Dometic

RM3601 RM3801

3-WAY
ROYALE

Automatic Energy Selector

Service Office
The Dometic Corp.
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Cambridge, Ontario
CANADA N3H2N7

REFRIGERATOR FOR LP GAS AND ELECTRIC OPERATION EQUIPPED WITH AUTOMATIC ENERGY SELECTOR

INDEX

FOR YOUR SAFETY

If you smell gas:

1. Open windows.
2. Don't touch electrical switches.
3. Extinguish any open flame.
4. Immediately call your gas supplier.

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

INSTALLATION AND OPERATING INSTRUCTIONS

MODELS

RM3601
RM3801

RECORD THIS INFORMATION FOR FUTURE REFERENCE:

MODEL NUMBER _____
SERIAL NUMBER _____
DATE PURCHASED _____
PLACE OF PURCHASE _____

Form No. 3100663.008 5/87

SECTION A. INSTALLATION

1. GENERAL INSTRUCTIONS

This appliance is designed for storage of foods and storage of frozen foods and making ice.

The refrigerators outlined herein have been design certified under ANS Z2 l.l9a- 1984; refrigerators by the American Gas Association for installation in a mobile home or recreational vehicle and are approved by the Canadian Gas Association. The certifications are, however, contingent on the installation being made in accordance with the following instructions as applicable:

In the U.S.A., The installation must conform with:

1. National Fuel Gas Code ANSI Z223.1- 1984
2. Manufactured Home Construction and Safety Standard, Title 24 CFR, Part 32-80
3. Recreational Vehicles ANSI/INFPA No. 501 C-1982

The unit must be electrically grounded in accordance with the National Electric Code ANSI/NFPA No. 70-1984 when installed if an external alternating current electrical source is utilized.

4. Any applicable local code.

In CANADA, the installation must conform with:

1. Current CGA B 149 Gas Installation Codes
2. Current CSA Standard Z 240.4 GAS-EQUIPPED RECREATIONAL VEHICLES AND MOBILE HOUSING
3. Any applicable local code.

The unit must be electrically grounded in accordance with the current CANADIAN ELECTRICAL CODE C 22 Parts 1 and 2.

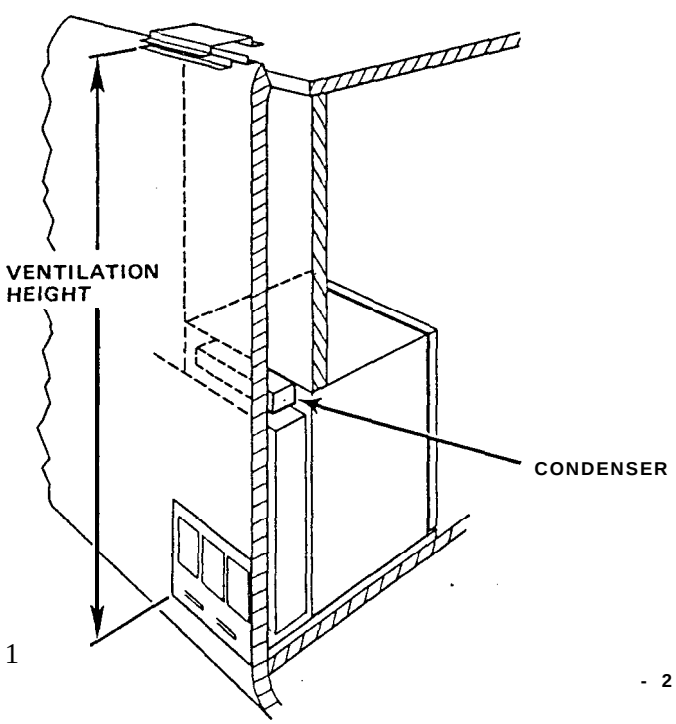


FIG. 1

2. VENTILATION

The installation shall be made in such a manner as to separate the combustion system from the living space of the mobile home or recreational vehicle.- Openings for air supply or ‘for venting of combustion products shall have a minimum dimension of not less than l/4 inch.

Proper installation requires one lower fresh air intake and one upper exhaust vent. The ventilation kits shown in this instruction booklet have been certified for use with the refrigerator models listed in the table. For certified vent system kits, see separate list. The ventilation kits must be installed and used without modification. An opening towards the outside at floor level in the refrigerator compartment must be provided for ventilation of heavier- than-air fuel gases. The lower vent of the recommended kits is provided with proper size openings. The flow of combustion and ventilating air must not be obstructed.

The lower side vent is fitted with a panel which provides an adequate access opening for ready serviceability of the burner and control manifold of the refrigerator.

3. CERTIFIED INSTALLATION

Certified installations require one roof vent and one lower side vent. For certified vent system kits, see separate list.

For further information contact your dealer or distributor.

4. METHOD OF INSTALLATION

The method of installation is shown below in Figure 1. It is essential that all maximum or minimum dimensions are strictly maintained as the performance of the refrigerator is dependent on an adequate flow of air over the rear of the refrigerator.

5. VENTILATION HEIGHTS

Refer to Figure 1.

Installation with roof vent and lower side vent Refrigerator	Minimum ventilation heights in	
	Inches	mm
RM3607	54	7372
RM3807	60	7 524

6. CLEARANCES

Minimum clearances in inches to combustible materials are:

G: Top 0 (Max. dim. l-1/2 in., See Step 7)
K: Side 0
L: Bottom 0
M: Rear 1
N: See example below

Clearance M between the rearmost part of the refrigerator and the wall behind the refrigerator.

Clearance N on top of the condenser is related to the minimum ventilation height.

See Figures 2, 3 and examples below.

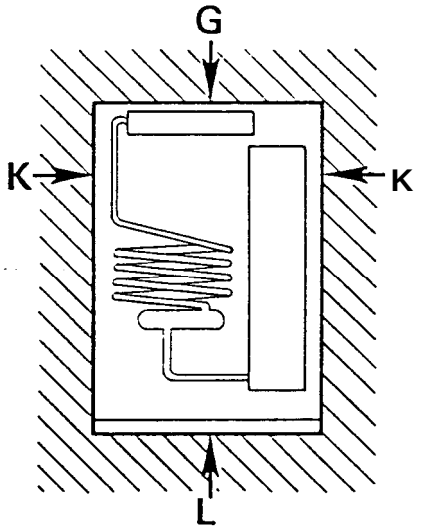


FIG. 2

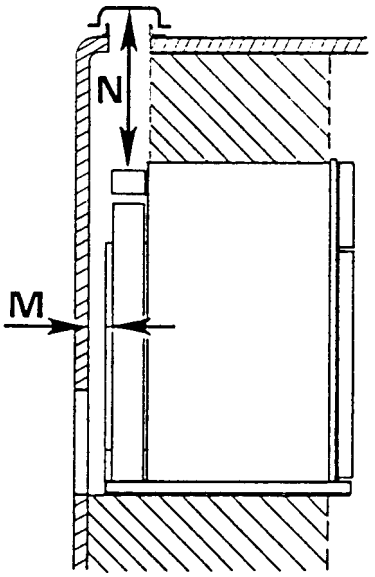
Example for Clearance N:

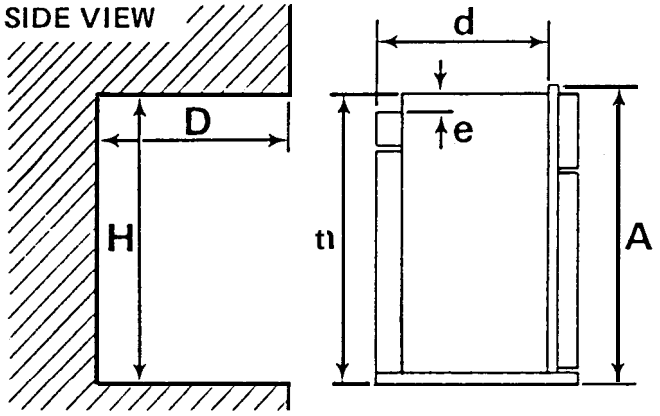
The clearance N for the RM3601 model is derived in the following way:

Installation with roof vent and lower side vent

N = Minimum ventilation height 54 (1372 mm) minus installation height.

49-7/32 plus distance between condenser top and refrigerator top l-l/8 plus distance between roof surface and roof vent cap 5- l/4
(N= 54 - 49-7/32 + l-l/8 + l/4 = 1l -5/32 inches
(N = 1372 - 1250 + 29 + 133 = 284 mm)





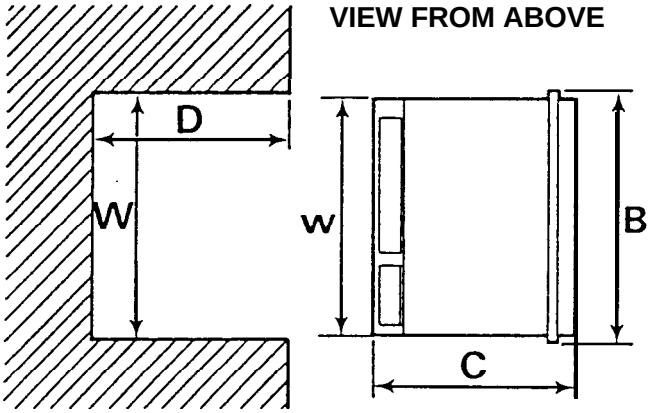


FIG. 3

Refrigerator Model		Overall Dimensions			Installation Dimensions			Recess Dimensions			Distance between Top of Condenser & Top of Refrigerator
		Height A	Width B	Depth C	Height h	Width w	Depth d	Height H	Width W	Depth D	e
RM 3601	inch	50 5/16	23 1/32	24 1 1/16	49 7/32	21 17/32	22 15/16	49 13/32	21 13/16	23 15/16	1 1/8
	mm	1278	585	627	1250	547	582	1255	554	608	29
RM 3801	inch	56 7/32	24 15/16	24 11/16	55 1/8	23 7/16	22 15/16	55 5/16	23 13/16	23 13/16	1 1/8
	mm	1428	633	627	1400	595	582	1405	605	608	29

7. INSTALLING REFRIGERATOR IN ENCLOSURE

NOTE: Do not install the appliance directly on carpeting. Carpeting must be removed or protected by a metal or wood panel beneath the appliance which extends at least full width and depth of the appliance.

The refrigerator must be installed in a substantial enclosure and must be level. When installing the refrigerator in the enclosure care should be taken to ensure a complete sealing between the front frame of the refrigerator and the top, sides and bottom of the enclosure. For this purpose a length of sealing strip is applied to rear surfaces of the front frame. A sealing strip should also be applied to the foremost floor of the enclosure as shown in Figure 4. The sealing should provide a complete isolation of the appliance combustion system from the vehicle interior.

Be careful not to damage the sealing strip applied to the floor of the enclosure when the refrigerator is put in place.

In the front frame and in the base at the rear of the refrigerator there are holes for screws for anchoring the refrigerator in the enclosure. See Figure 5.

Any space between counter or storage area and the top of the refrigerator greater than l-1/2" should be blocked. Insulating material is an effective means of filling the voids around the refrigerator. The heat produced at the rear of the refrigerator will otherwise become trapped in this space making the top of the refrigerator hot, reducing efficiency of the refrigerator.

FIG. 4

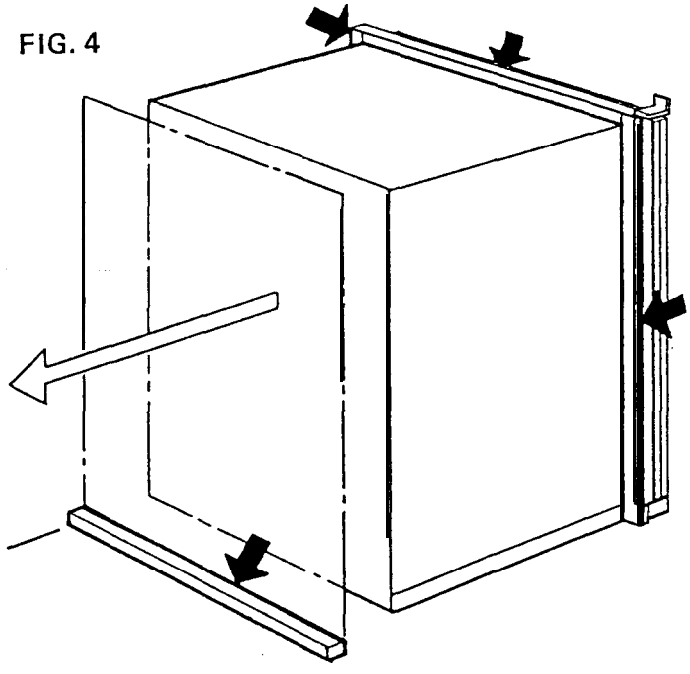
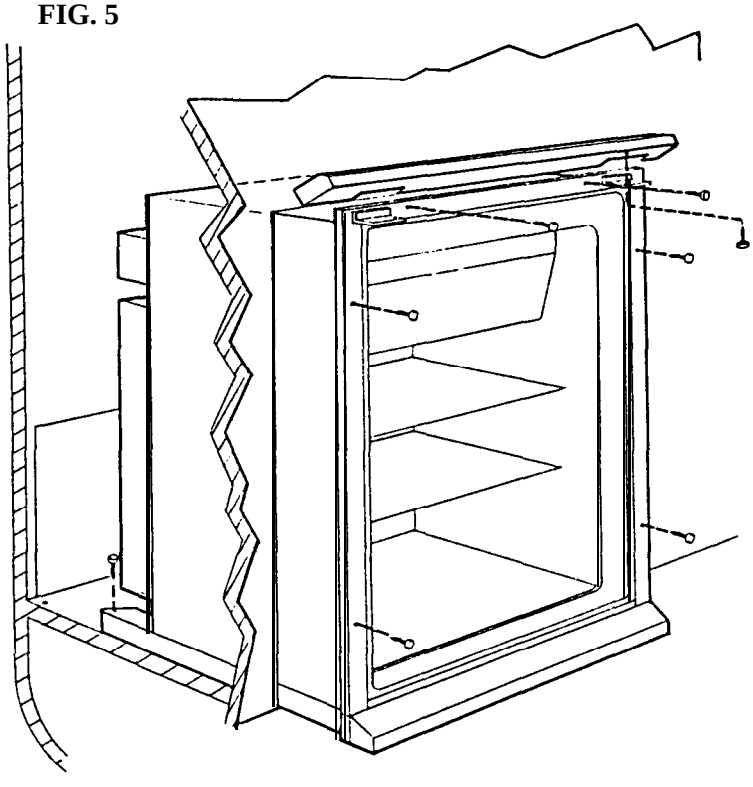


FIG. 5



8. GAS CONNECTION

Hook-up to the gas supply line is accomplished at the manual gas shutoff valve, which is furnished with **a** 3/8" SAE (UNF 5/8"-18) male flare connection. All completed connections should be checked for leaks with a non-corrosive leak detector.

The gas supply system must incorporate a pressure regulator to maintain a supply pressure of not more than 11 inches water column.

When testing the gas supply system at test pressures in excess of l/2 psig the refrigerator and its individual shutoff valve must be disconnected from the gas supply piping system.

When testing the gas supply system at pressures less than or equal to l/2 psig the appliance must be isolated from the gas supply piping by closing its individual manual shutoff valve.

In case detailed instructions on the installation and connection to the gas supply are required, contact your dealer *or* distributor.

9. ELECTRICAL CONNECTION

120 Volt 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. The cord should be routed to avoid coming in contact with the burner cover, flue cover or manual gas shutoff valve knob.

12 Volt DC Connection

This connection is made to the terminal block, see Figure 4. 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 below. The 12 volt circuit must be fused. Maximum circuit protection: 25 amps for RM3601 and RM3801.

Suggested maximum total conductor wire length in feet (m)

AWG	RM3601	RM3801
10	17(5)	17(5)
8	27(8)	27(8)

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. The refrigerator will draw from 15 to 18 amps at 12 volts depending on model.

CAUTION

The 12 volt control circuit must be connected directly to a battery. Connecting the control circuit to an unregulated converter can result in improper operation of the refrigerator.

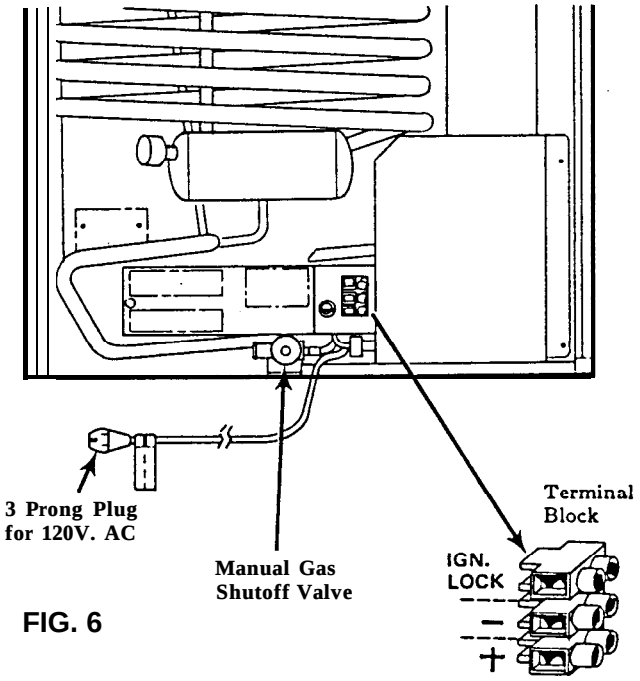


FIG. 6

Ignition Lock Connection

In order for the circuit board to perform certain, functions, like the 12 volt cooling mode and gas mode time delay, it must receive a signal when the vehicle engine is running. This signal wire (16 gauge minimum) should originate at the run terminal of the ignition switch (see Figures 7 & 8) and connect to the "IGN LOCK" position on the refrigerator terminal block (see Figure 6).

FIG. 8
MOTOR HOME

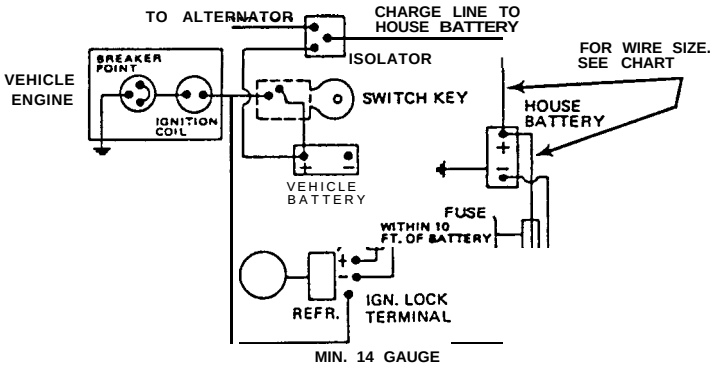
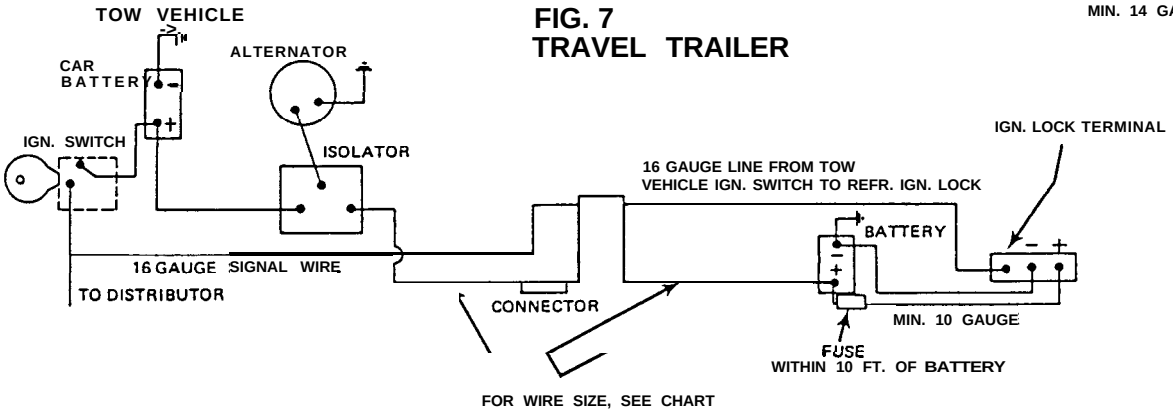


FIG. 7
TRAVEL TRAILER



10. CHANGING DOOR HINGES FROM ONE SIDE TO THE OTHER

Open the top door and unscrew the two screws holding the top decoration (1). The screws are accessible from beneath. Remove the top hinge pin (2) and lift out door. Remove the center hinge pin (3) and remove the lower door.

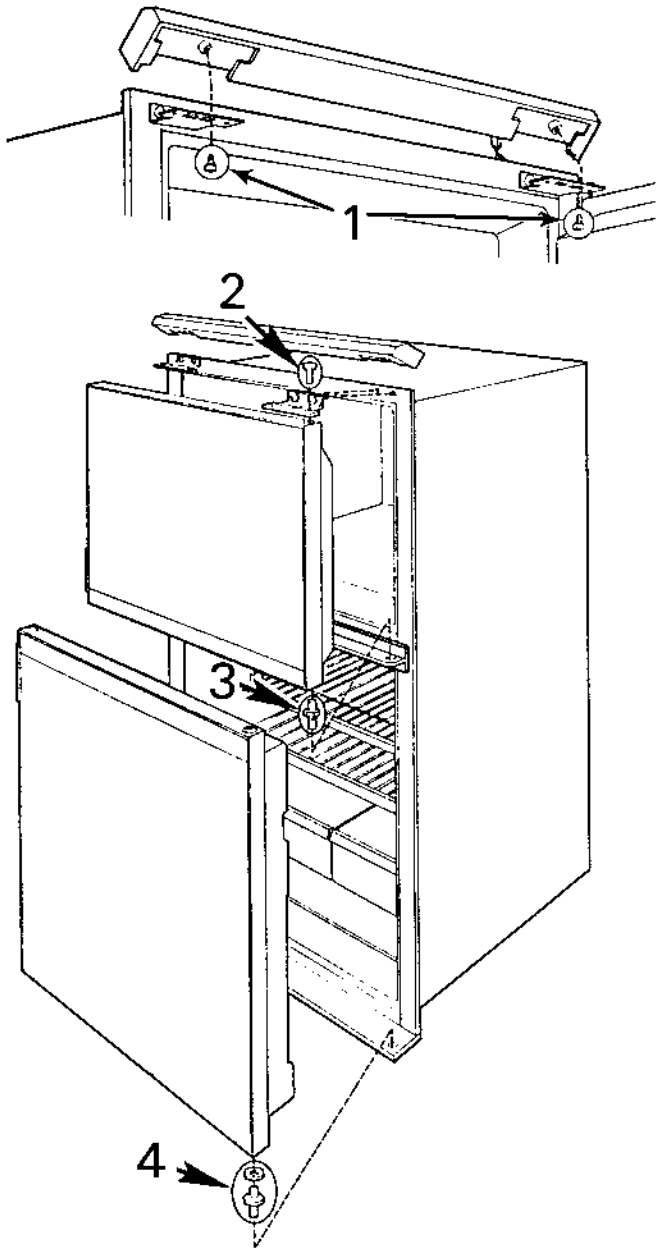
Lift out the bottom hinge pin (4) and move it to the hole at the opposite side of the base. Replace the doors and install the hinge pins that were removed previously.

Before the top decoration is refitted, check that the door closes easily and that the gasket seals well on all sides. If additional adjustments are needed, see "SECTION C. MAINTENANCE AND SERVICE".

11. INSTRUCTIONS FOR MOUNTING THE DOOR PANEL

The refrigerator is normally delivered without door panel(s). Before starting the mounting work check that the panel dimensions are in compliance with those given in the table and read the instructions thoroughly. When mounting the panel, proceed as follows:

A. Remove the door decoration strip (B) with its two screws (A). The upper corners of the upper panel (2-door models) and the lower corners of the lower panel must be cut according to the sketch.
B. Insert one of the vertical edges of the panel into the groove of the door frame (C).
C. Bend the panel gently so that the free side of the panel can be slipped into the corresponding groove of the door frame (D).
D. Push the panel downward so that the lower horizontal edge of the panel is fitted into the bottom groove (E).
E. Between the upper edge of the panel and the door frame there is now a gap which should be covered by the decoration strip.
F. Put the strip across the door so that the gap is covered and push it upward (F). The tabs on the inside of the strip should fit in behind the flange of the door frame. Secure the decoration strip by means of the two screws (A).



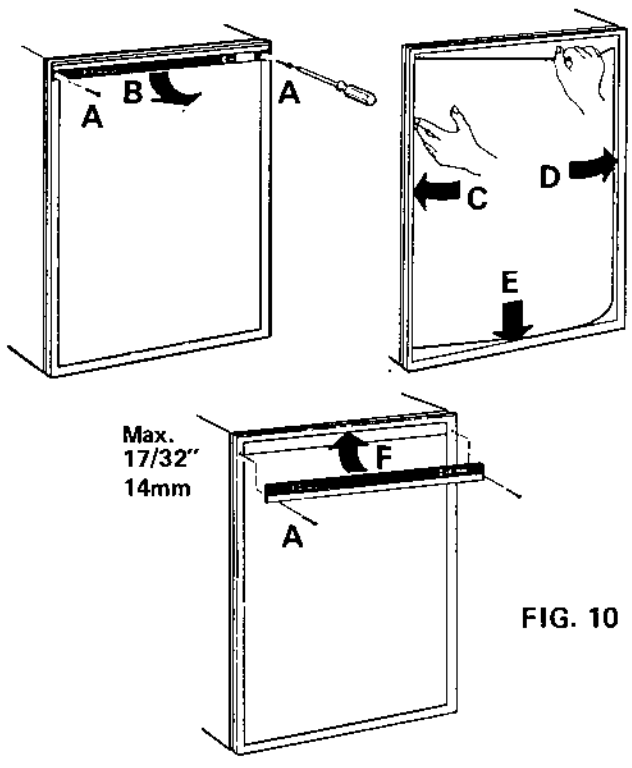


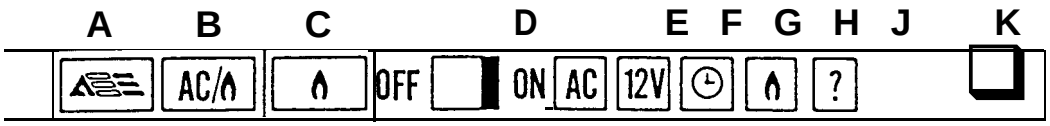
FIG. 10

PANEL DIMENSIONS

MAX. THICKNESS 5/32" (4 MM)

REFRIG. MODELS		HEIGHT		WIDTH	
		MAX.	MIN.	MAX.	MIN.
RM 3601					
Upper	mm	323	321	570	568
	inch	12 23/32	12 21/32	22 7/16	22 3/8
Lower	mm	836	834	570	568
	inch	32 29/32	32 27/32	22 7/16	22 3/8
RM3801					
Upper	mm	395	393	618	616
	inch	15 17/32	15 15/32	24 5/16	24 1/4
Lower	mm	914	912	618	616
	inch	35 31/32	35 29/32	24 5/16	24 1/4

SECTION B. OPERATING INSTRUCTIONS



AES CONTROL PANEL ON REFRIGERATOR

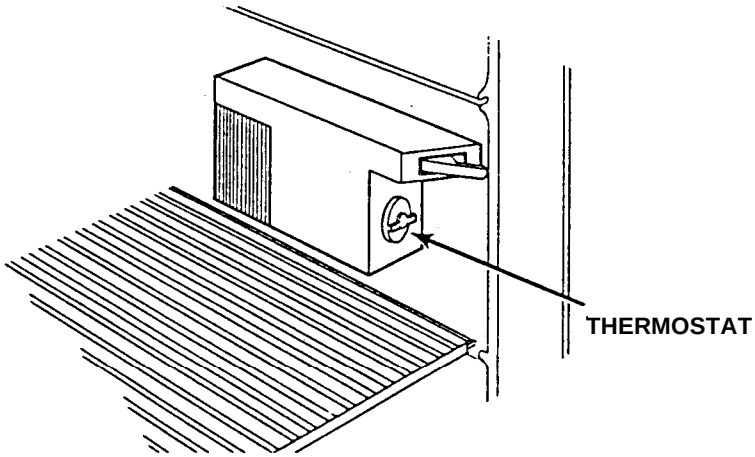
A	Push-button, green indicator - indicates full AES operation
B	Push-button, green indicator - indicates limited AES operation, 120V. or LP Gas
C	Push-button, green indicator - indicates LP Gas operation only
D	Main system switch (On - Off)
E	Yellow indicator - indicates 120 Volt AC operation mode
F	Yellow indicator - indicates 12 Volt DC operation mode
G	Yellow indicator - indicates LP GAS DELAY mode
H	Yellow indicator - indicates LP Gas operation
J	Push-button - press to light up indicator E, F, G or H
K	Flame failure indicator (orange) - indicates flame failure on LP Gas operation

1. BASIC OPERATION

To start refrigerator set switch D to ON.

Set thermostat inside cabinet to NORMAL setting. If a colder temperature is desired turn the thermostat knob clockwise ↷, for a warmer temperature turn the knob ↶.

To **shut off refrigerator** set switch D to OFF.



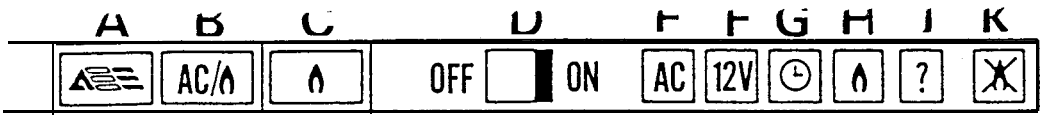
2. IMPORTANCE OF LEVELING REFRIGERATOR

In an absorption refrigerant system ammonia is liquified in the finned condenser coil at the top rear of the refrigerator. The liquid ammonia then flows into the evaporator (inside the freezer section) and is exposed to a circulating flow of hydrogen gas, which causes the ammonia to evaporate, creating a cold condition in the freezer.

The tubing in the evaporator section is specifically sloped to provide a continuous movement of liquid ammonia, flowing downward by gravity, through this section. If the refrigerator is operated when out-of-level when the vehicle is not moving, liquid ammonia will accumulate in portions of the evaporator tubing. This will slow the circulation of hydrogen and ammonia gas, or in severe cases, completely block it, resulting in a loss of cooling.

Any time the vehicle is parked for several hours with the refrigerator operating, the vehicle should be leveled to prevent this loss of cooling. The vehicle needs to be leveled only so it is comfortable to live in (no noticeable sloping of floor or walls).

When the vehicle is moving the leveling is not critical, as the rolling and pitching movement of the vehicle will pass to either side of level, keeping the liquid ammonia from accumulating in the evaporator tubing.



AES CONTROL PANEL ON REFRIGERATOR

3. AUTOMATIC ENERGY SELECTOR (AES)

A. GENERAL INFORMATION

This refrigerator is equipped with an Automatic Energy Selector (AES) control system, which can automatically select the most suitable energy source which is available - either 120 Volt AC, 12 Volt DC, or LP Gas operation The system can be set by the user to be fully automatic, or if desired, it can be set to limit operating modes to AC and LP Gas only, or LP Gas only.

Fully Automatic Mode

When switch D is set to ON the push-button will light up (green) indicating that the control system is in the fully automatic mode. In this mode 120 Volt AC operation has first priority, meaning the refrigerator will operate on 120 Volt AC whenever it is available. If 120 Volt AC is not available, and if the vehicle engine is running, the refrigerator will operate on the 12 Volt DC power being produced by the alternator on the engine. If neither 120 Volt AC or 12 Volt DC is available the system will switch to LP Gas operation.

AC/ 120 V AC and LP Gas Only

When this button is pushed, the control system will select only between 120 Volt AC and LP Gas operation. First priority is 120 Volt AC, which means the refrigerator will operate in this mode whenever 120 Volt AC is available.

LP Gas Only

If this mode is selected the refrigerator will operate only on LP gas, even if 120 Volt AC or 12 Volt DC is available.

B. MODE INDICATOR LAMPS

At the right side of the AES control panel are 4 indicator lamps which give you information about the operation of the AES system. When the ? button is depressed one of these indicators will light up, showing which operating mode the system is using. .

There is an additional indicator ❑ at the far right side of the control panel. This indicator will light only when there has been a flame failure in the LP Gas operation mode. (For further information see 5. *FLAME FAILURE DURING LP GAS OPERATION.)*

4. GENERAL SEQUENCE OF OPERATION

A.120 VOLT AC OPERATION

Since 120 Volt AC is usually the most economical energy source for operation of the refrigerator the AES control system is designed to select this mode whenever it is available (except when the LP Gas Only mode is selected). A 120 Volt heating element attached to the boiler tube provides the heat to operate the cooling system. The thermostat inside the refrigerator cabinet turns power on and off to this element as required to maintain the desired temperature.

B. 12 VOLT DC OPERATION

The refrigerator contains an additional heating element for use with 12 Volt DC power; however, due to the high amperage draw (15 to 18 amps depending on the model) it would not be practical to operate the refrigerator with only a 12 Volt battery, unless the battery is constantly being recharged. The AES system is therefore designed to switch to the 12 Volt DC mode only when vehicle engine is running, and the battery has been charged to 13.5 volts or higher. If the battery supply voltage should drop to 11 volts or less (due to demands of other 12 volt devices in the vehicle) the 12 volt DC mode will shut off to protect the battery from further drain. After about 25 minutes the 12 volt DC mode will resume again, provided the voltage is at least 11 volts.

The thermostat inside the refrigerator cabinet also controls power on and off to the 12 Volt heating element to maintain the desired temperature.

C. LP GAS DELAY MODE

When the vehicle engine is turned off the AES system initiates a delay cycle which prevents the refrigerator from operating on LP Gas for about 25 minutes. The purpose of the delay cycle is to avoid having a gas flame present during a refueling stop at a gas station. (See WARNING on Page 9).

If the vehicle engine is restarted during this delay period the 12 Volt DC mode will resume operation and the delay period will be reset to 25 minutes. This means that each time the vehicle engine is stopped, the complete 25 minute delay cycle will take place.

If 120 Volt AC becomes available during this delay cycle the AES system will start operating in the 120 Volt AC mode immediately.

If the RV is stopped somewhere other than at a gas station you may wish to cancel the delay cycle. To do this, set the main system switch D to OFF for -several seconds, then back to ON, and the system will start operating in the LP gas mode.

WARNING

Most LP Gas appliances used in recreational vehicles are vented to the outside of the vehicle. When parked close to a gasoline pump, it is possible that gasoline fumes could enter this type of appliance and ignite from the burner flame, causing a fire or an explosion. For your safety it is recommended that **all** LP Gas appliances that are vented to the outside should be shut off when refueling.

The AES system is designed to avoid an LP flame during refueling stops by use of the delay cycle explained above. However, you must remember that this delay cycle will be activated ONLY if the refrigerator is properly connected to the vehicle engine electrical circuit (see INSTALLATION, IGNITION LOCK CONNECTION).

If the refrigerator is not connected to the engine electrical circuit, the refrigerator must be shut off during refueling stops. Set the main system switch D to OFF, and after the vehicle has been moved away from the refueling area set the switch back to ON.

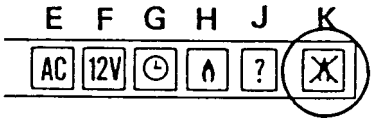
D. LP GAS OPERATION

When there is no electrical power available (120 Volt AC or 12 Volt DC) or if the ❑ indicator is lit, the AES system will switch to LP Gas operation. When the thermostat in the refrigerator cabinet calls for cooling the following sequence takes place:

1. A high voltage spark is created above the burner.
2. Power is sent to a solenoid which opens the gas control, allowing LP Gas to flow to the burner. The spark ignites the LP Gas, and a small flame then provides heat for the boiler, and the cooling process begins.
3. A sensor electrode mounted above the burner tube monitors the flame continuously. If the flame should fail for any reason, the high voltage spark will start immediately, and relight the flame.

When the desired temperature is reached the --thermostat will shut -off the gas flame completely, and the system will remain on standby until cooling is required again.

5. FLAME FAILURE DURING LP GAS OPERATION



If the gas flame does not ignite when the burner cycle begins, or if the flame fails during the burner cycle, the high voltage spark will continue sparking, up to 3 minutes. At that time the gas control will completely shut off the gas flow, the high voltage spark will cease and the ☒ indicator will light up. LP gas operation will not restart as long as this indicator is lit. This shutdown is to make sure that the LP gas flow does not continue for a long time.

To restart LP gas operation, first set switch D to OFF for five seconds, then back to ON. The flame failure indicator will go off, and the system will start another cycle for ignition.

If the refrigerator has not been used for some time, or if the supply tanks have just been refilled, air may be trapped in the LP gas supply line. To purge this air from the lines may require resetting the ON/OFF switch three or four times.

If repeated attempts to start LP gas operation are not successful, check to make sure the LP supply tank is not empty. Also check all manual shut off valves in the LP gas supply line to make sure they are open.

If the problem is still not corrected, contact a service center for assistance.

When the flame failure indicator ❑ comes on, the mode selection button (green light) will go off, indicating that all operation has stopped. However, if 120 Volt AC or 12 Volt DC becomes available during this period, the mode selection button (green light) will come on, indicating that the refrigerator is operating on another energy source; the ❑ indicator will remain lit until there is an OFF/ON operation of the main system switch D.

6. LOW VOLTAGE MONITOR ON 12 VOLT DC CONTROL SYSTEM

The AES system requires 12 Volt DC power at all times to operate on any energy source, and to operate properly this DC power must be at 9.5 Volts or higher. If this voltage should drop below 9.5 Volts the AES system will switch to an emergency cooling mode:

1. The mode selector button (green light) will go off.
2. The system will revert to continuous LP gas operation - with no thermostat control.

The refrigerator will continue operating in this mode, without the thermostat in the circuit, until the DC power supply is increased to 10.5 volts. At that time the mode selector button (green light) will come on and normal operation will resume.

During this low voltage condition the interior light will continue to operate normally.

7. HOW TO USE THE REFRIGERATOR

CAUTION

Do not store **any** combustible **materials, gasoline, or other flammable vapors or liquids in the refrigerator area.**

A. FOOD STORAGE COMPARTMENT

The food storage compartment is completely closed and unventilated, which is necessary to maintain the required low temperature for food storage. Consequently, foods having a strong odor or liable to absorb odors should be covered. Vegetables, salads, etc., should be covered to retain their crispness. The coldest positions in the refrigerator are underneath the cooling evaporator and at the bottom of the refrigerator. The least cold positions are on the upper door shelves. This should be considered when different types of food are placed in the refrigerator.

When the refrigerator is heavily loaded, it will take a longer time to lower the temperature, therefore to get maximum efficiency the refrigerator and the food items should be pre-cooled prior to loading. It is essential that the shelves are not covered with paper or plastic so air may freely circulate within the food storage area.

B. FROZEN FOOD STORAGE COMPARTMENT

Quick frozen soft fruits and ice cream should be placed in the coldest part of the compartment which is at the bottom of the aluminum liner or, in models with a shelf, on *or* just below the shelf. Frozen vegetables, on the other hand, may be stored in any part of the compartment.

This compartment is not designed for the deep or quick freezing of food. Meat or fish foods, whether raw or prepared, can however, also be stored in the frozen food storage compartment, provided they are precooled in the refrigerator. They can then be stored about three times as long as in the fresh food storage compartment. To prevent food from drying out, keep it in covered dishes, containers, plastic bags, or wrapped in aluminum foil.

C. ICE MAKING

Ice cubes can be made in the ice trays. These should be filled with water to within l/4" (5 mm) from the top. For faster ice making, the trays should be placed in direct contact with the freezer shelf.

To release the ice cubes, seize the tray with both hands and twist the tray. Cubes not required should preferably be replaced in the tray. Refill the tray with water and replace the tray on the freezer shelf.

Ice making is accelerated if the thermostat is set to MAX. It is a good idea to do this a few hours before an anticipated need for ice, but be sure to turn the knob back to normal setting when the ice is formed or the food in the lower cabinet may be frozen.

D. DEFROSTING

Shut off the refrigerator by setting switch D to OFF.

Empty the refrigerator, leaving the drip tray under the finned evaporator, and the cabinet and freezer doors open. If desired, defrosting may be speeded up by filling ice trays with hot water and placing them on the freezer shelf. **CAUTION: Do not use a hot air blower as permanent damage could result from warping the metal or plastic parts.**

When all frost is melted, empty the drip tray and dry the interior of the refrigerator with a clean cloth.

Replace drip tray and ice tray. Replace all food and set the thermostat to MAX for a few hours. Then reset the thermostat to its normal position.

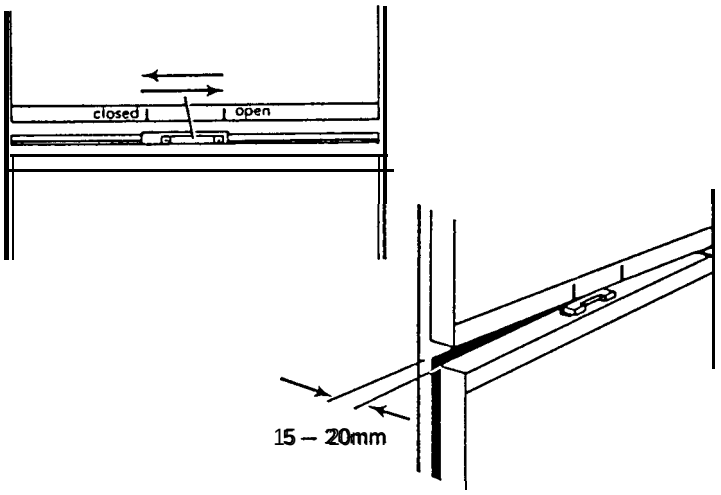
NOTE: On these models an evaporation cup is placed on the rear side of the refrigerator. If normal evaporation does not dissipate the accumulated condensation, empty the cup - do not allow it to overflow.

E. CLEANING

To clean the interior lining of the refrigerator, use lukewarm weak soda solution. The evaporator, ice trays and shelves must, however, be cleaned with warm water only. Never use strong chemicals or abrasives to clean these parts or the protective surface will be damaged. It is important to always keep the refrigerator clean.

F. WHEN REFRIGERATOR IS NOT BEING USED

To shut off the refrigerator, set switch D to the OFF position. If the refrigerator will not be in operation for a period of weeks, it should be emptied and cleaned and the doors left ajar. Use the travel latch to lock the doors in the open position. The ice trays should also be dried and kept outside the cabinet.



TRAVEL LATCH FOR Z-DOOR REFRIGERATOR

G. CAUTION - NO WATER ON CONTROLS
When washing your RV avoid spraying water through the refrigerator vents. Moisture on the electronic control circuits can cause improper operation and may damage the printed circuits.

SECTION C. MAINTENANCE AND SERVICE

1. PERIODIC MAINTENANCE

To keep your Dometic refrigerator operating efficiently and safely, periodic inspection and cleaning of several components is recommended once or twice a year.

A. Check all connections in the LP Gas system (at the back of the refrigerator) for gas leaks. Remove cover A and cover B from the back of the refrigerator (see Figure C-l). Apply a bubble solution to all LP gas connections. DO NOT USE A FLAME TO CHECK FOR LEAKS.

B. Check the burner flame for proper appearance. The flame should be light blue, with no yellow at the tip. See Figure C- 1.

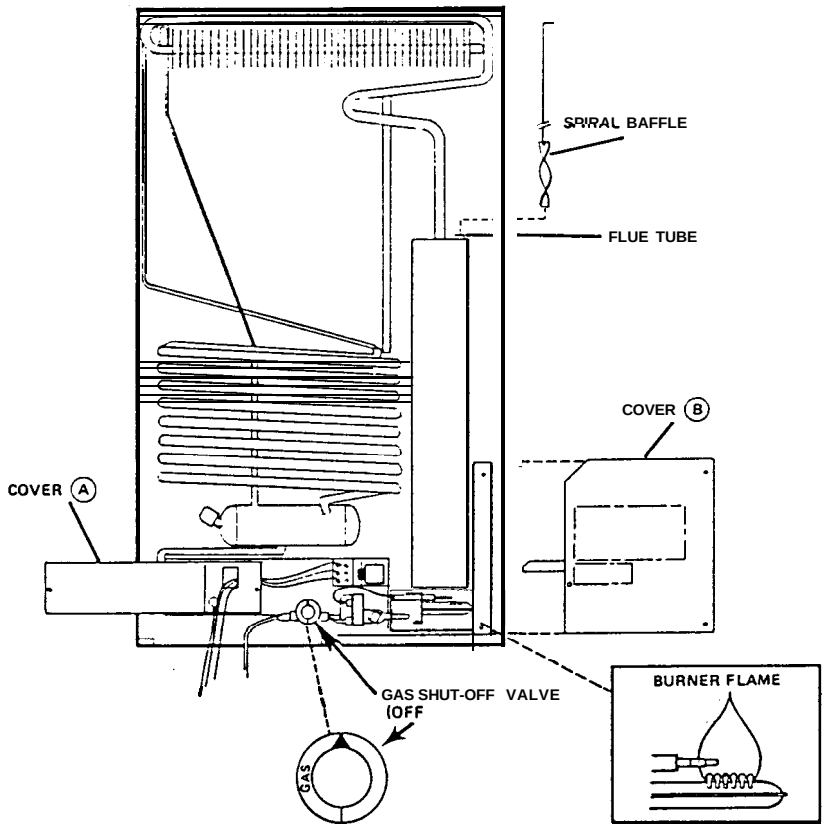


FIG. C-l

C. Keep the area at the back of the refrigerator clear. Check the lower vent, upper vent, and the area between these openings for any obstructions such as bird nests, spider webs, etc.

In **addition to the above, the following maintenance should be performed once or twice a year by a qualified serviceman who is familiar with** LP **Gas systems and refrigerators.**

D. **CHECK GAS PRESSURE**

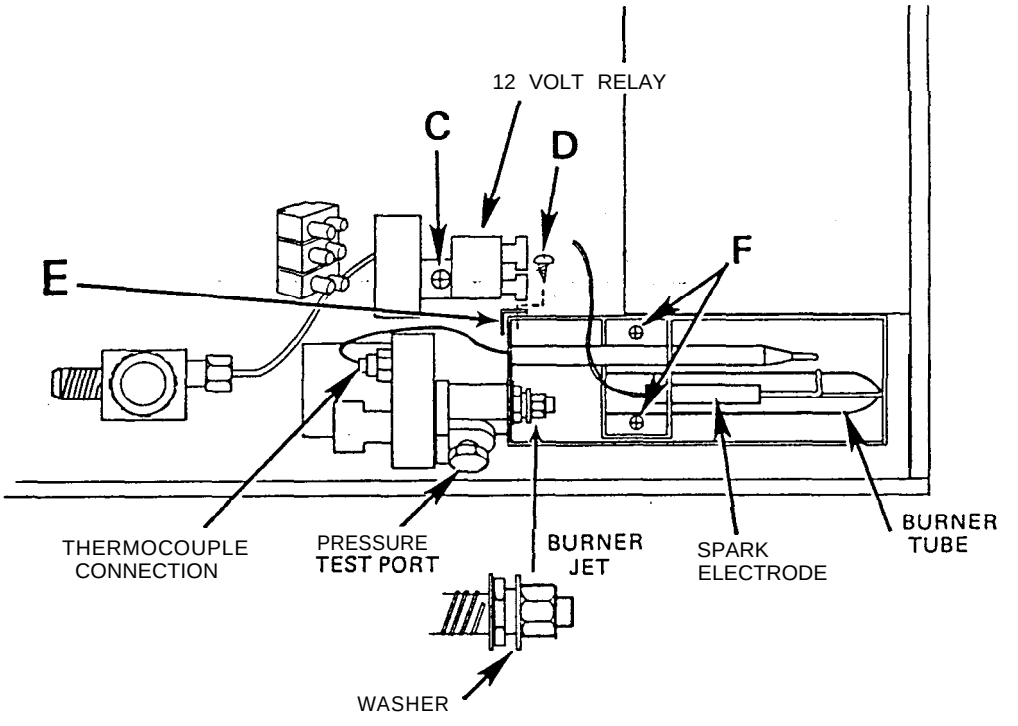
The LP Gas pressure should be checked, and the LP pressure regulator re-adjusted if necessary. The correct operating pressure is 11 inches water column. The pressure reading must be taken at the pressure test port located next to the gas control solenoid. See Figure c-2.

E. CLEANING FLUE TUBE AND BURNER JET

1. Unplug the 120 volt cord from the wall outlet.
2. Shut off the 12 volt supply to the refrigerator. NOTE: Do not remove the fuse mounted on Cover A, as this will not shut off the 12 volt power supply.
3. Turn the gas shut-off valve to the :OFF: position. See Figure C- 1.
4. Remove metal cover A and cover B. See Figure C- 1. Cover A needs to be moved out only far enough to expose the thermocouple connection.
5. Remove screw C which attaches the 12 volt relay and move the relay out from the refrigerator. Do not remove the relay or disconnect its wiring. See Figure C-2.
6. Disconnect the thermocouple connection and remove screw D and clip E. See Figure C-2. Remove the thermocouple by pulling it left, then outward.
7. Disconnect the eléctrode om the spark electrode. Remove the two burner mounting screws F, and remove the burner assembly. See Figure C-2.
8. Remove the flue cap from the top of the flue tube, and lift out the wire and spiral baffle. See Figure C-l. Clean the flue from the top, using a flue brush. Replace the spiral baffle and flue cap.

Alternate Method: On some installations the top of the flue tube cannot be reached for cleaning. In this case, the flue tube can be cleaned by blowing compressed air into the bottom to loosen any scale or soot.

FIG. C-2

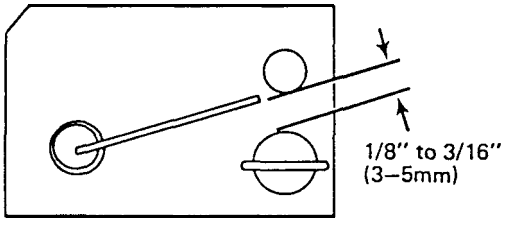


9. Remove all loose scale or soot from the area below the flue tube, then remove the burner jet. Do not lose the small washer. See Figure C-2. Clean the burner jet by soaking in wood alcohol and blowing out with compressed air, then re-install the jet and washer.

   CAUTION: Do not use a wire or pin **when cleaning the burner jet, as the precision opening could be damaged, affecting the flow of gas. This could cause damage to the refrigerator, or create a fire hazard.**

10. Clean the burner tube and check the electrode setting. See Figure C-3 for correct setting. Install the burner assembly and attach the electrode wire. Make sure the electrode setting is not disturbed.

FIG. C-3



11. Install the thermocouple and screw D and clip E. Tighten the thermocouple connection finger-tight plus l/4 turn. DO NOT OVER-TIGHTEN.
12. Attach the 12 volt relay and install cover A.
13. Turn gas shutoff valve to the "ON" position, and restore the 12 volt power supply to the refrigerator.
14. Check all LP connections for gas leaks, using a bubble solution. DO NOT USE A **FLAME TO CHECK FOR LEAKS.**
15. **Set** the refrigerator thermostat to the coldest position and check for proper operation. Turn the gas shutoff valve off and on several times and make sure the spark is lighting the burner each time.
16. Plug in the 120 volt cord to the wall outlet. If the vehicle is connected to 120 volt AC power, the burner should shut off at this time, indicating that the refrigerator is now operating in the 120 volt AC mode.
17. Install cover B.

F. CHECKING LP GAS SAFETY SHUTOFF

1. Set the refrigerator to operate on LP Gas by pressing push-button [↑] on the control panel. Set thermostat to the coldest position.
2. Remove cover B at the back of the refrigerator. See Figure C- 1.
3. Turn the gas shutoff valve to "OFF". The gas flame should shut off and the electrode should start sparking. Within four minutes or less the spark should stop, and the orange light [X] on the control panel should light up.

4. Coat the open end of the orifice with a non-corrosive commercial leak detector solution. Turn the manual gas shutoff valve to "ON". Watch for bubbles. If no bubbles appear, the gas safety shutoff is operating properly. The burner jet should be cleaned as described in "Cleaning the Flue and Burner Jet'! on Pages 12 and 13.

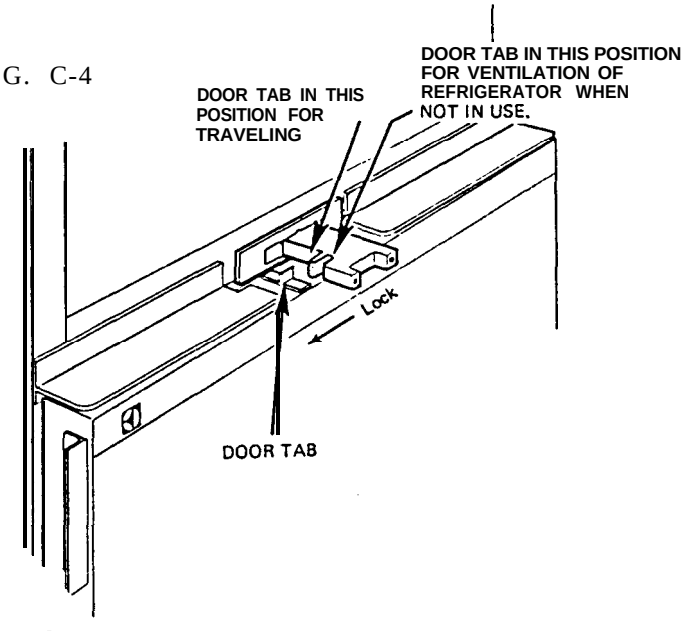
5. If the test is satisfactory, replace cover A, and set the refrigerator controls for normal operation. If the test did not give the results described in Steps 4 and 5, contact your serviceman for a checkout of the problem.

2. SERVICE

A. DOOR ADJUSTMENTS

The doors should close smoothly, without rubbing on the refrigerator cabinet. When closed, the travel latch should engage the tab on the door to prevent the door from opening when traveling. See Figure C-4.

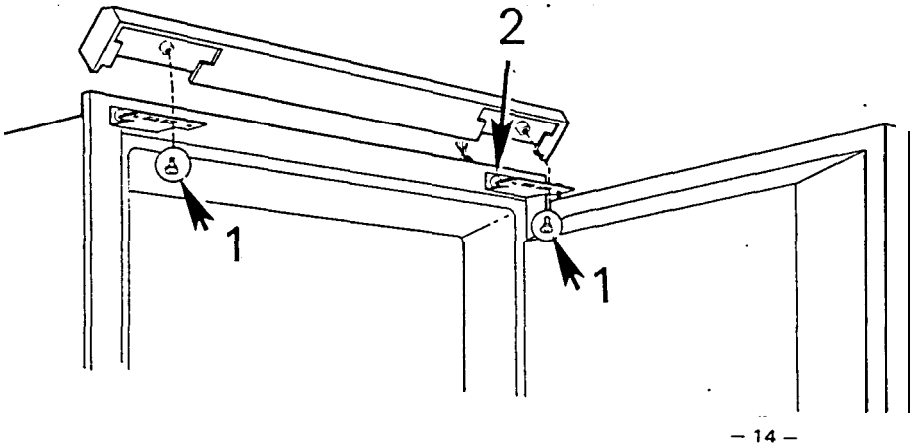
FIG. C-4



Adjusting Upper Hinge:

Open the door and remove the two screws (1) from underneath the hinge plate. Carefully tilt the decoration panel up until the hinge screws (2) are visible. See Figure C-5.

FIG. C-5



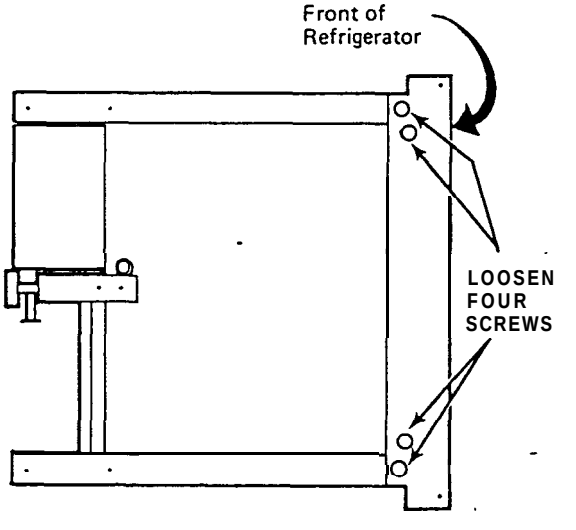
Loosen the hinge screws and slide the hinge to the desired position, then tighten the screws. Replace the decoration panel, being careful not to pinch the wires behind the panel.

If the door needs to be raised slightly, remove the door and place a flat metal washer (l/4" dia.) over the lower hinge pin, then replace the door.

Adjusting the Lower Hinge:

The lower hinge is part of the refrigerator base plate. If adjustment is required the refrigerator must be removed from the compartment. See C. REMOVING THE REFRIGERATOR. Lay the refrigerator on its side and loosen the four screws that attach the base plate. See Figure C-6. Move the base to the desired position, then tighten the screws. NOTE: On two-door models the center hinge is not adjustable.

FIG. C-6

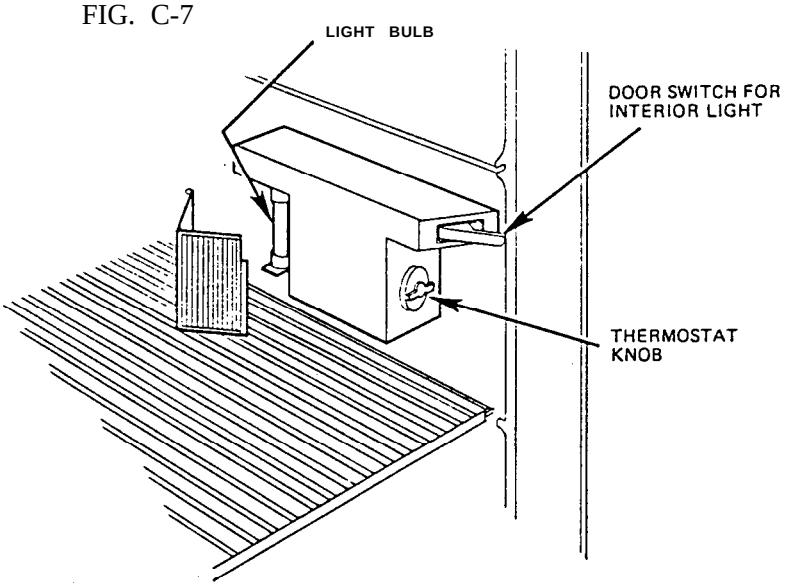


B. INTERIOR LIGHT

On refrigerators so equipped, the interior light is turned on and off by a door switch on the front of the light fixture. See Figure C-7.

To replace the light bulb, press forward on the rear of the bulb cover, · then swing the cover toward the center of the compartment.

FIG. C-7



NOTE: The following service should be performed by a qualified serviceman who is familiar with LP Gas systems and refrigerators.

C. REMOVING THE REFRIGERATOR FOR SERVICE

Most service work can be performed with the refrigerator installed; however, the refrigerator can easily be removed if required.

1. Disconnect the 120 volt cord from the wall receptacle.
2. Shut off the 12 volt supply to the refrigerator. Disconnect the 12 volt wires and the ignition lock wire from the terminal block at the back of the refrigerator. Mark the wires to make sure polarity is not reversed when they are reconnected.
3. Turn the gas shutoff valve to the "OFF" position. See Figure C-l. Disconnect the outgoing gas line at the right end of the shutoff valve. Pull the knob off of the valve and remove the two screws which attach the valve to the refrigerator. Leave the shutoff valve attached to the incoming gas supply line.
4. Remove the mounting screws at the front flange of the refrigerator (see Page 4, Figure 5) and slide the refrigerator forward out of the compartment.

When installing the refrigerator be careful not to damage the foam gaskets on the back of the mounting flanges and the bottom of the cabinet opening.

Reconnect the 12 volt wires and the ignition lock wire and restore the 12 volt power.

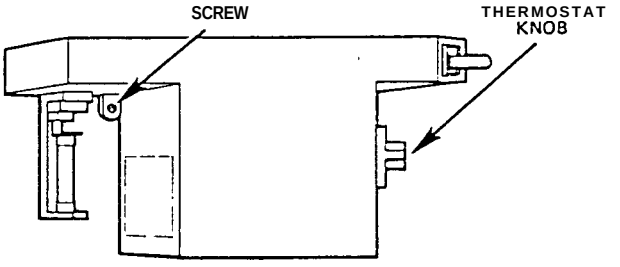
Connect the gas shutoff valve, turn it to the "ON" position, and check all connections for leaks with a bubble solution. DO NOT USE A FLAME TO CHECK FOR GAS LEAKS.

D. THERMOSTAT

The refrigerator thermostat is located inside the lower food storage compartment, inside the interior light fixture. See Figure C-7. To service the thermostat, remove the light bulb cover, then remove one screw (see Figure C-S). Pull the knob off the front of the thermostat, then remove the light fixture cover.

When replacing the cover, make sure wires are not pinched between the cover and the wall.

FIG. C-8



E. TROUBLESHOOTING GUIDE

The following list of possible causes is given as a guide for the serviceman when troubleshooting some common problems that may occur.

1. Refrigerator Does Not Cool Properly - All Modes
   - A. Refrigerator not level
   - B. Thermostat set too warm
   - C. Air circulation at rear of refrigerator restricted
   - D. Evaporator coil in freezer coated with frost
   - E. Air circulation in food compartment blocked (compartment too full)
   - F. Excessive heat load, because of:
     - Food too warm when put in refrigerator
     - Refrigerator not pre-cooled before adding food.
     - Doors open too much
   - G. 12 volt control circuit connected to AC/DC converter output, causing erratic operation.

2. Refrigerator Does Not Cool Properly - Electric Modes
   - A. Voltage drop to heating element (undersized wire or Ioose connection)
   - B. Defective heating element
   - C. Defective 12 volt relay (12 volt operation only)

3. Refrigerator Does Not Cool Properly - LP Gas Mode
   - A. Low gas pressure - minimum 11 inches water column
   - B. Burner jet restricted
   - C. Burner head plugged or damaged
   - D. Burner not located under center of flue tube
   - E. Spiral flue baffle not in flue tube
   - F. Flue tube needs cleaning