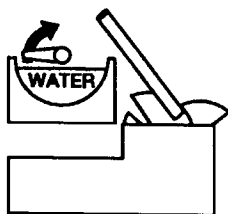
Some time during the second revolution the mold heater resets the thermostat. At this time, the mold heater is de-energized. If the storage bin is full, the shut-off arm will remain in a raised position.



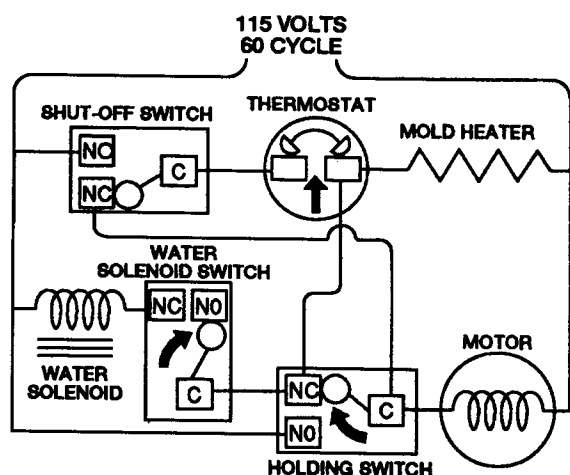
10



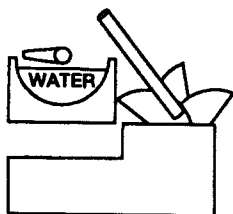
Near the completion of the second revolution the timing cam again closes the water valve switch. This time a circuit is completed through the water valve solenoid, its switch and the mold heater. The water valve solenoid received about 105 volts. The remaining 10 volts to the mold heater are not noticeable. When the water valve solenoid is energized, the valve opens and water refills the mold.



11



The ejection cycle ends the moment that the holding switch is switched by the timing cam. The water valve switch is also opened. If the storage bin is full, as shown here, additional cycles will not start until sufficient ice is used to lower the shut-off arm, thus operating its switch.



SECTION 12 ICE MAKER – OTHER

12.1 AIR FLOW

The path of air through the base of the refrigerator must be kept intact and free of obstructions.

Make sure there are no obstructions such as dirt, lint, etc. which might affect the proper production of ice.

12.2 WATER FILL ADJUSTMENT

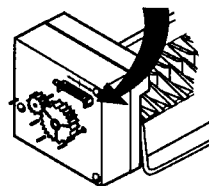
The correct water level in the mold is important for the proper production of ice. The size of the ice cubes depends on the amount of water which enters the mold. The cubes should be approximately 1/2" wide, 3/4" high and 2-1/2" long.

If the water overflows in the mold, first check to see if the ice maker unit is level in the appliance. Next ensure that the appliance is installed level in the RV.

If there is still water overflow, adjustment of the water fill screw is necessary. Locate the screw on the ice maker assembly. Turn the screw as necessary toward the "+" or "-" side. One full turn of the screw will make an 18cc change in the amount of water. DO NOT turn the screw more than one full turn at a time. If the water level is not set properly, ice production can be affected.

If the water level is too high, it can also cause the ejector blades to become frozen in the ice and stop producing ice cubes. Follow the procedures above to correct the problem.

WATER FILL ADJUSTING SCREW 1 FULL TURN = 18 cc's CHANGE



12.3 WEIGHT OF ICE

A large accumulation of ice in the ice storage bucket can cause the ice cubes to compress and become stuck together. Advise the user to empty the bucket periodically and store the surplus ice in the refrigerator's freezer compartment.

12.4 INSTALLATION

The refrigerator must be installed according to the installation instructions supplied with every appliance.

The most common installation problem is water leaks. Visually check all water connections in the water supply line, and where the line connects to the ice maker. Correct any problems found. Be sure the appliance is installed level in the coach with reference to the floor. Off-level conditions can cause water overflow into the ice bucket.

12.6 REFRIGERANT SYSTEM

The ice maker uses 134A refrigerant in its sealed system. Frequent starting and stopping of the compressor can be a symptom of low refrigerant level in the system.

NOTE: The *Clean Air Act* of 1990 set guidelines in regard to recapturing or disposition of refrigerants. Check with the local authorities for proper handling of evacuation of refrigerants.

Evacuation and recharge of the sealed refrigerant system must only be done by a technician trained in the procedure, and equipped with the necessary items.

The correct amount of 134A refrigerant is listed on the data plate of the appliance. The system is a critically charged unit. It must be charged with an exact weighted amount of refrigerant.

12.7 WATER SUPPLY

To operate properly, the water pressure in the water supply line must be between 15 lbs. PSI and 100 lbs. PSI.

Lower water pressure, water turned off, or obstructions or air in the water line can cause low or no ice production.

First check to see that the water supply is fully turned on. Visually check the line for kinks, etc. which might obstruct the flow of water.

To remove trapped air, loosen the connection at the solenoid water valve of the appliance. Ensure that pressurized water is reaching this point, and bleed off any air in the line. Retighten the connection, making sure there are no leaks.

