SERVICE NOTE BOOK

REFRIGERATION / FREEZER / MODULE ICE MAKER

VIKING RANGE CORPORATION

VCSB360 / 420 / 480

VIKING RANGE CORPORATION, P.O. DRAWER 956, GREENWOOD,MS 38930 USA

TABLE OF CONTENTS

TOOLS NEEDED FOR REPAIRS..... 3

COMPONENT LOCATION
Theory of Operation..... 4-12

COMPONENTS ACCESS AND REPAIR
Components in the Refrigerator Section..... 13
1. **Electronic Control Board..... 13**
2. **Light Switch..... 14**
3. **Motorized Air Door..... 15**
4. **Temperature Sensor (Thermistor)..... 15**
5. **Meat Locker Control..... 16**

Components in the Freezer Compartment
1. **Removing Freezer Thermostat..... 17**
2. **Removing Light Switch..... 18**
3. **Removing the Evaporator Fan Motor..... 19**
4. **Removing the Bi-metal..... 20**
5. **Removing the Defrost Heater..... 21**
6. **Installing a New Defrost Heater..... 22**

Components on Top of the Unit..... 23
1. **The Power On / Off Switch..... 24**
2. **Removing the Defrost Timer..... 25**
3. **Removing the Run Capacitor..... 25**
4. **The Condenser Fan Motor..... 26**
5. **The Water Valve..... 27**

Door Assemblies
Replacing the Door Gaskets..... 28

TROUBLE SHOOTING AND DIAGNOSIS..... 29--40

R134a REFRIGERANT SERVICE INFORMATION..... 41

MODULAR ICE MAKER SERVICE SHEET..... 42

WIRING DIAGRAMS AND LINE CIRCUITS..... 43--60

APPENDIX:
Refrigerator Installation Cutout 61
Adjust Door Swing..... 62
Level Refrigerator..... 62
Installing Custom Side Panels..... 63

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BUILT-IN REFRIGERATOR / FREEZER

Tools Needed For Repair

1. **Channel locks or 5/8" open end wrench**
2. **Medium size Phillips screwdriver**
3. **Medium & small straight blade screwdriver**
4. **Needle nose pliers**
5. **Socket set with medium & long extensions, socket sizes ½" to 1/4"**
6. **Set of nut drivers ½" to 1/4"**
7. **#15 Torx driver**
8. **Six foot step ladder**
9. **Sealed system equipment for R134a**

COMPONENT LOCATION

Cabinet Components

- Freezer thermostat
- Evaporator
- Evaporator Fan
- Freezer Side Panel Heater
- Bimetal
- Defrost Heater
- Electronic Temperature Control Board
- Thermistor
- Motorized Air Door
- Water Valves
- Upper Grille
- Power ON/OFF Switch

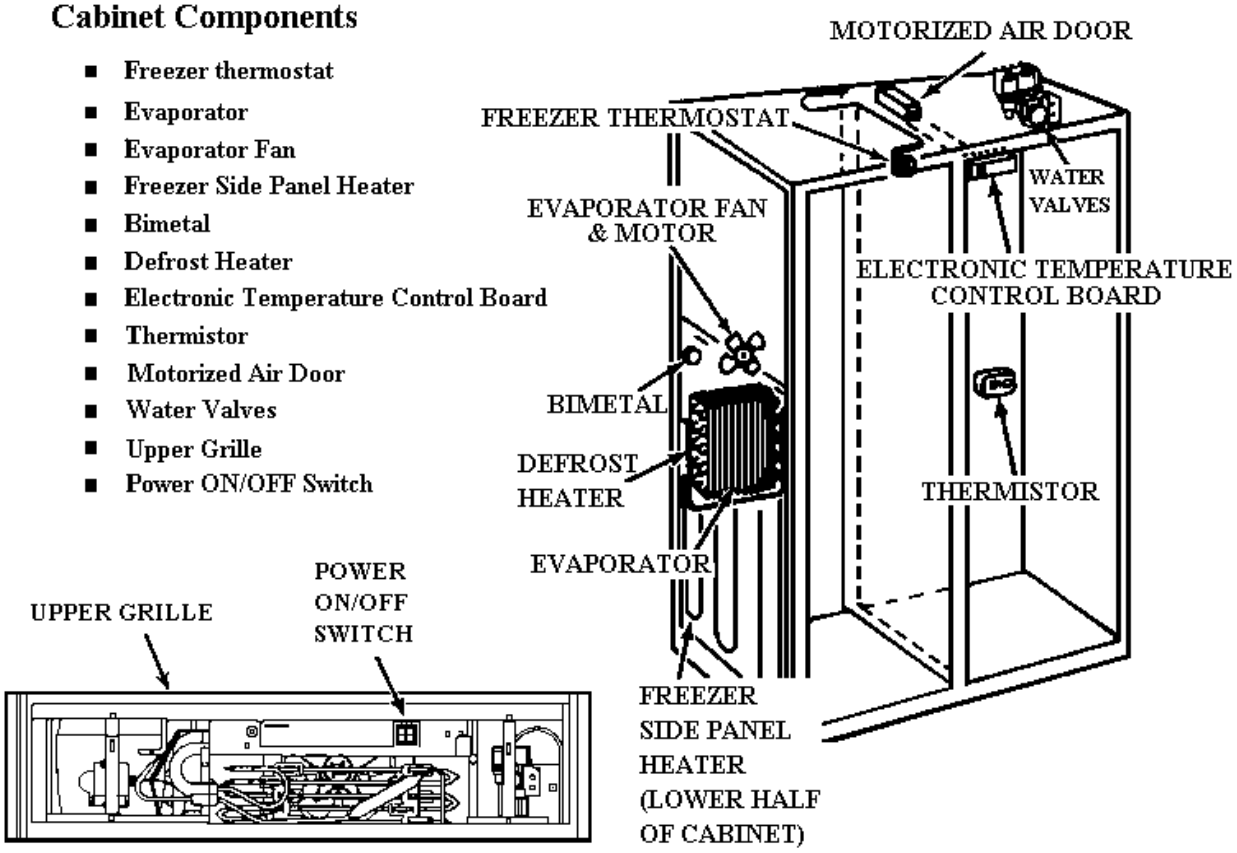
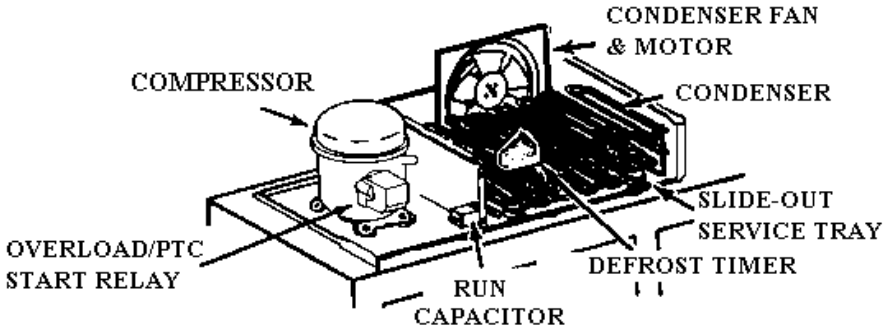


Fig. 1

Unit Compartment Components



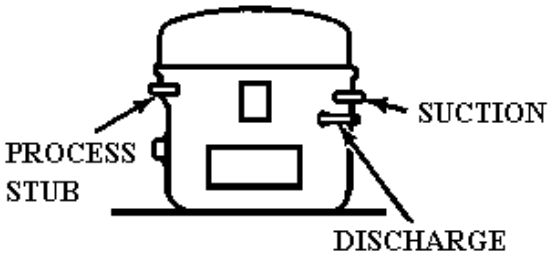
- Compressor
- Overload
- PTC Start Relay
- Run Capacitor
- Condenser
- Condenser Fan
- Defrost Timer

Fig. 2

Sealed System Components

- **Compressor**
- **Condenser**
- **Drier**
- **Heat Exchanger**
- **Discharge Line**
- **Evaporator**
- **Condenser Pan Heat Loop**
- **Mullion Heat Loop**

Compressor Hook Up



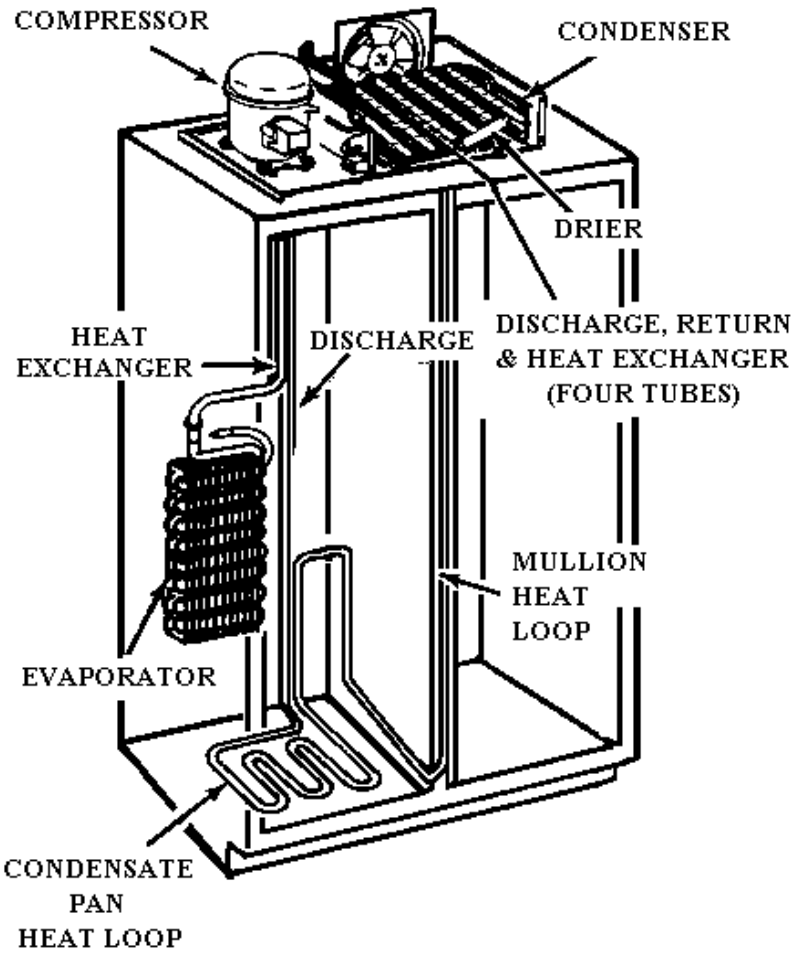


Fig. 3

TEMPERATURE CONTROL

Temperature control in both the refrigerator and freezer compartments is accomplished by circulating air through each compartment. The air picks up heat as it moves throughout the unit. as the air is drawn past the evaperator, the heat is removed by the refrigeration system, which then moves the heat to the outside of the unit.

Air Circulation In The Freezer And Refrigerator Compartments

Components related to air circulation in the refrigerator and freezer sections are:

1. Evaporator Fan
2. Freezer Air Duct
3. Air Diffuser
4. Evaporator
5. Motorized Air Door
6. Air Return Duct
7. Air Passsage
8. Cabinet Separator
9. Ice Maker Air Diffuser
10. Meat Savor Air Duct
11. Meat Savor Control
12. Round Port

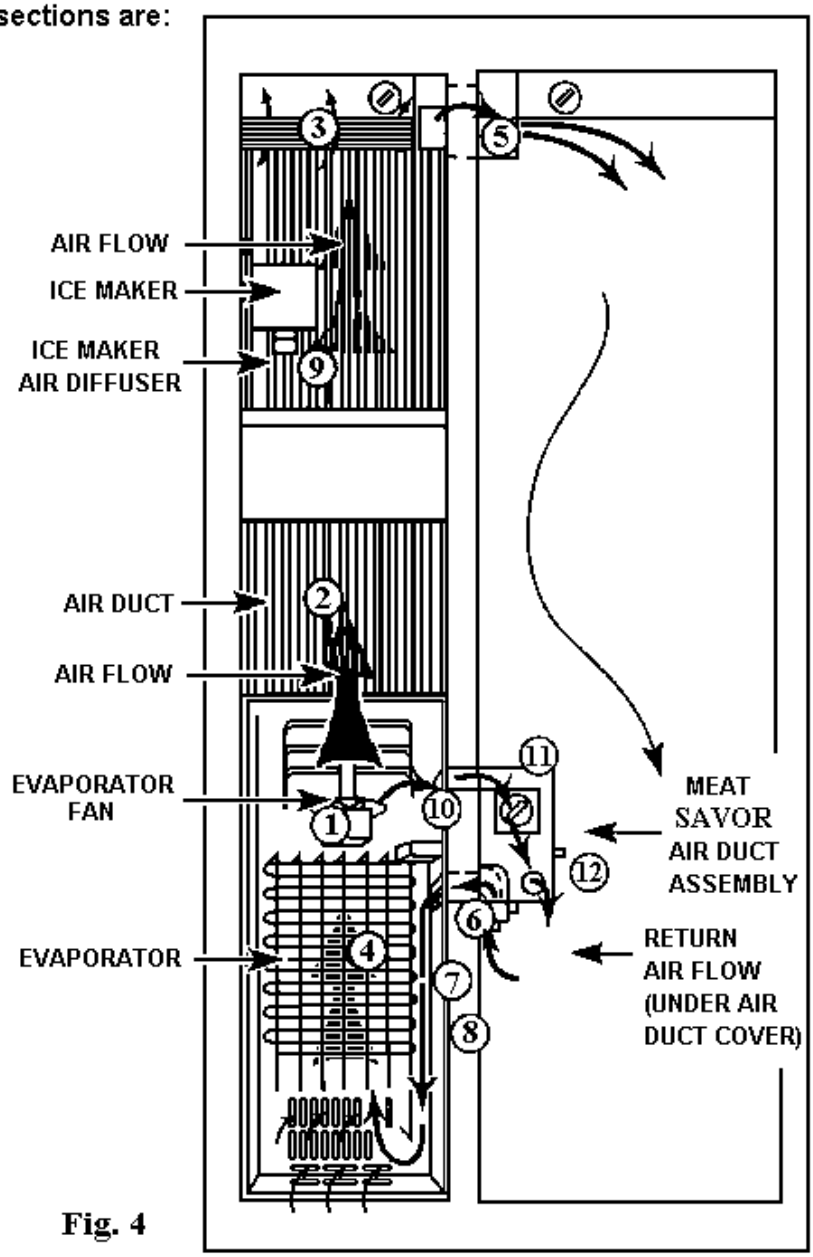


Fig. 4

Figure 4 illustrates all of the components used in the circulating air through the freezer and refrigerator compartments.

The Freezer Compartment

The evaporator fan (1) draws air over the evaporator coils (4) located in the lower portion of the freezer compartment. As the air passes over the evaporator, heat is extracted and the cold air travels up the back of the freezer compartment through an air duct (2) to the top of the unit.

An air diffuser (3) at the top of the freezer compartment allows the cold air to circulate into the freezer area and drop to the bottom of the compartment where it is drawn over the evaporator again.

Air traveling up the freezer air duct is also directed out the small diffuser (9) just below the ice maker. The air travels along the bottom of the ice maker to the front of the freezer and down toward the bottom of the compartment and then up through the evaporator coils (4).

The Refrigerator Compartment

An air duct regulated by a motorized air door (5) located at the top of the freezer section allows cold air to pass through the separator wall (8) into the refrigerator section. Air then circulates throughout the refrigerator section, generally flowing from top to bottom. As it reaches the bottom of the refrigerator section it is drawn through a return air duct (6) in the separator (8) wall located just below the meat savor drawer. This return air is drawn to the bottom of the freezer compartment through a passage between the side of the evaporator (7) and the separator wall (8) and then up past the evaporator coils (4).

Cold air from the freezer section also enters the meat savor drawer through a small air duct (10) in the separator wall (8). Air travels through the meat savor control (11). If the baffle in the meat savor control is open, the air travels out the round port (12) into the back of the meat savor drawer. The air exits the meat savor drawer and returns to the freezer through the return duct (6) The air then travels down between the side of the evaporator (7) and the separator wall (8) and then up through the evaporator coils (4).

Air Circulation In The Component Compartment

A second air circulation system in the component compartment at the top of the unit dissipates the heat picked up by the refrigeration system (Fig. 5). The condenser fan, located at the back of the compartment draws room air across the condenser, absorbing the heat in the refrigerant. This warmed air is then exhausted through a grille located at the left of the compartment behind the decorative grille assembly.

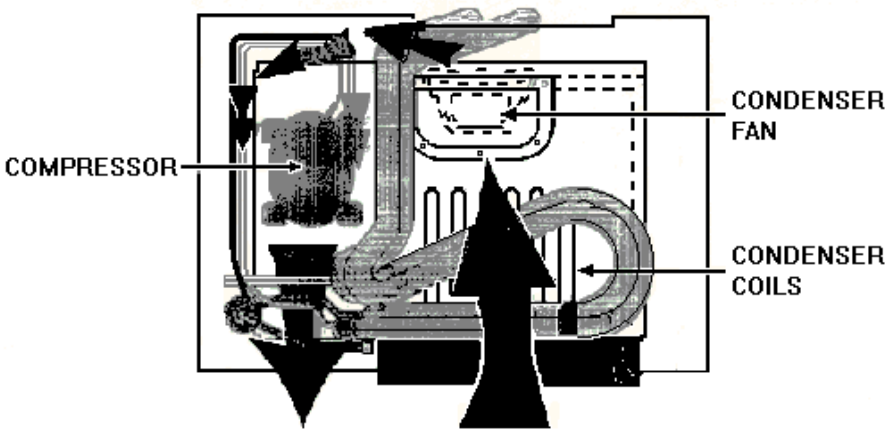


FIG.5

Motorized Air Operation

A motorized air door regulates the air flow coming from the freezer. The operation of the motorized air door is determined by the following components:

- The temperature sensor (thermistor) located on the back wall of the refrigerator cover.
- The electronic control board located inside the refrigerator section control cover.

When the temperature sensor calls for cooling in the refrigerator section, the electronic control energizes the air door motor and opens the baffle (Fig 6-A). from the "closed" position, the baffle rotates clockwise 270°. During this rotation it opens, closes and then parks in the "open" position. The OPEN MICRO-SWITCH shuts the door motor off when the baffle is fully open.

When the temperature sensor is satisfied, the electronic control again energizes the air door motor and closes the baffle (Fig 6-B). from the "open" position, the door rotates clockwise 90° and parks in the "closed" position. The CLOSED MICRO SWITCH shuts off the door motor when the baffle is fully closed.

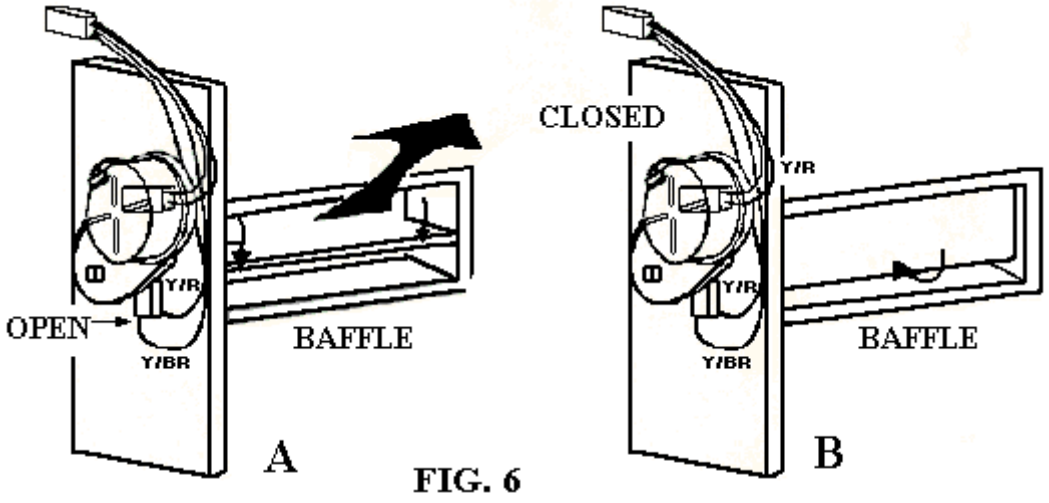


FIG. 6

Air Circulation in the Meat Savor Drawer

The Meat Savor drawer in the refrigerator compartment is provided with a separate controlled flow of cold air from the freezer compartment. Air enters the Meat Savor drawer through an air passage through the center divider wall into the upper part of the Meat Savor drawer control. If the control knob is rotated fully counterclockwise the control knob arrow is pointing to "COLD" (Fig 7A). In this position the cold air is blocked by the baffle and will not enter the Meat Savor drawer.

As the control knob is turned clockwise (toward the "COLDEST" setting), cold air will be able to pass around the baffle into the lower part of the Meat Savor control it can flow through the round port into the Meat Savor drawer. Air then leaves the drawer and joins the normal air circulation in the refrigerator compartment and return to the freezer compartment through the return air ducts in the center divider wall.

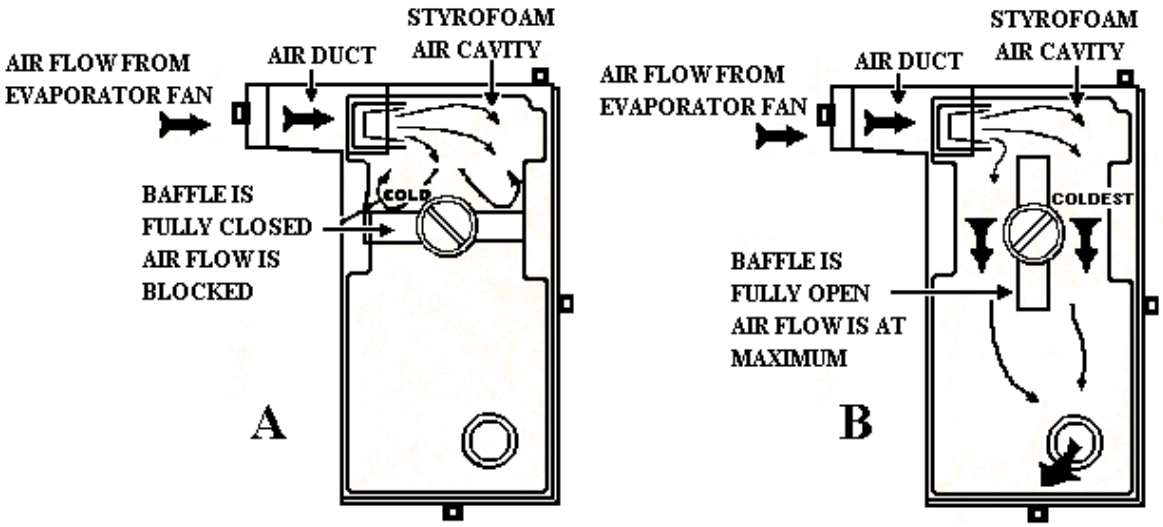


FIG. 7

Control and Operation

The temperature controls in the built-in refrigerator/freezer are designed to regulate temperature more accurately and operate the product more efficiently than freestanding side-by-side refrigerator/freezers.

Freezer Thermostat Control

The freezer thermostat controls the temperature of the freezer compartment be sensing cold air coming from the cold air duct on the back wall of the freezer liner. The thermostat's sensing tube is located in the upper right side and upper back of the freezer compartment and is covered by plastic wiring covers

When the thermostat calls for cooling, the following components are energized:

- Compressor
- Condenser
- Defrost Timer Motor
- Freezer Side Panel Heater

In addition, the thermostat sends a signal to the electronic control board indicating that the compressor is running. The electronic control board then energizes the evaporator fan motor. Although the evaporator fan motor is energized independently through the electronic control board, it always runs when the compressor is operating. This insures air circulation across the evaporator coils and through the freezer compartment during the compressor "on" cycle.

Refrigerator Electronic Temperature Control

The refrigerator electronic temperature control system consists of a thermistor and an electronic control board. The flexibility of the electronic control enables the refrigerator to operate with greater efficiency by activating the motorized air door and the evaporator fan motor independently of the compressor circuit.

- The electronic control board continuously sends a flow of voltage, or signal current, through the thermistor. The thermistor is sensitive to temperature fluctuations and changes resistance accordingly. When the temperature rises in the refrigerator compartment:

  - The thermistor resistance decreases, altering the signal going to the electronic control board.

  - The electronic control board, sensing the change in the signal current:

    a) Energizes the motorized air door to open.
    b) Energizes the evaporator fan motor (if it is not already running during a compressor "on" cycle).

When the refrigerator compartment temperature decreases:

- The thermistor resistance increases, altering the signal current to the electronic control board.

- The electronic control board sensing the change in the signal current:

  a) Closes the air door.
  b) Cycles the evaporator fan motor off (if the compressor is not running).

The electronic control board is operated by a variable resistor, or potentiometer, which sets the desired refrigerator compartment temperature. Adjusting the potentiometer changes the sensitivity of the electronic control board to the signal current from the thermistor. Varying the sensitivity raises or lowers the regulated temperature.

The refrigerator thermistor and the electronic control board directly affect the operation of the evaporator fan motor and the motorized air door. Evaporator fan motor and motorized air door cycling may occur one or more times before the freezer calls for a cooling cycle.

Control Interaction

The following information explains how the freezer thermostat and the refrigerator electronic temperature control system interact.

When the freezer thermostat closes (calling for cooling):

- The cycle is initiated.

- A voltage signal is sent to the electronic control board.

- The electronic control board energizes the evaporator fan motor.

- If the thermistor is satisfied, the motorized air door remains closed.

- If the thermistor is calling for cooling, the motorized air door opens.

When the freezer thermostat opens (is satisfied):

- The cooling cycle is terminated.

- The voltage signal to the electronic control board is terminated.

- If the thermistor is satisfied, the motorized air door is closed and the evaporator fon motor is turned off.

- If the thermistor is calling for cooling, the motorized air door opens and the evaporator fan motor runs.

Defrost System

As air circulates through the refrigerator/freezer, moisture from food and outside air that enters whenever the doors are opened condenses and freezes onto the evaporator coils and fins to form a layer of frost. Periodically the frost must be cleared from the coils so that the air flow is not blocked. An automatic defrost function accomplishes this task with the use of a defrost timer, defrost heater and bimetal.

The defrost system is designed to initiate the defrost function following 10 hours of accumulated compressor run time. The defrost timer motor runs during a cooling cycle when the compressor runs and stops running when the compressor cycles off. The timer motor also runs during the defrost cycle when the refrigeration system is shut down.

Once initiated, the defrost cycle lasts 21 minutes. The defrost heater is energized and melts off any frost accumulation. When the evaporator area reaches approximately 50* F, the bimetal opens and turns off the defrost heater. This usually occurs 10 to 15 minutes after the defrost cycle begins. The defrost timer motor continues the defrost cycle for the full 21 minutes duration and then the cooling cycles resume.

During the defrost cycle the following occurs:

- The thermostat is bypassed and has no controlling function.
- The compressor run signal current, from the thermostat to the electronic control board, is interrupted. The electronic control board will not sense or regulate the temperature.
- Voltage is interrupted from the thermostat to the electronic control board.
  a) The evaporator fan motor does not run.
  b) The motorized air door does not operate. The air door stays in its present position (either open or closed) until the defrost cycle is over.

The Mullion and Condensate Pan Heat Loop

The mullion and condensate pan heat loop (Fig.8 A) enters the separator wall through a grommet in the back of the cabinet (Fig.8 B) where it travels inside the separator wall to the front. It then bends 90* (1) and travels along the entire length of the separator (2) to the bottom of the cabinet. Finally, the loop bends 90* (3) and travels along the bottom of the separator and exits through a grommet at the back of the cabinet.

The loop then makes a 180* trap and travels down underneath the cabinet and forms a coil over the condensate pan. The loop then travels up the back of the cabinet to the condenser.

The Freezer Side Panel Heater

The freezer side panel heater element (4) is affixed to an adhesive sheet on the left inside wall of the outer cabinet and is foamed in place during manufacture. The element covers the bottom half of the wall and is energized whenever the freezer thermostat initiates a cooling cycle and the compressor runs. The plug (5) for the freezer side heater is located near the top left corner of the cabinet.

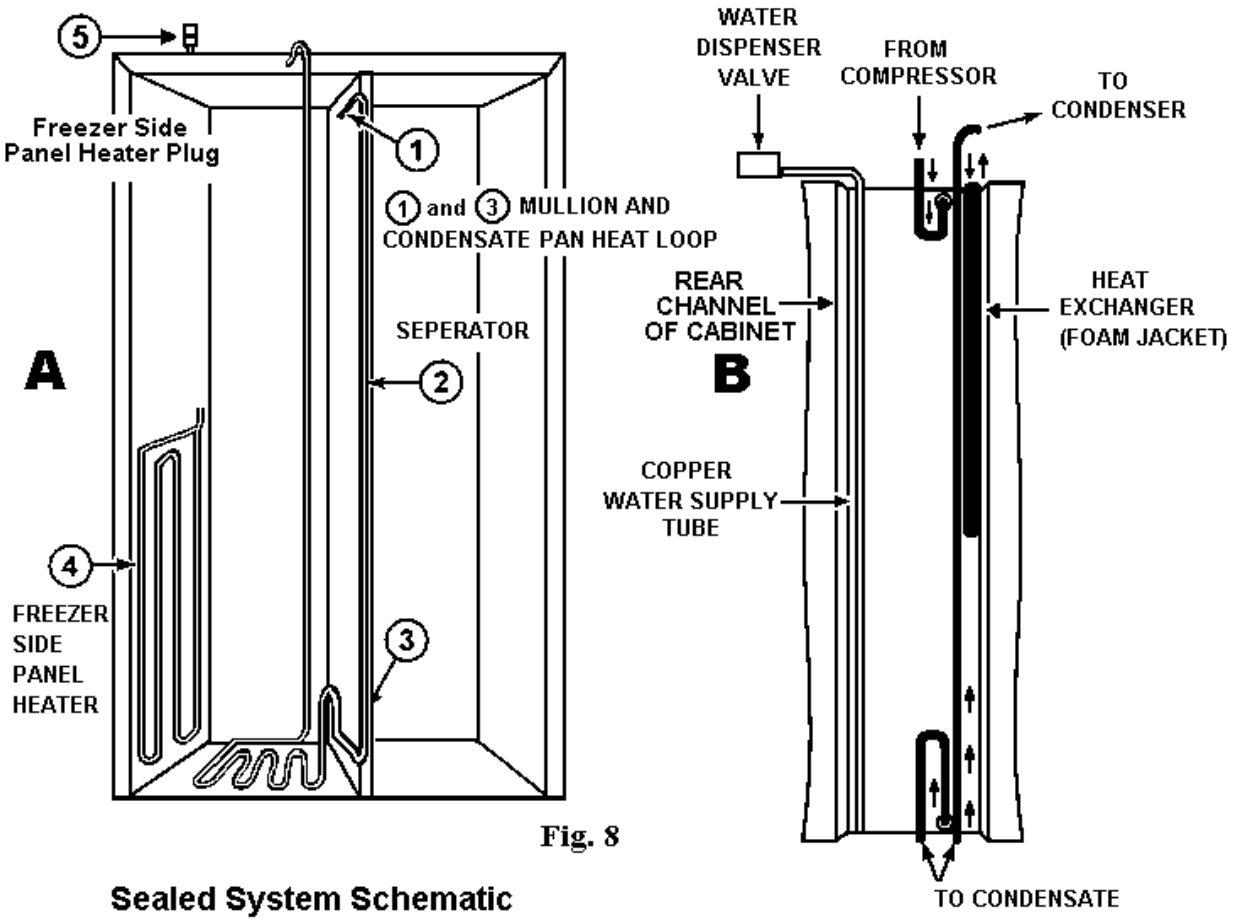

5
Freezer Side
Panel Heater Plug
1
1 and 3 MULLION AND
CONDENSATE PAN HEAT LOOP
SEPERATOR
2
A
4
FREEZER
SIDE
PANEL
HEATER
3
WATER
DISPENSER
VALVE
FROM
COMPRESSOR
TO
CONDENSER
REAR
CHANNEL
OF CABINET
HEAT
EXCHANGER
(FOAM JACKET)
B
COPPER
WATER SUPPLY
TUBE
TO CONDENSATE

Fig. 8

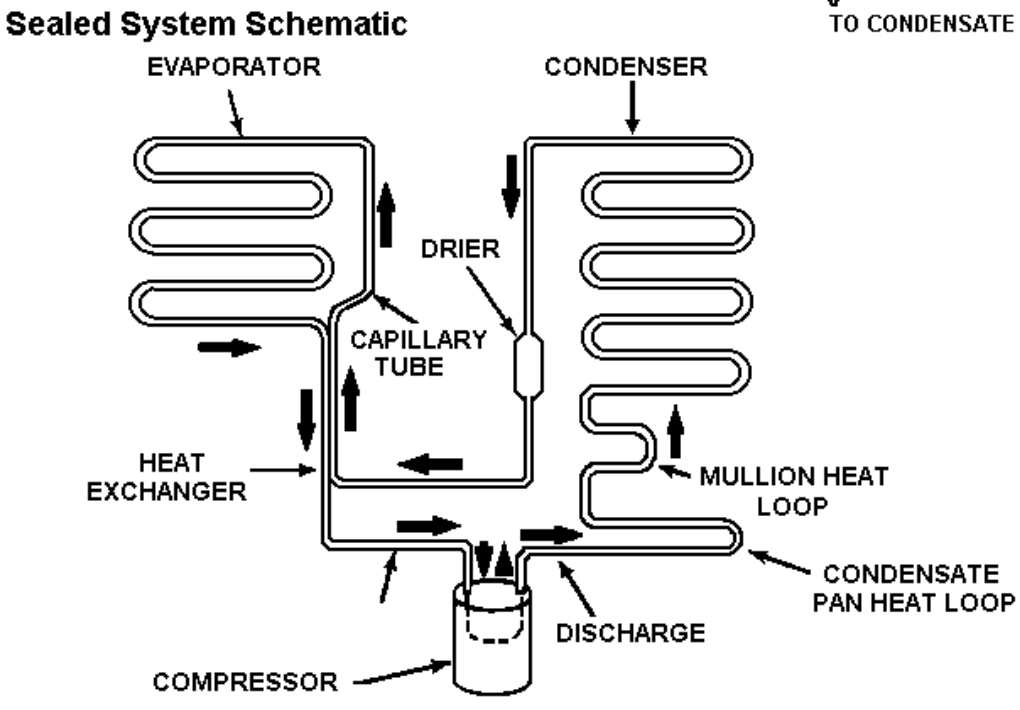
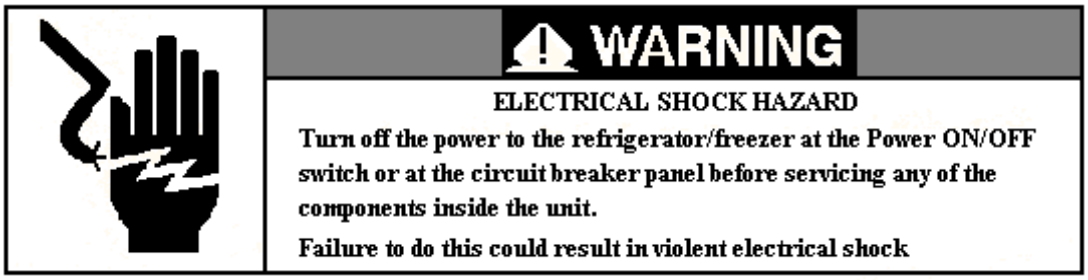

Sealed System Schematic
EVAPORATOR
CONDENSER
DRIER
CAPILLARY
TUBE
HEAT
EXCHANGER
MULLION HEAT
LOOP
CONDENSATE
PAN HEAT LOOP
DISCHARGE
COMPRESSOR

Fig. 9

COMPONENT ACCESS



The following information provides specific information on accessing components of the built-in side-by-side refrigerator/freezer. This section will be presented in four parts:

- Components in the refrigerator section
- Components in the freezer section
- Components in the top of the unit
- Door assemblies

COMPONENTS IN THE REFRIGERATION SECTION

The components that are accessible in the refrigerator compartment are:

- The Electronic Control Board
- Light Switch
- Motorized Air Door
- Temperature Sensor (Thermistor)
- Meat Savor Control

Servicing the Electronic Control Board

The electronic control board is located inside the control box at the top of the refrigerator section.

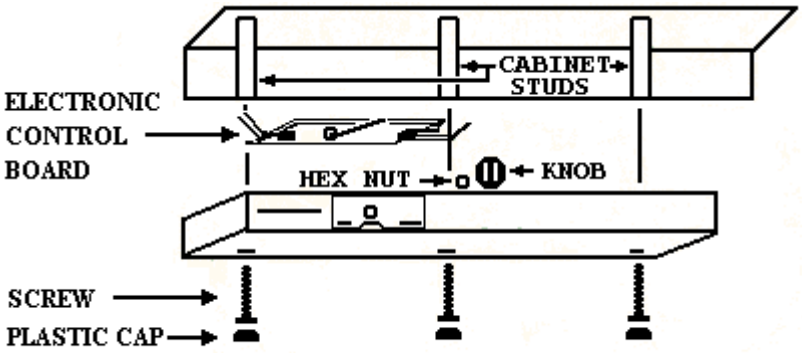


FIG. 10

1. Pull the knob from the control shaft.
2. Remove the one-half inch hex nut securing the control shaft to the control box cover.
3. Pry the three plastic caps from the control box cover.
4. Remove the three Phillips head screws securing the control box cover to the top of the cabinet.
5. Rotate the control box cover down to expose the contents of the control box.
6. Press down on the ends of the locking arm on the wiring connectors and unplug the two connectors from the electronic control board.
7. Slide the old control board from the slots in the control box cover.

NOTE

When replacing the electronic control board, use the ground protection gloves provided with the replacement assembly. If grounding gloves are not available, ground yourself before handling the electronic control board. Handle the electronic control board on its edges.

Servicing the Light Switch

The light switch that activates the lights inside the refrigerator section is located on the underside of the control box.

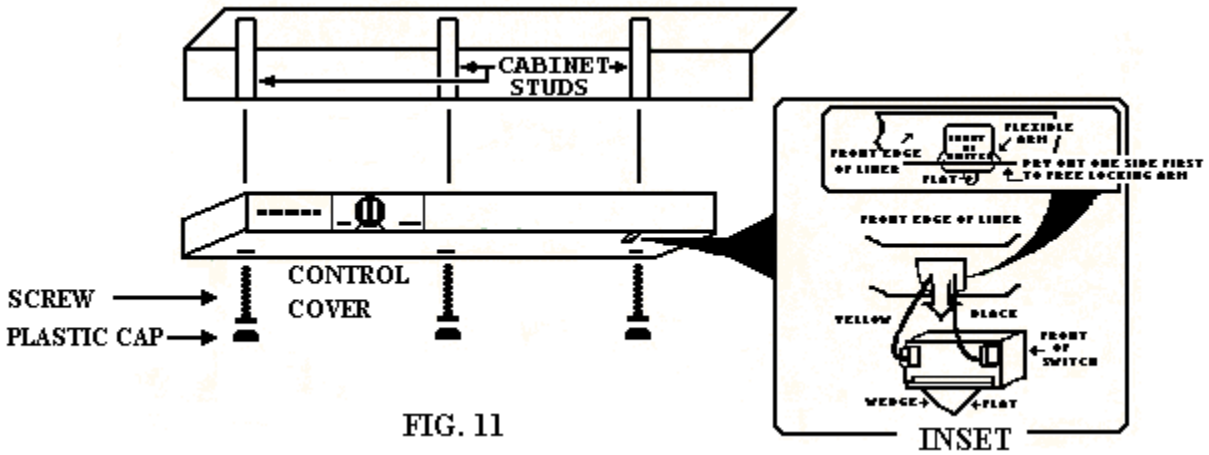


FIG. 11

1. Follow the procedure described earlier to remove the control board cover from its position at the top of the refrigerator section.
2. Unplug the yellow and black wire connectors from the light switch.
3. Press on the flexible arm of the light and pry the opposite side out of the hole in the control box cover.

Servicing the Motorized Air Door

The motorized air door assembly is located in the upper rear left corner of the refrigerator section.

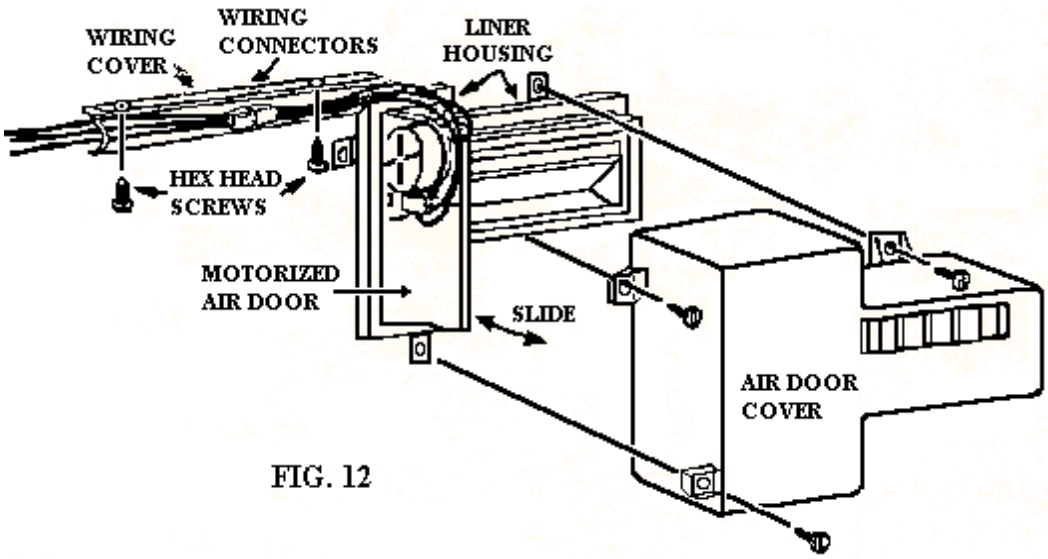


FIG. 12

1. Remove the three hex head screws securing the air door cover to the cabinet liner and set the cover aside.
2. Remove the two hex head screws securing the wiring cover to the top of the refrigerator section liner and remove the wire cover.
3. Disconnect the motorized air door wiring connector from the wiring harness.
4. Slide the motorized air door assembly out of the slot in the liner housing.

Servicing the Thermistor

The refrigerator section temperature sensor is located on the left side of the back wall of the cabinet approximately one third of the way from the top.

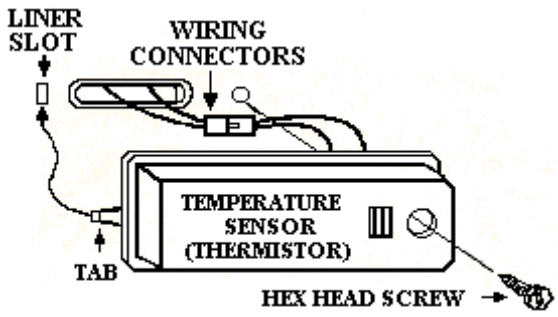
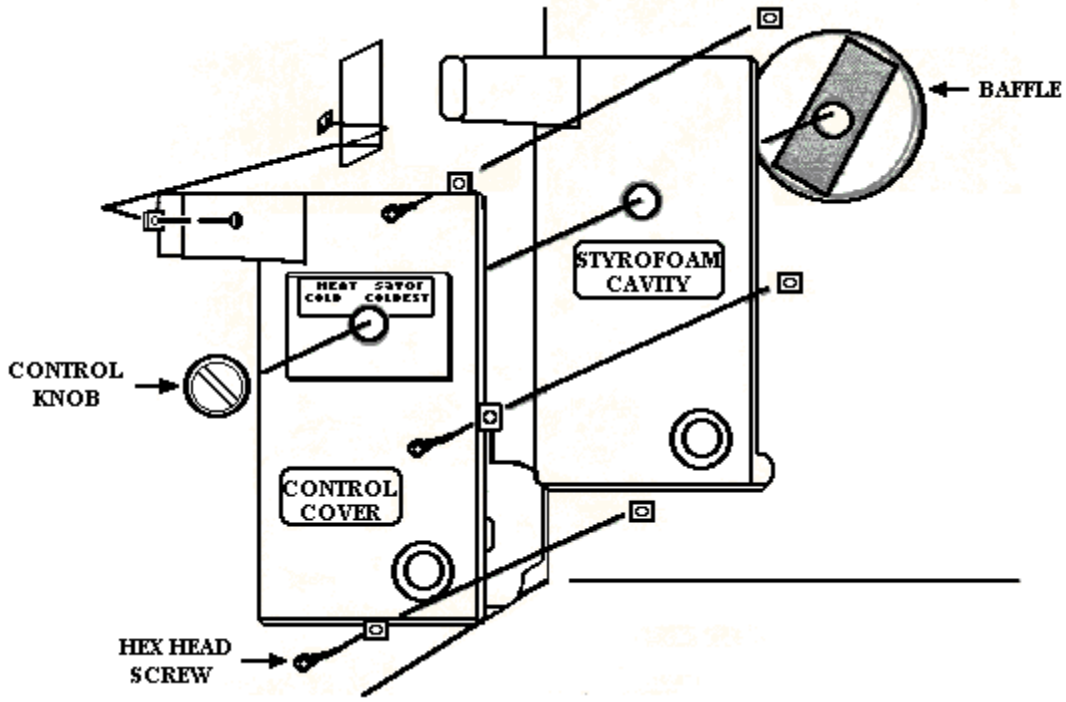


FIG. 13

1. Remove the hex head screw securing the temperature sensor assembly to the back wall of the cabinet liner.
2. Lift the right side of the assembly slightly and unhook the tab on the left end from the slot in the cabinet liner.
3. Unhook the locking arm on the temperature sensor connector from the tab on the wiring harness connector and unplug the connectors.

Servicing the Meat Savor Control

The control for the meat savor air baffle is located on the left side of the rear wall of the refrigerator section and will require that the meat savor shelf and drawer be removed for access.



1. Remove the four hex head screws securing the meat savor control to the cabinet liner.
2. Remove the control knob, control cover, styrofoam cavity and baffle.

NOTE

When reinstalling the meat savor control, the round port opening in the control cover should be covered by the cowl in the back of the meat locker when the drawer is pushed all the way back.

COMPONENTS IN THE FREEZER COMPARTMENT

The components that are accessible in the freezer compartment are:

- The freezer thermostat
- Light switch
- Evaporator fan motor
- Bimetal
- Defrost heater

Servicing the Freezer Thermostat and Light Switch

The freezer thermostat and the light switch are located in the control box at the top of the freezer compartment.

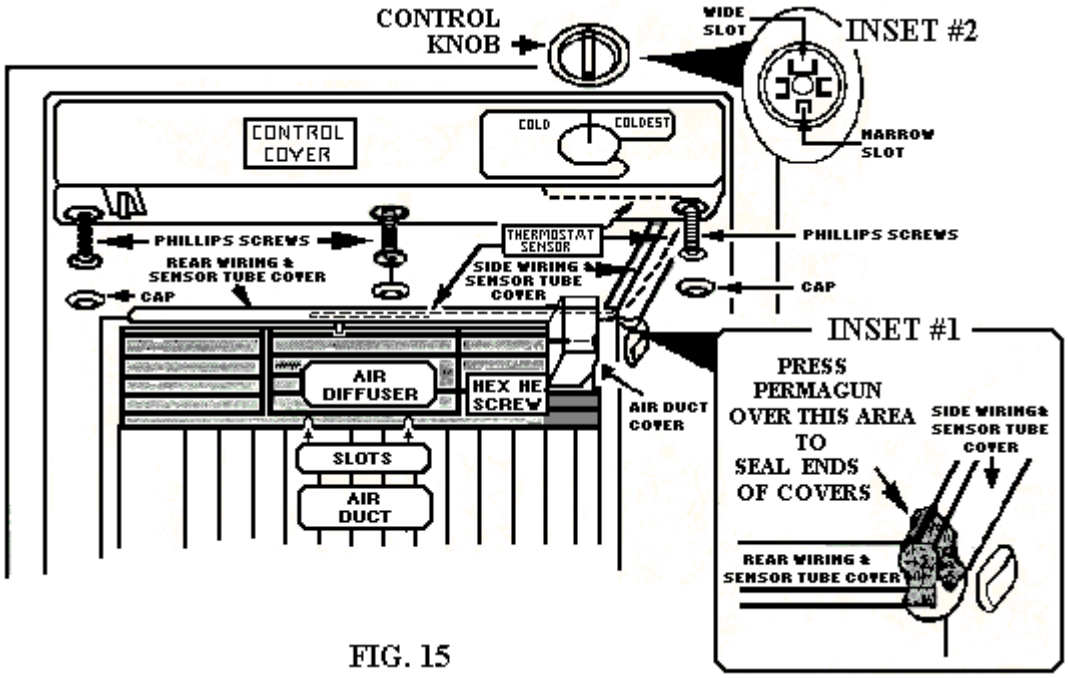


FIG. 15

1. Remove the hex head screw securing the air duct at the upper right rear corner of the freezer and remove the cover.
2. Remove the two hex head screws securing the side wiring harness cover to the upper right side of the freezer and remove the cover.
3. Slide the air diffuser at the top of the freezer up and remove the air diffuser from the freezer section.
4. Carefully remove the permagum from the upper right rear cover of the freezer. This material will have to be reinstalled later. Keep it clean and safe.
5. Remove the three hex head screws securing the rear wiring harness cover to the top of the freezer.

6. Remove the three plastic caps that cover the Phillips securing the control box cover to the top of the freezer and remove the screws.
7. Rotate the control box cover so it can be worked on. Once the control box cover is in this position the light switch and thermostat can be serviced.

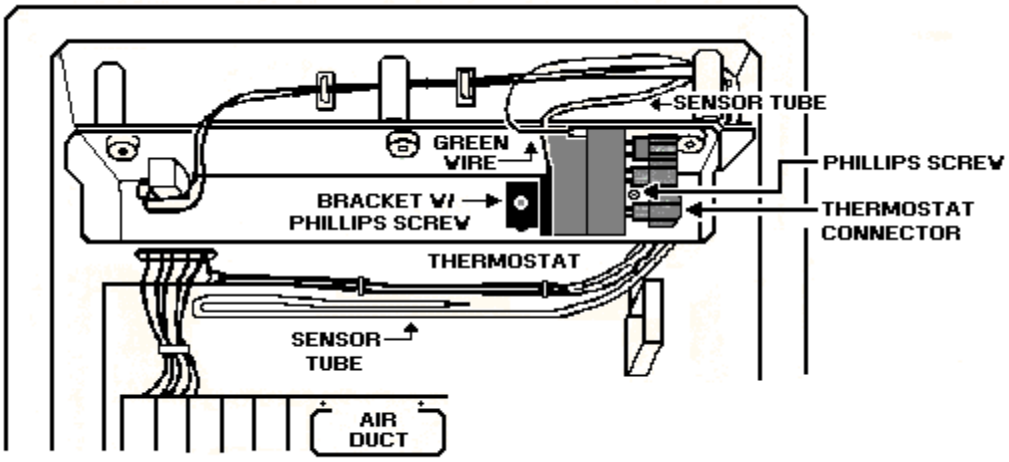


FIG.16

1. Pull the green ground wire connector from the thermostat ground terminal.
2. Pull the wire connector from the three thermostat terminals.
3. Remove the two Phillips screws securing the thermostat bracket to the control box cover.
4. Carefully remove the thermostat and the freezer sensor tube from the freezer compartment.

Removing the Light Switch

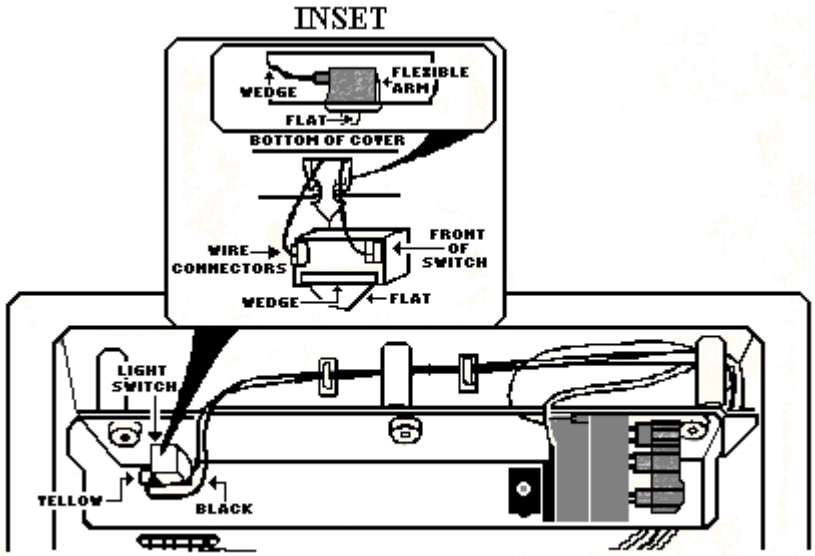


FIG. 17

1. Unplug the yellow and black wire from the switch terminals.
2. Press in on the flexible arm of the switch and pry the opposite side of the switch out of the hole in the corner cover.

NOTE

When replacing components be sure to press the permagum material removed earlier over the ends of the side and rear wiring covers and against the sides of the freezer liner at the right rear corner to form an air-tight seal.

Servicing Components Behind the Evaporator Cover

A number of serviceable components are located behind the evaporator cover located on the lower portion of the back wall of the freezer section.

1. Remove the sixteen hex head screws securing the evaporator cover to the back wall of the freezer liner.
2. Pull the top of the evaporator cover out between shelf studs and remove it from the freezer.

Removing the Evaporator Fan Motor

The evaporator fan motor and blade assembly is mounted on a bracket secured to back of the freezer liner.

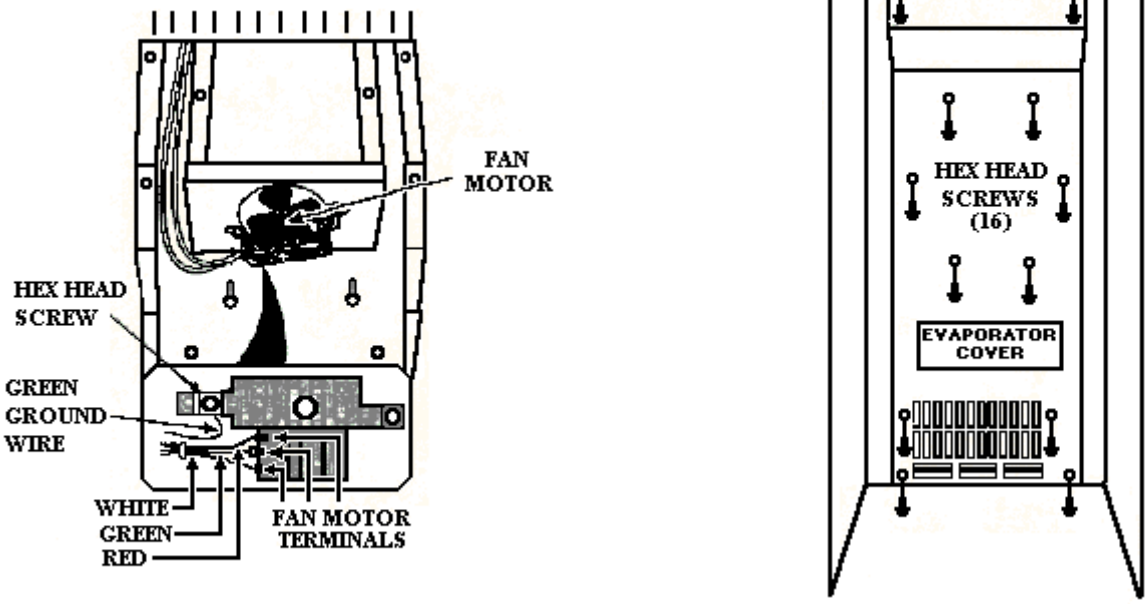


FIG.18

1. Remove the two hex head screws from the fan motor bracket.
2. Remove the three wires from the terminals on the fan motor.
3. Remove the two hex head screws securing the fan motor to the mounting bracket and remove the bracket from the motor.
4. If the motor is to be replaced, remove the blades from the motor shaft.

Removing the Bimetal

The bimetal is located behind the evaporator cover.

1. Push up on the bimetal bracket just enough to release the locator pin on the bimetal and remove the bimetal from the bracket.
2. Unplug the connector from the wiring harness connector.

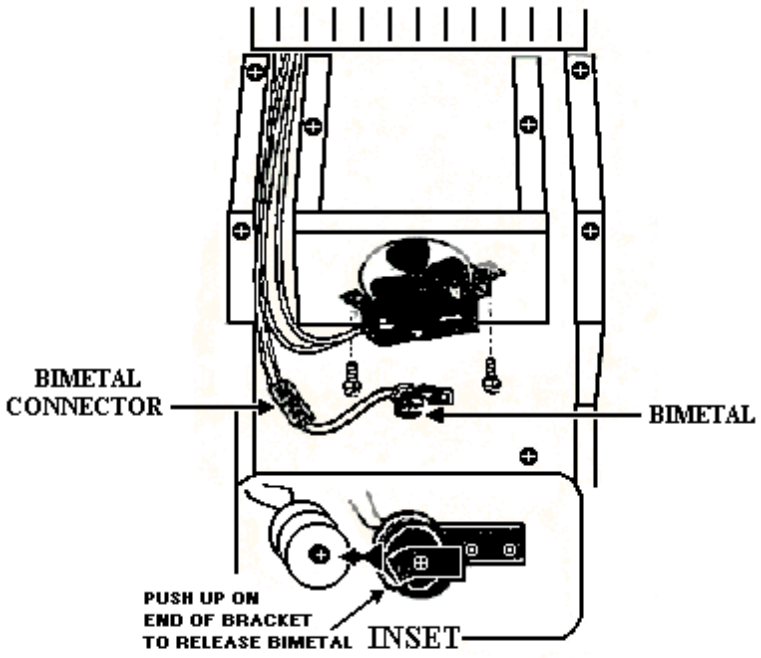


FIG. 19

Removing the Defrost Heater

The defrost heater is wrapped around the perimeter of the evaporator. Disconnect the heater wire connector from the wiring harness.

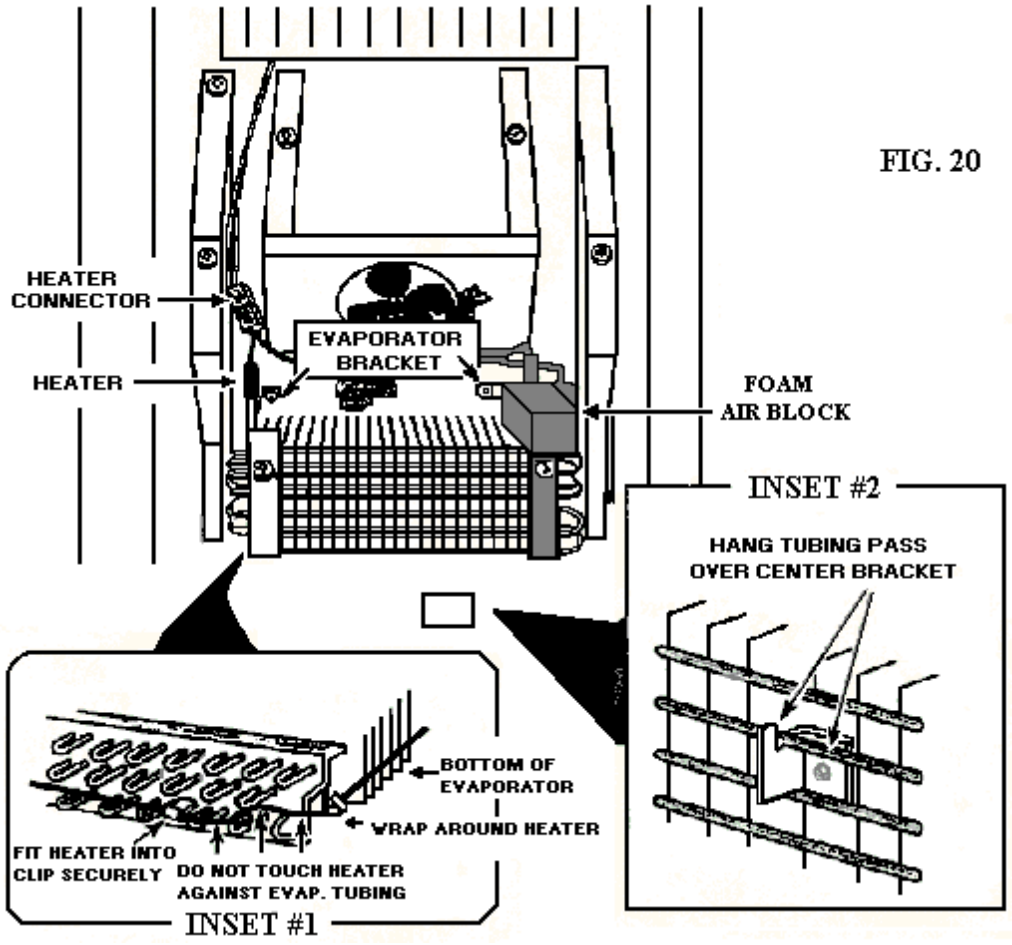


FIG. 20

1. Remove the foam air-block at the upper right corner of the evaporator from around the evaporator tubing.
2. Remove the two hex head screws securing the evaporator mounting bracket to the back wall of the freezer liner.
3. Lift the evaporator straight up to unhook it from the lower center hook in the freezer liner.
4. Carefully pull the bottom of the evaporator out just far enough to make the sides accessible for service.
5. The defrost heater is held in place at six locations around the sides and bottom of the evaporator.
6. Unsnap the defrost heater from the two clips on each side of the evaporator.
7. Bend the two bottom tabs out far enough to release the defrost heater.

Installing a New Defrost Heater

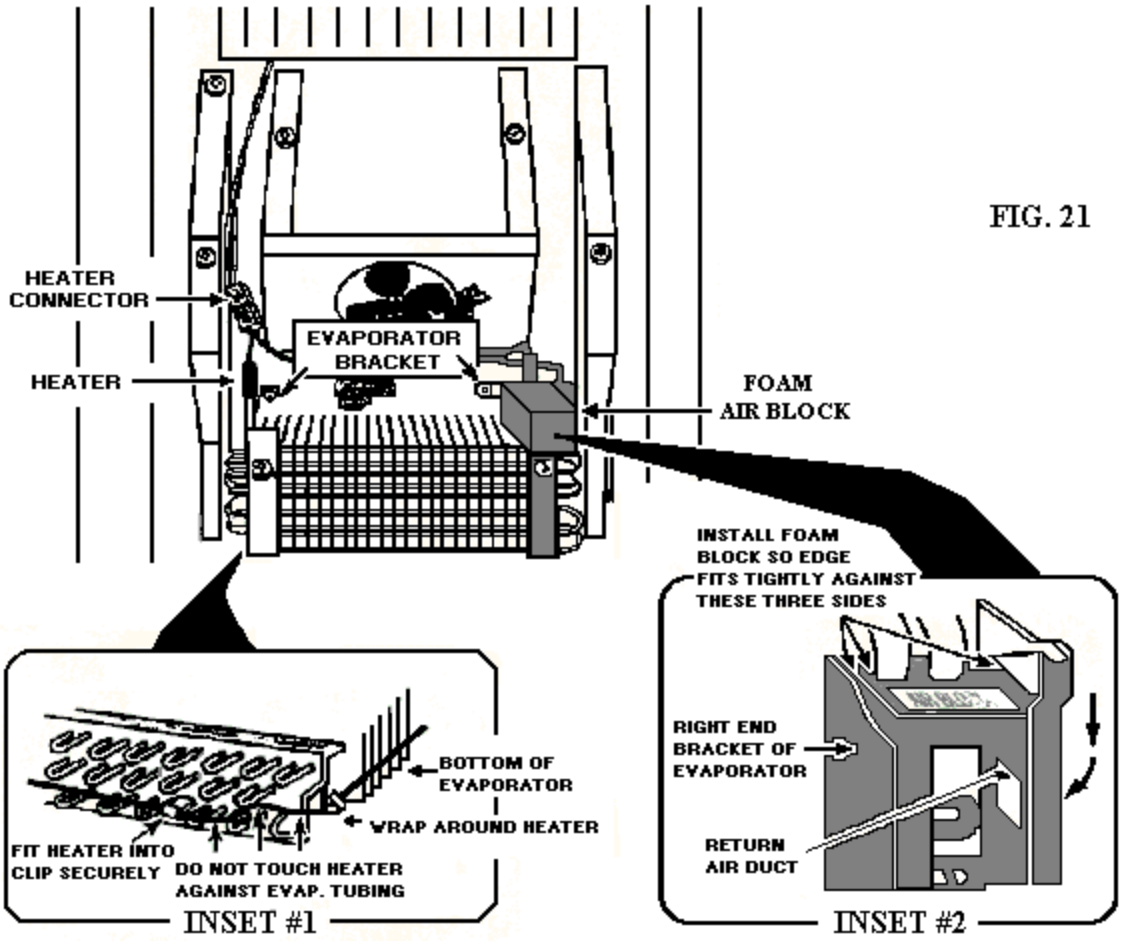
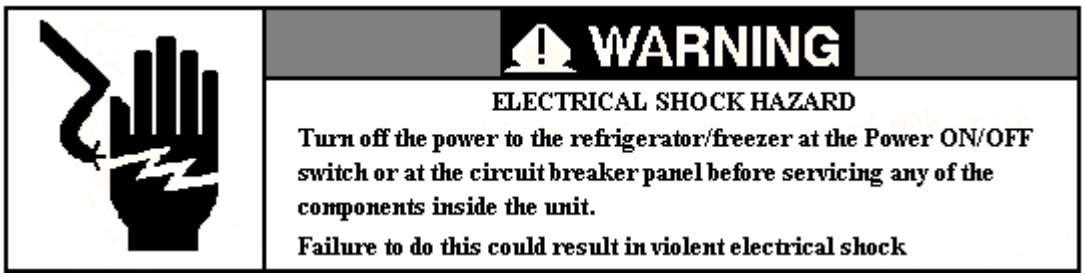


FIG. 21

1. Position the defrost heater so the black wire and the wire connector are to the left.
2. Spread the heater apart far enough to fit over the side clips.
3. Bend the bottom tabs securely around the heater.
4. Snap the heater into the side clips on both sides of the evaporator. Be sure the heater does not touch any of the evaporator tubing.
5. Carefully rotate the bottom of the evaporator back into position and hang it on the lower center hook on the freezer liner so the top bracket holes are aligned with the mounting holes in the freezer liner.
6. Place the foam air-block at the right rear corner of the liner at the top of the evaporator. Form the holes in the air-block around the tubing.
7. Slide the air-block down to make a tight seal between the evaporator bracket and the back and side walls of the freezer liner. When the air-block is in the proper position, it should cover the right evaporator bracket mounting screw.
8. Insert the right lead of the defrost heater into the wire connector hole so it locks in place.

COMPONENTS ON TOP OF THE UNIT



The components that are accessible on the top of the unit are:

- The power switch
- Defrost timer
- Run capacitor
- Water fill valve
- Condenser compartment

Unit Compartment Access

1. Grasp the decorative grille insert and slide it up to remove it from the grille mounting slots.

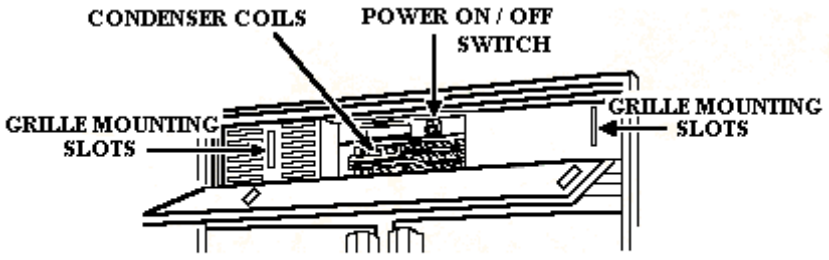


FIG. 22

Remove the four hex head screws securing the top grille to the mounting brackets.

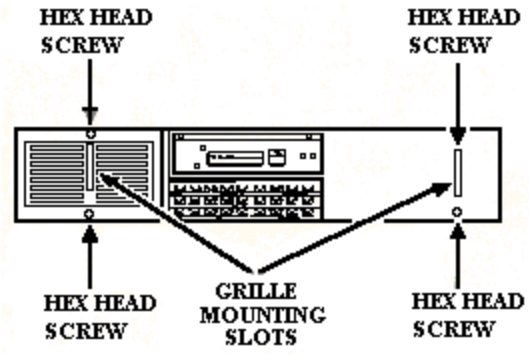


FIG. 23

Servicing the Power On / off Switch and Defrost Timer

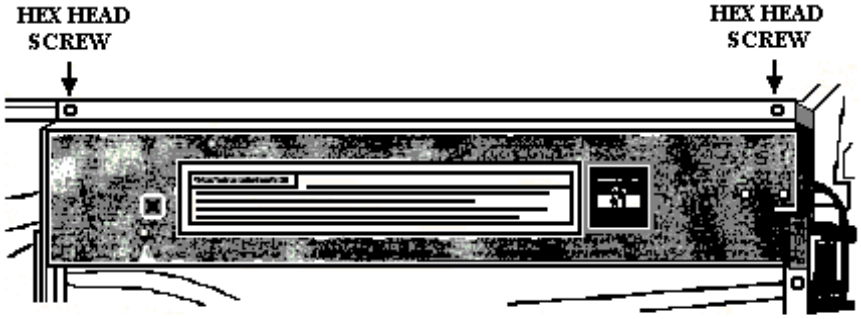


FIG. 24

1. Remove the two hex head screws securing the compartment assembly cover to the component cover.
2. Rotate the component assembly cover forward so the various components are accessible.

Remove the Power On/Off Switch

The power switch is located on the component assembly cover.

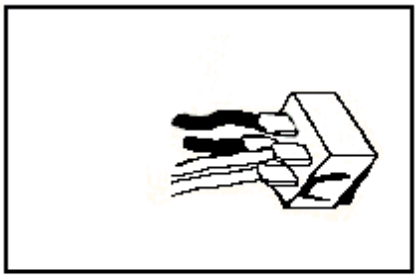


FIG. 25

1. Press the flexible arms against the switch body and push the switch out of the cutout.
2. Disconnect the four wires from the power switch terminals.
3. When installing a new power switch, slide the connectors from the power cord onto terminals six and three of the switch. Slide the two remaining onto terminals two and five.

Removing the Defrost Timer

The defrost timer is located on the component assembly cover.

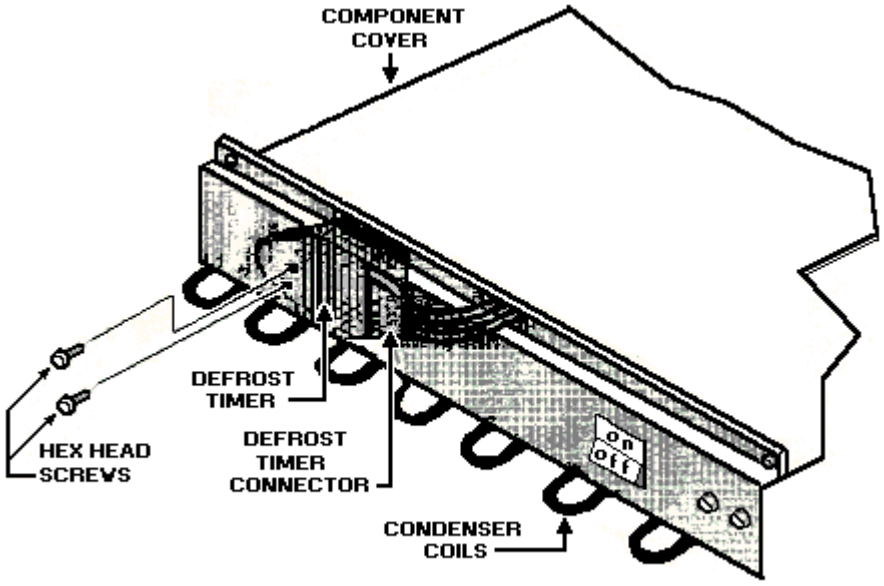


FIG.26

1. Remove the two hex head screws securing the defrost timer to the component cover.
2. Unplug the wiring harness connector from the defrost timer.

Removing the Run Capacitor

The run capacitor is located on the left side of the component cover.

1. Remove the hex head screw securing the run capacitor to the side of the compartment cover.
2. Disconnect the two wire connectors from the run capacitor.

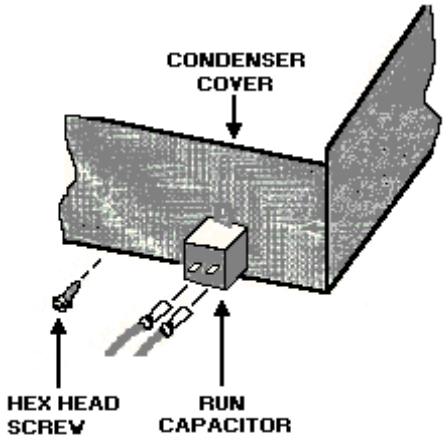


FIG. 27

Servicing the Condenser Fan Motor

With the service tray pulled out the condenser fan motor can be serviced.

1. Remove the two hex head screws at the top of the fan shroud.
2. Loosen, but do not remove the three hex head screws securing the fan shroud flange to the condenser cover.
3. Slide the fan shroud off the condenser cover and set it aside.
4. Disconnect the wires from the fan motor terminals.
5. Remove the three hex heads screws securing the fan motor to the mounting bracket.
6 . Remove the nut securing the fan blades to the motor shaft.

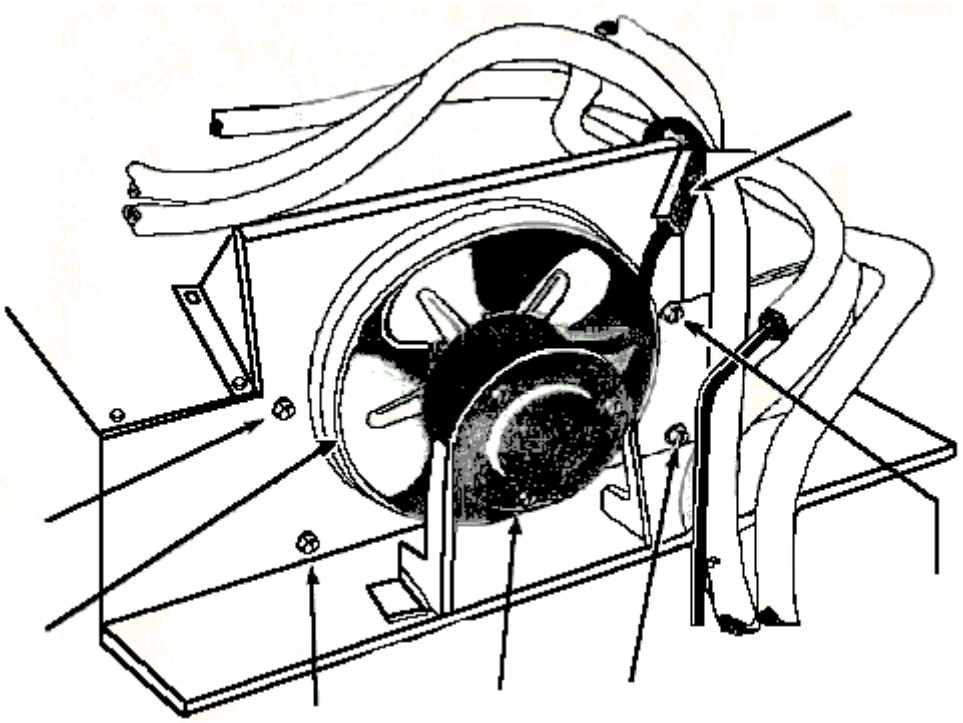


FIG. 28

Servicing the Dual Water Supply Valve

The saber valve for the ice maker is located on a mounting bracket to the right of the component compartment at the top of the unit. Be sure to turn off the water supply to the water fill valve before doing any service to the valve.

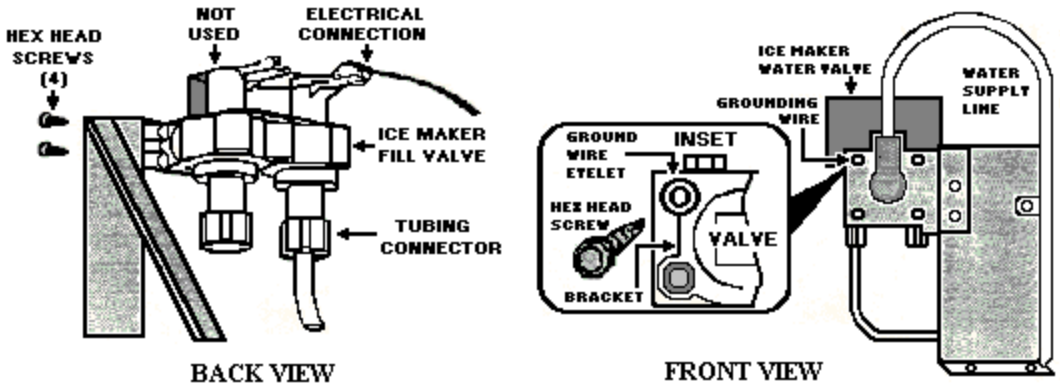


FIG. 29

1. Disconnect the copper water supply line from the valve assembly.
2. Remove the two hex head screws that secure the valve assembly to the mounting bracket.
3. Disconnect the plastic water line connector and tube from the valve.
4. Disconnect the two-wire connector from the valve's solenoid terminal.

DOOR ASSEMBLIES

Replacing the Door Gaskets

NOTE

BECAUSE OF THE SIZE AND WEIGHT OF THE DOORS ON THIS PRODUCT, IT IS RECOMMENDED THAT THE DOOR GASKET BE REPLACED WITH THE DOORS IN PLACE.

1. Fold the door gasket back and loosen but do not remove the hex head screws all around the perimeter of the door.
2. Pull the lip of the gasket out from under the metal retaining strip and remove the gasket.
3. To install the new gasket, begin by sliding the lip under the retainer at the top of the door.
4. Tighten the screw in the top retainer just enough to hold the gasket in place.
5. Install the bottom edge of the gasket under the metal retaining strip in the same manner as the top.
6. Beginning at the center of the gasket on the right side, work toward the top of the door, sliding the lip under the met al retaining strip, tighten the screws as you go along.
7. Install the lower half of the gasket in the same manner. Follow the same procedure for the left side of the door.
8. Check the entire gasket to make sure it seals properly and that the door is not warped. It may be necessary to loosen the screws and adjust the gasket or straighten the door. Be sure to tighten all of the screws securely when the gasket is properly installed and the door is aligned with the cabinet.

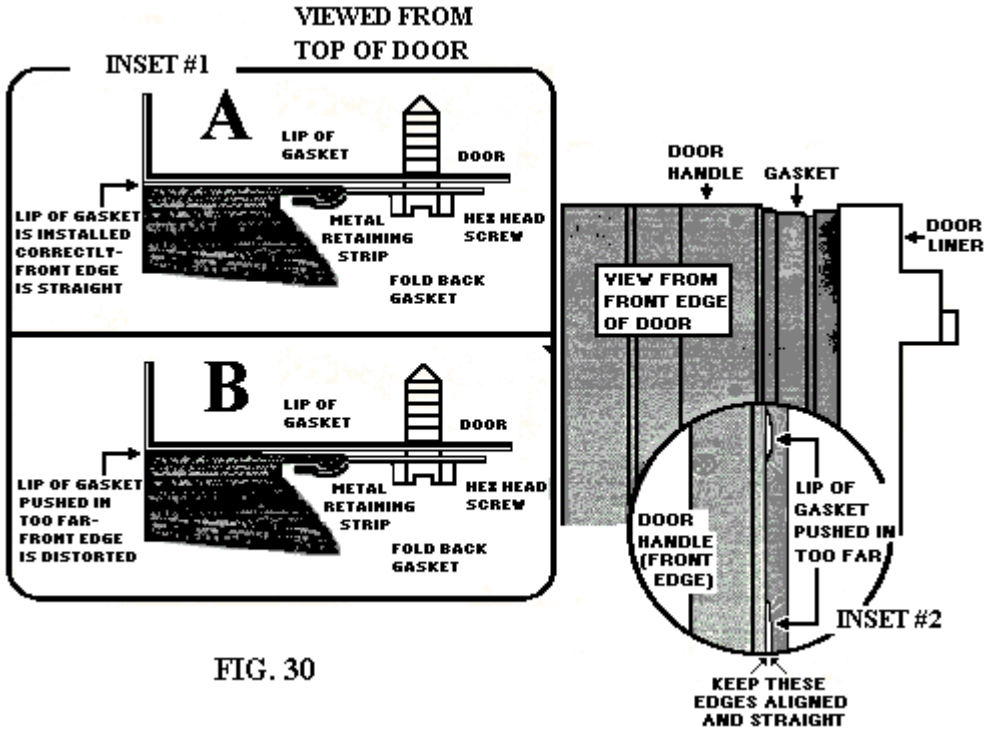


FIG. 30

TROUBLE SHOOTING AND DIAGNOSIS

GENERAL TROUBLE SHOOTING SITUATIONS

Heavy Warm Load

The amount of warm food placed in the refrigerator affects running time and power consumption. Generally speaking, when a supply of food is placed in the refrigerator, the unit will operate continuously until the food has been cooled down to the desired storage temperature. This continuous operation is normal. In regions where the ambient temperature is relatively high, an excessive warm load may cause overload cycles.

Excessive Door Openings

The length of time the door is left open and the number of times the door is opened should be held to a minimum. Excessive door openings will greatly increase running time, power consumption and frost build-up.

Improper Packaging

Uncovered foods and improper packaging materials and methods cause food to dry out. This reduces the flavor of the foods and results in an excessive frost build-up. Refer the customer to the OWNER'S GUIDE which came with the refrigerator.

Warm Room

1. A warm room or other large source of heat (such as range, heater, hot air duct, sunny window) can affect performance. If the room ambient temperature exceeds 100*F, 100% running time can be expected.

2. At temperatures approaching 120*F, the unit may cycle on the overload.

3. In general, the warmer the room, the greater time and power consumption.

Exterior Sweating

Refrigerators are designed to prevent "runoff" moisture at 90*F and 90% relative humidity. There may be a thin film of moisture on areas at a lower temperature and relative humidity. This is within design specifications and is not a fault of construction.

If possible, relocating the refrigerator in a less humid, better ventilated area will normally eliminate most moisture problems.

DIAGNOSTIC CHART

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE - ACTION
Compressor will not start	No power at ON / OFF switch	Plug in electrical outlet or turn on breaker.
	No power at the compressor No power at the outlet	Press power switch to ON. Check with test lamp or volt meter. Should supply 110-120 volts AC, 60 HZ.
	Thermostat: a. Turned off b. Points not closing	Turn knob clockwise Place jumper between terminals. If compressor starts, thermostat is defective and should be replaced.
and	Relay or overload	Using starting cord, check compressor Directly. If compressor starts, check relay And overload individually with ohmmeter Replace one found defective. If compressor doesn't start, replace compressor.
	Loose connections	Check circuit from power source to compressor using wiring diagram as guide.
	Run capacitor	Check capacitor, replace if defective.
	Motor windings open, shorted or grounded	Check windings with ohmmeter. See wiring diagram for resistance values. Replace Compressor if motor is defective.
	Timer	Timer may be in defrost cycle. Turn clockwise past 2 o'clock. Wired wrong. Check timer and replace if defective.
	Compressor stuck	Try starting with starter cord. If compressor won't start, change compressor.
Compressor runs, but no refrigeration or insufficient refrigeration.	Moisture restriction Heavy frost around evaporator	Heat frosted area. If frost line moves farther along coil after heating, restriction was probably caused by moisture freeze up. Discharge unit, sweep the system and recharge.

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURES-ACTION
Compressor runs, but no refrigeration or insuf-ficient refrigeration	Permanent restriction	First check for moisture restriction. Check for crimped or damaged tubing. Repair or replace restricted component.
	Low charge or no charge	Check for leak. Add leak charge to get internal pressure. Repair leak or replace Leaking component.
	No capacity or low capacity compressor.	Check operating wattage and pressure. See performance chart for wattage and high and low side pressures. Do not judge compressor to have low capacity until restrictions and low charge have been ruled out.
	Air circulation on high side: a. Condenser or grille restricted by lint b. condenser fan motor running or running slowly. c. Condenser fan motor top cover not in place.	Clean condenser and air passage with vacuum cleaner. Disconnect fan motor leads and check separately. Replace motor if defective. Put condenser fan motor top cover in Place.
Compressor kicks out on overload	High ambient and / or ab-normal usage.	On initial pull-down in high ambient, the compressor may cut off on overload. Instruct customer.
	Low or high voltage	Check voltage with voltmeter. Voltage at outlet should be 110 to 120 volts AC at the moment of start. Low voltage may cause false start s. High voltage may cause compressor to overheat. Correct voltage condition.
	Run capacitor	Check capacitor. Replace if defective.

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE-ACTION
Compressor kicks out on overload (continued)	Air circulation on high side: a. Condenser or grille restricted by lint b. Condenser fan motor Running or running Slowly. c. Condenser fan motor Top not in place.	 Clean condenser and air passage with vacuum cleaner. Disconnect fan motor leads and check separately. Replace motor if defective. Put condenser fan motor top in place.
	Relay and / or overload	Replace with parts known to be good.
	Motor windings shorted	Check windings with ohmmeter. See wiring Diagram for resistance values. Replace Compressor if motor is defective.
	Over charge	Check for high wattage and frosted suction Line. Evacuate and recharge with correct charge.
Freezer compartment too warm.	Thermostat: a. Set too warm b. Sensing tube not properly positioned c. Out of calibration or Not functioning	 Turn knob to higher setting. See that sensing tube is properly positioned. Check thermostat for cut-in and cut-out temperatures. Replace if necessary.
	Interior air circulation a. Fan b. Restriction in ducts	 Check evaporator fan. Replace if defective. Check for and remove obstruction in ducts.
	Abnormal usage	Instruct customer.
	Bad door seal or door not closing.	Adjust door to obtain proper seal. Instruct customer to make sure door closes completely.

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE-ACTION
Freezer compartment too warm (continued)	High ambient temperature	Locate in area our of direct rays of the sun and away from heat registers or Other source of heat.
	Cabinet light	Check to make sure door switch is closed. Replace or adjust switch if necessary.
	Excessive frost on evaporator.	check items under complaint, "incomplete defrosting."
	Unit: a. Compressor won't Run b. Compressor runs continuously	Check items under complaint, "Compressor won't run. Check items under complaint, "Compressor runs, but no refrigeration or Insufficient refrigeration.
Refrigerator compartment too warm	Motorized Air Door: a. Baffle closed b. Baffle is stuck closed	Check for a motor winding resistance of 8800 ohms between the BE/Y and W wires or the Y/R and W wires. If the meter reading shows "open" for both BE/Y and Y/R wires, replace motor. Check for iced door. Remove ice and eliminate moisture entering due to air leak.
	Electronic control board: a. Set too warm b. Baffle stuck closed	Turn knob to colder position. Check for 120 volts between the OR/W and W wires at circuit board plug. **NOTE:** Use static control gloves when handling electronic control board.
b.	Thermistor: a. Sends wrong or high resistance signal to control board. Others, same as "Freezer compartment too warm	Check resistance for given temperature at GY wires. An open or infinite resistance reading closes the door. Replace the thermistor. Same as items under, "Freezer compartment too warm."

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE-ACTION
Freezer compartment too cold	Thermostat: a. Set too cold b. Sensing tube not properly positioned c. Out of calibration or not functioning	 Turn knob to warmer position See that sensing tube is properly positioned. Check thermostat for cut-in and cut-out temperatures. Replace if necessary.
Refrigerator compartment too cold	Motorized Air Door: a. Baffle open b. Baffle is stuck open	Check for a motor winding resistance of 8800 ohms between the BK/Y and W Wires. If the meter reading shows "open" for both BK/Y and Y/R wires, replace Motor. Check for iced door. Remove ice and Eliminate moisture entering due to air leak.
	Electronic control board: a. Set too cold b. Baffle stick open	 Turn knob to warmer position. Check for 120 volts between the OR/W and W wires at the circuit board plug. **NOTE:** Use static control gloves when handling control board.
	Thermistor: a. Sends wrong or high resistance signal to control	 Check resistance for given temperature at GY wires. An open or infinite resistance reading closes the door. Replace the thermistor.
External Sweating	Freezer heater inoperative Mullion heat loop restricted Bad door seal or door not closing	Check heater with ohmmeter Check sealed system for restriction. Adjust door for proper seal.

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE-ACTION
Internal Sweating	Abnormal usage Door Seal	Instruct customer to cover foods and liquids. Adjust door for proper seal.
	Insufficient air circulation	Make sure return air flow is not restricted. Increase cold air flow by operating refrigerator compartment as cold as possible without freezing food.
Incomplete defrosting or high cabinet tempera-tures during defrost .	Limit switch	Check bimetal defrost control. If bimetal opens too soon defrost will be incomplete and frost will accumulate. If bimetal is stuck closed or opens too late, high cabinet temperature will result. A loose bimetal may cause the defrost heater to stay on too long. Change bimetal if defective.
	Timer	Check timer for proper operation. Timer should initiate 21 minute defrost cycle every 10 hours. Replace if defective.
	Defrost Heater	Check defrost heater with ohmmeter. Inoperative defrost heater will result in frost and ice accumulation on evaporator. Replace if defective.
	Drain clogged	Clogged drain may result in ice buildup in evaporator. Clear drain system.
Taste and odor	Odorous food	Instruct customer to keep food covered and clean refrigerator and freezer with solution of baking soda and water. Explain how odor and taste of food in refrigerator can be absorbed by ice cubes in freezer due to internal air circulation.
	Hot plastic	Check for a heater in contact with plastic or sealing compound, which may cause odor.

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE-TEST
Door will not close or will Not seal	Gasket binding	Adjust hinges, add shims if necessary. Lubricate face of gasket on hinge side With parawax.
	Door warped	Loosen retainer screws and rack door To fit cabinet.
	Cabinet racked	Level cabinet; make sure cabinet is setting solidly at all four corners.

THE MOTORIZED AIR DOOR

The electronic control board, located inside the refrigerator control cover, controls the operation of the motorized air door, the thermistor and the evaporator fan motor.

120 volts AC is supplied to the electronic control board through the BK wire and operates the circuit as follows:

1. To open the baffle: 120 volts AC is supplied to the baffle motor through the Y/R wire and switch SW1 (Fig.31-C). The motor rotates 270* from the "closed" position (Fig.31-A) to the open" position where it contacts SW1 which opens and parks the motor.
2. To close the baffle: 120 volts AC is supplied to the baffle motor through the W/BR wire and Switch SW2 (Fig.31-C). The motor rotates 90* from the "open" position (Fig.31-B) to the "closed" position where it contacts SW2 which opens and parks the motor.
3. 120 volts AC is supplied through the OR/W wire to the electronic control board which energizes the evaporator fan motor and supplies low voltage to the thermistor.

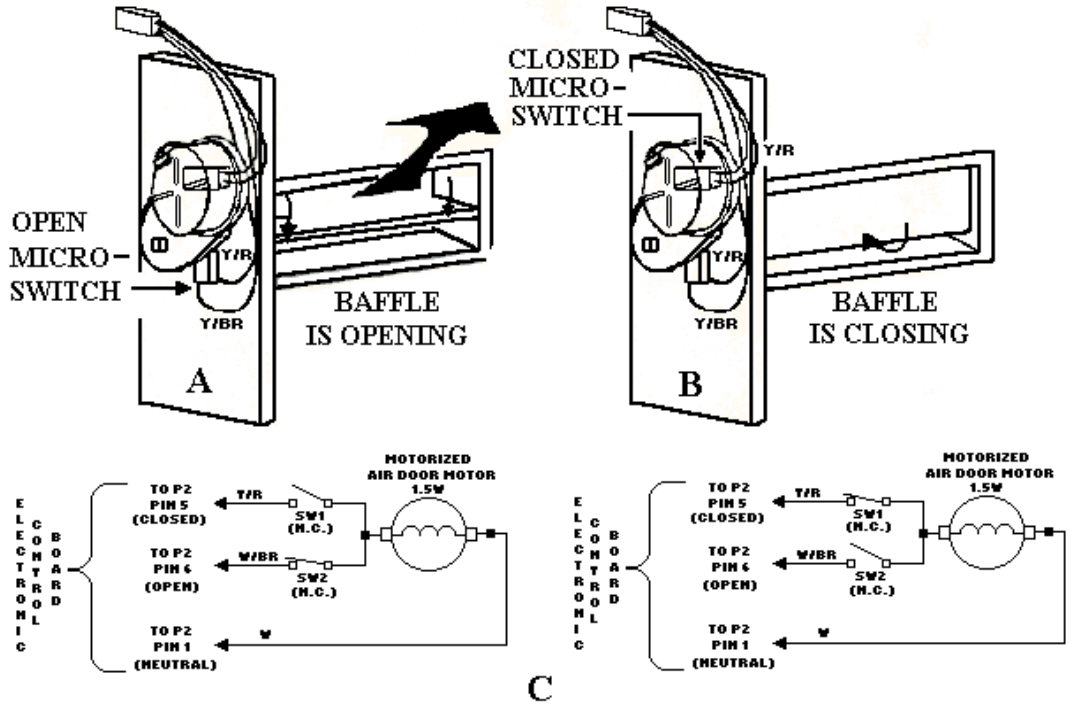


FIG. 31

CHECKING CONTINUITY

To make component or wiring measurements, set an ohmmeter's RANGE switch at R x 1 (unless directed otherwise.) For all "ground" measurements, set the RANGE switch to R x 10k. Insert the ohmmeter probes into the plug pins or against the component terminals as directed in the procedure.

COMPONENT	TEST PROCEDURE	METER READINGS
THERMISTOR	The thermistor can be tested by measuring the resistance between The GY wires at the thermistor connector or at the DC connector of the electronic control board. Making the test at the board is an easy way to check out the thermistor wiring harness. The "Meter Readings" show the thermistor resistance over a range of temperatures.	Temperature (*F) = Resistance(Ohms) 35*F = 8240 - 8926 65*F = 3628 - 3930 40*F = 7143 - 7739 70*F = 3189 - 3455 45*F = 6209 - 6727 75*F = 2810 - 3044 50*F = 5410 - 5860 80*F = 2480 - 2687 55*F = 4724 - 5118 85*F = 2194 - 2376 60*F = 4235 - 4479 90*F = 1945 - 2107
DEFROST HEATER	Disconnect the defrost heaters wire connector from the wiring harness. Touch the ohmmeter probes to the Connector pins.	The ohmmeter should indicate approximately 19 ohms to 20 ohms.
	Ground Test: Touch one probe to the chassis and the other to each connector pin.	Should indicate an "open' circuit for both pins. Any resistance indicates a short circuit.
BIMETAL	Make sure that the freezer is cold Enough to close the bimetal contacts. The bimetal contacts close At approximately 20*F +/- 8*F and open at approximately 50*F +/- 8*F.	
	Disconnect the 2-pin bimetal connector (PX and BR wires) from the wiring harness. Touch the ohmmeter Probes to the pins on the ends to the Wires.	Continuity if the evaporator temperature is below 12*F. No continuity if the evaporator temperature is above 56*F.
EVAPORATOR FAN MOTOR	Disconnect the wire terminals from the motor. Touch the ohmmeter probes to the motor terminals.	The ohmmeter should indicate between 40 ohms and 80 ohms.
	Ground Test: Touch one probe to the chassis and the other to each wiring connector.	Should indicate an "open" circuit. Any resistance indicates a short circuit

COMPONENT	TEST PROCEDURE	METER READING
MOTORIZED AIR DOOR	Disconnect the wire terminals from the motor and touch the ohmmeter probes to the connector pins as follows: 1. Y/BR and W wires 2. Y/ R and W wires	Approximately 8800 ohms between the W/BR and W wires OR the Y/R and W wires.
ICE MAKER FILL VALVE	Disconnect the solenoid wiring connector. Touch the ohmmeter probes to the solenoid terminals.	The ohmmeter should indicate approximately 270 ohms.
	`Ground Test:` Touch one probe to the chassis and the other to each solenoid terminal.	Should indicate an "open" circuit for both terminals. Any resistance indicates a short circuit.
CONDENSER FAN MOTOR	Disconnect the condenser fan motor connector from the wiring harness. Touch the ohmmeter probes to the motor wire connector pins.	The ohmmeter should indicate between 115 ohms and 450 ohms.
	`Ground Test:` Touch one probe to the chassis and the other to each motor wiring connector.	Should indicate an "open" circuit for each connector. Any resistance indicates a short circuit.
THERMOSTAT	Disconnect the thermostat wiring connector. Touch the ohmmeter probes to the thermostat connector pins.	With the thermostat turned fully clockwise, the ohmmeter should show "continuity." Fully counter clockwise rotation should show "no continuity."
COMPRESSOR	Touch the ohmmeter probes to the S and C connector pins.	The ohmmeter should indicate between 4 ohms and 22 ohms.
	Touch the ohmmeter probes to the M and C connector pins.	The ohmmeter should indicate between 1 ohm and 4 ohms.
	`Ground Test:` Touch one probe to the chassis and the other probe to the S, M and C connectors.	Each connector should indicate an "open" circuit. Any resistance indicates a shorted winding.
OVERLOAD PROTECTOR	Touch the ohmmeter probes to the two terminals.	The switch is normally closed (N.C.), so the ohmmeter should show continuity (0 ohms).

COMPONENT	TEST PROCEDURE	METER READING
PTC START RELAY	The PTC Start Relay cannot be tested. To determine its reliability, use the following procedure: 1. Measure the R and W wires at The compressor for 120 volts AC. 2. Check the overload relay to make sure there is continuity through It. (Use the previous test procedure.) 3. Test the run capacitor. (Use the following test procedure.) 4. Use a test cord and start the compressor. If it starts, and the preceding checks are okay, the relay Is defective.	
RUN CAPACITOR	Disconnect the wires and touch the ohmmeter probes to the two terminals.	The ohmmeter reading should peak and then drop. Reverse the test probes on the terminals and the Same results should occur.
TIMER **NOTE:** The production timer (Paragon) has a 10 hour cumulative run time with a 21 minute Defrost duration. The service replacement timer (Mallory) has an 8 hour cumulative run time with a 21 minute defrost duration.	To test the timer, perform the following steps: 1. Use a screwdriver and manually turn the time clockwise until you hear a "click." This will place the timer in the "defrost" position if the refrigerator was running, the compressor and fans will turn off. 2. Unplug the unit. 3. Disconnect the 4 wire connector from the timer. 4. Set the ohmmeter to the Rx10k. Checking the Motor: 1a. Paragon Timer: The motor windings have a capacitor connected In series. Use the same procedure that you would use for checking a capacitor. Momentarily touch the probes to terminals PK and R, then reverse the probes and touch the terminals again.	Paragon Timer - When you first touch the terminals the meter should momentarily deflect and show continuity.

COMPONENT	TEST PROCEDURE	METER READING
TIMER (Continued)	1b. Mallory Timer: Touch the meter probes to timer terminals PK and R (motor windings).	Mallory Timer - the meter should read 6000 ohms to 9000 ohms.
	The Defrost Mode 1. Set the ohmmeter to Rx1 scale and zero the meter. 2. Touch the meter probes to timer terminals PK and BK (switch contacts.) 3. Touch the meter probes terminals BK and OR (switch contacts.)	 The meter should read " zero" resistance (contacts closed.) If it reads anything else, replace the timer. The meter should read "infinity" (contacts open.) If it reads anything else, replace the timer.
	Cooling Mode 1. Use a screwdriver and Manually advance the Time 1/4 turn. 2. Touch the meter probes to timer terminals BK and OR (switch contacts.) 3. Touch the meter probe to timer terminals PK and BK (switch contacts.)	 The meter should read "zero" resistance (contacts closed.) If it reads anything else, replace the timer. The meter should read "infinity" (contacts open.) If it reads anything else replace the timer.

R134a REFRIGERANT
SERVICE INFORMATION

This product uses R134a refrigerant. This refrigerant requires synthetic Ester Oil in the compressor. This cooling system does not tolerate contamination from any of the following:

- Other Refrigerants
- Moisture
- Petroleum-based Lubricants
- Silicone Lubricants
- Cleaning Compounds
- Rust Inhibitors
- Leak Detection Dyes
- Any Other Type of Additive

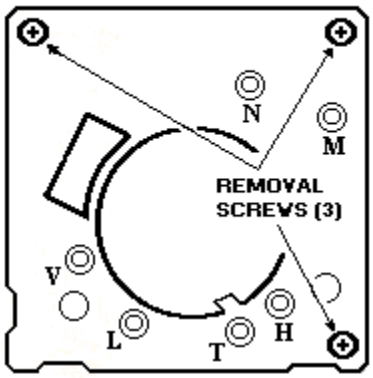
As a result the following precautions should be observed

- Use equipment dedicated to R134a sealed system only.
- Do not leave a replacement compressor open to the atmosphere for more than 10 minutes.
- Always replace the filter-drier when performing any repairs on the sealed system.
- **Use only 134a refrigerant for back flushing and sweep procedures.**
- If the rubber plugs on the service replacement compressor appear to have been tampered with or removed, **DO NOT USE THE COMPRESSOR**. Get another one.
- The filter-drier MUST be cut from the sealed system. Never un-braze the filter-drier from system tubing. Applying heat will drive moisture back into the sealed system.

HEALTH AND SAFETY HANDLING	**134a**
Allowable Overall Exposure Limit	1,000 ppm
Vapor Exposure to Skin	No Effect
Liquid Exposure to Skin	Can Cause Frostbite
Vapor Exposure to Eyes	Very Slight Irritation
Liquid Exposure to Eyes	Can Cause Frostbite
Above Minimum Exposure Limit	Can Cause Asphyxiation. Tachycardia and Cardiac arrhythmias.
Safety and Handling	Wear appropriate Skin and Eye protection. Use adequate Ventilation.
Spill Management	Remove or Extinguish Ignition or Combustion Sources. Evacuate or Ventilate Area.
Fire and Explosion Hazards	May Decompose if contact with Flames and Heating elements. Container May Explode IF Heated Due to Pressure Rise. Combustion Products are Toxic.
Storage Conditions	The Procedures/Rules for R12 also Apply to 134a.
Disposal Procedure	Reclaim

MODULAR ICE MAKER SERVICE SHEET

MODULE TEST POINTS



MODULE OHMMETER CHECKS (NO POWER TO ICEMAKER & EJECTOR BLADES IN PARK)			
TEST POINTS	COMPONENTS	MODULE POSITION	OHMS
L-H	MOLD HEATER	ATTACHED TO SUPPORT	72
L-M	MOTOR	DISCONNECT FROM SUPPORT	8800

SPECIFICATIONS

Mold Heater	185 watts. 72 ohms
Thermostat	close 17°F ± 3°
(Bimetal)	open 32°F ± 3°
Water fill	140cc, 7.5 sec.
Motor	1.5 watts, 8800 ohms
Module	stamped circuit. plug in connectors
Cycle	one revolution (Ejects & water fill)

For 120 models

MODULE VOLTAGE CHECKS WITH METER OR TEST LIGHT (POWER TO ICEMAKER)			
TEST POINTS	COMPONENTS	LINE VOLTAGE	0 VOLTS
L-N	MODULE	POWER OK	NO POWER
T-H	BIMETAL	OPEN	CLOSED
L-H	HEATER	ON	OFF
L-M	MOTOR	ON	OFF
N-V	WATER VALVE	ON	OFF

Service Procedures

Cover-
Pull water adjustment knob first and snap off cover index knob and reinstall in same position for same water fill.

Module motor and support assembly-
Insert Phillips driver in access ports in module-loosen both screws – disconnect shut-off arm –pull mold from support assembly.

Shut-off arm-
Pull out from support – reinstall to full depth.

Mold and heater-
Remove module motor and support assembly.

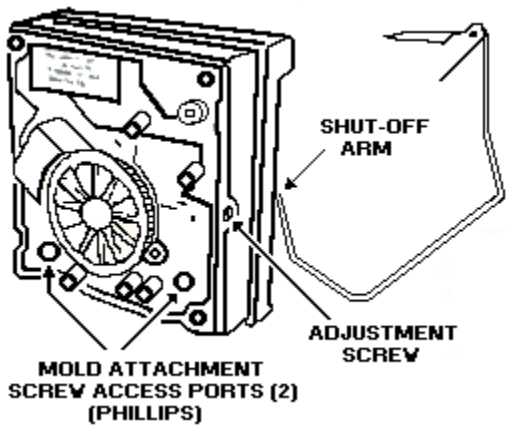
Bimetal-
Remove module motor and support assembly – pull out retaining clips with bimetal.

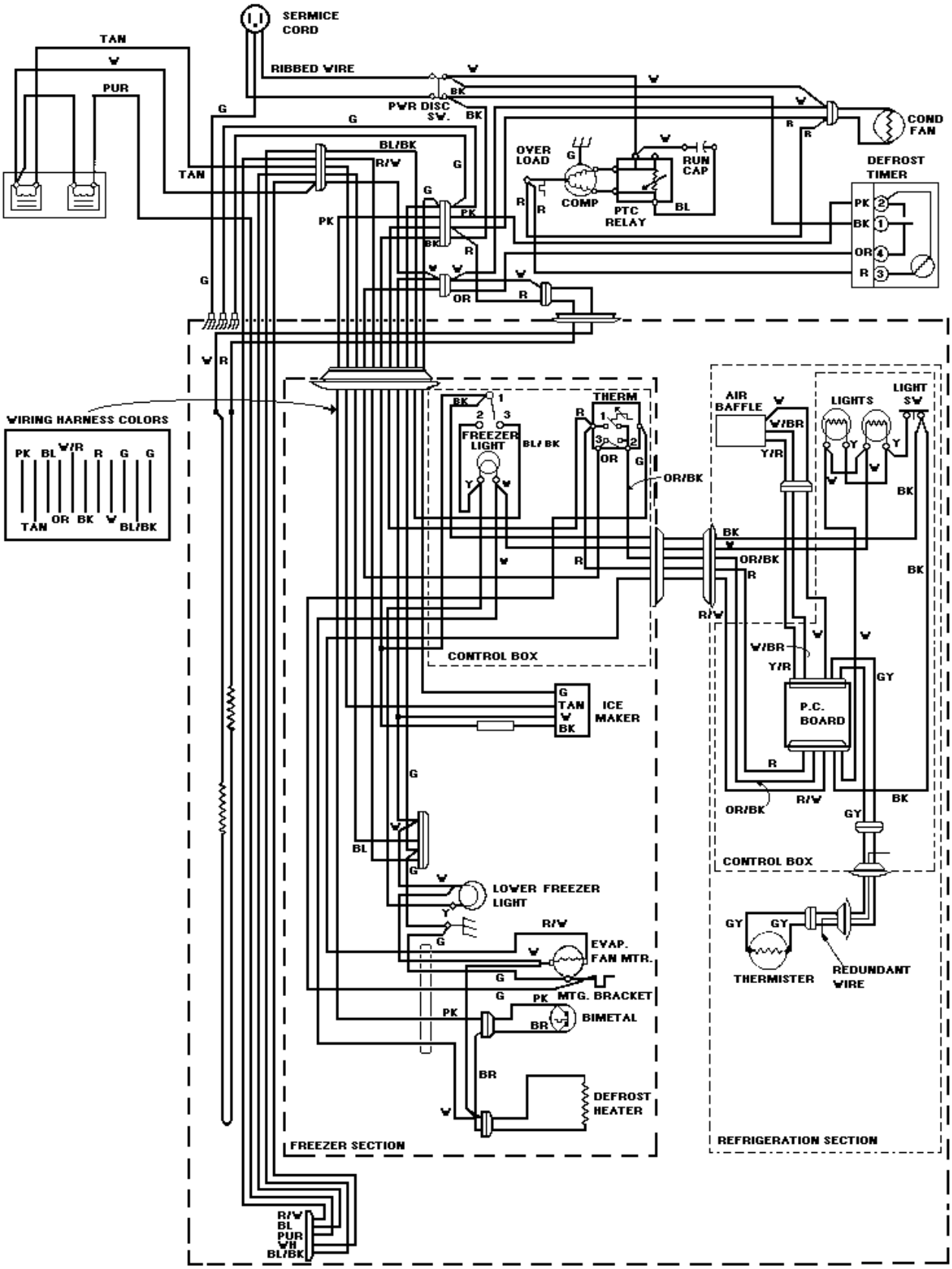
Fill cup-
Remove module motor and support assembly – remove ejector blades and shut-off arm – pull fill cup from mold.

Ejector blades or stripper-
Remove module motor and support assembly. When re-installing ejector blades, realign "D" coupling with module cam.

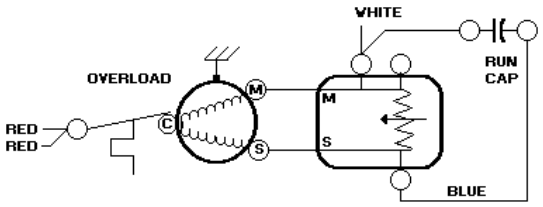
Water Level adjustment

Turning the screw clockwise decreases the water fill.
½ turn equals 20cc or 12 sec.
Full turn equals 40cc or 24 sec.
Maximum adjustment is one full turn either direction. Additional rotation could damage Module.

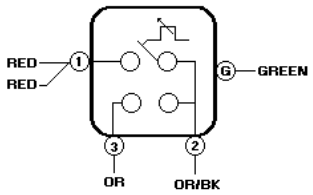



SERMICE CORD
TAN
PUR
RIBBED WIRE
PWR DISC SW.
BK
G
BL/BK
R/W
TAN
PK
OR
R
OVER LOAD
COMP
PTC RELAY
RUN CAP
BL
COND FAN
DEFROST TIMER
PK
BK
OR
R
WIRING HARNESS COLORS
PK BL W/R R G G
TAN OR BK W BL/BK
CONTROL BOX
FREEZER LIGHT
BL/ BK
THERM
OR/BK
AIR BAFFLE
W/BR
Y/R
LIGHTS
LIGHT SW
Y
BK
GY
P.C. BOARD
ICE MAKER
G
TAN
W
BK
LOWER FREEZER LIGHT
EVAP. FAN MTR.
MTG. BRACKET
BIMETAL
BR
DEFROST HEATER
THERMISTER
REDUNDANT WIRE
FREEZER SECTION
REFRIGERATION SECTION
R/W
BL
PUR
W
BL/BK

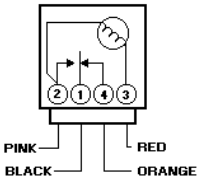
REFRIGERATOR COMPONENTS



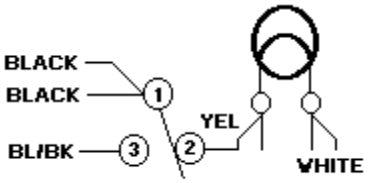
COMPRESSOR PTC RELAY



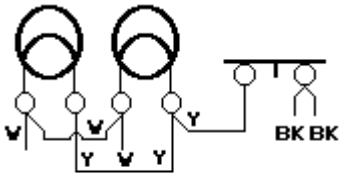
THERMOSTAT



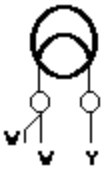
DEFROST TIMER



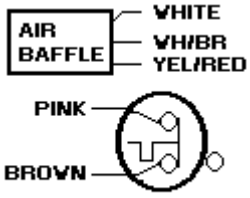
FREEZER LIGHT



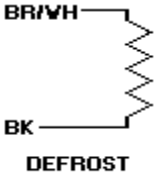
LIGHTS LIGHT SWITCH



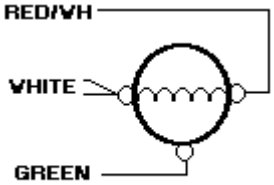
LOWER FREEZER LIGHT



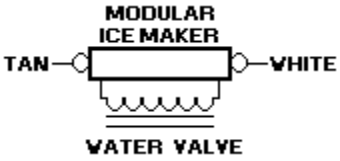
BIMETAL



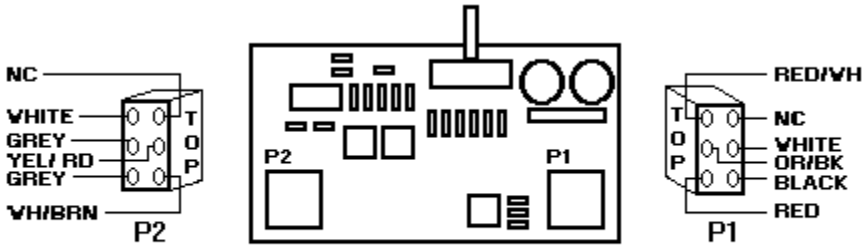
DEFROST HEATER



EVAP. FAN MOTOR

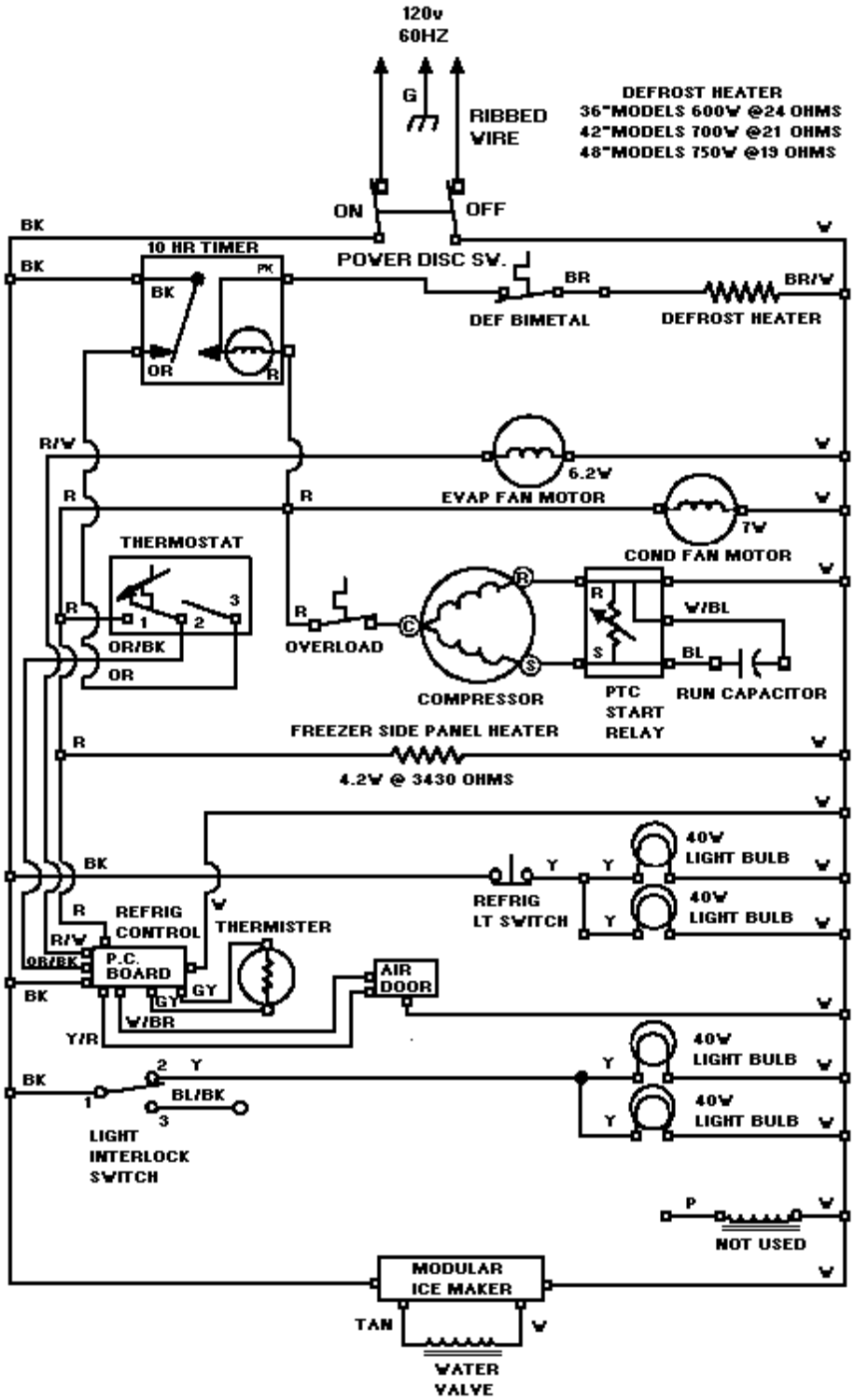


WATER VALVE



BK --- BLACK	BL/OR --- BLUE/ORANGE TRACER
BL --- BLUE	W/BL ----- WHITE/BLUE TRACER
BR --- BROWN	W/BR ---- WHITE/BROWN TRACER
GY --- GRAY	Y/BK ----- YELLOW/BLACK TRACER
OR --- ORANGE	Y/O ------ YELLOW/ORANGE TRACER
PK --- PINK	Y/R ------ YELLOW/RED TRACER
PUR - PURPLE	BR/W ---- BROWN/WHITE TRACER
R ----- RED	OR/BK -- ORANGE/BLACK TRACER
TAN - TAN	R/W ------ RED/WHITE TRACER
W ----- WHITE	G/Y ------ GRAY/WHITE TRACER
Y ----- YELLOW	G -------- GREEN OR GREEN/YELLOW TRACER
	BK/Y ---- BLACK/YELLOW TRACER
	BLBK --- BLUE/BLACK TRACER

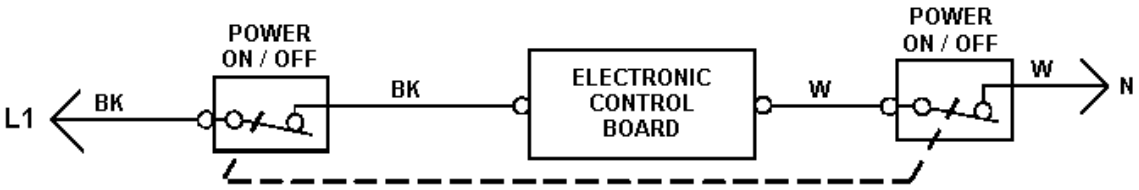
WIRING DIAGRAM

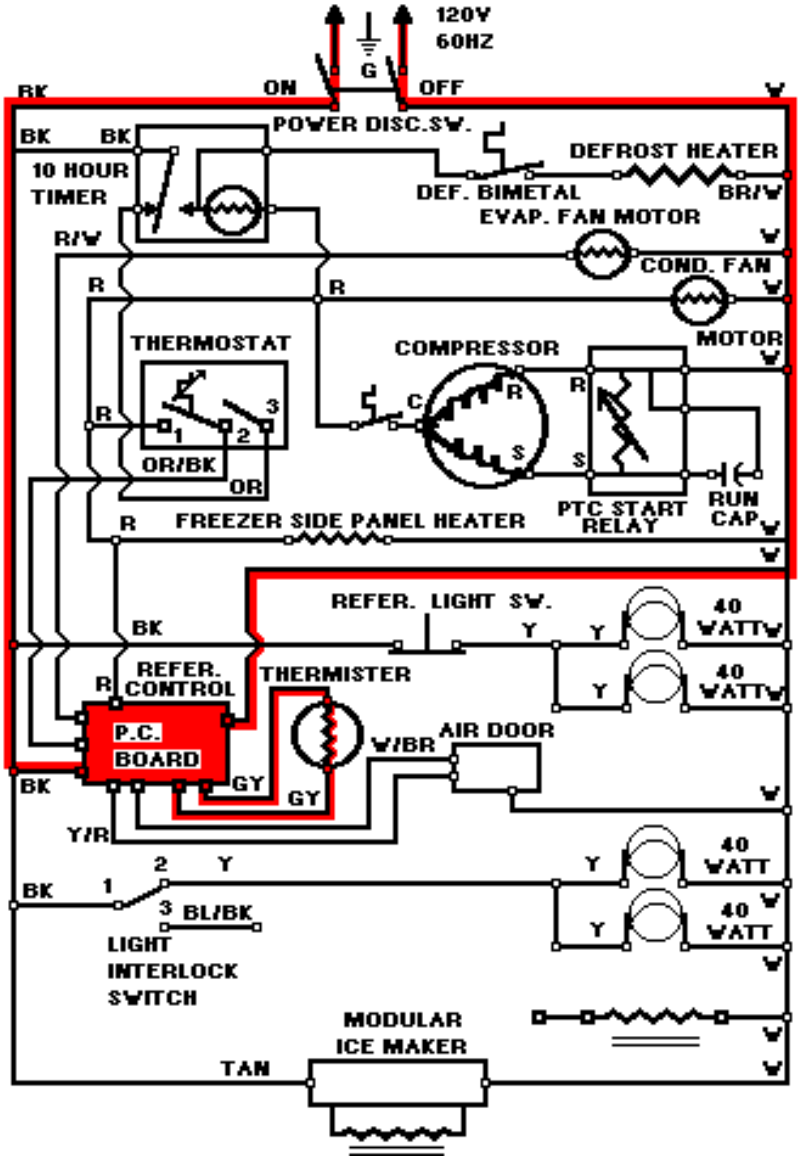


LINE CIRCUITS (# 1)

The Cooling Cycle

1. **Unit Plugged in, Electronic Control Board Energized (Also During Defrost).**

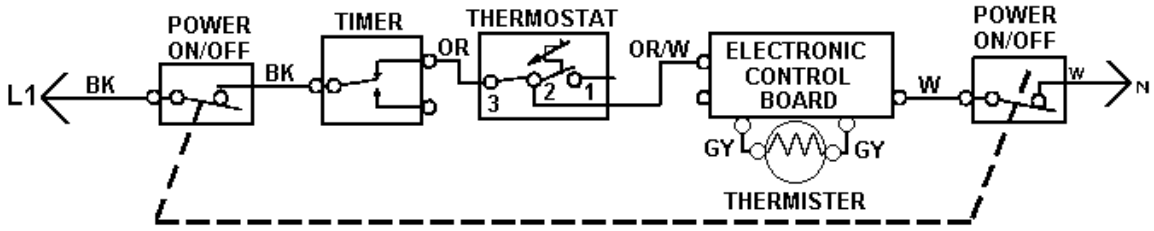


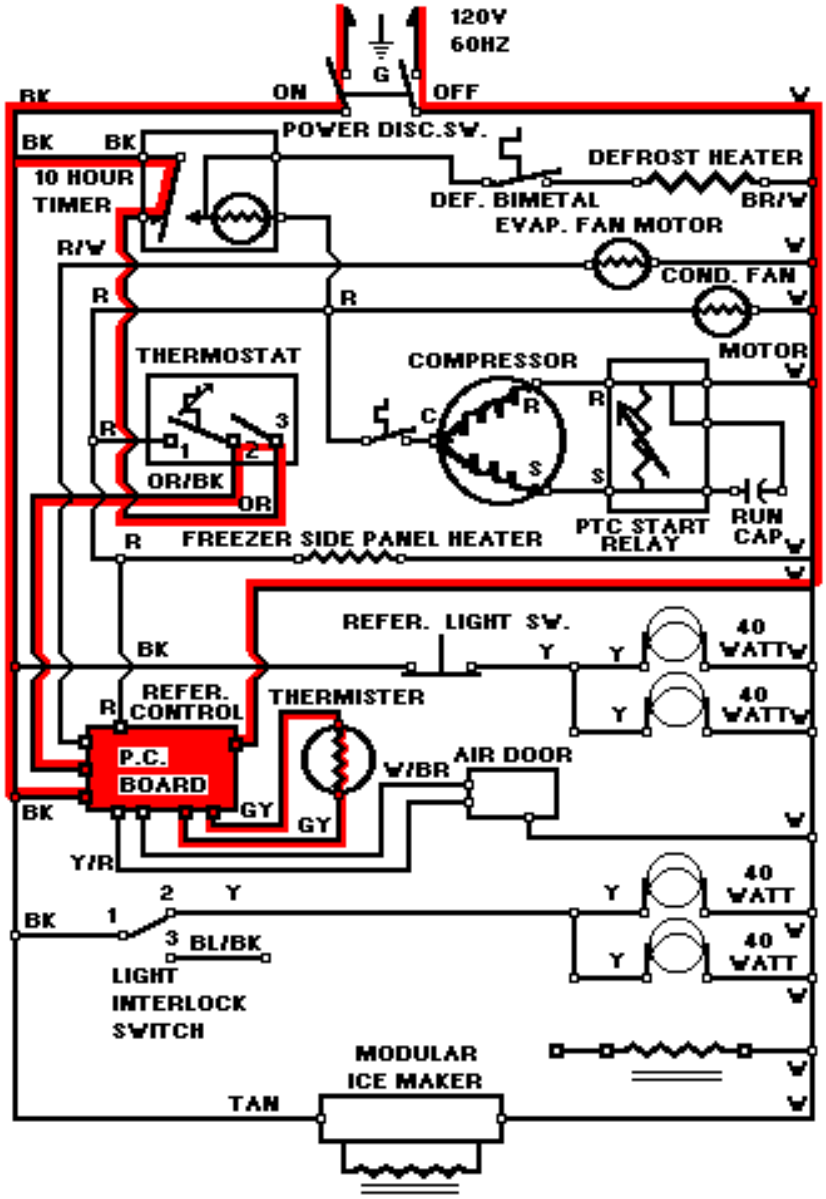


LINE CIRCUITS (# 2)

The Cooling Cycle

2. Freezer Thermostat Turned On. But Satisfied -- Low Voltage To Thermister

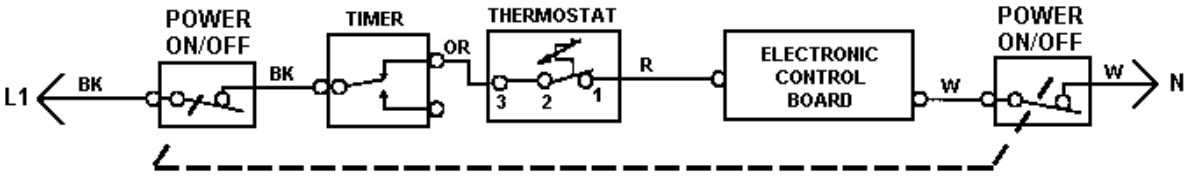




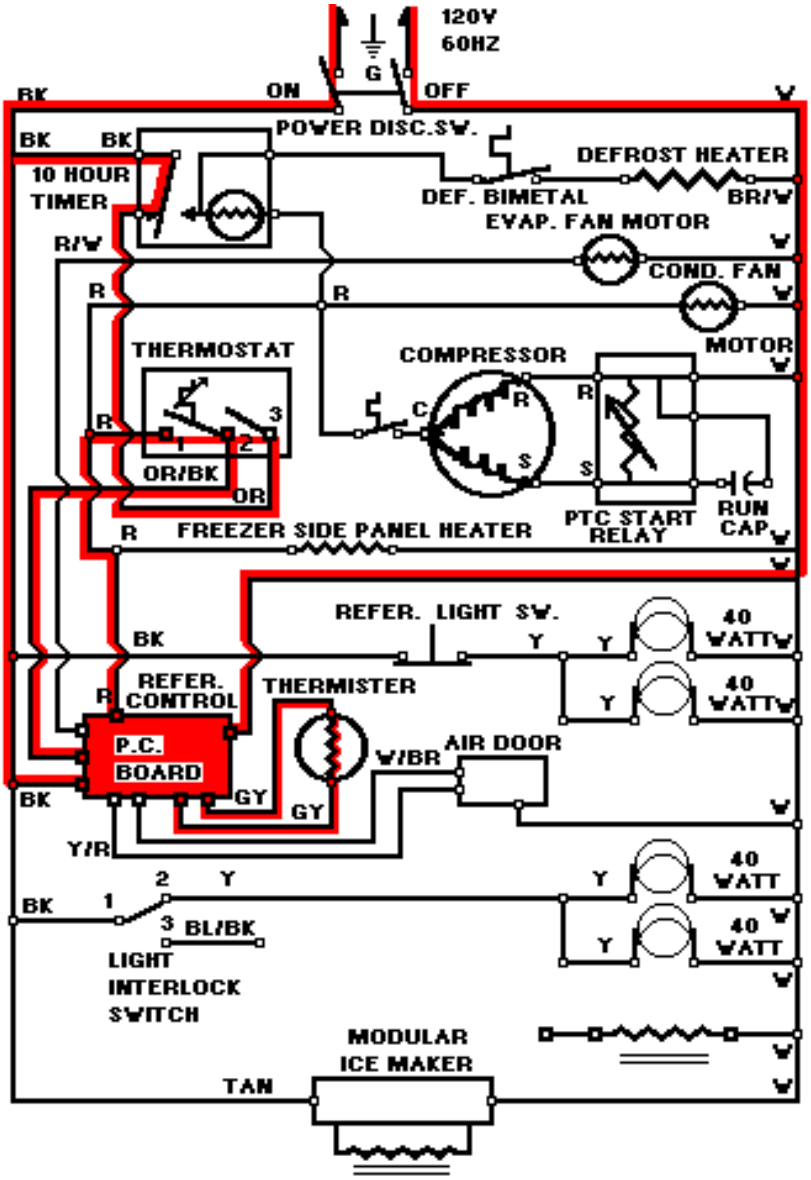
LINE CIRCUITS (# 3)

The Cooling Cycle

3. Freezer Thermostat Turned On And Calling For Cooling –



Compressor On – Input signal to Electronic Control Board.

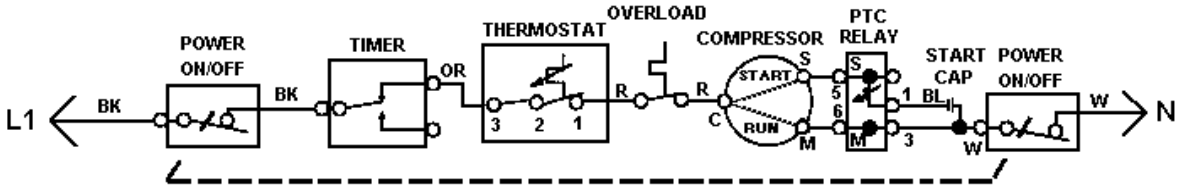


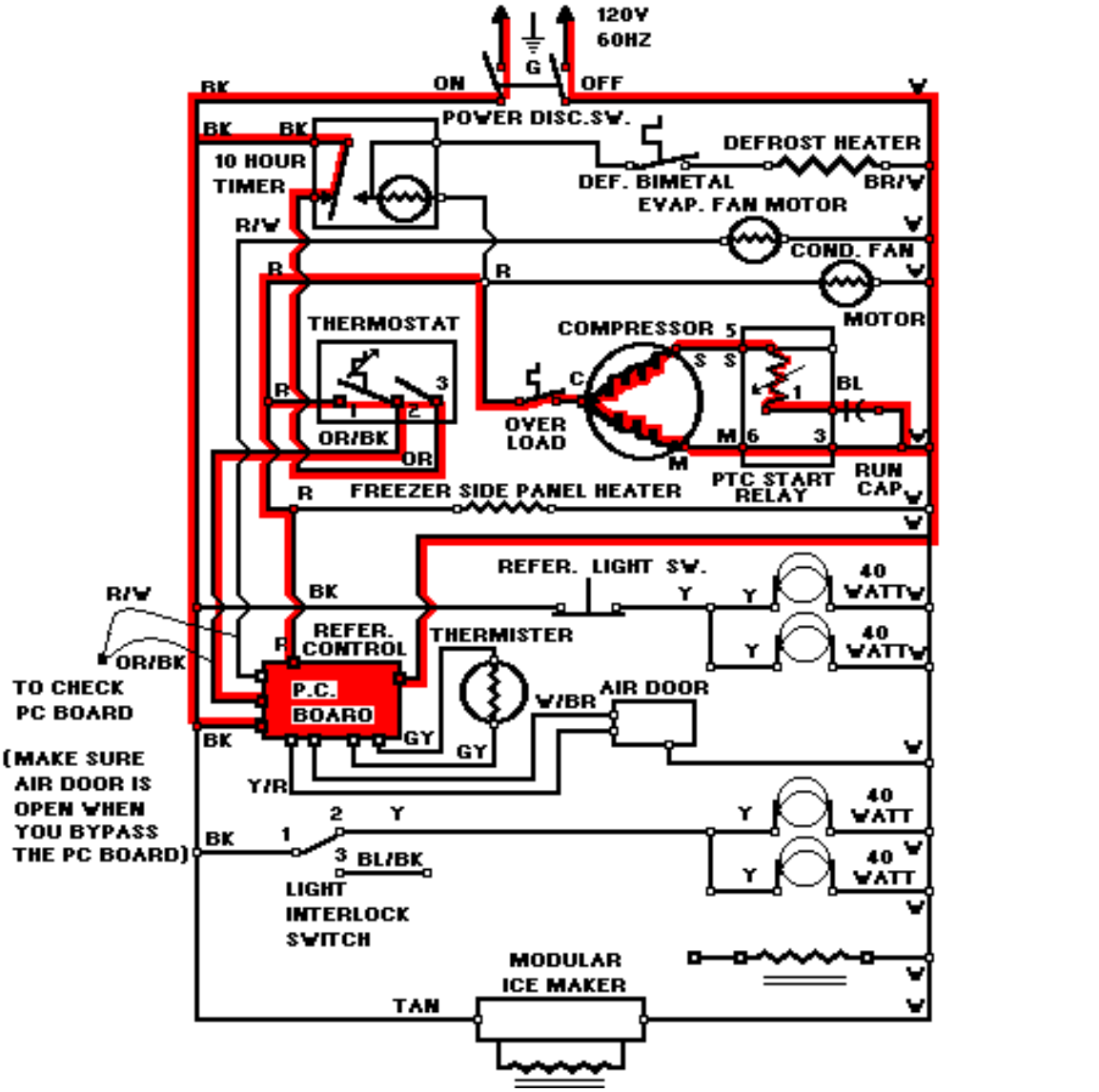
WATER VALVE

LINE CIRCUITS (# 4)

The Cooling Cycle

4. Freezer Thermostat Calling For Cooling-- Compressor Circuit At Instant Start

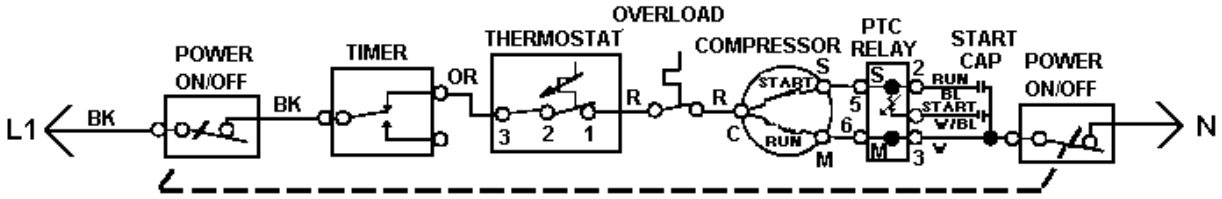


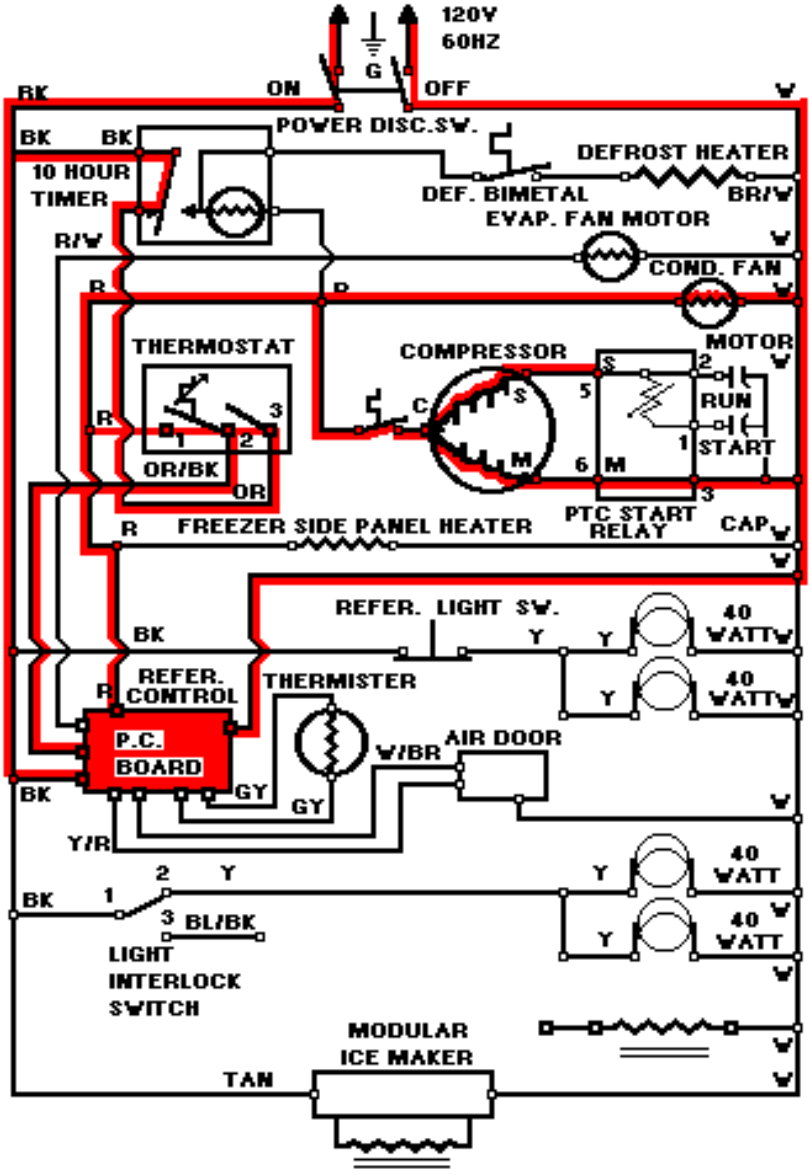


LINE CIRCUIT (# 5)

The Cooling Cycle

5. Freezer Thermostat Turned On And Calling For Cooling Compressor Circuit During Run

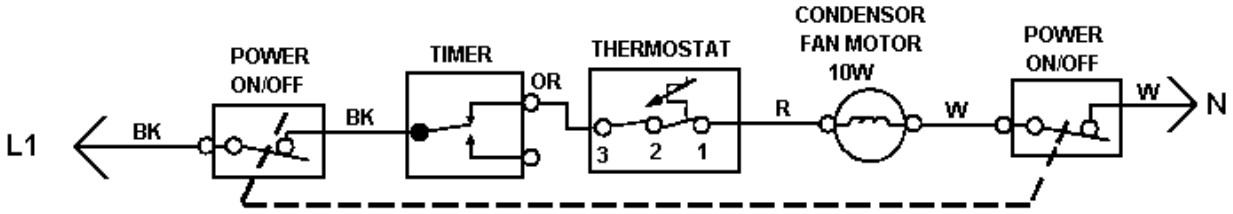


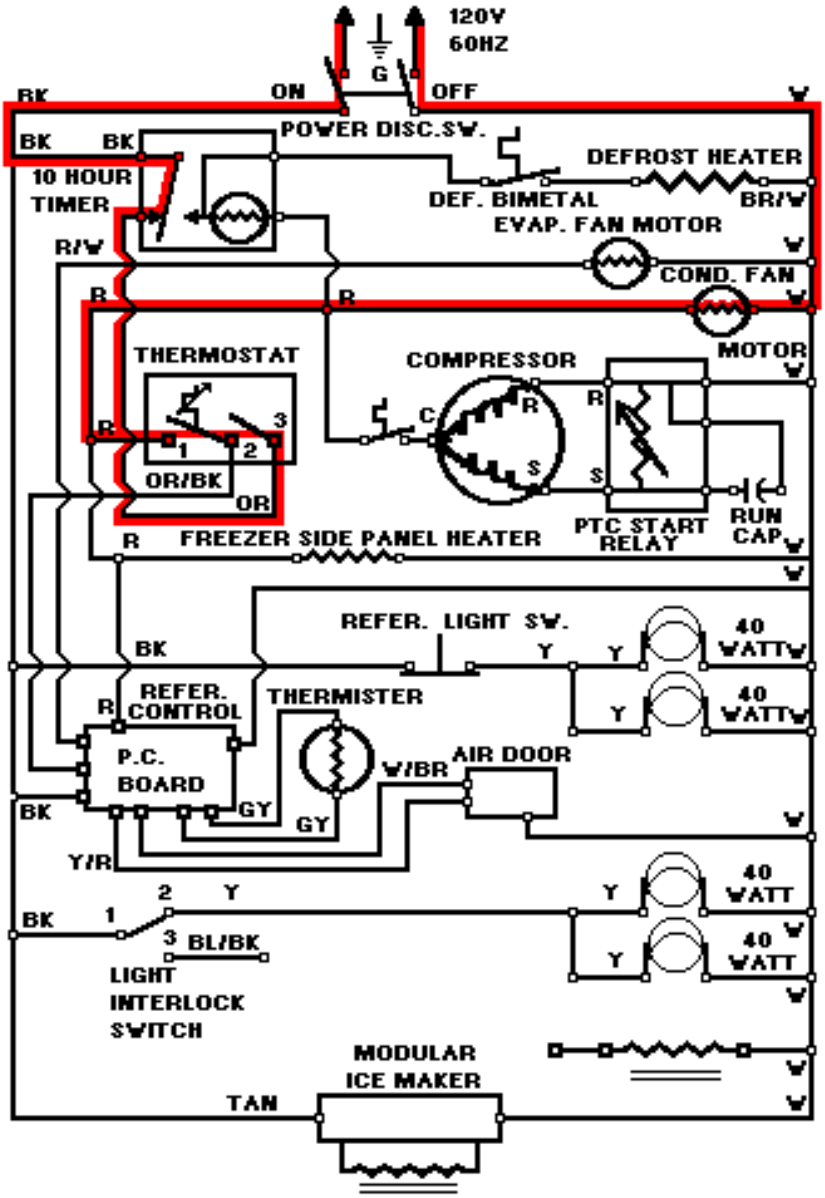


LINE CIRCUITS (# 6)

The Cooling Cycle

6. Freezer Thermostat Calling For Cooling – Condenser Fan Motor Circuit



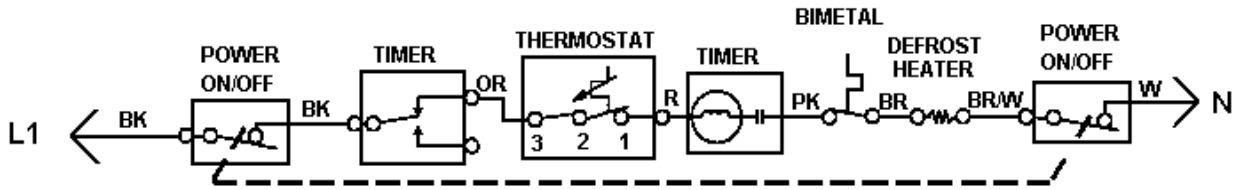


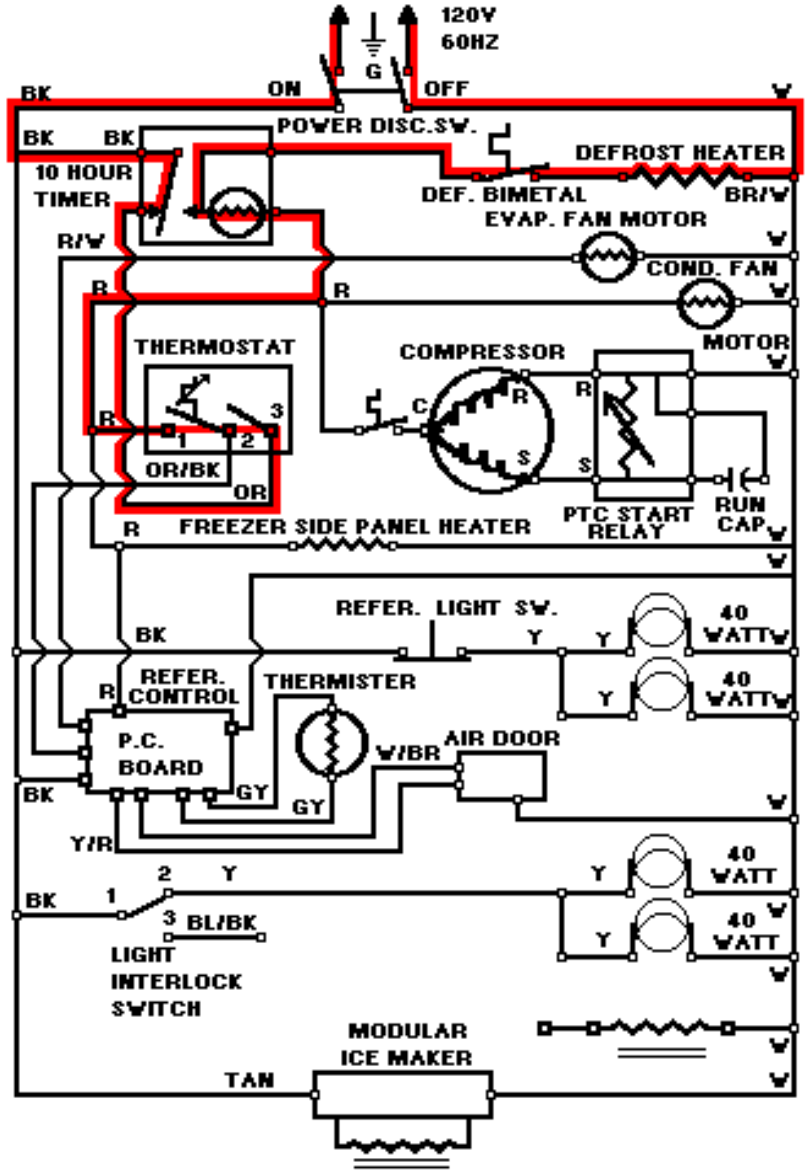
WATER VALVE

LINE CIRCUITS (# 7)

The Cooling Cycle

7. Freezer Thermostat Turned On And Calling For Cooling -- Defrost Timer Running



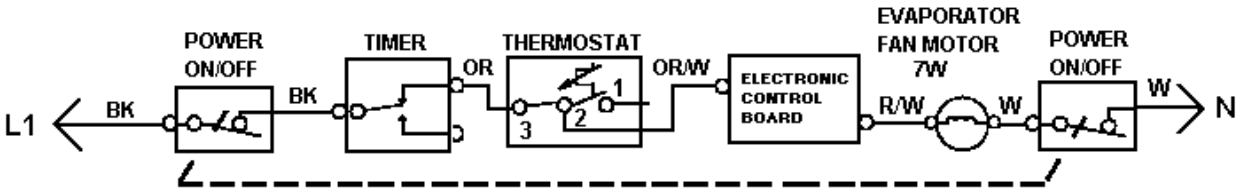


WATER VALVE

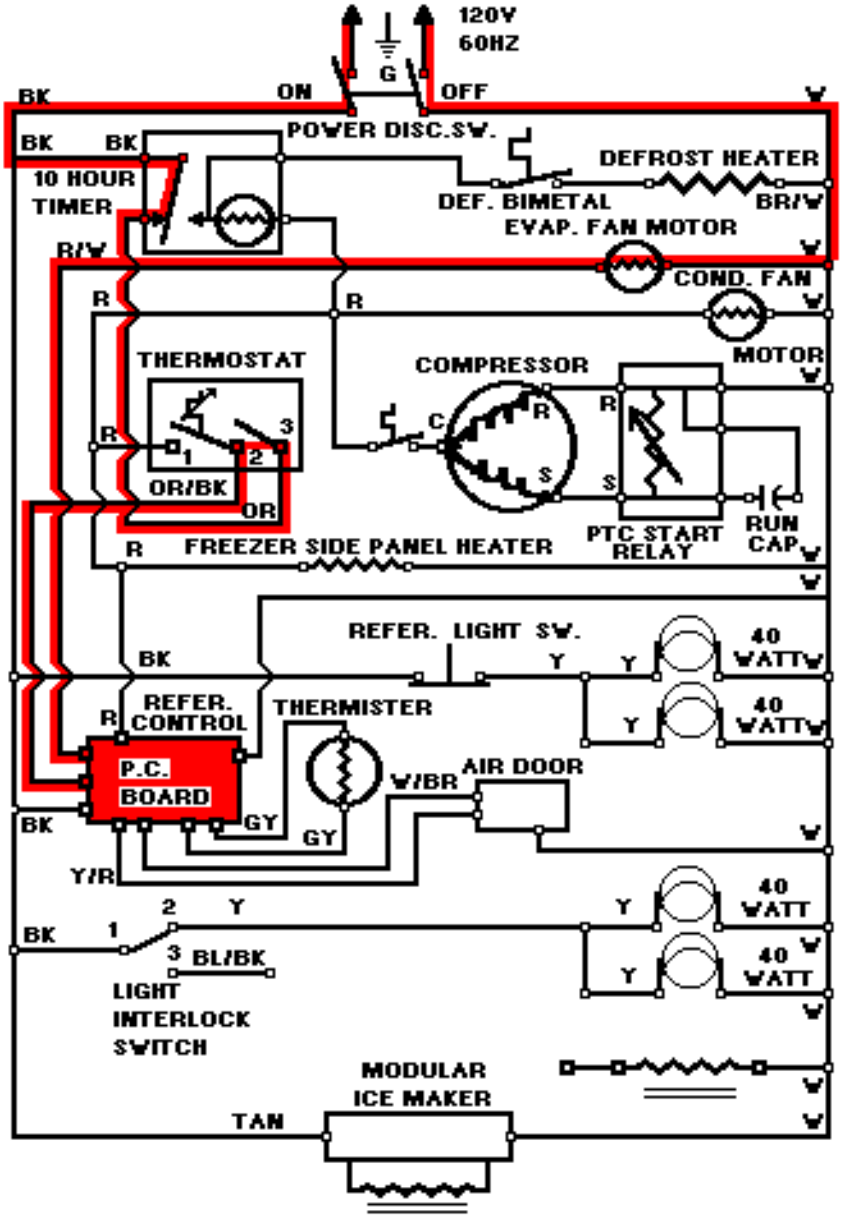
LINE CIRCUITS (# 8)

The Cooling Cycle

8. Freezer Thermostat Turned On And Calling For Cooling -- Evaporator Fan Motor



Circuit

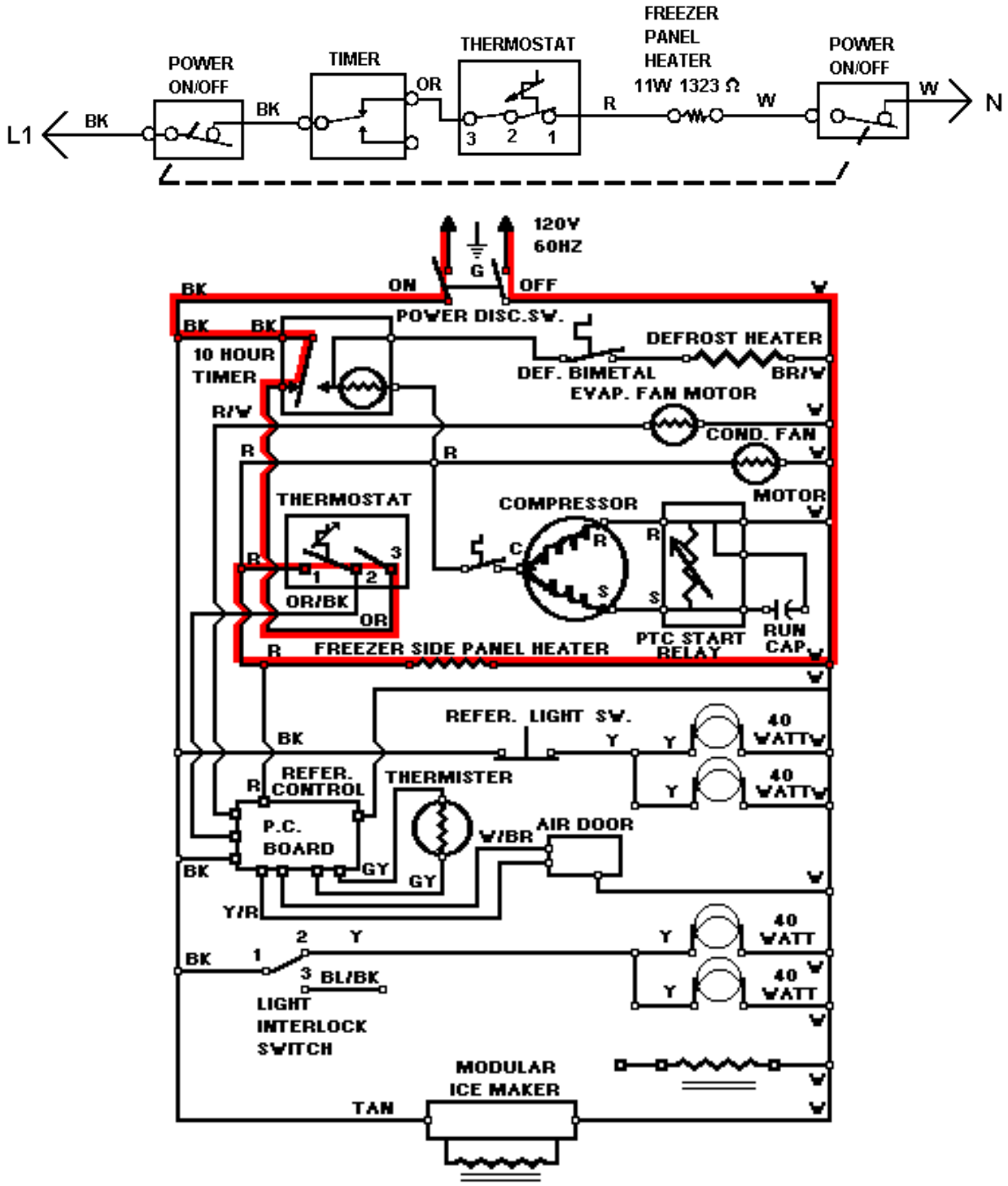


WATER VALVE

LINE CIRCUITS (# 9)

The Cooling Cycle

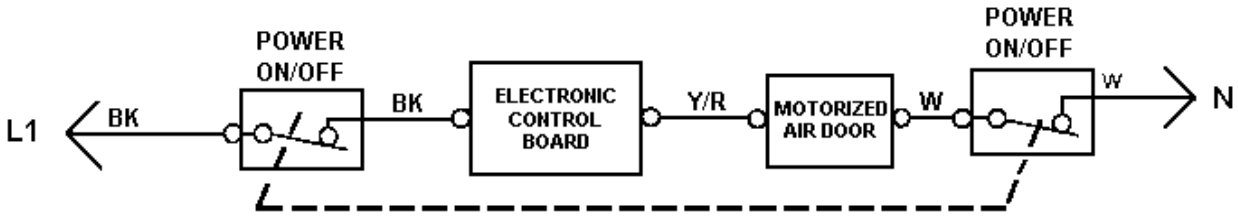
9. Freezer Thermostat Calling For Cooling -- Freezer Side Panel Heater Circuit

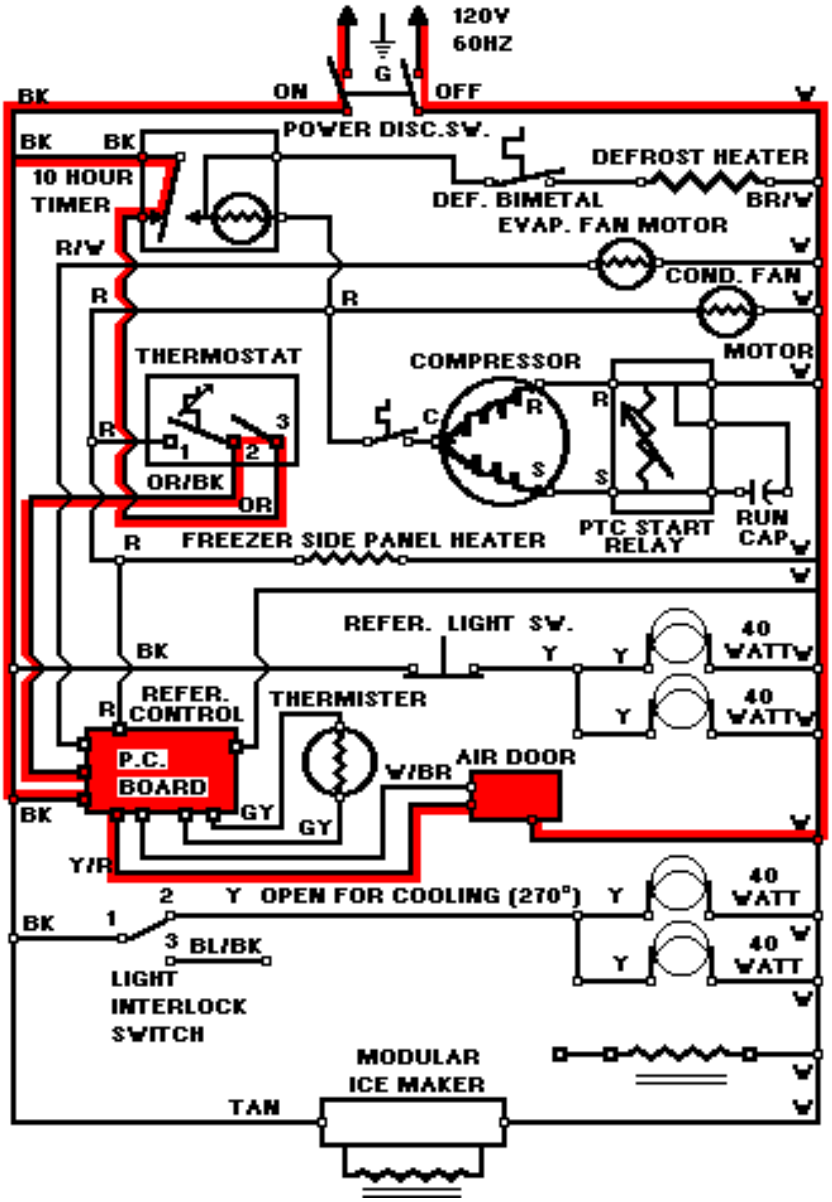


LINE CIRCUITS (# 10)

The Cooling Cycle

10. Refrigerator Control Calling For Cooling -- Motorized Air Door Opening

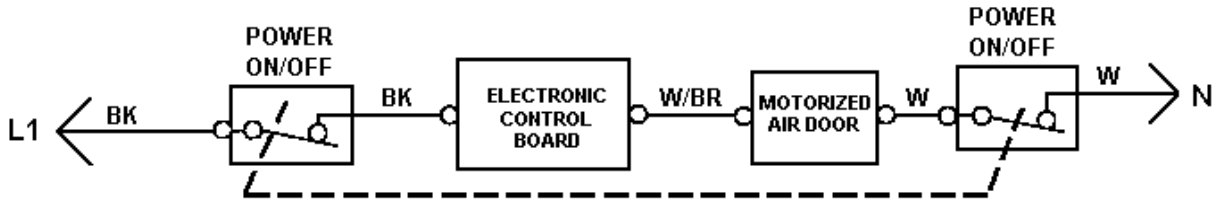


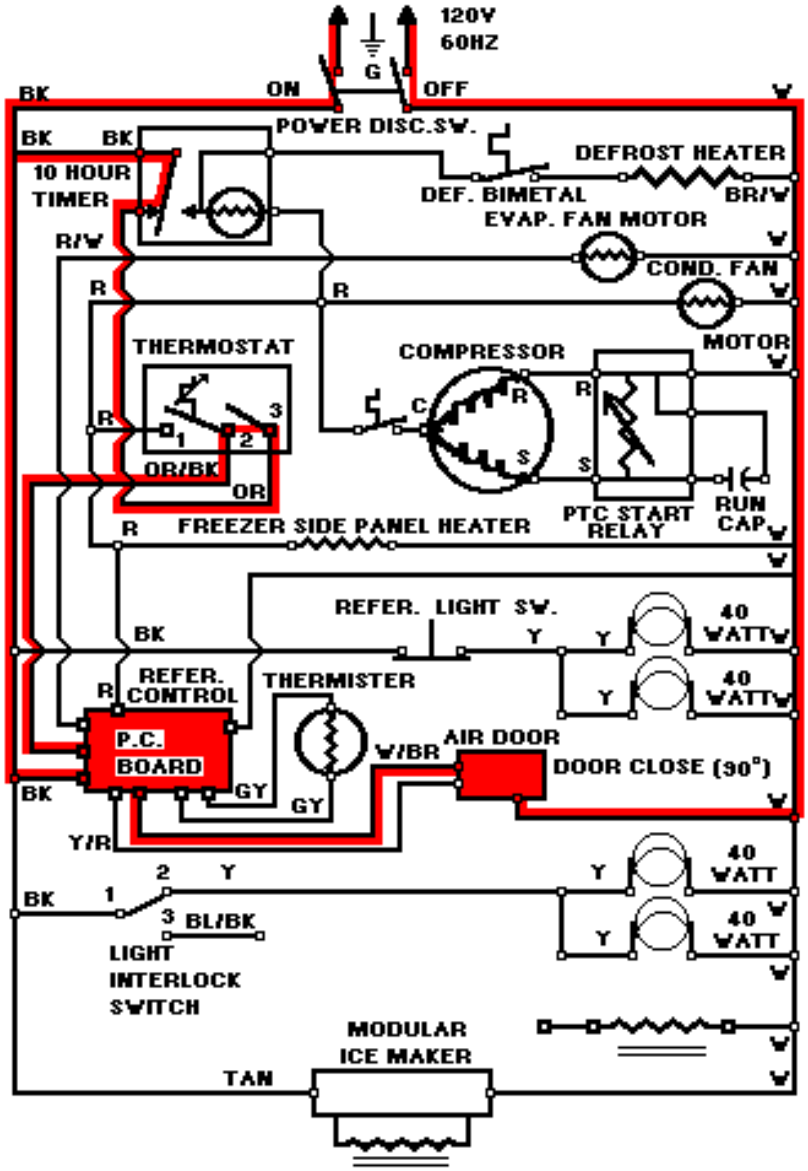


LINE CIRCUITS (# 11)

The Cooling Cycle

11. Refrigerator Control Satisfied -- Motorized Air Door Closing

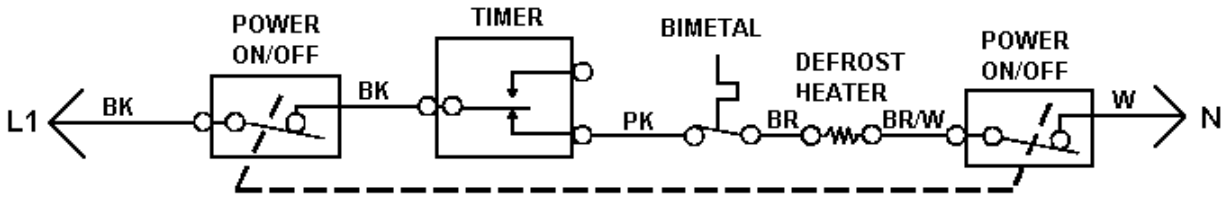


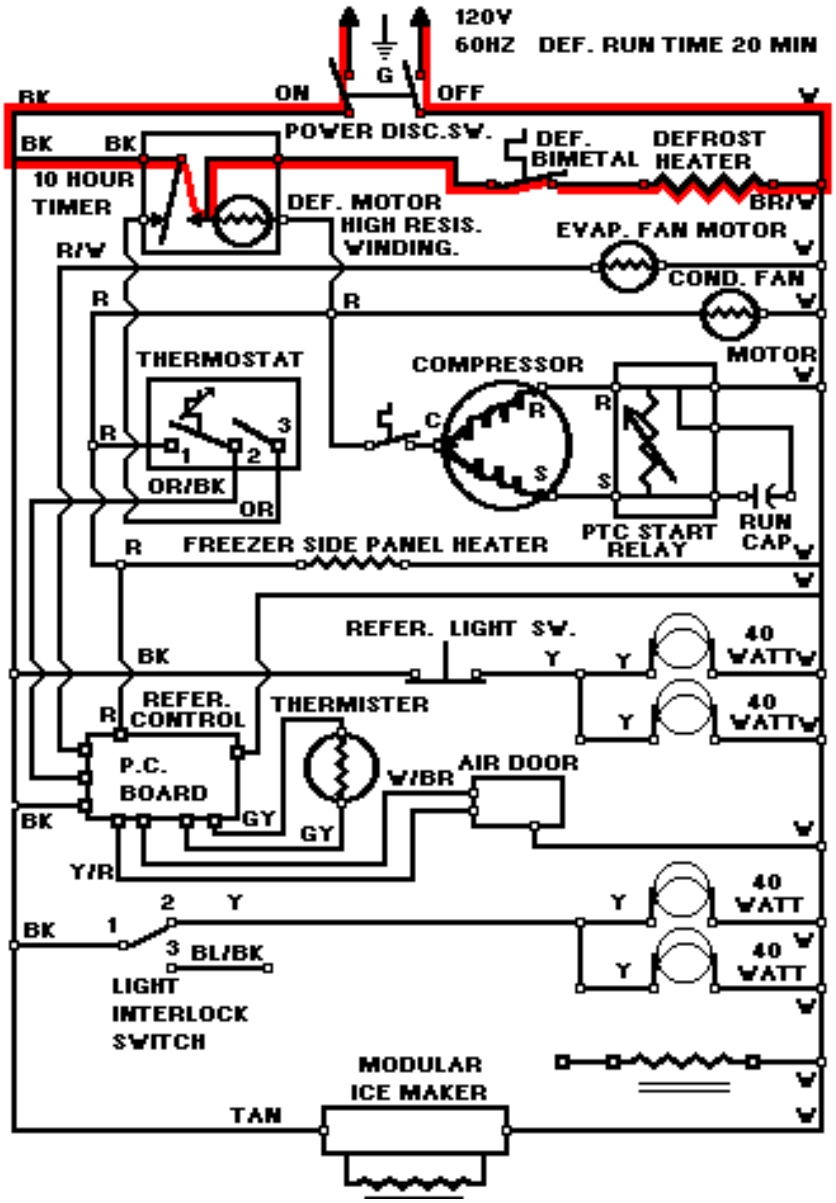


WATER VALVE

LINE CIRCUITS (# 12)

The Defrost Cycle
12 Defrost Heater Circuit



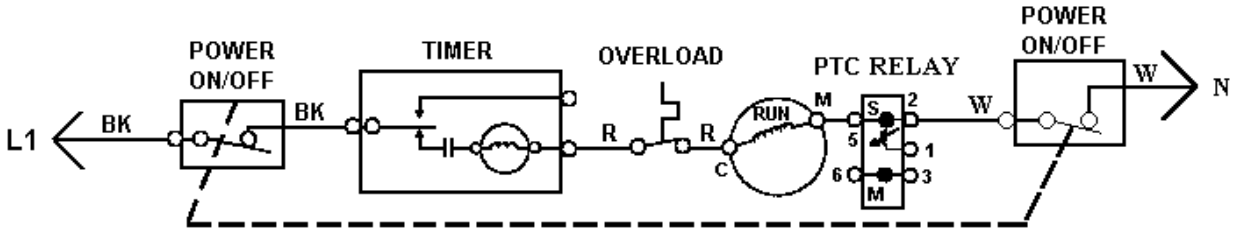


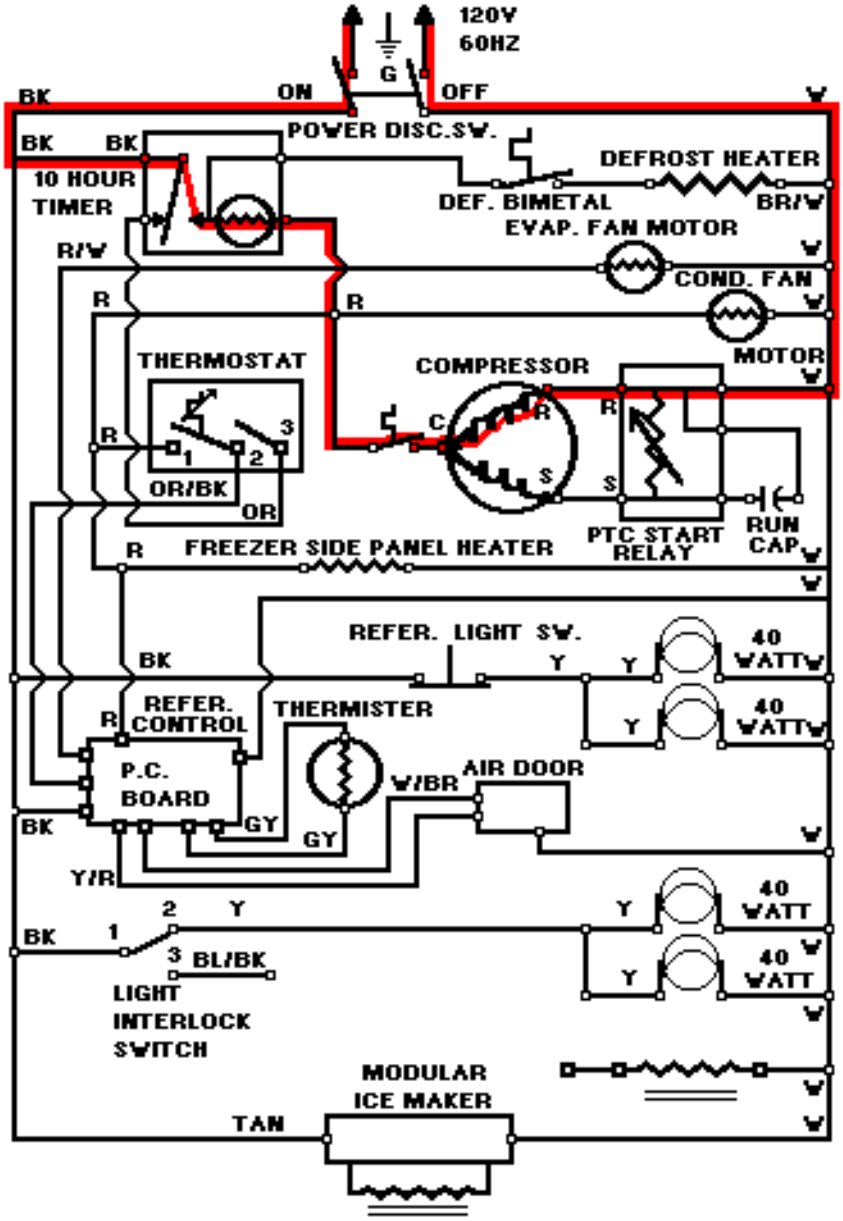
WATER VALVE

LINE CIRCUITS (# 13)

The Defrost Cycle

13. Defrost Timer Motor Running

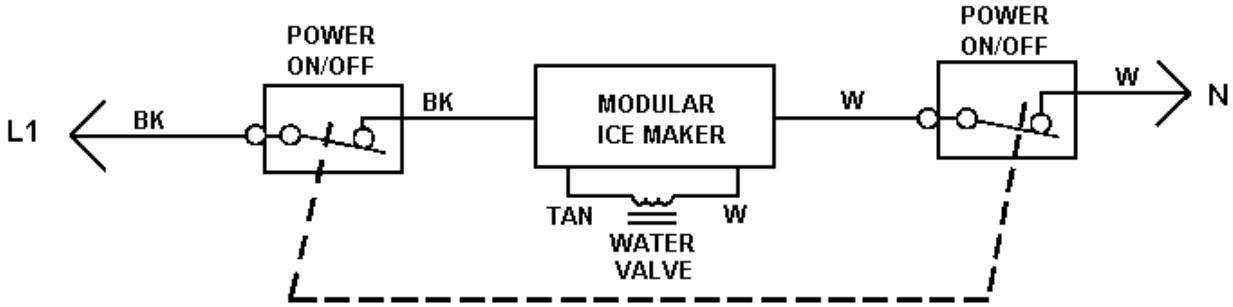


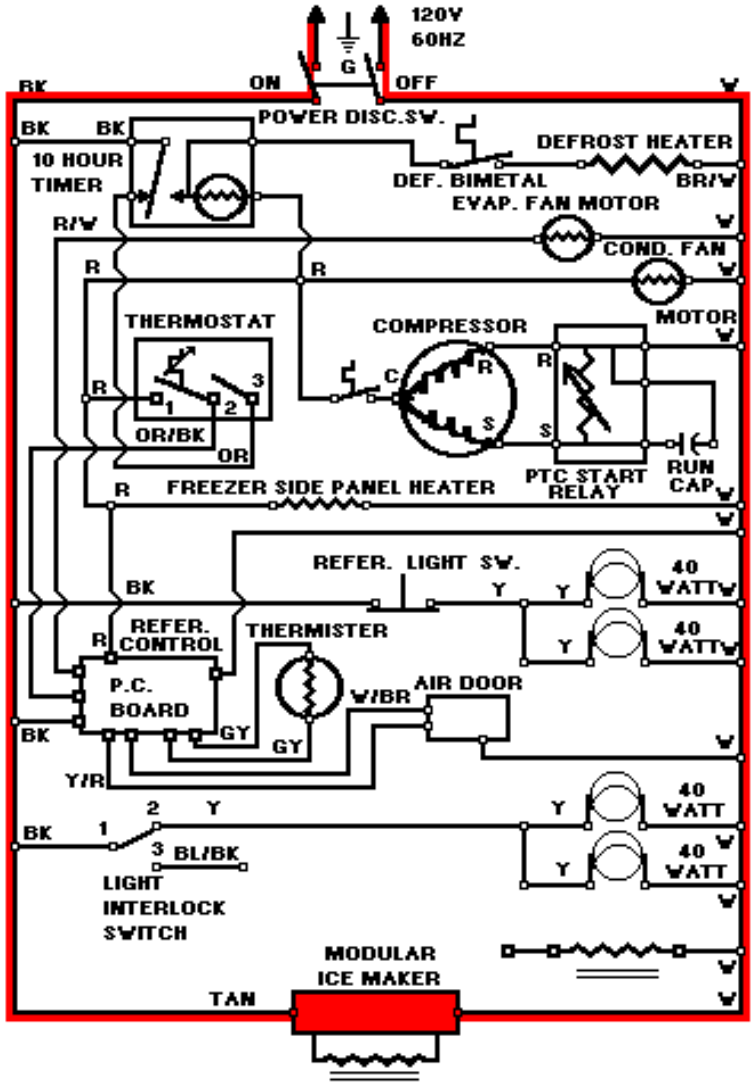


LINE CIRCUITS (#14)

The Dispenser Circuit

14. Modular Ice Maker Circuit



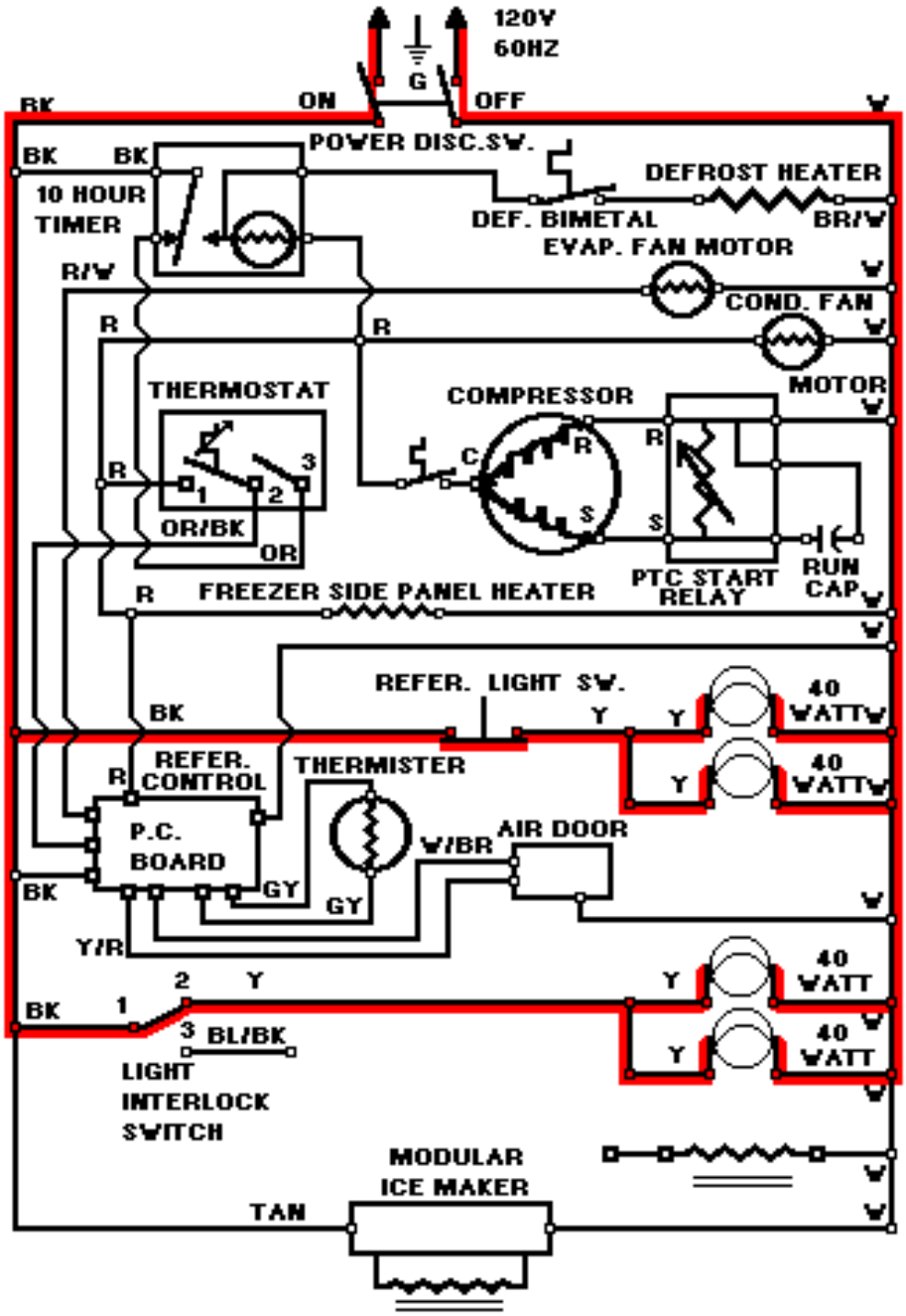


WATER VALVE

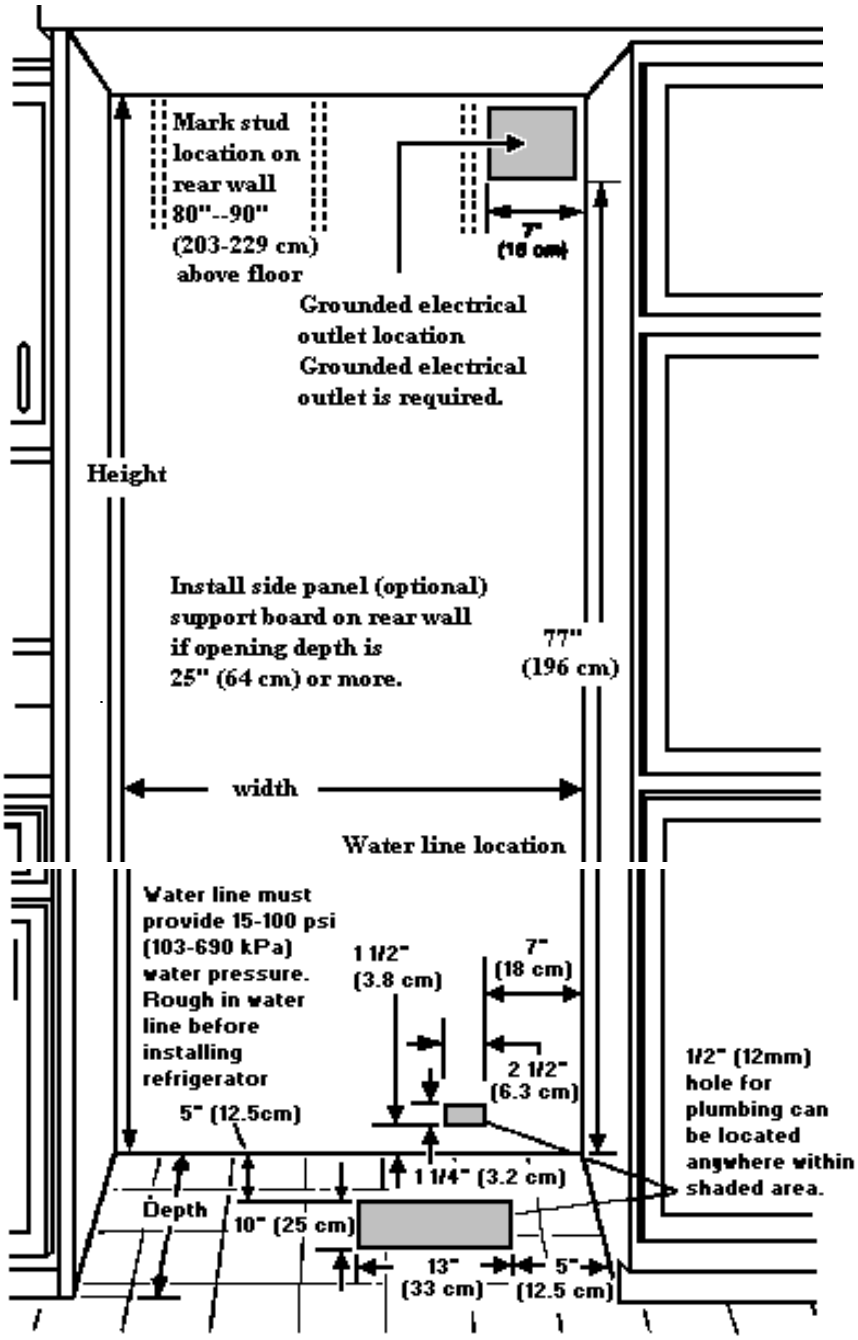
LINE CIRCUITS (#15)

Refrigerator And Freezer Light Circuits

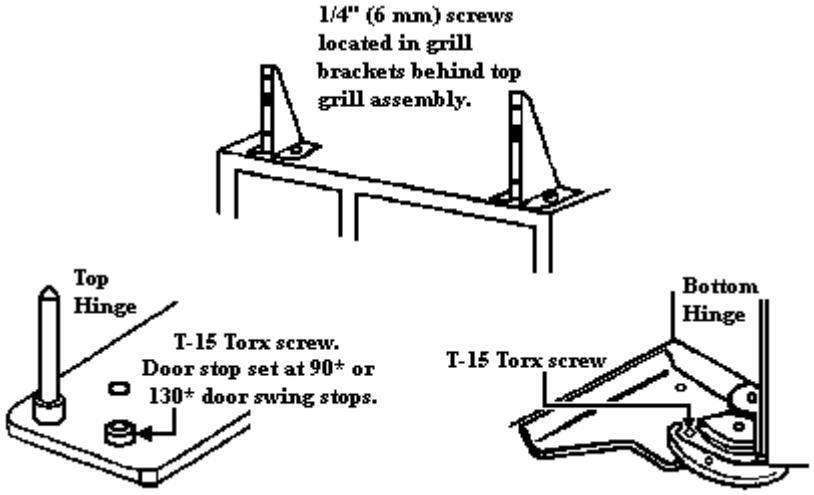
15. Refrigerator And Freezer Light Circuits



REFRIGERATOR INSTALLATION

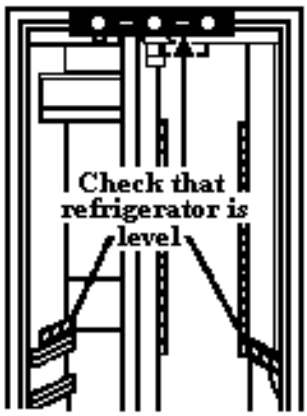


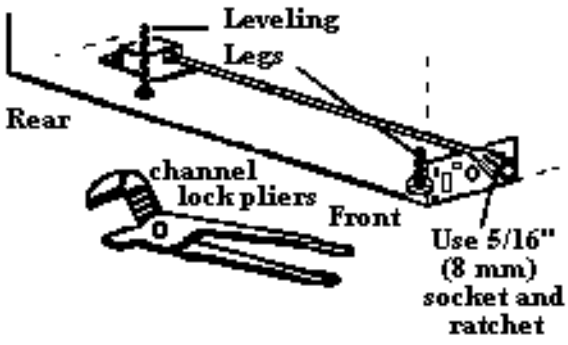
ADJUST DOOR SWING, if needed.
Remove top grill by removing four 1/4" (6 mm) screws located behind the panel assembly. Remove door stop set screw located in top and bottom hinges using a T-15 Torx wrench. Hold door in the desired position and replace set screw. If door does not clear countertop after the door stop has been adjusted, countertops may need to be mitered.



LEVEL REFRIGERATOR

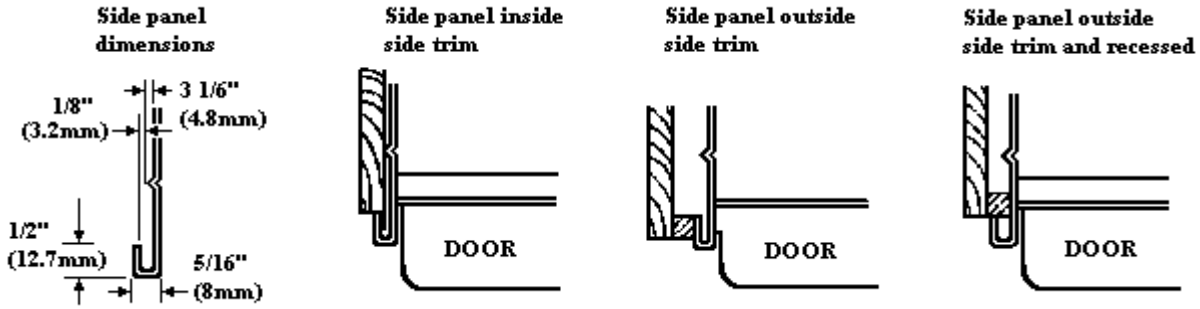
- Turn rear leveling rods clockwise with a 5/16" (8mm) socket and ratchet until cabinet weight is supported by rear legs. Lower front leveling legs with channel lock pliers until weight of the cabinet is supported by the legs. **NOTE: All four legs must contact the floor to support and stabilize the full weight of the refrigerator.**
- Remove all tape and door bracing from refrigerator and freezer doors. Open doors. Place a level against underside of door trim, on refrigerator product guides, and on freezer basket guides as shown. Adjust front leveling legs and right and left rear rods until refrigerator is level and at the proper height. Check that all four leveling legs contact floor and support the full weight of the refrigerator. Doors need to be installed when leveling.
- Check that both refrigerator and freezer doors are aligned and level. **If doors need to be adjusted Left to Right or In or Out, loosen the 3/8" (9mm) hex head screws in the top hinges. If doors need to be adjusted Up or Down, loosen the 3/8" (9mm) hex screws in the bottom hinges. Adjust doors.** Tighten screws. Check that the doors are aligned and level.





INSTALLING CUSTOM SIDE PANELS

If built-in area depth is 25" (63.5 cm) or more, custom side panels can be installed inside the side trim or attached to the outside of the side trim. If the side panels will be installed inside the side trim and the panels are more then 1/8" (3.2 mm) thick, route front edge of panel to fit side trim piece. If panels are less than 1/8" (3.2 mm) thick, install a filler panel between sides and custom side panels. Follow specific installation instructions provided with custom



INSTALLING TOP GRILL

To remove:

1. Grasp louver area.
2. Push straight up, then pull straight out.
3. Loosen (4) screws to remove grill assembly from unit.

INSTALL DIFFERENT HEIGHT TOP GRILL

1. Grasp louver area.
2. Push straight up, then pull straight out.
3. Loosen (4) screws to remove grill assembly from unit.
4. Remove louvers from mounting brackets. Align new brackets with holes on one end of louvers. Fasten in place with screws, repeat at opposite end.
5. Remove screws attaching top trim to guard. Readjust trim according to new grill height.
6. Replace end caps with ones that correspond with new grill height.
7. Reattach grill assembly.
8. Replace louver assembly. Pull down slightly to lock into place.