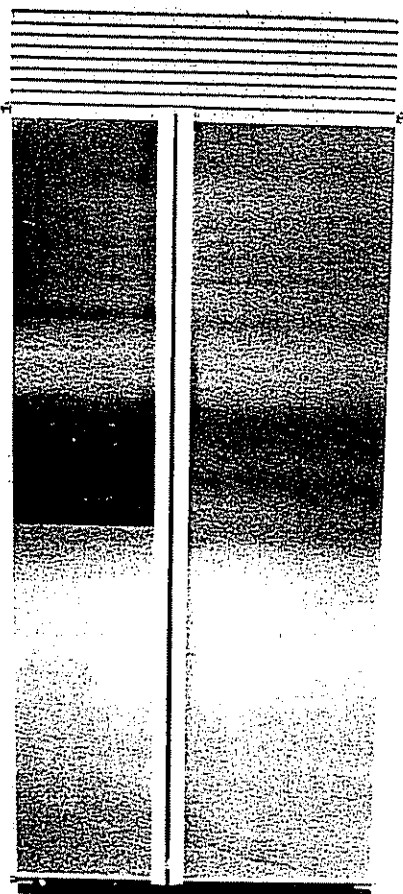


# ***Thermador***<sup>®</sup>

**THE HEART OF THE KITCHEN.**<sup>™</sup>

***BUILT-IN SIDE-BY-SIDE  
36 & 48 IN. WIDE  
REFRIGERATOR-FREEZER***



**MODEL TSS36**

**MODEL TSS48**

# ***SERVICE MANUAL***

***Thermador***<sup>®</sup>  
CORPORATION

5551 MCFADDEN • HUNTINGTON BEACH, CALIFORNIA 92649 • TELEPHONE: 1(800) 735-4328

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## Table of Contents

	Page
Refrigerator Warranty .....	1
Specifications .....	2
Component Layout .....	3
Theory Of Operation .....	5
Air Flow Through The Meat Locker Control .....	5
Air Flow In The Main Unit .....	6
Motorized Air Door Air Flow And Operation .....	8
Controls And Operation .....	9
The Freezer Thermostat Control .....	9
The Refrigerator Electronic Temperature Control .....	9
Defrost Timer, Bimetal & Heater .....	10
Sealed System .....	11
The Fluid Control Valve Operation .....	11
Fluid Control Valve Hookup .....	12
Mullion Heat Loop And Freezer Heater .....	13
Parts And Features .....	14
Installation, Use And Care .....	15
Installing The Refrigerator-Freezer .....	15
Removing The Packing Material .....	16
Adjusting The Refrigerator Shelves .....	18
Adjusting The Freezer Shelves .....	18
The Adjustable Door Bins .....	19
The Wine/Egg Rack .....	19
Removing The Meat Locker And Cover .....	20
The Utility Drawer & Crisper .....	21
Pull-Out Freezer Baskets .....	22
The Ice Maker Storage Bin .....	23
Built-In Installation .....	24
Using The Refrigerator-Freezer .....	33
Power On/Off Switch .....	33
Setting The Temperature Controls .....	34
The Meat Locker Temperature Control .....	34
Changing The Control Settings .....	35
Cold Water And Ice Dispensers .....	36
The Automatic Ice Maker .....	37
Dispenser/Ice Maker Operating Tips .....	38
Replacing A Refrigerator Light Bulb .....	39
Replacing A Freezer Light Bulb .....	39
Removing the Base Grille .....	40
The Defrost Pan .....	40
Refrigerator Sounds .....	41
Energy-Saving Tips .....	41
Caring For The Refrigerator-Freezer .....	42
Cleaning The Refrigerator .....	42
Vacation And Moving Care .....	43
If You Need Assistance Or Service .....	44

## Table of Contents (Cont'd)

	<b>Page</b>
Servicing The Components .....	45
General Information .....	45
The Refrigerator Compartment .....	46
Replacing The Electronic Control Board .....	46
Replacing The Light Switch .....	47
Replacing The Motorized Air Door .....	48
Replacing The Temperature Sensor .....	49
Replacing The Meat Locker Control .....	50
Replacing The Cold Water Reservoir .....	51
The Freezer Compartment .....	52
Replacing The Thermostat .....	52
Replacing The Light Or Ice Conveyor Switch .....	56
Replacing The Ice Maker .....	58
Replacing The Evaporator Fan Motor .....	59
Replacing The Bimetal .....	61
Replacing The Defrost Heater Or The Evaporator .....	62
Removing The Water And Ice Dispenser .....	66
Reinstalling The Dispenser .....	68
Servicing The Water & Ice Dispenser Components .....	70
Servicing The Ice Conveyor Assembly .....	78
Servicing The Ice Conveyor Motor .....	79
On Top Of The Cabinet .....	80
Unit Compartment Access .....	80
Replacing The Power Switch .....	82
Replacing The Defrost Timer .....	83
Replacing The Run Or Starting Capacitor .....	84
Cleaning/Replacing A Water Dispenser/Ice Maker Fill Valve .....	85
Replacing The Condenser Fan Motor .....	86
Troubleshooting .....	89
General .....	89
Diagnostic Chart .....	90
Servicing The Built-In Refrigerator Sealed System .....	95
Introduction .....	95
Important Service Information .....	96
Revised Sweep Charge Procedure .....	99
Sweep Charge Procedure Without Manifold Gauges .....	101
Sweep Charge Procedure With Manifold Gauges .....	112
Checking Continuity .....	125
Component Test Chart .....	125
The Modular Ice Maker .....	127
The Motorized Air Door .....	128
Wiring Diagrams .....	130
Strip Circuits .....	134

# THERMADOR® BUILT-IN REFRIGERATOR WARRANTY

LENGTH OF WARRANTY:	THERMADOR WILL PAY FOR:	THERMADOR WILL NOT PAY FOR:
<p><b>ONE-YEAR FULL WARRANTY FROM DATE OF INSTALLATION</b></p>	<p>Replacement parts and repair labor to correct defects in materials or workmanship. Service must be provided by an authorized service outlet.</p>	<p>A. Service calls to:</p> <ol style="list-style-type: none"> <li>1. Correct the installation of the refrigerator.</li> <li>2. Instruct you on how to use the refrigerator</li> <li>3. Replace house fuses or correct house wiring.</li> <li>4. Replace house plumbing.</li> </ol> <p>B. Repairs when refrigerator is used in other than normal home use.</p> <p>C. Damage resulting from accident, alteration, misuse, abuse, improper installation or installation not in accordance with local electrical codes or plumbing codes.</p> <p>D. Any food loss due to product failure</p> <p>E. Replace parts or repair labor costs for units operated outside the United States.</p> <p>F. Repairs to parts or systems caused by unauthorized modifications made to the appliance.</p>
<p><b>FIVE-YEAR FULL WARRANTY FROM DATE OF INSTALLATION</b></p>	<p>Replacement parts and repair labor costs to correct defects in materials or workmanship in the automatic ice maker. Service must be provided by an authorized service outlet.</p> <p>Replacement parts and repair labor costs to correct defects in materials or workmanship in the sealed refrigeration system. These parts are the:</p> <ol style="list-style-type: none"> <li>1. Compressor</li> <li>2. Evaporator</li> <li>3. Condenser</li> <li>4. Drier</li> <li>5. Connecting tubing</li> </ol> <p>Service must be provided by an authorized service outlet.</p>	

THERMADOR DOES NOT ASSUME ANY RESPONSIBILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states or provinces do not allow the exclusion of incidental or consequential damages, so this exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state or province to province.

If you need service, first see the "Assistance or Service" section of this book. After checking "Assistance or Service," additional help can be found by calling an authorized service outlet.

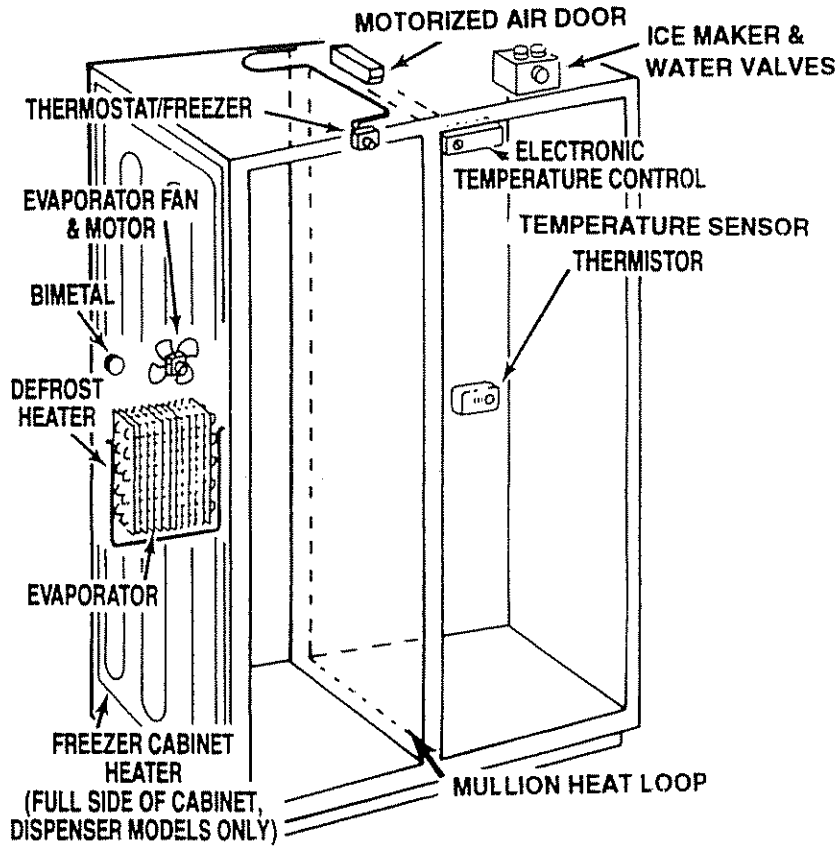
# SPECIFICATIONS

## THERMADOR

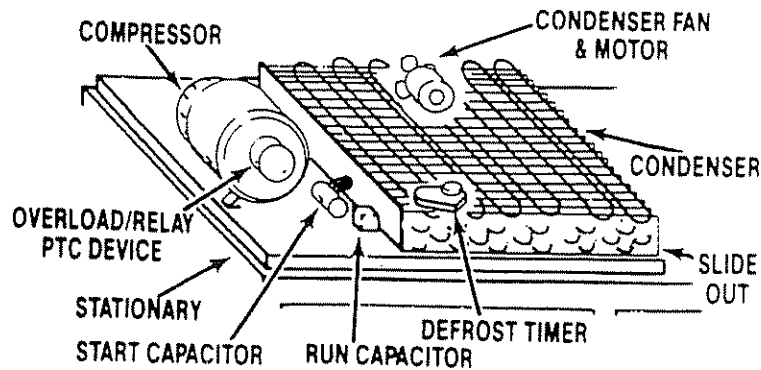
Model:	(JH) TSS36DAB	(JH) TSS48DAB
Total Capacity (cu ft.)	20.1	28.7
Refrigerator Compartment Volume (cu ft.)	12.7	18.1
Freezer Compartment Volume (cu ft.)	7.4	10.6
Total Shelf area (sq ft.)	21.8	32.0
Style	36" Black Dispenser	48" Black Dispenser
Freezer:		
Automatic Ice Maker	Yes	Yes
Shelving:	Black Overflow Grille	Black Overflow Grille
Full Width Plastic (stationary)	1	1
Full Width Plastic (adjustable)	—	—
Full Width Wire (stationary)	2	2
Full Width Wire (adjustable)	1	1
Basket	2 Slide w/o Panel	2 Slide w/o Panel
Ice Trays	—	—
Ice Trays Storage	—	—
Ice Bucket	Yes	Yes
Door:		
Thru-The-Door-Dispenser	Ice/Water	Ice/Water
Dispenser Escutcheon Color	Black	Black
Paddle Color	Dark Grey	Dark Grey
Overflow Grille Color	Black	Black
Shelving		
Full Width (RMV-ADJ)	2	2
Refrigerator:		
Shelving:		
Full Width (adjustable)	4 - Smoked Glass	4 - Smoked Glass
Half Width (adjustable)	—	—
Full Width (stationary)	1	1
Roll Out (adjustable)	—	—
Finish	Powder Coat	Powder Coat
Trim (front)	None	None
Crispers:	2 - Full Width	2 - Full Width
Type - Clearview	Roller Trac	Roller Trac
Humidity Control	Yes	Yes
Cover Type	Smoked Glass	Smoked Glass
Utility Bin	1 - White	1 - White
Meal Pan:	1 - Full Width	1 - Full Width
Type	Roller Trac	Roller Trac
Temperature Adj	Yes	Yes
Cover Type	Smoked Glass	Smoked Glass
Miscellaneous:		
Compartment Doors	1	1
Type & Layout		
Shelving	Adjustable	Adjustable
Full Width (stationary)	—	—
Door Bins (removable)	4 Full Width	4 Full Width
Gallon Storage	No	No
Can Rack	—	—
Egg/Wine Rack	Smoked Glass	Smoked Glass
Load Lock	—	—
Grille	TBD Louvered	TBD Louvered
Color	Aluminum	Aluminum
Exterior Dimensions (in.)		
Height (TOC)	84.75	83.5
Width	36	48
Depth w/o Handles	25	25
Handles		
Type	Ext Aluminum	Ext Aluminum
Color	Brushed Aluminum	Brushed Aluminum
Door Trim	New Brushed Aluminum	New Brushed Aluminum
Condenser Panel	Louvered	Louvered
Hinge Type	Ajax	Ajax
Rollers/Levelers	Front/Rear Adjustable	Front/Rear Adjustable
Nameplate	Condenser Panel	Condenser Panel

# COMPONENT LAYOUT

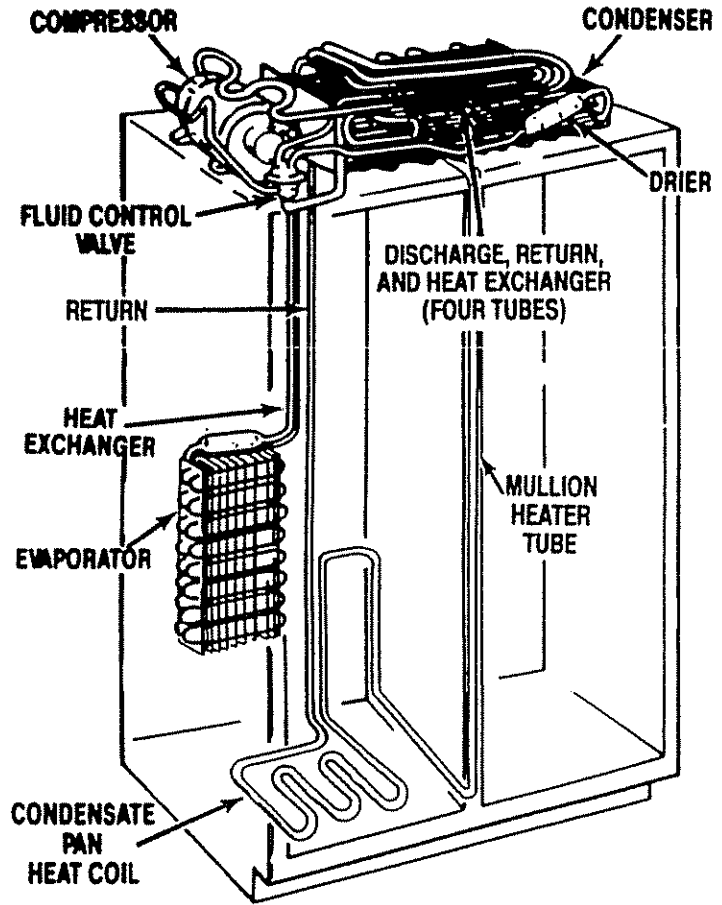
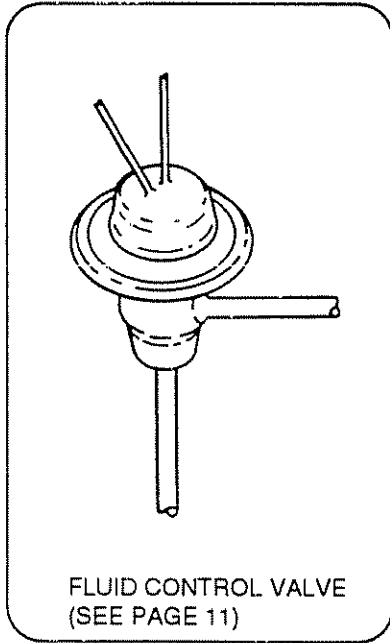
## CABINET



## UNIT COMPARTMENT (ELECTRICAL)



# SEALED SYSTEM & TUBING





# THEORY OF OPERATION

## AIR FLOW THROUGH THE MEAT LOCKER CONTROL

Refer to Figure 1 while you read this description.

Air from the evaporator enters the Meat Locker Control air duct and passes through the upper part of the control. If the control knob is rotated fully counterclockwise (at the "cold" setting, shown in Figure 1A), the air will be completely blocked by the baffle.

As the control knob is turned clockwise (toward the "coldest" setting), air will be able to flow around the baffle into the lower part of the Meat Locker Control (Figure 1B). As it does, it passes through the round outlet port into the meat locker drawer. Air flow leaves the drawer and joins other air flow returning to the evaporator through the return air duct.

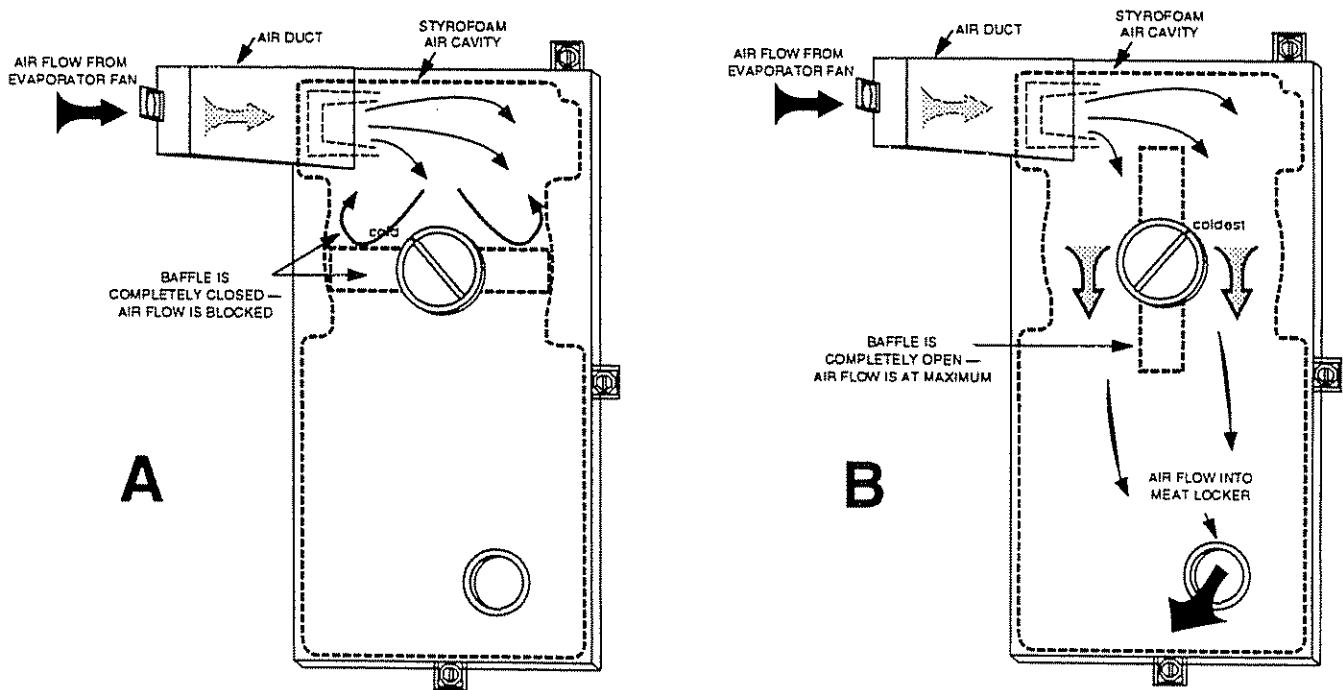


FIGURE 1  
 Meat Locker Control Air Flow

# AIR FLOW IN THE MAIN UNIT

Refer to Figure 2B on the next page while you read this section.

The evaporator fan circulates air through the freezer and refrigerator compartments, to the ice maker, and to the meat locker. Each of these is discussed in the following paragraphs.

## THE FREEZER COMPARTMENT

Air is forced from the evaporator fan (1) up through the freezer air duct (2), out the top air diffuser (3) to the front of the freezer, down toward the bottom of the liner, and up through the evaporator coils (4) to the evaporator fan.

## THE REFRIGERATOR COMPARTMENT

The evaporator fan (1) forces air from the freezer air duct into the refrigerator through the motorized air door (5) at the top of the freezer liner (see "Motorized Air Door Air Flow and Operation" on page 8). From there, it migrates to the return air duct (6) into the freezer between the sides of the evaporator (7) and the separator (8) toward the bottom of the freezer liner, and up through the evaporator coils.

## THE ICE MAKER

Air from the evaporator fan is also directed out the small diffuser (9) below the ice maker. The air travels along the bottom of the ice maker to the front of the freezer, down toward the floor of the liner, and up through the evaporator coils (4).

## THE MEAT LOCKER

Air from the evaporator fan enters the meat locker through the small cutout in the separator (10). It travels through the meat locker air duct (11) to the interior of the meat locker control. If the baffle inside the meat locker control is open, (see "Air Flow Through The Meat Locker Control" on page 5), the air travels out the round port (12) into the back of the meat locker drawer. The air exits the drawer and returns to the freezer through the return air duct (6). From there, it travels down between the sides of the evaporator (7) and the separator (8) toward the bottom of the freezer liner, and then up through the evaporator coils (4).

## THE CABINET TOP

Refer to Figure 2A. Air is pulled into the center of the top grille and over the condenser coils by the condenser fan. It travels to the back, through the fan to the left side of the cabinet, around the compressor, and out the top grille.

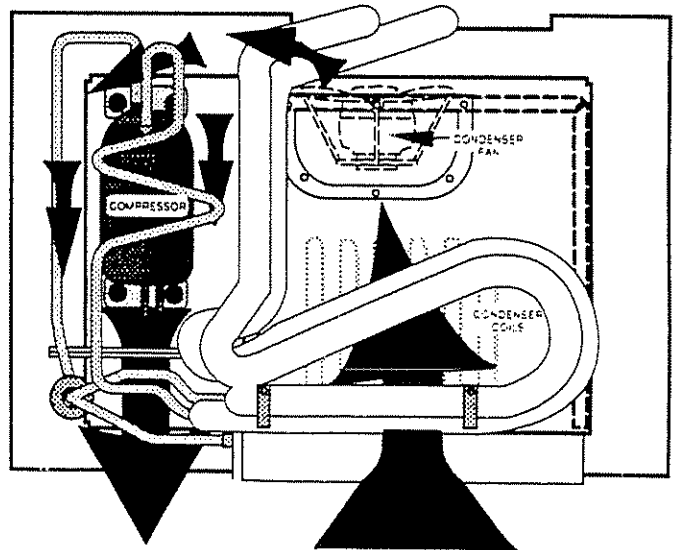


FIGURE 2A  
*Cabinet Top Air Flow*

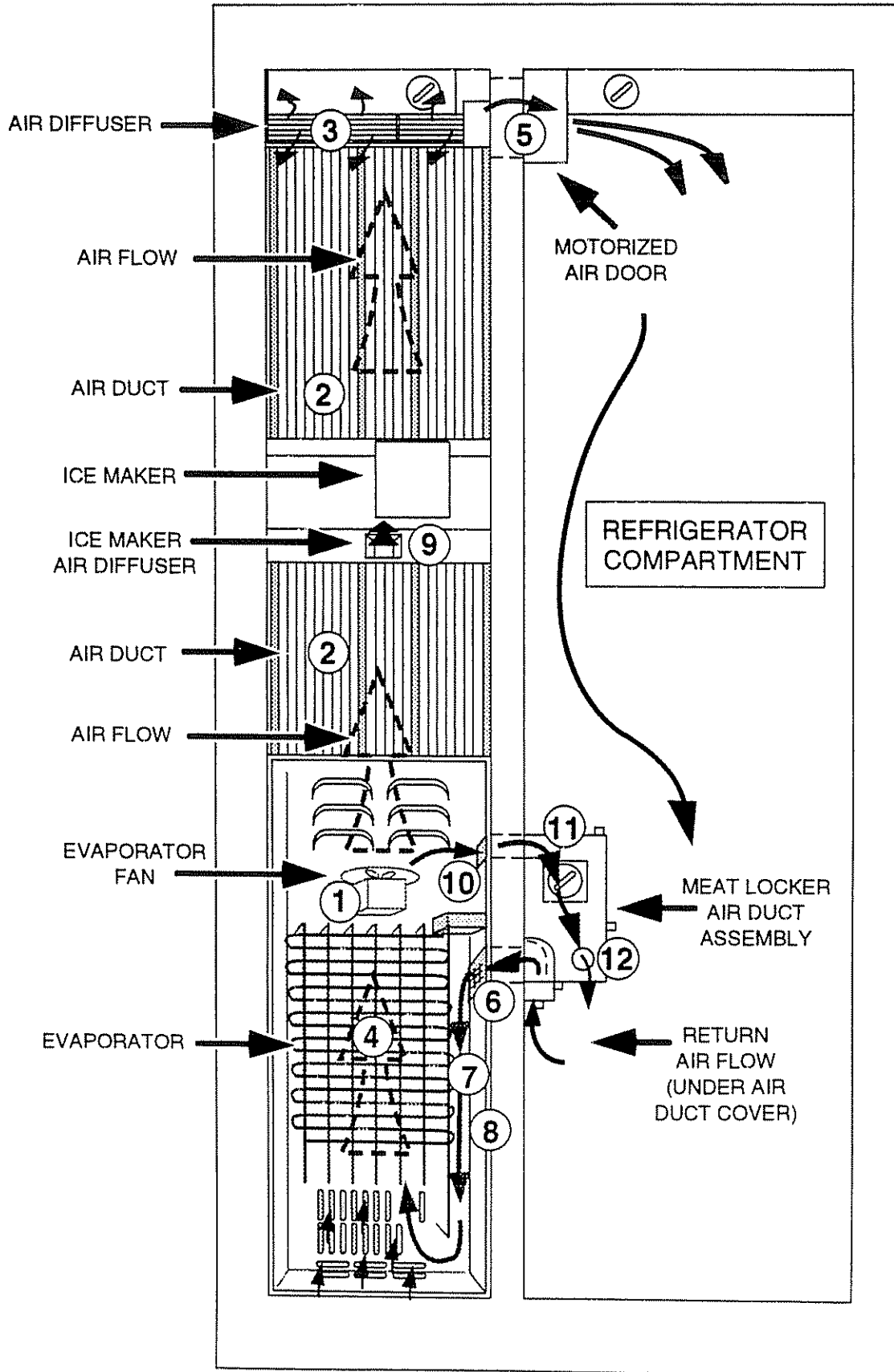


FIGURE 2B

Refrigerator-Freezer Air Flow

# MOTORIZED AIR DOOR AIR FLOW AND OPERATION

The main job of the motorized air door is to regulate the air flow coming from the freezer air duct into the refrigerator compartment. 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 liner).
- The electronic control board (located inside the refrigerator control cover).

When the temperature sensor calls for cooling, the electronic control energizes the air door motor and opens the baffle (see Figure 3A). From the "closed" position, the baffle rotates clockwise (CW) 270°. During its rotation, it opens, closes, and then parks in the "open" position. The OPEN MICROSWITCH 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 (see Figure 3B). From the "open" position, it rotates clockwise 90° and parks in the "closed" position. The CLOSED MICROSWITCH shuts off the door motor when the baffle is fully closed.

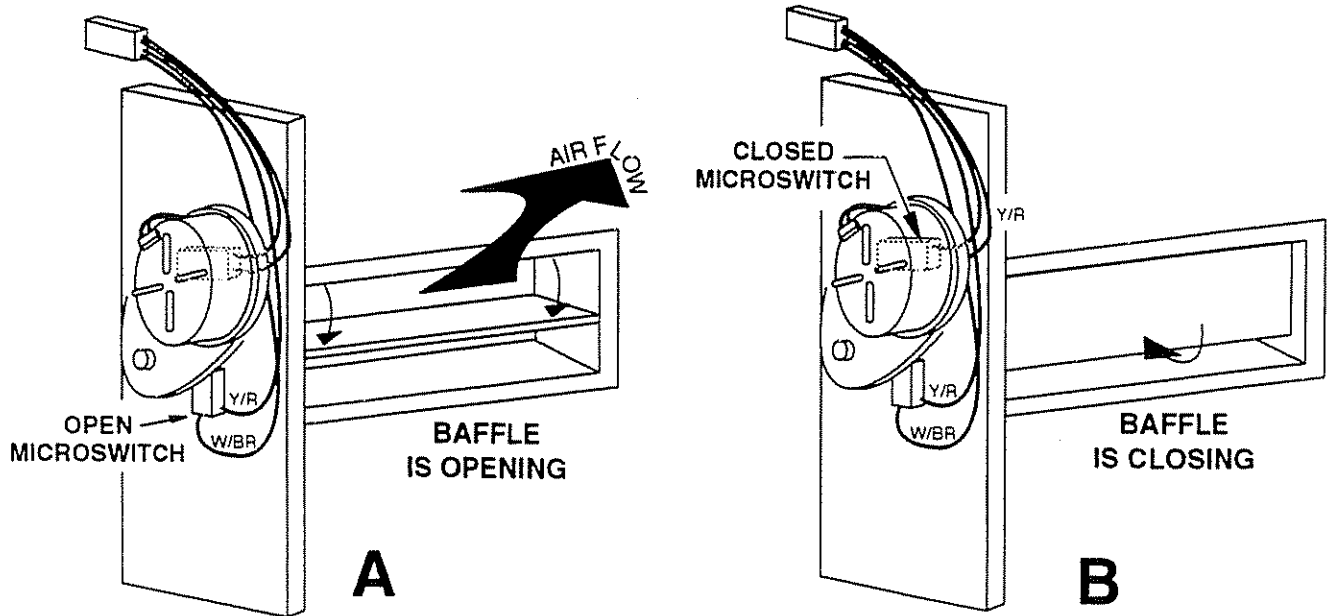


FIGURE 3  
*Motorized Air Door Air Flow*

## CONTROLS AND OPERATION

To understand the regulation of temperatures and air flow in this unit, we must see how the freezer and refrigerator temperature controls function and interact.

### THE FREEZER THERMOSTAT CONTROL

The freezer thermostat controls the temperature of the freezer compartment by sensing cold air coming from the cold air duct during the compressor's "on" cycle, and sensing the compartment temperature during the "off" cycle. The thermostat's sensing tube is located at the upper rear corner of the freezer compartment.

When it is calling for cooling, the thermostat energizes the compressor, condenser fan motor, defrost timer motor, and freezer side panel heater, and signals the electronic control board that the compressor is running. The electronic control then energizes the evaporator fan motor. Although the evaporator fan motor is energized independently through the electronic control, it always runs when the compressor is operating. This insures air circulation across the evaporator coil and through the freezer compartment during the "on" cycle. The motorized air door only opens if the refrigerator thermistor is calling for cooling.

### THE REFRIGERATOR ELECTRONIC TEMPERATURE CONTROL

The refrigerator electronic temperature control 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 control board continuously sends a low 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 current going back to the electronic control. The electronic control, sensing the change in the signal current, activates the motorized air door to the "open" position, and energizes the evaporator fan motor (if it is not already running with the compressor). When the refrigerator temperature decreases, thermistor resistance increases, again altering the signal current to the control board. The electronic control responds by closing the air door, and cycles the evaporator fan motor off (if the compressor is not running).

The refrigerator thermistor and the electronic control directly affect the operation of the evaporator fan motor and motorized air door. However, to understand the overall function of the thermistor/electronic control, evaporator fan, and air door, we must also understand the freezer thermostat's influence upon them.

## **The Refrigerator Electronic Temperature Control (Cont'd)**

When the freezer thermostat closes, (calling for cooling), the cooling cycle is initiated, and a signal is sent to the electronic control board. The electronic control then energizes the evaporator fan motor.

If the refrigerator compartment is cold enough, the motorized air door remains closed, and the evaporator fan motor continues to run. When the thermistor senses a rise in the refrigerator compartment temperature, the electronic control activates the motorized air door, and it rotates to the "open" position. When the thermistor senses that the temperature is cold enough, the electronic control activates the motorized air door, and it rotates to the "closed" position.

When the freezer thermostat opens (is satisfied), the cooling cycle ends. The signal to the electronic control is discontinued, and the compressor shuts down.

If the refrigerator compartment is cold enough, the electronic control allows the evaporator fan motor to shut off and the motorized air door to remain closed. When the thermistor senses a temperature increase in the refrigerator compartment, the electronic control activates both the evaporator fan motor, and the motorized air door. The air door baffle rotates to the "open" position, and allows colder freezer compartment air to circulate throughout the refrigerator section. When the thermistor senses that the temperature is cold enough, the electronic control shuts off the evaporator fan motor, and activates the air door. The air door baffle rotates to the "closed" position, closing off the air circulation.

The electronic control is adjustable, and allows the customer to select the desired refrigerator temperature. The adjustment is made by a variable resistor (potentiometer), which changes the electronic control's sensitivity to the signal current. By varying the control's sensitivity, the regulated temperature range can be raised and lowered.

Cycling of the evaporator fan motor and motorized air door may occur one or more times before the freezer thermostat calls for another cooling cycle.

## **DEFROST TIMER, BIMETAL & HEATER**

As air circulates through the refrigerator-freezer, moisture from food and outside air that enters whenever the door opens, 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 for every 10-hours of accumulated compressor run time. During the cooling cycle, the defrost timer runs only when the compressor runs, and stops when the compressor cycles off. However, the timer runs throughout the defrost cycle when the refrigeration system is shut down.

Once initiated, the defrost cycle lasts for 21-minutes. The defrost heater energizes, 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 timer continues the defrost cycle for the 21-minute duration, and then the cooling cycle resumes.

## SEALED SYSTEM

### THE FLUID CONTROL VALVE OPERATION

The Matsushita rotary compressor, used in the built-in refrigerator, does not have a check valve on its suction side. Without a check valve, warm refrigerant vapor can migrate backwards through the compressor during the "off" cycle and warm the evaporator up. This causes poor operating efficiency and an increase in energy consumption, because the system has to run longer to compensate for the additional heat load.

During the "off" cycle, the high pressure liquid refrigerant in the condenser continues to flow toward the evaporator until both sides of the system equalize. If the liquid refrigerant could be trapped in the condenser during the "off" cycle, it would take much less time to recover and continue with the refrigeration process.

The fluid control valve consists of two valves that are housed together in one enclosure and separated by a diaphragm. The valves operate independently of each other, and stop the flow of refrigerant between the high and low pressure sides of the system during the compressor's "off" cycle.

The low-side check valve (see Figure 4), is located between the compressor and the evaporator, and is drawn open when the compressor starts to run. It closes again when the compressor cycles off.

The high-side, pressure-activated valve is located in the system between the filter drier and the capillary tube (see Figure 4). It is connected to, and actuated by, pressure on top of the diaphragm. When the compressor turns on, and the pressure differential between the high- and low-sides exceed 39.98 psi, the high-side valve opens and allows liquid refrigerant to flow toward the evaporator. When the compressor shuts off and the pressure differential between the two sides drops below 21.33 psi, the high-side valve closes and stops the flow of refrigerant.

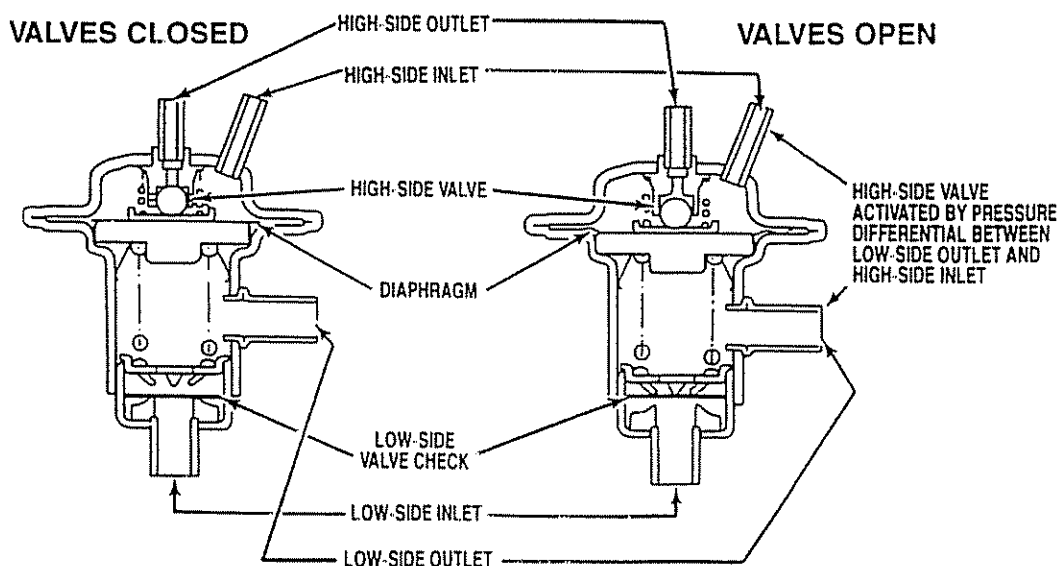


FIGURE 4

Fluid Control Valve Operation

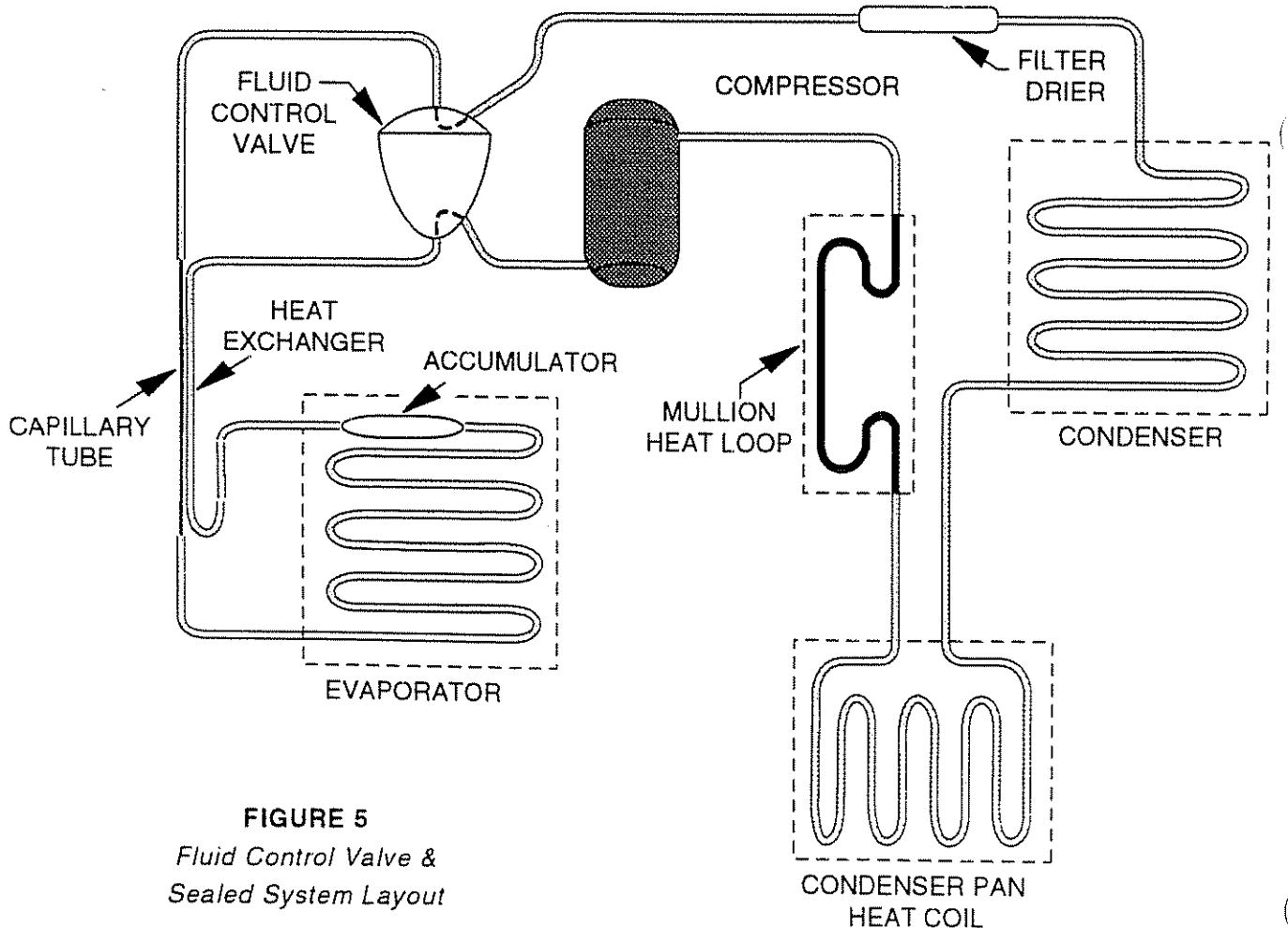
## FLUID CONTROL VALVE HOOKUP

Within 15-seconds after the compressor cycles off, the high-side valve closes and traps liquid refrigerant in the condenser section. Also, within 15-seconds after the compressor starts up, the valve reopens and allows the sealed system to continue where it "left off" from the previous "on" cycle. There is one exception. If the unit has been off for an extended period of time, (both compartments are warm), it may take up to 30-minutes for the high-side valve to open.

Briefly, here's how the high-side check valve operates in a sealed system (see Figure 5):

- *Off Cycle* — Valve closes when pressure differential decreases to 21.33 p.s.i.
- *On Cycle Begins* — Valve begins to open when pressure differential increases to 28.5 p.s.i.
- *On Cycle* — Valve opens fully when pressure differential increases to 39.98 p.s.i.

When the compressor cycles off, the low-side check valve instantly closes and stops the backward flow of refrigerant. When the compressor energizes, the check valve opens as soon as it senses the slightest pressure drop across it.



**FIGURE 5**  
Fluid Control Valve &  
Sealed System Layout



## MULLION HEAT LOOP AND FREEZER HEATER

Refer to Figure 6. The mullion heat loop enters the top grommet in the back of the cabinet (see the "Rear View"), where it travels inside the separator 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), travels along the bottom of the separator, and exits through the lower grommet in the back of the cabinet (see the "Rear View").

The freezer heating element (4) is affixed to an adhesive sheet that is stuck to the left inside wall of the outer cabinet. The heater runs the entire length and width of the cabinet wall. The plug (5) for the freezer heater is located near the top left rear corner of the cabinet.

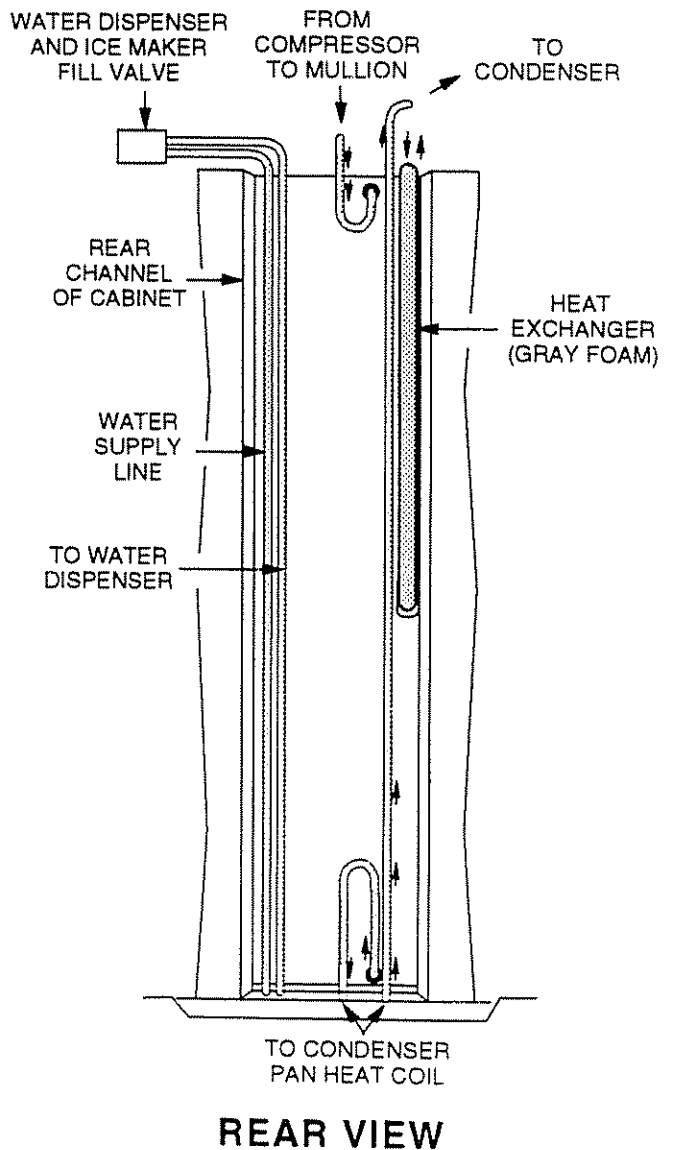
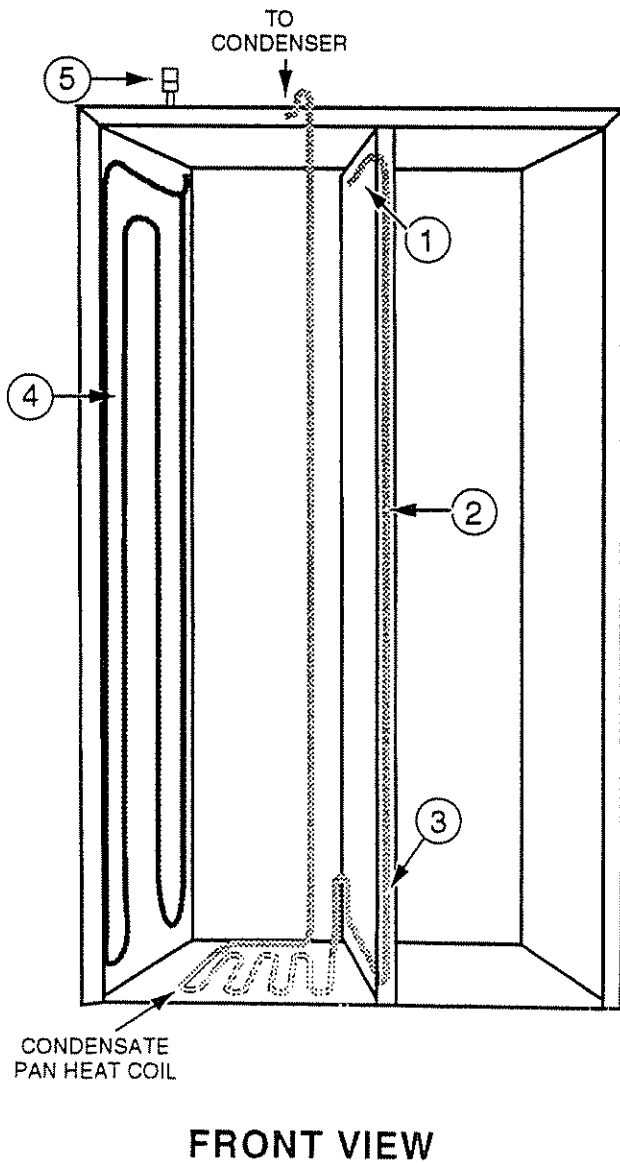


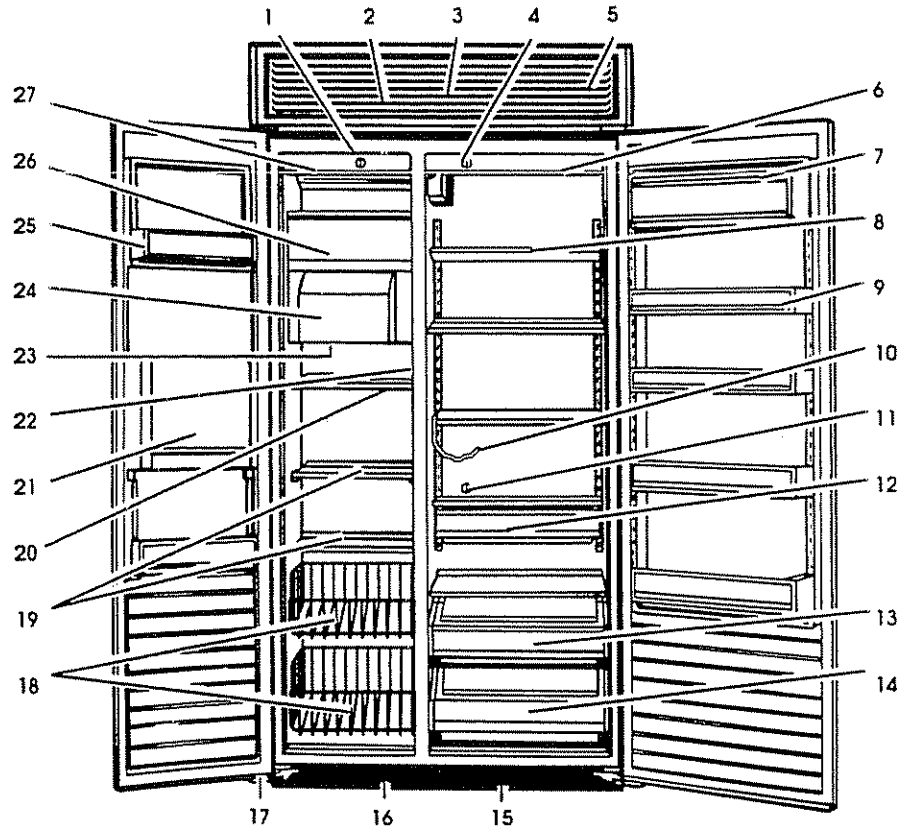
FIGURE 6

Mullion Heat Loop & Freezer Heater

# PARTS AND FEATURES

This section shows where the parts and features are located on the appliance. Use it to become familiar with their location. The key numbers in the illustration match those at the beginning of each description in the list.

Since the manual covers different models, the appliance may have all, or some of the features shown. The cold water and ice dispenser model is shown below.



- |   |   |
|---|---|
| 1. Freezer control                                      | 14. Roll-out humidity-controlled crisper          |
| 2. Upper ventilation panel                              | 15. Base grille                                   |
| 3. Power on/off switch (behind upper ventilation panel) | 16. Defrost pan (behind base grille)              |
| 4. Refrigerator control                                 | 17. Water/electrical dispenser supply tube        |
| 5. Water valve (behind upper ventilation panel)         | 18. Pull-out freezer baskets                      |
| 6. Refrigerator lights (behind control panel)           | 19. Stationary freezer shelves                    |
| 7. Utility compartment                                  | 20. Adjustable freezer shelf                      |
| 8. Adjustable glass shelves                             | 21. Water and ice dispenser area (on some models) |
| 9. Adjustable door bins                                 | 22. Model and serial number label                 |
| 10. Wine/egg rack                                       | 23. Freezer light (below ice bin)                 |
| 11. Meat Locker Temperature Control                     | 24. Ice bin (on some models)                      |
| 12. Roll-out adjustable meat locker                     | 25. Stationary door shelf                         |
| 13. Roll-out humidity-controlled utility drawer         | 26. Automatic ice maker                           |
|   | 27. Freezer light (behind control panel)          |

## INSTALLATION, USE AND CARE

### INSTALLING THE REFRIGERATOR-FREEZER

This service manual is intended for factory-service technicians only. Thermador recommends that customers DO NOT service their own units, because of the complexity and risk of high-voltage electrical shock.

The following information is used throughout this manual, and should be read carefully.

#### **NOTE**

Helpful information that explains a more complicated step, prior to carrying it out.

#### **! CAUTION**

Information that alerts you to potential equipment damage if the suggested procedures are not observed.

#### **! WARNING**

Information that alerts you to potentially dangerous conditions. These conditions can cause serious personal injury if the suggested procedures are not observed.

## REMOVING THE PACKING MATERIAL

### NOTE

Do not remove any permanent instruction labels inside the appliance, and do not remove the Tech Sheet that is fastened under the bottom grille.

### CAUTION

#### Personal Injury/Property Damage Hazard

Use care when moving this refrigerator-freezer. It is easy to tip over when pushed from the back. Position the unit as close to its primary operating location as possible so you can easily push it straight back into place after you have removed all of the packing material, and have connected it to the water and electrical supplies.

1. Move the refrigerator-freezer near its operating location.
2. Cut the shipping bands from the top and bottom carton covers, and remove the top cover.
3. Slit the four corners of the shipping carton down the sides, and then fold the sides down. Remove the carton, the four corner support posts, and the styrofoam support inserts and discard them.
4. Remove the carton containing the top and bottom grilles from the main carton and set it aside.
5. Use a 1/2" socket and unbolt the four brackets that hold the bottom of the cabinet to the shipping skid. Discard the bolts and brackets
6. Using at least two people, carefully lift the cabinet from the shipping skid high enough to clear the four casters, and set it on the floor.
7. Remove all of the shipping tape from the refrigerator and freezer doors.
8. Simultaneously pull the refrigerator and freezer doors open to release them from the strip of styrofoam that is wedged down the center.
9. Remove the styrofoam strip that is taped to the front edge of the refrigerator door.
10. Peel off the clear plastic film from the front of the refrigerator and freezer door bins.
11. Remove the tape from the utility door.
12. Remove the shipping tape from the sides of the refrigerator door bins.
13. Remove the shipping tape from the top edges of the refrigerator and freezer doors.
14. Remove the three long cardboard strips that are taped to the sides and the top of the cabinet, just in front of the liner.
15. In the freezer section, pull out the five cardboard inserts holding the shelves and drawers in place.
16. Remove the cardboard insert from the ice maker and push the bail arm to the "ON" (down) position.
17. Cut the nylon ties from the instruction sheet entitled: "Things You Need To Know." This sheet is attached to the freezer shelf. Give the sheet to the customer.

## Removing The Packing Material (Cont'd)

### **! CAUTION**

#### **Personal Injury/Property Damage Hazard**

The top shelf in the refrigerator section may be installed upside down during shipping. When you remove the packing material from under this shelf, hold on to it so that it cannot fall. The refrigerator shelves are made of heavy tempered glass. Be careful not to drop them.

18. Remove the shipping inserts from between the refrigerator shelves.
19. Remove the tape from the front edges of the utility and crisper drawers.
20. Peel off the clear plastic film from the front of the meat locker, utility, and crisper drawers.
21. Remove the cardboard insert from the meat locker drawer. Then pull the drawer straight out as far as the stop, raise the front slightly, and remove it from the shelf tracks. Remove the round plastic plug that is taped to the inside of the meat locker drawer and set it aside.
22. Remove the cardboard insert from under the meat locker drawer, and then reinstall the drawer into its tracks.
23. Remove the cardboard insert from under the crisper drawer.
24. Peel off the clear plastic film from the front of the freezer, refrigerator, and meat locker temperature controls.
25. Pull out the utility drawer and remove the bag with the "Use and Care Guide" and other papers, and give them to the customer.
26. If there is an ice and water dispenser installed in the freezer door, peel the clear plastic film from the front panel.
27. Connect the water line to the refrigerator-freezer water valve.

## ADJUSTING THE REFRIGERATOR SHELVES

### **CAUTION**

#### **Equipment Damage Hazard**

The refrigerator shelves are made of tempered glass and are quite heavy. Be careful not to drop a shelf when you handle it.

Refer to Figure 7A.

You can adjust the position of the refrigerator shelves so that they can accommodate the highest items placed on them.

*To remove a shelf:*

1. Remove the items from the refrigerator shelf you wish to remove.
2. Tilt the front of the shelf up.
3. Lift the back of the shelf and unhook it from the hanger slot, then pull it out of the refrigerator.

*To reinstall a shelf:*

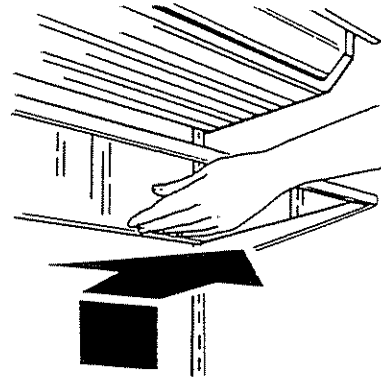
1. Tilt the front of the shelf up and guide the rear hooks into the hanger slots on the back wall of the liner.
2. Lower the front of the shelf and allow the support hooks to drop into the hanger slots.
3. Check the stability of the shelf to be sure that the hooks have been properly seated into the slots.

## ADJUSTING THE FREEZER SHELVES

Refer to Figure 7B.

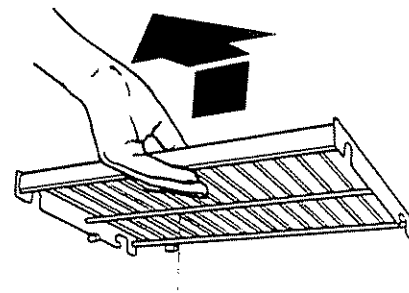
*To remove a freezer shelf:*

1. Lift the wire shelf straight up and off the liner supports and pull it out of the freezer.
2. Reverse to reinstall the shelf inside the freezer.



**FIGURE 7A**

*Adjusting The Refrigerator Shelves*



**FIGURE 7B**

*Adjusting The Freezer Shelves*

## THE ADJUSTABLE DOOR BINS

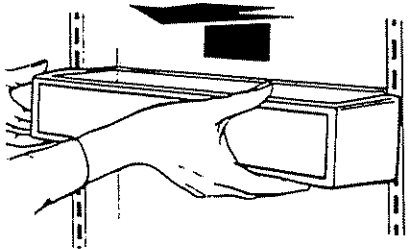
Door bins can hold 2-liter bottles and can be placed in any position on the refrigerator door.

*To remove a bin (refer to Figure 8A):*

1. Lift the door bin straight up and pull the hooks out of the ladder slots.

*To replace a bin:*

1. Insert the door bin hooks into the ladder slots on both sides of the refrigerator door.
2. Push down on the bin to lock the hooks in place.

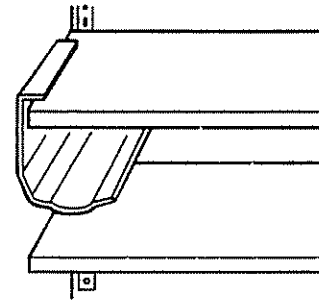


**FIGURE 8A**

*The Refrigerator Adjustable Door Bins*

## THE WINE/EGG RACK

The wine/egg rack (see Figure 8B) is shaped to hold either a bottle of wine or a carton of eggs securely. The wine/egg rack can be slid over the edge of any shelf, as shown below



**FIGURE 8B**

*The Wine/Egg Rack*

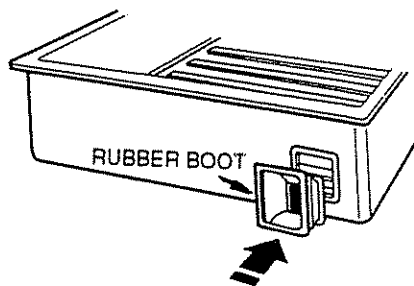
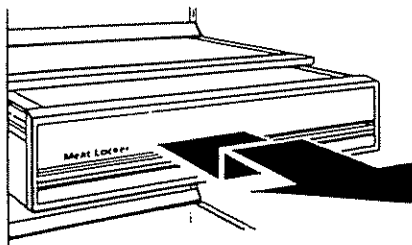
## REMOVING THE MEAT LOCKER AND COVER

Refer to Figure 9.

The meat locker is designed to provide colder storage temperatures than the average refrigerator temperature. The meat locker can be located in any set of ladder slots. However, for temperature-controlled use, the meat locker must be located in the second to the last (bottom) set of ladder slots.

*To remove the meat locker:*

1. Roll the drawer out to the stop.
2. Lift the front of the drawer slightly to clear the stop.
3. Pull the drawer out the rest of the way and remove it.



**FIGURE 9**  
*The Meat Locker*

*To remove the cover:*

1. Push up on the back of the cover to release the clips from the ladder slots.
2. Tilt the front of the cover up and pull it out of the refrigerator.

*To replace the cover:*

1. Tilt the front of the cover up slightly and fit the hooks of the supports into the second to the last (bottom) set of ladder slots.
2. Lower the front of the cover so the hooks drop into the slots.

*To reinstall the meat locker:*

1. Position the rollers at the front of the drawer between the front roller of the track and the track itself.
2. Push the drawer up and onto the track.
3. Roll the drawer back as far as it will go.

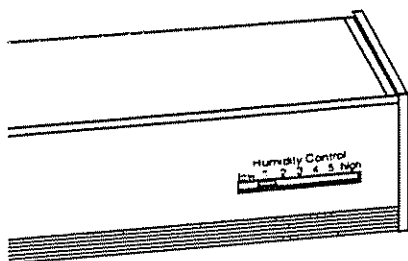
**IMPORTANT:** If the meat locker is placed in any set of slots other than the second to the last (bottom) set of ladder slots, insert the plug that was taped to the bottom of the meat locker drawer into the air supply port of the meat locker control.

The rubber boot (located on the back of the meat locker) directs the air from the meat locker control outlet port into the meat locker. If the air connector comes off, replace it by pushing it into the square opening on the back of the drawer.



## THE UTILITY DRAWER & CRISPER

The humidity controls (see Figure 10A) on the drawers give you the ability to change the amount of moisture in the utility drawer and crisper according to what food you store in it. A lower setting allows less humidity into the drawer, while a higher setting allows more humidity inside. The humidity-controlled utility drawer and crisper are interchangeable. The clear section of the lid cover allows you to see into the drawer or crisper without opening it.



**FIGURE 10A**

*The Humidity Control*

*To remove/reinstall the utility drawer or crisper (see Figure 10B):*

1. Roll the drawer out to the stop
2. Lift the front of the drawer slightly and pull it out the rest of the way.
3. Reinstall the drawer in the reverse order

*To remove the glass covers (see Figure 10C):*

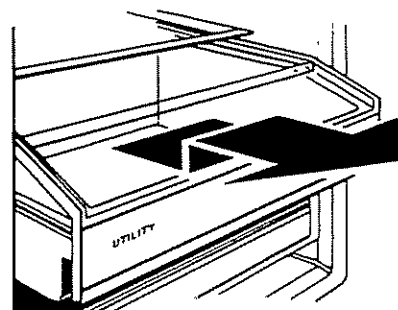
1. Lift the right side of the glass cover to free the retainer and the left side of the cover
2. Carefully slide the glass cover out of the refrigerator.

*To replace the glass covers:*

1. Place the retainer on the right side of the glass cover
2. Insert the left side of the glass cover into the groove on the left side of the drawer.
3. Lower the cover so that the retainer pins are in the guide holes on the right side of the drawer

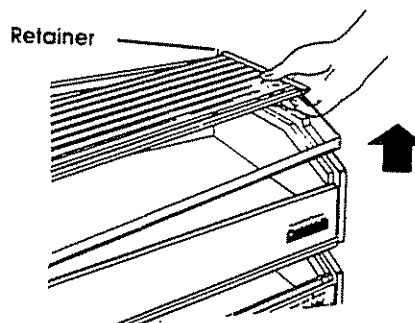
*To remove the clear lid cover (see Figure 10D):*

1. Remove the glass cover (see the previous steps).
2. Slide the clear lid cover down the track, away from the retainer.
3. Replace the clear lid cover in the reverse order.



**FIGURE 10B**

*The Utility Drawer & Crisper*



**FIGURE 10C**

*The Glass Covers*



**FIGURE 10D**

*The Clear Lid Cover*

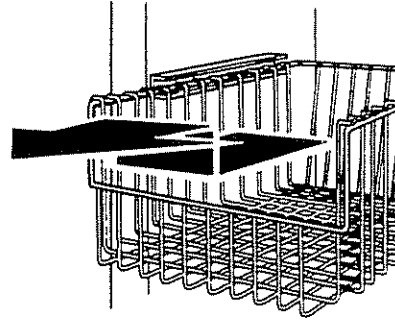
## PULL-OUT FREEZER BASKETS

*To remove a basket (see Figure 11):*

1. Pull the basket out to the stop.
2. Lift the front of the basket slightly and move it to the left.
3. Pull the basket out of the freezer the rest of the way.

*To reinstall a basket:*

1. Place the basket in the shelf tracks and move it to the left.
2. Push the basket in to the stop on the left side.
3. Lift the left side of the basket slightly to clear the stop, and then push it the rest of the way into the freezer.



**FIGURE 11**

*Removing A Freezer Basket*

## THE ICE MAKER STORAGE BIN

Depending on the model, the ice maker storage bin holds the following amounts of ice:

- (JH) TSS36DAB - 8.5 pounds (3.8 kg)
- (JH) TSS48DAB - 17.6 pounds (8.0 kg)

Remove any unused ice periodically to reduce the potential for off-taste or odor build-up in the ice. The storage bin can be removed for cleaning or to dispense large amounts of ice at one time.

*To remove the bin:*

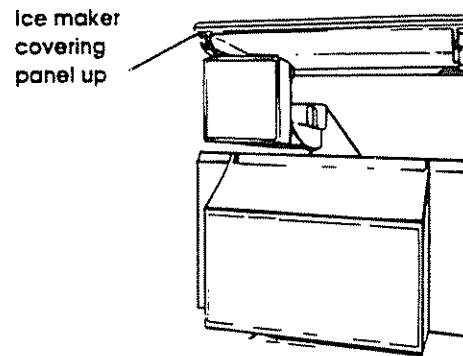
1. Pull the ice maker covering panel (see Figure 12A) out from the bottom and slide it to the rear.
2. Lift the ice maker signal arm until you feel it click into the Off position.

**IMPORTANT:** While the ice maker is Off, no more ice can be produced, but ice can still be dispensed when the freezer door is closed.

3. Lift the front of the storage bin, then pull it out.
4. Empty the storage bin. Use hot or warm water to melt ice, if necessary. Never use anything sharp to break up ice in the storage bin. This can damage the storage bin and the dispenser mechanism.

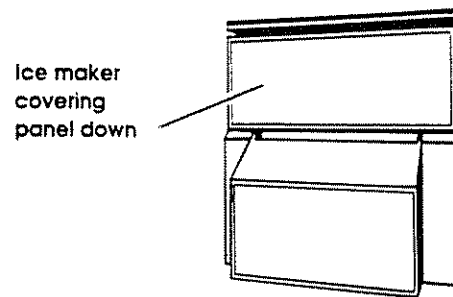
*To replace the bin:*

1. Make sure the storage bin is pushed in all the way.
2. Push the ice maker signal arm down to the On position to restart the ice maker.
3. Lower the ice maker covering panel (see Figure 12B)



**FIGURE 12A**

*The Ice Maker Covering Panel Raised*



**FIGURE 12B**

*The Ice Maker Covering Panel Lowered*

# BUILT-IN INSTALLATION

## Before You Start

### ! WARNING

#### PERSONAL INJURY HAZARD

Because of the size and weight of the refrigerator-freezer, two or more people are required to install it. Most of the refrigerator-freezer weight is located at the top. Use extra care when you move it so it does not tip over.

Failure to follow these instructions could result in personal injury.

### ! CAUTION

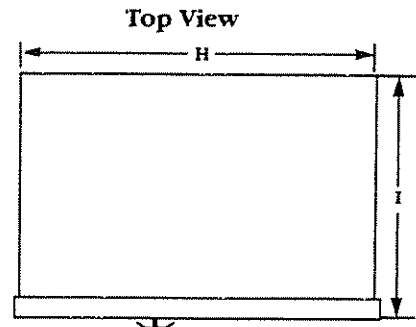
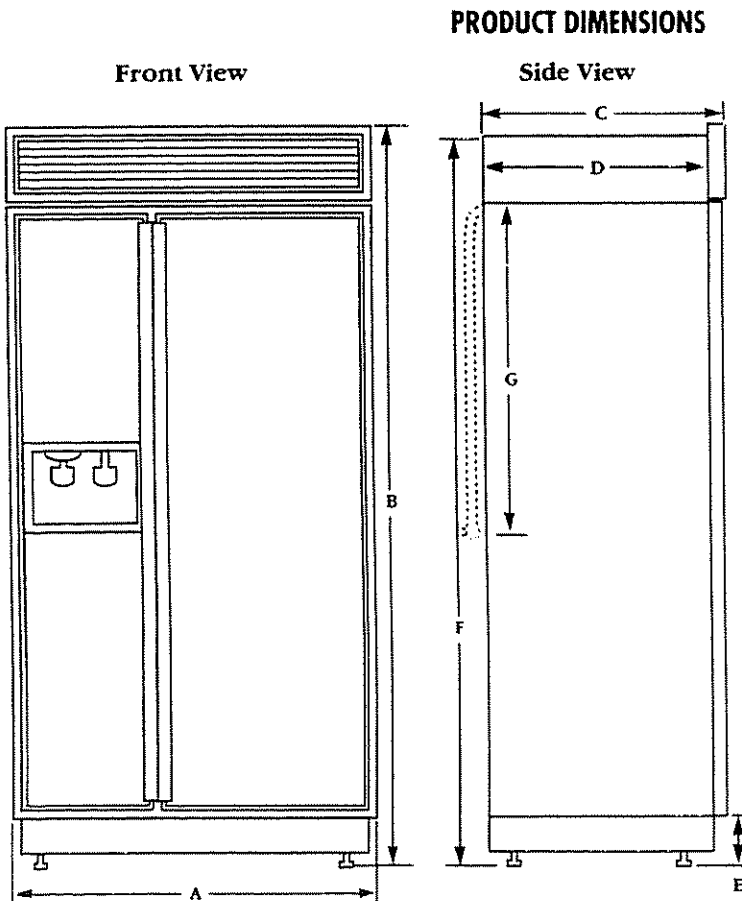
#### FLOOR DAMAGE

Use a heavy piece of cardboard from the shipping carton, or a piece of plywood, under the refrigerator-freezer until it is installed in its final location.

Failure to do this could cause damage to the floor covering.

**IMPORTANT:** Be sure to observe all governing codes and ordinances. It is your responsibility to:

1. Comply with installation specifications and dimensions.
2. Properly install the refrigerator-freezer.
3. Assure that the floor will support the weight of the refrigerator-freezer, (at least 600 lbs/272 kg), the door panels, and the contents.
4. Provide a properly grounded electrical outlet (see page 29).
5. Assure that the location will permit the appliance doors to open at a minimum of 90°.
6. Assure that the proper tools and materials are available for proper installation. These consist of:
  - a) 1/4" (6 mm) copper tubing with a non-piercing-type shutoff valve.
  - b) 1/4" (6 mm) compression fitting.
  - c) Six #8 x 3" (7.6 cm) wood screws (some installations may require longer screws).
  - d) Two 2"x 4"x 32" (5 cm x 10 cm x 81 cm) wood boards (see page 26).
  - e) T-15 Torx drive and bit.



	36" (91 cm)	48" (122 cm)
A	36" (91 cm)	48" (122 cm)
B	83-5/8" (212 cm)*	83-5/8" (212 cm)*
C	25-3/8" (64 cm)	25-3/8" (64 cm)
D	23-1/2" (60 cm)	23-1/2" (60 cm)
E	3-1/2" (9 cm)*	3-1/2" (9 cm)*
F	82-1/2" (210 cm)*	82-1/2" (210 cm)*
G	24" (61 cm)	24" (61 cm)
H	35" (89 cm)	47" (119 cm)
I	25" (63.5 cm)	25" (63.5 cm)

\* Dimensions shown are for levelers extended 1/8" (3 mm) below rollers. For levelers fully extended 1-1/4" (32 mm) below rollers, add 1-1/8" (29 mm) to the dimension.

## Opening Requirements & Dimensions

### **! WARNING**

#### PERSONAL INJURY/PROPERTY DAMAGE HAZARD

Take special care at all times to prevent the refrigerator-freezer from tipping over.

A solid soffit, or two 2" x 4" x 32" (5 cm x 10 cm x 81 cm) wood boards to cover the width of the compressor cover, are required above the refrigerator-freezer to prevent tipping during use.

If the solid soffit is more than 1" (2.5 cm) above the refrigerator-freezer, two 2" x 4" x 32" (5 cm x 10 cm x 81 cm) wood boards must be installed on the wall 1/4" (6 mm) above the refrigerator cover. The bottom surface of the boards must be 84" (213 cm) from the floor, and long enough to fully cover the width of the compressor cover.

Failure to follow these instructions could result in personal injury or property damage.

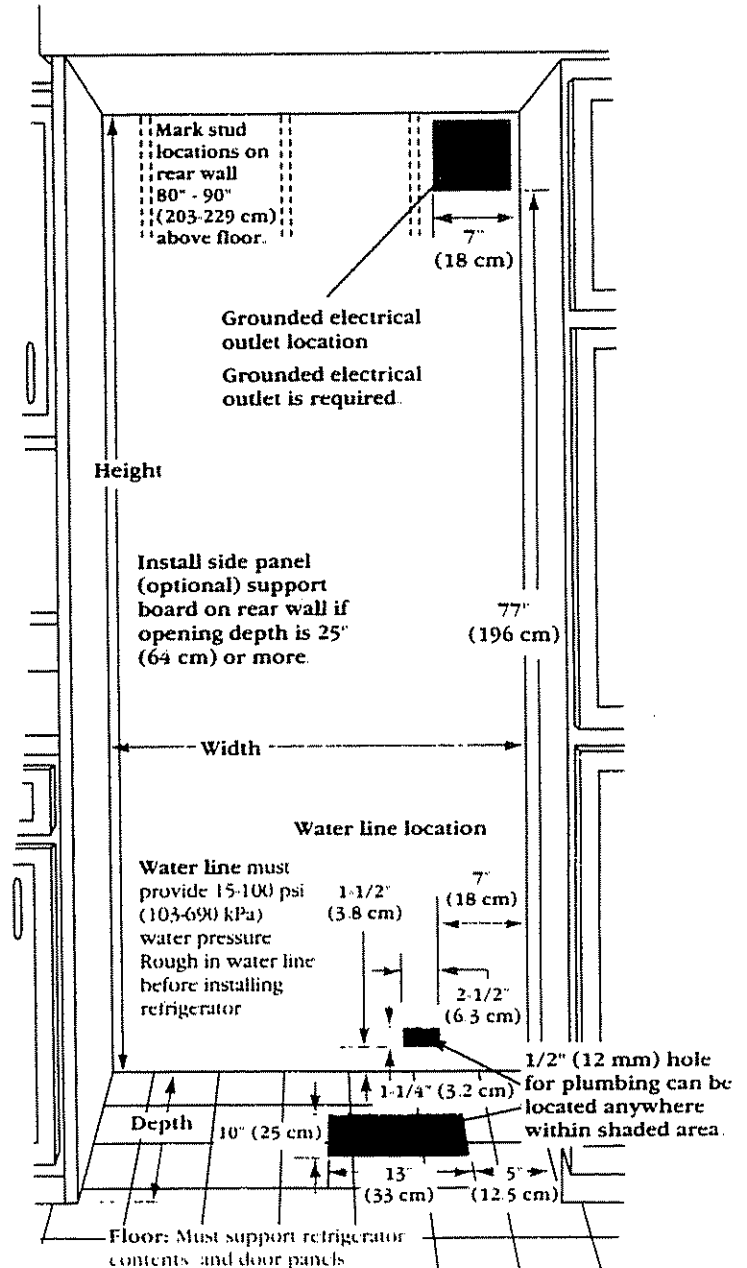
The built-in refrigerator-freezer can be installed:

1. With the doors protruding from the cabinet front.
2. With side panel(s) enclosing the refrigerator-freezer side(s).

Select one method and use the dimensions given. All dimensions shown are  $\pm 1/8"$  (3 mm), and provide 0" (0 cm) clearance

### OPENING DIMENSIONS

Model	36" (91 cm)	48" (122 cm)
Width (min)	35-1/2" (90 cm)	47-1/2" (120 cm)
Height (min)	82-1/2" (209 cm)	82-1/2" (209 cm)
Height (max)	84-3/4" (215 cm)	84-3/4" (215 cm)
Depth	23-1/8" (59 cm)	23-1/8" (59 cm)



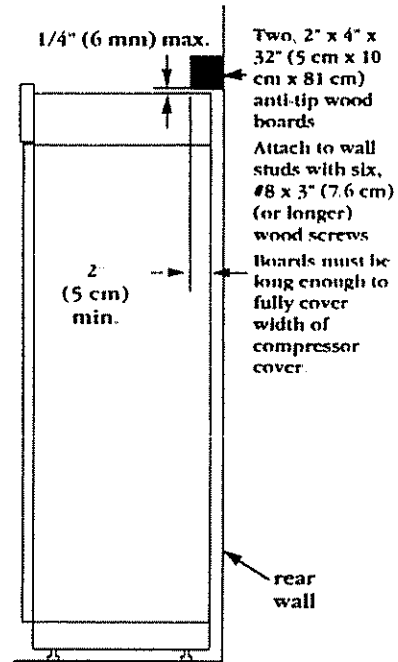
## Anti-Tip Requirements

If the boards are placed before you install the refrigerator-freezer, position the boards with the bottom surface 84" (213 cm) from the floor. During the installation, raise the refrigerator-freezer so there is a 1/4" (6 mm) maximum distance between the top of the refrigerator-freezer, and the bottom of the anti-tip boards.

If the solid soffit 1" (2.5 cm) above the top of the refrigerator-freezer, anti-tip boards are not required.

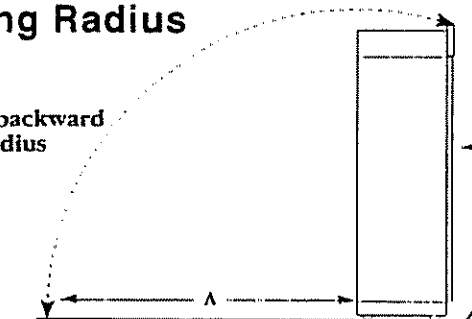
If the solid soffit is not available, or if the soffit is more than 1" (2.5 cm) above the top cover, center the wood boards on the rear wall 1/4" (6 mm) maximum above the refrigerator-freezer. Attach the wood boards to the wall studs with wood screws. Make sure that the screws are engaged in the wall studs a minimum of 1-1/2" (3.8 cm). The boards should extend a minimum of 2" (5 cm) over the top rear of the refrigerator-freezer's compressor cover.

The location must permit the refrigerator-freezer doors to open a minimum of 90°. Allow 1" (2.5 cm) minimum clearance between the side of the cabinet and the corner of the wall.

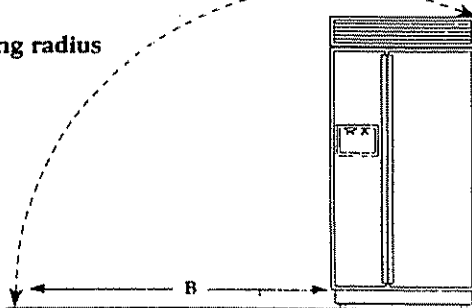


## Tipping Radius

Forward/backward tipping radius

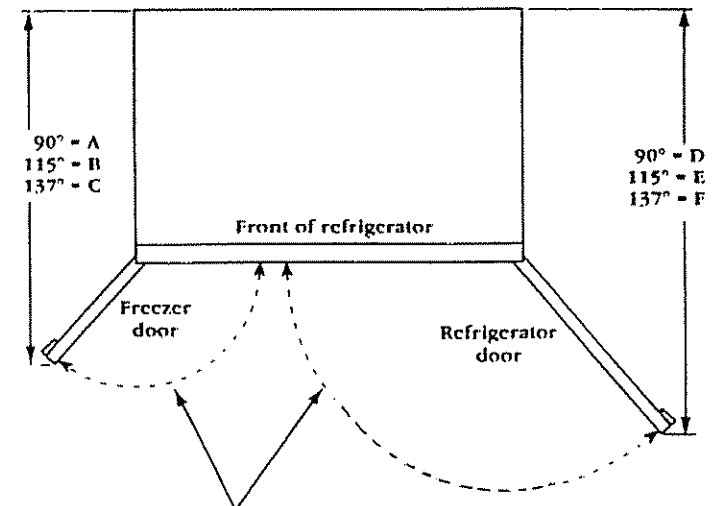


Side tipping radius



Size	A	B
36" (91 cm)	87-1/4" (222 cm)	90-1/16" (229 cm)
48" (122 cm)	87-1/4" (222 cm)	95-1/2" (243 cm)

## DOOR SWING DIMENSIONS



Model	A	B	C	D	E	F
36" (91 cm)	39-3/4" (101 cm)	39" (99 cm)	36-1/4" (92 cm)	44-3/4" (114 cm)	43-1/2" (110 cm)	39-3/4" (101 cm)
48" (122 cm)	44-3/4" (114 cm)	43-1/2" (110 cm)	39-3/4" (101 cm)	51-3/4" (131 cm)	50" (127 cm)	44-1/2" (113 cm)

## Installing Kit Or Custom Panels

### Panel Kits

You can purchase panel kits that contain colored acrylic or stainless-steel door panels from your dealer. To install the panels, follow the instructions that are provided with the kit.

### Custom Panels

⚠ CAUTION

PRODUCT DAMAGE

The custom panel weight must NOT exceed the amounts shown in the chart below.

Panels that weigh more than those listed may cause product damage.

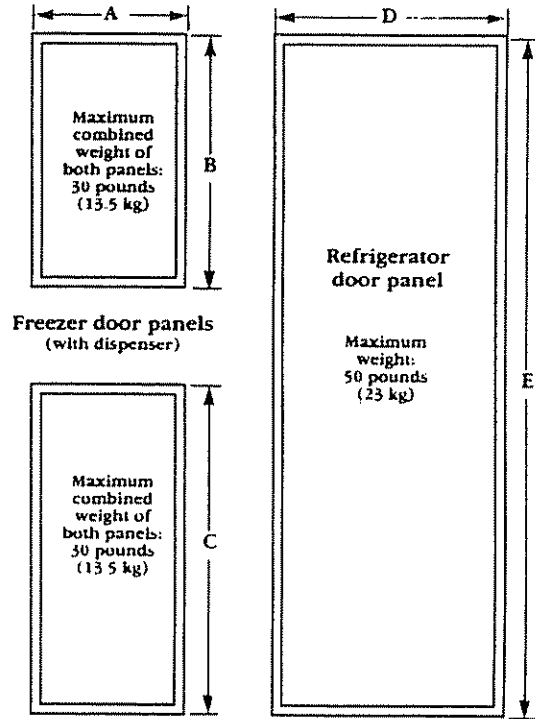
NOTE: The indicated dimensions have a  $\pm 1/16"$  (1.5 mm) tolerance.

If the panels are more than  $1/4"$  (6mm) thick, they must be routed on all sides. If routed panels are used, add  $1/16"$  (1.5 mm) to the dimensions shown in the chart.

If the panels are less than  $1/4"$  (6 mm) thick, install a filler panel between the doors and the decorative panels.

### KIT PANEL NUMBERS

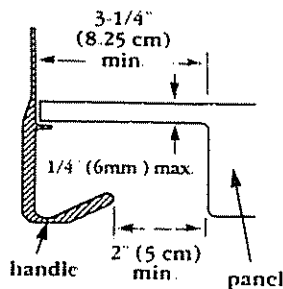
Size	36" (91 cm)	48" (122 cm)
White	4378347	4378351
Black	4378348	4378352
Stainless Steel	4378350	4378354



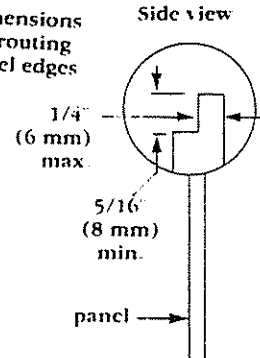
Model	A	B	C	D	E
36" (91 cm)	14-1/4" (36 cm)	26-1/4" (67 cm)	34-7/16" (87 cm)	19-1/4" (49 cm)	70-7/16" (179cm)
48" (122 cm)	19-1/4" (49 cm)	26-1/4" (67 cm)	34-7/16" (87 cm)	26-1/4" (67 cm)	70-7/16" (179cm)

If the panels are more than  $1/4"$  (6 mm) thick, route the entire length, or selected areas of the handle side of the panels,  $3-1/4"$  (8.25 cm)

End view of handle side of panel

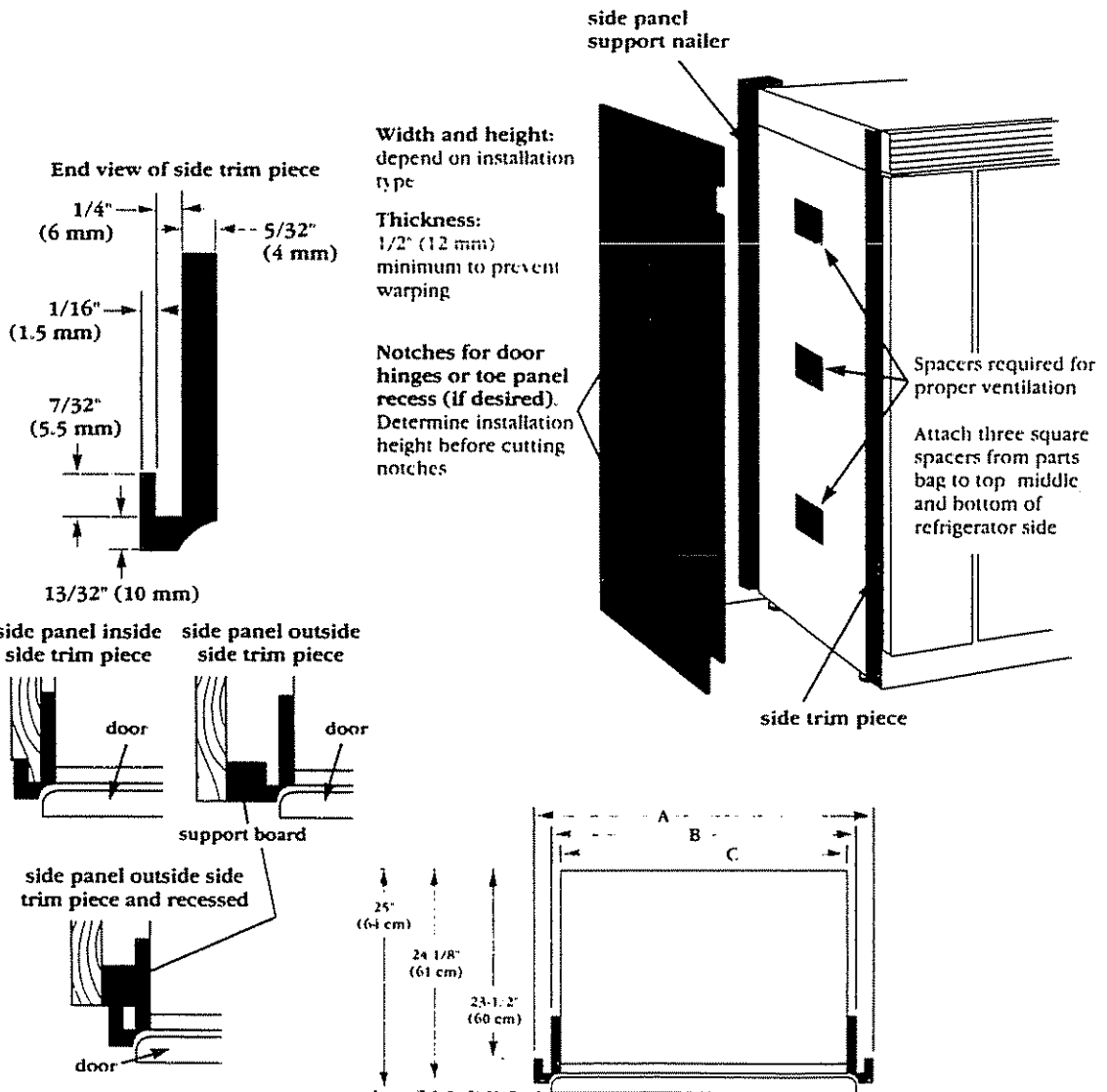


Dimensions for routing panel edges



## Side Panels

If you are installing panels inside the side trim and the panel is more than 1/4" (6 mm) thick, route the front edge of the panel to fit the trim piece.



	36" (91 cm)	48" (122 cm)
A	36" (91 cm)	48" (122 cm)
B	35-1/2" (90 cm)	47-1/2" (120 cm)
C	35" (89 cm)	47" (119 cm)



## Electrical & Water Supply Requirements

### Electrical

#### ▲WARNING

##### ELECTRICAL SHOCK HAZARD

An electrical ground is required on this appliance.

If the cold water pipe is interrupted by plastic, non-metallic gaskets, or other insulating materials, DO NOT use for grounding.

Do not ground to a gas pipe.

Do not modify the power supply cord plug. If it does not fit the outlet, have a proper outlet installed by a qualified electrician.

Do not have a fuse in the neutral or grounding circuit

Do not use an extension cord with this appliance.

Check with a qualified electrician if you are in doubt as to whether the appliance is properly grounded.

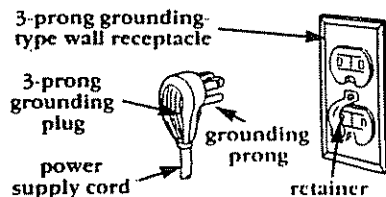
It is the customer's responsibility:

To contact a qualified electrical installer.

To assure that the electrical installation is adequate and in conformance with the National Electrical Code, ANSI/NFPA 70—latest edition\*\* or Canadian Electrical Code, C22.1-1982 and C22.2 No. 01982 (or latest edition\*), and all local codes and ordinances.

Failure to follow these instructions could result in serious injury or death.

If codes permit and a separate grounding wire is used, it is recommended that a qualified electrician determine that the grounding path is adequate.



A 120-volt, 60-Hz, AC-only, 15- or 20-ampere, fused electrical supply is required. A time-delay fuse or circuit breaker is recommended. It is recommended that a separate circuit serving only this appliance be provided.

This appliance is equipped with a power supply cord that has a 3-prong grounding plug. To minimize a possible shock hazard, the cord must be plugged into a mating 3-prong, grounding-type wall receptacle, grounded in accordance with the National Electrical Code, ANSI/NFPA 70—latest edition or Canadian Electrical Code, C22.1-1982 and C22.2 No. 01982 (or latest edition\*), and all local codes and ordinances.

Copies of the standard listed may be obtained from:

\*Canadian Standard Association  
178 Rexdale Boulevard  
Rexdale (Toronto), Ontario M9W 1R3

\*\*National Fire Protection Association  
Batterymarch Park  
Quincy, Massachusetts, 02269

### Water Supply

#### ▲WARNING

##### ELECTRICAL SHOCK HAZARD

Some water may remain in the line. The electric drill must be grounded to prevent severe or lethal shock if water is in the water line and enters the drill during use.

Failure to do so may result in personal injury or death.

#### ▲CAUTION

##### PRODUCT/PROPERTY DAMAGE

Use only ¼" (6 mm) copper tubing for the water line.

Do not install copper tubing in an area where temperatures will drop below 32°F (0°C).

Before attaching copper tubing to the refrigerator-freezer, flush at least 2-quarts (1.9 l) of water through the copper tubing and into a bucket to eliminate any particles.

Do not overtighten the compression nut or it will crush the copper tubing.

Check for leaks around the saddle valve.

Failure to follow these instructions may result in water damage to property or product damage

The water line to the refrigerator-freezer must provide 15 to 100 psi (103-690 kPa) water pressure. To calculate the length of ¼" (6 mm) O.D. copper tubing needed:

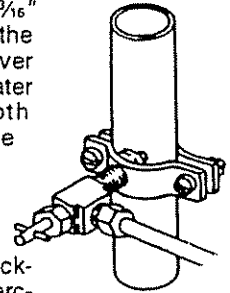
1. Locate a vertical ½" (1.2 cm) to 1-¼" (3.2 cm) COLD water line near the refrigerator-freezer area. A horizontal COLD water line can be used if the directions in step 4 are carefully followed.

2. Measure the distance from the cold water line to the refrigerator freezer and add 24" (61 cm) to the measurement.

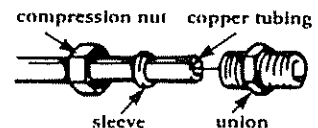
3. Turn off the main water supply and turn on the nearest faucet long enough to clear the line of water

4. Use a grounded electrical drill, or a hand drill, and drill a ⅜" (4.5 mm) hole in the water line. For a *horizontal* line, drill the hole in the *top*. This will keep sediment from collecting in the valve

5. Position the washer over the hole in the water line. Turn the saddle valve handle clockwise to expose the piercing lance a maximum of ⅜" (4.5 mm). Align the piercing lance over the hole in the water line. Place both halves of the saddle valve bracket against the water line. Turn the saddle valve handle clockwise until the piercing lance enters the hole in the water line and is firmly seated. The saddle valve is not in the closed position. Tighten the packing nut. Evenly and firmly tighten the bracket screws so the washer makes a water-tight connection. **Do not overtighten the screws. You could crush the copper tubing.**



6. Check that both ends of the copper tubing are cut square. Slide the compression nut and sleeve onto the copper tubing. Insert the end of the tubing completely into the valve outlet. Tighten the compression nut with a wrench. **Do not overtighten.**



7. Turn on the main water supply and check for leaks. Turn the saddle valve handle counterclockwise and run water through the tubing into a bucket. Turn the saddle valve handle off

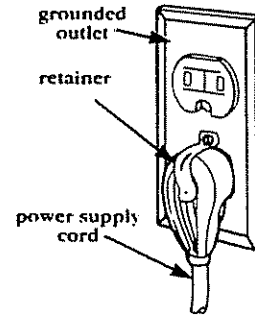
8. Route the copper tubing to the refrigerator-freezer area

9. Slide the compression nut and sleeve over the water line. Connect the union to the compression nut and sleeve and tighten it. **Do not overtighten.**

## Installing The Unit

The following parts are included with your appliance. Remove and check them against the following list, then set them aside until they are called for in a step.

Top grille assembly  
 Base grille  
 Tube assembly  
 Miscellaneous parts bag  
 Ice Maker bin assembly



### ⚠ CAUTION

**PRODUCT/PROPERTY DAMAGE**

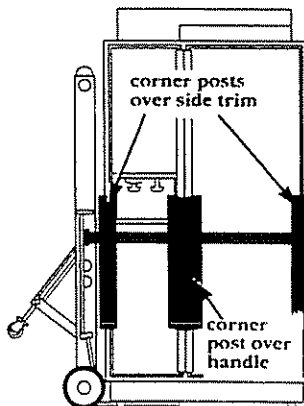
When you remove the shipping base, do not lower the refrigerator-freezer against the base.

Make sure that all four leveling legs contact the floor so that they support and stabilize the full weight of the refrigerator-freezer.

Keep the cardboard shipping piece, or plywood, under the refrigerator-freezer until it is installed in the operating position.

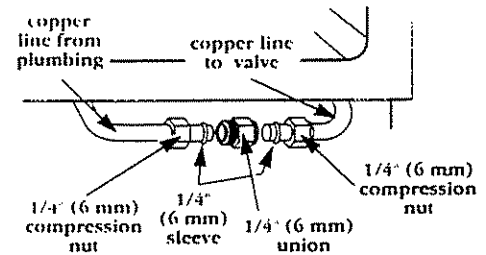
Failure to follow these instructions may cause damage to the product or floor covering.

- Place an appliance dolly under the unit and loosely wrap the dolly strap around it. Insert the carton corner posts between the strap and the refrigerator-freezer at the side trim and handle locations shown in the illustration. Carefully tighten the strap, making sure the side trim and handles are protected.



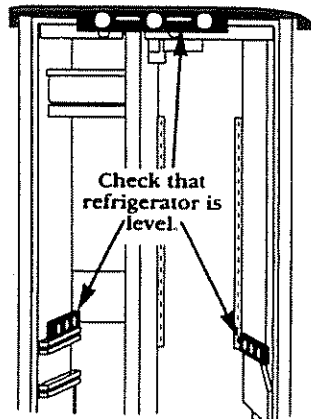
- Use two people and move the refrigerator-freezer near its built-in location. Place it on the cardboard or plywood, and remove the dolly.
- Set the power switch at the top of the cabinet to its "off" position, then plug the power supply cord into a grounded outlet. Install the retainer on the grounded outlet using the screw from the parts bag (see the top of the next column)

- If side panels are to be installed, attach three square spacers to the top, middle and bottom at the side of the cabinet that will be adjacent to the side panel (see page 28).
- Move the refrigerator straight back into its opening. Make sure that the copper tubing under the unit is not kinked, and that the power cord hangs freely, or is on top of the unit next to the compressor cover.
- If not already done, flush out the water line that will be connected to the refrigerator-freezer.
- Pull the copper tubing assembly forward. Slide a compression sleeve and nut over the end of the copper tubing and over the water line. Connect the tubing ends to the copper tubing union, and tighten the compression nuts one full turn each.



- Turn the water supply valve to the "open" position and turn the refrigerator switch on. Wait a few minutes and check the water line connection and the water valve on top of the cabinet for leaks. Position the tubing underneath the unit, being careful not to kink it
- Remove the tape from the rear leveling rods. Use a  $\frac{5}{16}$ " (8 mm) socket and turn the leveling rods clockwise until the cabinet weight is supported by the rear legs. Lower the front leveling legs with channel lock pliers until the weight of the cabinet is supported by the legs. Make sure that all four legs contact the floor and support the full weight of the unit. Do not use the rollers as a support

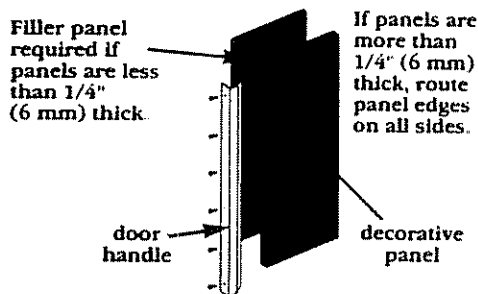
10. Open the doors and place a level against the underside of the door trim, on the refrigerator crisper guide, and on the freezer basket guide, as shown. Adjust the front leveling legs and the right and left rear leveling rods, as necessary, until the unit is level and at the correct opening height. Check to make sure that all four legs contact the floor and support the full weight of the unit.



11. Remove the screws from the door handles and remove the handles from the door frames. Slide the decorative panels into the door frames.

If the panels are less than 1/4" (6 mm) thick, install a filler panel between the door and the decorative panel.

If the panels are more than 1/4" (6 mm) thick, route the panel edges on all sides.



12. Check that both the refrigerator and freezer doors are aligned and level.

If the doors need to be adjusted left or right, or in or out, loosen the 3/8" (9 mm) hex-head screws in the top hinges.

If the doors need to be adjusted up or down, loosen the 3/8" (9 mm) hex-head screws in the bottom hinges.

Adjust the doors, tighten the screws, and check that the doors are aligned and level.

13. Replace the door handles. Check that the top of both the door handles are aligned. If they are not, loosen all the handle screws, and adjust the door handles up or down, then tighten the screws.

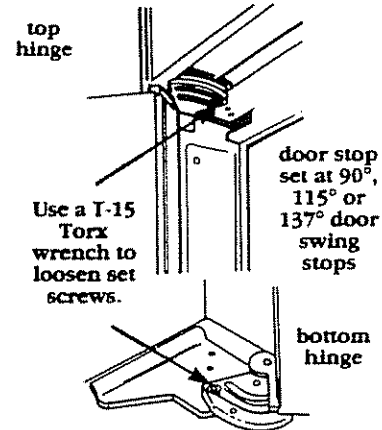
If the refrigerator has white door handles with white screws, discard the nylon washers, located beneath the screws. If any of the white door screws are damaged, replace them with additional screws provided in the parts bag.

## WARNING

### PERSONAL INJURY HAZARD

Make sure that you reinstall the setscrews after the door swing is set.

Failure to do so could result in personal injury.



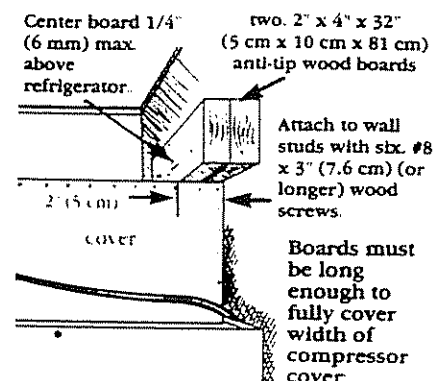
14. Make sure that the doors open freely. If needed, adjust the door swing as follows:

- Remove the setscrews in the top and bottom door hinges with a T-15 Torx wrench.
- Hold the door in the desired door swing position and replace the setscrews (the door stops are set at 90°, 115°, or 137°).

If the door does not clear the countertop after the door stop has been adjusted, you may need to miter the countertop. Consult with the builder.

15. If the solid soffit is 1" (2.5 cm) above the refrigerator-freezer, anti-tip wood boards are not required.

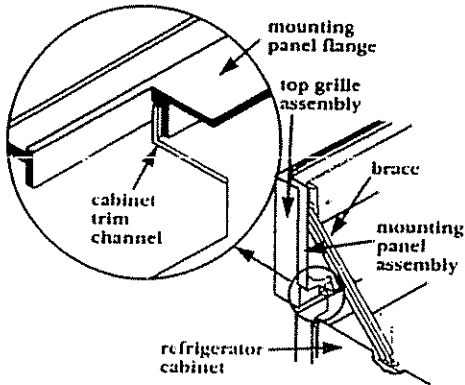
If the soffit is not available, or if the soffit is more than 1" (2.5 cm) above the refrigerator, locate the wall studs in the refrigerator opening. Center one wood board on the rear wall 1/4" (6 mm) maximum above the refrigerator-freezer. Attach the wood board to the wall studs with wood screws, making sure that the screws are engaged in the wall studs 1-1/2" (3.8 cm) minimum. Attach the second wood board to the front of the first board. The wood boards must extend 2" (5 cm) minimum over the top rear of the refrigerator-freezer compressor cover.



16. Remove the top grille assembly from its carton and slide the louver panel up and off the mounting assembly. Remove the two plastic nuts to release the tethers from the mounting panel assembly, and carefully set the louver panel aside.

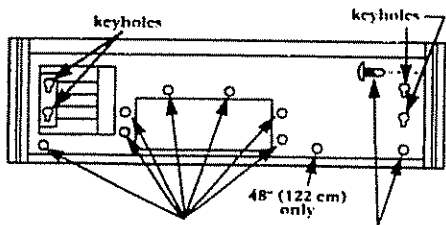
Attach the brace to the top right front corner of the refrigerator cabinet with one screw.

Insert the mounting panel flange into the cabinet trim channel and center it over the top and side trim. Attach the mounting panel assembly to the brace with one screw.



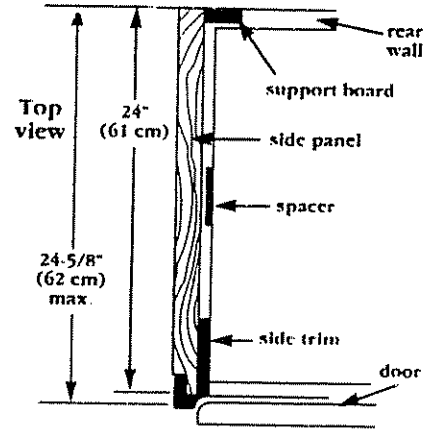
17. Tighten the top mounting panel assembly to the refrigerator with the screws. Use two plastic nuts and reattach the tethers to the mounting panel assembly. Insert the louver panel into the keyholes in the mounting panel assembly, and pull down to secure it.

If side panels are not used, go to step 22.

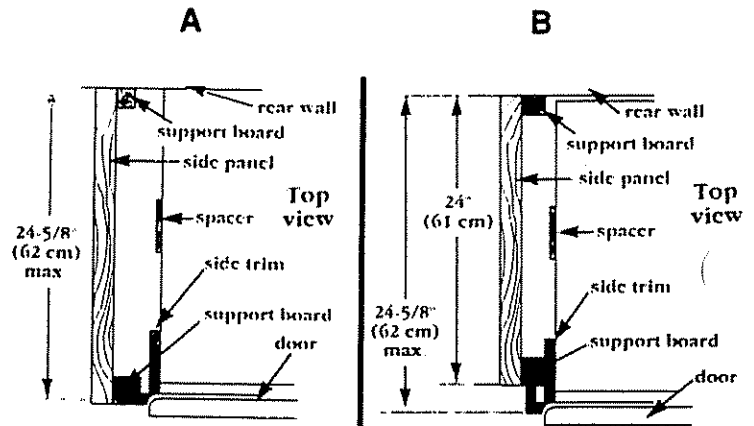


Attach mounting panel with screws at these points

18. If the built-in area depth is 25" (63.5 cm) or more, side panels can be installed inside the side trim, or attached to the outside of the side trim (see the top of the next column).



19. **Inside side trim piece:** Slide the front edge of the routed side panel into the trim piece, and nail the rear edge of the panel to the support board (see part A below).



20. **Outside side trim piece:** Being careful not to drill into the side of the appliance, drill six equally-spaced holes into the side trim piece (see part B above).

Attach a support board to the trim piece and nail the front and rear edges of the side panel to the support boards. Cover the front support board with a matching panel piece.

21. If the built-in area depth is less than 25" (63.5 cm), complete the side panel installation according to site restrictions. One method is to install a support nailer on the built-in opening rear wall. Drill holes into the side trim, and attach the wood support to the trim. Attach the side panel to the wood support and the support nailer. Cover the wood support with a matching panel piece.

22. Open the appliance doors and recheck the water connections at the bottom of the unit for leaks. Attach the bottom grille to the cabinet with the two screws. Level the grille before you tighten the screws.

Proceed to "Using The Refrigerator-Freezer."

## USING THE REFRIGERATOR-FREEZER

### POWER ON/OFF SWITCH

The Power On/Off switch is located behind the decorative top grille (see Figure 13A). It is used to turn the power on and off to the refrigerator-freezer.

To access the Power On/Off switch:

1. Remove the upper ventilation panel at the center of the top grille by lifting the spacers in the back out of the keyhole slots.
2. Grasp the louvres of the decorative top grille (it fits inside the main part of the grille) and slide it up to remove the rear spacers from the keyhole slots. Pull the louvred grille toward you as far as the cables will allow.

You can now access the Power On/Off switch (see Figure 13B), located in the upper right corner of the grille. This switch allows you to cut the power to the refrigerator without having to remove it from the wall, or disconnect it at the circuit breaker. Press the switch to its on or off position as needed.

3. Reinstall the decorative top grille by inserting the two spacers into the keyhole slots.

**IMPORTANT:** Be sure the Power On/Off switch is in the On position after cleaning the refrigerator-freezer, or changing a light bulb.

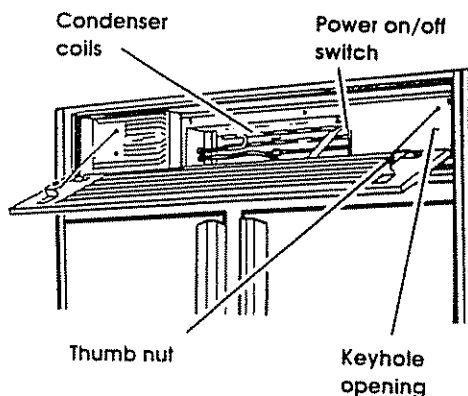


FIGURE 13A  
*The Decorative Top Grille*

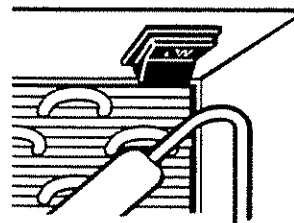


FIGURE 13B  
*The Power On/Off Switch*

## SETTING THE TEMPERATURE CONTROLS

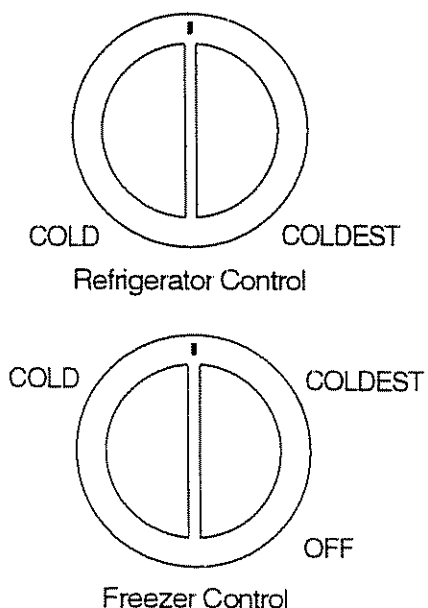
The refrigerator and freezer temperature controls (see Figure 14) have been preset at the factory. These settings should be correct for normal household refrigerator use. Allow the refrigerator to reach the preset temperature for approximately 24-hours before changing the settings.

*To make the temperature warmer:*

1. Turn the control toward the "cold" setting (counterclockwise). Wait at least 24-hours before making further adjustments to allow the refrigerator or freezer to reach the new temperature setting.

*To make the temperature colder:*

1. Turn the control toward the "coldest" setting (clockwise). Wait at least 24-hours before making further adjustments to allow the refrigerator or freezer to reach the new temperature setting.



**FIGURE 14**

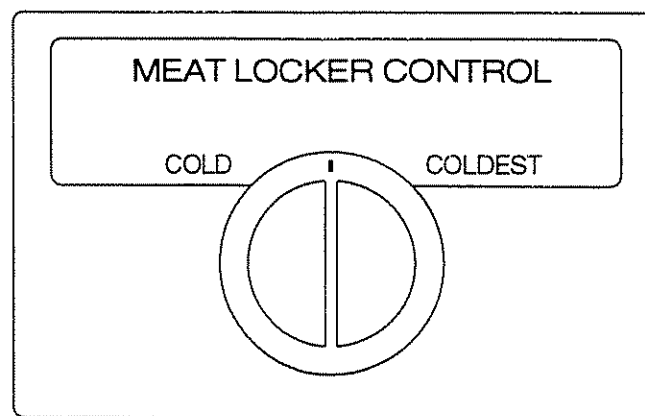
*The Temperature Control Box*

## THE MEAT LOCKER TEMPERATURE CONTROL

The Meat Locker Temperature Control (see Figure 15) allows you to adjust the storage temperature of the meat locker. Cold air flows into the meat locker through an air duct between the freezer and the refrigerator. Setting the control allows more or less cold air through the air duct.

The meat locker is designed to provide colder storage temperatures than the average refrigerator temperature. The meat locker can be located in any set of ladder slots. However, for temperature-controlled use, the meat locker must be located in the second to the last (bottom) set of ladder slots.

**IMPORTANT:** Occasionally, a food item may freeze in the meat locker, utility drawer, or crisper. When this occurs, turn the Meat Locker Temperature Control toward "cold."



**FIGURE 15**

*The Meat Locker Temperature Control*

## CHANGING THE CONTROL SETTINGS

Allow several hours for the refrigerator and freezer compartments to reach their operating temperatures, before adding food items. If the milk or juice in the refrigerator section is as cold as desired, then the thermostat is set correctly. The freezer section is set correctly when ice cream remains firm. If the refrigerator and freezer temperatures need to be readjusted, make sure that you:

1. Adjust the Refrigerator compartment temperature first.
2. Wait at least 24-hours before you make any further changes.
3. When the refrigerator section is at the desired temperature, adjust the freezer section, as desired.

For further information on control settings, refer to the chart shown below.

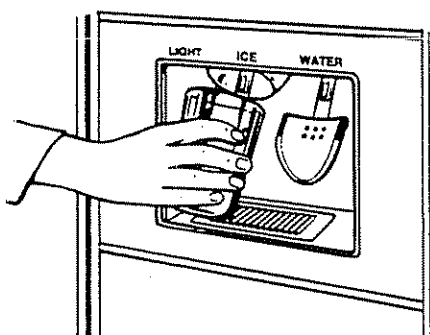
CONDITION:	POSSIBLE CAUSE:	RECOMMENDED CONTROL SETTINGS:	
Refrigerator section is too warm.	<ol style="list-style-type: none"> <li>1 Door is opened too often.</li> <li>2 Large amount of food present.</li> <li>3 Room is too warm</li> </ol>	Refrigerator:	Turn control toward "coldest."
Freezer section is too warm.	<ol style="list-style-type: none"> <li>1 Door is opened too often.</li> <li>2 Large amount of food present.</li> <li>3 Room is very cold (freezer cannot cycle often enough)</li> </ol>	Freezer :	Turn control toward "coldest "
Refrigerator section is too cold.	<ol style="list-style-type: none"> <li>1 Control not set properly for room temperature/humidity conditions</li> </ol>	Refrigerator:	Turn control toward "cold."
Freezer section is too cold	<ol style="list-style-type: none"> <li>1. Door is opened too often.</li> <li>2 Large amount of food present.</li> <li>3 Room is too warm or too cold.</li> </ol>	Freezer:	Turn control toward "cold."
Ice maker does not make ice fast enough	<ol style="list-style-type: none"> <li>1. Heavy ice usage.</li> <li>2 Room is very cold (freezer cannot cycle often enough)</li> </ol>	Freezer :	Turn control toward "coldest "

## COLD WATER AND ICE DISPENSERS

### The Ice Dispenser

To dispense ice (see Figure 16):

1. Press a **sturdy** glass against the ice dispenser bar.
2. Remove the glass to stop the ice dispenser.



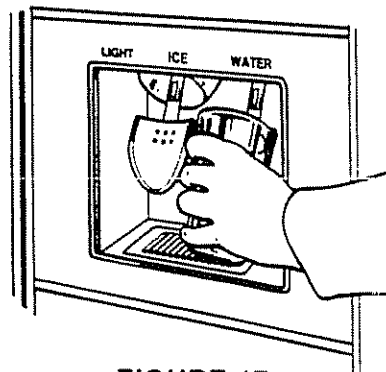
**FIGURE 16**  
*The Ice Dispenser*

Ice is dispensed from the ice maker storage bin in the freezer. When the dispenser bar is pressed, a trapdoor opens in the chute between the dispenser and the ice bin. Ice is moved from the bin and falls through the chute. When the dispenser bar is released, a buzzing sound may be heard for a few seconds while the trapdoor closes.

### The Cold Water Dispenser

To dispense cold water (see Figure 17):

1. Press a **sturdy** glass against the water dispenser bar.
2. Remove the glass to stop the water dispenser.



**FIGURE 17**  
*The Water Dispenser*

If the cold water dispenser stops working, it may be due to the water line freezing that leads to the dispenser. If this happens, turn the Meat Locker Temperature Control toward "cold."

Chilled water for the water dispenser is stored in a 50 oz. (1.5 l) tank that is located behind the crisper/utility drawer. Allow about 24-hours for the water to chill the first time the appliance is turned on.

When the refrigerator is first hooked up, press the water dispenser bar with a glass, or jar, and draw from 2- to 3-quarts (1.9 to 2.9 l) of water. This will remove air from the lines and rinse out the tank and pipes.

If the dispenser is not used regularly, dispense enough water every week to freshen the supply. Allow 2- to 3-hours for the new water supply to chill.

**IMPORTANT:** The small tray under the dispenser is designed to evaporate small spills. There is no drain in this tray. Do not pour water into it or leave large amounts of ice to melt in it.



## The Dispenser Light

The dispenser light (see Figure 18) automatically turns on whenever you press either of the dispenser bars. It will stay on as long as the arm is pressed. The light can be turned on and used as a night light by pressing the button located behind the dispenser panel in the upper left corner. To turn the light off, press the button again.

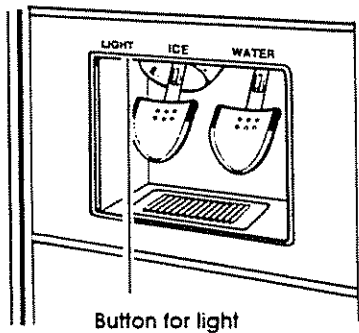


FIGURE 18

*The Dispenser Light*

## THE AUTOMATIC ICE MAKER

The ice maker is shipped from the factory with the signal arm in the Off (up) position. Turn the ice maker on immediately after you first turn on the unit. Ice production will occur approximately 24-hours later.

When the ON/OFF signal arm is down (see Figure 19), the ice maker will make ice automatically. When the signal arm is up, the ice maker is turned off.

It is normal for ice crescents to be attached at their corners. They can be easily broken apart. Shake the ice bin occasionally to keep the cubes from sticking together, and to increase the storage capacity.

When the ice maker is in the "harvest" cycle, you will hear water running, and ice falling into the bin. Because of the new plumbing connections, the first ice may be discolored, or taste off-flavor. Discard the first few batches of ice

If ice is not being made fast enough, turn the Freezer control to its coldest position, then, wait for 24-hours.

If you remove the ice bin, raise the signal arm to turn off the ice maker. When you return the bin, push it all the way in and lower the arm to the ON position.

If cubes are stored too long, they may develop an off-flavor, like stale water. When this happens, throw them away and let the ice maker make new ones.

Good water quality is important for making good ice. It is not recommended that you connect the ice maker to a softened water supply. Chemicals, such as salt, can damage the ice maker mold and lead to poor quality ice. If a softened water supply cannot be avoided, then it is important that you maintain it and keep it operating properly.

*To start the ice maker (see Figure 19):*

1. *For dispenser models only:* Pull the ice maker covering panel out from the bottom and slide it to the rear.
2. Push the ice maker signal arm down to the On position to start the ice maker.

*To stop the ice maker:*

1. Lift the ice maker signal arm until you feel it click into the Off position.

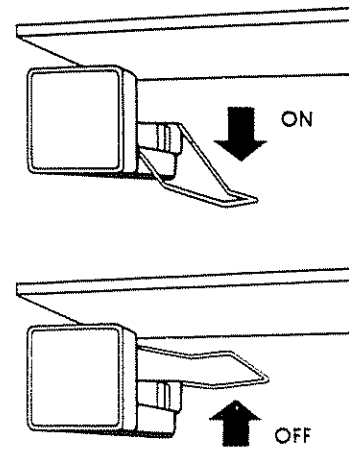


FIGURE 19

*The Automatic Ice Maker*

## DISPENSER/ICE MAKER OPERATING TIPS

PROBLEM	CAUSE	SOLUTION
Dispensers will not operate.	Freezer door is open.	Close the freezer door.
	Frozen water line.	Turn the Meat Locker Temperature Control toward "cold "
Ice Dispenser will not operate.	Ice bin is not properly installed.	Push ice bin in all the way.
	Oversized cubes added to bin Fused ice jamming auger.	Use only crescents from the ice maker. Shake the ice bin occasionally to keep the cubes separated and to obtain increased storage capacity.
	Dispenser is not used for extended periods of time, causing ice cubes to melt together.	Dump the old ice and make a new supply.
Ice dispenser stops working.	Ice fused together. Large quantity of ice dispensed at one time.	Wait about 3-minutes for the dispenser motor overload to reset.
		Large amounts of ice should be taken from the bin, not through the dispenser.
Off-taste or odor in ice.	Ice attracts airborne odors. Ice is old.	Dump old ice and make a new supply. Store excess ice in a covered container.
	Water quality	Water contains minerals (such as sulphur) and may require a filter to remove.
		For best results, avoid connecting the ice maker to a softened water supply. If this cannot be avoided, make sure the water softener is well-maintained and operating properly.
	Foods not wrapped.	Wrap foods properly in air and moisture-proof materials.
	Ice bin and freezer may need cleaning.	Clean freezer and ice bin
	Plumbing to ice maker.	Check the water supply hookup.
	New ice maker	The first few batches of ice from a new ice maker may have an off-taste. Dump this ice and make a new supply.

## REPLACING A REFRIGERATOR LIGHT BULB

### ! WARNING

#### Electrical Shock Hazard

Before you remove a refrigerator or freezer light bulb, turn the Power On/Off switch to Off (see page 33, ), or disconnect the electricity at the main power breaker. Failure to do this could result in personal injury due to electrical shock.

### NOTE

Replace the light bulbs with 25-watt, incandescent, medium-base, tubular bulbs.

#### To change the refrigerator light bulb:

1. Reach behind the control box cover in the refrigerator compartment, and unscrew the burned-out bulb from its socket in a counterclockwise rotation (see Figure 20).
2. Replace the burned-out bulb with a new 25-watt appliance bulb by inserting the base into the light socket, and rotating it clockwise until it is snug. Do not over-tighten the bulb.
3. Close the door and reconnect the power.

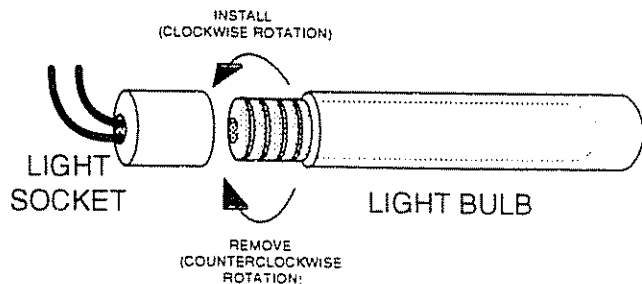


FIGURE 20

Replacing A Light Bulb

## REPLACING A FREEZER LIGHT BULB

NOTE: There are two lights in the freezer section, one at the top (located behind the freezer thermostat cover), and another near the center, below the ice maker.

#### To change the top freezer light bulb:

1. Reach behind the control box cover in the freezer compartment, and unscrew the bulb from its socket in a counterclockwise rotation (see Figure 20)
2. Replace the burned-out bulb with a new 25-watt appliance bulb by inserting the base into the light socket, and rotating it clockwise until it is snug. Do not over-tighten the bulb.
3. Close the door and reconnect the power.

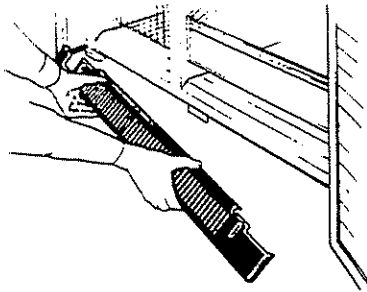
#### To remove the light lens and replace the light bulb located below the ice maker:

1. Press in on the center of the lens, then lift the top edge straight up and away from the light bracket. Lower the lens slightly at the bottom to disengage it from the bracket, and remove it from the freezer.
2. Unscrew the bulb from its socket in a counterclockwise rotation
3. Replace the burned-out bulb with a new 25-watt appliance bulb by inserting the base into the light socket, and rotating it clockwise until it is snug. Do not over-tighten the bulb.
4. Position the light lens with the slot facing down, and press the bottom edge against the liner and the outside edge of the metal light shield, then push the top of the lens forward and pull it up slightly while you hook it over the top of the metal light shield
5. Close the door and reconnect the power.

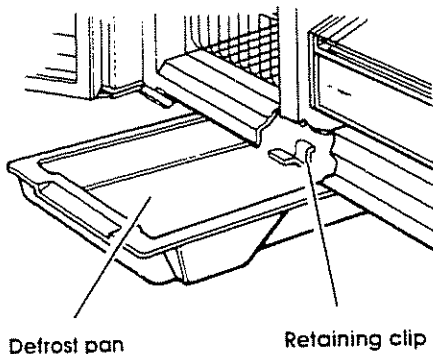
## REMOVING THE BASE GRILLE

To remove the base grille (see Figure 21):

1. Remove the screws at each end of the base grille and remove the grille.
2. Replace the base grille by loosely mounting it with the two screws you removed earlier. Level the grille so its edges are parallel to those of the refrigerator and freezer doors, then tighten the two screws



**FIGURE 21**  
*The Base Grille*



**FIGURE 22**  
*The Defrost Pan*

## THE DEFROST PAN

### **⚠ WARNING**

#### **Personal Injury & Floor Damage Hazard**

Refrigeration system tubes are located above the defrost pan and can become hot. Remove and reinstall the defrost pan carefully and do not come in contact with these coils.

Replace the defrost pan in the proper position after cleaning so that water does not collect on the floor.

Failure to follow these precautions could result in personal injury or floor damage.

The defrost pan is located behind the base grille, toward the left side of the refrigerator.

To remove the pan (see Figure 22):

1. Press the Power On/Off switch to off (see page 33).
2. Remove the base grille (see the previous section).
3. Locate the retaining clip under the refrigerator.
4. Push up on the retaining clip while you slide the defrost pan out from under the refrigerator-freezer.
5. Clean the pan.

To reinstall the defrost pan:

1. Position the edge of the defrost pan approximately 7-inches (17.8 cm) from the left side of the refrigerator.
2. Lift the defrost pan into the side guides and push it back until you hear the retaining clip "click" or "snap" into place.
3. Replace the base grille (see step 2 in the previous section)
4. Press the Power On/Off switch to the On position and reinstall the top panel

## REFRIGERATOR SOUNDS

Your new refrigerator may make sounds that your old one didn't. Because these sounds are new, you may become concerned. However, these new sounds are normal. Hard surfaces can make the sounds seem even louder. Some of the sounds you may hear are:

**A slight hum, or a soft hiss** - caused by the refrigerator's fan motor and moving air.

**Clicking or snapping** - caused by the thermostat when the refrigerator stops or starts operating. The defrost timer will click when the defrost cycle begins and ends.

**Water sounds or a gurgling noise** - caused by liquid settling in the tubing when the refrigerator stops operating. You may also hear defrost water dripping into the defrost water pan.

**Trickling water or a "thudding" sound with an ice maker installed** - caused by a buzzing of the water valve. Trickling water in the ice maker and ice falling into the bin can also cause these sounds.

**Running sounds** - caused by the high-efficiency compressor and motor. The newer compressors run longer than older ones, and may even seem to run most of the time. This is normal.

## ENERGY-SAVING TIPS

You can help your refrigerator use less electricity by:

1. Making sure the gaskets are clean and are making good contact with the cabinet.
2. Cleaning the condenser coils regularly.
3. Opening the refrigerator and freezer doors as little as possible. Keep food well organized and remove all of what you need at one time.
4. Not overfilling the compartments so that air cannot circulate properly.
5. Not setting the refrigerator and freezer sections to a temperature higher than necessary. If ice cream is firm and drinks are as cold as you like them, that is cold enough.
6. Keeping the refrigerator-freezer away from heat sources, such as a range, water heater, furnace, radiator, or direct sunlight.

# CARING FOR THE REFRIGERATOR-FREEZER

## CLEANING THE REFRIGERATOR

Both the refrigerator and freezer sections defrost automatically, but both should be cleaned about once a month to help prevent odors from building up.

To clean the refrigerator, turn the Power switch to OFF (see page 33). Take out all removable parts, and clean the refrigerator according to the following directions.

COMPONENT	WHAT TO USE	HOW TO CLEAN
<b>Removable parts</b> (shelves, crisper, meat locker, etc.)	Sponge, or cloth. Mild detergent. Warm water.	Wash Rinse and dry thoroughly.
<b>Outside Surfaces.</b>	Sponge, cloth, or paper towel Mild detergent Warm water. Appliance wax (or auto paste wax).	Wash the outside of cabinet. <b>Do not use abrasives or harsh cleaners.</b> Rinse and dry thoroughly. Wax the painted metal surfaces at least twice a year. Apply wax with a clean, soft cloth. <b>Waxing painted metal surfaces provides rust protection. Do not wax the plastic parts.</b>
<b>Inside walls</b> (allow freezer to warm up so cloth won't stick).	Sponge, soft cloth or paper towel. Baking soda or mild detergent. Warm water	Wash with mixture of warm water and mild detergent, or add 2 tablespoons (26 g) of baking soda to 1 quart (.95 l) of water. Rinse and dry thoroughly.
<b>Door liners and gaskets.</b>	Sponge, soft cloth or paper towel. Mild detergent. Warm water.	Wash Rinse and dry thoroughly. <b>Do not use cleaning waxes, concentrated detergents, bleaches, or cleaners containing petroleum on the plastic parts.</b>
<b>Plastic parts</b> (covers and panels)	Soft, clean sponge or soft clean cloth Mild detergent. Warm water.	Wash Rinse and dry thoroughly. <b>Do not use paper towels, window sprays, scouring cleansers, or flammable fluids. These can scratch or damage the material.</b>
<b>Defrost pan.</b>	Sponge or cloth Mild detergent Warm water.	Remove base grille. Lift defrost pan over the wire brace. Wash defrost pan. Rinse and dry thoroughly. Replace with notched corner to the rear. Push in all the way. Make sure the defrost drain tube is pointing into the pan. Replace the base grille.
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p><b>⚠ WARNING</b></p> <p>Personal Injury Hazard Refrigeration system tubes are located near the defrost pan and can become hot. Remove and install defrost pan carefully. Failure to do so could cause personal injury.</p> </div>		
<b>Condenser coils.</b>	Vacuum cleaner	Remove base grille Remove base grille and vacuum coils at least every month Replace the base grille.

## VACATION AND MOVING CARE

### Short vacations

No need to shut off the refrigerator if you will be away for less than four weeks. Use up perishables; freeze other items. If your refrigerator is equipped with an automatic ice maker:

1. Turn off your ice maker by raising signal arm.
2. Shut off the water supply to the ice maker.
3. Empty the ice bin.

### Long vacations

Remove all the food if you are going for a month or more. If your refrigerator is equipped with an automatic ice maker, turn off the water supply to the ice maker at least a day ahead. When the last load of ice drops, turn off the ice maker, and press the power On/Off switch to the "Off" position.

Clean the refrigerator, rinse it well, and dry it. Tape rubber or wood blocks to the top of both doors, keeping them open far enough for air to get in. This will keep odor and mold from building up.

## WARNING

### Personal Injury Hazard

Do not allow children to climb on, play near or climb inside the refrigerator when the doors are blocked open. They may become injured or trapped.

To restart refrigerator, see "Using The Refrigerator-Freezer" on page 33

## Moving

We do not recommend moving built-in products. However, if the built-in refrigerator-freezer must be moved, contact the dealer from whom you purchased the unit, or your local Thermador authorized servicer.

## Power interruptions

If electricity goes off, call the power company. Ask how long power will be off.

1. If service is to be interrupted 24-hours or less, keep both doors closed. This will help frozen food stay frozen.
2. If service is to be interrupted longer than 24-hours:
  - (a) Remove all frozen food and store in a frozen food locker

**OR**

  - (b) Place 2 lbs. (0.9 kg) of dry ice in the freezer for every cu. ft. of freezer space. This will keep food frozen for 2 to 4 days. Wear gloves to protect your hands from dry ice burns.
  - (c) If neither food locker storage nor dry ice is available, use or can perishable food at once.

3. A full freezer will stay cold longer than a partly filled one. A freezer full of meat will stay cold longer than a freezer full of baked goods. If food contains ice crystals, it may be safely refrozen, although the quality and flavor may be affected. If the condition of the food is poor or if you feel it is unsafe, dispose of it.

## IF YOU NEED ASSISTANCE OR SERVICE

Before you call for assistance, remember that performance problems often result from little things you can find and fix yourself without tools of any kind. The following points will help you troubleshoot your unit:

*If your refrigerator will not operate:*

- Is the power supply cord plugged into a live circuit with proper voltage?
- Have you checked your home's main fuses or circuit breaker box?
- Is the Refrigerator Power switch on?
- Is something on top of or behind the refrigerator making noise when the refrigerator is running?
- New features on your new refrigerator make new sounds. You may be hearing air flowing from the fans, timer clicks for the defrosting cycle, or defrost water draining in the defrost pan.

*If your ice maker will not operate:*

- Has the freezer had enough time to get cold? With a new refrigerator, this might take overnight.
- Is the signal arm ON (in the down position)?
- Is the water valve turned on? Is water getting to the ice maker?

*If there is water in the defrost pan:*

- This is normal in hot, muggy weather. The pan can even be half full. Make sure the refrigerator is level so the pan does not overflow.

*If the light does not work:*

- Is the Refrigerator Power switch on?
- Have you checked your home's main fuses, or circuit breaker box?
- Is the power supply cord plugged into a live circuit with proper voltage?

*If a bulb is burned out:*

- See instructions for changing light bulbs on page 39. Use only appliance bulbs.

*If the motor seems to run too much:*

- Is the condenser free of dust and lint?
- On hot days, or if the room is warm, the motor naturally runs longer.
- If the door has been opened a lot, or if a large amount of food has been put in, the motor will run longer to cool down the interior.

*Remember that:*

- Motor running time depends on the number of times you open the door, the amount of food stored, the temperature of the room, and the setting of the controls.
- Your new refrigerator may be larger than your old one so it has more space to be cooled. It also has a regular freezer instead of a frozen food compartment. All this means better refrigeration and may require more running time than your old one.

### **For Service In The U.S. And Canada:**

Call your dealer or a repair service that he recommends.

If you are unable to obtain the name of an authorized service outlet, look in the yellow pages of your area, or metro, telephone directory, or under "Refrigerators" for authorized Thermador service outlets.

All service should be handled locally by the dealer from whom you purchased the unit, or from an authorized Thermador servicer.

If you must write, please provide your complete model number, serial number, date of purchase, your daytime phone number, and a complete description of the problem. Write to:

Customer Relations Department  
Thermador  
5119 District Boulevard  
Los Angeles, CA 90040  
(213) 562-1133.



## SERVICING THE COMPONENTS

### GENERAL INFORMATION

This section instructs you how to service each component inside the Refrigerator-Freezer. Make sure you follow the instructions carefully, and observe all the safety "Warnings" and "Cautions."

The unit is divided into three basic sections: the refrigerator, freezer, and top cabinet. The components that are accessible from inside the refrigerator compartment, include the:

- Electronic control board
- Light switch
- Motorized air door
- Temperature sensor (thermistor)
- Meat locker control
- Cold water reservoir

To service any of these components, refer to "The Refrigerator Compartment," starting on page 46.

The components that are accessible from inside the freezer compartment, include the:

- Thermostat
- Light/ice conveyor switch
- Ice maker
- Evaporator fan motor
- Bimetal
- Defrost heater/evaporator
- Water & ice dispenser
- Ice conveyor assembly
- Ice conveyor motor

To service any of these components, refer to "The Freezer Compartment," starting on page 52

The components that are accessible from the top of the cabinet, include the:

- Power switch
- Defrost timer
- Run capacitor
- Starting capacitor
- Water dispenser and ice maker fill valves
- Condenser fan motor

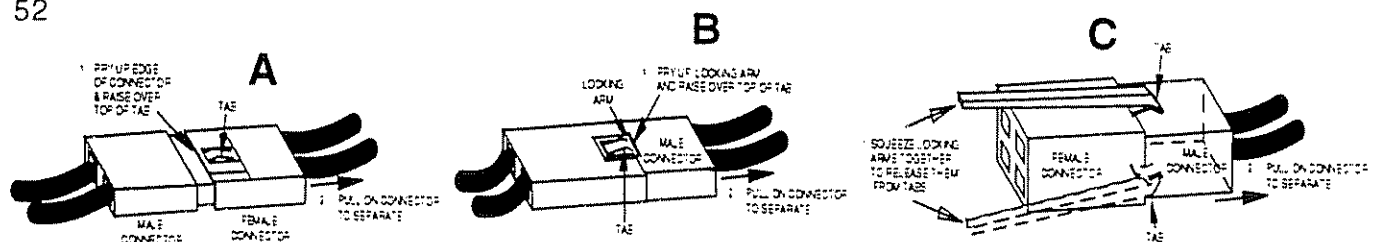
To service any of these components, refer to "On Top Of The Cabinet," starting on page 80.

You will need the following tools and materials when you service the unit:

- Standard socket or nut driver set
- Regular screwdriver
- Phillips screwdriver
- Electric screwdriver (optional)
- Work mat

The appliance uses three types of wiring connectors (see Figure 23). These connectors are held together by tabs and a locking arms. To separate connectors A and B, slide the blade of a small screwdriver under the skirt, or locking arm, and pry up gently until the slot is over the top of the tab, then pull on the two connectors and separate them.

**FIGURE 23**  
*Wiring Connectors*



# THE REFRIGERATOR COMPARTMENT

## REPLACING THE ELECTRONIC CONTROL BOARD

### **WARNING**

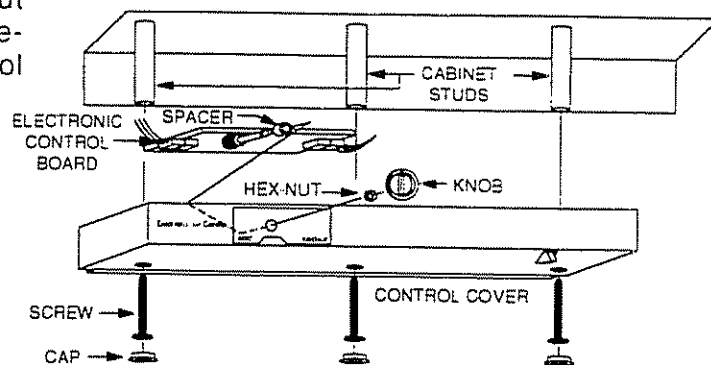
#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 24 for the following

1. Pull the knob from the control shaft on the electronic control board.
2. Use a 1/2" (13 mm) nut driver and remove the hex nut from the control shaft on the electronic control board.
3. Pry off the three plastic caps from the control cover.
4. Remove the three phillips screws from the control cover and rotate it down to expose the wiring.
5. Press down on the ends of the locking arms on the wiring connectors so the hooks disengage from the tabs, and unplug the two connectors from the electronic control board.
6. Slide the old electronic control board out of the slots in the control cover and remove the plastic spacer from the control shaft.
7. Slide the plastic spacer over the control shaft on the new board, and install the board into the control cover slots so the control shaft fits through the cover opening.
8. Carefully thread the 1/2" (13 mm) hex nut onto the control shaft of the electronic control board (**be careful not to crossthread it**) and tighten the nut securely.
9. Reconnect the two control board plugs to their connectors so that the hooks on the arms lock over the tabs.
10. Rotate the control cover to its normal position, and push the wiring inside the cover from the back so that it does not become pinched between the edge of the cover and the liner. Mount the cover to the three cabinet studs with the phillips screws you removed earlier.
11. Align the flat of the control shaft with the flat of the knob, and insert the knob over the shaft as far as it will go.
12. Press the three plastic caps into the screw holes.
13. Turn on the unit and check out the electronic control board operation.

**FIGURE 24**  
*The Electronic Control Board*



## REPLACING THE LIGHT SWITCH

### **⚠ WARNING**

#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 25 for the following steps.

1. Remove the three plastic caps from the control cover.
2. Remove the three phillips screws from the control cover and rotate it so you can work on it.
3. Unplug the yellow and black wire connectors from the refrigerator light switch.
4. Press on the flexible arm of the light switch (see the inset drawing) and pry the side out as far as possible, then unhook the wedged side of the switch from the edge of the cover, and carefully remove the switch from the slot.
5. Position the new refrigerator light switch so the flat of the rocker arm is toward the front, and then press the switch into place into the control cover cutout.
6. Reconnect the yellow and black wire connectors to either of the switch terminals.
7. Rotate the control cover to its normal position, and push the wiring inside the cover from the back so that it does not become pinched between the edge of the cover and the liner. Mount the cover to the three spacers with the three phillips screws you removed earlier.
8. Press the three plastic caps into the screw holes.
9. Turn on the unit and check out the light.

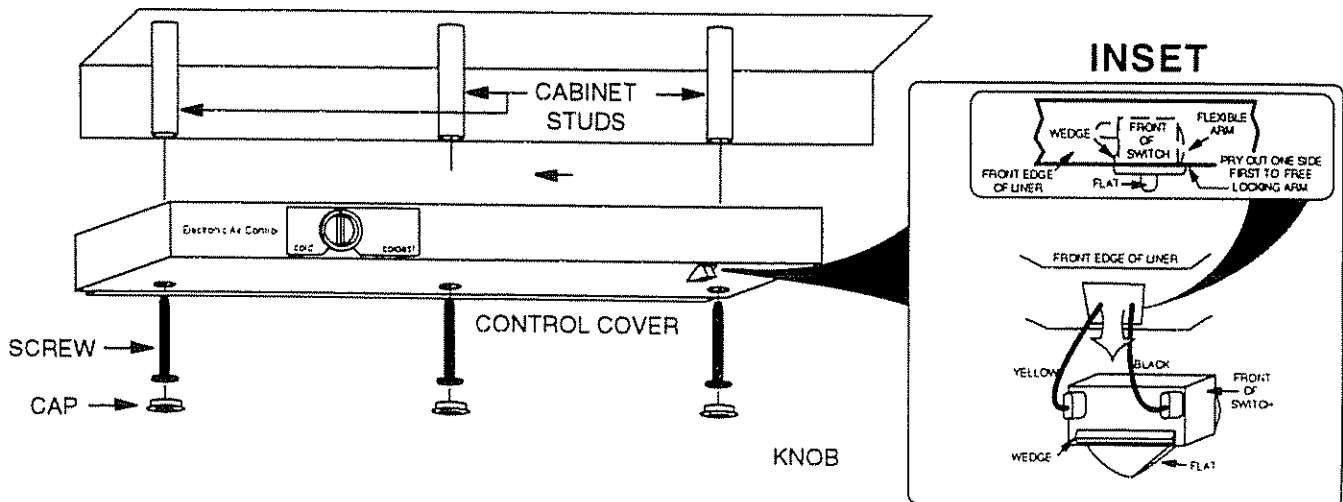


FIGURE 25  
 The Light Switch

## REPLACING THE MOTORIZED AIR DOOR

### **⚠ WARNING**

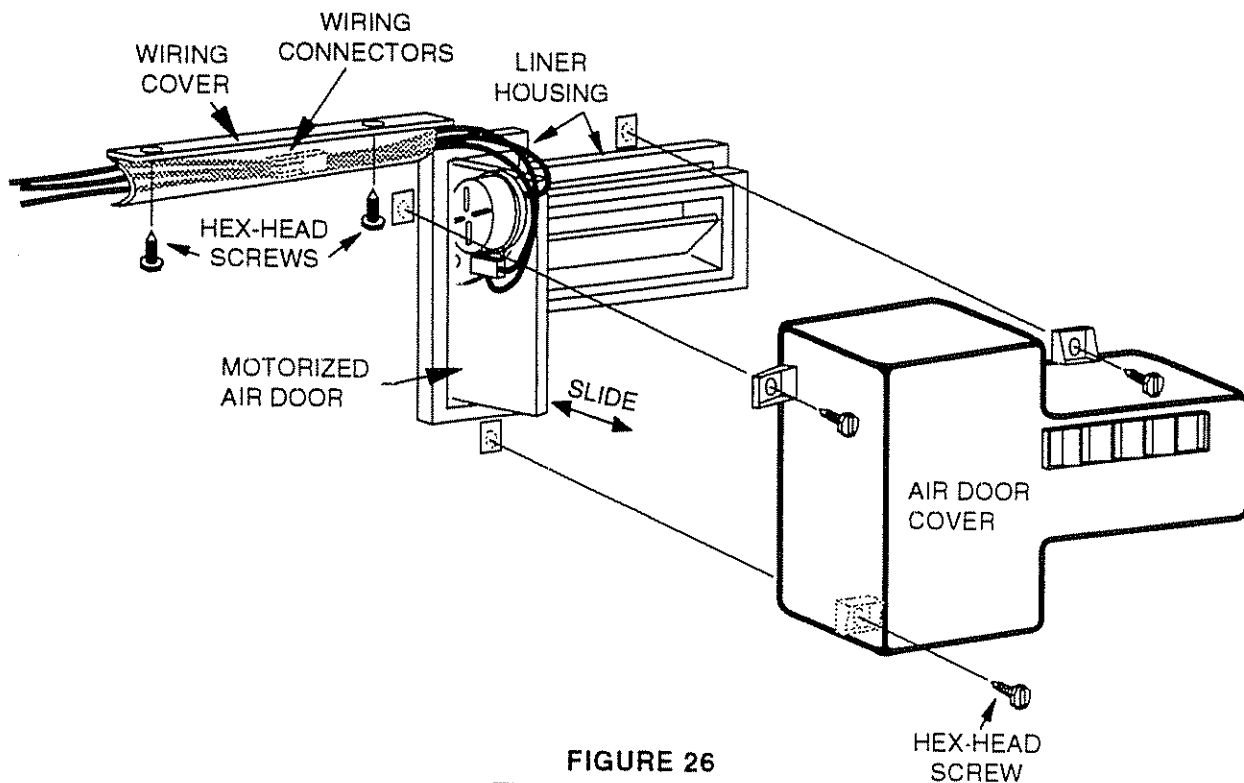
#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 26 for the following steps.

1. Use a 1/4" nut driver and remove the three hex-head screws from tabs of the motorized air door cover and remove the cover.
2. Remove the two hex-head screws from the wiring cover and remove the cover.

3. Disconnect the motorized air door connector from the wiring harness.
4. Slide the motorized air door assembly out of the slot in the liner housing.
5. Mount the new motorized air door assembly into the liner housing and push it back as far as it will go.
6. Reconnect the motorized air door plug to the wiring harness so the locking arm hooks over the tab.
7. Position the wiring cover with the straight edge toward the front, and mount it with the two hex-head screws you removed earlier. Make sure that you do not pinch any wires between the cover and the liner.
8. Mount the air door cover to the liner with the three hex-head screws you removed earlier. Install the top screw first, and then install the other two screws.
9. Turn on the unit and check out the motorized air door operation.



**FIGURE 26**  
*The Motorized Air Door*

## REPLACING THE TEMPERATURE SENSOR

### **⚠ WARNING**

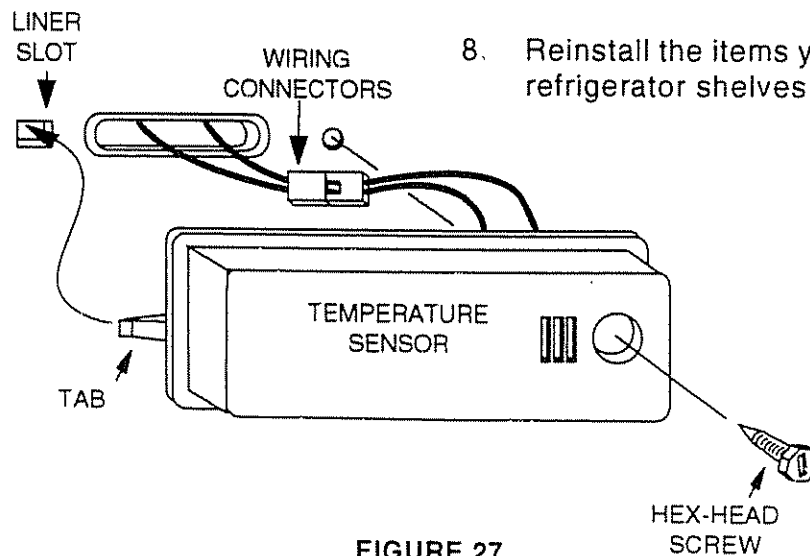
#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 27 for the following steps.

1. Remove any items from the refrigerator shelves that are obstructing the temperature sensor and set them aside.

2. Use a 1/4" nut driver and remove the hex-head screw from the temperature sensor assembly.
3. Lift the right end of the sensor slightly, and unhook the tab in the left end from the slot in the liner.
4. Unhook the locking arm on the temperature sensor connector from the wiring harness connector tab and separate the connectors.
5. Connect the new temperature sensor to the wiring harness.
6. Hook the tab in the end of the new temperature sensor into the slot in the liner, and mount the other end to the liner with the hex-head screw you removed in step 2.
7. Turn on the unit and check out the temperature sensor operation.
8. Reinstall the items you removed from the refrigerator shelves and close the door.



**FIGURE 27**  
*The Temperature Sensor*

## REPLACING THE MEAT LOCKER CONTROL

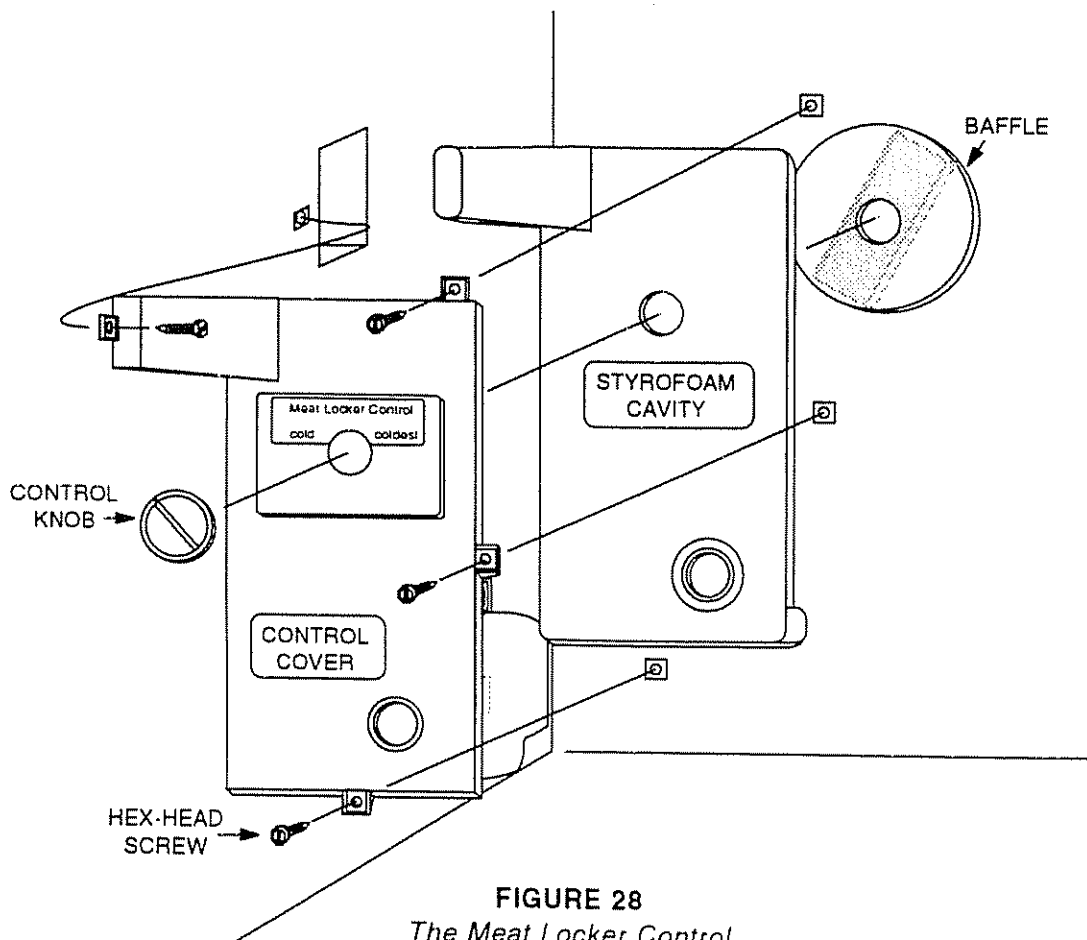
### **WARNING**

#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 28 for the following steps.

1. If necessary, remove the shelf and drawer from the refrigerator so you can easily access the meat locker control.
2. Remove the four hex-head screws from the meat locker control tabs and remove the assembly.
3. Replace the defective baffle, styrofoam cavity, control cover, or the entire assembly.
4. Remount the meat locker control components to the liner with the four hex-head screws you removed in step 2.
5. Fully rotate the control knob in both directions to make sure it works properly.
6. Reinstall the meat locker shelf and drawer into the second to the last (bottom) ladder slots in the refrigerator. 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 fully back.



**FIGURE 28**  
*The Meat Locker Control*

## REPLACING THE COLD WATER RESERVOIR (Water & Ice Dispenser Models Only)

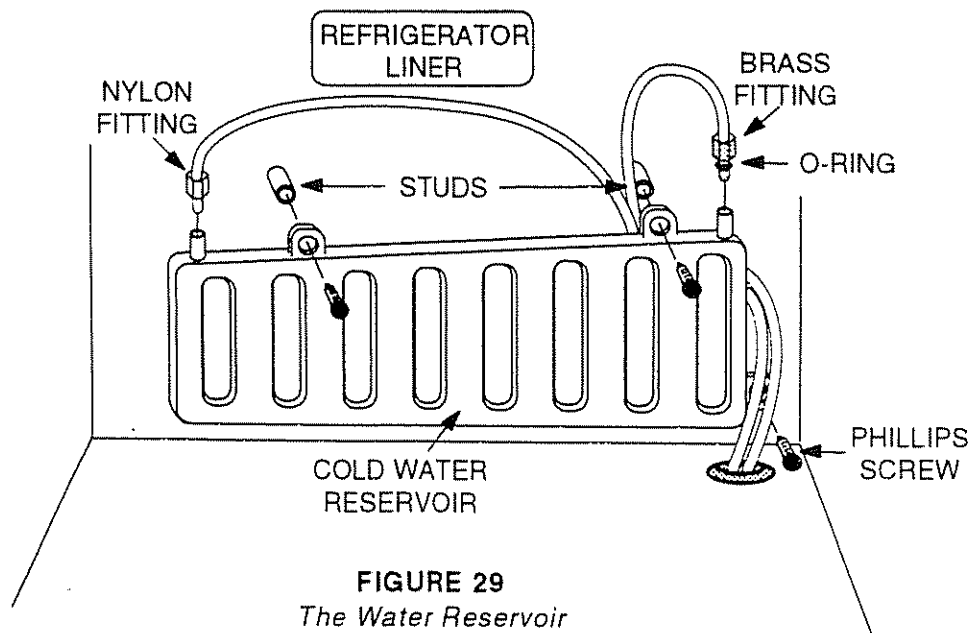
### **! WARNING**

#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 29 for the following steps.

1. Remove the utility drawer and crisper from the refrigerator. You may wish to remove the meat locker as well.
2. Use a pair of pliers and remove the nylon fitting from the left reservoir connector.
3. Similarly, remove the brass fitting from the right reservoir connector.
4. Remove the three phillips screws from the cabinet studs and remove the reservoir.
5. Position the tubing with the brass fitting under the right top liner stud, and then mount the new reservoir to the studs with the three phillips screws you removed in the previous step.
6. Make sure that the rubber o-ring is over the end of the tubing, and loosely connect the brass fitting to the right reservoir connector. Push the tubing into the fitting as far as it will go, and then tighten the fitting.
7. Loosely connect the nylon fitting to the left reservoir connector (there is no o-ring for this connector). Push the tubing into the fitting as far as it will go, and then tighten the fitting.
8. Turn the unit on and press the water dispenser and check the reservoir fittings for leaks.
9. Reinstall the utility drawer and crisper in their designated locations. If you removed the meat locker, reinstall it into the second to the last (bottom) ladder slots in the refrigerator. 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 fully back.



**FIGURE 29**  
*The Water Reservoir*

# THE FREEZER COMPARTMENT

## REPLACING THE THERMOSTAT

### **WARNING**

#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 30 for the following steps.

1. Remove the hex-head screw from the air duct cover at the upper right rear corner of the freezer and remove the cover.
2. Remove the two hex-head screws from the side wiring cover and remove the cover.
3. Slide the air diffuser up so the flange clears the air duct, then remove it.

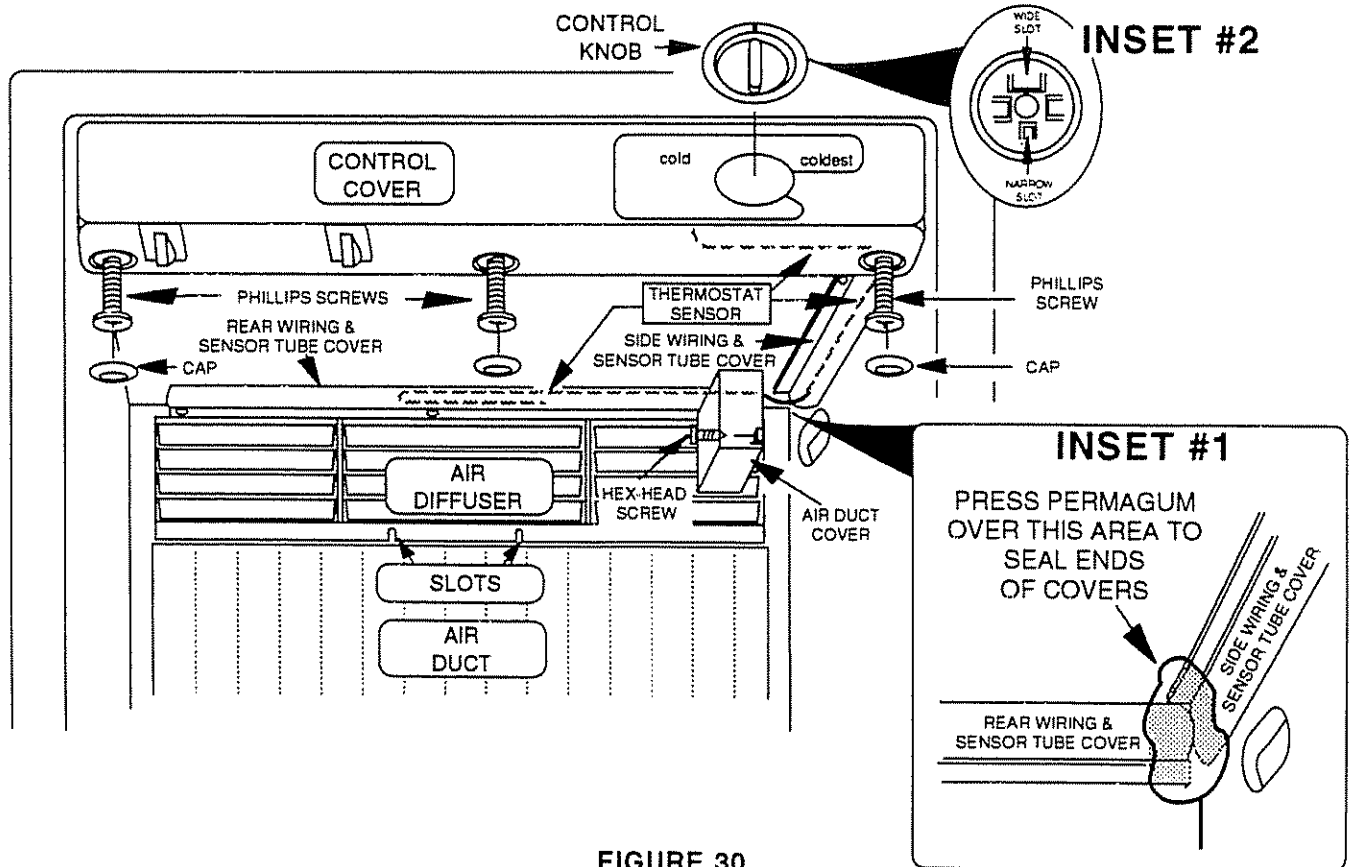
4. Carefully remove the Permagum from the upper right rear corner of the freezer (see inset #1).

### **NOTE**

When you remove the screws from the rear wiring cover in the next step, use a magnetic socket to help hold the screws so they cannot drop behind the air duct

5. Remove the three hex-head screws from the rear wiring cover and remove it. Be careful not to drop any of the screws behind the air duct.
6. Remove the three plastic caps from the freezer thermostat control cover.
7. Pull the knob off the freezer thermostat control shaft.
8. Remove the three phillips screws from the freezer thermostat control cover and rotate it so you can work on it.





**FIGURE 30**  
 Accessing The Freezer Thermostat

## Replacing The Thermostat (Cont'd)

Refer to Figure 31A for the following steps.

9. Pull the wire connector off the three thermostat terminals.
10. Pull the green wire terminal off the thermostat ground terminal.
11. Remove the two phillips screws from the thermostat bracket, then carefully remove the thermostat and the sensor tube from the freezer.
12. Form the new freezer thermostat sensor tube to the dimensions shown in Figure 31B. Make sure that you form the loop at the end of the tube as shown.
13. Mount the freezer thermostat to the thermostat cover studs with the two phillips (not hex-head) screws you removed earlier.
14. Connect the 3-prong wiring connector to the thermostat terminals.
15. Connect the green wire connector to the ground terminal of the thermostat.
16. Route the sensor tube on the new freezer thermostat and the wiring from the connector around the inside of the right mounting stud of the control cover as shown.

Refer to Figure 30 on the previous page for the following steps.

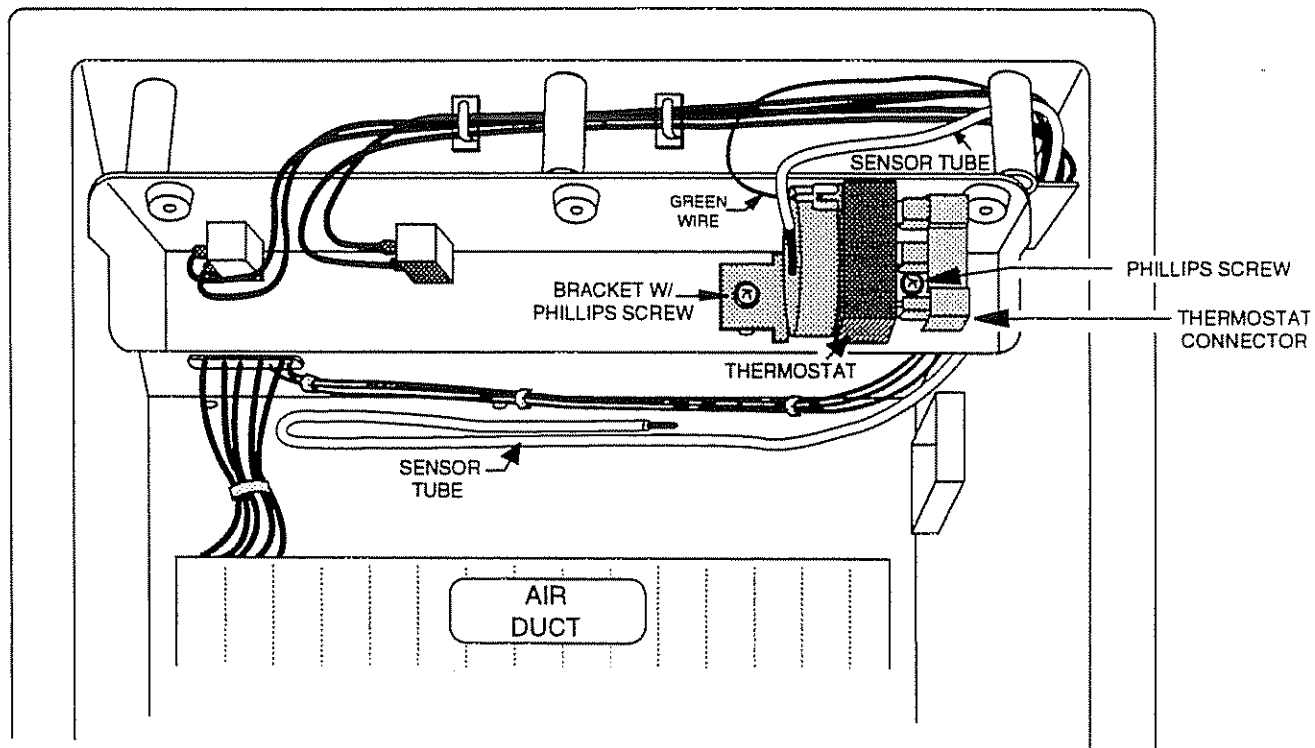
17. Rotate the control cover to its mounting position and align the mounting holes with the three cabinet mounting studs (if necessary, insert your finger through the

cutout in the rear of the cover to align the cover screw holes with the studs). Loosely install the three phillips screws into the studs to hold them in place. Make sure that none of the wiring is pinched between the cover and the liner, then tighten the three screws securely.

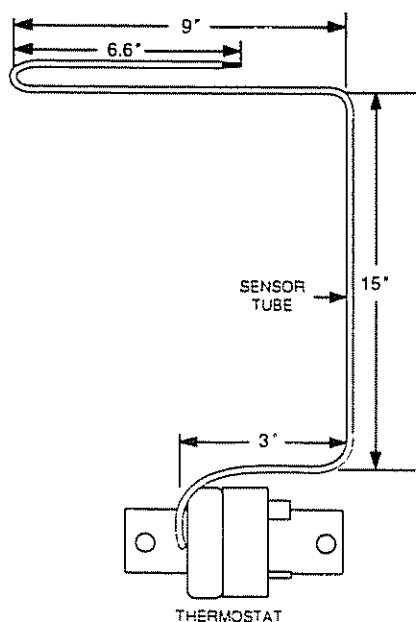
18. Refer to inset drawing #2 and note that the thermostat's control shaft has a wide and a narrow tab. Position the knob so the slots match these tabs and push it over the control shaft as far as it will go.
19. Insert the three plastic caps into the control cover screw holes.
20. Mount the side wiring and sensor tube cover over the wiring and sensor tube with two hex-head screws. Be careful not to pinch any of the wiring between the cover and the liner.
21. Mount the rear wiring and sensor tube cover over the wiring and sensor tube with three hex-head screws.

**22. IMPORTANT: Refer to inset #1 and press the Permagum you removed earlier over the ends of the wiring covers and against the sides of the freezer liner at the right rear corner of the freezer to form an air-tight seal.**

23. Slide the freezer air diffuser over the top of the air duct so the slots fit into the spacers behind the air duct.
24. Mount the air duct cover to the right side of the freezer liner with a hex-head screw.
25. Turn on the unit and check out the thermostat.



**FIGURE 31A**  
*Replacing The Freezer Thermostat*



**FIGURE 31B**  
*Sensor Tube Dimensions*

## REPLACING THE LIGHT OR ICE CONVEYOR SWITCH

### **WARNING**

#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 32 for the following steps.

1. Remove the three plastic caps from the control cover.
2. Remove the three phillips screws from the control cover and rotate it so you can work on it.

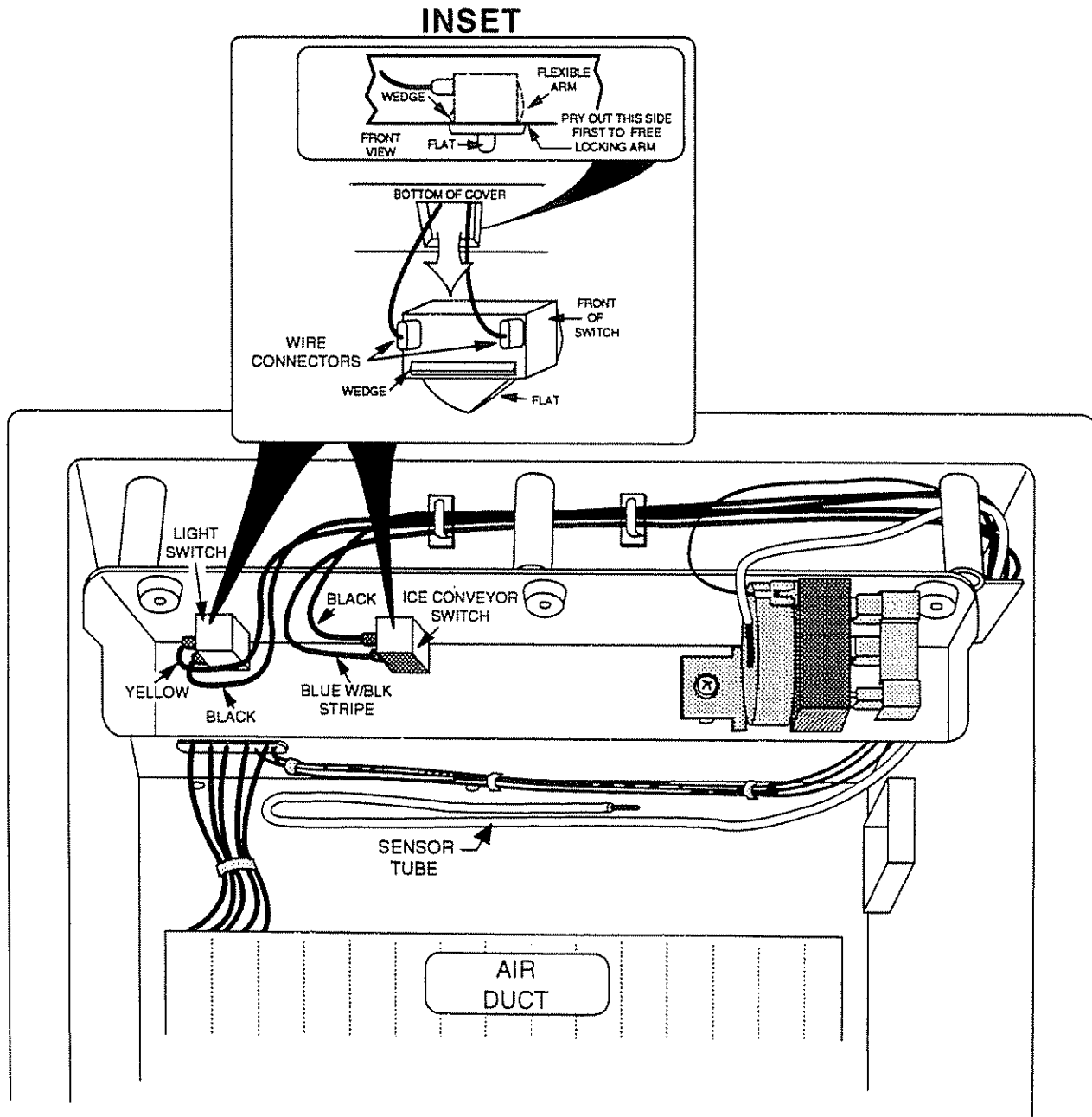
If you are replacing the light switch, proceed to step 3. If you are replacing the ice conveyor switch (on units that have a water and ice dispenser feature), proceed to step 7.

3. Unplug the yellow and black wire connectors from the light switch.
4. Press in on the flexible arm (see the inset drawing) of the light switch and pry the side out as far as possible, then unhook the other side of the switch and carefully work it out of the slot.
5. Position the new light switch so the flat of the rocker arm is toward the front, and then press the switch into place into the control cover cutout

6. Reconnect the yellow and black wire connectors to either of the switch terminals

Proceed to step 11.

7. Disconnect the light blue w/black stripe and the dark blue wire connectors from the ice conveyor switch.
8. Press in on the flexible arm of the ice conveyor switch and pry the side out as far as possible, then unhook the other side of the switch and carefully work it out of the slot.
9. Position the new ice conveyor switch so the flat of the rocker arm is toward the front, and then press the switch into place into the control cover cutout
10. Reconnect the light blue wire w/black stripe and the dark blue wire connectors to either of the ice conveyor switch terminals.
11. Rotate the control cover to its mounting position and align the mounting holes with the three cabinet mounting studs (if necessary, insert your finger through the cutout in the rear of the cover to align the cover screw holes with the studs). Loosely install the three phillips screws into the studs to hold them in place. Make sure that none of the wiring is pinched between the cover and the liner, then tighten the three screws securely.
12. Turn on the unit and check out the light or ice conveyor switch.



**FIGURE 32**  
*Replacing The Light Or Ice Conveyor Switch*

## REPLACING THE ICE MAKER

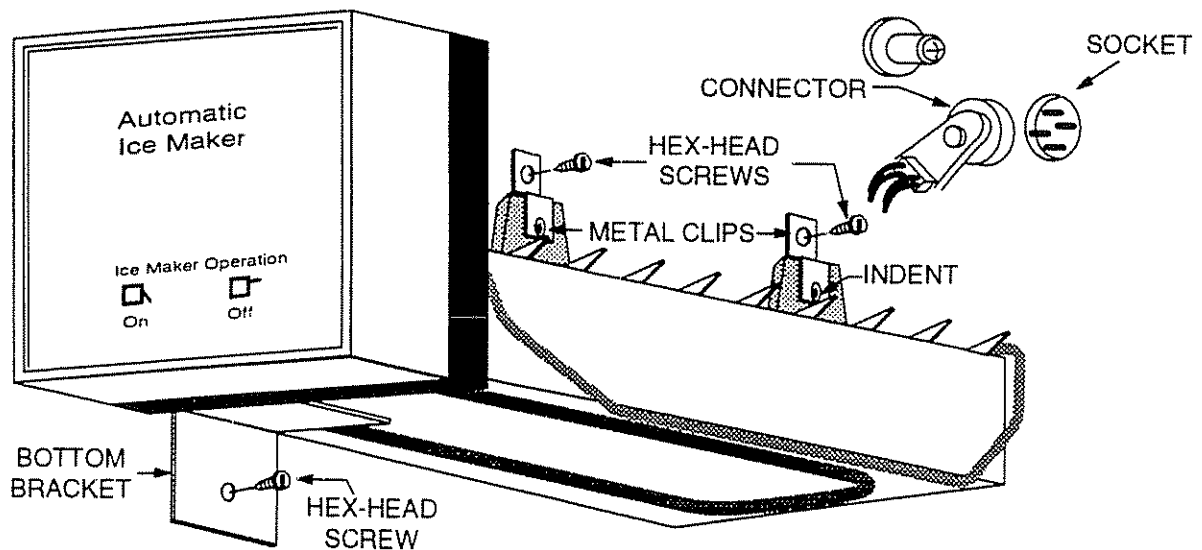
### **⚠ WARNING**

#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 33 for the following steps.

1. *Non-dispenser models:* Remove the ice bucket and the ice bucket shelf from the freezer.
  2. *Water and ice dispenser models:* Remove the ice container from the freezer.
  3. Remove the hex-head screw from the bottom bracket
  4. Support the ice maker from underneath with one hand, and loosen the two top hex-head screws 1-1/2 turns with the other. If necessary, unhook the two metal clips from the top ice maker tabs to free it.
  5. Pull the ice maker forward just far enough to unplug the ice maker power connector from the freezer liner socket, and remove the ice maker from the freezer.
- To reinstall the new ice maker:
6. Plug the power connector into the freezer socket.
  7. Position the ice maker so the end of the fill tube is inside the cup, and then slide the top mounting tabs under the two metal clips so that the indents fit into the center holes of the tabs. Secure the tabs to the freezer liner with the hex-head screws.
  8. Mount the bottom bracket to the freezer liner with the hex-head screw you removed earlier.
  9. Replace the ice bucket shelf and the ice bucket in the freezer. If you have a water and ice dispenser model, reinstall the ice container.
  10. Lower the ice maker arm to the "on" position.
  11. Turn the appliance on and check out the ice maker operation.



**FIGURE 33**  
*Replacing The Ice Maker*

## REPLACING THE EVAPORATOR FAN MOTOR

### **⚠ WARNING**

#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 34 for the following steps.

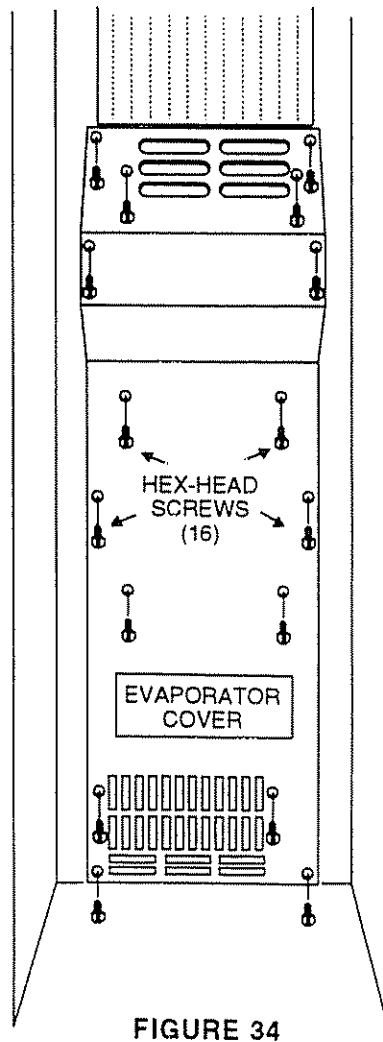
1. Remove the shelves and baskets from the freezer.
2. Remove the sixteen hex-head screws from the evaporator cover.

### **⚠ CAUTION**

#### **PERSONAL INJURY HAZARD**

The evaporator cover has sharp edges. Be careful when you handle it that you do not cut your hands or scratch the inside of the freezer.

3. Pull the top of the evaporator cover out between the shelf studs and remove it from the freezer compartment.

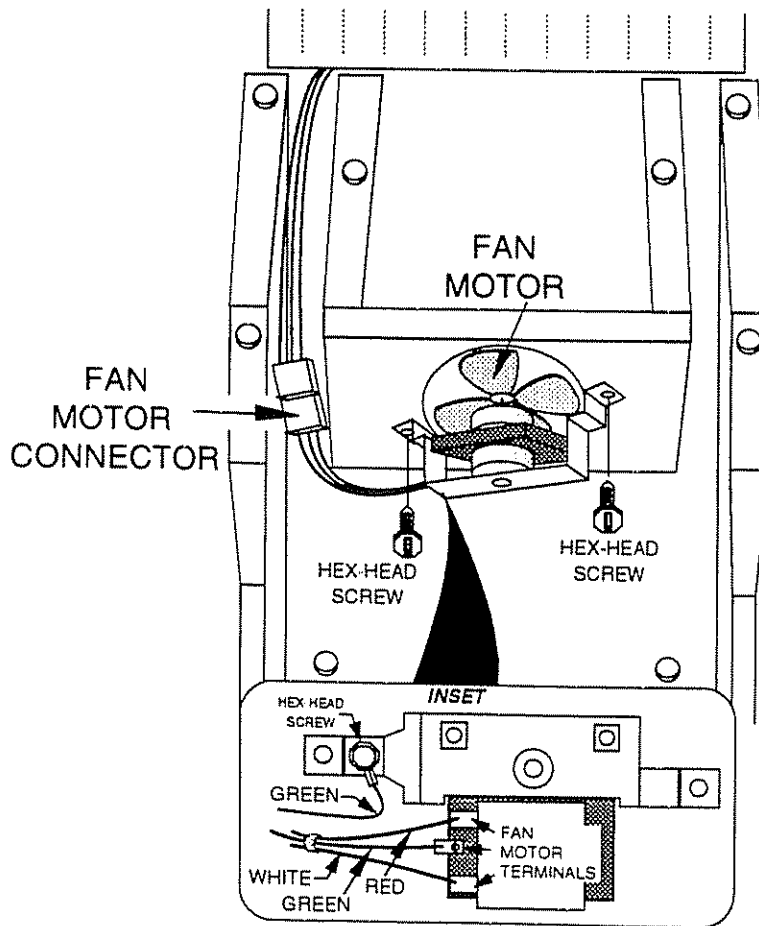


**FIGURE 34**  
*The Evaporator Cover*

## Replacing The Evaporator Fan Motor (Cont'd)

Refer to Figure 35 for the following steps.

4. Remove the two hex-head screws from the fan motor bracket (you may have to use a box-end wrench to loosen the back screw).
5. Remove the hex-head screw from the green wire eyelet.
6. Pull the white, green, and red wire connectors from the fan motor terminals and remove the fan motor from the freezer.
7. To reinstall the fan motor, push the white, green, and red wire connectors over the fan motor terminals, as shown in the inset drawing in Figure 35.
8. Mount the eyelet on the end of the green wire to the fan motor bracket with a hex-head screw (inset drawing in Figure 35).
9. Mount the fan motor bracket to the fan baffle with two hex-head screws.
10. Loosely reinstall the evaporator cover with the sixteen hex-head screws you removed earlier (refer to Figure 34 on page 59). After you have all of the screws installed, tighten them securely.
11. Turn on the unit and check out the fan motor.
12. Reinstall the shelves and baskets in the freezer compartment.



**FIGURE 35**  
*Replacing The Evaporator Fan Motor*



## REPLACING THE BIMETAL

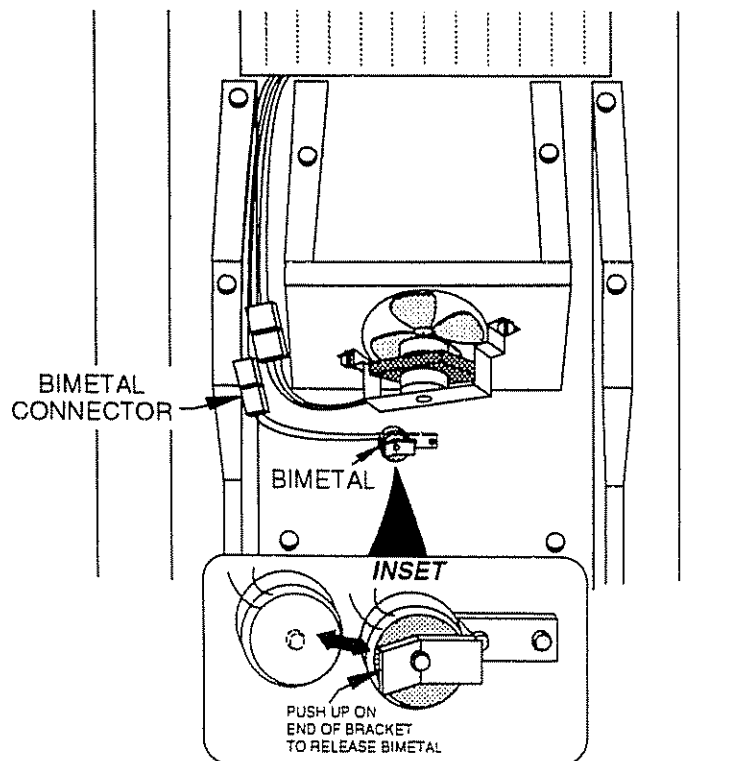
### **⚠ WARNING**

#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 36 for the following steps

1. Remove the shelves and drawers from the freezer.
2. Refer to page 59 and remove the evaporator cover.
3. Push up on the end of the bimetal bracket just far enough to release the bimetal, then slide the bimetal out from under the bracket.
4. Unhook the locking arm from the tab (see page 45) and unplug the bimetal connector from the wiring harness.
5. Plug the new bimetal connector into the wiring harness. Make sure that the locking arm is over the tab on the connectors.
6. Slide the new bimetal under the bracket so the round center tab fits into the bracket hole.
7. Loosely reinstall the evaporator cover with the sixteen hex-head screws you removed earlier (see Figure 34 on page 59). After you have all of the screws installed, tighten them securely.
8. Turn on the unit and check out the bimetal.
9. Reinstall the shelves and baskets in the freezer compartment.



**FIGURE 36**  
*Replacing The Bimetal*

## REPLACING THE DEFROST HEATER OR THE EVAPORATOR

### **WARNING**

#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 37 for the following steps.

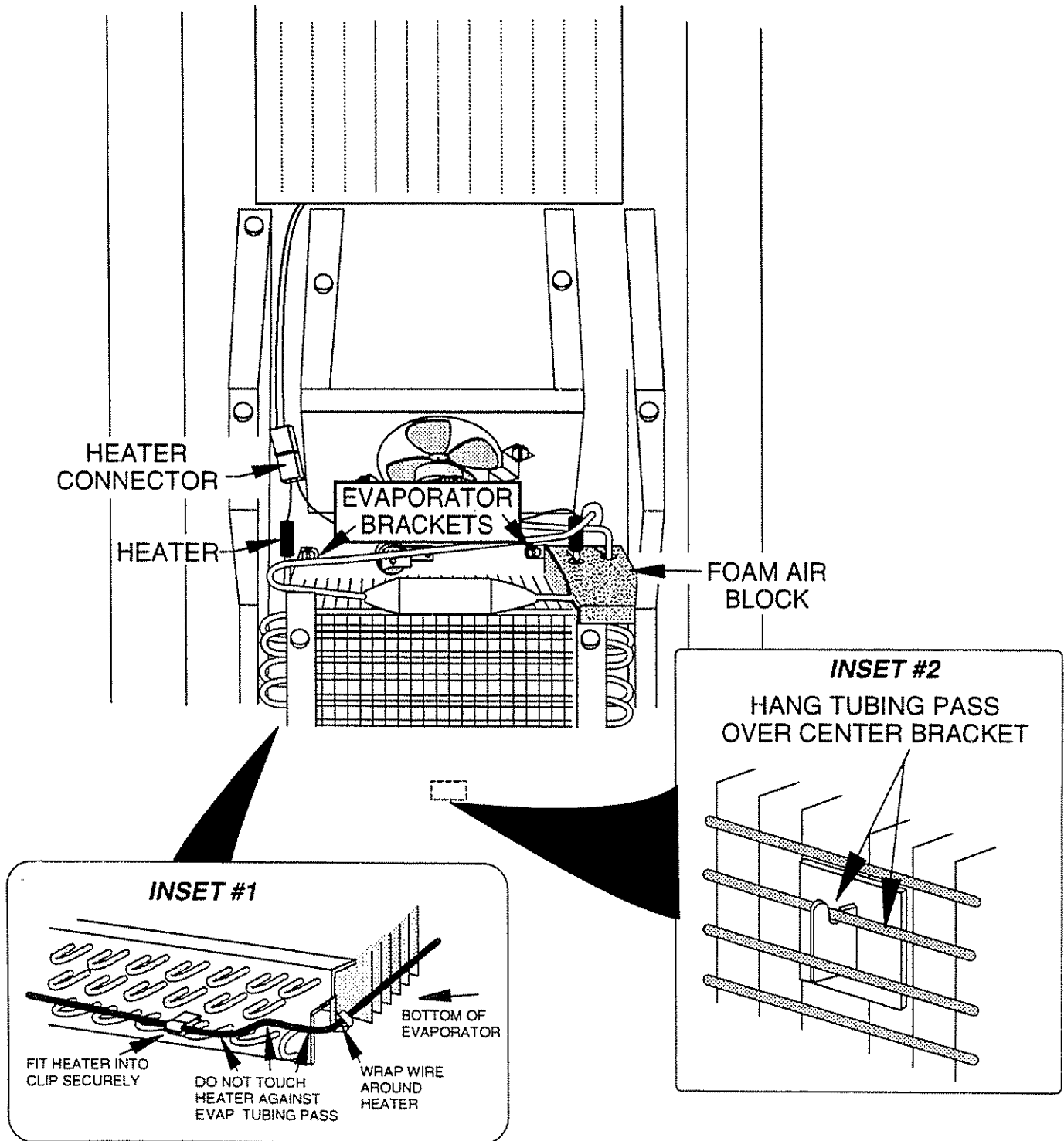
1. Remove the shelves and drawers from the freezer.
2. Remove the three hex-head screws from each of the four basket tracks on the sides of the freezer liner and remove the tracks. The left tracks may have spacers underneath.
3. Refer to page 59 and remove the evaporator cover.
4. Unclip the locking arm from the tab (use a screwdriver blade, if necessary) and disconnect the heater wire connector from the wiring harness.

### **CAUTION**

#### **PERSONAL INJURY HAZARD**

When you handle the evaporator, be careful not to cut yourself on the sharp edges. If possible, wear a pair of gloves to protect your hands.

5. Remove the foam air-block from around the evaporator tubing and set it aside. The air-block is located at the upper right corner of the evaporator, next to the separator wall.
6. Remove the two hex-head bracket screws from the top of the evaporator.
7. Lift the evaporator straight up and unhook it from the lower center hook in the freezer liner (see inset #2). Then very carefully pull the bottom of the evaporator out just far enough so that the sides are accessible. You may have to tip one side up at a time to unclip the heater in the next step.
8. The heater is held in place by six clips, two on each side of the evaporator, and two at the bottom (inset drawing #1 shows the clips on one side of the evaporator). Bend the two bottom clips out just far enough to unclip the heater, then unsnap the side clips and pull the heater out from the evaporator. Be careful not to hook the wiring on the evaporator vanes



**FIGURE 37**  
*Replacing The Defrost Heater/Evaporator*

Refer to Figure 38 for the following steps.

If you are replacing the evaporator, proceed to step 9. If you are replacing the defrost heater, proceed to step 10.

9. Place a flame barrier in back of the brazing joints of the evaporator to protect the liner and surrounding surfaces when unbrazing the tubing joints. Then remove the evaporator and the flame blanket, and proceed to step 11.

## CAUTION

### PRODUCT DAMAGE HAZARD

When you install the heater in the next step, make sure that it does not touch the tubing, otherwise it will burn a hole in the tubing at the point of contact and cause a sealed system leak.

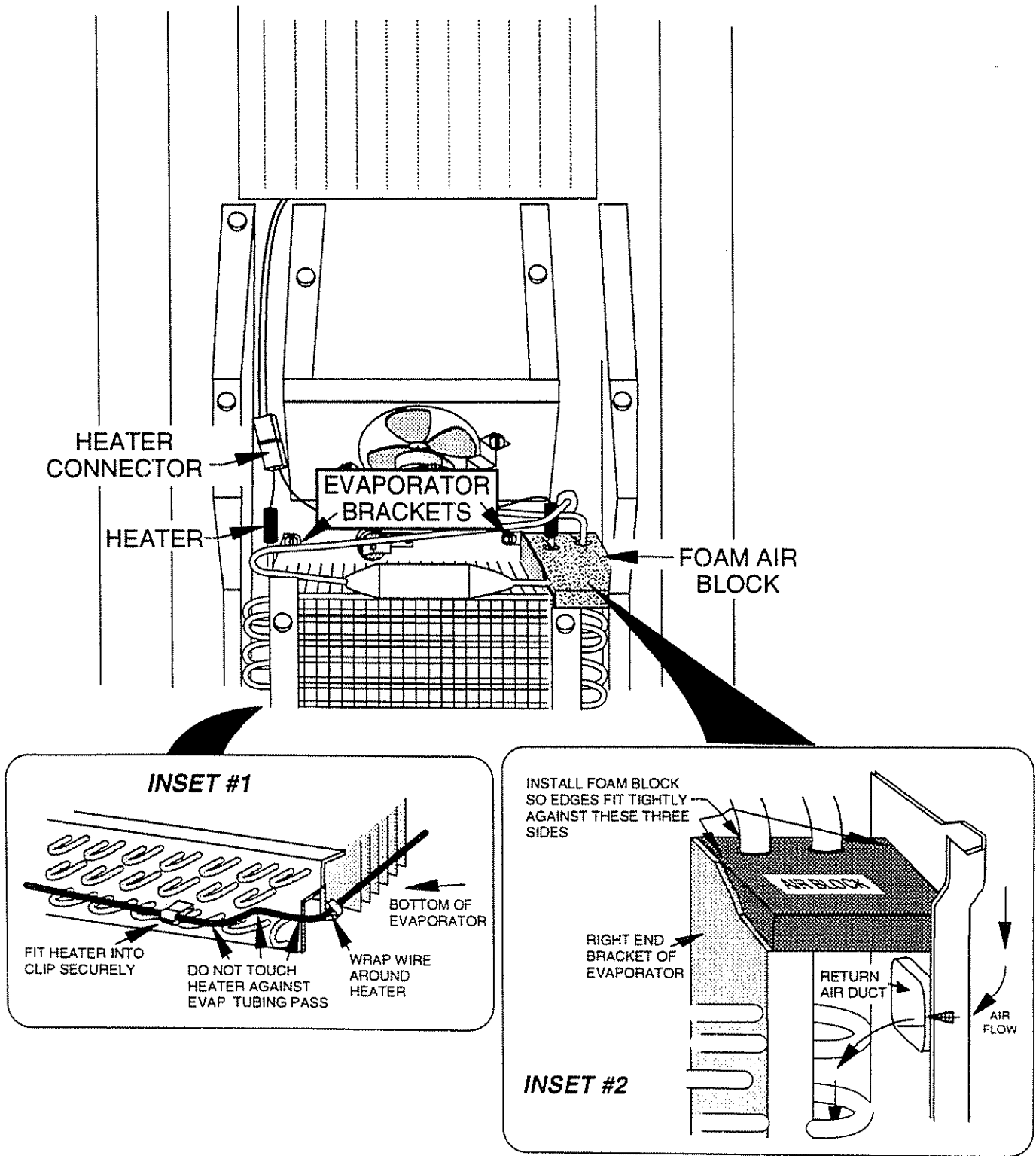
10. Position the new heater with the black wire and the connector to the left, and spread it apart just enough to position it over the side clips. Slide the heater up along the sides of the evaporator clips and fasten it firmly into the two bottom clips, then snap the heater into the side clips. Make sure that the heater fits snugly and does not contact the evaporator tubing.
11. Carefully rotate the bottom of the evaporator back into position, and hang it over the lower center hook on the freezer liner so the top bracket holes are aligned with the freezer mounting holes. Then secure the top brackets to the liner with two hex-head screws.

## NOTE

### IMPORTANT INSTRUCTIONS!

The foam air block is very important to the operation of the refrigerator-freezer. It seals the top of the return air channel so that air flow from the return air duct moves to the bottom of the freezer liner and up through the evaporator coils. Make sure that the foam air-block is installed correctly. It fits only one way.

12. Mount the foam air-block at the right rear corner of the liner. Form the holes in the block around the tubing pass, and then slide it so the edges fit tightly against the evaporator bracket and the sides of the liner. Once in place, the rear edge of the foam block should cover the right evaporator mounting screw.
13. Insert the right lead of the defrost heater into the wire connector hole so that it locks into place.
14. Plug the defrost heater connector into the wiring harness connector.
15. Loosely reinstall the evaporator cover with the sixteen hex-head screws you removed earlier. After you have all of the screws installed, tighten them securely.
16. Mount the two left freezer basket tracks (and spacers, if installed) to the freezer liner with three hex-head screws.
17. Mount the two right freezer basket tracks to the freezer liner with three hex-head screws.
18. Turn on the unit and check out the system.
19. Reinstall the shelves and baskets in the freezer compartment.



**FIGURE 38**  
*Replacing The Defrost Heater/Evaporator*

## REMOVING THE WATER AND ICE DISPENSER

### **WARNING**

#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 39 for the following steps.

1. Turn off the water supply to the refrigerator-freezer.
2. Remove the six phillips pan-head screws from the freezer door handle and remove it.

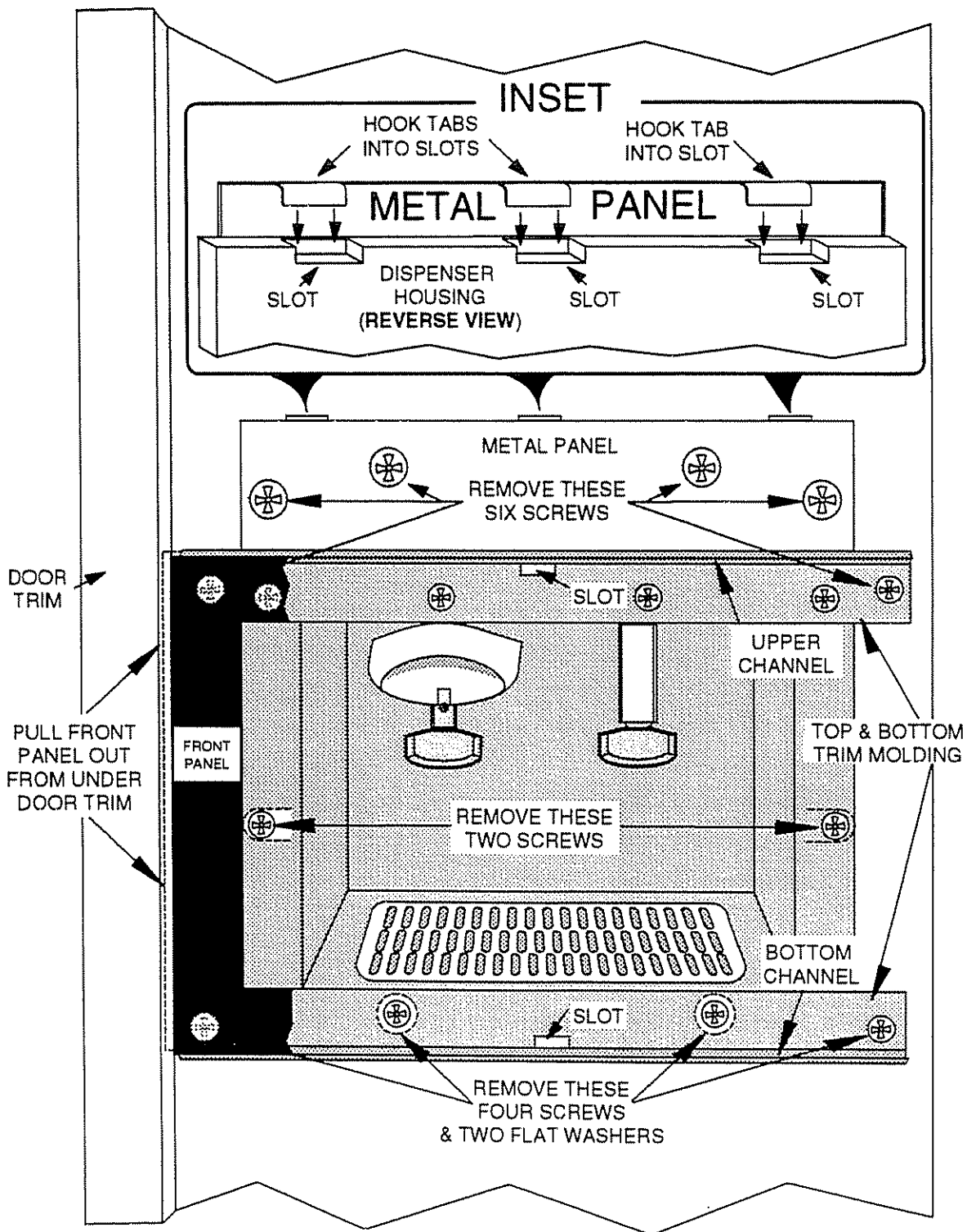
### **NOTE**

The water and ice dispenser front panel is held in place by top and bottom tabs and strips of molding. When you remove the front panel, be careful not to break the tabs.

3. Carefully pull the right edge of the front panel away from the dispenser so that the top and bottom edges start to slide out of the trim channel. Continue to pull the panel out for approximately three-quarters of the way until the center tabs are free of their slots, then slide the panel to the right until it is free of the door trim, and remove the panel.
4. Remove the four screws from the metal cover that is above the dispenser, and the two end screws from the upper trim molding. Do not remove the rest of the trim molding screws.
5. Unhook the three metal panel tabs from over the top of the dispenser (see the inset drawing) and remove the cover.

If you are going to service the dispenser components, proceed to "Servicing The Water And Ice Dispenser Components" on page 70. If you are going to remove the dispenser from the door, continue with step 6.

6. Remove the four screws and two flat washers from the bottom trim molding. The two flat washers are located under the trim molding and act as spacers. Note that the two center screws are longer than the rest.
7. Remove the remaining two screws from the sides of the water and ice dispenser.



**FIGURE 39**  
*Removing The Dispenser*

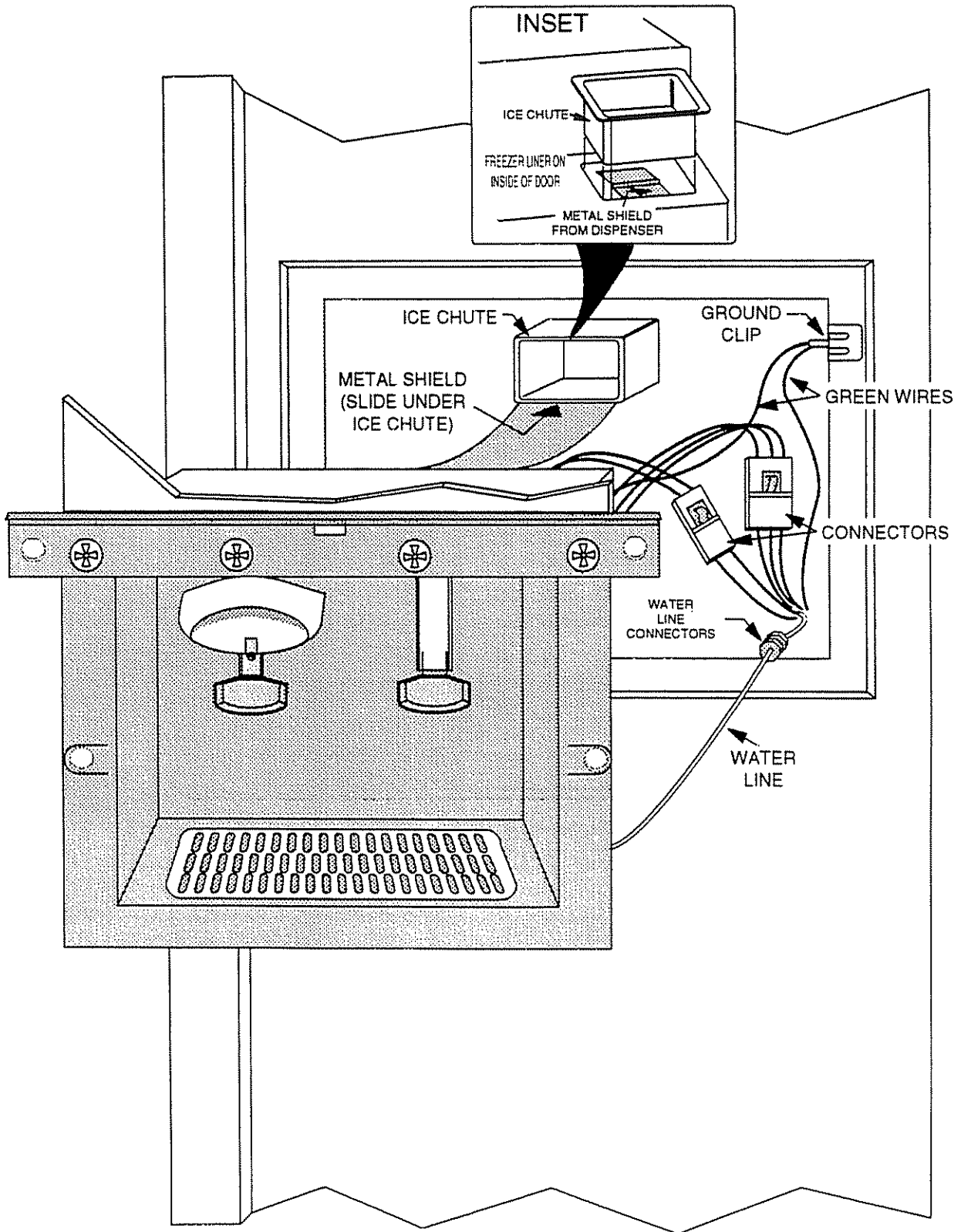
Refer to Figure 40 for the following steps.

8. Disconnect the two dispenser wiring harness connectors. These cables may be anchored to the foam by plastic stakes. If so, remove the stakes and set them aside.
9. Unclip the ground clip on the end of the green wires from the edge of the door cutout.
10. Disconnect the water line and remove the dispenser.
11. Open the freezer door and unsnap the ice chute from the liner (Inset) and remove it.

## REINSTALLING THE DISPENSER

1. Connect the water line to the new dispenser. Make sure the tubing connector is tight so that it does not leak.
2. Connect the two dispenser cables to the wiring harness connectors.
3. Slide the ground clip on the end of the green wires over the edge of the door cutout.
4. Insert the bottom edge of the dispenser into the door cutout.
5. Insert the plastic stakes between the wires near the two connectors, and then press the stakes into the foam to hold the connectors in place.
6. Form the thin metal shield coming from the dispenser so that it slides under the ice dispenser chute, and push the dispenser all the way into the door cutout. Be careful not to pinch any of the wiring at the top of the dispenser.
7. From inside the freezer door, pull the metal shield into the ice chute as far as it will go (see the inset drawing), and then position it flat against the foam.
8. Reinstall the ice chute into the freezer liner cutout so the sides and bottom edges fit inside the ice dispenser chute.
9. Install two phillips pan-head screws in the side mounting holes of the dispenser.
10. Use the long phillips pan-head screws and flat washers, and mount the bottom trim molding to the freezer door at the two center holes. Place the flat washers under the trim molding to act as spacers.
11. Install the remaining two phillips pan-head screws in the ends of the bottom trim molding.
12. Hook the three tabs of the metal panel over the top of the dispenser (see the inset in Figure 39 on the previous page). You may have to pry the top edge of the dispenser out a bit with a screwdriver blade to do this.
13. Loosely install four phillips pan-head screws into the metal panel mounting holes, and two into the end holes of the top trim molding. When all the screws are installed, push up on the panel as far as it will go, and tighten the six screws.
14. Install the front panel as follows:
  - a) Position the left edge of the trim molding as close to the door molding as possible, then start the top and bottom edges into the trim channels.
  - b) Slide the left end of the front panel under the door molding as far as it will go.
  - c) Carefully push the rest of the front panel into place so that the top and bottom edges slide into the trim molding channels, and the center tabs slide into their slots.
15. Loosely mount the handle to the freezer door with the remaining six phillips pan-head screws (do not pinch the gasket under the edge of the handle). When all the screws are installed, align the top edge of the handle with the other door handle, and tighten the screws securely.
16. Turn on the water supply to the water and ice dispenser and check out the operation.





**FIGURE 40**  
*Replacing The Water & Ice Dispenser*

## SERVICING THE WATER AND ICE DISPENSER COMPONENTS

### **⚠ WARNING**

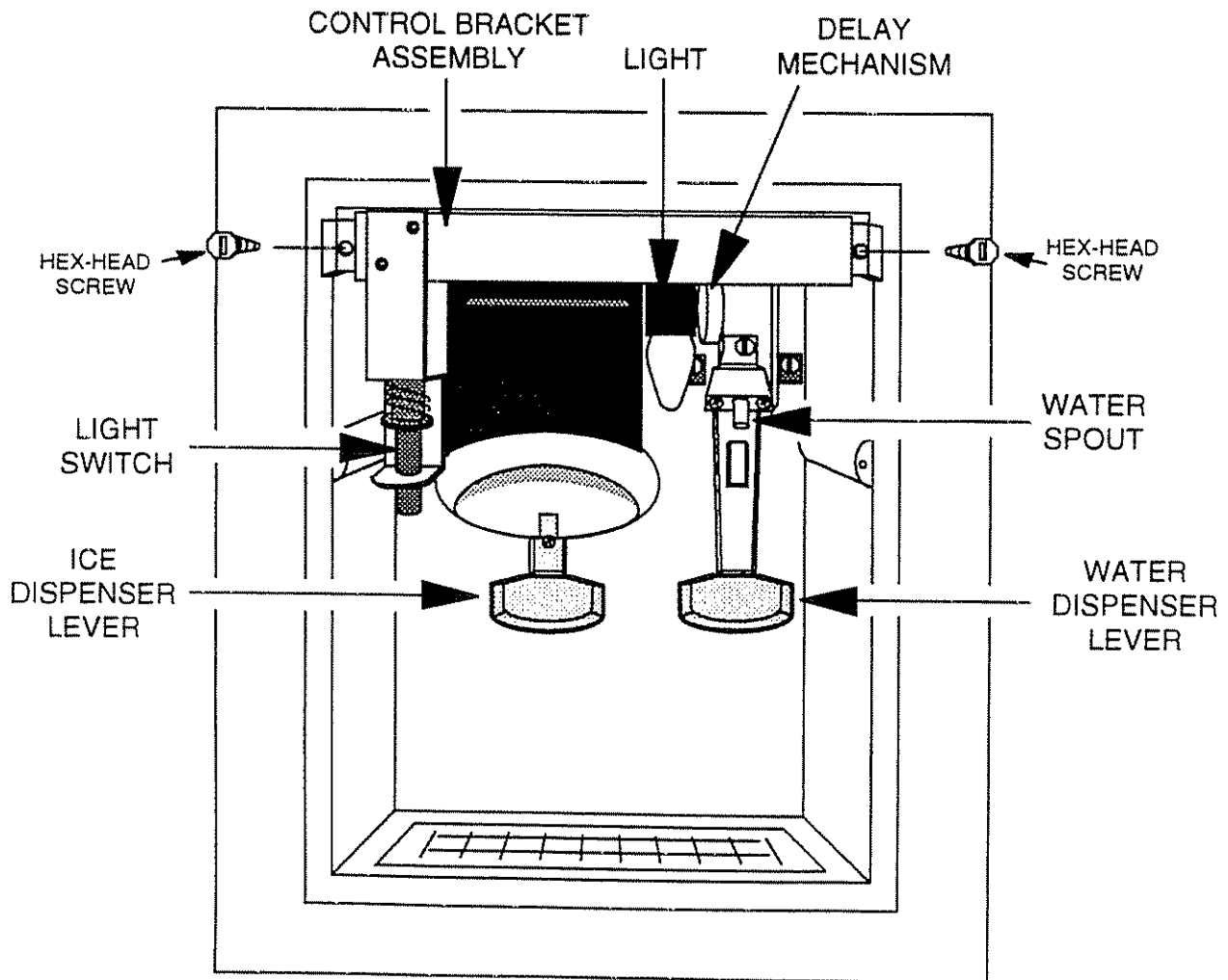
#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Figure 41 shows the location of all the serviceable components in the water and ice dispenser. The components are listed as follows:

- The Ice Dispenser Switch (page 71).
- The Water Dispenser Switch (page 71).
- The Light Socket (page 72).
- The Light Switch (page 73).
- The Ice Dispenser Assembly (page 74).
- The Water Dispenser Lever Arm (page 76).
- The Delay Mechanism (page 77).

Each of these components has its own section, starting on the pages shown above. Refer to the section for the component you wish to service.

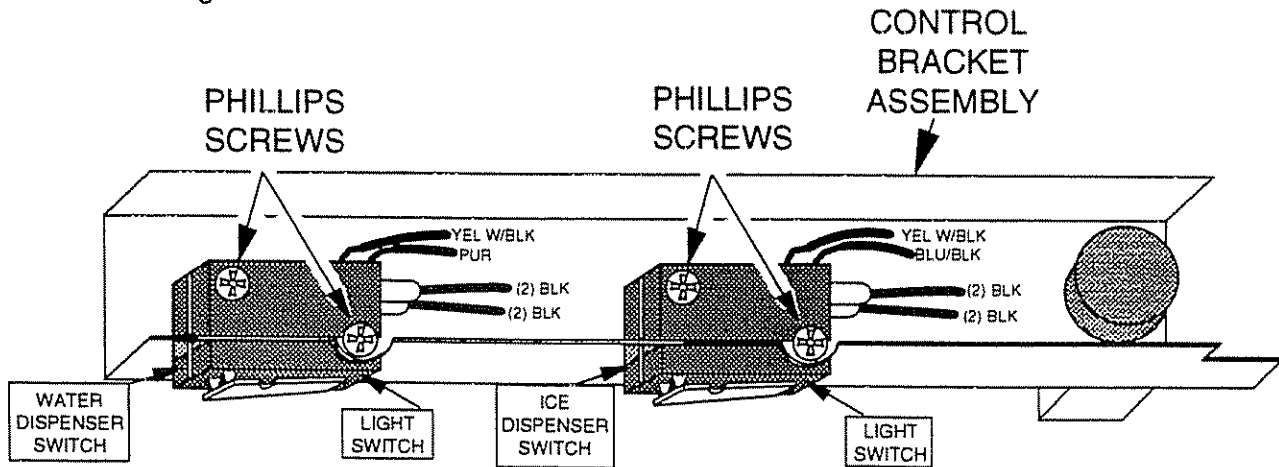


**FIGURE 41**  
*The Water & Ice Dispenser Components*

## The Water & Ice Dispenser Switches

Refer to Figure 42 for the following steps.

1. Refer to page 66 and perform steps 1 through 5 to remove the front panel and the metal plate from the dispenser. Return to this section when you are finished.
2. Refer to Figure 41 on page 70 and remove the two hex-head screws from the ends of the control bracket assembly, then pull the assembly forward out of the dispenser housing slots.
3. Position the control bracket assembly as shown below, then untape one side of the cover and fold it back out of the way.
4. Remove the two phillips screws from the dispenser/light switches you are going to service and separate the two switches. The switch with the metal arm is the dispenser switch and the switch without the arm is the light switch.
5. Unplug the wire connectors from the defective switch terminals and plug them onto the new switch terminals (see Figure 42 for the wire connections).
6. Place the switches together and mount them to the control bracket with the two phillips screws you removed earlier. Make sure that the light switch is toward the screw head.
7. Position the control bracket cover over the wiring and tape it neatly into place.
8. Mount the control bracket assembly to the dispenser housing with the two hex-head screws you removed earlier.
9. Refer to "Reinstalling The Dispenser" on page 68 and perform steps 12 through 16.

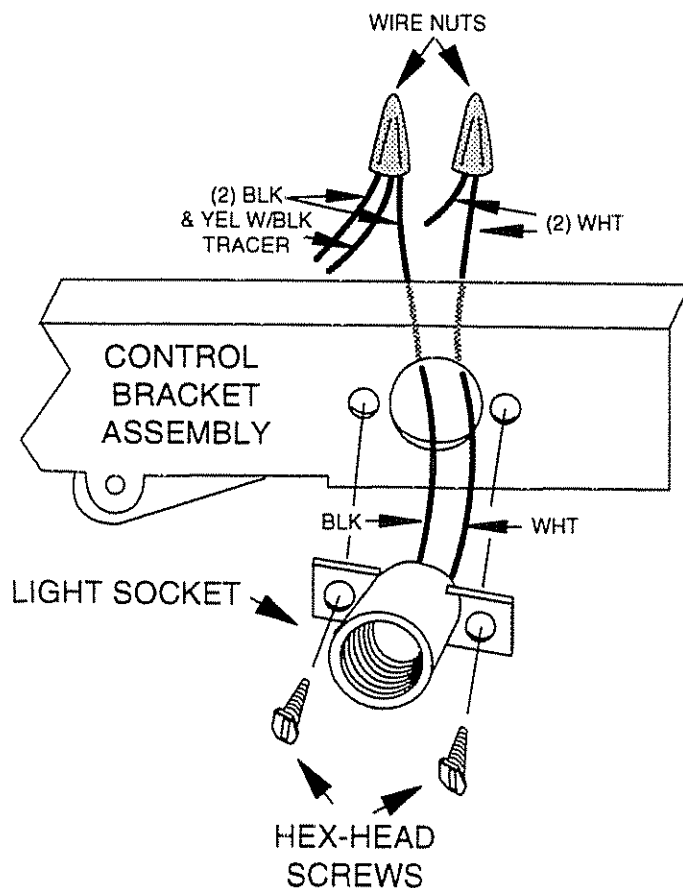


**FIGURE 42**  
*The Water & Ice Dispenser Switches*

## The Light Socket

Refer to Figure 43 for the following steps.

1. Refer to page 66 and perform steps 1 through 5 to remove the front panel and the metal plate from the dispenser. Return to this section when you are finished.
2. Remove the two hex-head screws from the ends of the control bracket assembly (see Figure 41 on page 70) and pull the assembly forward out of the dispenser slots.
3. Untape one side of the control bracket cover and fold it back out of the way.
4. Remove the bulb from the light socket and set it aside.



**FIGURE 43**  
*The Light Socket*

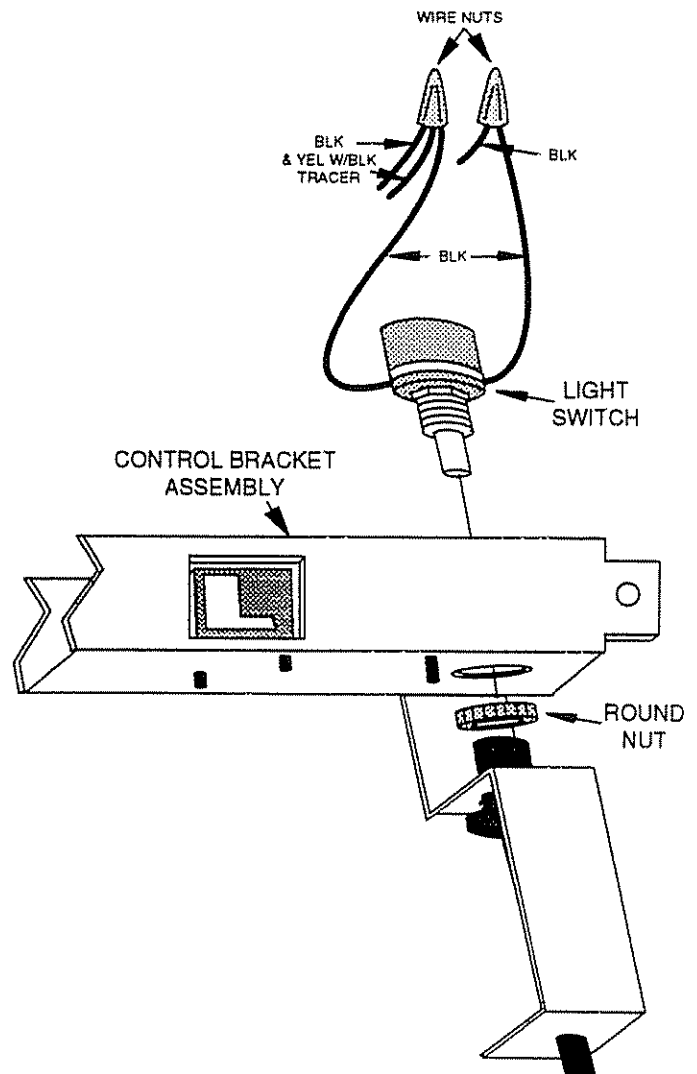
5. Remove the two hex-head screws from the light socket.
6. Remove the two wire nuts and the wires coming from the old light socket and discard the socket.
7. Mount the new light socket to the control bracket with two hex-head screws.
8. Connect the white light socket wire to the other white wire and install a wire nut.
9. Connect the black light socket wire to the black wire and the yellow wire w/the black tracer and install a wire nut.
10. Install the light bulb into the light socket.
11. Fold the wires neatly inside the control bracket.
12. Position the control bracket cover over the wiring and tape it neatly into place.
13. Mount the control bracket assembly to the dispenser with the two hex-head screws you removed earlier.
14. Refer to "Reinstalling The Dispenser" on page 68 and perform steps 12 through 16.

## The Light Switch

Refer to Figure 44 for the following steps.

1. Refer to page 66 and perform steps 1 through 5 to remove the front panel and the metal plate from the dispenser. Return to this section when you are finished.
2. Remove the two hex-head screws from the ends of the control bracket assembly (see Figure 41 on page 70) and pull the assembly forward out of the dispenser slots.
3. Untape one side of the control bracket cover and fold it back out of the way.
4. Remove the round nut from the light switch and remove the switch from the mounting bracket.
5. Remove the two wire nuts and the wires coming from the old light switch and discard the switch.
6. Mount the new light switch to the mounting bracket with the round nut.
7. Connect one of the black light switch wires to the end of the single black wire and install a wire nut.
8. Connect the other black light switch wire to the end of the black wire and the yellow wire w/the black tracer, and install a wire nut.

9. Fold the wires neatly inside the control bracket.
10. Position the control bracket cover over the wiring and tape it neatly into place.
11. Mount the control bracket assembly to the dispenser with the two hex-head screws you removed earlier.
12. Refer to "Reinstalling The Dispenser" on page 68 and perform steps 12 through 16.

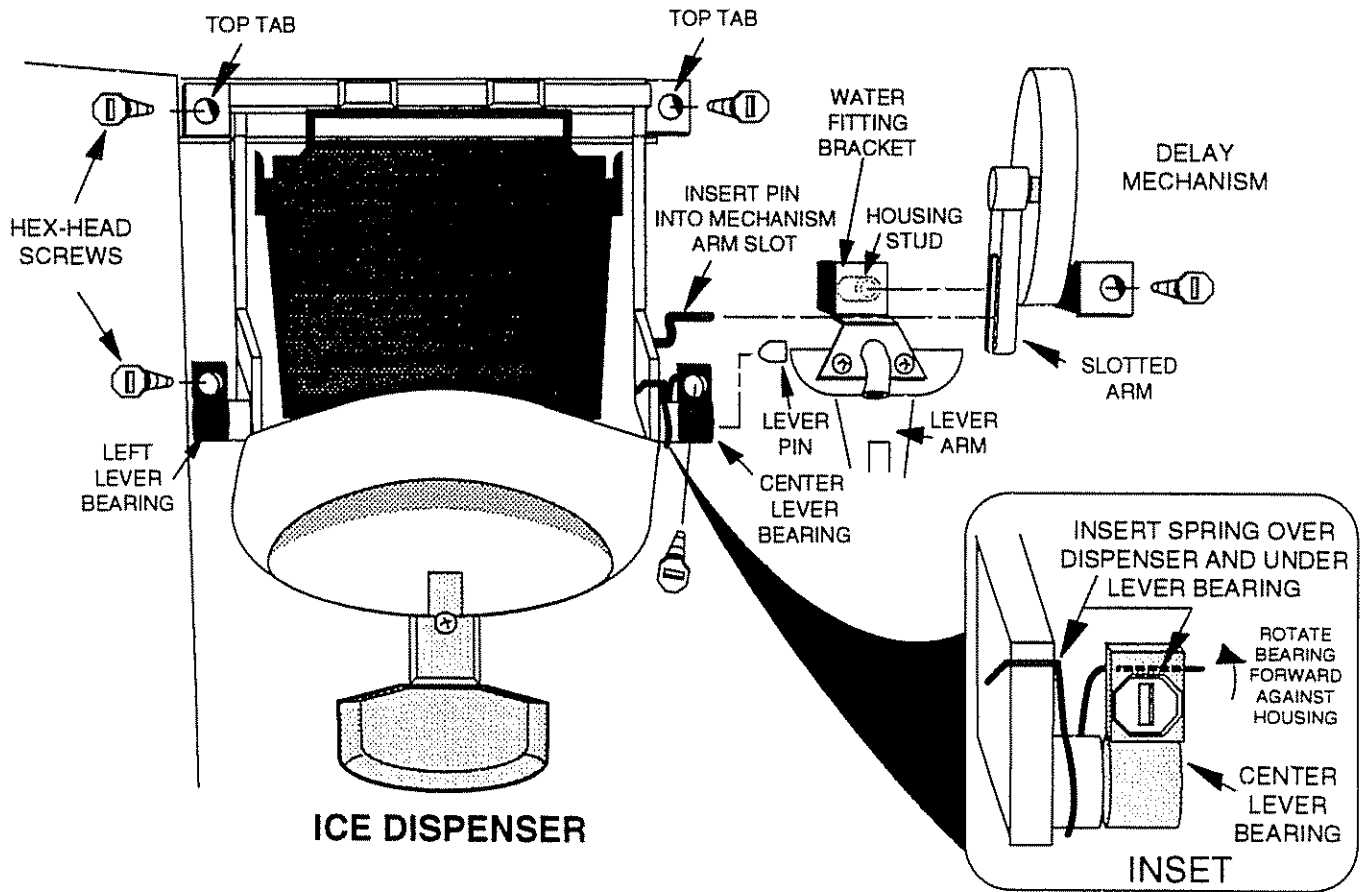


**FIGURE 44**  
*The Light Switch*

## The Ice Dispenser Assembly

Refer to Figure 45 for the following steps.

1. Refer to page 66 and perform steps 1 through 5 to remove the front panel and the metal plate from the dispenser. Return to this section when you are finished.
2. Remove the two hex-head screws from the ends of the control bracket assembly (see Figure 41 on page 70) and pull the assembly forward out of the dispenser slots. Tie or tape the control bracket assembly out of the way while you work on the dispenser.
3. Remove the 1" hex-head screw from the delay mechanism bracket and the water fitting bracket and remove the mechanism.
4. Remove the two hex-head screws from the top mounting tabs of the ice door mechanism.
5. Remove the hex-head screws from the left and center lever bearings and remove the ice dispenser assembly.
6. Mount the ice door mechanism tabs to the dispenser housing with the hex-head screws you removed earlier.
7. Carefully pull the bottom of the ice dispenser out and slide the left lever bearing over the dispenser pin. Do not mount it to the dispenser housing yet.
8. Mount the center bearing to the dispenser housing as follows:
  - a) Slide the spring and the center lever bearing over the other pin of the ice dispenser. Hook one end of the spring over the edge of the dispenser and the other end into the slot on the bottom side of the bearing (see the inset drawing).
  - b) Insert the left pin of the water dispenser lever arm into the center bearing.
  - c) Press against the front of the ice dispenser while you rotate the center bearing and spring against the dispenser housing, and secure the bearing with a hex-head screw. Make sure the spring remains in the slot under the bearing while you tighten the screw.
9. Mount the left lever bearing to the dispenser housing with a hex-head screw.
10. Loosely mount the delay mechanism bracket over the water fitting bracket with the 1" hex-head screw you removed earlier. Insert the pin from the ice dispenser mechanism into the slot of the delay mechanism arm. Make sure that the tabs on the water fitting bracket fit over the housing stud, and that the motor is straight so it does not interfere with the action of the ice dispenser, then tighten the screw securely.
11. Mount the control bracket assembly to the dispenser with the two hex-head screws you removed earlier.
12. Refer to "Reinstalling The Dispenser" on page 68 and perform steps 12 through 16.



**FIGURE 45**  
*The Ice Dispenser Assembly*

## The Water Dispenser Lever Arm

Refer to Figure 46 for the following steps.

1. Refer to page 66 and perform steps 1 through 5 to remove the front panel and the metal plate from the dispenser. Return to this section when you are finished.
2. Remove the two hex-head screws from the ends of the control bracket assembly (see Figure 41 on page 70) and pull the assembly forward out of the dispenser slots. Tie or tape the control bracket assembly out of the way while you work on the dispenser.
3. Remove the 1" hex-head screw from the delay mechanism bracket and the water fitting bracket and remove the mechanism.
4. Remove the two phillips screws from the water fitting bracket and remove the bracket from the water spout.
5. Remove the hex-head screw from the right water dispenser lever arm bearing and spring, then slide the right pin out of the center lever bearing and remove the lever arm.
8. Slide the water fitting bracket over the water spout, and mount them together with the two phillips screws you removed earlier (see inset drawing #2).
9. Loosely mount the delay mechanism bracket over the water fitting bracket with the 1" hex-head screw you removed earlier. Insert the pin from the ice dispenser mechanism into the slot of the delay mechanism arm. Make sure that the tabs on the water fitting bracket fit over the housing stud, and that the motor is straight so it does not interfere with the action of the ice dispenser, then tighten the 1" hex-head screw securely.

To reinstall the water dispenser:

6. Slide the spring and the lever bearing over the right pin of the lever. Hook one end of the spring over the edge of the lever arm, and the other end into the slot in the bottom of the bearing (see inset drawing #1).
7. Slide the left water dispenser lever pin into the center lever bearing, then rotate the right lever bearing and spring against the housing, and secure it with a hex-head screw.

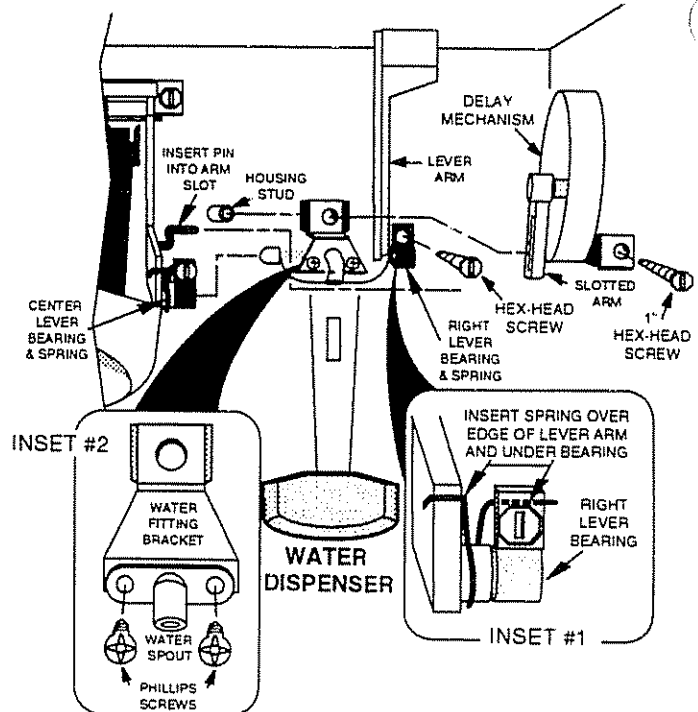


FIGURE 46  
The Water Dispenser Assembly



## The Delay Mechanism

Refer to Figure 47 for the following steps.

1. Refer to page 66 and perform steps 1 through 5 to remove the front panel and the metal plate from the dispenser. Return to this section when you are finished.
2. Remove the two hex-head screws from the ends of the control bracket assembly (see Figure 41 on page 70) and pull the assembly forward out of the dispenser slots. Tie or tape the control bracket assembly out of the way while you work on the dispenser.
3. Remove the 1" hex-head screw from the delay mechanism bracket, unhook the arm from the dispenser pin, and remove the mechanism.
4. Loosely mount the new delay mechanism over the water fitting bracket, and insert the ice dispenser mechanism pin into the delay mechanism's arm slot. Make sure that the tabs on the water fitting bracket fit over the housing stud, and that the motor is straight so it does not interfere with the action of the ice dispenser, then tighten the 1" hex-head screw securely.
5. Mount the control bracket assembly to the dispenser with the two hex-head screws you removed earlier.
6. Refer to "Reinstalling The Dispenser" on page 68 and perform steps 12 through 16.

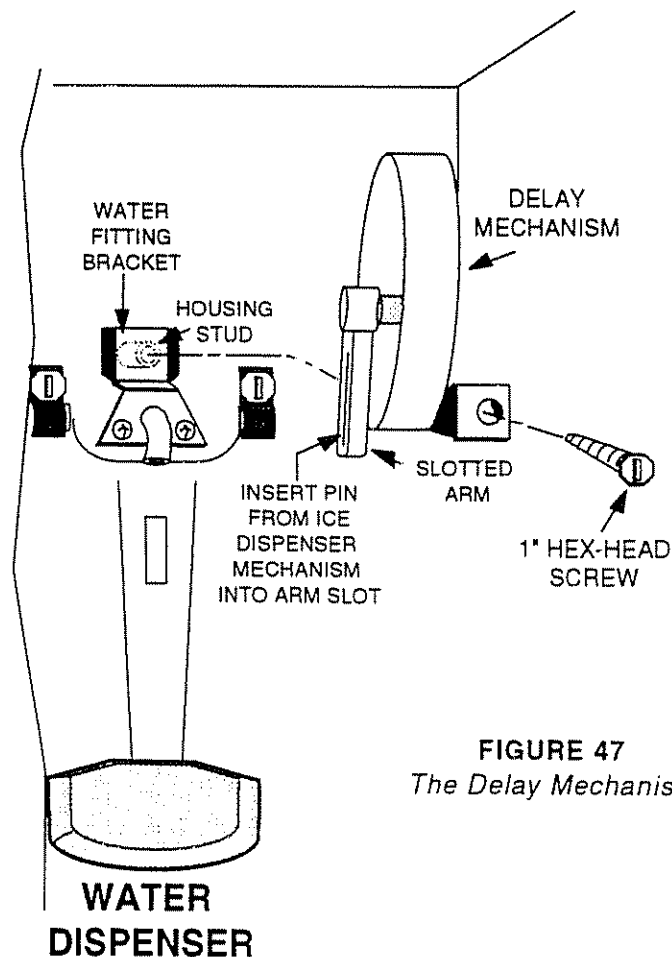
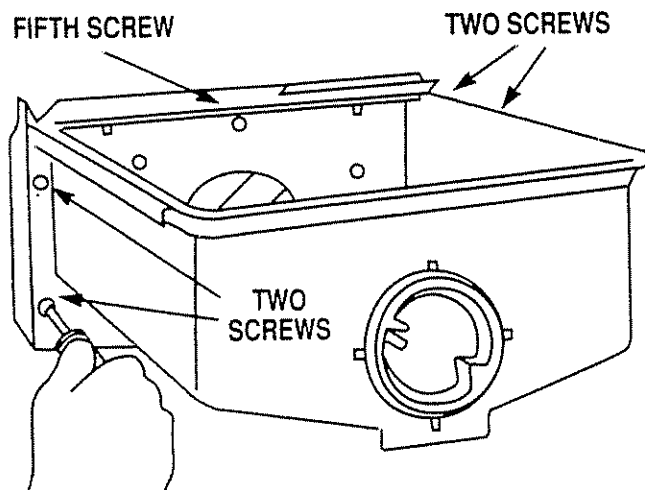


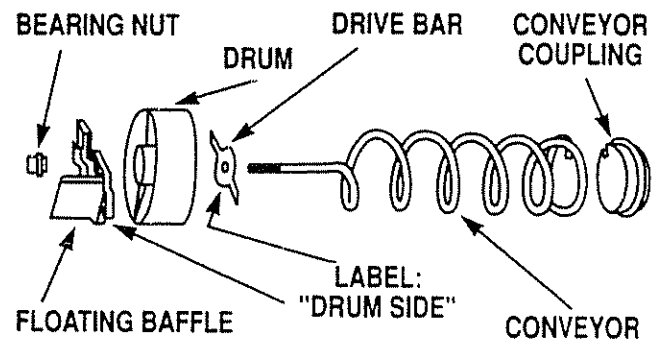
FIGURE 47  
 The Delay Mechanism

## SERVICING THE ICE CONVEYOR ASSEMBLY

1. Raise the ice maker shut off arm to the "off" position.
2. Open the freezer door and pull the ice conveyor drawer forward as far as the stop, then lift the front until it clears the stop, and remove the drawer from the freezer.
3. Refer to Figure 48A and remove the five hex-head screws from the front cover of the conveyor drawer and remove the cover.
4. Pull the conveyor assembly out of the slots in the cover and remove it.
5. Refer to Figure 48B and remove the bearing nut from the conveyor (the threads on the conveyor are reverse threaded). You can now service the conveyor assembly components. **NOTE:** If you replace the drive bar and the floating baffle, make sure that you install them with the side marked "DRUM SIDE" facing the drum (Figure 48B).
6. After you reassemble the conveyor assembly, place it inside the front cover so the wide and narrow sides of the floating baffle fit into their slots.
7. Position the front panel assembly facing down on your work surface, and mount the conveyor to it with the five hex-head screws you removed in step 3.
8. Install the ice conveyor drawer into the freezer so the rollers fit into their tracks and push it all the way back.
9. Lower the ice maker shut off arm to the "on" position.



**A**



**B**

**FIGURE 48**  
*The Ice Conveyor Assembly*

## SERVICING THE ICE CONVEYOR MOTOR

### ⚠ WARNING

#### ELECTRICAL SHOCK HAZARD

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

1. Open the freezer door and pull the ice conveyor drawer forward as far as the stop, then lift the front until it clears the stop and remove it from the freezer.
2. Remove the light lens (located under the motor bracket) from over the center freezer light.
3. Unscrew the freezer light bulb from the socket and set it aside.
4. Refer to Figure 49 and remove the three hex-head screws from the top cover of the motor bracket and remove the cover. Note that the center screw is a machine screw. Use this location to replace it later.
5. Place a  $\frac{5}{16}$ " open-end wrench over the motor shaft, and a  $\frac{1}{2}$ " socket over the hex shaft of the motor coupler, then rotate the coupler clockwise (reverse threaded), and remove it from the motor shaft.
6. Remove the two bottom hex-head screws from the motor bracket and position the bracket with the motor facing you (see Figure 50).
7. Unplug the two wire connectors from the motor terminals.
8. Remove the phillips screw from the eyelet on the ends of the green wires.
9. Remove the four  $\frac{1}{4}$ " hex-head screws from the motor and remove it from the bracket.
10. Mount the new motor to the bracket with the four motor-mounting hex-head screws.
11. Refer to Figure 50 and connect the eyelet on the end of the two green wires to the motor case with the phillips screw you removed earlier.
12. Refer to Figure 50 and connect the white and the black wires to the motor terminals.
13. Mount the motor coupler onto the motor shaft in a counterclockwise (CCW) direction and hand-tighten it.
14. Mount the motor bracket to the freezer liner studs with the two hex-head screws you removed earlier.
15. Mount the motor bracket cover to the motor bracket with the three hex-head screws you removed earlier. Use the machine screw at the center hole.
16. Install the ice conveyor drawer into the freezer so the rollers fit into their tracks and push it all the way back.
17. Turn on the unit and check out the operation.

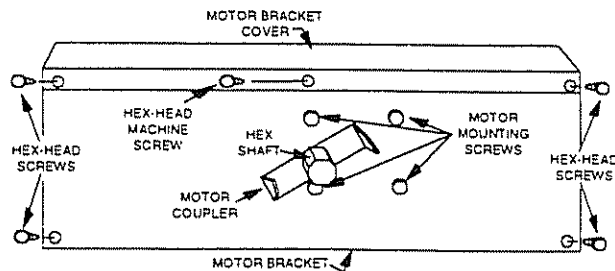


FIGURE 49

The Ice Conveyor Motor Assembly

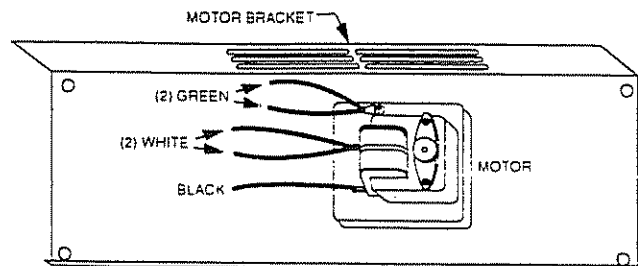


FIGURE 50

The Ice Conveyor Motor Wiring

## ON TOP OF THE CABINET

### UNIT COMPARTMENT ACCESS

#### **⚠ WARNING**

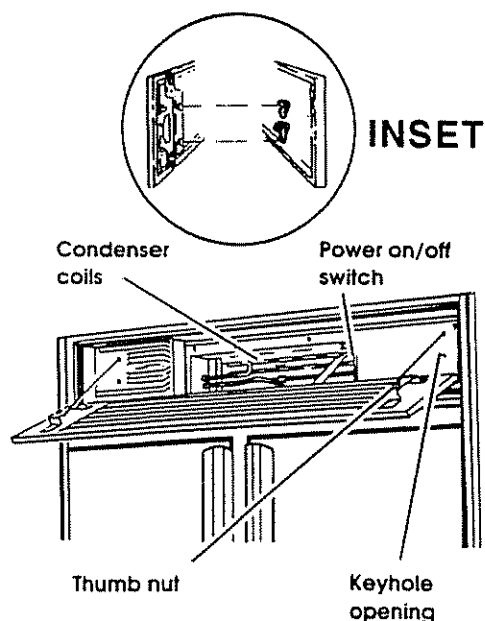
##### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

The unit compartment is accessed by removing the top grille. To remove the grille, use the following procedure.

#### **Disassembly**

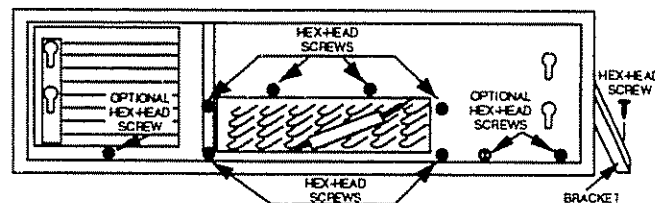
1. Turn the Power On/Off switch to Off.
2. Grasp the louver of the decorative top grille (see Figure 51A) and slide it up to remove it from the keyhole slots (see the inset drawing). Pull the decorative grille toward you as far as the cables will allow.



**FIGURE 51A**

*Removing The Decorative Grille*

3. Remove the hex-head screws (see Figure 51B) from the front of the top grille (up to 9 screws, depending upon the model).



**FIGURE 51B**

*Removing The Top Grille*

4. Remove the screw that holds the grille bracket (Figure 51B) to the top of the cabinet. Leave the other end of the bracket connected to the grille.
5. Lift the top grille straight up so the channel slides out of the track in the top of the cabinet and remove the grille.

You can now proceed to service the following components:

- The Power Switch (page 82).
- The Defrost Timer (page 83).
- The Run or Starting Capacitor (page 84).
- The Water Dispenser/Ice Maker Fill Valves (page 85).

If you wish to service the sealed system, proceed with the following steps.

Refer to Figure 52 for the following steps.

6. Remove the hex-head screw and flat washer from each of the two tray holding clips, and then remove the hex-head screws from alongside the clips.
7. Open both doors and remove the top trim and the bracket that is behind it from the top of the cabinet.
8. Remove the two hex-head screws from the component assembly cover and remove it from the component cover.

- Slide the unit compartment forward as far as it will go.

If you wish to service the condenser fan motor or the sealed system, and the unit compartment does not slide out far enough, proceed to step 10.

- Remove the four screws from the side flanges of the component cover and remove the cover. If there is not enough space above the component cover to remove it, move the refrigerator out of the wall opening. To do this, proceed to "Removing A Built-In Unit From The Cutout."

You can now service the sealed system (see page 95). To service the condenser fan motor, proceed to page 86.

## Removing A Built-In Unit From The Cutout

- Remove the two screws from the bottom grille and remove the grille.
- Retract the front and rear feet and allow the unit to rest on its rollers.
- Check the water supply line underneath the unit and make sure that it does not become damaged when you roll the unit out in the next step. You may have to disconnect it.
- Pull the unit out of its built-in location just far enough to access the back. Unplug the line cord if it is not long enough.

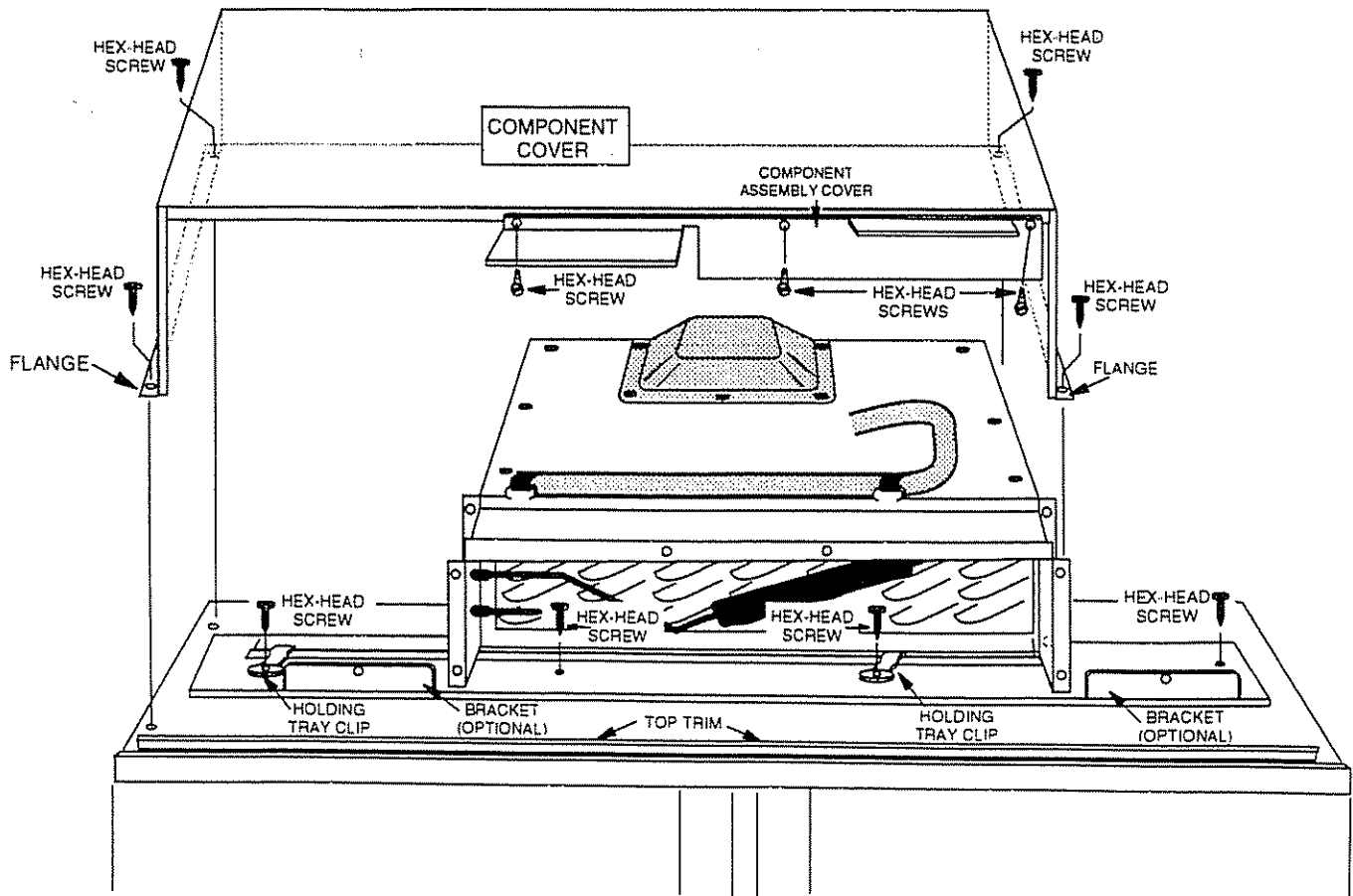


FIGURE 52

Accessing The Top Components

## REPLACING THE POWER SWITCH

### **WARNING**

#### **ELECTRICAL SHOCK HAZARD**

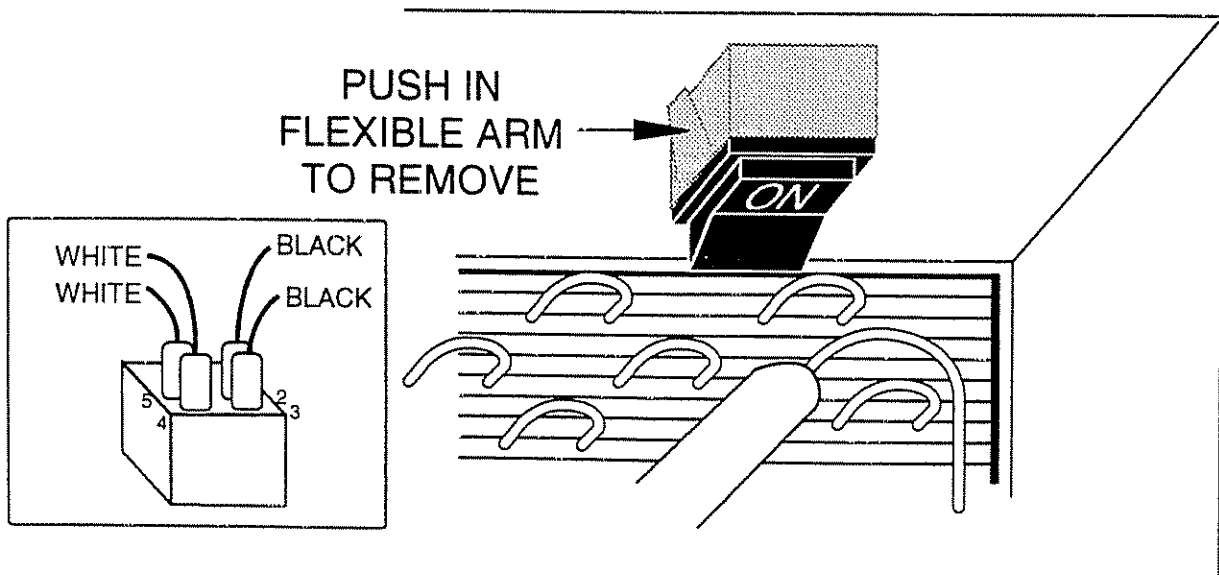
Turn off the power to the refrigerator-freezer at the circuit breaker panel before you service the Power On/Off switch. Failure to do this could result in violent electrical shock.

Refer to Figure 53 for the following steps.

1. Turn off the power to the refrigerator-freezer at the circuit breaker panel before you service the Power On/Off switch.
2. Refer to page 80 and remove the top grille from the cabinet.

3. Disconnect the four wires from the power switch terminals.
4. Press the flexible arms against the power switch body and push the switch out of the cutout in the top cover.
5. Position the new power switch with terminals 2 and 3 to the right (the numbers are etched on the sides of the switch body). Press the switch into the top cover cutout until the ends of the locking arms lock over the top of the cutout.
6. Slide the two black wire connectors over terminals 2 and 3.
7. Slide the two white wire connectors over terminals 4 and 5.

Refer to "Reassembly" on page 88.



**FIGURE 53**  
*Replacing The Power Switch*

## REPLACING THE DEFROST TIMER

### **⚠ WARNING**

#### **ELECTRICAL SHOCK HAZARD**

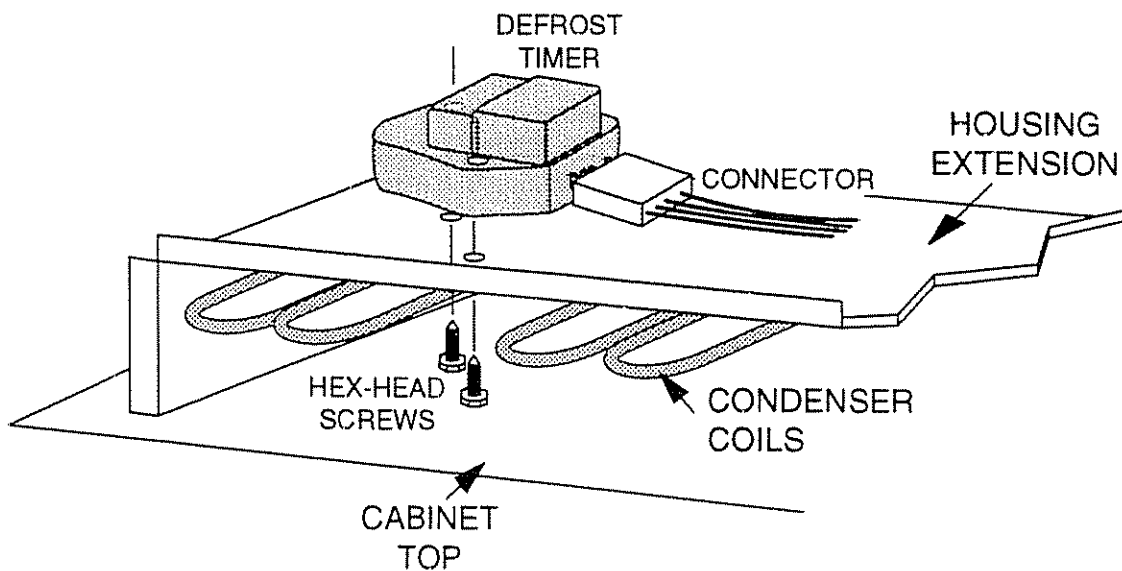
Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 54 for the following steps.

1. Refer to page 80 and remove the top grille from the cabinet.
2. Remove the three hex-head screws from the component assembly cover on the front of the component cover (see Figure 52 on page 81) and remove it.

3. Unplug the connector from the defrost timer terminals.
4. Remove the two hex-head screws from the defective defrost timer and remove it.
5. Mount the new timer to the top of the cabinet with the two hex-head screws you removed in the last step.
6. Plug the wiring harness connector onto the defrost timer terminals.
7. Mount the component assembly cover to the front of the component cover with the three hex-head screws you removed in step 2.
8. Turn on the unit and check out the defrost timer.

Refer to "Reassembly" on page 88



**FIGURE 54**  
*Replacing The Defrost Timer*

## REPLACING THE RUN OR STARTING CAPACITOR

### **⚠ WARNING**

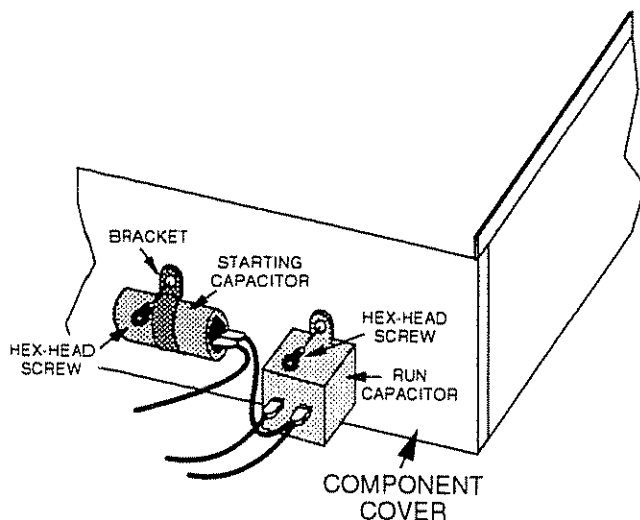
#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 55 for the following steps.

1. Refer to page 80 and remove the top grille from the cabinet.
2. Remove the four hex-head screws from the left and right flanges on the component cover, and then remove the cover.

If you are replacing the starting capacitor, proceed to step 7, otherwise continue with step 3.



**FIGURE 55**

*The Run & Starting Capacitors*

*To replace the run capacitor:*

3. Remove the hex-head screw from the run capacitor mounting flange.
4. Disconnect the two wire connectors from the run capacitor terminals.
5. Connect each wire to either terminal of the new run capacitor.
6. Mount the run capacitor to the left side of the component cover with the hex-head screw you removed in step 3.

Proceed to step 12.

*To replace the starting capacitor:*

7. Remove the hex-head screw from the starting capacitor mounting bracket.
8. Disconnect the two wire connectors from the old capacitor terminals.
9. If a new bracket is not supplied with the replacement starting capacitor, remove the old bracket and reinstall it on the new capacitor. Make sure that the mounting flange of the bracket is positioned properly.
10. Connect each wire to either terminal of the new starting capacitor.
11. Mount the starting capacitor bracket to the left side of the component cover with the hex-head screw you removed in step 7.
12. Mount the left and right component cover flanges to the cabinet with four hex-head screws.
13. Turn on the power and check out the system.

Proceed to "Reassembly" on page 88.



## CLEANING/REPLACING A WATER DISPENSER/ICE MAKER FILL VALVE

### ⚠ WARNING

#### ELECTRICAL SHOCK HAZARD

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

Refer to Figure 56 for the following steps.

### NOTE

The water dispenser and ice maker fill valves are housed in a single assembly. Use the following procedure to remove and replace either one.

1. Turn off the water supply to the refrigerator-freezer.
2. Disconnect the plastic water line connectors and tubes from the two valves.
3. Disconnect the 2-wire connectors from the valves' solenoid terminals.
4. Remove the hex-head screws from the valve bracket and remove the valves.
5. Inspect the valve screens for debris and clean them if necessary.
6. To reinstall the valve assembly, hook the ground wire eyelet (see the inset drawing) over the front of the bracket, and mount the valve assembly with the hex-head screws you removed in step 4. Make sure to tighten the screws securely so the valves do not leak.
7. Slide the 2-wire connector with the violet and white wires over the water fill valve solenoid terminals.
8. Slide the 2-wire connector with the brown and white wires over the ice maker fill valve solenoid terminals.
9. Reconnect the water lines to the valves.
10. Turn on the water supply.
11. Turn on the unit and check out the valve operation.

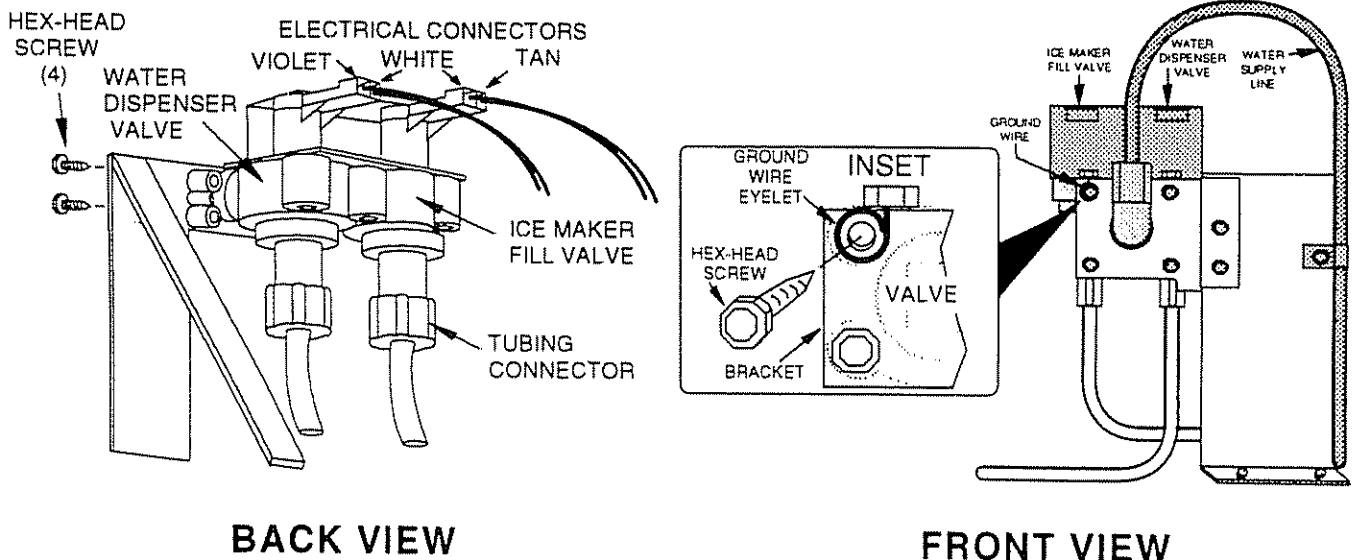


FIGURE 56

Replacing The Water Dispenser/Ice Maker Fill Valves

## REPLACING THE CONDENSER FAN MOTOR

### **! WARNING**

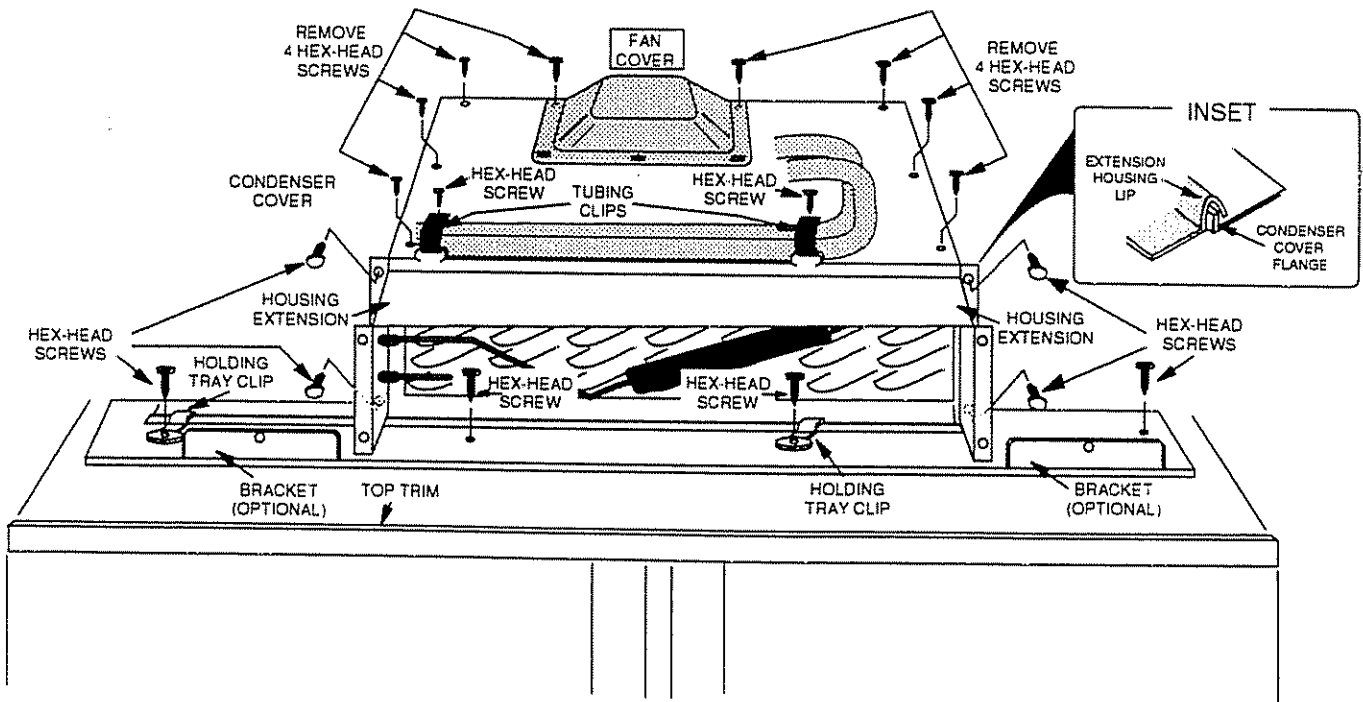
#### **ELECTRICAL SHOCK HAZARD**

Turn off the power to the refrigerator-freezer at the Power On/Off switch (see page 33), or at the circuit breaker panel before you service any of the components inside the unit. Failure to do this could result in violent electrical shock.

1. Refer to Pages 80 and 81 and perform steps 1 through 9, then return to this page and continue with the steps.

Refer to Figure 57 for the following steps.

2. Remove the four hex-head screws from the side flanges of the housing extension.
3. Remove the hex-head screws from the two tubing clips.
4. Remove the eight hex-head screws from the perimeter of the condenser cover.
5. Unhook the lip of the housing extension from over the condenser cover flange (see the inset drawing). Push the extension forward approximately 1-inch, then slide the condenser cover to the right and off the unit.



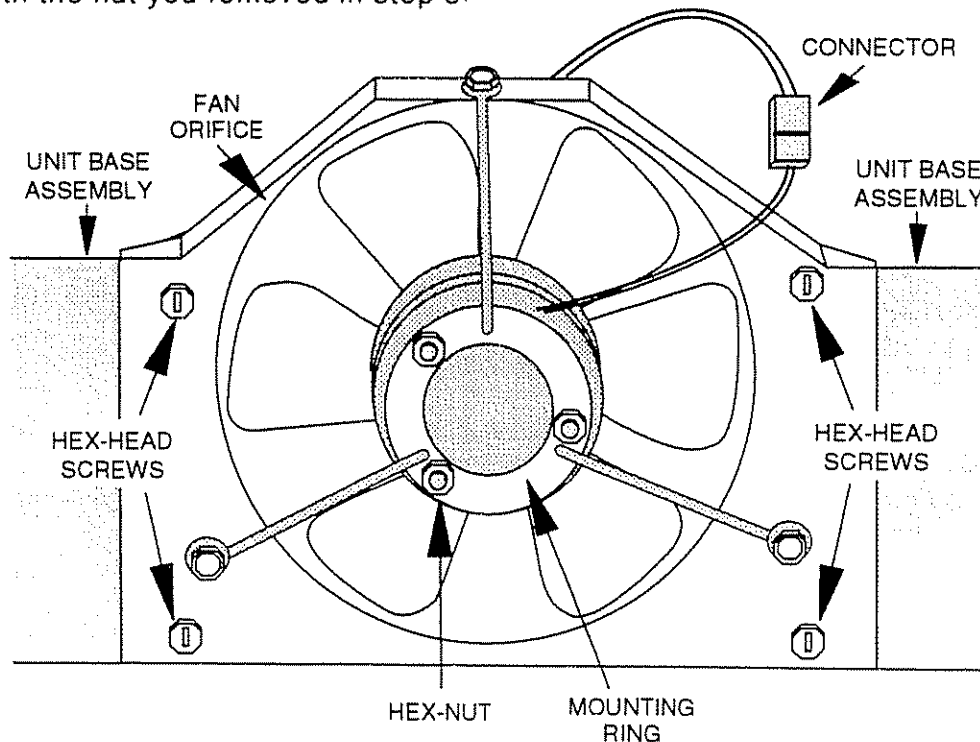
**FIGURE 57**

*Removing The Condenser Cover*

Refer to Figure 58 for the following steps.

6. Disconnect the fan motor connector from the wiring harness.
7. Remove the four hex-head screws that hold the fan orifice to the unit base assembly and remove the fan motor assembly.
8. Remove the nut from the motor shaft and remove the fan blade.
9. Remove the three hex-nuts from the threaded studs at the back of the mounting ring and remove the fan motor.
10. Position the new fan motor with the wiring harness as shown in Figure 58, and mount the threaded studs to the wire frame mounting ring with the three hex-nuts you removed in step 9.
11. Position the fan blade with the "nut side" printing stamped on the blade toward the nut, and secure the blade to the fan motor shaft with the nut you removed in step 8.
12. Mount the fan orifice to the unit base assembly with the four hex-head screws you removed in step 7.
13. Connect the fan motor plug to the wiring harness connector.
14. Carefully slide the condenser cover into place (see Figure 57) and secure it with the eight hex-head screws you removed earlier.
15. Slide the housing extension forward and hook it over the top of the condenser cover flange (Figure 57), then mount the two side flanges to the unit base assembly with four hex-head screws.
16. Mount the tubing clips (Figure 57) over the two foam-covered lengths of tubing with two hex-head screws.

Proceed to "Reassembly" on page 88.



**FIGURE 58**  
*The Condenser Fan Motor*

## Reassembly

Refer to Figure 59 for the next three steps.

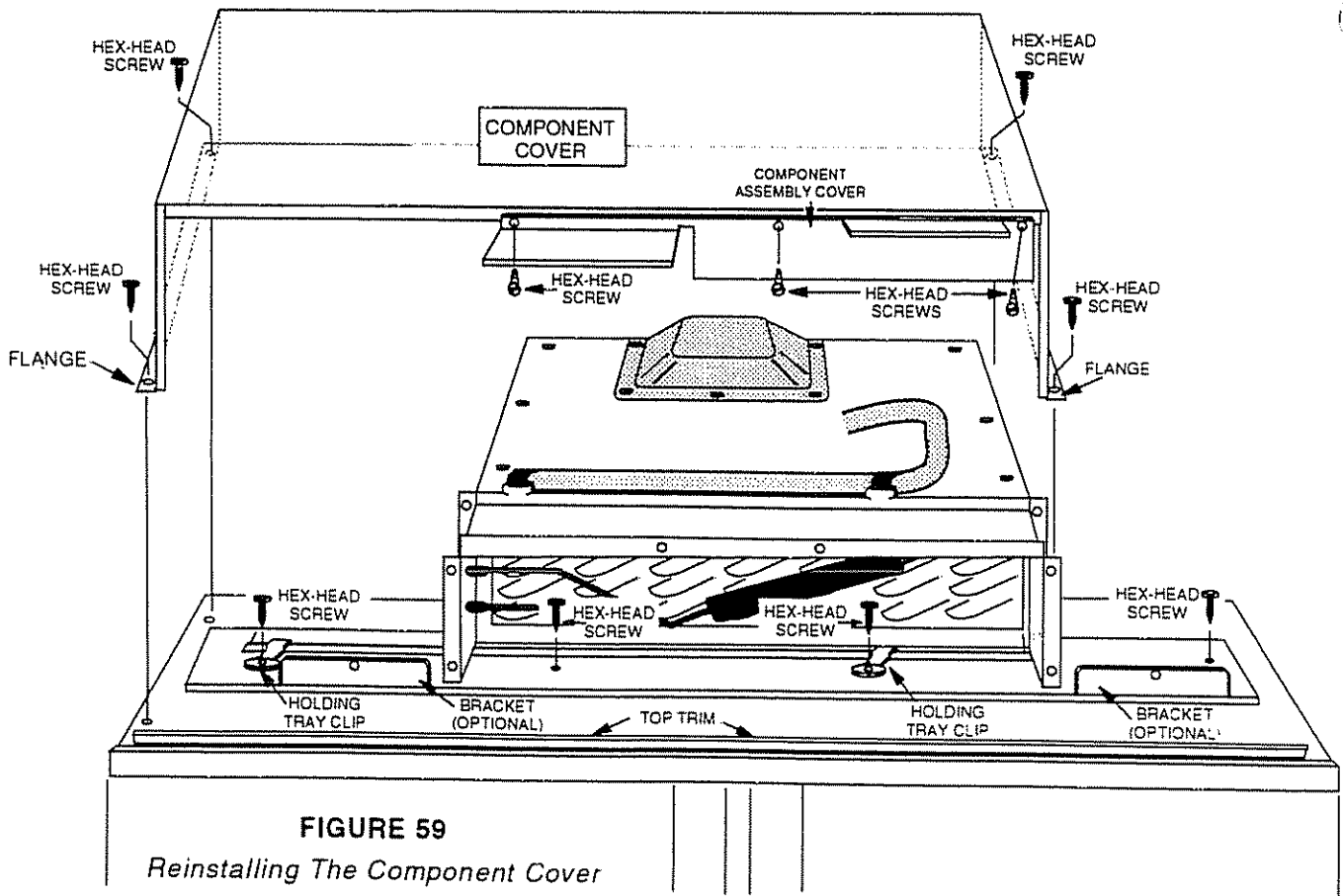
1. Slide the unit compartment tray back to its operating position.
2. Mount the component cover flanges to the top of the cabinet with four hex-head screws.
3. Place the top trim and the bracket into place so the mounting holes align, then secure it, and the unit compartment tray, with the mounting clips, flat washers, and hex-head screws you removed earlier. Close the doors when you are finished.

If you did not move the unit out of its built-in location, proceed to step 7, otherwise continue with step 4.

4. Make sure that you do not damage the bottom tubing, and carefully move the

unit back into its built-in location (make sure that the power cord is plugged into its AC outlet).

5. Reset the feet and level the unit.
6. Mount the bottom grille to the unit with the two hex-head screws you removed earlier.
7. Mount the top grille to the cabinet with the eight hex-head screws you removed earlier.
8. Mount the end of the top grille bracket to the cabinet with the remaining hex-head screw.
9. Turn on the Power switch and check out the system.
10. Hang the center section of the top grille over the keyhole slots.



# TROUBLESHOOTING

## GENERAL

### HEAVY WARM LOAD

The amount of warm food placed in the refrigerator affects running time and power consumption. Ordinarily, when a supply of food is placed in a refrigerator, it will operate continuously until the food is down to the desired storage temperature. This continuous operation is normal. In high ambients, 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 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 a range, heater, hot air duct, sunny window) can affect performance. If the room ambient 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 the running time and power consumption.

### EXTERIOR SWEATING

Refrigerators are designed to prevent "run-off" moisture at 90°F and 90% relative humidity ambient. There may be a thin film of moisture on some 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 compressor. No power at outlet.	Press power switch to on. Check with test lamp or volt meter. Should supply 110-120-volt 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.
	Relay or overload.	Using starting cord, check compressor directly. If compressor starts, check relay and overload individually with ohmmeter and replace one found to be defective. If compressor doesn't start, replace compressor.
	Loose connections.	Check circuit from power source to compressor using wiring diagram as guide.
	Starting or run capacitor.	Check capacitor. Replace if defective.
	Motor windings open, shorted or grounded.	Check winding 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 starting cord. If compressor won't start, change compressor.
Compressor runs, but no refrigeration, or insufficient refrigeration.	Moisture restriction. Heavy frost around evaporator inlet.	Heat frosted area. If frost line moves farther along coil after heating, restriction was probably caused by moisture freeze up. Discharge unit, evacuate, using wet system procedure, and recharge.
	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 if necessary to get internal pressure. Repair leak or replace leaking component.
	No capacity, or low capacity compressor.	Check operating wattage and pressures. 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.

## Diagnostic Chart (Cont'd)

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE — ACTION
Compressor runs, but no refrigeration, or insufficient refrigeration (continued).	Air circulation on high side:	
	a. Condenser or grille restricted by lint. b. Condenser fan not running, or running slowly. c. Condenser 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 motor top cover in place.
Compressor kicks out on overload	High ambient and/or abnormal 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 starts. High voltage may cause compressor to overheat. Correct voltage condition.
	Starting or run capacitor.	Check capacitor. Replace if defective.
	Air circulation on high side:	
	a. Condenser or grille restricted by lint. b. Condenser fan not running, or running slowly. c. Condenser 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 motor top cover in place.
	Relay and/or overload.	Replace with parts known to be good.
	Motor winding shorted.	Check winding with ohmmeter. See wiring diagram for resistance values. Replace compressor if motor is defective.
	Overcharge.	Check for high wattage and frosted suction line. Evacuate and recharge with correct charge.
Compressor stuck.	Change Compressor.	

## Diagnostic Chart (Cont'd)

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE — ACTION
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 number. See that sensing tube is properly positioned and pressed well into retainer clips. 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 door seal. Instruct customer to make sure door closes completely
	High ambient.	Locate in area out of direct rays of sun and away from heat registers, or other source of heat.
	Cabinet lights.	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 $\Omega$ between the BK/Y and white wires, or the Y/R and white wires. If the meter reading shows "open" for both BK/Y and Y/R wires, replace the motor. Check for iced door. Remove ice and eliminate moisture entering due to air leaks
	Electronic control board: a. Set too warm. b. Baffle is stuck closed.	Turn knob to colder position Check for 120 volts between the OR/W and WHT wires at circuit board plug.
	Thermistor: a. Sends wrong or high resistance signal to electronic control board b. Others - same as items under "Freezer compartment too warm."	Check resistance for given temperature at grey wires. An open or infinite resistance reading closes the door. Replace the thermistor. Same as items under "Freezer compartment too warm."



## Diagnostic Chart (Cont'd)

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 to see that damper opens and closes at proper 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 $\Omega$ between the BK/Y and white wires, or the Y/R and white wires. If the meter reading shows "open" for both BK/Y and Y/R wires, replace the motor. Check for iced door. Remove ice and eliminate moisture entering due to air leaks.
	Electronic control board: a. Set too cold. b. Baffle is stuck open.	Turn knob to warmer position. Check for 120 volts between the OR/W and WHT wires at circuit board plug
	Thermistor: a. Sends wrong or high resistance signal to electronic control board. b. Others - same as items under "Freezer compartment too cold."	Check resistance for given temperature at grey wires. An open or infinite resistance reading closes the door. Replace the thermistor. Same as items under "Freezer compartment too cold."
External sweating.	Freezer heater inoperative. Mullion hot gas loop inoperative. Door seal.	Check heater with ohmmeter. Check hot gas loop Adjust door for proper seal.
Internal sweating.	Ice dispenser chute not sealing. Abnormal usage Door seal.	Check heater with ohmmeter. If defective, connect redundant heater. 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.

## Diagnostic Chart (Cont'd)

PROBLEM	POSSIBLE CAUSE	TEST PROCEDURE — ACTION
Incomplete defrosting, or high cabinet temperatures during defrosting.	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 temperatures 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 12-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.	Keep food covered. Clean refrigerator and freezer with solution of baking soda and water. Explain to customer 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 be causing odor.
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.

# SERVICING THE BUILT-IN REFRIGERATOR SEALED SYSTEM

## INTRODUCTION

The sweep charge procedure in this section is recommended for purging contaminants from the sealed system during repair. This procedure works better than using a vacuum pump, because many pumps are poorly maintained and cannot pull the required "deep" vacuum.

This section does not follow a standard sweep charge service procedure. It uses a "revised" procedure that applies only to built-in refrigerator sealed systems with fluid control valves. It expands the procedure for removing contaminants and non-condensables from the sealed system, and allows the use of manifold gauges for monitoring both function and system pressures.

To establish a basic knowledge of sweep procedures, we highly recommend that the technician first review the Job Aid entitled "Sweep Charge Procedure for Sealed System Repair" (Part #4314243-A), and its accompanying video (Part #4314079).

The information in this section contains:

- Service information that is essential to understanding and diagnosing the built-in refrigerator sealed system.
- A revised sweep charge procedure.

A flow chart for the built-in refrigerator sealed system procedure is shown in Figure 60.

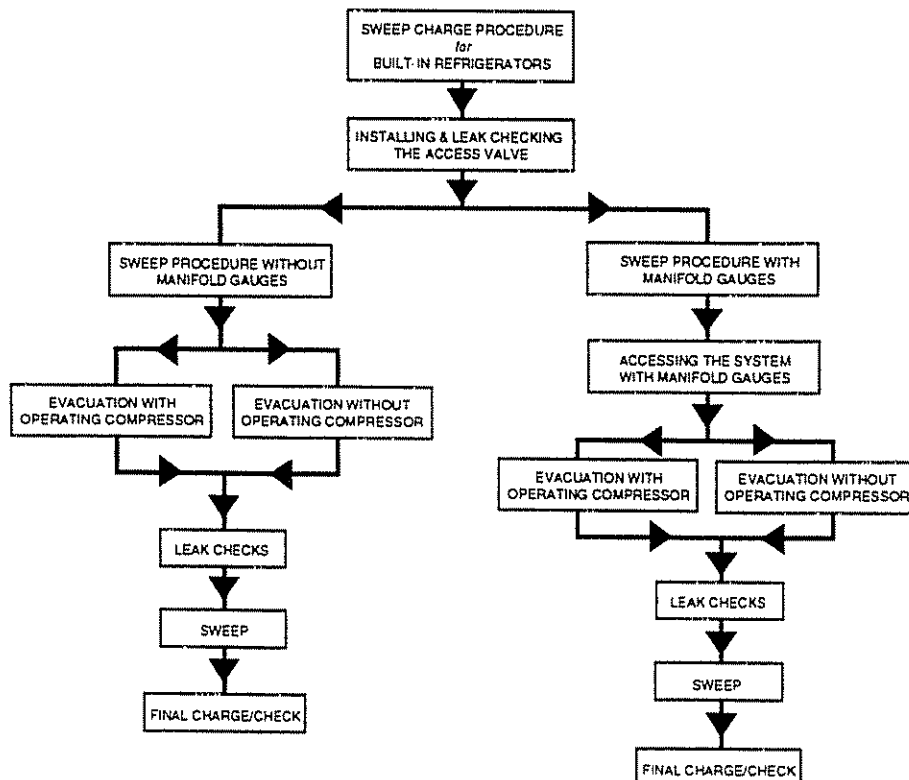


FIGURE 60

Sealed System Procedure Flow Chart

# IMPORTANT SERVICE INFORMATION

## THE CONDENSER COIL

**THE CONDENSER COIL MUST BE KEPT CLEAN AND THE AIRFLOW THROUGH IT UNRESTRICTED.**

High-side system operating pressures and normal compressor operating temperatures generally run higher in the built-in refrigerator. A dirty or restricted condenser reduces heat transfer from the condenser and increases its internal temperature. This, in turn, increases the high-side operating pressure. Compressors that are subjected to this condition for any length of time will prematurely fail.

## THE FLUID CONTROL VALVE

The fluid control valve increases the operating efficiency of the sealed system, and allows the product to meet government energy efficiency requirements. The fluid control valve should not be removed from the system unless it malfunctions, and then it should be replaced. If the fluid control valve malfunctions and no replacement is readily available, it can be bypassed until the new fluid control valve is installed. No adjustment for sealed system charge is necessary.

## SEALED SYSTEM CHARACTERISTICS

On the built-in unit, the system high-side operating pressure averages 15- to 20-psig higher than the normal pressures on standard products. Low-side operating pressures may vary from 5-inches of vacuum to as high as 10-psig. Depending upon the size of the unit, the room ambient temperature, and heat load inside the product, it is possible to see wide differences in operating pressures. The following charts show the normal range of system pressures and total wattage draw, when the refrigerator and freezer compartments are operating at normal temperatures (freezer = 0°F ±5°; refrigerator = 33°F to 45°F).

### 36" Side Cabinet W/O Dispenser

Room Temp.	Total Watts	System Pressure	
		Hi Side	Lo Side
70°	155±10	110±10	0 - 10 lbs.
90°	160±10	160±20	3 - 9 lbs.
110°	160±15	180±20	4 - 9 lbs.

### 48" Side Cabinet With Dispenser

Room Temp.	Total Watts	System Pressure	
		Hi Side	Lo Side
70°	220±10	105±10	-2 - 3 lbs.
90°	225±10	141±15	-1 - 4 lbs.
110°	250±15	185±20	0 - 5 lbs.

### 48" Side Cabinet Without Dispenser

Room Temp.	Total Watts	System Pressure	
		Hi Side	Lo Side
70°	190±15	105±10	-2 - 3 lbs.
90°	210±15	141±15	-1 - 4 lbs.
110°	225±15	185±20	0 - 5 lbs.

When starting the unit for the first time, or when the refrigerator and freezer compartments are at room temperature, the fluid control valve is almost completely closed for approximately the first 20-minutes of operation. During this time, pressure readings may be erratic. The low-side pressure may read as low as 20-inches of vacuum, and the high-side may also read considerably lower than normal. As the compressor begins to move refrigerant through the system, the high-side pressure builds, and forces the fluid control valve open. The low-side pressure comes out of a vacuum as liquid refrigerant is supplied to the evaporator to pick up heat.

## LEAKS AND LOW CHARGE

If the system has a low charge, you can assume that there is a leak in the system. Sealed system leaks must be found and repaired to eliminate moisture and other contamination from entering the system. Do not add or replace the refrigerant without first repairing the leak.

Leaks may be found at improperly soldered tubing joints, or at stress points where copper tubing has sharp bends. When you determine that there is a low charge, thoroughly check for leaks with an electronic leak detector, or with soap bubbles. Many times traces of oil can be found at leaking joints.

## BRAZING AND UNBRAZING

For more efficient brazing, a double-tipped acetylene torch is recommended for localizing the flame around tubing joints. A double-tipped torch assembly is shown in Figure 61. Use caution not to apply too much heat to the top of the refrigeration tray, or you could seal the tray to the top of the cabinet, and make it difficult to slide the tray back into position after work is completed.

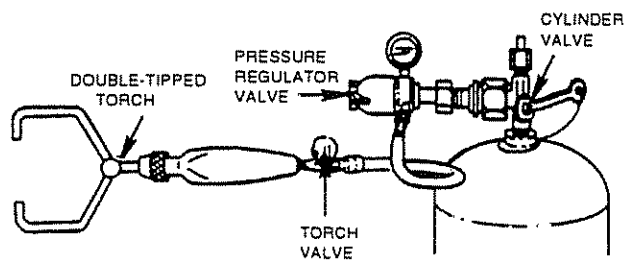


FIGURE 61

*Double-Tipped Acetylene Torch Assembly*

If you do any soldering near the fluid control valve, it is very important to protect the valve from heat. Use heat sink paste on the tubing between the flame and the valve. Also protect the valve from direct contact with the torch flame. The diaphragm inside the valve contains a neoprene seal, and heat will permanently damage it. If this should happen, the valve will not function correctly and must be replaced.

## THE EVAPORATOR COIL

The evaporator coil must be warm to effectively remove moisture during "purge" and "sweep" operations. Just before you purge the system, take an extra few minutes to heat the evaporator to a temperature that is very warm to the touch.

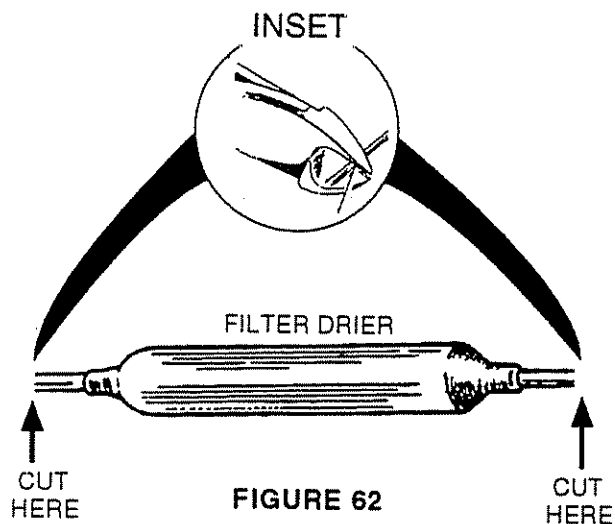
If the unit is operating and has a cold evaporator, advance the defrost timer and defrost the unit while you prepare your equipment. This will allow time for the defrost heater to warm the evaporator coil. If more heat is needed to bring the evaporator to the desired temperature, use a heat gun. Take care not to overheat nearby materials and surfaces that are vulnerable to heat, such as foam, wire insulation, plastic, etc.

On a non-operating compressor system, the defrost heater will not energize, because the evaporator is already warm and the bimetal is open. The bimetal opens and closes at approximately 50°F and 20°F, respectively. If the defrost timer is set to defrost, and the heater does not come on because the evaporator is not cold enough to reset the bimetal, use a heat gun to warm the evaporator coil.

## THE FILTER DRIER

*Always replace the filter drier whenever you enter the sealed system. Always cut the filter drier out of the system. Never unbraid it from the lines.* These steps will keep any moisture localized in the drier, and prevent heat from driving it back into the system.

If the drier's connecting tubing is minimal, cut the tubing next to the drier body with a pair of dikes (see Figure 62 and the inset), and then unbraid the drier stubs from the condenser outlet and connecting tubing.



**FIGURE 62**  
*Removing The Filter Drier*

## EXCESSIVE MOISTURE IN THE SYSTEM

To remove excessive moisture from the system, replace the compressor and the filter drier. Heat the evaporator coil, and then evacuate and sweep the system. See "Revised Sweep Charge Procedure" on page 99.

Excessive moisture usually results from operating the system with a low-side leak over an extended period of time, and affects the sealed system in the following ways:

1. The compressor oil becomes permanently contaminated, and eventually causes premature compressor failure.
2. The dessicant inside the filter drier becomes saturated, and decomposes into fine particles small enough to pass through the filter drier's fine mesh screen. Eventually, this residue works its way into the compressor, and causes the pump to seize, or become inefficient.
3. Moisture migrates out of the saturated filter drier dessicant and freezes at the evaporator inlet, preventing the flow of refrigerant through the system. This is known as a "moisture restriction."

If a moisture restriction reoccurs after performing the procedure, replace the filter drier, heat the evaporator, and evacuate and sweep the system over again. Do not replace the compressor, because it should not be affected.

## REVISED SWEEP CHARGE PROCEDURE

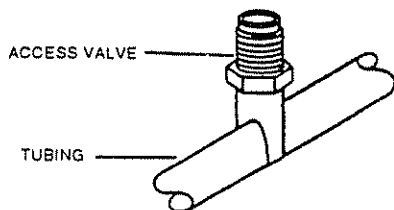
### INSTALLING & LEAK-CHECKING AN ACCESS VALVE

**NOTE**

Government regulations may prohibit the use of refrigerant to leak-check the brazed joint. Since the system has not yet been pierced, dry nitrogen or compressed air can be used for this purpose, however, **NEVER USE COMPRESSED AIR TO PRESSURIZE AND LEAK-CHECK A SEALED SYSTEM.**

When you are instructed to install and leak-check an access valve, refer to Figure 63, and use the following procedure.

1. Use sanding cloth and clean the access valve and an area on the tubing where the valve will be installed.
2. Connect an access valve to the tubing so that a hand valve and hose can be connected.



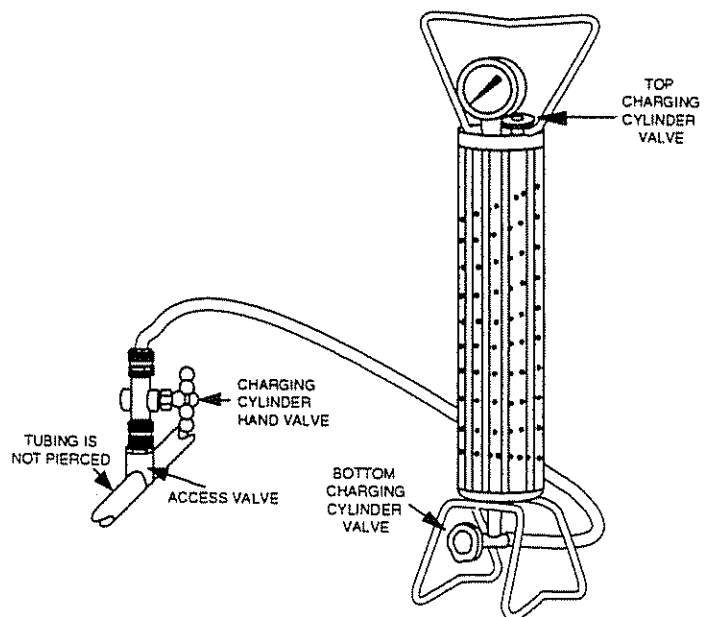
**FIGURE 63**  
*The Access Valve*

3. Flux the area to be brazed.
4. Braze the access valve onto the tube and allow it to cool.
5. Thoroughly clean all traces of flux from the access valve joint with a steel brush and damp cloth (if necessary, review the brazing procedure in the Job Aid entitled "Techniques of Brazing" (Part number #4314245).

Refer to Figure 64 for the remainder of the procedure.

6. Connect the charging cylinder hand valve to the access valve.
7. Open the bottom charging cylinder valve.
8. Open the charging cylinder hand valve and pressurize the access valve.
9. Check the brazed joint for leaks using bubble solution, or an electronic leak detector. If the braze joint is questionable, clean the joint, and repeat the procedure, starting with step 3.
10. Close the charging cylinder hand valve and disconnect it from the access valve.

Proceed to "Piercing The Sealed System Tubing" on the next page.

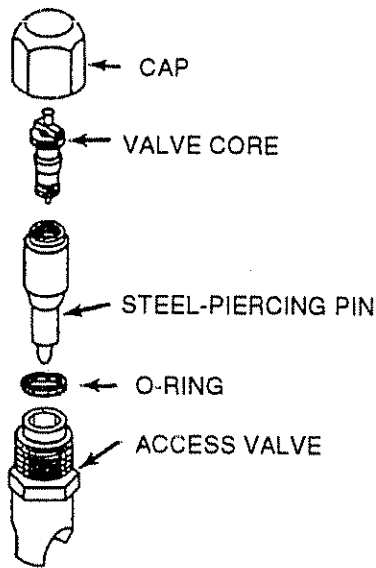


**FIGURE 64**  
*The Charging Cylinder & Valves*

## PIERCING THE SEALED SYSTEM TUBING

In this section, you will install the access valve components and pierce the sealed system. The access valve components are shown in Figure 65, and consist of the following parts:

- Cap
- Valve core
- Steel piercing pin
- O-ring
- Access valve



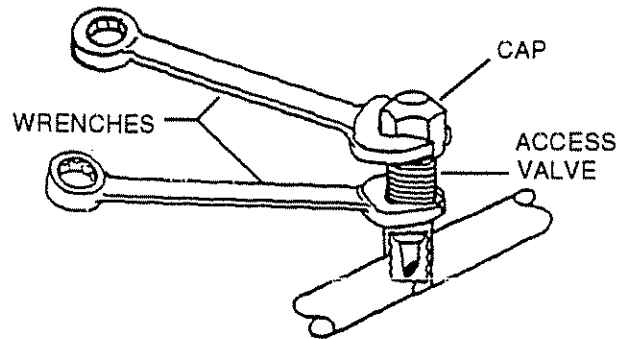
**FIGURE 65**

*The Access Valve Components*

Use the following procedure and pierce the sealed system:

1. Look at the steel-piercing pin and make sure that the valve core inside the pin is tight.
2. Place the O-ring over the steel piercing-pin body and insert them into the access valve.

3. Refer to Figure 66, and pierce the tubing. Use two wrenches, (to prevent twisting the valve on the tubing), and tighten the cap on the access valve until it will not turn anymore.



**FIGURE 66**

*Piercing The Tubing*

4. Remove the cap from the access valve.

## NOTE

There are two procedures that you can use to service the sealed system. One procedure allows you to use manifold gauges, and the other procedure does not. If you do not intend to use manifold gauges, proceed to "Sweep Charge Procedure Without Manifold Gauges" on page 101. If you do intend to use manifold gauges, proceed to "Sweep Charge Procedure With Manifold Gauges" on page 112.



## SWEEP CHARGE PROCEDURE WITHOUT MANIFOLD GAUGES

### NOTE

During the following procedures, it is important to minimize the loss of any refrigerant when removing hand valves from system access valves. To execute this effectively, press the hand valve against the access valve while backing off the knurled nut of the hand valve, then with a swift motion, pull the hand valve away.

If you have a unit with an operational compressor, proceed to "Evacuating With An Operational Compressor" on page 102. If the unit does not have an operational compressor, proceed to "Evacuating With A Non-Operational Compressor" on page 104.

## EVACUATING WITH AN OPERATIONAL COMPRESSOR

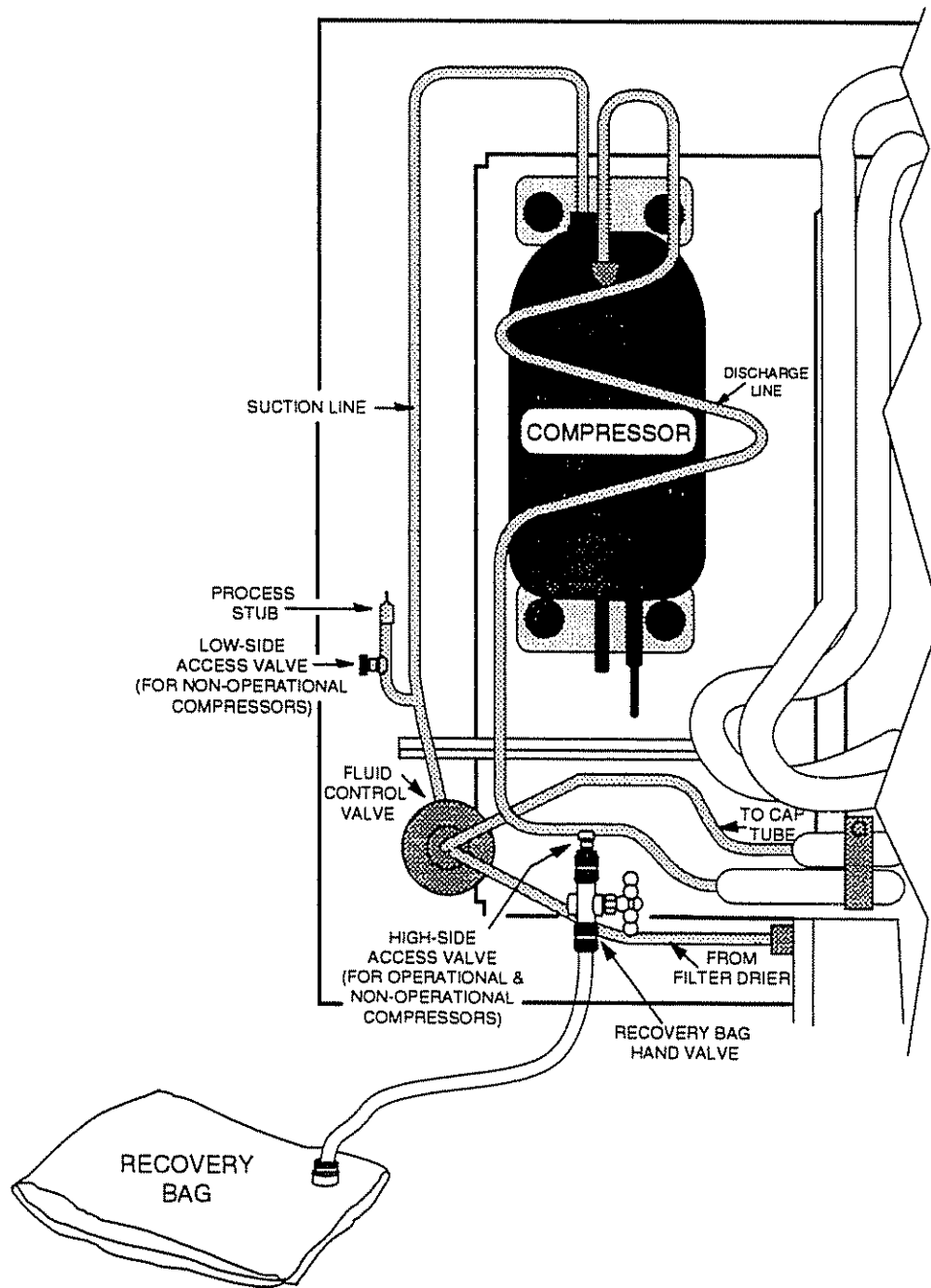
The next step is very important! Make sure that you perform it properly. It will eliminate extra evacuation and procedural time.

1. Warm up the evaporator coil by turning the defrost timer to defrost, or by applying heat with a heat gun. Take care not to overheat nearby materials and surfaces that can be damaged by the heat, such as foam, wire insulation, vinyl, plastic, etc.
2. Install a permanent access valve onto the compressor discharge tube between the compressor and the mullion heat loop (if necessary, refer to "Installing & Leak-Checking An Access Valve" on page 99).

Refer to Figure 67 for the following steps.

3. Connect the recovery bag hand valve to the high-side access valve.
4. Open the recovery bag hand valve, allowing the system to purge refrigerant into the bag for 3-minutes, then run the compressor for 5-minutes to aid in evacuating the low-side of the system. Use a heat gun, and heat the evaporator coil to keep it warm during the purge time.
5. Close the recovery bag hand valve and remove it from the high-side access valve, then turn off the compressor.
6. Remove the valve core from the high-side access valve to reduce the restriction of refrigerant during evacuation of the sweep charge.

You can now service the system. When you make the other necessary repairs, ***make sure that you replace the filter drier as well.***



**FIGURE 67**  
*Evacuating With An Operational Compressor*

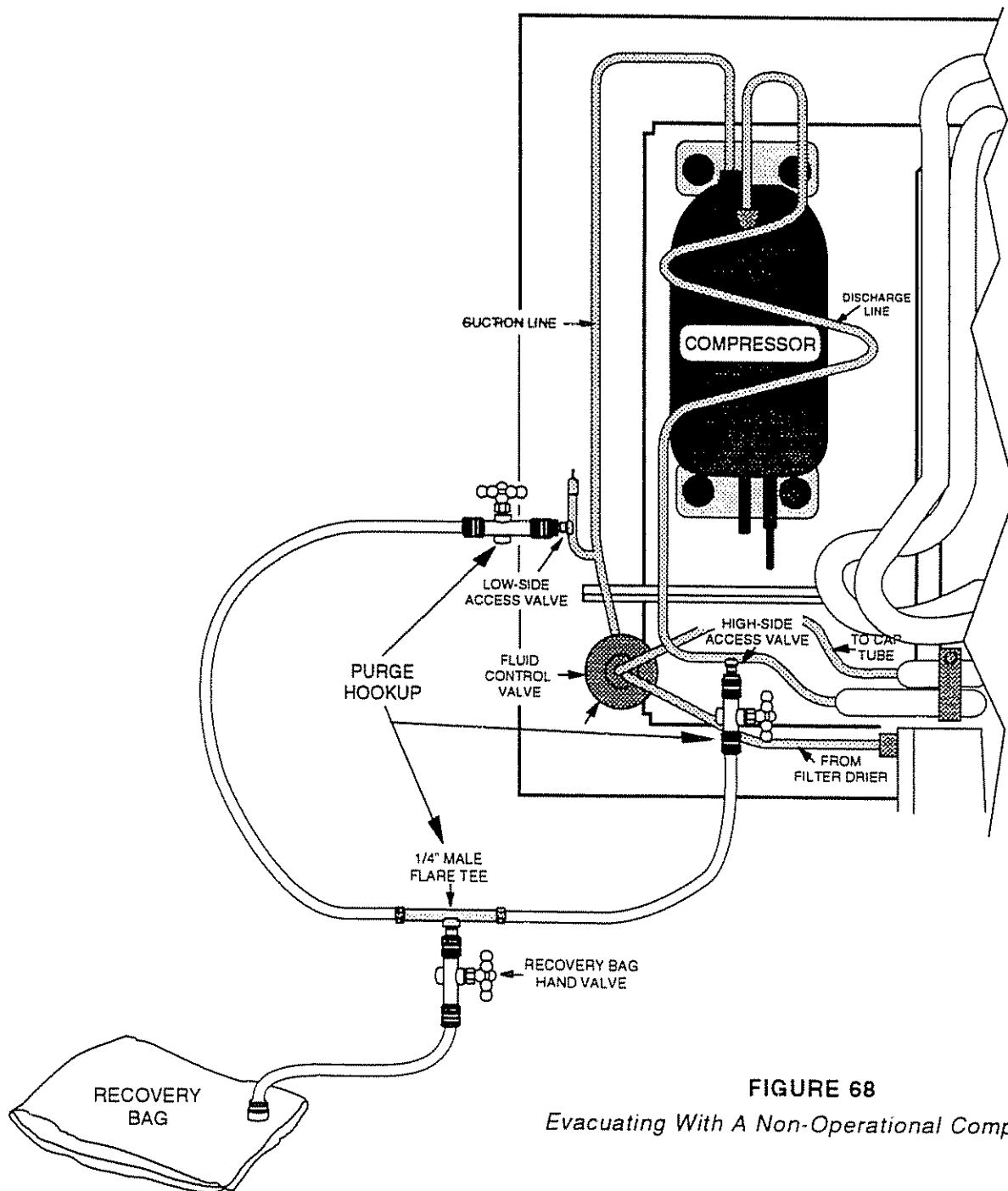
## **EVACUATING WITH A NON-OPERATIONAL COMPRESSOR**

The first step is very important! Make sure that you perform it properly. It will eliminate extra evacuation and procedural time.

Refer to Figure 68 (on the next page) for the following steps.

1. Use a heat gun and warm up the evaporator coil. The defrost cycle will not come on because the evaporator temperature is not cold enough to reset the defrost bi-metal. Make sure that you keep the evaporator coil warm until you begin purging refrigerant from the system.
2. Install an access valve on the compressor discharge tubing (if necessary, refer to "Installing & Leak-Checking An Access Valve" on page 99).
3. Install a second access valve on the suction line process stub between the compressor and the fluid control valve. You will use this valve to evacuate refrigerant from the low-side of the system.
4. Leak-check both access valves (if necessary, refer to "Installing & Leak-Checking An Access Valve" on page 99).
5. Pierce the system at both access valves (if necessary, refer to "Piercing The Sealed System Tubing" on page 100).
6. Connect the recovery bag hand valve to a ¼" male flare T-fitting.
7. Connect a hose to each end of the T-fitting.
8. Connect a hand valve to the ends of the T-fitting hoses. This is the purge hook-up for non-operating compressor sealed systems.
9. Connect one of the purge hand valves to the system low-side access valve.
10. Connect the other purge hand valve to the system high-side access valve.
11. This step has three parts to it. Read each part carefully before you perform it.
  - a) Make sure that the evaporator coil is warm, and then open both purge hand valves and the recovery bag hand valve, and purge the refrigerant into the recovery bag for at least 15-minutes. Keep all three hand valves open during the entire purge procedure.
  - b) During the purge, direct a heat gun on the bottom half of the compressor. The heat helps remove any refrigerant from the compressor oil. The longer the compressor has been off before the repair is made, the more refrigerant will be in the compressor.
  - c) After the system has purged refrigerant into the recovery bag for 12-minutes, sharply bang the compressor three or more times near the base with a plastic mallet. Continue to use the heat gun for the remaining 3-minutes.
12. Observe the refrigerant being recovered into the recovery bag for signs of compressor oil. If contaminants are present, you can back-flush the condenser, or replace it. However, due to the rising cost of refrigerant, we recommend that you replace the condenser.

13. Close both purge valves and the recovery bag hand valve.
14. Disconnect the recovery bag hand valve from the "T" fitting.
15. Disconnect both purge hand valves from the access valves.
16. Remove the valve cores from both system access valves.
17. After you have completed the evacuation procedure, prepare and install the new compressor. **Make sure that you replace the filter drier.**



**FIGURE 68**

*Evacuating With A Non-Operational Compressor*

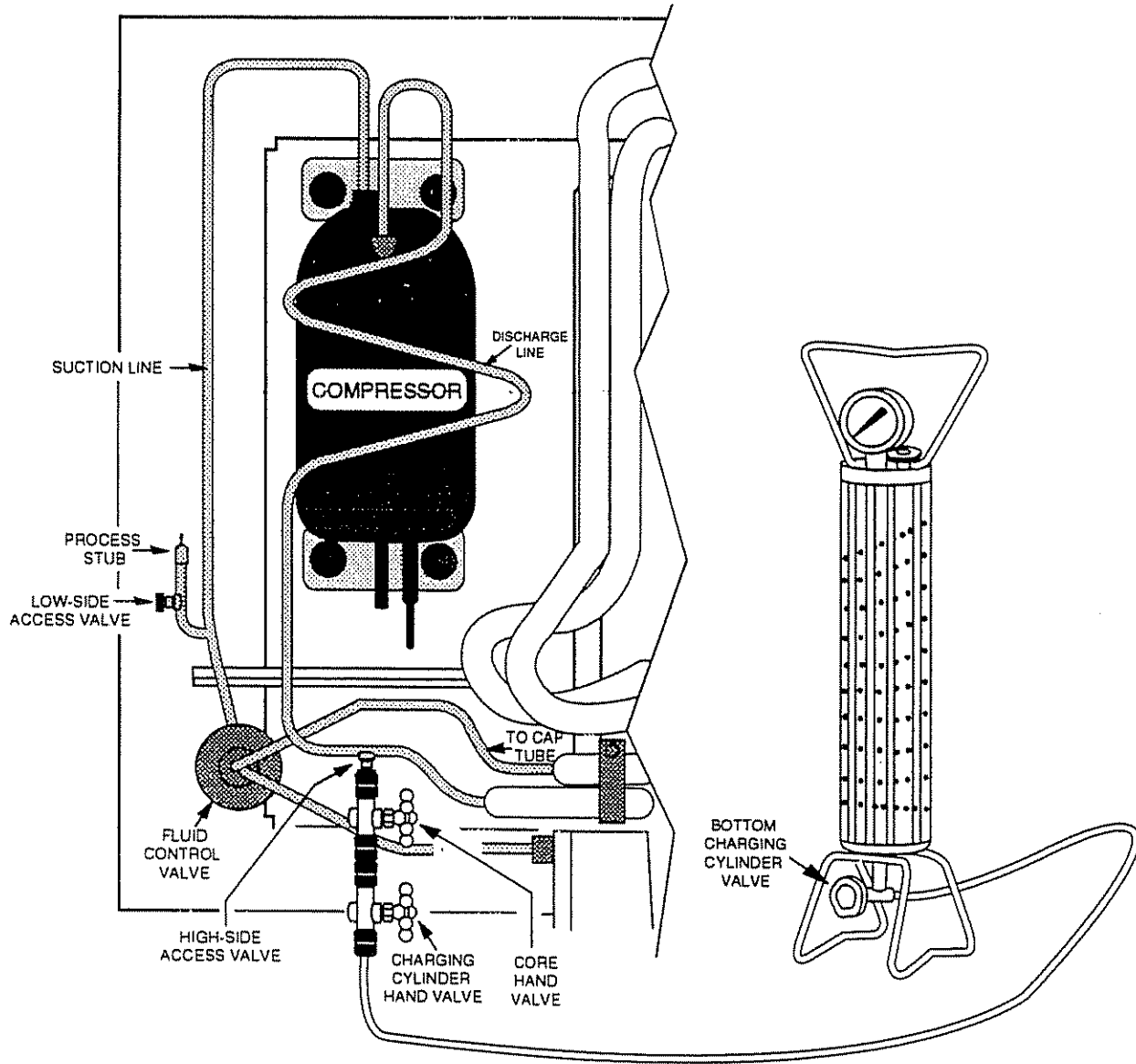
## LEAK-CHECKING THE SYSTEM

# CAUTION

**EQUIPMENT DAMAGE HAZARD**  
**NEVER USE COMPRESSED AIR TO PRESSURIZE AND LEAK-CHECK A SEALED SYSTEM.** Use only refrigerant specified for the system.

Refer to Figure 69 for the following steps.

1. Make sure that all of the electrical components and wires are properly and safely connected together.
  2. If there is an access valve on the suction line, insert a valve core into it and tighten it (see Figure 65 on page 100).
  3. Wrap Teflon tape around the suction line valve threads and cap the valve. Use two wrenches and tighten the cap (see Figure 66 on page 100).
  4. Connect a new core hand valve to the high-side access valve. This hand valve will temporarily replace the valve core in the access valve, which would restrict the flow of refrigerant during the sweep procedure.
  5. Connect the charging cylinder hand valve to the core hand valve in a "piggyback" configuration.
  6. If not already done, open the bottom charging cylinder valve.
  7. Open the core hand valve.
- In the next step, you will adjust and control the flow of refrigerant with the charging cylinder hand valve.
8. Find the level of refrigerant in the charging cylinder sight glass. Slide the band over the outside sleeve of the charging cylinder to mark 4-oz. less (for complete instructions on using a charging cylinder, refer to the Job Aid entitled "Sweep Charge or Refrigerant Recovery").
  9. Slowly open the charging cylinder hand valve and allow the refrigerant to flow into the system. When a 4-oz. charge of refrigerant is in the system:
    - a) Close the bottom charging cylinder hand valve.
    - b) Close the core hand valve.



**FIGURE 69**  
*Leak Checking The System*

## Leak Checking The System (Cont'd)

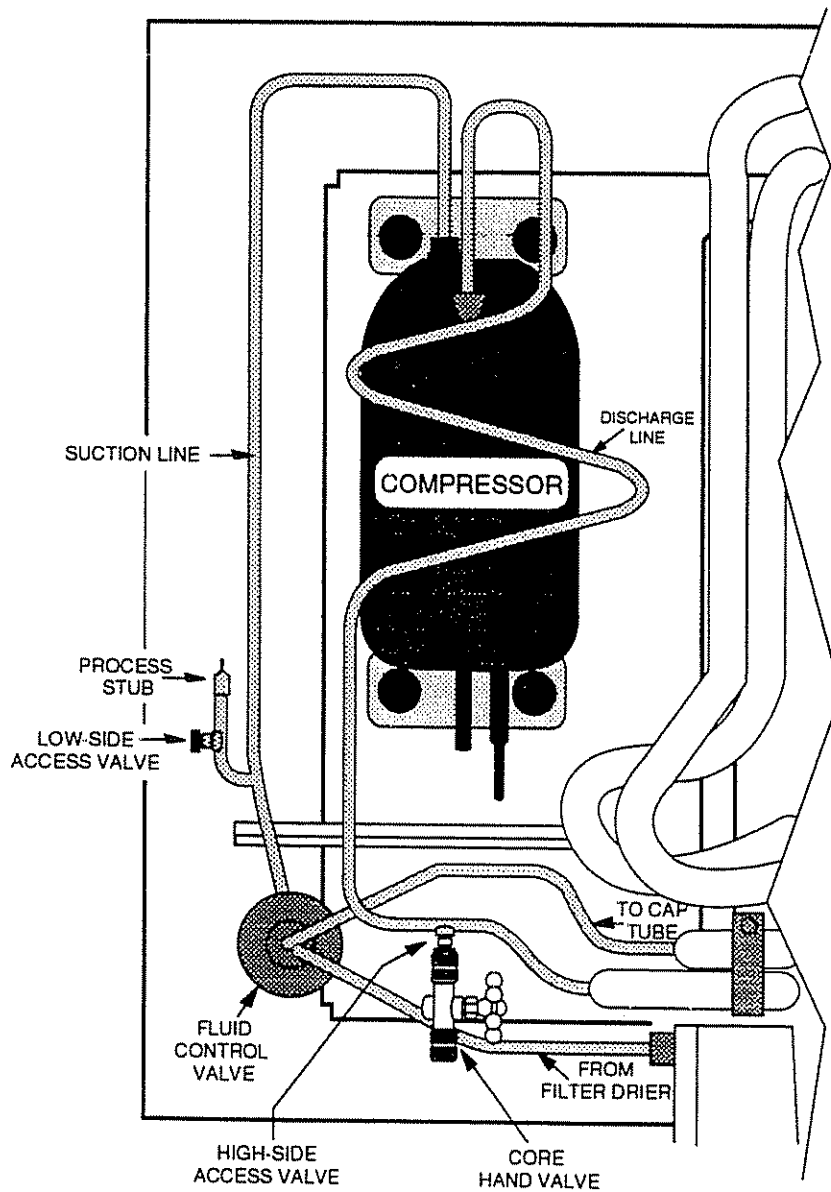
Refer to Figure 70 for the following steps.

10. Disconnect the charging cylinder hand valve from the core hand valve.

NOTE: The high-side access valve has no valve core. Leave the core hand valve connected to the access valve.

11. Allow approximately 3-minutes for the high- and low-side pressures to equalize, then leak check all of the newly brazed joints with either bubble solution, or an electronic leak detector.

**IMPORTANT NOTE:** If a leak is detected, you must perform the evacuation and brazing procedure over again.



**FIGURE 70**  
*Sweeping The Sealed System*



## SWEEP CHARGING THE SYSTEM

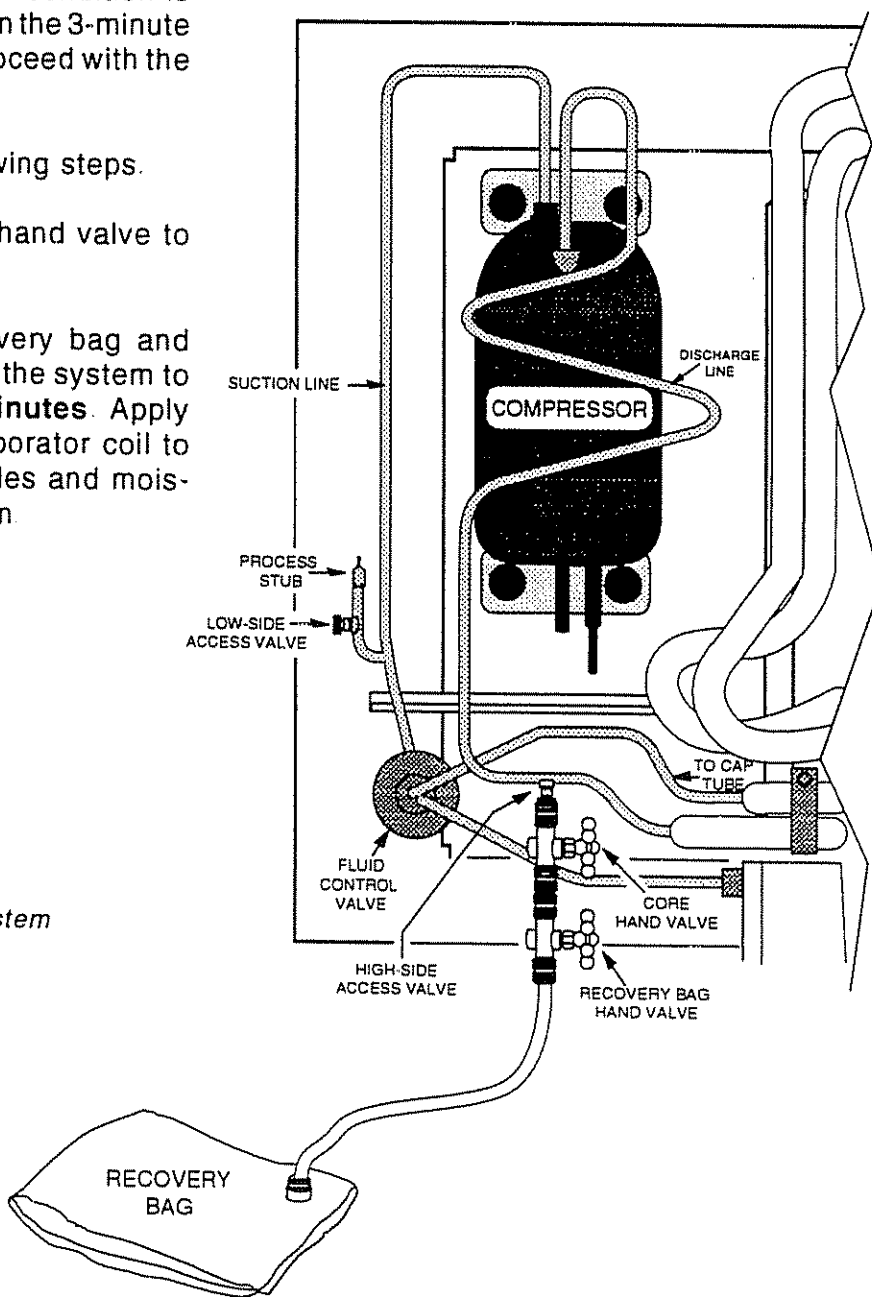
1. Turn the compressor on and allow it to run until you are instructed to turn it off.
2. Plug the unit into an electrical supply and run the compressor for 3-minutes. This will sweep the 4-oz. of refrigerant through the sealed system. In refrigerators with a system charge of less than 12-oz., there may or may not be cooling noticeable at the evaporator inlet during the circulation of the sweep charge. Either condition is normal for this product. When the 3-minute circulation time elapses, proceed with the next step.

Refer to Figure 71 for the following steps.

3. Connect the recovery bag hand valve to the core hand valve.
4. Completely open the recovery bag and core hand valves and allow the system to purge into the bag for 5-minutes. Apply additional heat on the evaporator coil to help purge non-condensables and moisture from the sealed system.

5. Close the recovery bag hand valve and disconnect it from the core hand valve.
6. Disconnect the core hand valve from the high-side access valve.
7. Install the valve core into the high-side access valve.
8. Connect the charging cylinder hand valve to the high-side access valve.
9. Turn off the compressor

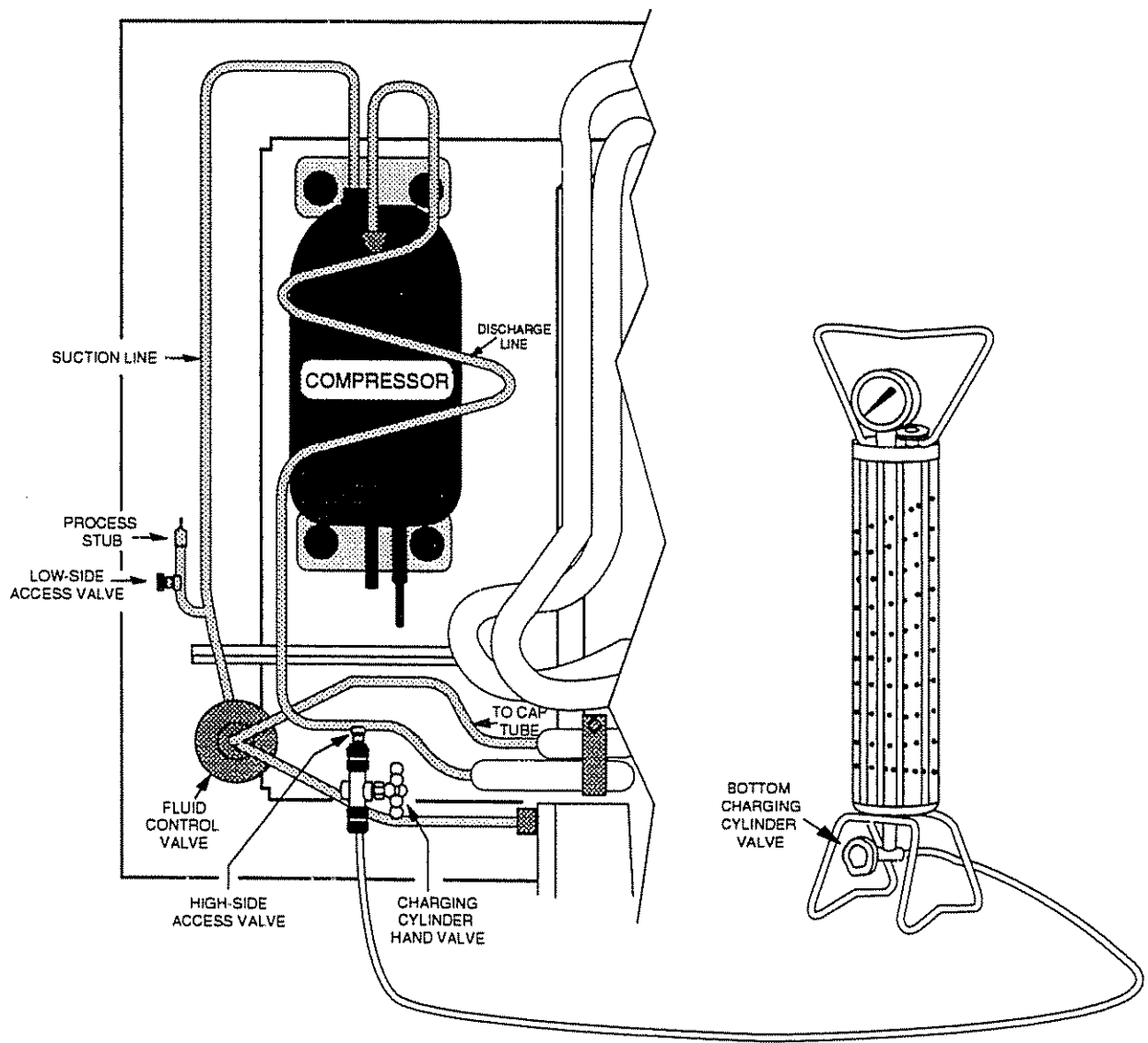
**FIGURE 71**  
*Purging The Sealed System*



## FINAL CHARGING THE SYSTEM

Refer to Figure 72 for the following steps.

1. Check the pressure in the charging cylinder and make sure it is still 30 lbs. above the pressure at room ambient. If the pressure has dropped, plug in the charging cylinder heater.
2. Find the level of refrigerant in the charging cylinder sight glass. Slide the band over the outside sleeve of the charging cylinder to mark the amount of refrigerant charge specified for the sealed system (for complete instructions on using a charging cylinder, refer to the Job Aid entitled "Sweep Charge or Refrigerant Recovery").
3. Slowly open the charging cylinder hand valve and allow the refrigerant to flow into the system. Do not open the hand valve too quickly, or the refrigerant may bubble in the charging cylinder and make it very difficult to read the level in the sight glass. If bubbling occurs, close the hand valve until the refrigerant stabilizes in the charging cylinder, then resume the charging procedure. Once the proper amount of refrigerant has been charged into the system, proceed with the next step.
4. Close the charging cylinder hand valve and carefully remove it from the high-side access valve.
5. Close the bottom charging cylinder valve. Keep the hose with the hand valve permanently attached to the charging cylinder.
6. Use Teflon tape on the saddle valve threads to keep the cap from leaking, then cap the high-side access valve, and tighten it using two wrenches.
7. Turn the unit on and check for proper operation by feeling for heat at the condenser inlet. For sealed systems with rotary compressors and fluid control valves, it may take about 20-minutes for normal operation to become apparent. Some compressors may experience false starts until the pressure equalizes in the system. This is a normal condition.
8. Turn the unit off and replace any access panels, covers, or grilles on the unit.
9. Turn the unit on.
10. Disconnect the hose with the hand valve from the recovery bag and cap the bag.
11. Check for cooling in the freezer compartment.
12. Clean up the refrigerator and work area.



**FIGURE 72**  
*Final Charging The System*

## SWEEP CHARGE PROCEDURE WITH MANIFOLD GAUGES

**IMPORTANT: THE USE OF MANIFOLD GAUGES DURING A SWEEP CHARGE PROCEDURE IS ONLY INTENDED FOR MONITORING SEALED SYSTEM FUNCTION AND PRESSURES.**

Refer to Figure 73 as you read the following information.

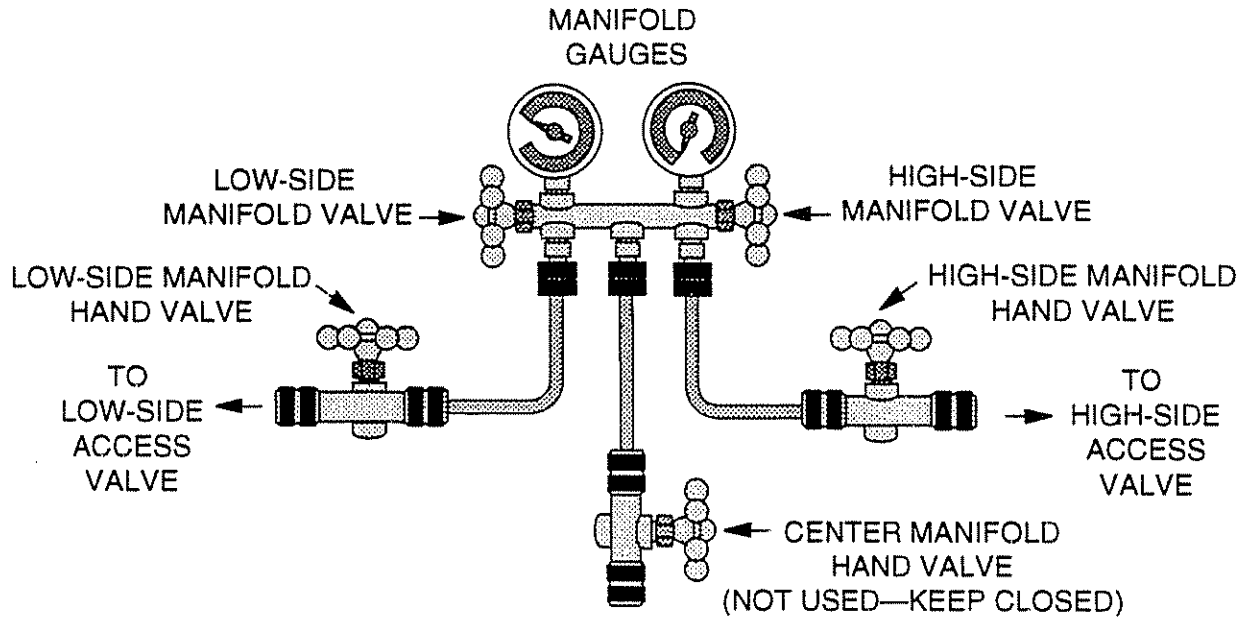
Refrigerant from a sealed system should never be purged through a manifold gauge set, because at some time, the manifold will become contaminated. Also, do not use a manifold gauge set for charging the system, because sealed system refrigerant charges are exact and critical. Refrigerant cannot be measured accurately through the gauges and hoses.

To avoid venting refrigerant from the manifold set, permanently attach hand valves to the ends of the manifold hoses, or use hoses with self-sealing connectors (this procedure uses hand valves).

When the manifold is not in use, the hand valves must be kept closed. This retains positive pressure and eliminates the entry of moisture into the manifold assembly.

### **NOTE**

It is important to minimize the loss of any refrigerant when removing hand valves from system access valves. To execute this effectively, press the hand valve against the access valve while backing off the knurled nut of the hand valve, then with a swift motion, pull the hand valve away.



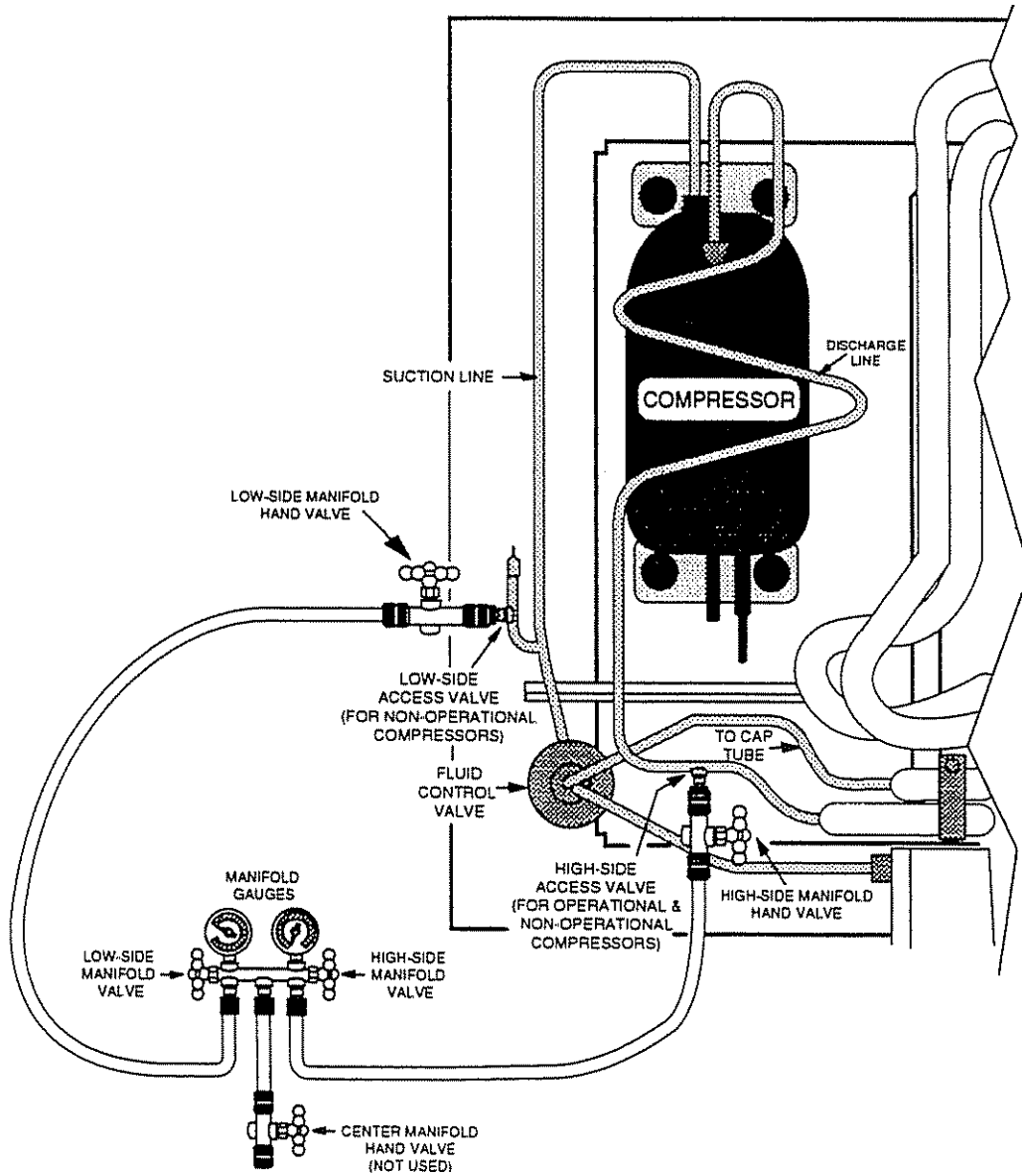
**FIGURE 73**  
*Manifold Gauges*

## ACCESSING THE SEALED SYSTEM & MONITORING PRESSURES

Refer to Figure 74 for the following steps.

1. *On the high-side of the system*, permanently attach an access valve on the compressor discharge tube, between the compressor and mullion heat loop (if necessary, refer to "Installing & Leak-Checking An Access Valve" on page 99).
2. *On the low-side of the system*, permanently attach an access valve on the suction line process stub, between the fluid control valve and the compressor inlet.
3. Close all three manifold hand valves.
4. Connect the low-side manifold hand valve to the low-side access valve.
5. Open the low-side manifold hand valve.
6. Connect the high-side manifold hand valve to the high-side access valve.
7. Open the high-side manifold hand valve
8. Turn on the compressor and monitor the system pressures. Allow the compressor to run for 20-minutes so that the pressures settle into the normal operating range. Do not attempt to diagnose the system prematurely. When you finish monitoring pressures, proceed to the next step.
9. Close the high-side hand valve.
10. Open the high-side manifold valve.
11. Slowly open the low-side manifold valve and bleed the pressure into the low-side of the system. When the high-side valve reads "0" psi, close the low-side hand valve.
12. Close the two manifold valves.
13. Turn off the compressor.
14. If no further work is to be done on the system, carefully disconnect both manifold hand valves from the access valves and cap the valves.

If you have a unit that has an operational compressor, proceed to "Evacuating With An Operational Compressor" on page 116. If the unit has a non-operational compressor, proceed to "Evacuating With A Non-Operational Compressor" on page 118.



**FIGURE 74**  
*Monitoring System Pressures*

## EVACUATING WITH AN OPERATIONAL COMPRESSOR

The first step is very important! Make sure that you perform it properly. It will eliminate extra evacuation and procedural time

1. Warm up the evaporator coil by turning the defrost timer to defrost, or by applying heat with a heat gun. Take care not to overheat nearby materials and surfaces that can be damaged by the heat, such as foam, wire insulation, vinyl, plastic, etc.

Refer to Figure 75 for the following steps.

2. Install a permanent access valve onto the compressor discharge tube between the compressor and the mullion heat loop (if necessary, refer to "Installing & Leak-Checking An Access Valve" on page 99).
3. Install a second access valve on the suction line process stub between the compressor and the fluid control valve. You will use this valve to monitor the low-side of the system during evacuation.
4. Connect the low-side manifold hand valve to the low-side access valve and open it.
5. Connect the recovery bag hand valve to the high-side access valve.
6. Open the recovery bag hand valve, allowing the system to purge refrigerant into the bag for 3-minutes, then run the compressor for 5-minutes to aid in evacuating the low-side of the system. Use a heat gun, and heat the evaporator coil to keep it warm during the purge time.
7. Close the recovery bag hand valve and leave it attached, then turn off the compressor.
8. Monitor the low-side pressure for 3-minutes. Pressure should stabilize in a vacuum at least 25-inches, or lower. If

pressure begins to rise, residual refrigerant may still be in the system. In this case, apply heat to the evaporator, open the recovery bag hand valve, and run the compressor for another 5-minutes.

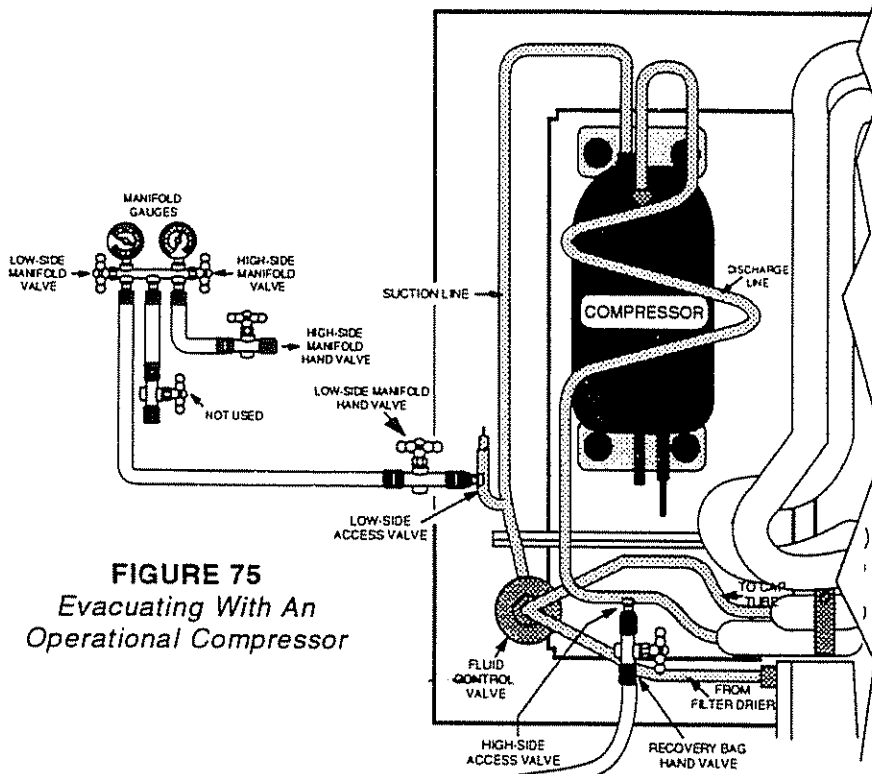
9. Close the recovery bag hand valve, turn off the compressor, and monitor the low-side pressure for 3-minutes.
10. *Optional* - You can also monitor the high-side. To do this:
  - a) Disconnect the recovery bag hand valve.
  - b) Connect the high-side manifold hand valve to the high-side access valve. Open the hand valve and monitor the high-side pressure. Pressure should stabilize at approximately 0-psi.

Refer to Figure 76 for the following steps.

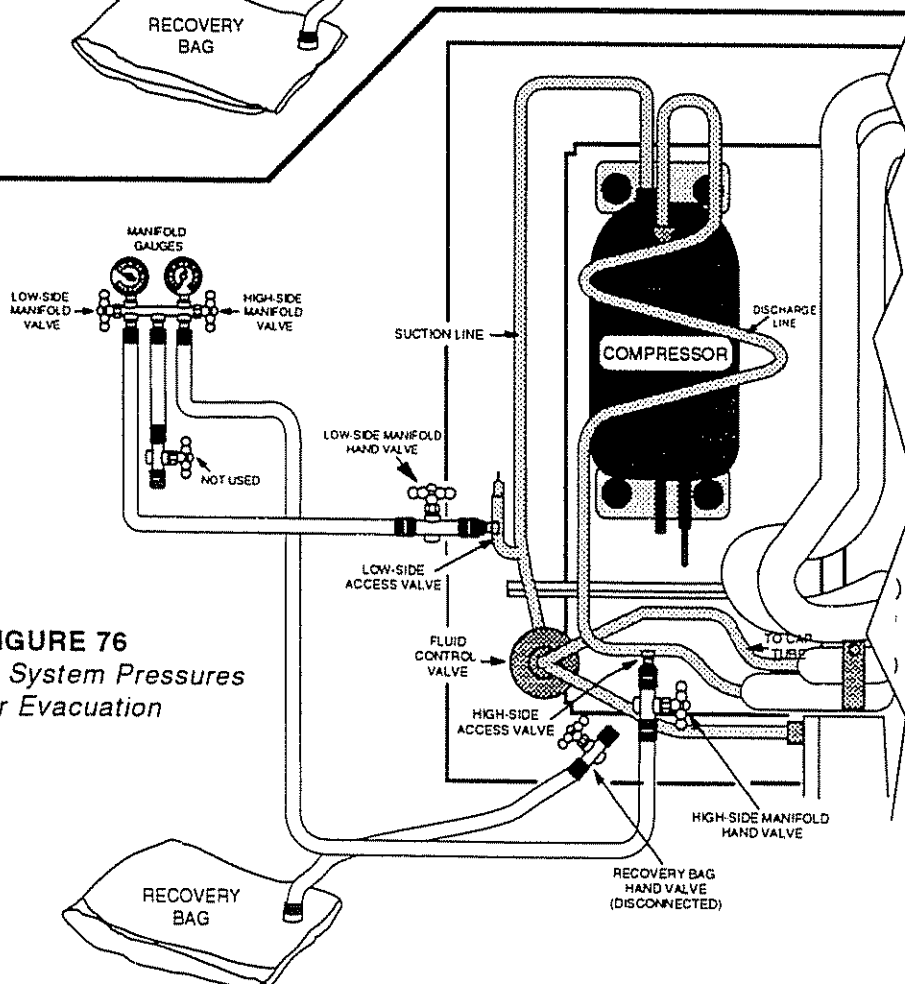
11. At this time, the system pressures should remain stable. If so, proceed to step 12. However, you may experience one of the following problems:
  - a) The system pressures begin to equalize as the low-side gauge begins to rise, and the high-side gauge begins to fall into a vacuum. If this happens, the fluid control valve has an internal leak. Replace the valve before you proceed.
  - b) The low-side gauge begins to rise, and the high-side gauge falls to approximately 0 psi. If this happens, the system has a low-side leak. Find and repair the leak before you proceed.
12. Close and detach both manifold hand valves from the system.
13. Remove the valve core from the high-side access valve to reduce the restriction of refrigerant flow during evacuation of the sweep charge.

You can now service the system. **Make sure that you replace the filter drier.**





**FIGURE 75**  
*Evacuating With An Operational Compressor*



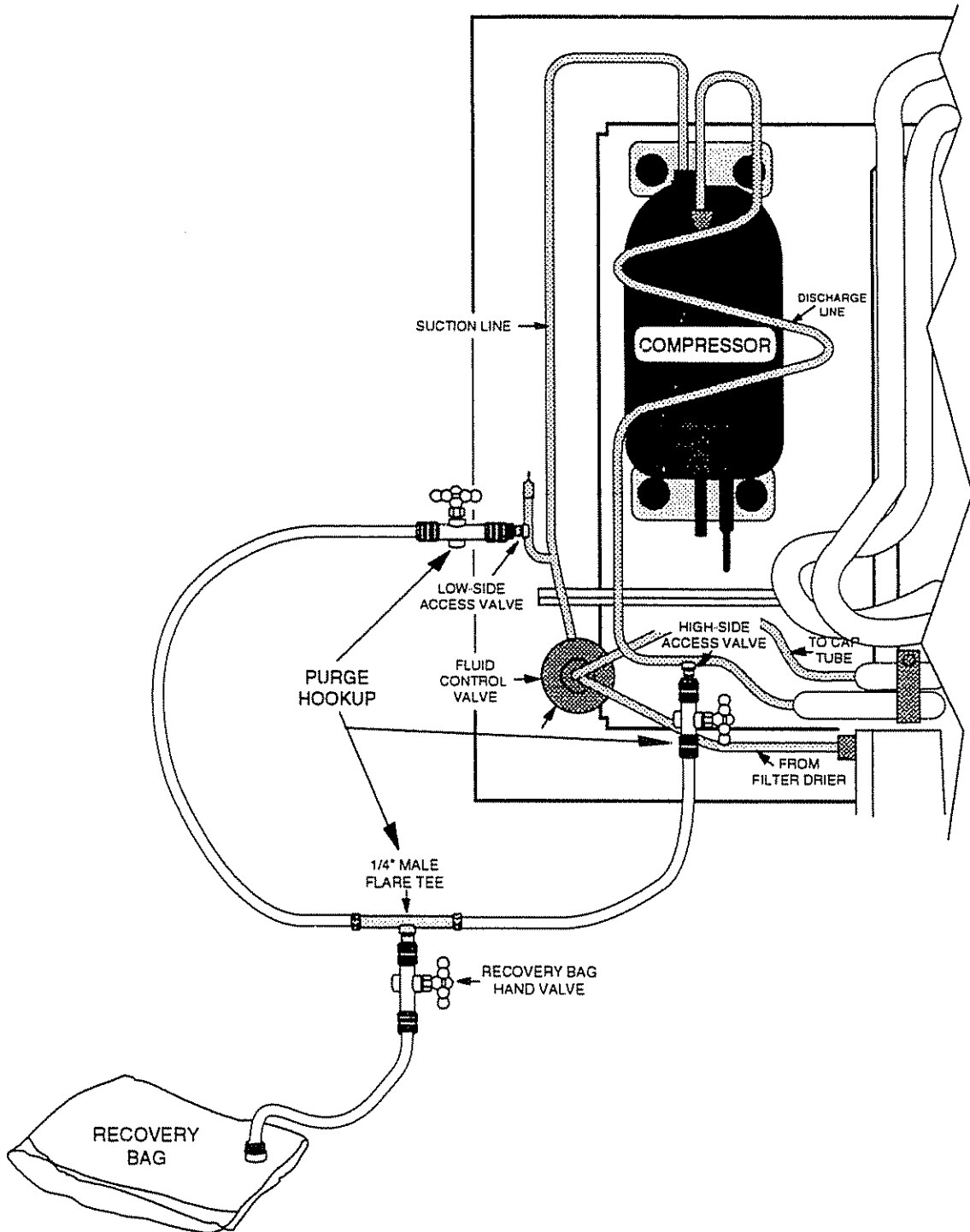
**FIGURE 76**  
*Monitoring System Pressures After Evacuation*

## EVACUATING WITH A NON-OPERATIONAL COMPRESSOR

1. Use a heat gun and warm up the evaporator coil. The defrost cycle will not come on because the evaporator temperature is not cold enough to reset the defrost bi-metal. Make sure that you keep the evaporator coil warm until you begin purging refrigerant from the system.

Refer to Figure 77 for the following steps.

2. Install an access valve on the compressor discharge tubing (if necessary, refer to "Installing & Leak-Checking An Access Valve" on page 99).
3. Install a second access valve on the suction line process stub between the compressor and the fluid control valve. You will use this valve to evacuate refrigerant from the low-side of the system.
4. Leak-check both access valves.
5. Pierce the system at both access valves (if necessary, refer to "Piercing The Sealed System Tubing" on page 100)
6. Attach the recovery bag hand valve to a 1/4" male flare T-fitting.
7. Attach a hose to each end of the T-fitting.
8. Connect a hand valve to the ends of the T-fitting hoses. This is the purge hook-up for a non-operational compressor sealed system.
9. Attach one of the purge hand valves to the system low-side access valve.
10. Attach the other purge hand valve to the system high-side access valve.
11. This step has three parts to it. Read each part carefully before you perform it.
  - a) Make sure that the evaporator coil is warm, and then open both purge hand valves and the recovery bag hand valve, and purge the refrigerant into the recovery bag for at least 15-minutes. Keep all three hand valves open during the entire purge procedure.
  - b) During the purge, direct a heat gun on the bottom half of the compressor. The heat helps remove any refrigerant from the compressor oil. The longer the compressor has been off before the repair is made, the more refrigerant will be in the compressor.
  - c) After the system has purged refrigerant into the recovery bag for 12-minutes, sharply bang the compressor three or more times near the base with a plastic mallet. Continue to use the heat gun for the remaining 3-minutes.
12. Observe the refrigerant being recovered into the recovery bag for signs of compressor oil. If contaminants are present, you can back-flush the condenser, or replace it. However, due to the rising cost of refrigerant, we recommend that you replace the condenser.
13. Close both purge valves and the recovery bag hand valve.
14. Detach the recovery bag hand valve from the "T" fitting.
15. Detach both purge hand valves from the access valves.
16. Remove the valve cores from both system access valves.
17. After you have completed the evacuation procedure, prepare and install the new compressor. **Make sure that you replace the filter drier.**



**FIGURE 77**  
*Evacuating With A Non-Operational Compressor*

## LEAK-CHECKING THE SYSTEM

### **! CAUTION**

#### **EQUIPMENT DAMAGE HAZARD**

Government regulations may prohibit the use of refrigerant to leak-check the brazed joint. Since the system has not yet been pierced, compressed air can be used for this purpose, however, **NEVER USE COMPRESSED AIR TO PRESSURIZE AND LEAK-CHECK A SEALED SYSTEM.**

1. Make sure all electrical components and wires are connected to the compressor, and that the connections are safe and secure.

Refer to Figure 78 for the following steps.

2. If there is an access valve on the suction line, insert the valve core into the access valve (see Figure 65 on page 100).
3. Connect the low-side manifold hand valve to the low-side access valve and open the hand valve. Use the low-side gauge to monitor low-side pressure during the leak-check and sweep procedures.
4. Connect a new core hand valve to the high-side access valve. This hand valve will temporarily replace the valve core in the access valve, which would restrict the flow of refrigerant during the sweep procedure.
5. Attach the charging cylinder hand valve to the core hand valve in a "piggyback" configuration.

6. If not already done, open the bottom charging cylinder valve.
7. Open the core hand valve.

In the next step, you will adjust and control the flow of refrigerant with the charging cylinder hand valve.

8. Find the level of refrigerant in the charging cylinder sight glass. Slide the band over the outside sleeve of the charging cylinder to mark 4-oz. less (for complete instructions on using a charging cylinder, refer to the Job Aid entitled "Sweep Charge or Refrigerant Recovery").
9. Slowly open the charging cylinder hand valve and allow the refrigerant to flow into the system. When a 4-oz. charge of refrigerant is in the system:

- a) Close the bottom charging cylinder hand valve.
- b) Close the core hand valve.

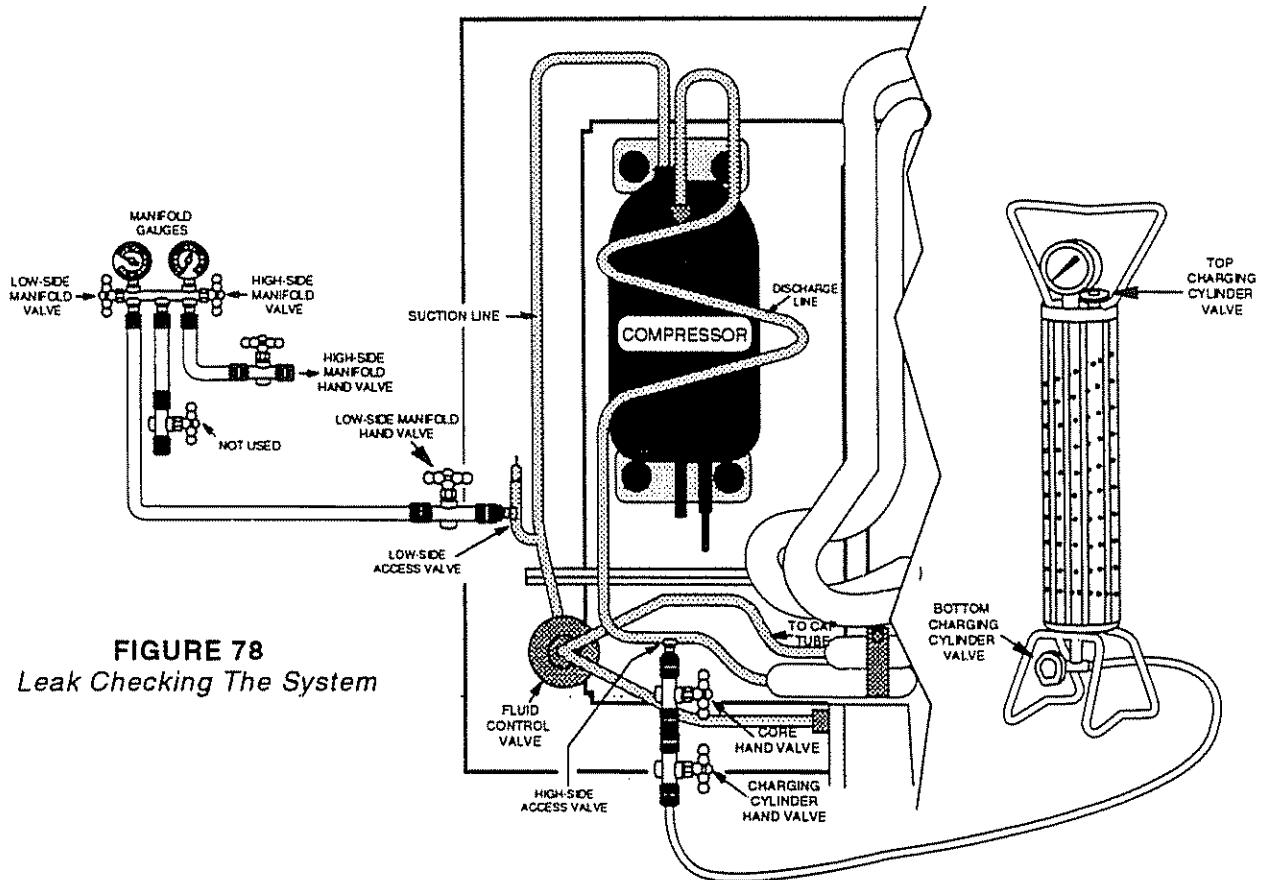
Refer to Figure 79 for the following steps.

10. Disconnect the charging cylinder hand valve from the core hand valve.

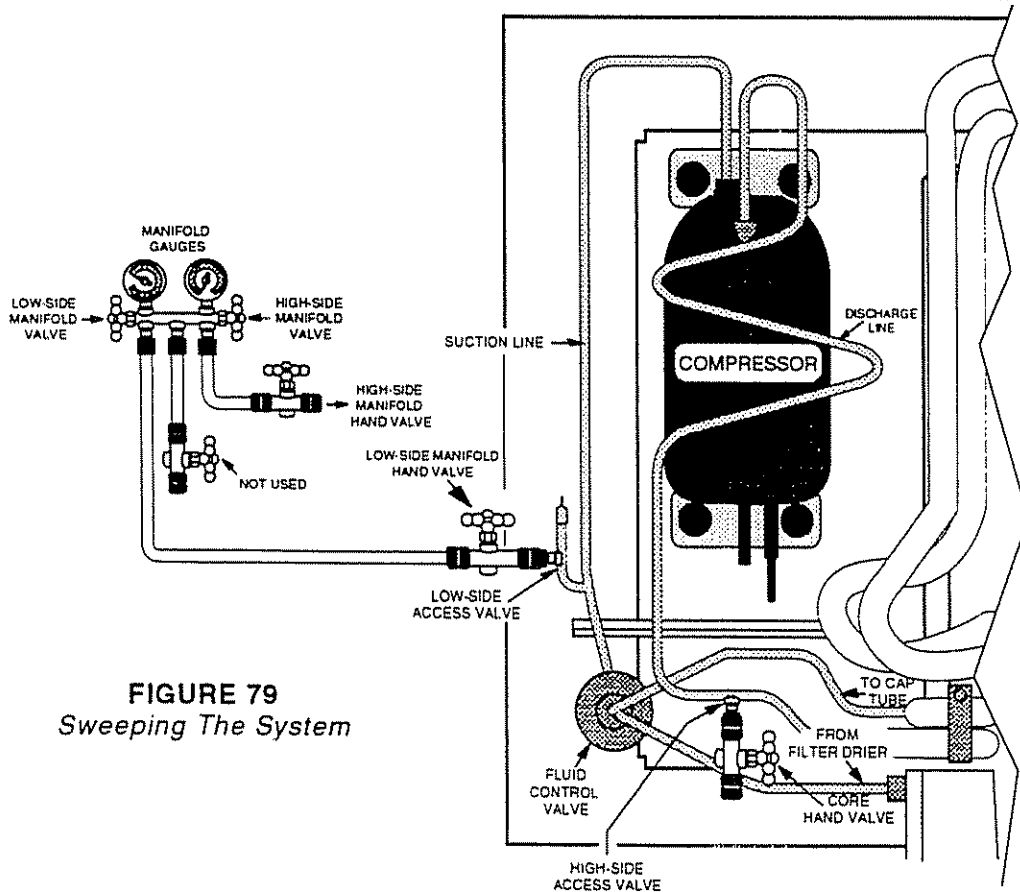
**NOTE:** The high-side access valve has no valve core. Leave the core hand valve connected to the access valve.

11. Allow approximately 3-minutes for the high- and low-side pressures to equalize, then leak check all of the newly brazed joints with either bubble solution, or an electronic leak detector.

**IMPORTANT NOTE:** If a leak is detected, you must perform the evacuation and brazing procedure over again.



**FIGURE 78**  
*Leak Checking The System*

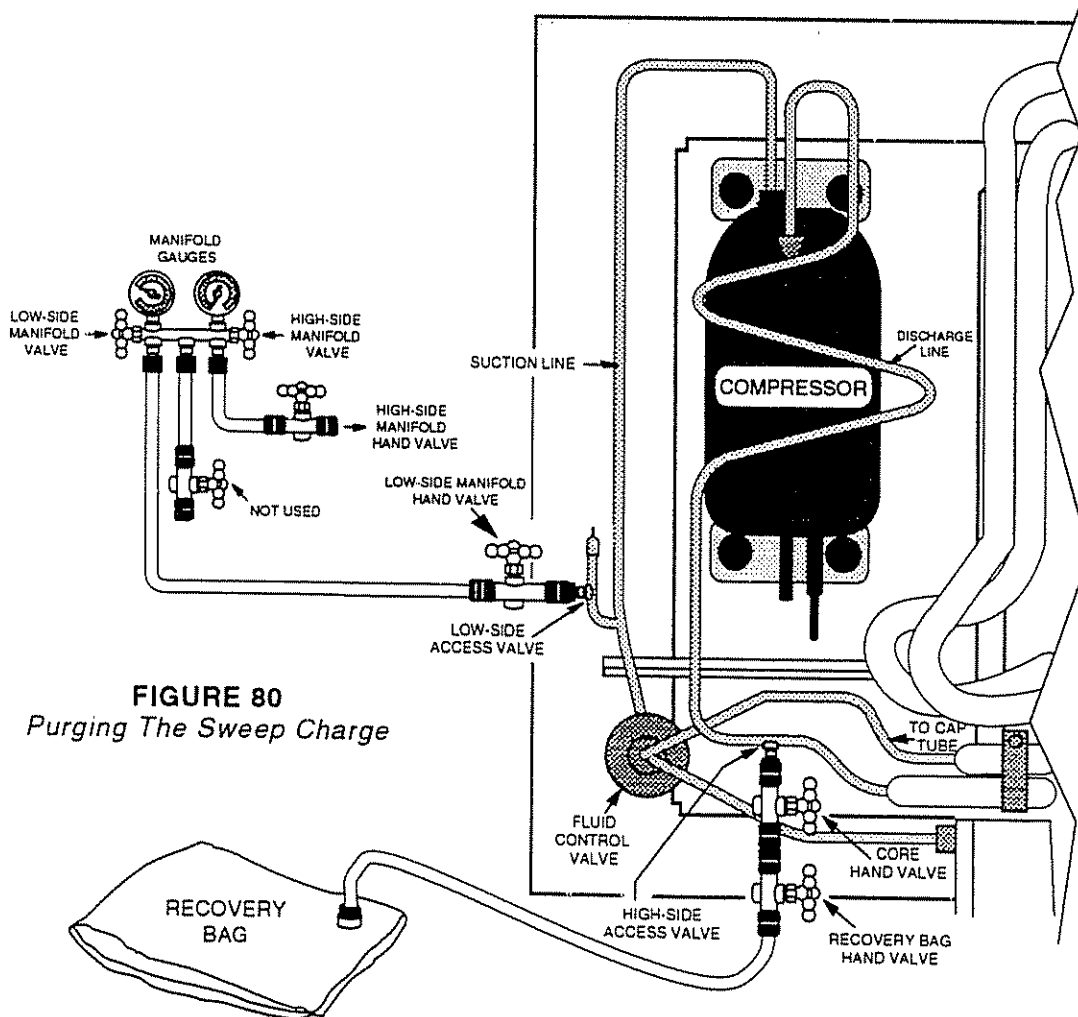


**FIGURE 79**  
*Sweeping The System*

## SWEEP CHARGING THE SYSTEM

1. Turn the compressor on and allow it to run until you are instructed to turn it off.
2. Plug the unit into an electrical supply and run the compressor for 3-minutes. This will sweep the 4-oz. of refrigerant through the sealed system. In refrigerators with a system charge of less than 12-oz., there may or may not be cooling noticeable at the evaporator inlet during the circulation of the sweep charge. Either condition is normal for this product. When the 3-minute circulation time elapses, proceed with the next step.
3. Attach the recovery bag hand valve to the core hand valve.
4. Completely open the recovery bag and core hand valves and allow the system to purge into the bag for **5-minutes**. Apply additional heat on the evaporator coil to help purge non-condensables and moisture from the sealed system.
5. Close the recovery bag hand valve and disconnect it from the core hand valve.
6. Disconnect the core hand valve from the high-side access valve.
7. Install the valve core into the high-side access valve.
8. Attach the charging cylinder hand valve to the high-side access valve.
9. Turn off the compressor.

Refer to Figure 80 for the following steps.

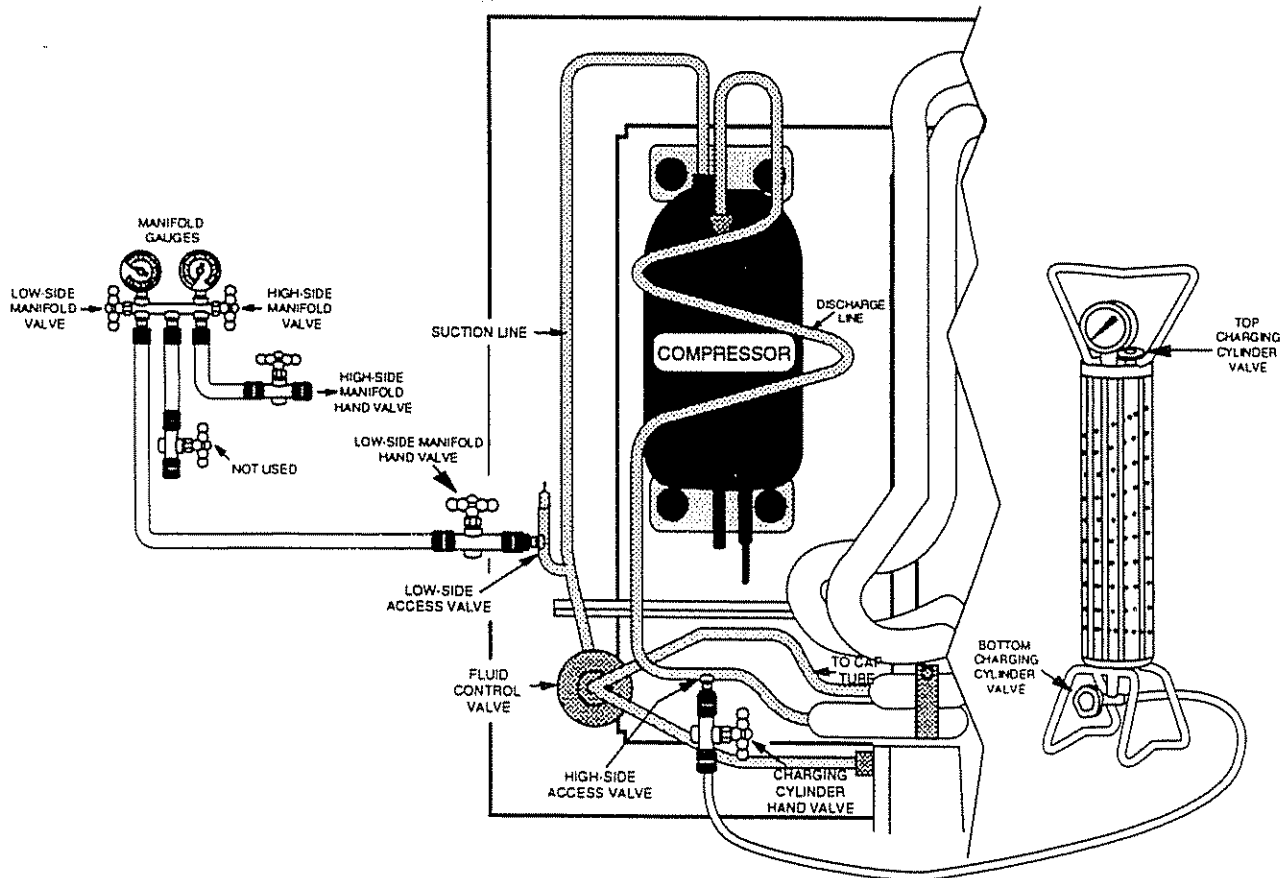


**FIGURE 80**  
*Purging The Sweep Charge*

## FINAL CHARGING THE SYSTEM

Refer to Figure 81 for the following steps.

1. Check the pressure in the charging cylinder and make sure it is still 30 lbs. above the pressure at room ambient. If the pressure has dropped, plug in the charging cylinder heater.
2. Find the level of refrigerant in the charging cylinder sight glass. Slide the band over the outside sleeve of the charging cylinder to mark the amount of refrigerant charge specified for the sealed system (for complete instructions on using a charging cylinder, refer to the Job Aid entitled "Sweep Charge or Refrigerant Recovery").
3. Slowly open the charging cylinder hand valve and allow the refrigerant to flow into the system. Do not open the hand valve too quickly, or the refrigerant may bubble in the charging cylinder and make it very difficult to read the level in the sight glass. If bubbling occurs, close the hand valve until the refrigerant stabilizes in the charging cylinder, then resume the charging procedure. Once the proper amount of refrigerant has been charged into the system, proceed with the next step.
4. Close the charging cylinder hand valve and carefully remove it from the high-side access valve.
5. Close the bottom charging cylinder valve. Keep the hose with the hand valve permanently attached to the charging cylinder.

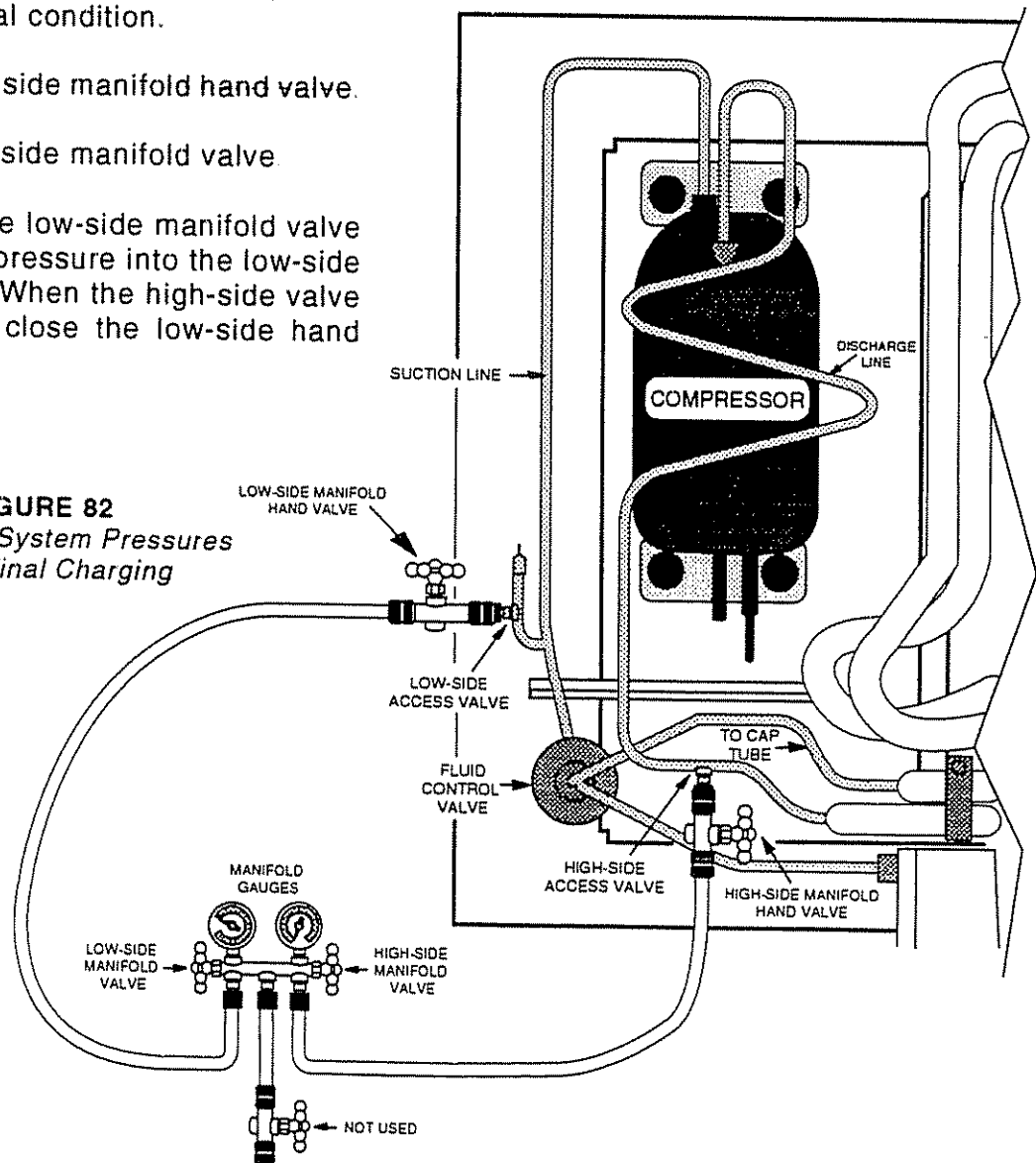


**FIGURE 81**  
*Final Charging The Sealed System*

Refer to Figure 82 for the following steps.

6. Connect the high-side manifold hand valve to the high-side access valve. The low-side manifold gauge should still be connected to the low-side of the system, and the low-side hand valve should be open.
7. Turn the unit on and check for proper operation by feeling for heat at the condenser inlet, and by monitoring system pressures. For sealed systems with rotary compressors and fluid control valves, it may take about 20-minutes for normal operation to become apparent. Some compressors may experience false starts until the pressure equalizes in the system. This is a normal condition.
8. Close the high-side manifold hand valve.
9. Open the high-side manifold valve
10. Slowly open the low-side manifold valve and bleed the pressure into the low-side of the system. When the high-side valve reads "0" psi, close the low-side hand valve.
11. Close the two manifold valves.
12. Turn off the compressor.
13. Carefully detach both manifold hand valves from the access valves and cap the valves.
14. Disconnect the hose with the hand valve from the recovery bag and cap the bag.
15. Check for cooling in the freezer compartment.
16. Clean the refrigerator and your work area.

**FIGURE 82**  
Monitoring System Pressures  
After Final Charging





## CHECKING CONTINUITY

This section allows you to easily perform continuity tests on most of the electrical components. To make component or wiring measurements, set the 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 step.

### COMPONENT TEST CHART

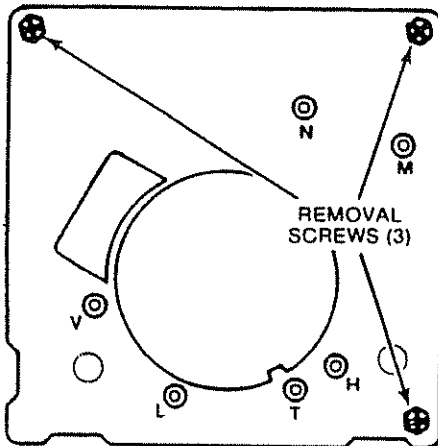
COMPONENT	TEST PROCEDURE	METER READING
THERMISTOR	The thermistor can be tested by measuring the resistance between the gray wires at the thermistor connector, or at the DC connector of the electronic control board. Making the test at the board is an easy way to check out the thermistor wiring harness. The "Meter Readings" show the thermistor resistances over a range of temperatures.	$Temperature (^{\circ}F) = Resistance (Ohms)$ 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 = 4135 - 4479    90°F = 1945 - 2107
DEFROST HEATER	Disconnect the defrost heater's wire connector from the wiring harness. Touch the ohmmeter probes to the connector pins.	<i>For 36" models</i> , the ohmmeter should indicate approximately 24 Ω. <i>For 48" models</i> , the ohmmeter should indicate approximately 19 Ω.
	<u>Ground Test:</u> 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 ±6°F.  Disconnect the 2-pin bimetal connector (pink and brown wires) from the wiring harness. Touch the ohmmeter probes to the pins on the ends of the wires.	Continuity if the evaporator temperature is below 12°F. No continuity if the evaporator temperature is above 56°F (approx.).
EVAPORATOR FAN MOTOR	Disconnect the wire terminals from the motor. Touch the ohmmeter probes to the motor terminals.	The ohmmeter should indicate between 40 Ω and 80 Ω.
	<u>Ground Test:</u> Touch one probe to the chassis and the other to each wiring connector.	Should indicate an "open" circuit for both connectors. Any resistance indicates a short circuit.
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 Ω between the W/BR and W wires, OR the Y/R and W wires.
WATER DISPENSER AND ICE MAKER FILL VALVES	Disconnect the solenoid wiring connector. Touch the ohmmeter probes to the solenoid terminals.	The ohmmeter should indicate approximately 270 Ω.
	<u>Ground Test:</u> 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.

## Component Test Chart (Cont'd)

COMPONENT	TEST PROCEDURE	METER READING
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 $\Omega$ and 450 $\Omega$ .
	<i>Ground Test:</i> 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 counterclockwise rotation should show "no continuity."
COMPRESSOR	Touch the ohmmeter probes to the S and C connector pins.	The ohmmeter should indicate between 4 $\Omega$ and 22 $\Omega$ .
	Touch the ohmmeter probes to the M and C connector pins.	The ohmmeter should indicate between 1 $\Omega$ and 4 $\Omega$ .
	<i>Ground Test:</i> 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 $\Omega$ ).
PTC RELAY	The PTC relay cannot be tested. To determine its reliability, use the following procedure: <ol style="list-style-type: none"> <li>1. Measure the R and W wires at the compressor for 120 vac.</li> <li>2. Check the overload relay to make sure there is continuity through it (use the previous test procedure).</li> <li>3. Test the Starting and Run capacitors (use the following test procedure).</li> <li>4. Use a test cord and start the compressor. If it starts, and the preceding checks are okay, the relay is defective.</li> </ol>	
STARTING/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.
ICE CONVEYOR MOTOR	Disconnect the wires at the motor terminals. Touch the ohmmeter probes to the terminals.	The ohmmeter should indicate between 2 and 3 $\Omega$ .
	<i>Ground Test:</i> 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.

## THE MODULAR ICE MAKER

### MODULE TEST POINTS



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

### 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. REINSERT TO FULL DEPTH.
- MOLD & 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, SUPPORT ASSEMBLY. WHEN REINSTALLING EJECTOR BLADES, REALIGN "D" COUPLING WITH MODULE CAM.

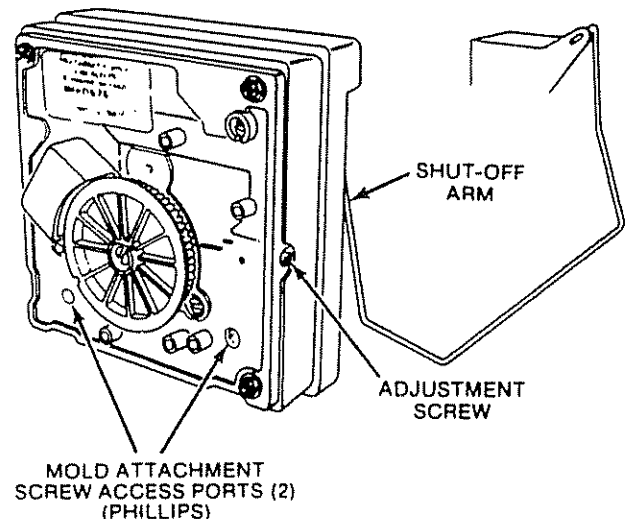
### SPECIFICATIONS:

- MOLD HEATER—185 WATTS, 72 OHMS  
THERMOSTAT—CLOSE  $17^{\circ} \pm 3^{\circ}$   
(BIMETAL) OPEN  $32^{\circ} \pm 3^{\circ}$   
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 VOLT MODEL

MODULE VOLTAGE CHECKS WITH METER OR TEST LIGHT (POWER TO ICEMAKER)			
TEST POINTS	COMPONENT	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

### WATER LEVEL ADJUSTMENT

- TURNING THE SCREW CLOCKWISE DECREASES THE WATER FILL
- 1/2 TURN EQUALS 20CC OR 1.2 SEC.
  - FULL TURN EQUALS 40CC OR 2.4 SEC.
  - MAXIMUM ADJUSTMENT IS ONE FULL TURN EITHER DIRECTION. ADDITIONAL ROTATION COULD DAMAGE MODULE.



## THE MOTORIZED AIR DOOR

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

120-volts AC is supplied to the electronic control board through the black 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 (see Figure 83C). The motor rotates 270° from the closed position (see Figure 83A) 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 (Figure 83C). The motor rotates 90° from the open position, (see Figure 83B), 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.

When the freezer calls for cooling, a "compressor run" signal is sent to the electronic control board, which turns on the following components:

- Compressor.
- Condenser fan motor.
- Evaporator fan motor.
- Freezer side panel heater.

The evaporator fan motor operates when:

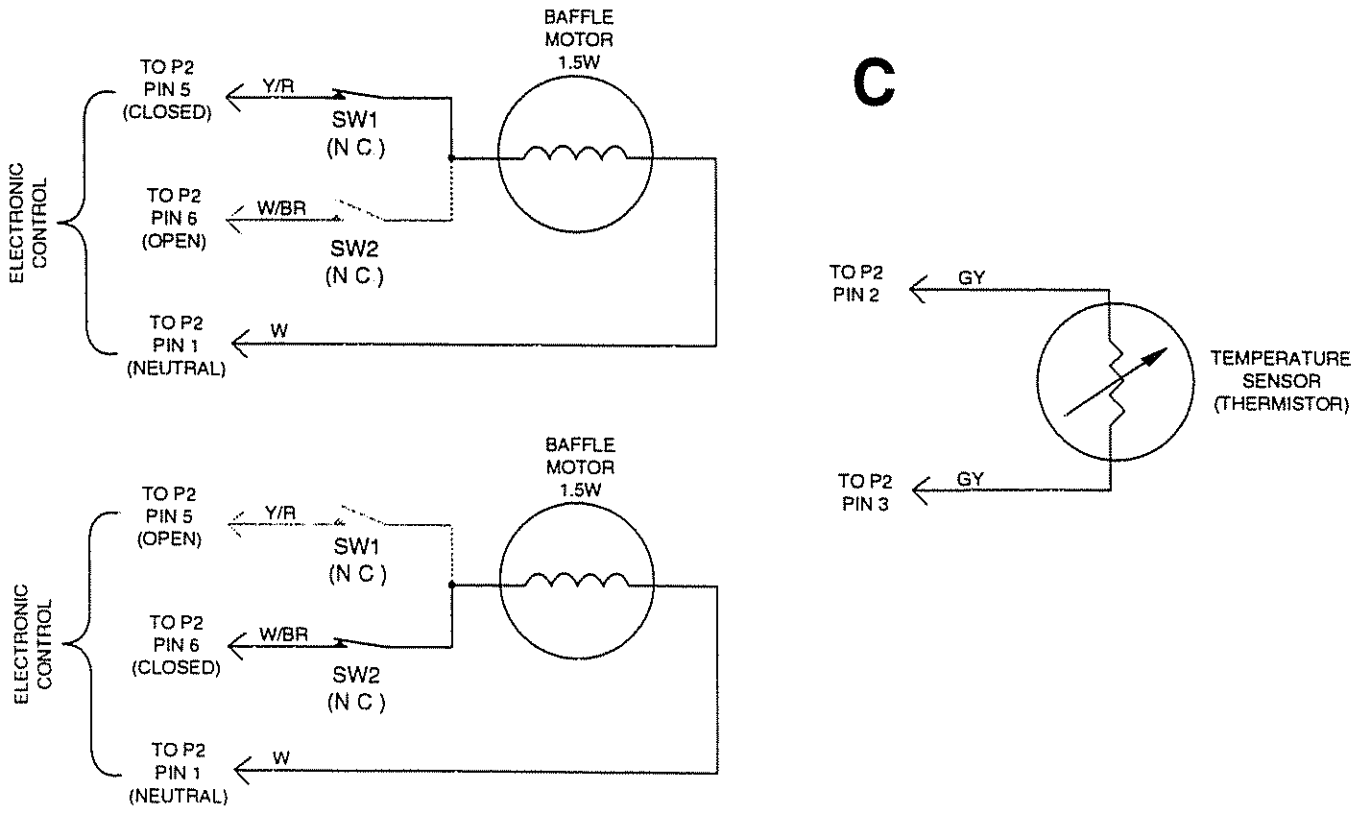
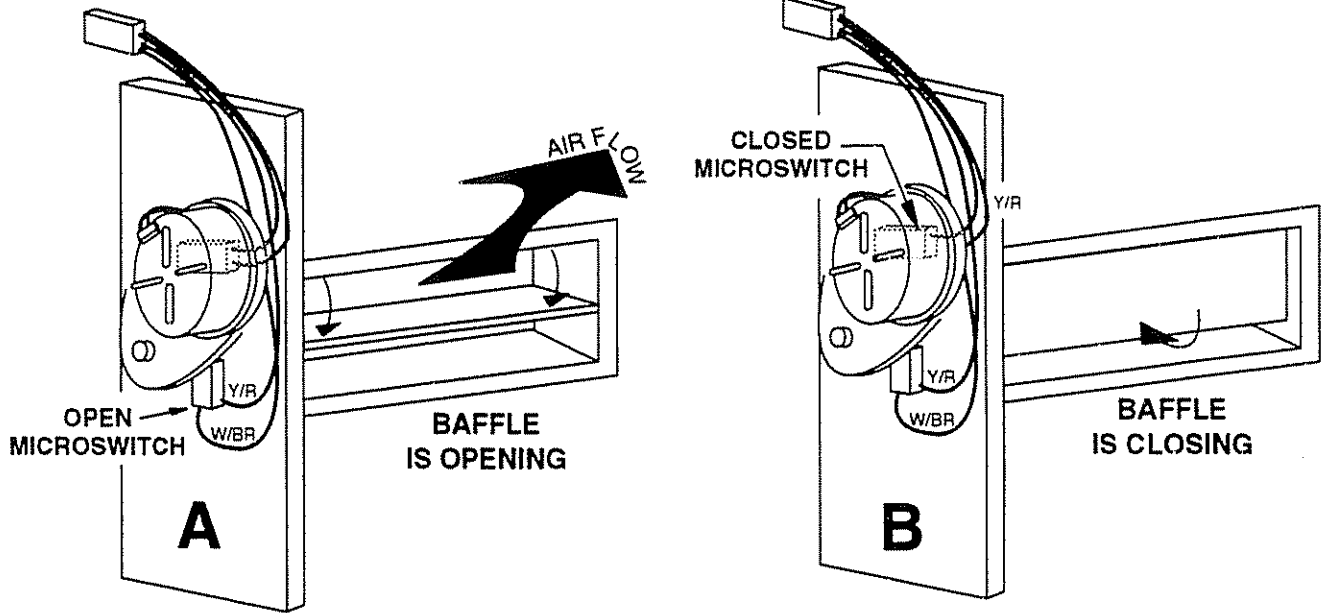
- The compressor runs.
- The motorized air door is open (except during the "defrost" cycle).
- The thermistor calls for cooling and the freezer control is satisfied (compressor is off).

When the freezer control calls for cooling, the compressor and the evaporator fan will operate. During this time, if the thermistor calls for cooling, the baffle will open. If the thermistor is satisfied, the baffle will close.

When the freezer control is satisfied, the compressor will turn off.

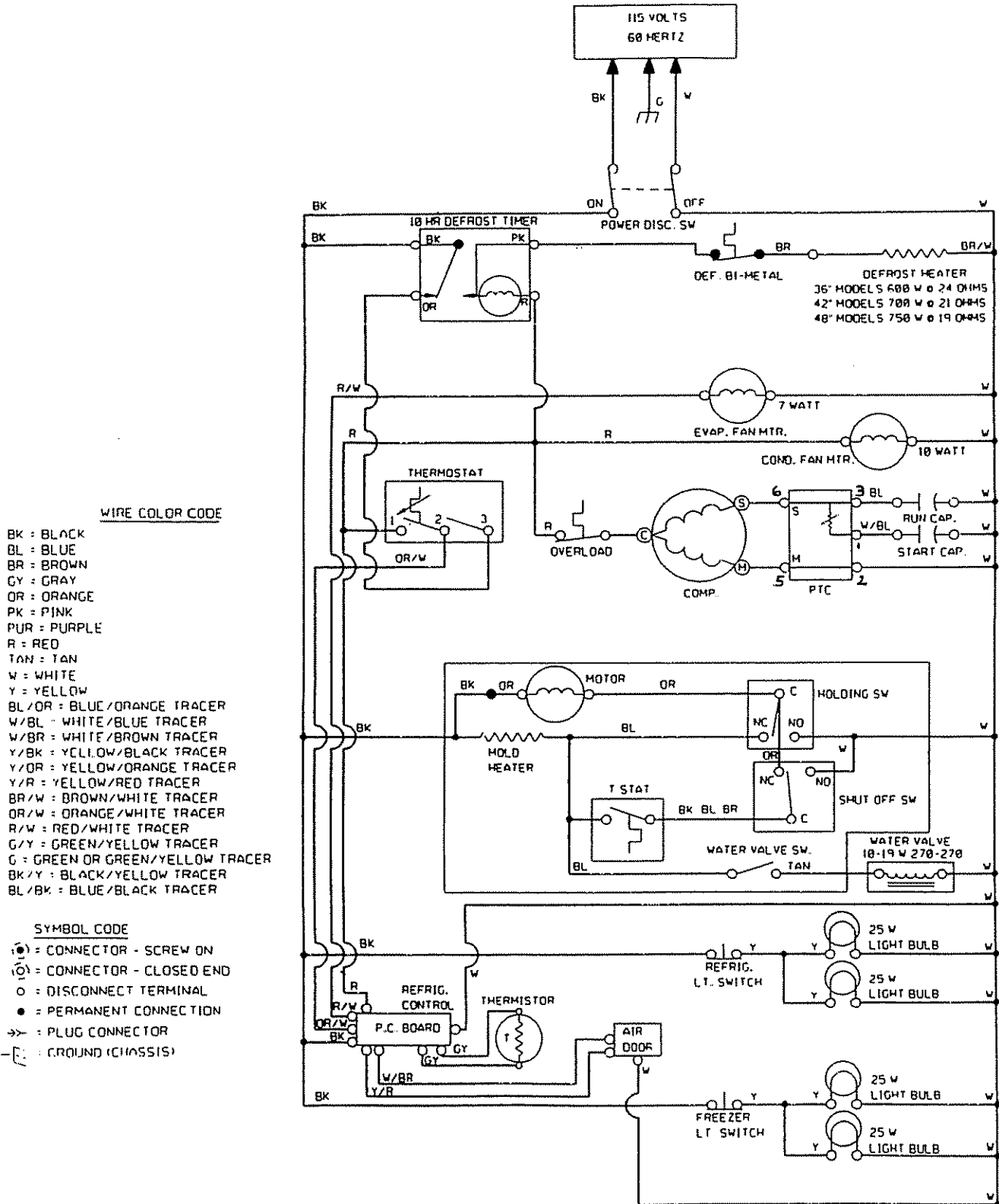
When the thermistor is satisfied, the evaporator fan will turn off, and the baffle will close.

When the thermistor calls for cooling, the evaporator fan will turn on, and the baffle will open.



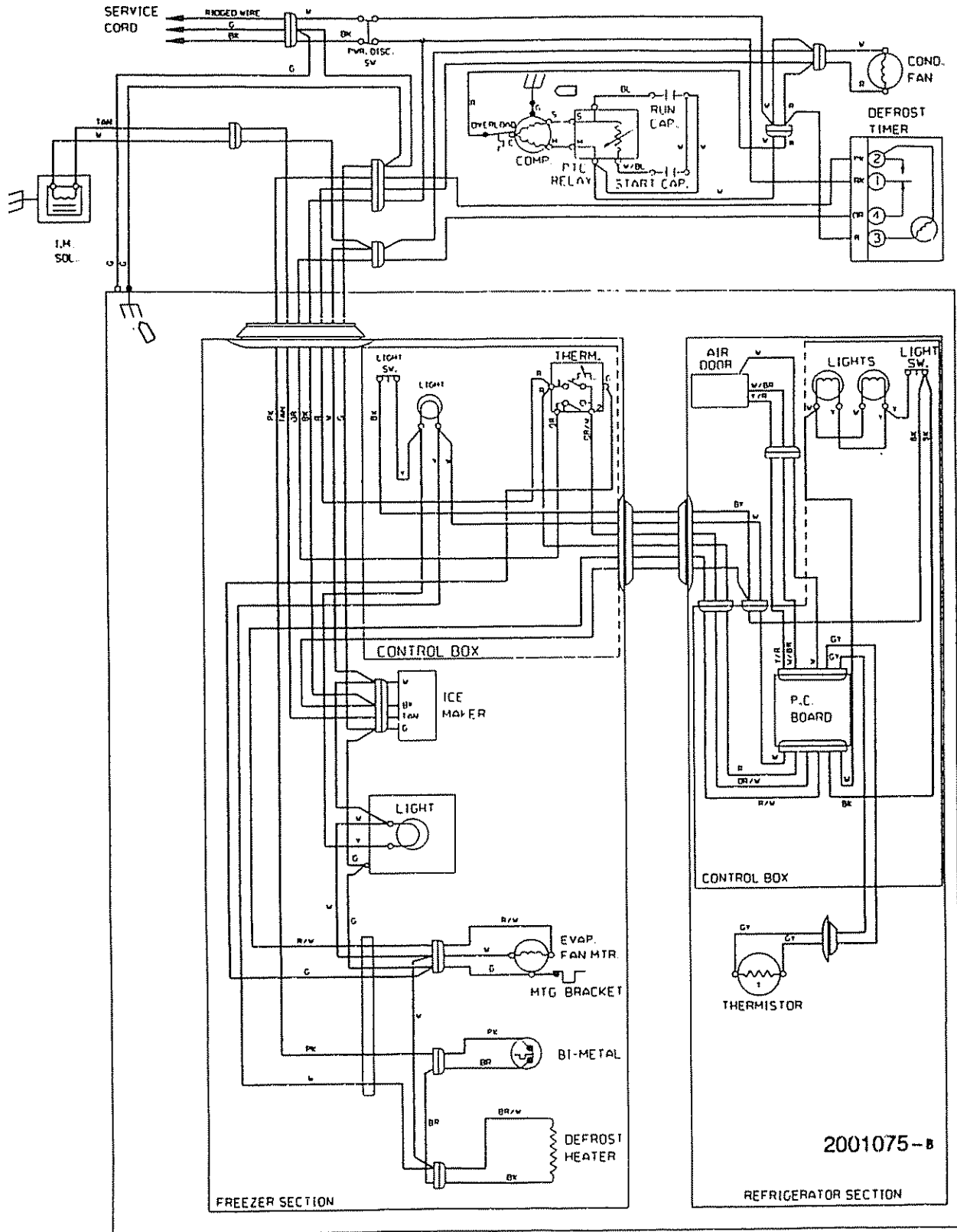
**FIGURE 83**  
 Motorized Air Door Operation

# WIRING DIAGRAMS



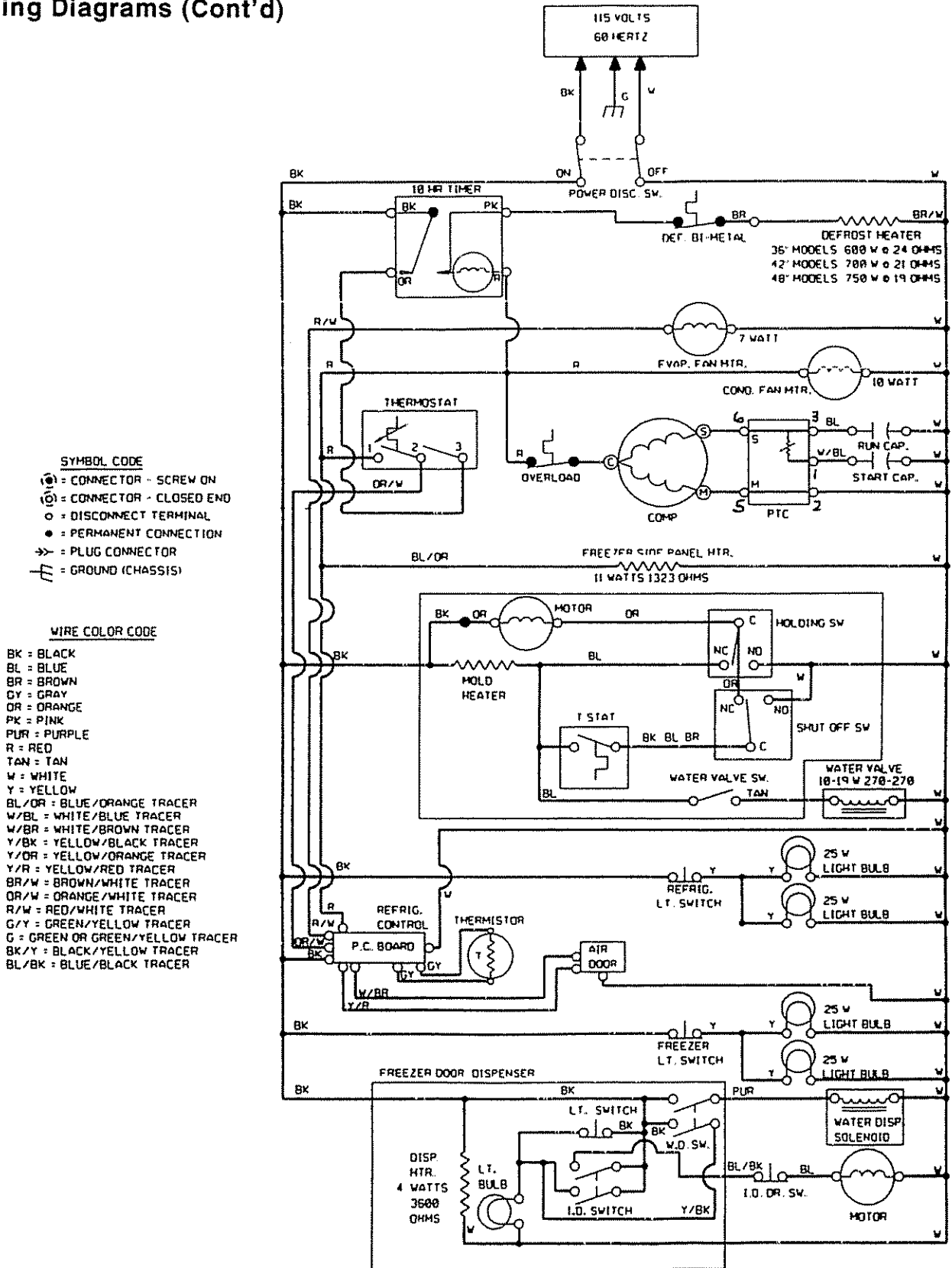
36" & 48" Built-In Refrigerator-Freezer w/o Dispenser  
— Part 1 —

## Wiring Diagrams (Cont'd)



**36" & 48" Built-In Refrigerator-Freezer w/o Dispenser**  
 — Part 2 —

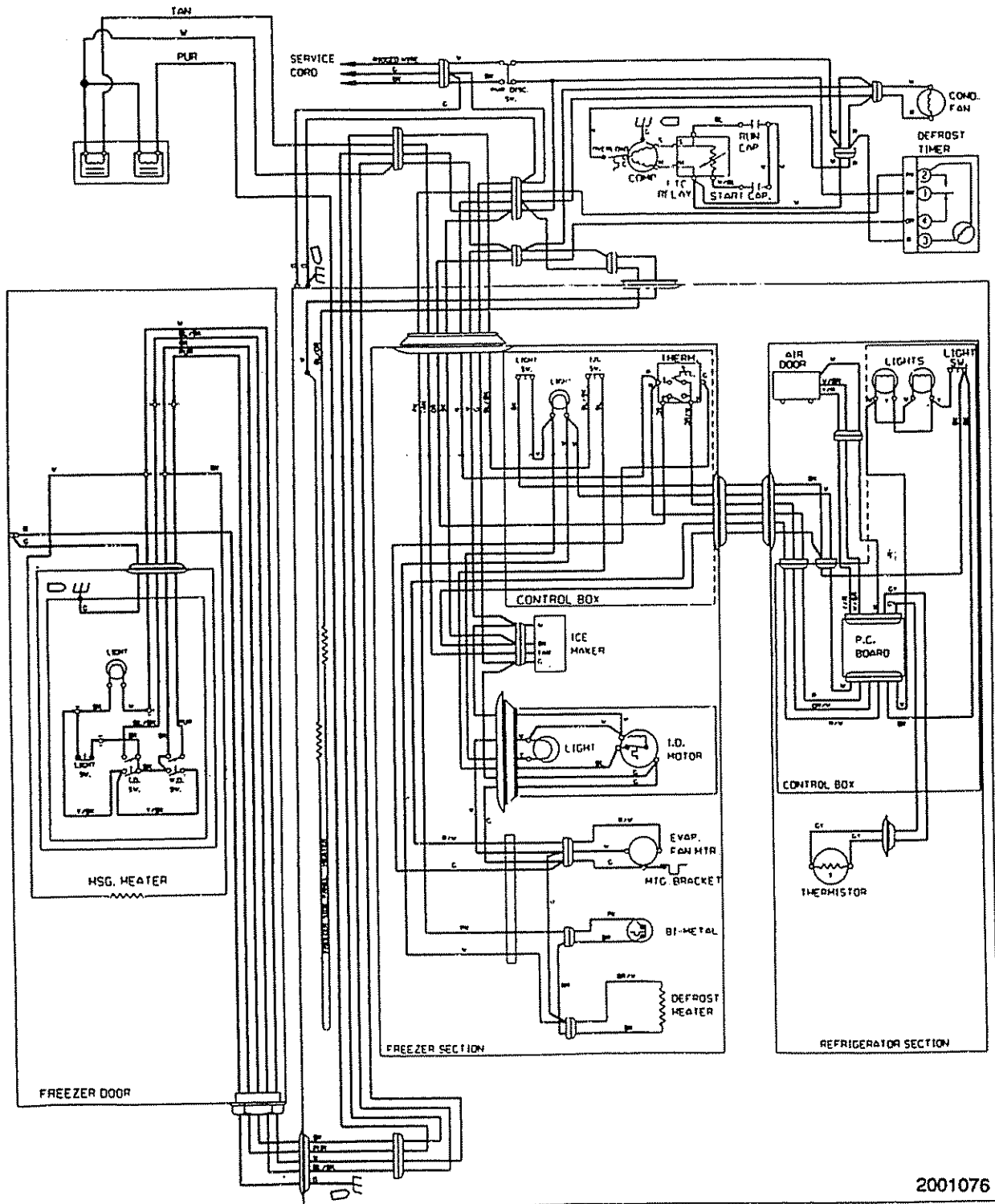
# Wiring Diagrams (Cont'd)



**36" & 48" Built-In Refrigerator-Freezer w/Dispenser  
— Part 1 —**



## Wiring Diagrams (Cont'd)

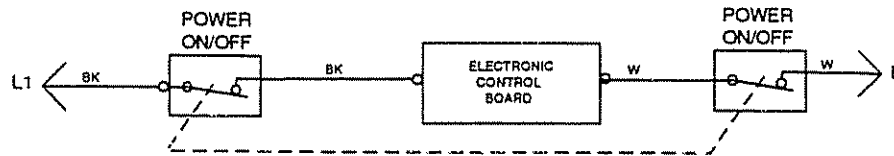


36" & 48" Built-In Refrigerator-Freezer w/Dispenser  
 — Part 2 —

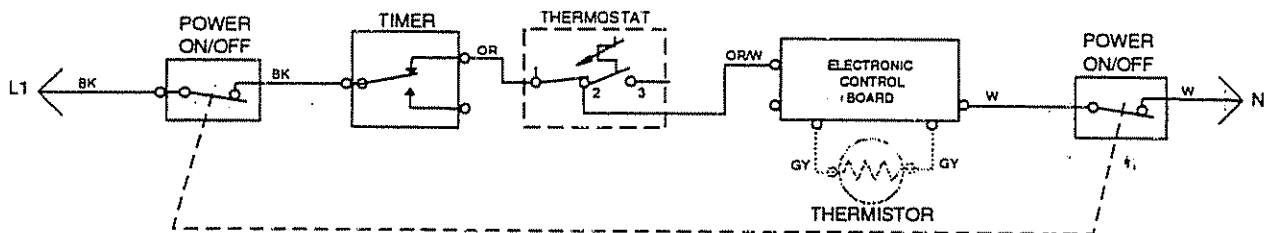
# STRIP CIRCUITS

## COOLING CYCLE

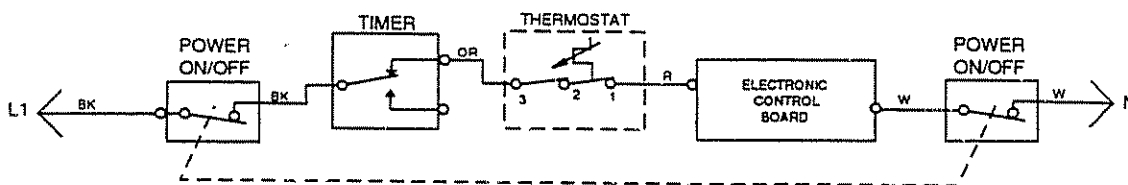
1. Unit Plugged In, Electronic Control Board Energized  
(Also During Defrost)



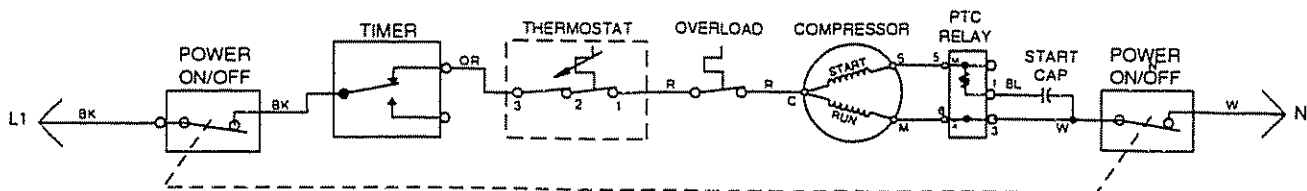
2. Freezer Thermostat On -  
Low Voltage To Thermistor



3. Freezer Thermostat On & Calling For Cooling -  
Compressor On - Input Signal To Electronic Control Board



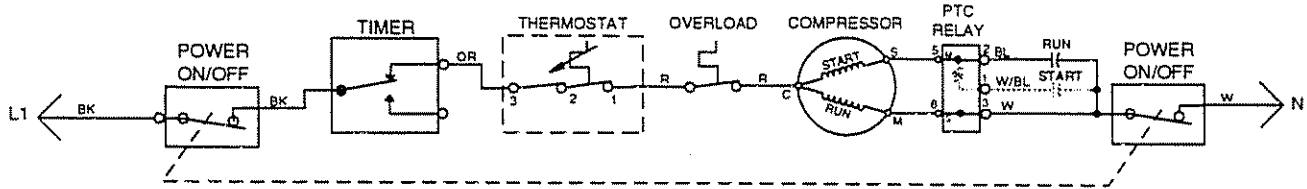
4. Freezer Thermostat Calling For Cooling -  
Compressor Circuit At Instant Of Start



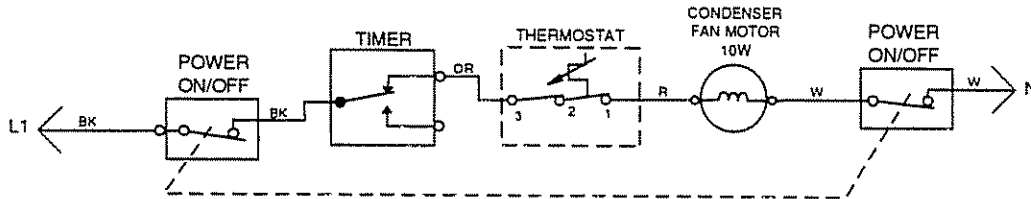
## Strip Circuits (Cont'd)

### Cooling Cycle (Cont'd)

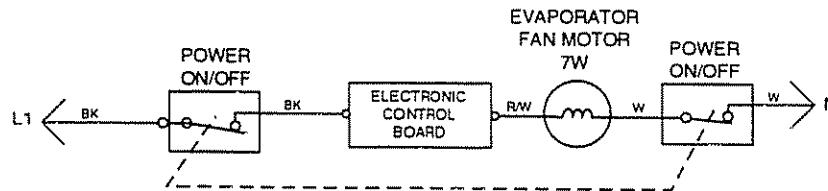
#### 5. Freezer Thermostat On & Calling For Cooling - Compressor Circuit During Run



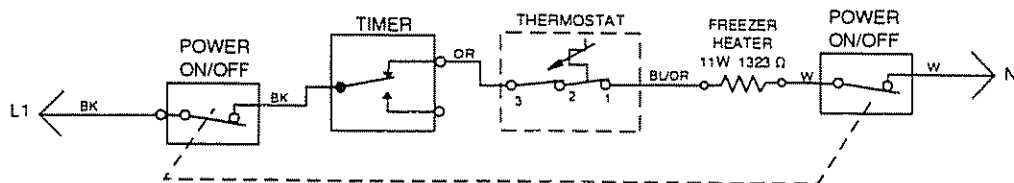
#### 6. Freezer Thermostat Calling For Cooling - Condenser Fan Motor Circuit



#### 7. Evaporator Fan Motor Circuit Refrigerator Control Calling For Cooling



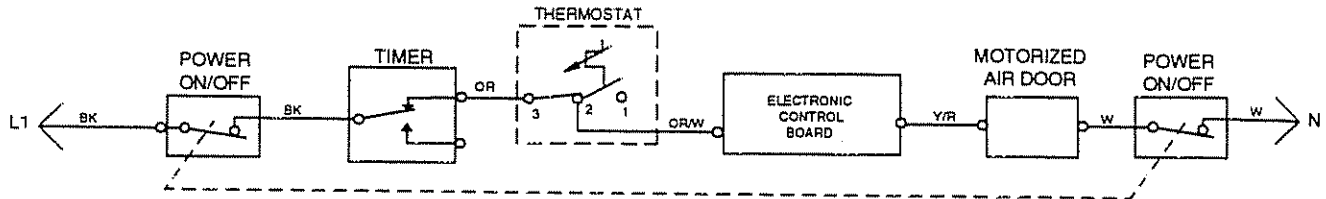
#### 8. Freezer Side Panel Heater Circuit - Freezer Thermostat Calling For Cooling



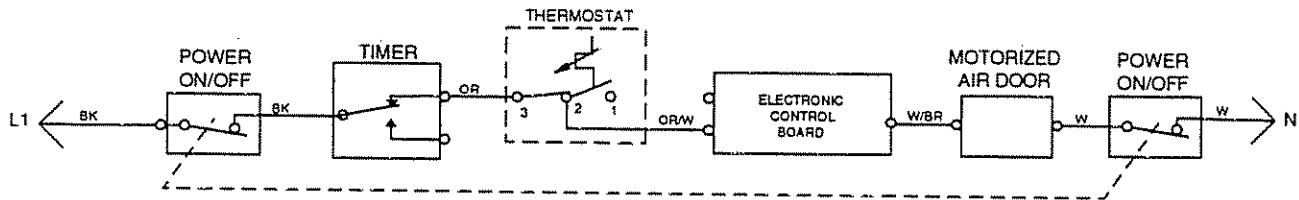
Strip Circuits (Cont'd)

## Cooling Cycle (Cont'd)

### 9. Motorized Air Door Opening Refrigerator Control Calling For Cooling



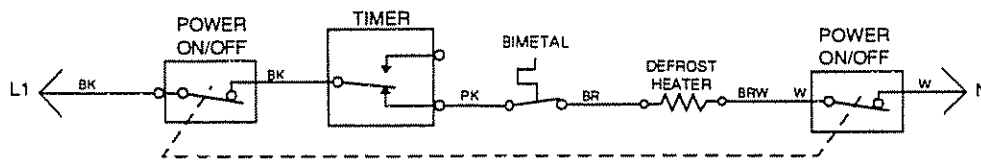
### 10. Motorized Air Door Closing Refrigerator Control Satisfied



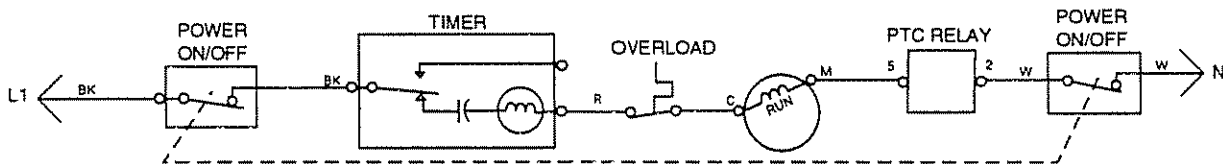
## Strip Circuits (Cont'd)

### DEFROST CYCLE

#### 11. Defrost Heater Circuit



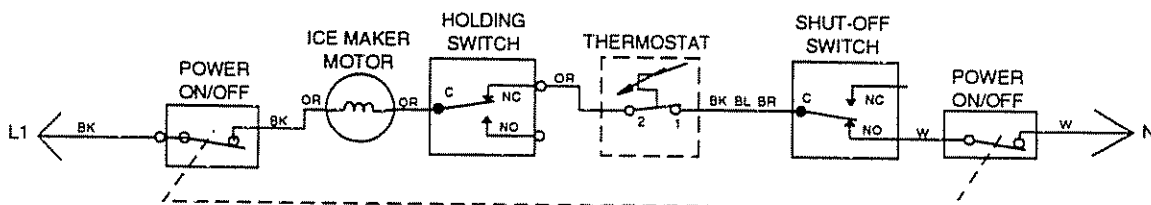
#### 12. Defrost Timer Motor



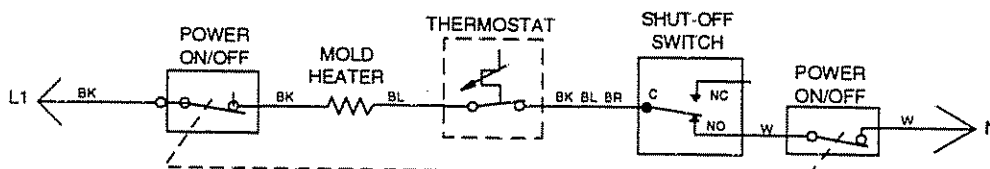
Strip Circuits (Cont'd)

# ICE MAKER CIRCUIT

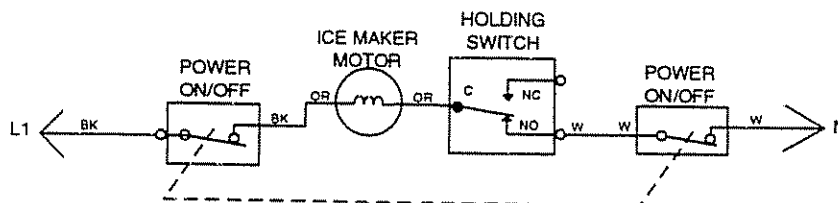
## 13. Ice Maker Motor Circuit - Start Of Harvest



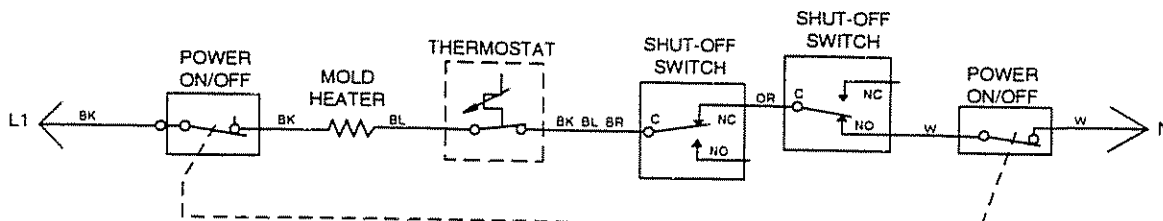
## 14. Ice Maker Heater Circuit - Start Of Harvest



## 15. Ice Maker Motor Circuit - After Start Of Harvest



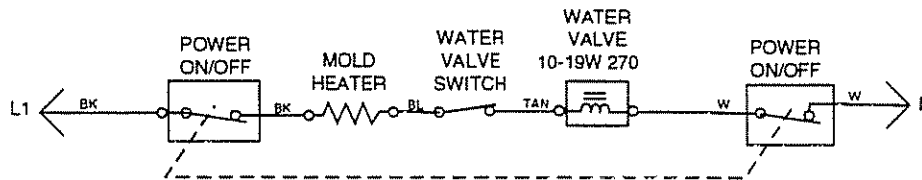
## 16. Ice Maker Heater - Harvest Cycle - Shut-Off Arm Raises To Shut-Off Position



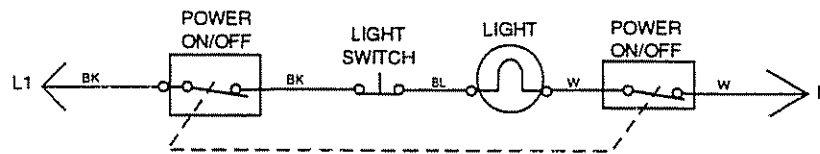
## Strip Circuits (Cont'd)

### DISPENSER CIRCUIT

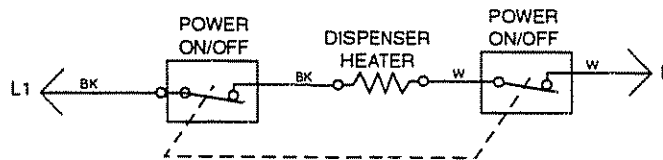
#### 17. Ice Maker Heater Circuit - Water Fill At End Of Circuit



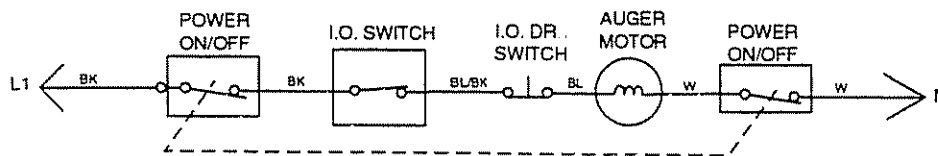
#### 18. Dispenser Light Switch



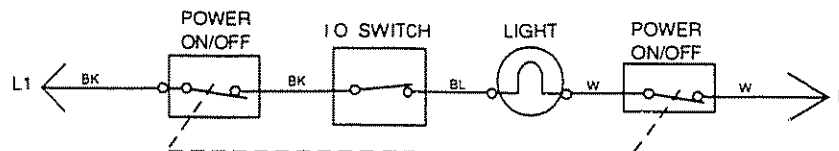
#### 19. Dispenser Housing Heater Circuit



#### 20. Ice Dispenser Circuit - Auger Motor



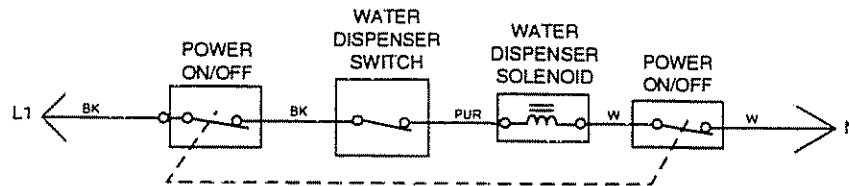
#### 21. Ice Dispenser Circuit - Light Activated Through Ice Dispenser Switch



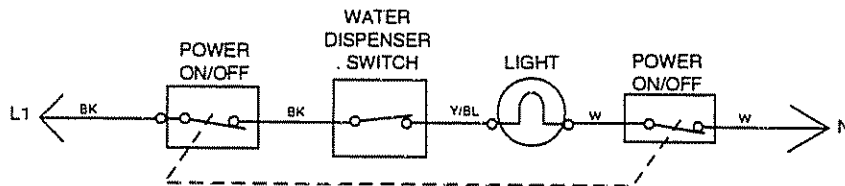
## Strip Circuits (Cont'd)

### Dispenser Circuit (Cont'd)

22. Water Dispenser Circuit -  
Water Dispenser Valve Activated



23. Water Dispenser Circuit -  
Light Activated Through Water Dispenser Switch



24. Refrigerator & Freezer Light Circuits

