



# SERVICE TIPS

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## AMES/AES/ROYALE/ELITE REFRIGERATORS

### Models

|            |          |         |         |
|------------|----------|---------|---------|
| SILHOUETTE | DOMETIC  | DOMETIC | DOMETIC |
| AMES/AES   | AMES/AES | ROYALE  | ELITE   |
| S1521      | RM2607   | RM3662  | RM4872  |
| S1531      | RM2611   | RM3663  | RM4873  |
| S1621      | RM2807   | RM3862  |         |
| S1631      | RM2811   | RM3863  |         |
| S1821      | RM3607   |         |         |
| S1831      | RM3807   |         |         |

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### Refrigerator Start-Up Information

**The new Dometic Refrigerator has been designed to provide more cooling power than ever before — surpassing all agency requirements and customer expectations. When starting this refrigerator for the very first time, the cooling cycle may require up to four hours of running time before the cooling unit is fully operational.**

THE MOST COMMON SYSTEM PROBLEMS ASSOCIATED WITH THE S1521, S1531, S1621, S1631, S1821, S1831, RM2607, RM2611, RM2807, RM2811, RM3607, RM3807, RM3662, RM3663, RM3862, RM3863, RM4872 and RM4873 REFRIGERATORS.

**SYMPTOM**

**CAUSE**

|   |   |
|---|---|
| 1. No operation - no panel lights               | Operation<br>DC Volts<br>Fuse<br>Wiring<br>Upper Circuit Board<br>Lower Circuit Board   |
| 2. No operation - has panel lights              | Operation<br>DC Volts<br>Thermistor<br>Fuses<br>Upper Circuit board<br>Wiring<br>Lower Circuit Board  |
| 3. No AC operation - operates on other mode(s)  | Operation<br>AC Volts<br>Fuse<br>Heating Element<br>Upper Circuit Board<br>Wiring<br>Lower Circuit Board  |
| 4. No DC operation - operates on other mode(s)  | Operation<br>DC Volts<br>Fuse<br>Heating Element<br>Upper Circuit Board<br>Wiring<br>Lower Circuit Board  |
| 5. No gas operation - operates on other mode(s) | Operation<br>LP Gas<br>Manual Gas Valve<br>Igniter<br>High Voltage Cable<br>Electrode<br>Solenoid<br>Upper Circuit Board<br>Wiring<br>Lower Circuit Board |
| 6. Insufficient cooling on all mode(s).         | Ventilation<br>Leveling<br>Ambient Temperature<br>Air Leaks<br>Thermistor<br>Cooling Unit<br>Thermistor Adjuster  |

## **SYMPTOM**

7. Insufficient cooling on AC - cools properly on other mode(s)

8. Insufficient cooling on DC - cools properly on other mode(s)

9. Insufficient cooling on gas - cools properly on other mode(s)

10. Freezes

11. Changes preset mode

12. Check light on

13. Interior light on when door is closed

14. Rapid formation of frost

15. Water on frame

## **CAUSE**

AC Volts  
Heating Element  
Lower Circuit Board

DC Volts  
Heating Element  
Wiring  
Lower Circuit Board

LP gas  
Orifice  
Flue Baffle  
Flue Tube  
Flue Cap (if equipped)  
Burner  
Lower Circuit Board

Thermistor  
Thermistor Adjuster  
Lower Circuit Board  
Upper Circuit Board

Operation  
DC Volts  
Wiring  
Upper Circuit Board  
Lower Circuit Board

DC Volts  
Wiring  
LP Gas  
Manual Gas Valve  
Solenoid  
Orifice  
Burner  
Lower Circuit Board  
Thermocouple

Wiring  
Door Switch  
Door Position

Food Storage  
Interior Liner to Frame  
High Humidity  
Air Leaks

Interior Liner to Frame  
High Humidity  
Air Leaks  
Climate Control Heater

# ICE MAKER SECTION

## SYMPTOM

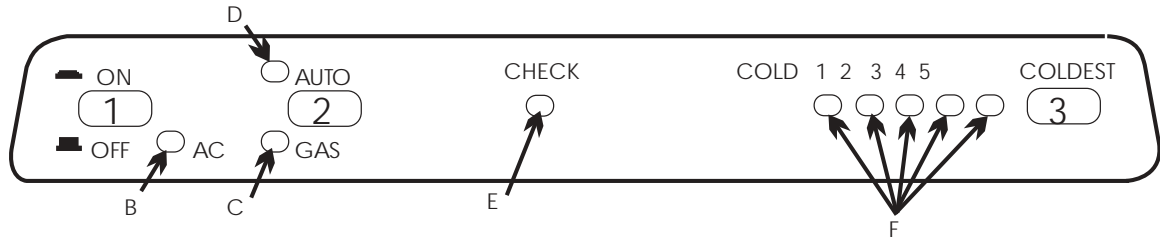
- 16. Ice Maker fails to start.
- 17. Ice Maker won't make ice.
- 18. Keeps making ice and won't shut off.
- 19. Not making enough ice.
- 20. Too much water is coming out.
- 21. Ejector blade frozen into ice cubes.
- 22. Unit is hooked-up no water comes in.
- 23. Ice maker is running but won't make cubes.
- 24. Ice maker will not make ice.

## CAUSE

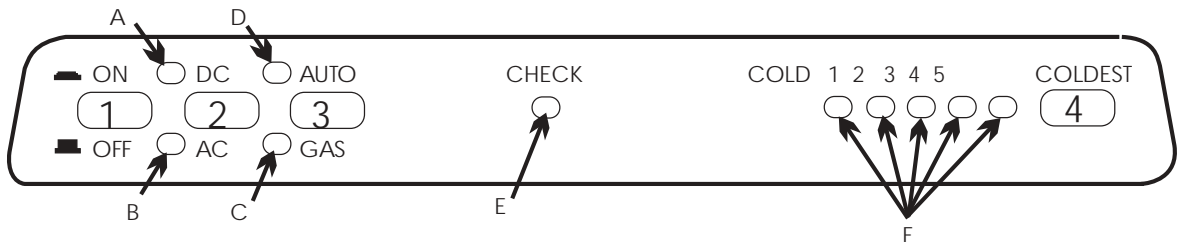
- Operation  
Arm in Up Position  
AC Voltage  
Water Valve  
Ice Maker Cycle
- Blades Frozen in Ice  
AC Voltage  
Water Valve  
Ice Maker Cycle
- Shut-off arm
- Operation  
Mold Thermostat  
Cube Size  
Ice Maker Cycle
- Water Fill Adjustment  
Water Valve
- Water Fill Adjustment  
Water Valve
- Water  
Water Valve
- Water  
Shut-Off Arm  
Mold Thermostat  
Hold Switch
- Ice Ejector  
Mold Heater  
Timing Motor

# AMES REFRIGERATOR OPERATION

## 2-WAY DISPLAY PANEL



## 3-WAY DISPLAY PANEL



**MODELS INCLUDE: S1521, S1531, S1621, S1631, S1821, S1831, RM2607, RM2611, RM2807, RM2811**

### AUTO MODE

When operating in the AUTO mode, the AUTO mode indicator lamp (D) will illuminate. The control system will automatically select between AC and GAS operation with AC having priority over GAS. Either the AC indicator lamp (B) 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 AUTO mode indicator lamp (D) will not 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 (E) 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 and 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 or DC 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.

## DC MODE (3-Way Models Only)

When operating in the DC mode, the DC mode indicator lamp (A) will be illuminated. All other mode lamps will be off. The DC mode overrides all other operating modes. If one of the other operating modes is desired, the DC selector button (2) must be in the UP (OFF) position.

## SPECIAL FEATURES 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 the display module becomes nonfunctional, the control system will revert to full automatic operation selecting the best energy source available with AC, DC (3-way only) 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.

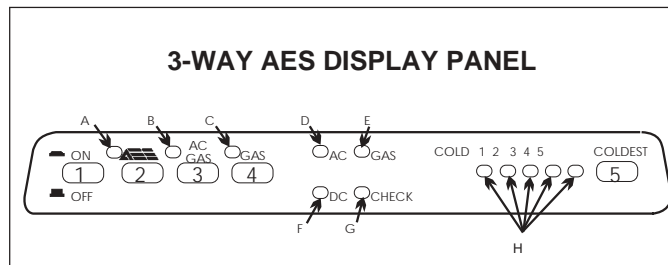
The second Special Feature of operation will execute when a failure of the temperature sensing device or associated electronic circuitry occurs. If this should occur, the control system will operate on the energy source selected via the control panel. The cooling unit will run continuously on the selected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

NOTE: The operational range of these refrigerators is 46° to 35° ± 3°F.

# AES REFRIGERATOR OPERATION

Models Include: RM3607 and RM3807

## AES MODE



The AES mode of operation takes priority over all other operating modes. If more than one mode selector button (2), (3) or (4) is in the down position, the priority is from left to right.

When operating in the AES mode, the AES mode indicator lamp (A) will illuminate. In this mode the control system will automatically select the energy source with AC having top priority, DC second priority and GAS third priority. If the control system has selected a particular energy source such as AC, and then it becomes unavailable, it will automatically seek out the next available energy source.

## AC/GAS MODE

When operating in the AC/GAS mode the AC/GAS mode indicator lamp (B) will illuminate. In this mode of operation the control system will automatically select between the AC and GAS energy sources with AC having first priority.

## **GAS MODE**

When operating in the GAS mode, the mode indicator lamp (E) will illuminate.

The GAS 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 (G) 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 and then ON position. The control system will attempt a new 45 seconds 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 the AES or AC/GAS mode of operation while the CHECK indicator lamp is on, it will function properly on AC or DC, but if the CHECK indicator lamp is on, it will not go off until the main power ON/OFF button is pressed to the OFF then ON position.

## **BATTERY PROTECTION SYSTEM**

The control system is equipped with a battery protection system. If AC power is not available, the control will switch to the DC energy source. If the input voltage at the terminal block connections is below 12.8 volts, the control system will bypass the DC energy source and attempt GAS operation. If the GAS energy source is available, CHECK lamp is on, the control system will return to the DC energy source. The control will operate in the DC mode for a maximum of 10 minutes.

If the input voltage has not returned above 12.8 volts within this time, the control will terminate DC operation and turn off the DC lamp (F) and start gas operation if GAS energy source is available and check light is not on.

The input battery voltage must rise above 12.8 volts for 25 minutes before DC operation can resume.

As soon as the input voltage rises above the required 12.8 volts, the DC mode lamp (F) will illuminate; however, the control system will remain in the 25 minute delay mode and operate on gas. This delay is to allow sufficient time for the vehicle charging system to recharge the battery. If 120 volt AC becomes available during the 25 minute delay, the control will automatically switch energy source.

## **SPECIAL FEATURES 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 the display module becomes nonfunctional, the control system will revert to full automatic operation selecting the best energy source available with AC, DC 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 Special Feature 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 and could freeze. The refrigerator will continue to operate in this mode indefinitely or until a new sensor is installed and the system is reset.

NOTE: The operational range of these refrigerators is 46°F to 35°F ± 3°.

DC

# ROYALE REFRIGERATOR OPERATION

**MODELS INCLUDE: RM3662, RM3663, RM3862 and RM3863**

### **AUTO MODE (2-WAY MODEL)**

Press the AUTO mode selector button (2) to the DOWN position. If 120 volts AC is available, the AC mode indicator lamp (B) 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 (E) 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 GAS MODE.)

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

### **GAS MODE (2-WAY MODEL)**

Move the AUTO 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 (E) will illuminate and the GAS mode indicator lamp (C) will go off. To reset when the CHECK indicator lamp (E) 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.**

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

### **AUTO MODE (3-WAY MODEL)**

Press the DC mode selector button (2) to the UP (OFF) position.

Move the AUTO mode selector button (3) to the DOWN position. If 120 volts AC is available, the AC mode indicator lamp (B) 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 (E) 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 GAS MODE).

Press the TEMPERATURE SELECTOR button (4) until the lamp (F) at the desired position is illuminated.

### **GAS MODE (3-WAY MODEL)**

Press the DC mode button (2) to the UP (OFF) position.

Move the AUTO mode selector button (3) 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 (E) will illuminate and the GAS mode indicator lamp (C) will go off. To reset when the CHECK indicator lamp (E) 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.

Press the **TEMPERATURE SELECTOR** button (4) until the lamp (F) at the desired position is illuminated.

### DC MODE (3-WAY MODEL ONLY)

Press the DC mode indicator button (2) to the **DOWN** position. (Lamp [A] will light).

Press the **TEMPERATURE SELECTOR** button (4) until the lamp (F) at the desired position is illuminated.

The refrigerator will continue to operate in the DC mode until switch (2) is moved to the **UP** position.

## ! CAUTION

Turn off the refrigerator or move the DC selector button (2) to the **UP/OFF** position. The DC mode overrides all the other operating modes. Discharging of the battery will occur if the vehicle engine is not running.

### TEMPERATURE SELECTOR

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

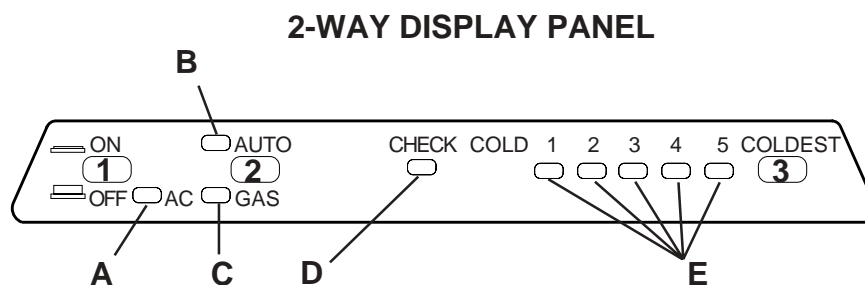
After the initial start-up, the temperature selector should be moved from "COLDEST" to the desired temperature setting, which is usually about mid-setting.

### 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 (1) to the **UP (OFF)** position. This shuts off all DC power to the refrigerator, including the interior light.

## ELITE REFRIGERATOR OPERATION (2-WAY)

MODELS INCLUDE: RM4872



### AUTO MODE

Press the Auto mode selector button (2) to the **DOWN** position. Lamp (B) will illuminate. 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.

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

## **GAS MODE**

Move the 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.

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

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

## **TEMPERATURE SELECTOR**

The temperature selector 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 temperature selector should be moved from "COLDEST" to the desired temperature setting, usually about 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 OPERATING MODES**

### **AUTO MODE**

When operating in the AUTO mode, the 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 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 and 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.

## **SPECIAL FEATURES OF OPERATION**

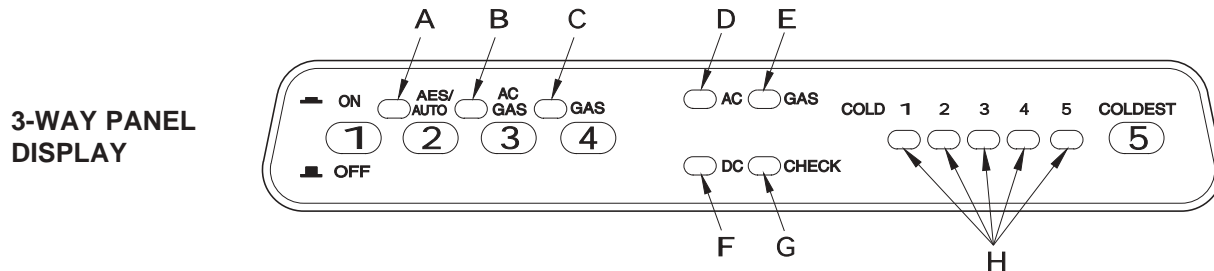
This control system contains a feature where it will continue to operate the cooling system in the event of a failure of a major operating component. Two different modes of operation can occur in this category.

If for some reason the display module becomes nonfunctional, 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.

## ELITE REFRIGERATOR OPERATION (3-WAY)

MODELS INCLUDE: RM4873



### AES/AUTO MODE

The AES/AUTO mode of operation takes priority over all other operating modes. If more than one mode selector button (2), (3) or (4) is in the DOWN position, the priority is from left to right.

When operating in this mode, the AES/AUTO mode indicator lamp (A) will illuminate. In this mode the control system will automatically select the energy source with AC having top priority, DC second priority and GAS third priority. If the control system has selected a particular energy source such as AC, and then it becomes unavailable, it will automatically seek out the next available energy source.

Press the AES/AUTO mode selector button (2) to the DOWN position. Indicator lamp (A) should illuminate. Indicator lamp (D), (E) or (F) should also illuminate indicating which energy source the control has selected.

Press the TEMPERATURE SELECTOR button (5) until the lamp at the desired position is illuminated.

### AC/GAS MODE

Press the AC/GAS mode selector button (3) to the DOWN (ON) position. Mode indicator lamp (B) should illuminate.

In this mode of operation the control system will automatically select between the AC and GAS energy sources with AC having first priority.

The AES/AUTO mode selector button (2) must be in the UP (OFF) position.

Indicator lamp (D) or (E) should also illuminate indicating which energy source the control has selected. If the CHECK indicator lamp (G) illuminates, see *GAS MODE* for further instructions.

Press the TEMPERATURE SELECTOR button (5) until the lamp at the desired position is illuminated.

## **GAS MODE**

When operating in the GAS mode, the AES/AUTO (2) and AC/GAS (3) mode selector buttons must be in the UP (OFF) position.

The GAS mode provides LP gas operation only.

Press the GAS mode indicator button (4) to the DOWN (ON) position.

Indicator lamps (C) and (E) should illuminate indicating GAS operation. 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 (G) will illuminate and the GAS indicator lamp (C) and (E) will go off.

To reset when the CHECK indicator lamp (G) is illuminated, press the main power ON/OFF button (1) 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 shutoff valves in the lines are open.

Press the TEMPERATURE SELECTOR button (5) until the lamp (H) at the desired position is illuminated.

If the control is switched to the AES/AUTO or AC/GAS mode of operation while the CHECK indicator lamp is on, AC or DC 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.

## **TEMPERATURE SELECTOR**

The temperature selector 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 temperature selector should be moved from "COLDEST" to the desired temperature setting, usually about 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.

## **DESCRIPTION OF OPERATING MODES**

### **AES/AUTO MODE**

The AES/AUTO mode of operation takes priority over all other operating modes. If more than one mode selector button (2), (3) or (4) is in the down position the priority is from left to right.

When operating in the AES/AUTO mode, the AES/AUTO mode indicator lamp (A) will illuminate. In this mode the control system will automatically select the energy source with AC having top priority, DC second priority and GAS third priority. If the control system has selected a particular energy source such as AC, and then it becomes unavailable, it will automatically seek out the next available energy source.

### **AC/GAS MODE**

When operating in the AC/GAS mode, the AC/GAS mode indicator lamp (B) will illuminate.

In this mode of operation the control system will automatically select between the AC and GAS energy sources with AC having first priority.

## **GAS MODE**

When operating in the GAS mode, the GAS mode indicator lamp (C) will illuminate.

The GAS 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 (G) 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 and 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 AES/AUTO or AC/GAS mode of 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.

## **BATTERY PROTECTION SYSTEM**

The control system is equipped with a battery protection system. If AC power is not available the control will switch to the DC energy source. If the input voltage at the terminal block connections is below 12.8 volts the control system will bypass the DC energy source and attempt GAS operation. If the GAS energy source is available, CHECK lamp is on, the control system will return to the DC energy source. The control will operate in the DC mode for a maximum of 10 minutes.

If the input voltage has not returned above 12.8 volts within this time, the control will terminate DC operation and turn off the DC lamp (F) and start gas operation if GAS energy source is available.

The input battery voltage must rise above 12.8 volts for 25 minutes before DC operation can resume.

As soon as the input voltage rises above the required 12.8 volts, the DC mode lamp (F) will illuminate. However the control system will remain in the 25 minute DC delay mode and operate on gas. This delay is to allow sufficient time for the vehicle charging system to recharge the battery. If 120 volt AC becomes available during the 25 minute delay, the control will automatically switch to the AC energy source.

## **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 nonfunctional, 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.

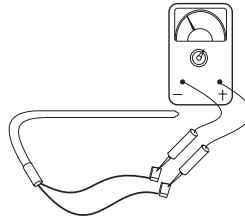
## **AC VOLTAGE REQUIREMENTS**

**Proper Operating Range is 100 to 132 Volts.**

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.

## AC COMPONENTS HEATING ELEMENT

Remove the heater leads from the lower circuit board and measure for proper resistance .



You should obtain the following readings  $\pm 10\%$ :

| MODEL  | WATTS | VOLTS | OHMS |
|--------|-------|-------|------|
| S1521  | 185   | 120   | 78   |
| S1531  | 195   | 120   | 78   |
| S1621  | 325   | 120   | 44   |
| S1631  | 325   | 120   | 44   |
| S1821  | 325   | 120   | 44   |
| S1831  | 325   | 120   | 44   |
| RM2607 | 295   | 120   | 48   |
| RM2611 | 295   | 120   | 48   |
| RM2807 | 325   | 120   | 44   |
| RM2811 | 325   | 120   | 44   |
| RM3607 | 295   | 120   | 48   |
| RM3807 | 325   | 120   | 44   |
| RM3662 | 325   | 120   | 44   |
| RM3663 | 325   | 120   | 44   |
| RM3862 | 325   | 120   | 44   |
| RM3863 | 325   | 120   | 44   |
| RM4872 | 325   | 120   | 44   |
| RM4873 | 325   | 120   | 44   |

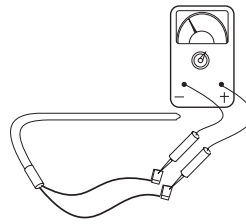
## DC VOLTAGE REQUIREMENTS

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

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.

## DC COMPONENTS – HEATING ELEMENT

Check the heating element with ohms resistance.



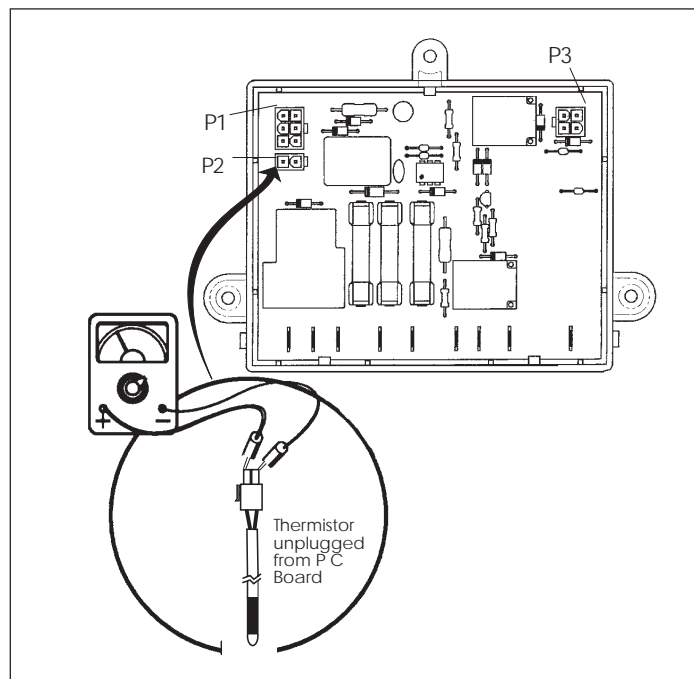
You should obtain the following readings  $\pm 10\%$ :

| MODEL  | WATTS | VOLTS | OHMS |
|--------|-------|-------|------|
| S1531  | 215   | 12    | .67  |
| S1621  | 215   | 12    | .67  |
| S1631  | 215   | 12    | .67  |
| RM2607 | 215   | 12    | .67  |
| RM2611 | 215   | 12    | .67  |
| RM2807 | 215   | 12    | .67  |
| RM2811 | 215   | 12    | .67  |
| RM3607 | 215   | 12    | .67  |
| RM3807 | 215   | 12    | .67  |
| RM3663 | 215   | 12    | .67  |
| RM3863 | 215   | 12    | .67  |
| RM4873 | 215   | 12    | .67  |

A continuity reading will indicate an open or complete circuit.

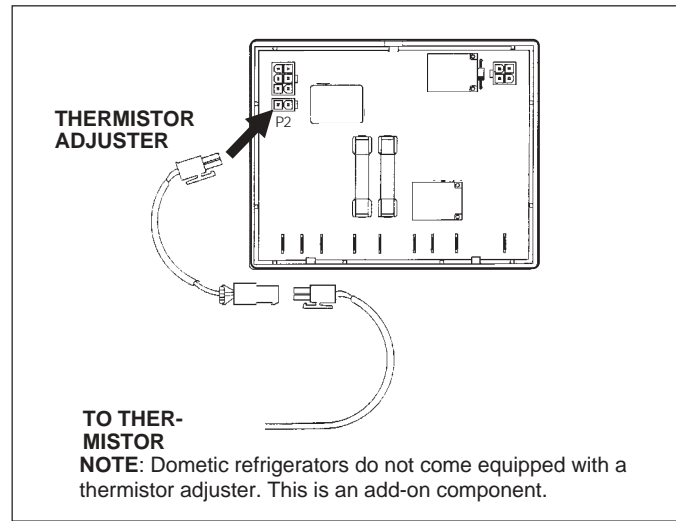
## THERMISTOR

Disconnect the thermistor harness from the P2, 2-pin terminal on the lower circuit board. Place a thermistor in a glass of ice water. Wait 2 to 3 minutes. You should get a reading of approximately 7,000 to 10,000 ohms.



## THERMISTOR ADJUSTER

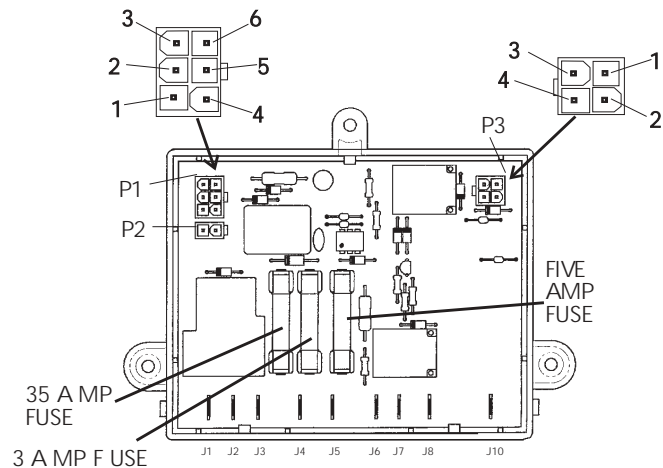
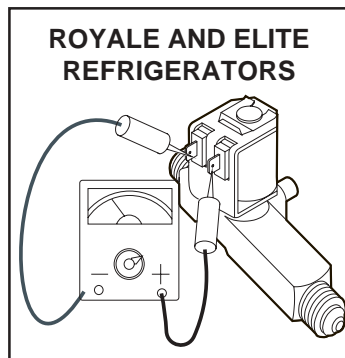
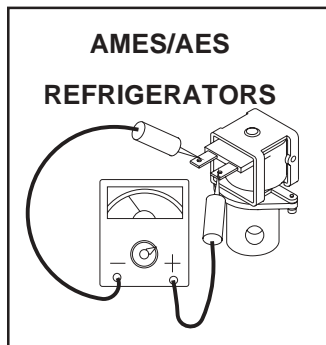
Do an ohms resistance check across the terminals. Proper ohms reading is approximately 23,200 ohms  $\pm$  10%.



## SOLENOID VALVE

Check the solenoid 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 wire at Plug 3, Terminal 2 on lower circuit board has DC volts (9 or more).

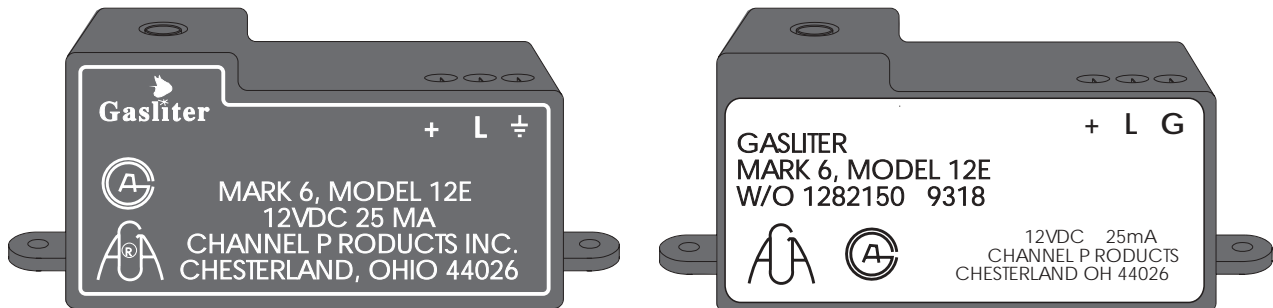
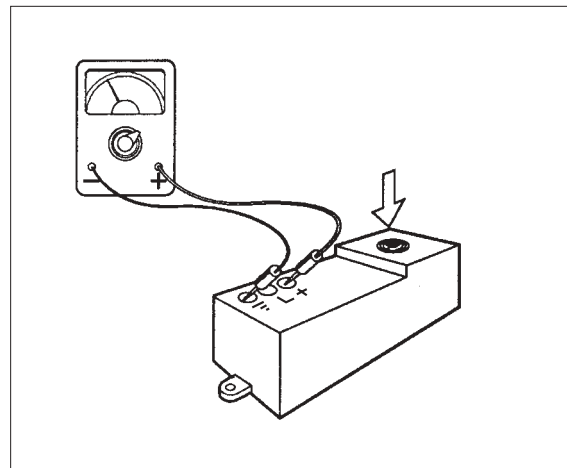




## IGNITER

Verify proper voltage at the positive (+) and ground (-) terminals of the igniter. Remove high voltage cable from igniter. The igniter should produce a sparking sound during trial-for-ignition. 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.



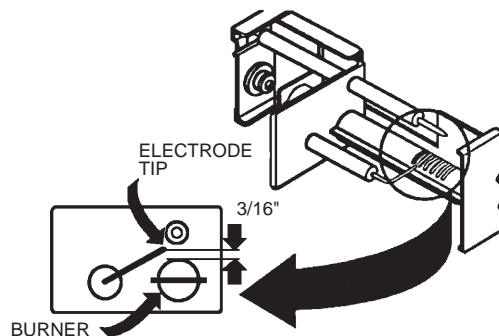
Installation of the Channel Products, Inc., Gasliter Mark 6, Model 12E will **VOID** the Warranty on the refrigerator.

## HIGH VOLTAGE CABLE

Disconnect high voltage cable from electrode. If sparking starts during trial-for ignition, the cable is good.

## ELECTRODE

Do a visual check for cracks or breaks on the ceramic insulator. 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.

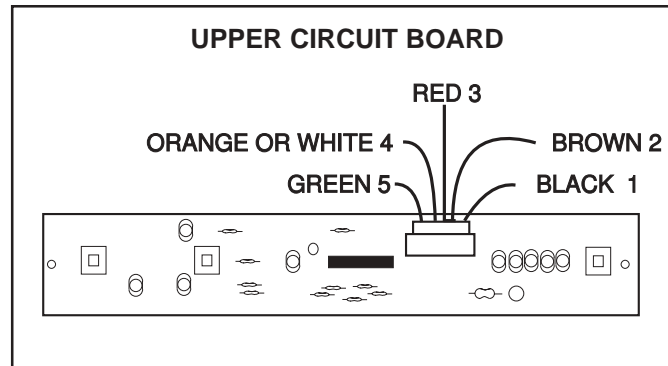


## UPPER CIRCUIT BOARD

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.

### 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.



Check for DC voltage between J4 and J10 terminals on the lower circuit board.

Next, check for DC voltage at the upper circuit board between terminal 4 (orange or white wire) and terminal 3 (red) 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.

### 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.

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.

## DIAGNOSTIC MODE

**Access to the diagnostic sequence unit:** 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 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.

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 (+).

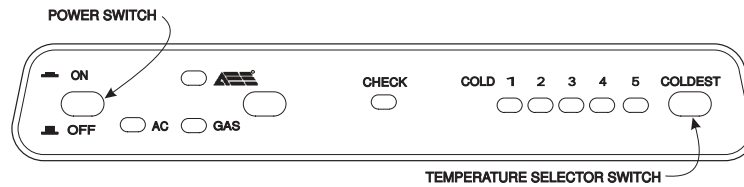
Position #4: Activate DC heater. Check for DC volts between J1 (+) and J10 (-).

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.

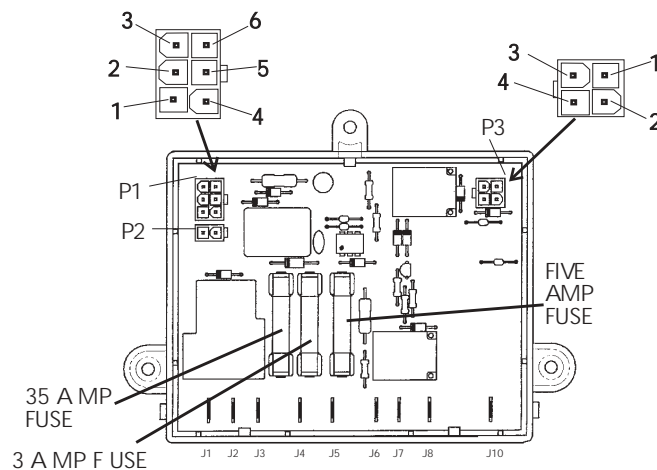
## AES DISPLAY PANEL



## LOWER CIRCUIT BOARD

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

Measure volts between terminal J4 and the ground strip. Voltage should be the same as at the positive (+) and negative (-) on the terminal block.



**B. AC MODE:** Check that incoming AC voltage is present at terminals J5 and J6 on the circuit board. 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 fuses are good, replace the circuit board.

**C. DC MODE:** Check for voltage between terminal J4 on the circuit board and the ground strip. If voltage is 12.8 volts DC or above, check for DC volts between the heating element (J1) connection and the ground strip. Check the fuses and the DC heating element.

D. **GAS MODE:** Verify that the following components are good: upper circuit board, thermistor and 3-amp fuse.

Check for voltage during **trial-for-ignition** at Plug 3, Terminals 1 (white wire) and 2 (yellow wire) to the solenoid. If no voltage is present, change the circuit board.

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

NOTE: When millivolts to the lower circuit board are  $10 \pm 3$ , 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  $10 \pm 3$ .

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  $10 \pm 3$  millivolts or 7 to 13.

### **DOOR SWITCH (Only on Models Equipped with Interior Lights)**

When the switch arm is depressed, there should not be continuity. When the switch arm is **NOT** depressed, there should be continuity.

### **FUSES**

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. On 3-way models only, the 35- amp DC fuse is designed to protect the DC heater circuit integrity.

### **CLIMATE CONTROL HEATER**

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. The proper ohms reading is 24 ohms  $\pm$  10%.

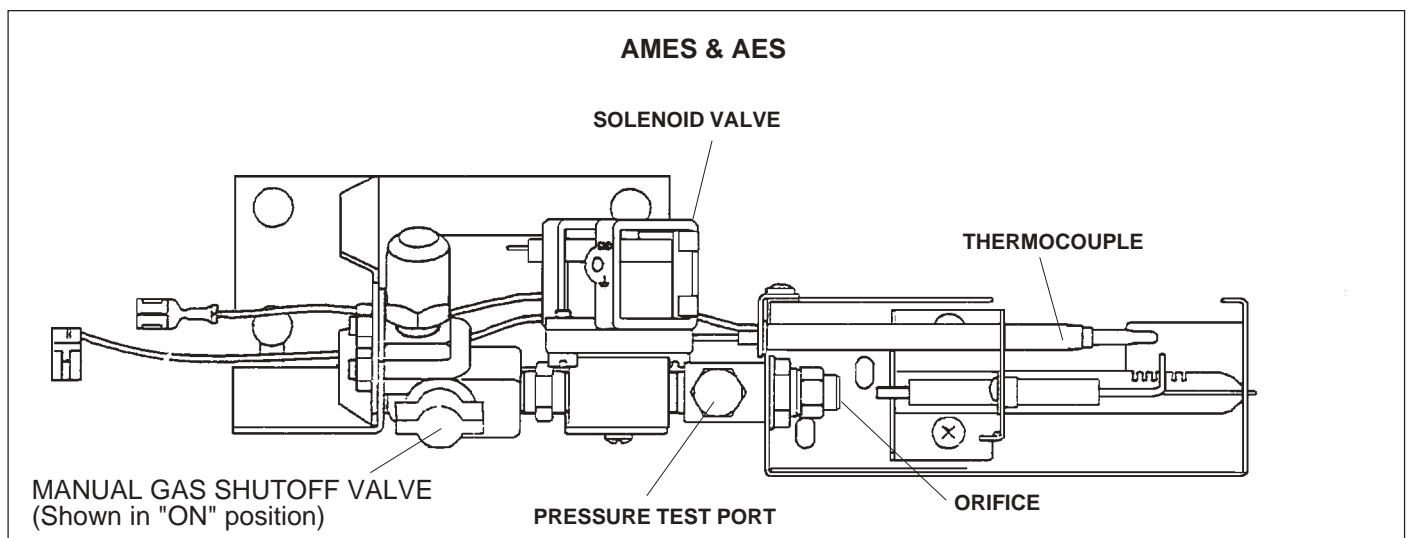
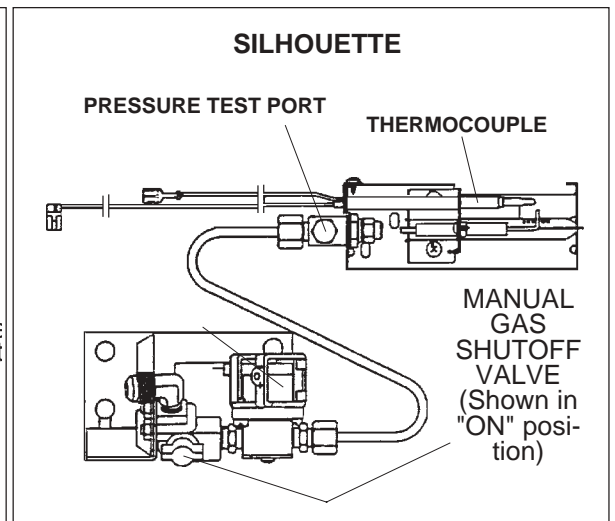
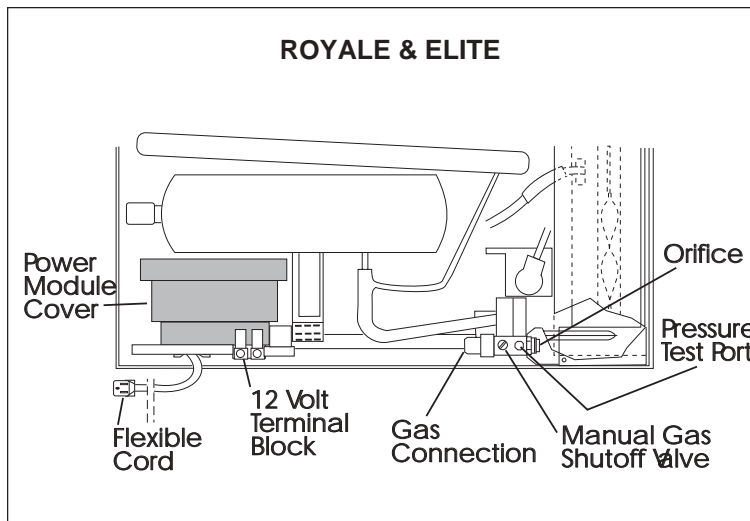
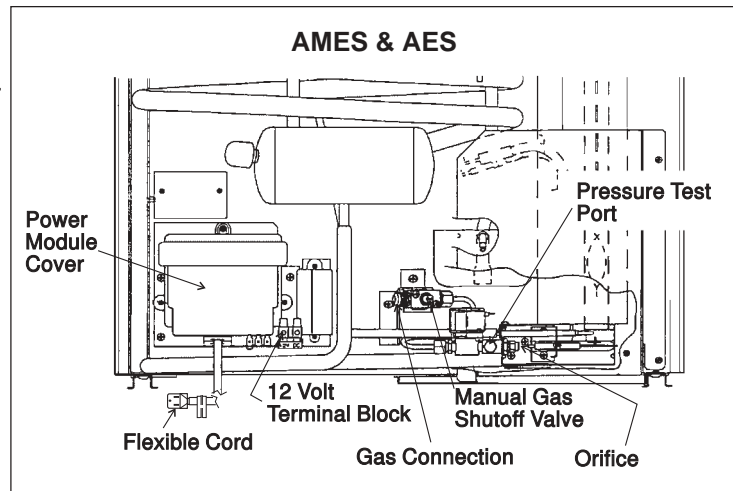
## LP GAS REQUIREMENTS

The LP gas pressure to the refrigerator should be 11 inches water column with half of all BTU's of the RV turned on. With all other appliances 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.

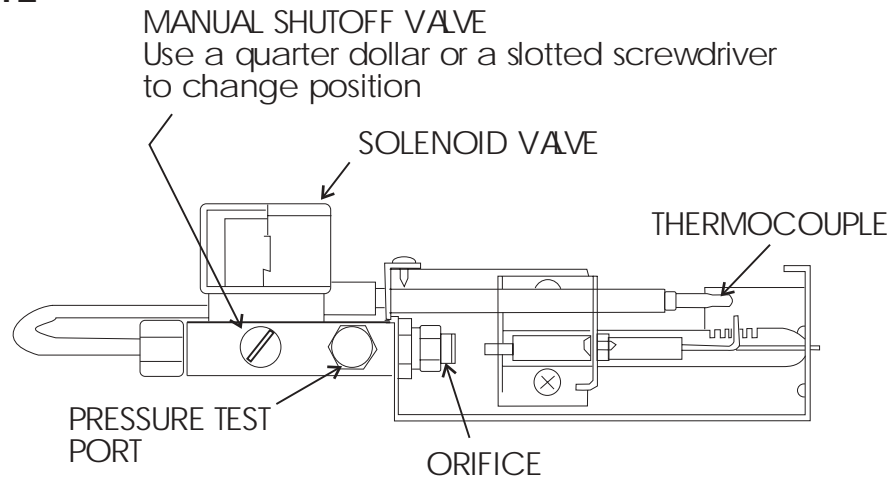
## LP GAS COMPONENTS

### MANUAL GAS SHUTOFF VALVE

To check the shutoff valve, remove and inspect for any obstructions.



## ROYALE AND ELITE MODELS



### ORIFICE

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

If there is a lack of cooling on gas operation, verify the orifice is the proper size per the chart below:

|       |     |        |     |        |     |
|-------|-----|--------|-----|--------|-----|
| S1521 | #43 | RM2607 | #53 | RM3662 | #58 |
| S1531 | #43 | RM2611 | #53 | RM3663 | #58 |
| S1621 | #58 | RM2807 | #58 | RM3862 | #58 |
| S1631 | #58 | RM2811 | #58 | RM3863 | #58 |
| S1821 | #58 | RM3607 | #53 | RM4872 | #58 |
| S1831 | #58 | RM3807 | #58 | RM4873 | #58 |

### THERMOCOUPLE

The thermocouple should produce 25 to 35 millivolts when connected to the lower circuit board. Any reading below 18 millivolts could cause erratic gas operation.

### BURNER

The slots in the burner should be directly below the flue tube. The burner should be cleaned periodically, at least once a year. Soak the burner in an alcohol based solvent and allow to air dry.

### FLUE BAFFLE

It should be cleaned periodically, at least once a year.

The proper position of the baffle above the burner should be as follows:

|        |        |        |        |
|--------|--------|--------|--------|
| S1521  | 2-1/4" | RM2607 | 1-5/8" |
| S1531  | 2-1/4" | RM2611 | 1-5/8" |
| S1621  | 1-5/8" | RM2807 | 1-3/4" |
| S1631  | 1-5/8" | RM2811 | 1-3/4" |
| S1821  | 1-5/8" | RM3607 | 1-5/8" |
| S1831  | 1-5/8" | RM3807 | 1-3/4" |
| RM3662 | 1-7/8" |        |        |
| RM3663 | 1-7/8" |        |        |
| RM3862 | 1-7/8" |        |        |
| RM3863 | 1-7/8" |        |        |
| RM4872 | 1-7/8" |        |        |
| RM4873 | 1-7/8" |        |        |

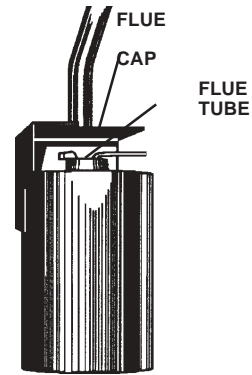
### FLUE CAP (AMES/AES MODELS ONLY)

The flue cap is located at the top of the flue tube and is attached with a screw.

### FLUE TUBE

The flue tube must be cleaned periodically, at least once a year

Clean by using a flue brush, Dometic Part No. 0151404001.



## WIRING

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### 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

The refrigerator must be connected to the battery circuit with two wires of adequate capacity to avoid voltage drop.

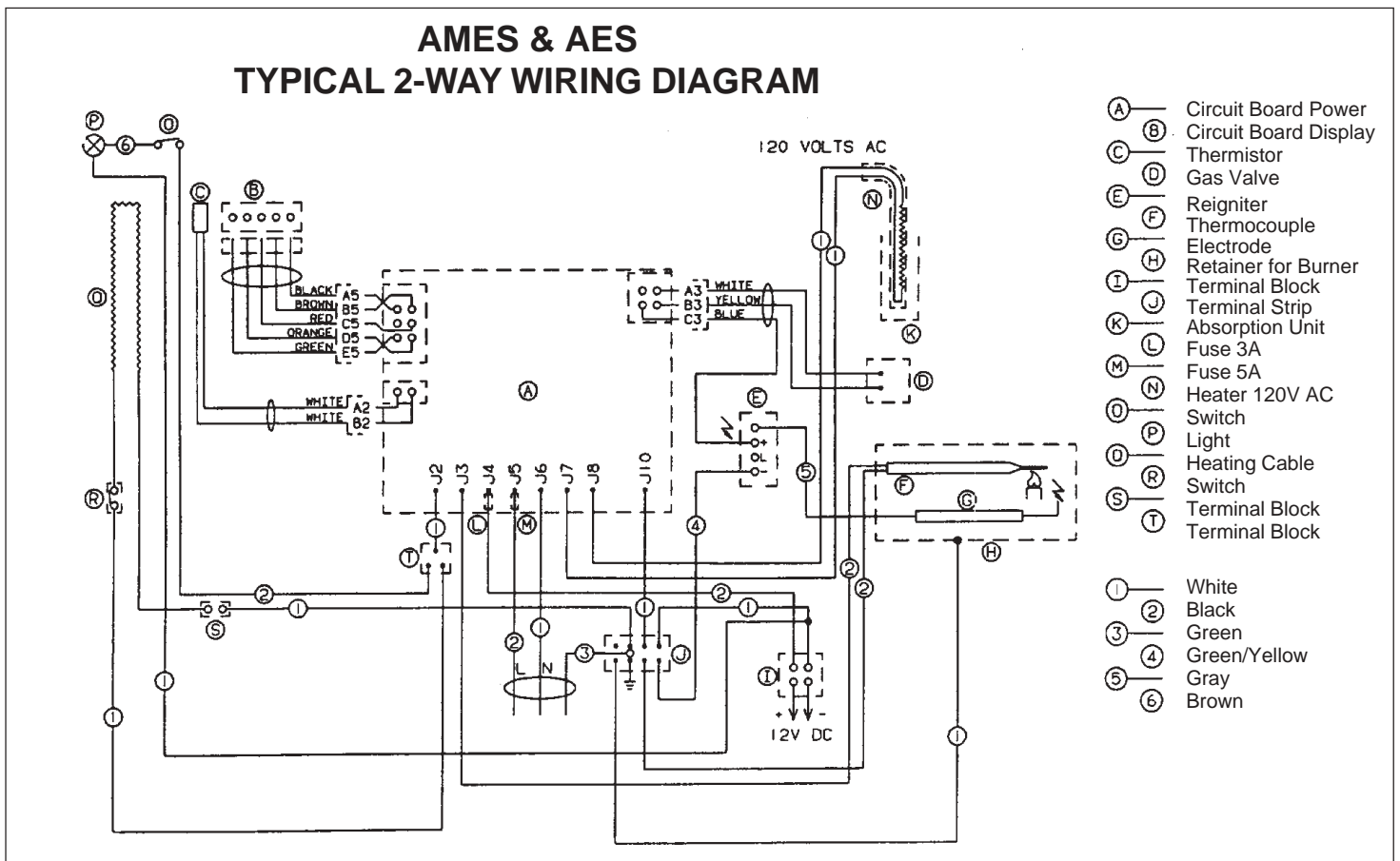
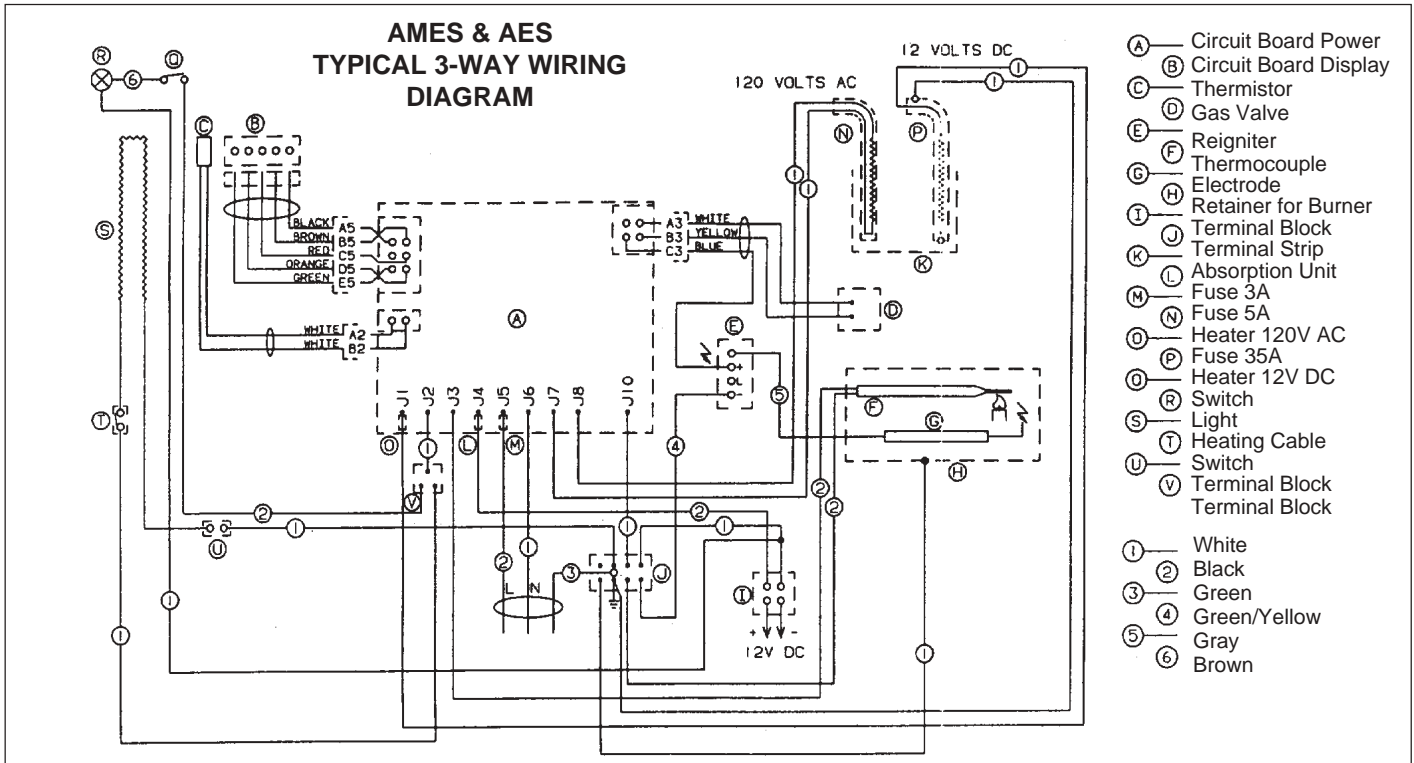
The wire gauge should be chosen in accordance with the Table shown below.

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.

| MAXIMUM CONDUCTOR WIRE LENGTH IN FEET |       |       |       |        |        |        |        |        |        |        |
|---------------------------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
| AWG                                   | S1521 | S1621 | S1821 | RM2607 | RM2807 |        |        | RM3662 | RM3862 | RM4872 |
|                                       | S1531 | S1631 | S1831 | RM2611 | RM2811 | RM3607 | RM3807 | RM3663 | RM3863 | RM4873 |
| 8                                     | —     | 27    | 27    | 27     | 27     | 27     | 27     | 27     | 27     | 27     |
| 10                                    | 19    | 17    | 17    | 17     | 17     | 17     | 17     | 17     | 17     | 17     |
| 12                                    | 12    | —     | —     | —      | —      | —      | —      | —      | —      | —      |

## INTERNAL WIRING

Verify the refrigerator is wired per the wiring diagram for the **exact** model you are working on. See the following typical wiring diagrams.

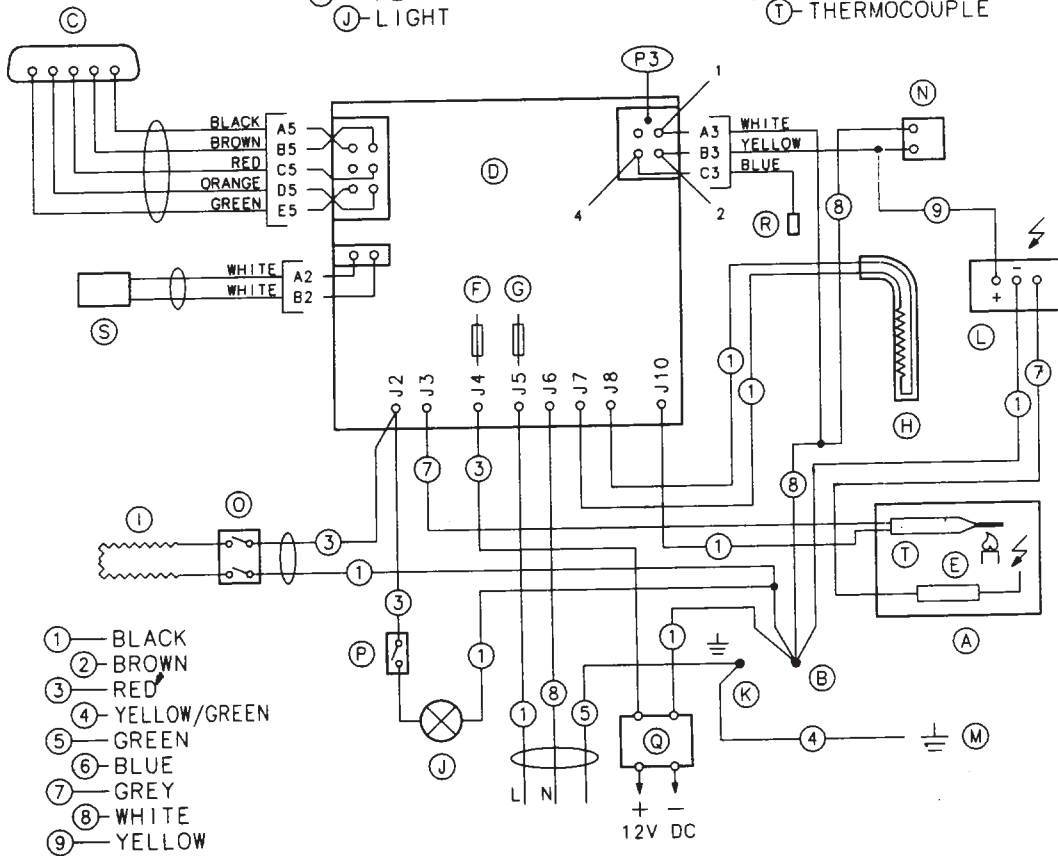




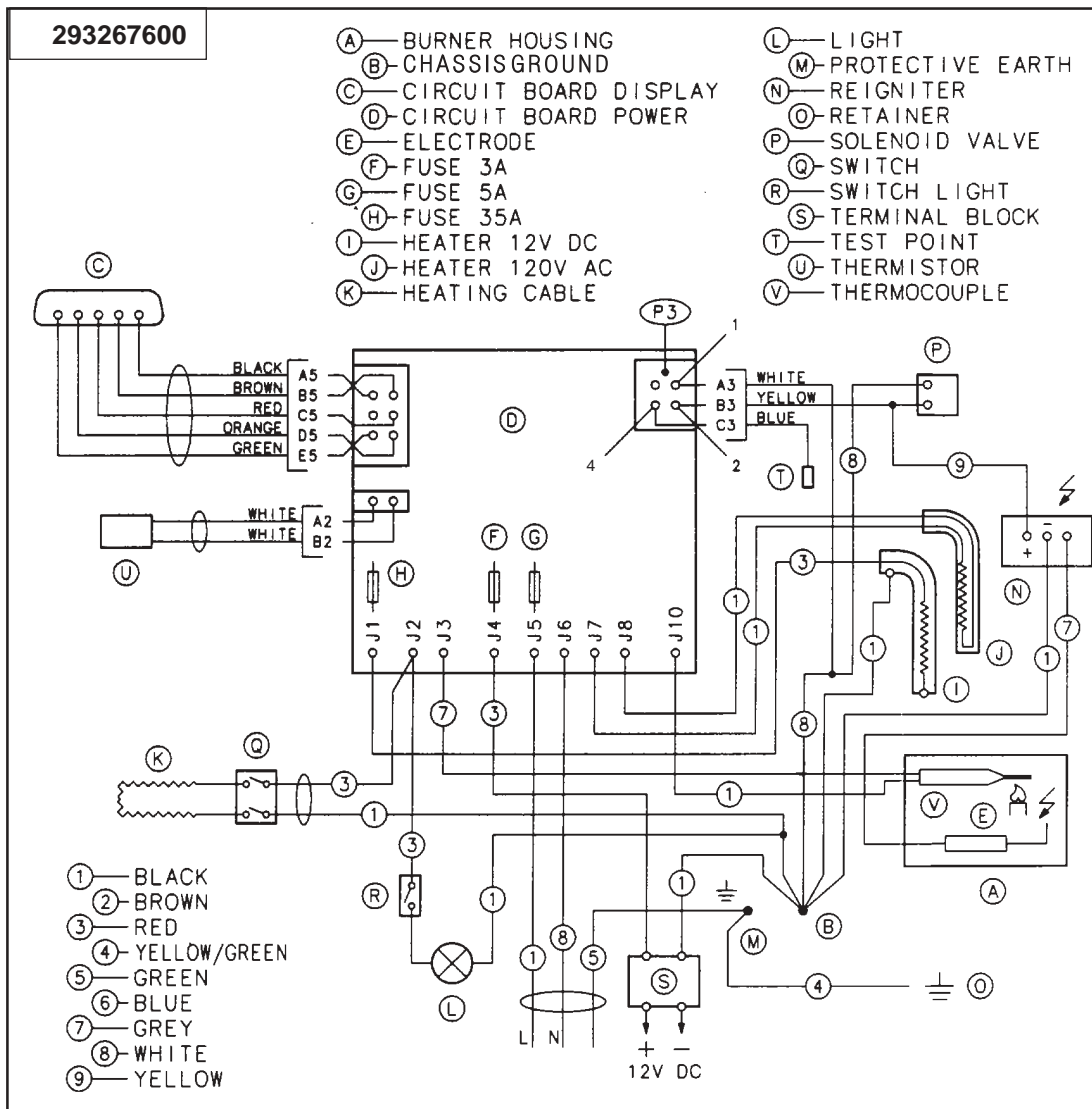
# ROYALE & ELITE TYPICAL 2-WAY WIRING DIAGRAM

293267500

- |                             |                        |
|-----------------------------|------------------------|
| (A) — BURNER HOUSING        | (K) — PROTECTIVE EARTH |
| (B) — CHASSISGROUND         | (L) — REIGNITER        |
| (C) — CIRCUIT BOARD DISPLAY | (M) — RETAINER         |
| (D) — CIRCUIT BOARD POWER   | (N) — SOLENOID VALVE   |
| (E) — ELECTRODE             | (O) — SWITCH           |
| (F) — FUSE 3A               | (P) — SWITCH LIGHT     |
| (G) — FUSE 5A               | (Q) — TERMINAL BLOCK   |
| (H) — HEATER 120V AC        | (R) — TEST POINT       |
| (I) — HEATING CABLE         | (S) — THERMISTOR       |
| (J) — LIGHT                 | (T) — THERMOCOUPLE     |



# ROYALE & ELITE TYPICAL 3-WAY WIRING DIAGRAM

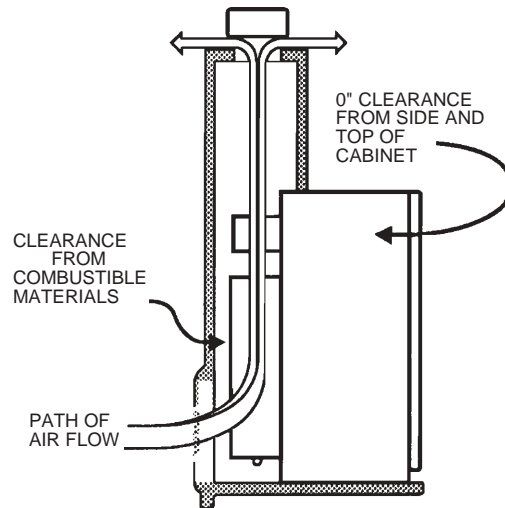


## LEVELING

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. Both Dometic and Servel brand refrigerators have a type of cooling unit that utilizes an enclosed pump tube surrounded by a solution. The vehicle needs to be leveled so it is comfortable to live in. 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.

## VENTILATION

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. 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.



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

## AIR LEAKS

Check the gasket on the doors to be sure of a positive air seal.

If a gasket is not sealing properly, first warm the gasket material with a hair drier. Close the door and the magnetic strip should pull the gasket to the metal frame. Also check that the cooling unit is installed properly.

### AMES/AES MODELS:

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

#### First Two Screws:

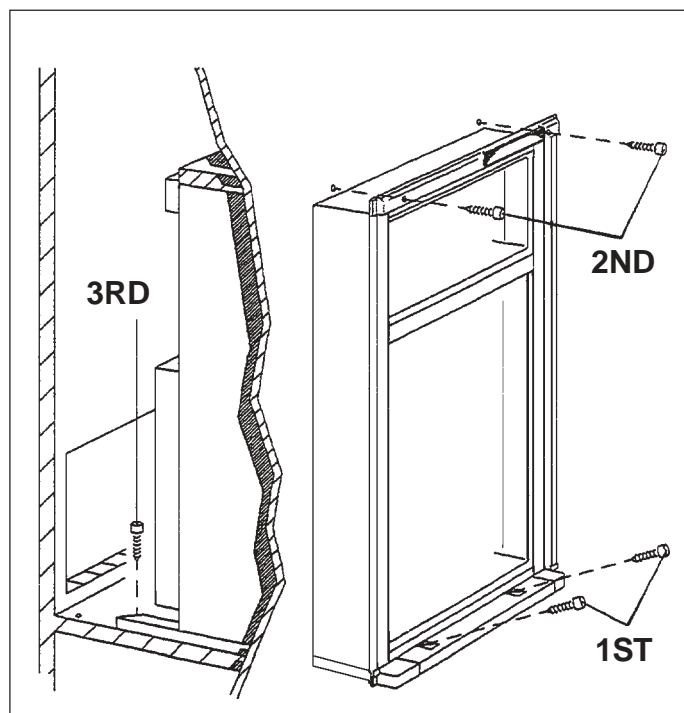
Installed on the front base.

#### Second Two Screws:

Installed in the top frame.

#### Third Two Screws:

Installed in the rear base.



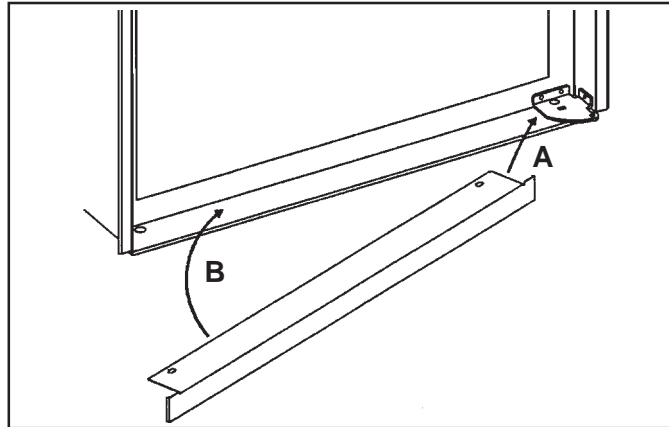
## ROYALE AND ELITE MODELS:

**CONDENSATE WATER DRAIN HOSE:** A 3/4" hole must be drilled through the flooring in the opening of the base plate on the rear of refrigerator.

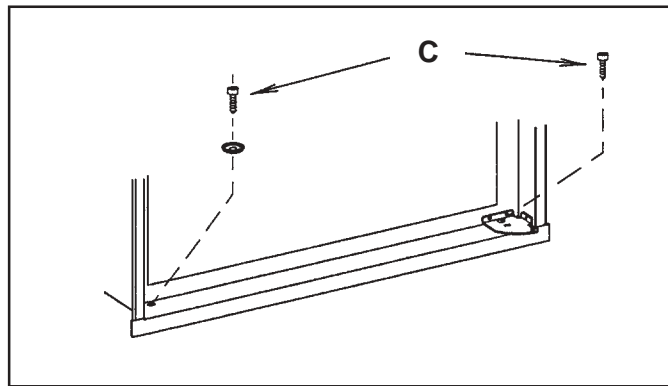
The refrigerator is secured in the enclosure with six screws. They must be installed in the following order:

**First: Two screws are installed in front decoration strip and through the front base.**

- A. The front strip is to be installed after the refrigerator is set into the alcove.
- B. Install the lower front strip by sliding it under the bottom hinge plate as shown.

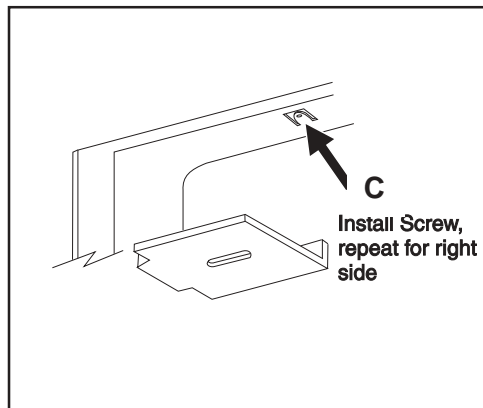
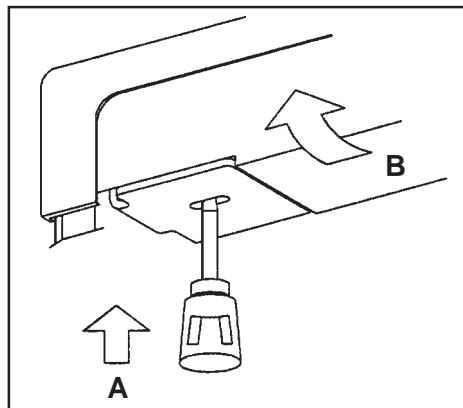


- C. When the front strip is in place, install one screw through the hinge and into the floor. The second screw is installed with a washer on the opposite side.



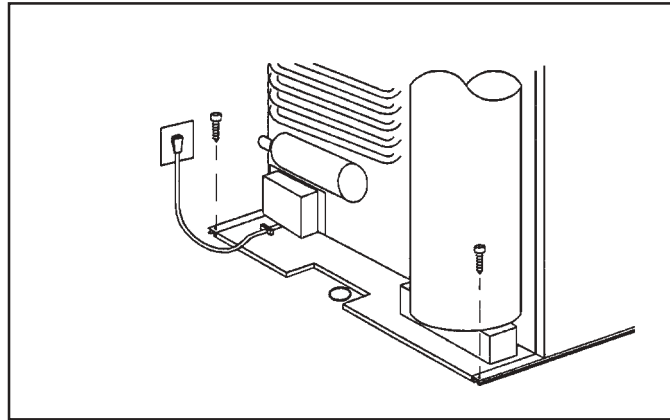
**Second: Install the two screws in the top frame.**

- A. The top decoration panel must be removed from the refrigerator. Open refrigerator door and gently push the tabs out of the hole in the hinge with a flat blade screwdriver.
- B. Carefully tilt the top decoration panel and lift up to remove from top frame.
- C. Install the second two screws in the top frame as shown.



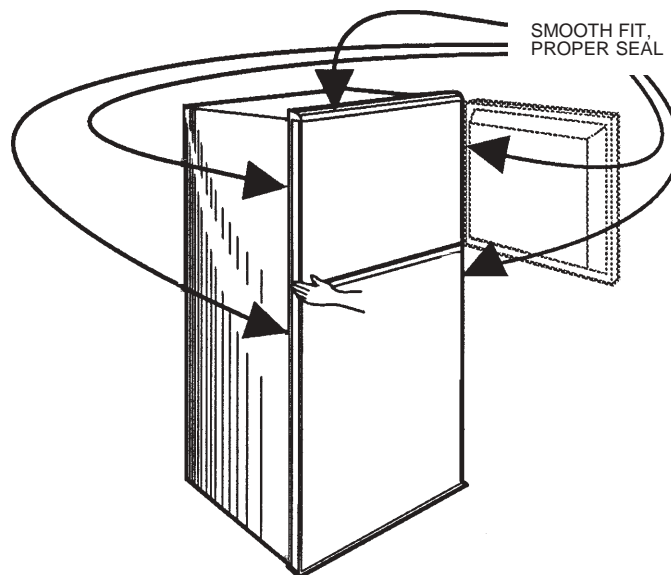
D. Replace the top decoration panel.

**Third: Two screws installed as shown in rear base.**



## DOOR POSITION

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



To adjust either door, loosen the hinge bracket screws, reposition the door then tighten the hinge bracket screws. To adjust up or down, add or remove washers from the lower hinge pin.

## AMBIENT TEMPERATURE

As the ambient temperature increases, the air temperature in the area of the cooling unit increases. The double-door refrigerators should maintain approximately 43 degrees food storage temperature at 110 degrees ambient temperature.

## COOLING UNIT

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.

## TO DIAGNOSE ALL COOLING UNITS

**Models RM3662, RM3663, RM3862, RM3863, RM4872, RM4873**

After four hours of operation, feel the back plate of the freezer section. It should be cold to the touch. If cold to the touch, the unit is working.

If after four hours of operation the unit back plate is not cold to the touch, turn the refrigerator to OFF; wait 1-1/2 hours and restart the refrigerator. After four hours of operation the back plate of the freezer section should be cold to the touch. If it is not cold to the touch after the second four hours of operation, the cooling unit may be defective.

**Verify the AC heating element is good.** Then place approximately one gallon of water inside the refrigerator and place a thermometer in one of the containers of water. Next, supply 115 volts direct to the AC heating element and operate for at least 12 hours. Check the temperature on the thermometer. It should be 45 degrees or lower, depending on test conditions.

## FOOD STORAGE

It is essential that the shelves are not covered with paper or large storage containers. Always remember to allow for proper air circulation.

Odorous or highly flavored foods should always be stored in covered dishes, plastic bags, or wrapped in foil or waxed paper to prevent food odors. Vegetables, lettuce, etc., should be covered. **NEVER PUT HOT FOOD INTO THE REFRIGERATOR.**

## HIGH HUMIDITY

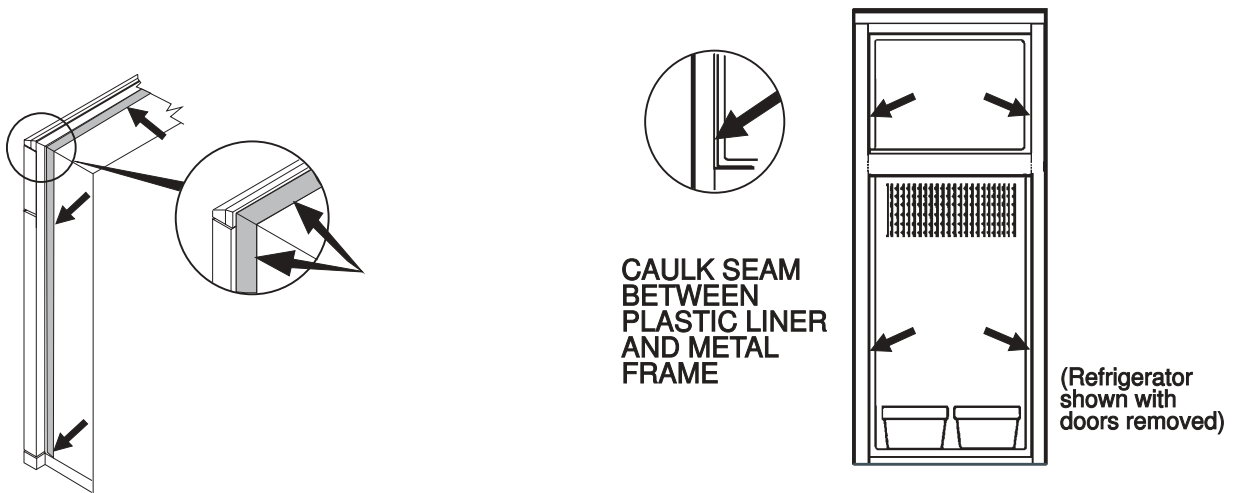
The condensation may actually run off the frame. As the humidity is reduced, the "sweating" will decrease.

## INTERIOR LINER SEAL TO FRAME

Condensation could form on the frame and could promote rapid formation of frost. Apply a small bead of silicone all the way around the perimeter where the frame meets the interior liner.

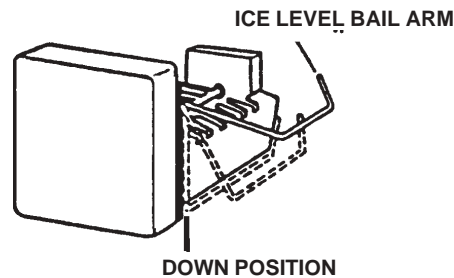
Slide the refrigerator out approximately 2–4 inches. Apply a foil-backed adhesive tape to the joint between outer frame and foil-backed refrigerator insulation.

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



## ICE MAKER OPERATION

The refrigerator must be allowed to precool properly before starting the ice maker. The refrigerator has to be connected to 120 volts AC before the ice maker can operate. The water line manual shutoff valve must be open. To start making ice, move the ice level bail arm to DOWN position.



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 down position.

The absorption system will keep the compartment at the proper temperature for storage of ice. Ice making is accelerated if the thermostat is set to the coldest position. It is a good idea to do this a few hours before you anticipate a need for ice.

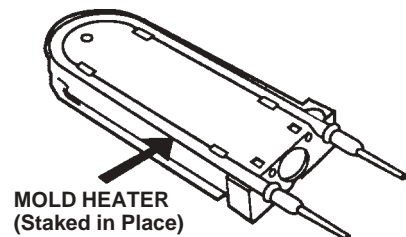
**NOTE:** IF THE ICE MAKER WAS CLEANED AND DRAINED, NO ICE CUBES WILL BE DUMPED INTO THE STORAGE CONTAINER DURING THE FIRST CYCLE.

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

## ICE MAKER COMPONENTS

### MOLD HEATER

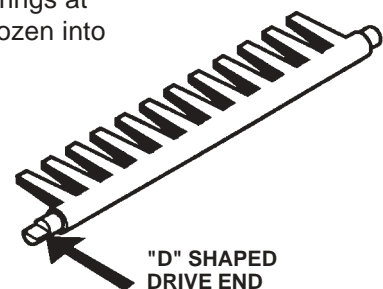
The mold heater uses 165 watts to thaw the ice free from the mold. It is wired in series with the thermostat which also acts as a safety device. You should obtain a reading of approximately 80 ohms. If the heater is found to be defective, the manufacturer recommends replacement of the entire ice making unit for proper operation.



### ICE EJECTOR

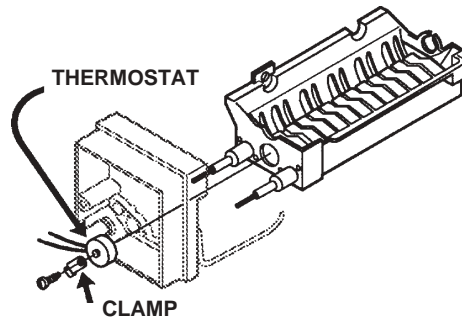
The ice ejector blades sweep the ice from the mold cavities during the ejection cycle.

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.



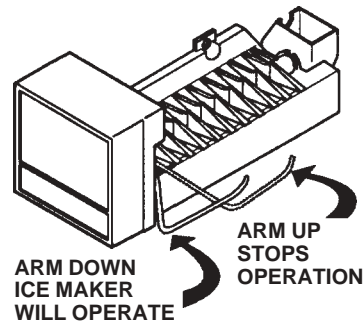
## MOLD THERMOSTAT

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.



## SHUTOFF ARM

The shutoff 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. The arm has a manual shutoff built into the linkage; by raising the arm as high as possible, it will lock in that position until forced down.



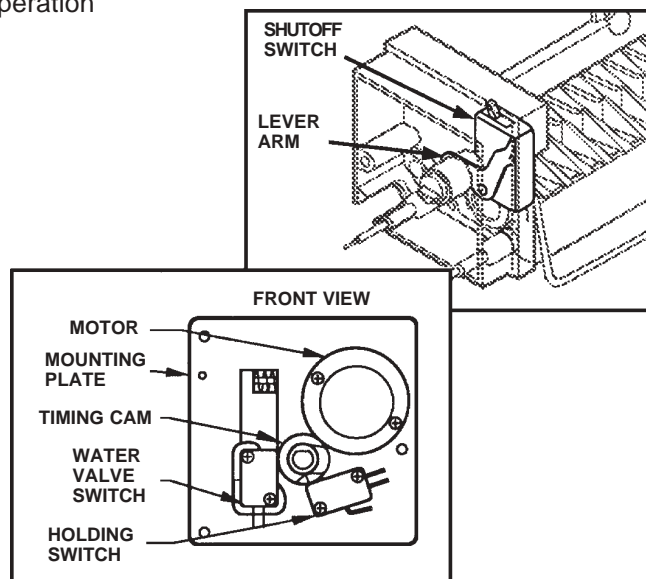
## MOLD SWITCHES

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 shutoff switch** stops the ice maker's operation when the storage bin is full.

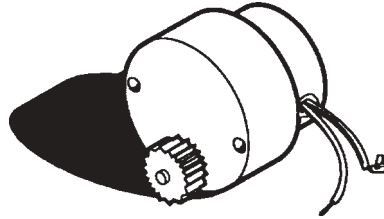




## TIMING MOTOR

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

Disconnect power to the appliance and test for continuity between the two leads.



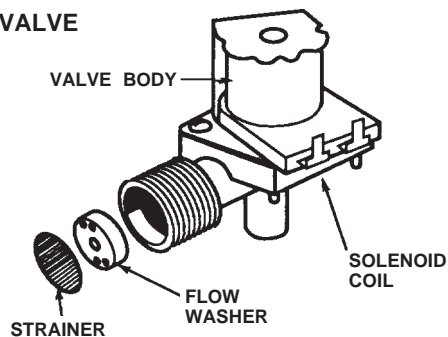
## WATER VALVE

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.

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.

### WATER VALVE



## ICE MAKER ASSEMBLY

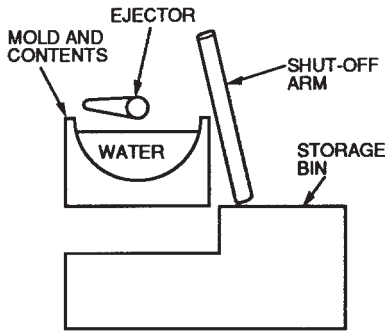
Check each wire for continuity to make sure the wiring is good before replacing the ice maker unit.

## 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 (on the following pages) 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.

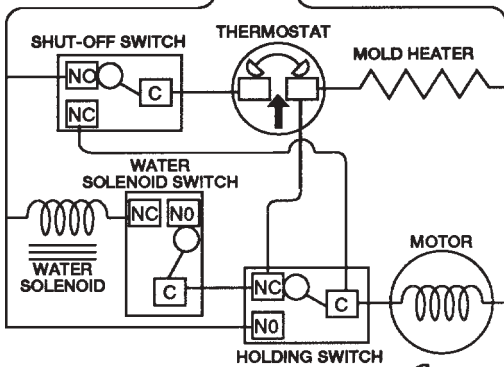
NOTE THE RELATIVE POSITION OF THESE COMPONENTS IN THE FOLLOWING SCHEMATICS



1

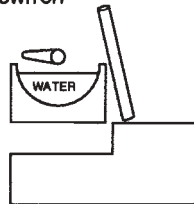
NON ENERGIZED CIRCUIT \_\_\_\_\_  
ENERGIZED CIRCUIT \_\_\_\_\_

115 VOLTS  
60 CYCLE

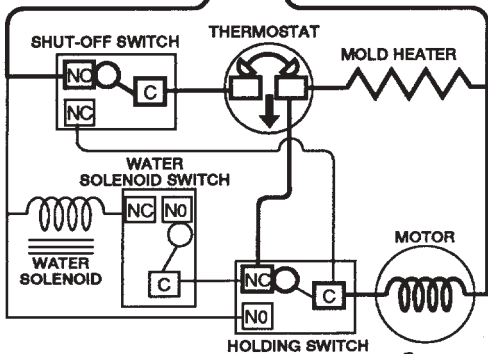


2

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

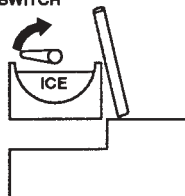


115 VOLTS  
60 CYCLE



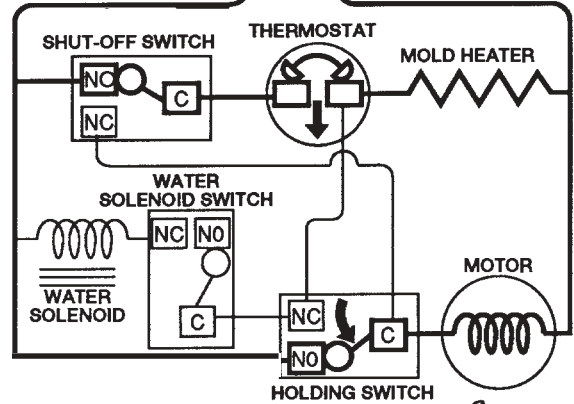
3

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

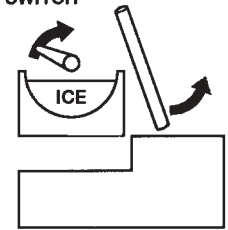


4

115 VOLTS  
60 CYCLE

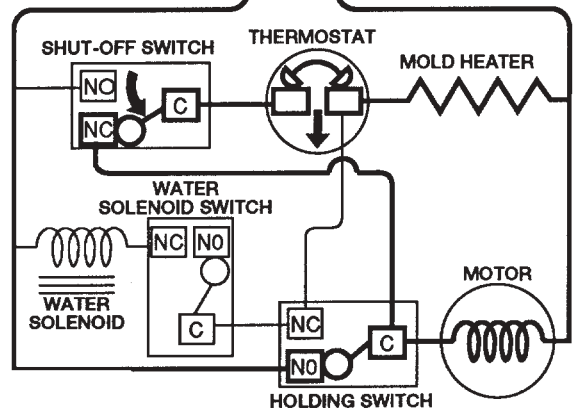


After a few degrees of motor rotation, the timing cam switches the holding switch to its normally open position; this assures completion of the cycle. The mold heater remains energized through the thermostat circuit. During the first half of the cycle, the shut-off arm is raised and lowered by the timing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

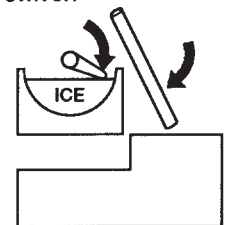


5

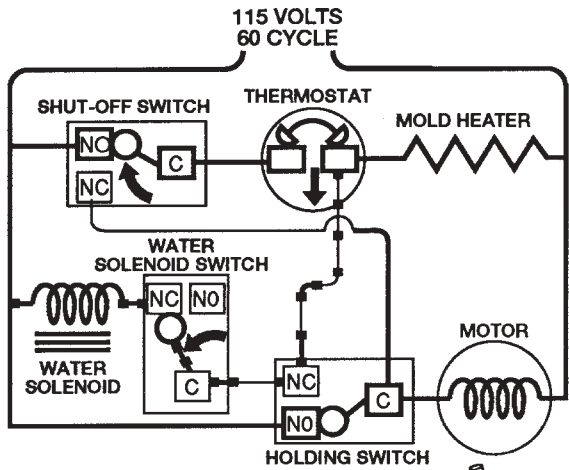
115 VOLTS  
60 CYCLE



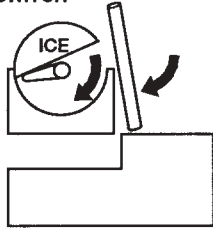
When the ejector blades reach the ice in the mold, the motor will stall. It will remain in this position until the ice has thawed loose. During this time the mold heater remains energized.



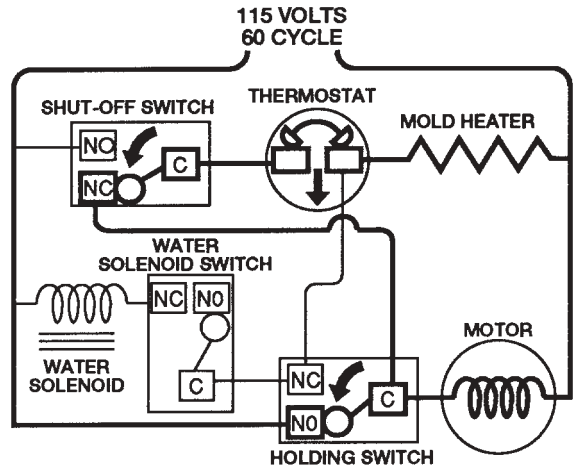
6



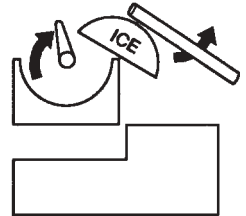
Near the completion of the first revolution, the timing cam closes the water valve switch. However since the thermostat is still closed the mold heater circuit is energized. Current will not pass through the water valve solenoid and its switch. (Electrical current follows the path of least resistance.)



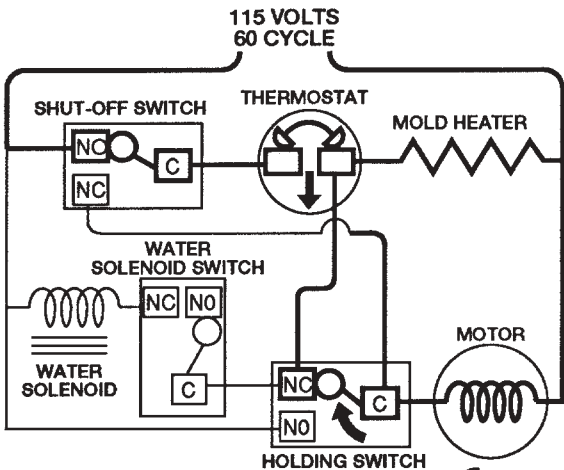
8



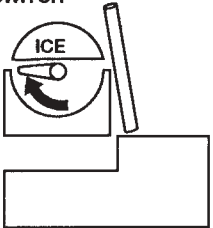
Once again after a few degrees of rotation the timing cam closes the holding switch providing a circuit to the motor that will assure completion of this revolution. The mold heater remains energized. The shut-off arm will raise and lower again operating its switch. The ice that was ejected during the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



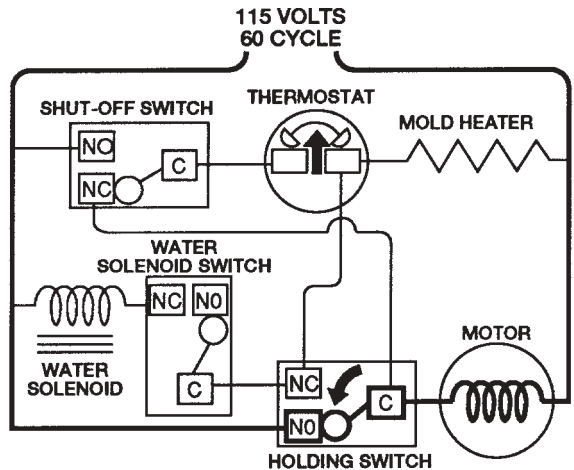
7



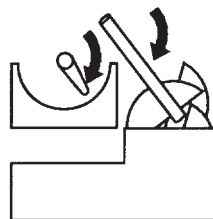
At the end of the first revolution the timing cam opens the holding switch. However, since the thermostat is still closed a second revolution begins.

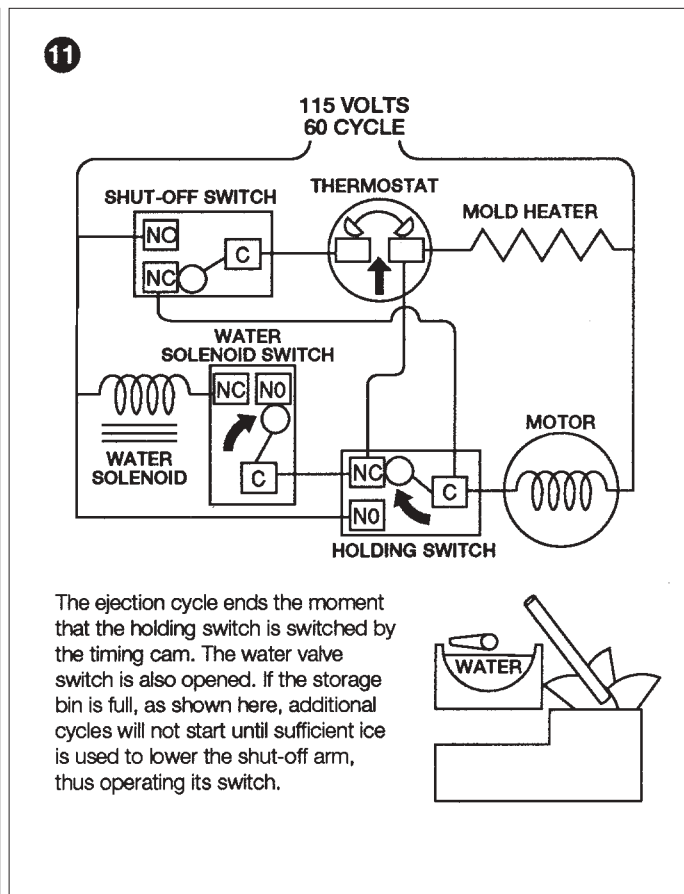
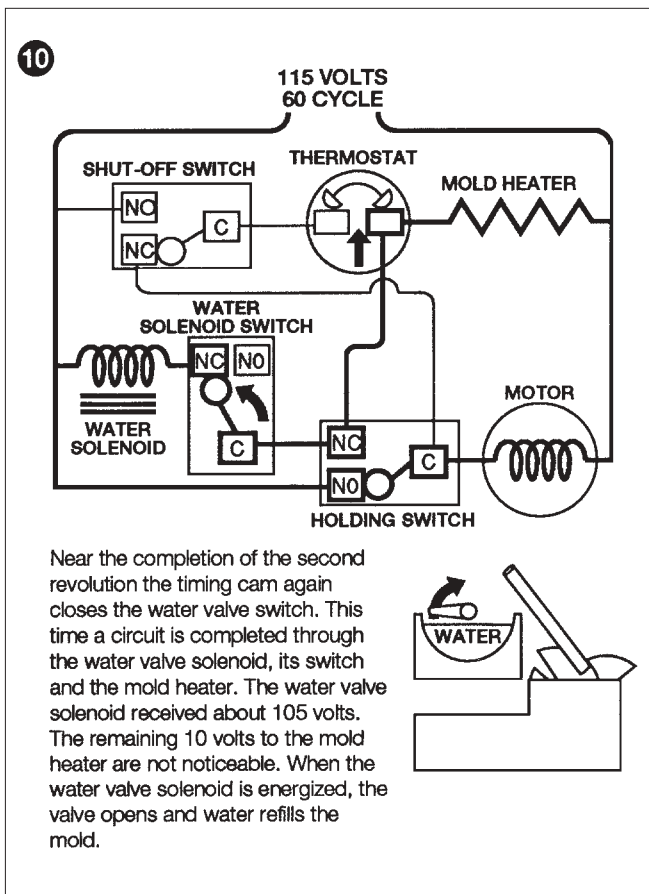


9



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.





## ICE MAKER – OTHER

### WATER FILL ADJUSTMENT

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.

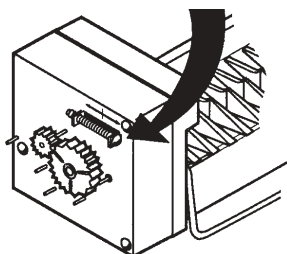
If the water overflows in the mold, first check to see if the ice maker unit is level in the appliance. Next ensure that the appliance is installed level in the RV.

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 too high, it can also cause the ejector blades to become frozen in the ice. Follow the procedures above to correct the problem.

### WATER FILL ADJUSTING SCREW

1 FULL TURN = 18 cc's CHANGE



## WIRING

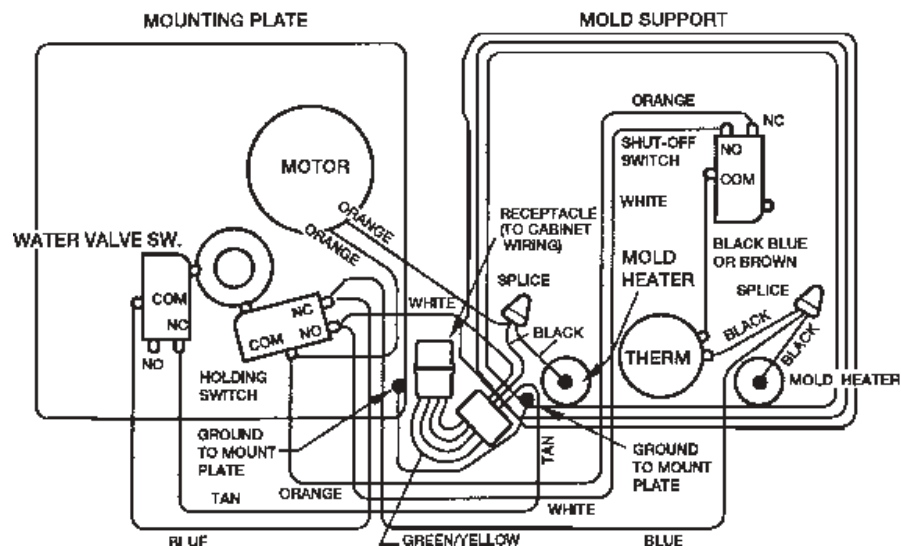
Refer to the wiring diagram supplied with the unit you are working on, and make sure all wiring connections are correct and tight.



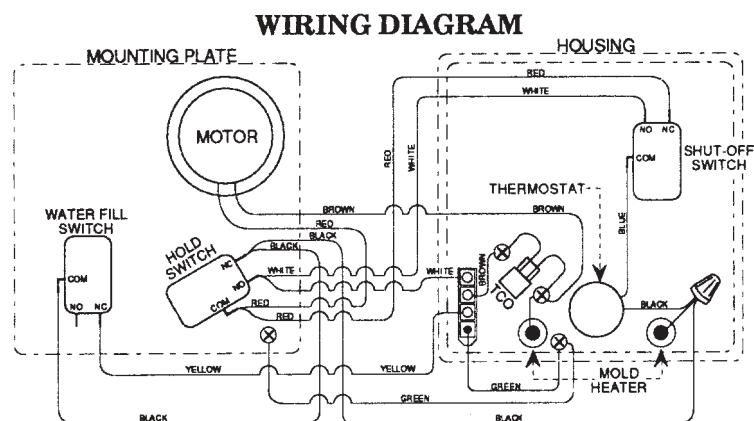
**WARNING**

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

### AMES & AES ICE MAKER TYPICAL WIRING DIAGRAM



### ROYALE/ELITE ICE MAKER TYPICAL WIRING DIAGRAM



## WATER SUPPLY

The water pressure in the water supply line must be between 15 lbs. PSI and 125 lbs. PSI.

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