



Reach-In Refrigerators and Freezers

Installation  
&  
Owner/Operator  
Use and Care Guide

Thank you for selecting a Manitowoc product,  
the dependability leader  
in Reach-In Refrigerator/Freezers, ice making equipment  
and related products.

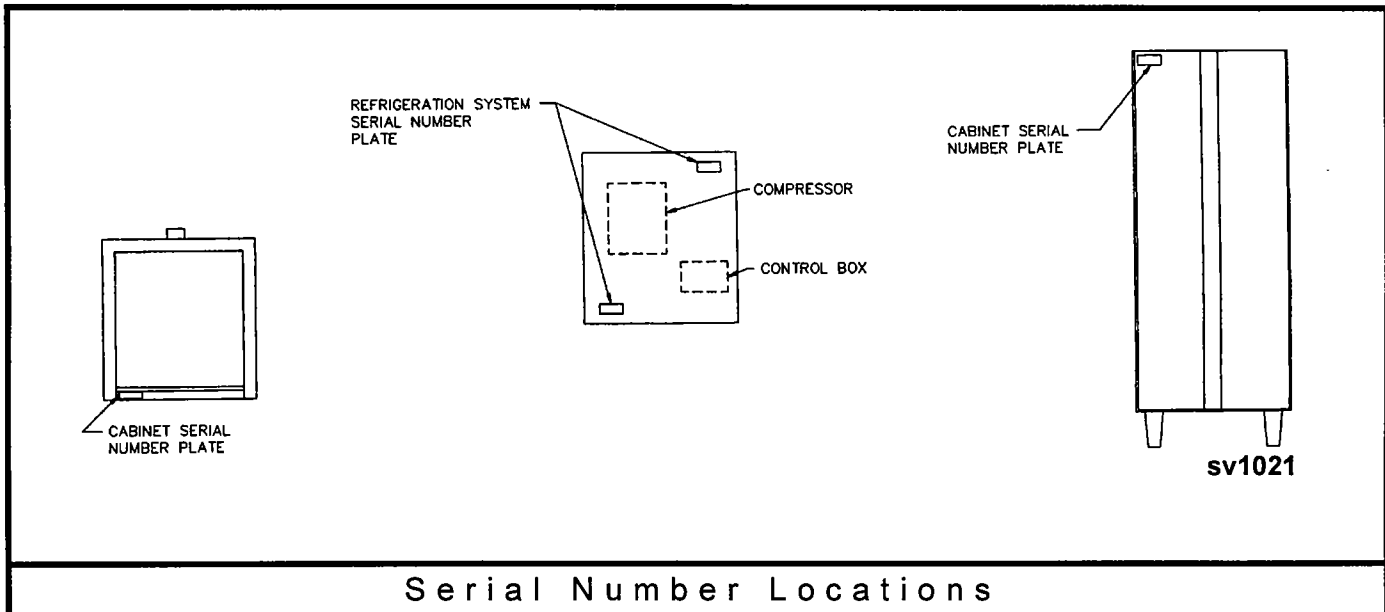
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## WELCOME TO MANITOWOC

Proper care and maintenance are essential for trouble-free operation of your **Manitowoc Reach-In Refrigerator or Freezer**. Please read and understand this **Installation & Owner/Operator Use and Care Guide**. It contains valuable installation, care, and maintenance information. If you encounter problems not covered by this guide, please contact your local Manitowoc dealer or distributor for more information.

**Warning:** Keep refrigerator/freezer upright. Do not, under any circumstances, lay this equipment down on its back, front, or one of its sides.



Both serial numbers are required when requesting information from your service representative, area Manitowoc distributor, or Manitowoc Equipment Works. Factory pre-assembled Reach-Ins have only one model and one serial number. Turn to Page 1-1, Warranty, for a list of Manitowoc Reach-In model numbers.

Record the model and the serial number from both your Refrigeration System and Reach-In Cabinet in the boxes below:

### Refrigeration System

Model #:

Serial #:

### Reach-In Cabinet

Model #:

Serial #:

### Factory Assembled

Model #:

Serial #:

Record the phone number of your Manitowoc service representative or Manitowoc distributor in the box below.

### Service Representative

Phone #:

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**Warning:** Reach-Ins are susceptible to tipping. **Never** move a Reach-In with the door(s) open.  
Always use two people to move a Reach-In.

## MANITOWOC EQUIPMENT WORKS

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# Warranty

## MODEL/SERIAL NUMBERS

This Installation & Owner/Operator Use and Care Guide covers the following **current** models:

Cabinets Separate		Refrigeration System Separate			
Solid Door(s)	Glass Door(s)*	Refrigerators		Freezers	
		Remotes	Self-Contained	Remotes	Self-Contained
AV1S	AV1G	RR1	R1	FR1	F1
AV2S	AV2G	RR2	R2	FR2	F2
AV3S	AV3G	RR3	R3	FR3	F3

\* Glass door models available in refrigerators only. Do not install a Freezer System into a glass door cabinet.

Factory Pre-Assembled Reach-Ins		
Refrigerators		Freezers
Solid Doors	Glass Doors	Solid Doors
CRS1	CRG1	CFS1
CRS2	CRG2	CFS2

In addition, this Installation & Owner/Operator Use and Care Guide covers the following **older** models:

Cabinets Separate				Refrigeration System Separate	
Solid Door(s)			Efficient-See™ Glass Door(s)	Refrigerators	Freezers
AV1A	AV1B	AV1S	AV1*G	RS1	FS1
AV2A	AV2B	AV2S	AV2*G	RS2	FS2
AV3A	AV3B	AV3S	AV3*G	RS3	FS3

\* Door(s) Material: A = Aluminum, B = Black Clad Vinyl, S = Stainless Steel

The model and serial numbers are listed on the warranty registration cards and the model/serial number decal affixed to each section of the machine. Turn to the inside cover for the model/serial number decal locations.

## OWNER/WARRANTY REGISTRATION CARDS

When purchasing units separately, the Refrigeration System and Reach-In Cabinet will have separate warranty registration cards. Your warranty coverage begins on the day your Refrigeration System/Reach-In Cabinet is installed.

When purchased separately, both the Refrigeration System and the Reach-In Cabinet Owner/Warranty Registration Cards must be filled in and returned as soon as possible to validate your installation date.

Factory pre-assembled Reach-Ins have only one Owner/Warranty Registration Card.

If you do not return both Owner/Warranty Registration Cards, Manitowoc uses the date of sale to your local Manitowoc distributor as the first day of warranty coverage for your new Reach-In Refrigerator. This will shorten your warranty coverage period.

## **WARRANTY COVERAGE**

Read the "Warranty-Bond" that came with your unit(s) for a detailed explanation of warranty parts and labor coverage, and warranty exclusions. Contact your service representative, Manitowoc distributor, or Manitowoc Equipment Works if you need further warranty information.

### **Parts**

1. Manitowoc warrants the Refrigeration System and Reach-In Cabinet against defects in materials and workmanship, under normal use and service for two (2) years from the date of original installation.
2. The evaporator coil and compressor are covered by an additional three (3) year (five year total) warranty beginning on the date of the original installation.

**Note:** The additional three (3) year evaporator coil warranty does not apply to parts such as fan motors, defrost elements, housings, electrical wiring or controls that are attached to the evaporator coil.

### **Labor**

A labor allowance is provided to repair or replace defective components for two (2) years from the date of the original installation.

### **Exclusions**

The following items are not included in the Refrigeration System/Reach-In Cabinet's warranty coverage:

1. Normal maintenance, adjustments and cleaning.
2. Interior cabinet light bulb.
3. Repairs due to unauthorized modifications to the Refrigeration System/Reach-In Cabinet or the use of non-standard parts without prior, written approval from Manitowoc Equipment Works.
4. Damage caused by improper installation of Refrigeration System/Reach-In Cabinet as outlined in the Installation Instructions, electrical supply, water supply or drainage; floods, storms, or other acts of God.
5. Premium labor rates due to holidays, overtime, etc.; travel time; flat rate service call charges; mileage and miscellaneous tools and material charges not listed on the payment schedule. Additional labor charges resulting from the inaccessibility of the Refrigeration System/Reach-In Cabinet are also excluded.
6. Parts or assemblies subjected to misuse, abuse, neglect or accidents.
7. Damage to the interior of cabinet or Refrigeration System as a result of storing open acidic food containers.
8. Claims for special, indirect or consequential damages including, without limitation, food spoilage or product loss.
9. The Manitowoc Refrigeration System and Manitowoc Reach-In Cabinet are designed for use only with each other.

No warranty coverage applies when a Manitowoc Refrigeration System or Reach-In Cabinet is used in conjunction with other products.

## **AUTHORIZED WARRANTY SERVICE**

To comply with the provisions of the warranty, a refrigeration service company, qualified and authorized by your Manitowoc distributor, or a Contracted Service Representative must perform the warranty repair.

**Note:** If the dealer you purchased the reach-in from **IS NOT** authorized to perform warranty service, contact your Manitowoc distributor or our Wisconsin headquarters for the name of the nearest authorized service representative.

## **SERVICE CALLS**

If you have followed the procedures listed in this guide and the refrigerator or freezer still does not perform properly, call your authorized service company.

## **ADDITIONAL WARRANTIES**

An Extended Parts and Labor Warranty is available which covers your Reach-In Refrigerator/Freezer for a third year. Contact your Manitowoc dealer or distributor for information.

# Installation

## GENERAL

These instructions are provided to assist the qualified installer. Check your local yellow pages for the name of the nearest Manitowoc distributor, or call Manitowoc Equipment Works for information regarding installation and start-up services.

**Warning:** Reach-Ins are susceptible to tipping. **Never** move a Reach-In with the door(s) open. Always use two people to move a Reach-In.

## INSTALLATION INSTRUCTIONS

For factory-assembled Reach-Ins, follow only steps 1, 2, 6, 11, and 13.

### Step 1

#### Measure Location.

1. Confirm match of Refrigeration System and Reach-In Cabinet. Refer to Page 1-1, Warranty.
2. Select an installation space with cool, dry air circulation away from heat and moisture generating equipment such as stoves, ovens, etc.

Air Temperature Entering Condenser	
Minimum	Maximum
50°F (10°C)	110°F (43.3°C)

3. Verify that the floor can support the total weight of the Reach-In Cabinet and its contents.

**Important:** A fully loaded Reach-In can weigh more than **3,000** pounds.

4. Measure space for clearance. There must be at least six (6) inches to both sides, six (6) inches from the back of the cabinet, and twelve (12) inches above the condensing unit.

**Caution:** Less than the minimum clearance on any of these four sides will reduce cooling capacity which will lead to premature component failure.

### Percentage (%) of Relative Humidity at which Condensation Forms on Glass\*

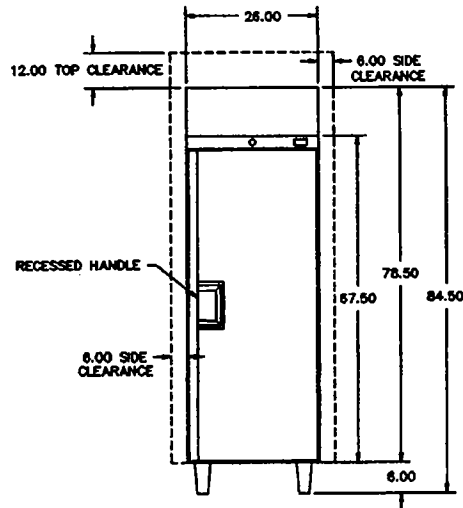
Glass door refrigerators utilize two pane reflective, non-heated glass (N.H.G.). Condensation will form on the glass if the unit is installed in a high humidity area. Because atmospheric conditions vary depending on specific operating conditions, use the following table as a guideline to determine the suitability of a selected installation space.

Room Temperature	% of Relative Humidity
70°F/21.1°C	76%
75°F/23.9°C	72%
80°F/26.7°C	69%
85°F/29.4°C	67%
90°F/32.2°C	65%

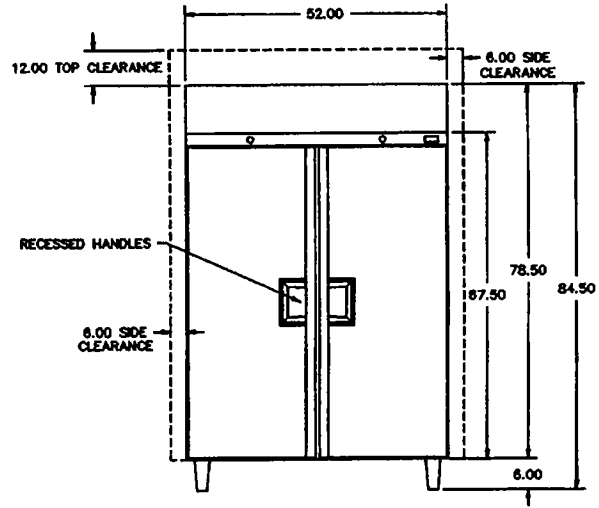
\* Based on interior cabinet temperature of 38°F/3.3°C.

# Cabinet Dimensions

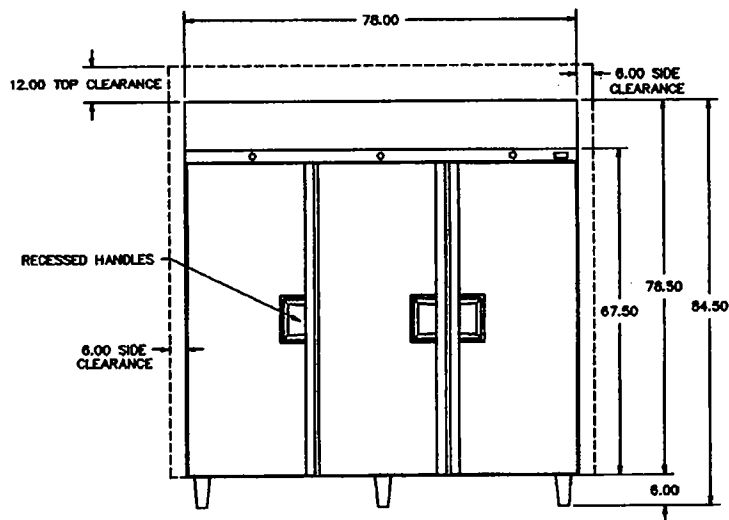
SINGLE DOOR MODEL



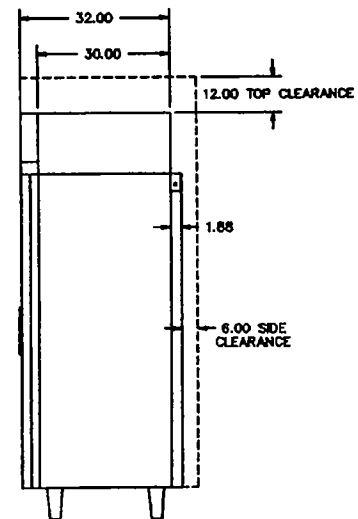
TWO DOOR MODEL



THREE DOOR MODEL



SIDE VIEW  
ALL MODELS



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Note: Caster height is 5". Leg height is 6".

Dimensions/Cabinet Clearance Requirements

## Step 2

To assure that the door(s) close and seal properly,  
**Level the Cabinet.**

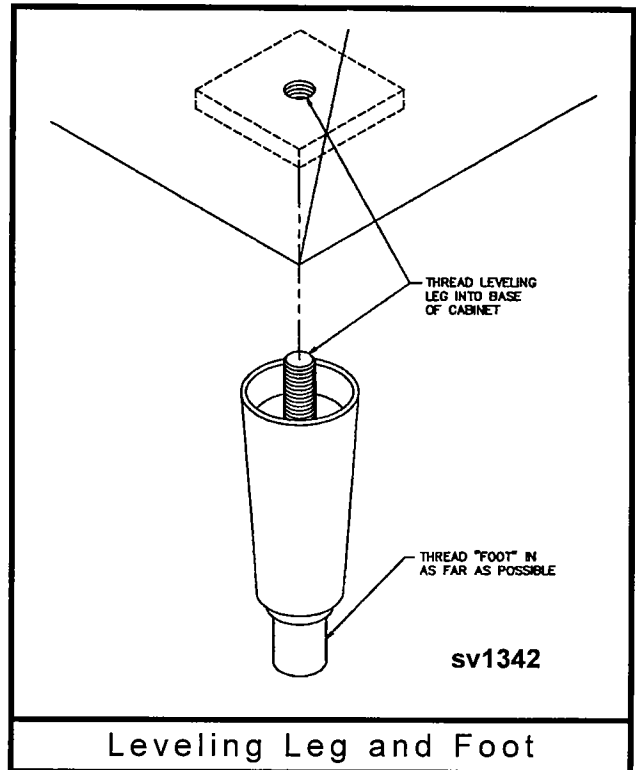
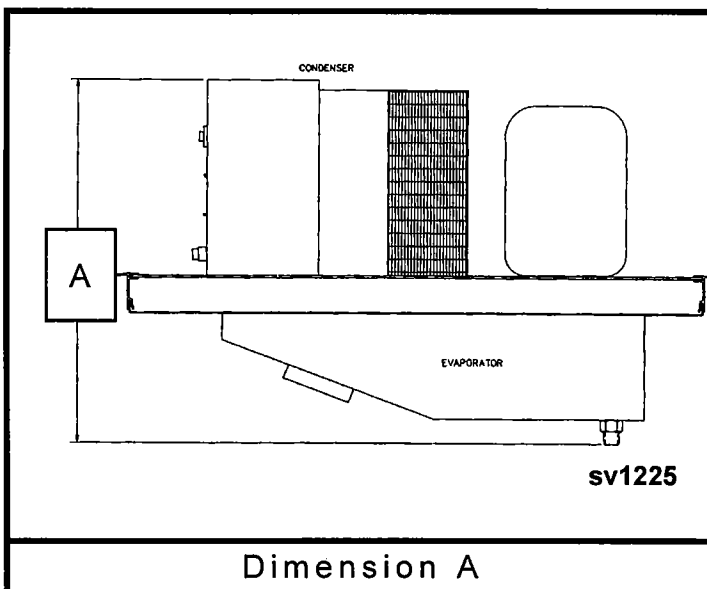
1. Thread in and hand tighten the leveling legs into the four corner pads on the bottom of the cabinet. Then thread the foot onto each leg until it stops.
2. Move the Reach-In Cabinet to its final position.
3. Place a level on top of the cabinet. Turn the foot of the lowest corner to center the bubble in the level. Continue to adjust each corner until the bubble is centered and the cabinet is stable.

## Step 3

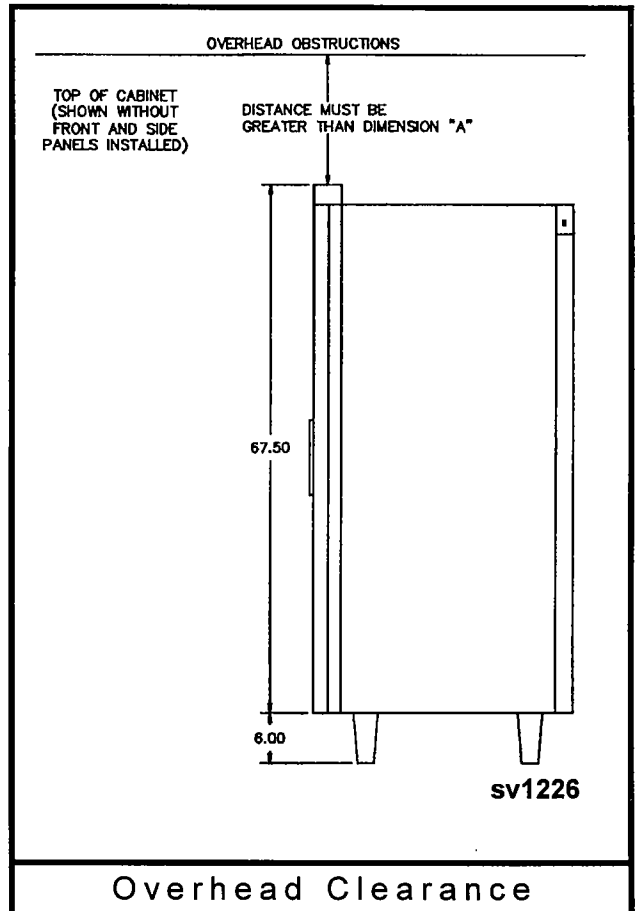
**Check Overhead Clearance.**

1. Measure the distance between the top of the cabinet and any overhead obstructions.
2. Compare the measurement to Dimension A for the Refrigeration System model number in the table below. The measurement, the top of the cabinet to any overhead obstruction, must be greater than Dimension A.

Model	Dimension A
RR1 or R1	19.5"
RR2 or R2	20.5"
RR3 or R3	20.5"
FR1 or F1	20.5"
FR2 or F2	23.5"
FR3 or F3	30.5"



**Important:** If a caster assembly is installed in place of legs, the supporting floor will have to be leveled prior to the final positioning of the Reach-In Cabinet.

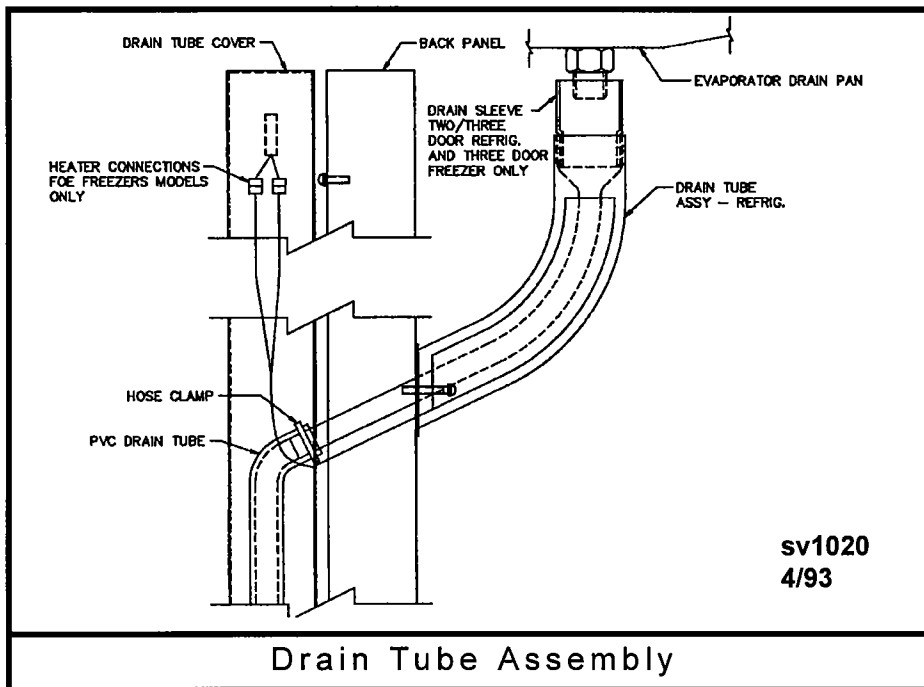




## Step 4

### Install the Drain Tube.

1. Install the drain tube sleeve into the drain assembly of two and three door refrigerators and three door freezers.



## Step 5

### Assemble the Refrigeration System to the Reach-In Cabinet.

1. Lift the Refrigeration System off the shipping crate. Be very careful not to damage the flexible vinyl gaskets.

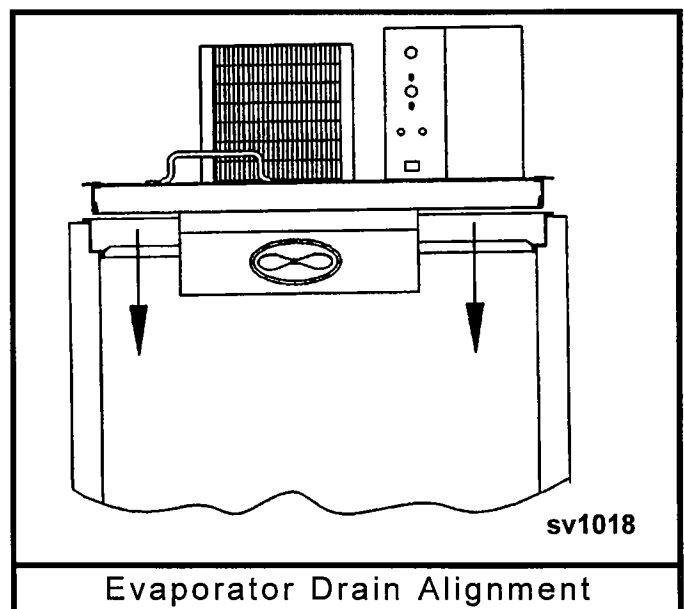


**Caution:** Do not set the Refrigeration System on the evaporator coils.

2. Line up the evaporator drain with the cabinet drain and lower the Refrigeration System into the Reach-In Cabinet.



**Caution:** Do not install a Freezer Refrigeration System into a glass door cabinet.



## ELECTRICAL REQUIREMENTS - Self-Contained Models

### Step 6

### Wire-in the Refrigeration System.

**Caution:** All wiring must conform to local, state, and national codes.

**Caution:** Never use an extension cord.

#### Current Self-Contained Models

Self-Contained Models*	Voltage/Phase/Cycle	Total Amps	Maximum Fuse Size	N.E.M.A. Electrical Plug Configuration
One Door Refrigerator** R1 CRS1 CRG1	115/60/1	6.0	15	5-15P
	208-230/60/1	3.4	15	No Plug Furnished
	220-240/50/1	2.8	15	No Plug Furnished
Two Door Refrigerator** R2 CRS2 CRG2	115/60/1	9.4	15	5-15P
	208-230/60/1	5.8	15	No Plug Furnished
	220-240/50/1	4.7	15	No Plug Furnished
Three Door Refrigerator** R3	115/60/1	12.0	15	5-15P
	208-230/60/1	6.9	15	No Plug Furnished
	220-240/50/1	6.8	15	No Plug Furnished
One Door Freezer F1 CFS1	115/60/1	10.6	15	5-15P
	208-230/60/1	5.7	15	No Plug Furnished
	220-240/50/1	7.2	15	No Plug Furnished
Two Door Freezer F2 CFS2	115/60/1	12.8	20	5-20P
	208-230/60/1	7.8	15	No Plug Furnished
	220-240/50/1	8.0	15	No Plug Furnished

Self-Contained Model	Voltage/Phase/Cycle	Min. Circuit Amps	Maximum Fuse Size	Electrical Connection
Three Door Freezer F3	115-208-203/60/1	11.2	15	Hard wired
	220-240/50/1	12.1	15	No Plug Furnished

\* Ratings with listed Self-Contained Refrigeration System installed and operating with appropriate cabinet.

\*\* Refrigerators have same ratings with solid or glass doors.

#### Older Self-Contained Models

Self-Contained Model*	Voltage/Phase/Cycle	Total Amps	Maximum Fuse Size	M.E.M.A. Electrical Plug Configuration
One Door Refrigerator RS1	115/60/1	7.9	15	5-15P
	220-240/50/1	3.7	15	No Plug Furnished
Two Door Refrigerator RS2	115/60/1	9.6	15	5-15P
	220-240/50/1	4.8	15	No Plug Furnished
Three Door Refrigerator RS3	115/60/1	10.6	15	5-15P
	220-240/50/1	5.6	15	No Plug Furnished
One Door Freezer FS1	115/60/1	11.7	15	5-15P
	220-240/50/1	4.9	15	No Plug Furnished
Two Door Freezer FS2	115/60/1	13.8	20	5-20P
	220-240/50/1	6.3	15	No Plug Furnished

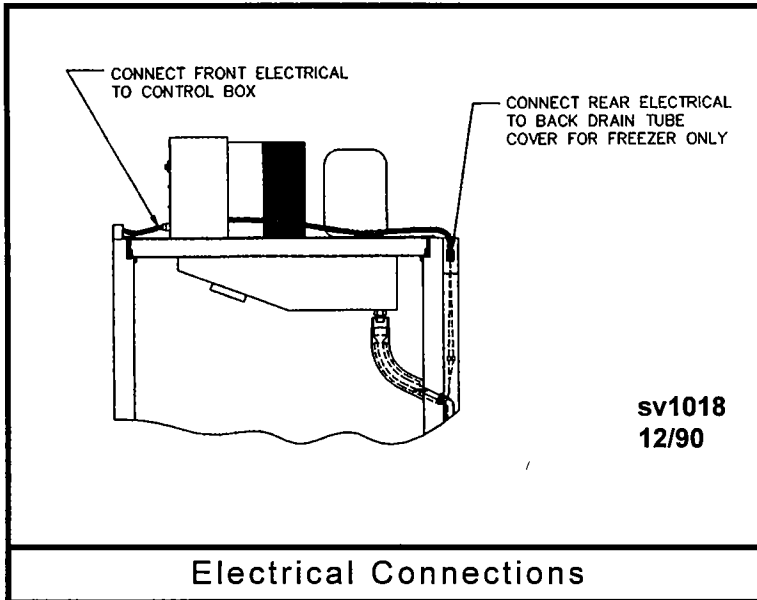
Self-Contained Model	Voltage/Phase/Cycle	Min. Circuit Amps	Maximum Fuse Size	Electrical Connection
Three Door Freezer FS3	115-208-230/60/1	13.1	15	Hard Wired
	220-240/50/1	9.4	15	No Plug Furnished

\* Ratings with Refrigeration System installed and operating with appropriate cabinet.

## Step 7

### Connect the Electrical Harnesses to the Cabinet.

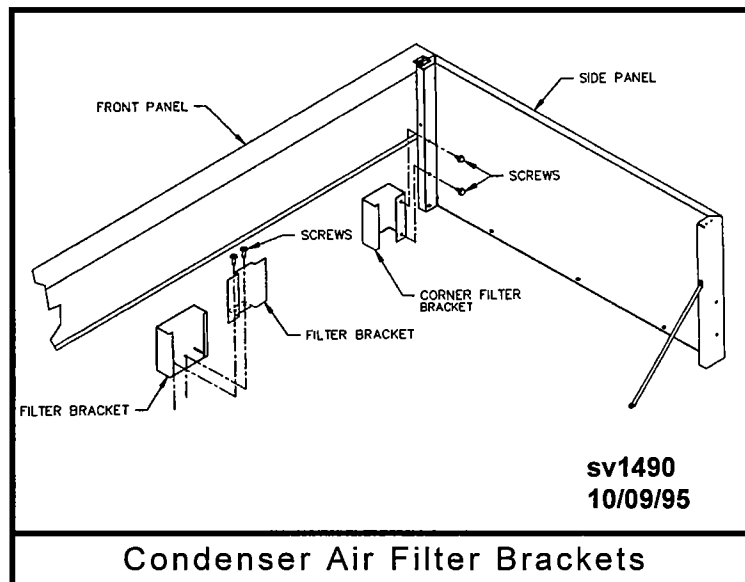
1. Connect the drain line heater (freezer only) to the Refrigeration System wiring with the plug-in connector at the back of the cabinet.
2. Connect the Reach-In Cabinet to the Refrigeration System wiring with the plug-in connector on the front panel of the electrical box.



## Step 8

### Install Condenser Air Filter Brackets

1. Fasten the corner filter brackets to the side panels with the screws provided.
2. Fasten the center filter bracket(s) to the top rail on the two and three door cabinets with the screws provided.

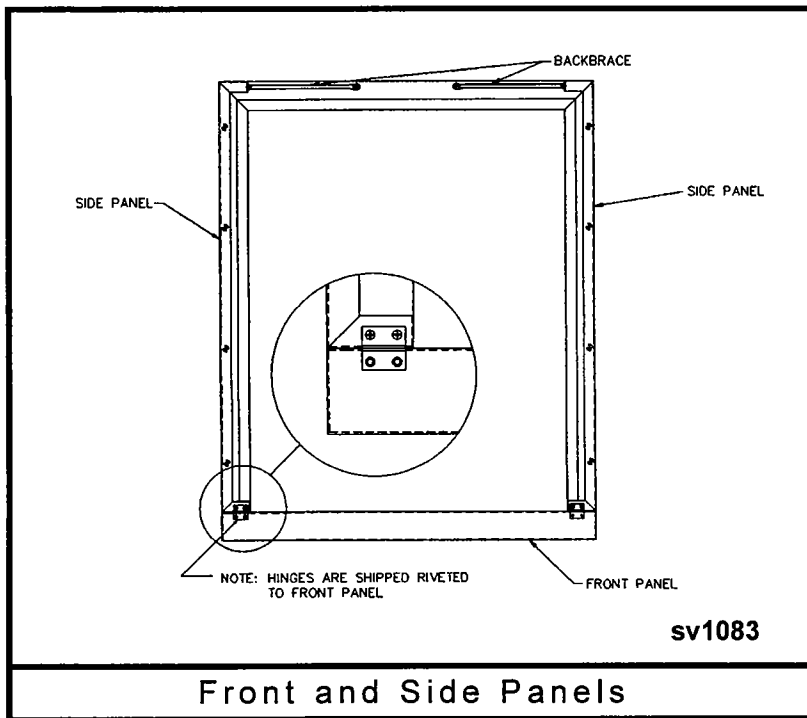


**Air Filter:** Early production cabinets have solid top front panel, there is no washable aluminum air filter. Later production AV1S, AV2S, and AV3S cabinets include the air-filter.

## Step 9

### Install the Front and Side Panels to the Cabinet.

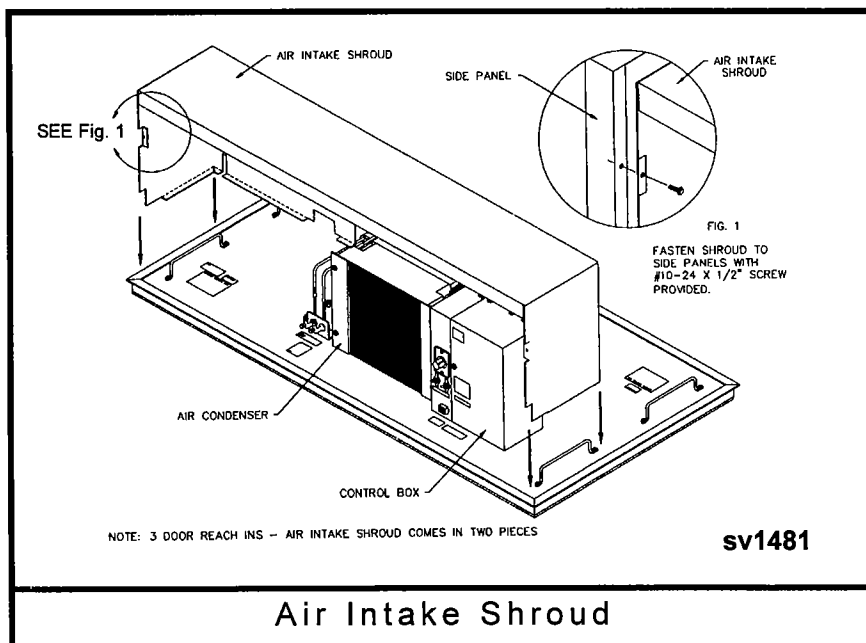
1. Fasten the hinges on the side panels to the threaded holes in the cabinet frame with the screws provided.
2. Fasten the hinges on the front panel to the threaded holes in the cabinet frame with the screws provided.



## Step 10

### Install Air Condenser Intake Shroud.

- 1 Place shroud over air condenser and control box as shown.
- 2 Fasten shroud to side panels with the #10-24 x 1/2 screw.



**Air Filter:** Early production cabinets have solid top front panel, there is no washable aluminum air filter. Later production AV1S, AV2S, and AV3S cabinets include the air filter.

**Note:** Illustration shown without side panels in place. Front and side panels (Step 9) must be in place prior to installation of air intake shroud.

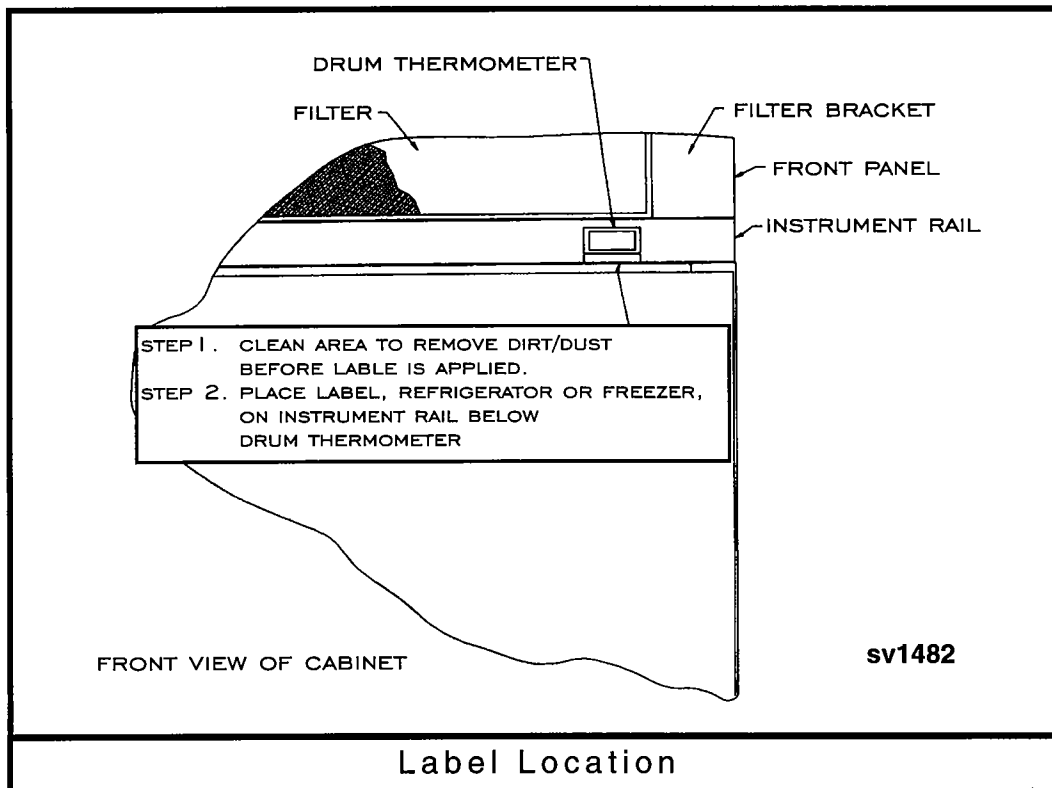
### Step 11

#### Plumb the Condensate Drain.

Plumb the cabinet's condensate drain to a floor drain. To prevent air from entering the cabinet through the drain line, the **copper "p" trap** (packaged in the plastic bag with the shelving clips) **must be installed**. Connect the longer tail of the "p" trap to the clear plastic drain tube on the cabinet, then connect the tubing to continue the drain. If a floor drain is not available, a condensate vaporizer is recommended.

### Step 12

#### Place Refrigerator/Freezer Label on the Reach-In.



### Step 13

#### Start Up the Reach-In.

1. Plug the power cord into a wall outlet. For model F3, turn on the main breaker.
2. Turn the main power switch to the "On" position.
3. Set the temperature to initial setting. Turn to Page 3-2, Owner/Operator Use and Care Guide, for guidelines on temperature control settings.

**Caution:** Do not fill the Reach-In with food or product until the Reach-In has cooled to the desired temperature.

## REVERSING SOLID DOOR SWING

### Step 1

#### Release Door Spring Tension.

1. Use a Phillips screwdriver, the same diameter as the holes, to turn the spring housing to release the spring tension from the tension pin.
2. While holding spring tension with the screwdriver, remove the tension pin.

**Important:** Do not release or remove the screwdriver after removing the tension pin.

3. With an additional screwdriver, back off the spring housing one space at a time to completely release the spring tension.

### Step 2

#### Remove the Door.

1. Remove the pivot pin from the opposite side of the door spring tension hinge.
2. Slide the door out.

### Step 3

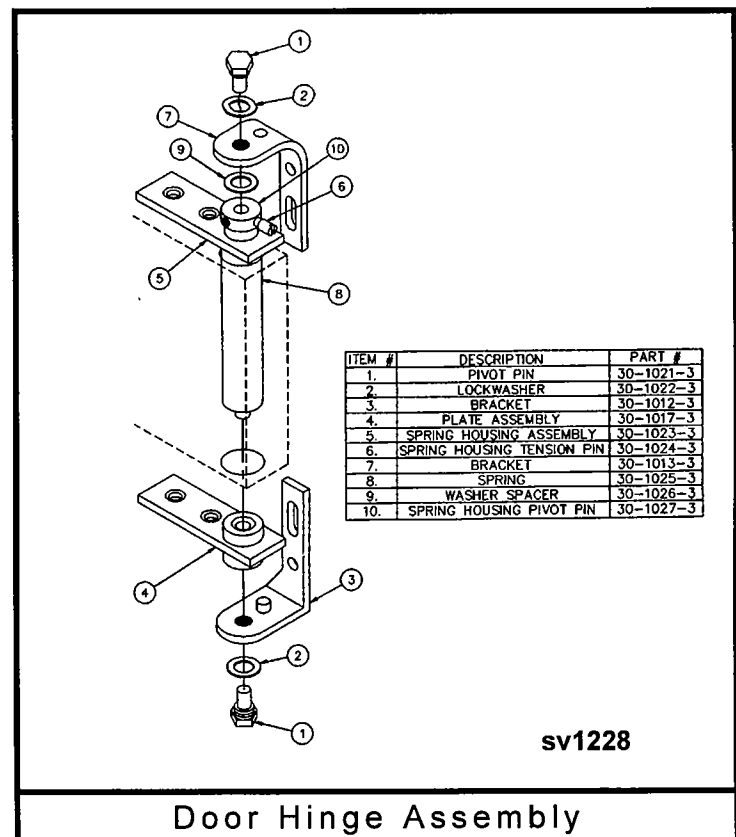
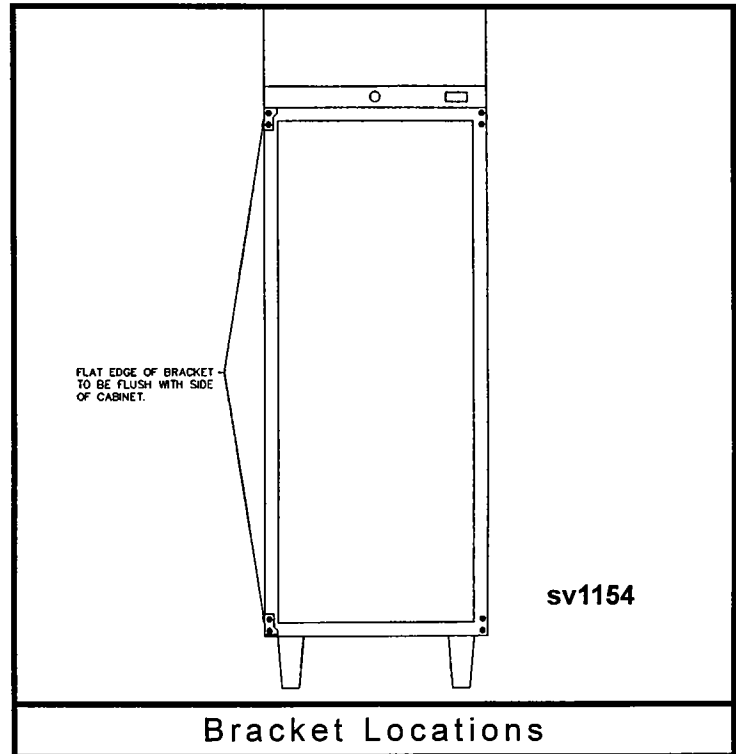
#### Reverse the Hinge Brackets.

1. Remove the screws fastening the hinge brackets. Also remove the hinge bracket mounting screws, or hole plugs, on the opposite side of the cabinet.
2. Re-install the hinge brackets by placing the bottom bracket onto the top of the opposite side. This insures that the flat edge of the hinge bracket is flush with the side of the cabinet.
3. Re-install the short screws in the empty holes.

### Step 4

#### Re-Install the Door.

1. Verify that the door hinge is properly assembled.
2. Install the pivot pin in the top hinge bracket. Slide the door up into the top pivot pin and allow the bottom of door to rest on the bottom hinge bracket.
3. Re-install the bottom hinge bracket pivot pin.



## ADJUST SWING TENSION

### Step 5

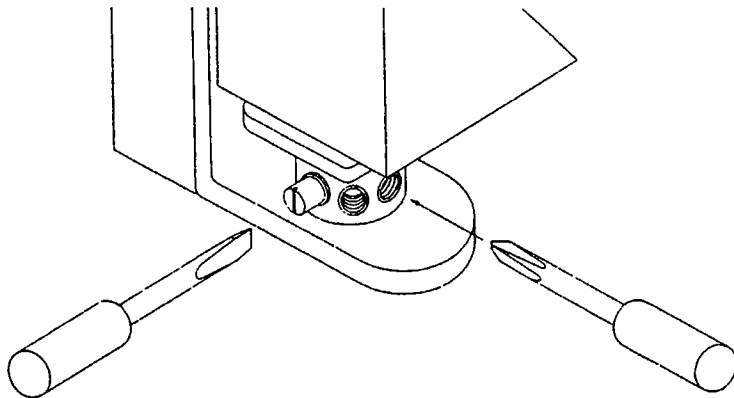
#### Adjust Solid Door Spring Tension.

1. Tighten the spring tension by turning the tension pin, one hole at a time, with a Phillips screwdriver the same diameter as the holes until you begin to feel tension.

Continue turning the tension pin approximately one full turn. Maximum turns after tension must not exceed 1 and 1/2 turns.

**Important:** Do not overtighten the spring.

2. Screw or slide the tension pin, depending on the style you have, into a threaded hole.
3. Be sure the door swings freely and closes by itself.



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Spring Tension Pin

## Glass Door

### Glass Door Tension Adjustment

Use hand tools only for the following procedure:

1. Completely release the door tension by turning the door tension adjustment screw clockwise.

2. Open door approximately 2-3 inches.

3. Without touching the door, slowly turn door tension adjustment screw counter-clockwise until door closes.

4. Leave door closed and turn door travel adjustment screw two (2) more full turns counter-clockwise. Door tension is now at the factory setting. If desired, you may increase or decrease door tension slightly from factory setting.

### Glass Door Sag Adjustment

Use hand tools only for the following procedure:

**Important:** To assure that the door(s) close, seal and adjust properly the floor and Reach-In cabinet must be level prior to changing door sag adjustment.

1. When dimensions A and B visually appear equal, no adjustment is necessary.

2. Turn door sag adjustment screw clockwise to increase or counter-clockwise to decrease dimension B to visually match dimension A. Dimension A is non-adjustable.

### Glass Door Removal

#### **Stop! Warning! Stop!**

To prevent cabinet damage and or personal injury, the following steps require two (2) people capable of each lifting a minimum of 75lb (34Kg)

1. Refer to glass door tension adjustment and completely release door tension.

2. Use a needle nose pliers and remove safety snap ring from around the top pin shaft.

3. Use a small flat-head screwdriver to gently pry and remove outer shaft retainer from torque-master.

4. A. Lift door up and slide out of torque-master being careful not to lower the door until hold-open arm stud is disengaged from hold-open arm. (Step 4 B.)

- B. Align hold-open arm stud on door with key hole on hold-open arm and disengage door from hold-open arm.

- C. Lower door down to disengage from top hinge bracket pin.

### Glass Door Installation

#### **Stop! Warning! Stop!**

To prevent cabinet damage and or personal injury, the following steps require two (2) people capable of each lifting a minimum of 75lb (34Kg).

1. Assure both top and bottom hinge brackets are properly and securely mounted to the cabinet. This includes assuring both the top hinge pin and the torque-master are properly mounted to the hinge brackets.

2. Use a small flat-head screwdriver to gently pry and remove the outer shaft retainer from the torque-master.

3. A. Slide door up into top hinge bracket pin.

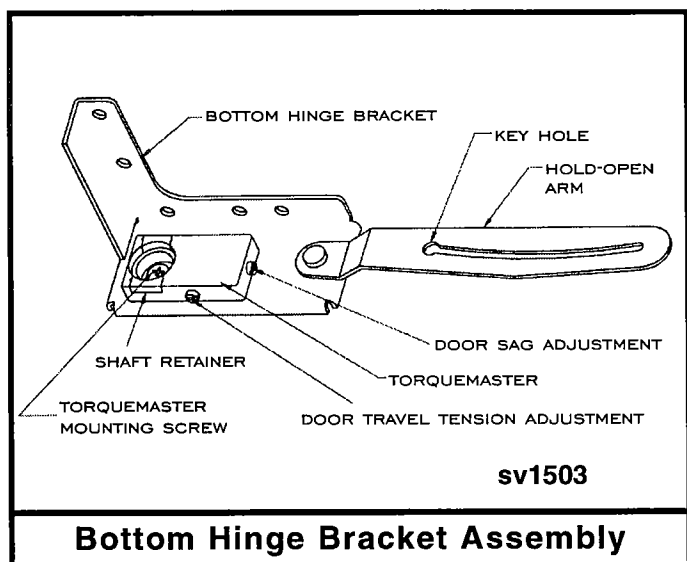
- B. Align hold-open arm stud on door with key hole on hold-open arm and engage door stud into hold-open arm. Be careful not to lower the door and bend hold-open arm until the door is engaged into torque-master. (Step 3 C.)

- C. Lift up on door and slide into torque-master on bottom hinge bracket.

4. Re-install safety snap ring around top pin shaft.

5. Re-install outer shaft retainer into torque-master.

6. Refer to glass door tension and sag adjustments and re-adjust as necessary.



**Bottom Hinge Bracket Assembly**



## Reversing Glass Door Swing

Reversing door swing requires the proper top and bottom hinge bracket assemblies. Order the appropriate hinge assembly kit below to convert door swing.

Convert Swing From	Order Kit Number
Left to Right	K00328 RH Swing Hinge Kit
Right to Left	K00329 LH Swing Hinge Kit

1. Refer to the glass door removal procedures and remove door.

2. Using ½ inch wrench, remove the top hinge pin from bracket assembly. Remove the top hinge bracket from the cabinet. This top hinge bracket assembly is not to be reused. Save the mounting screws for use with the new hinge brackets.

3. Remove torquemaster from bottom hinge assembly by using door sag adjustment to align for access to mounting screw. Remove the bottom hinge bracket from the cabinet. This bottom hinge bracket assembly is not reused. Save the the mounting screws for use with the new hinge brackets.

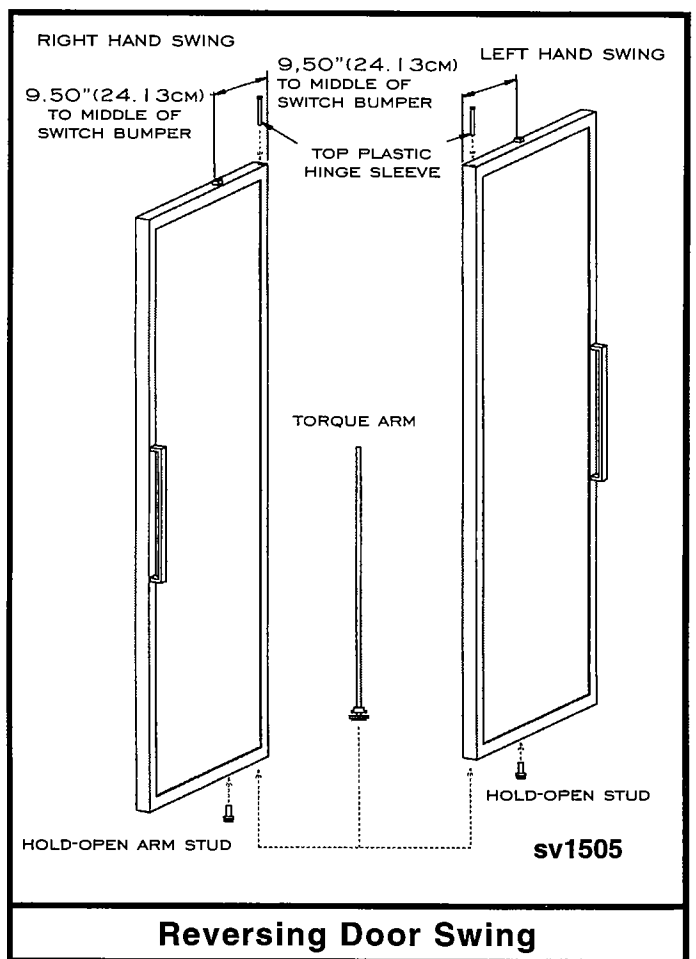
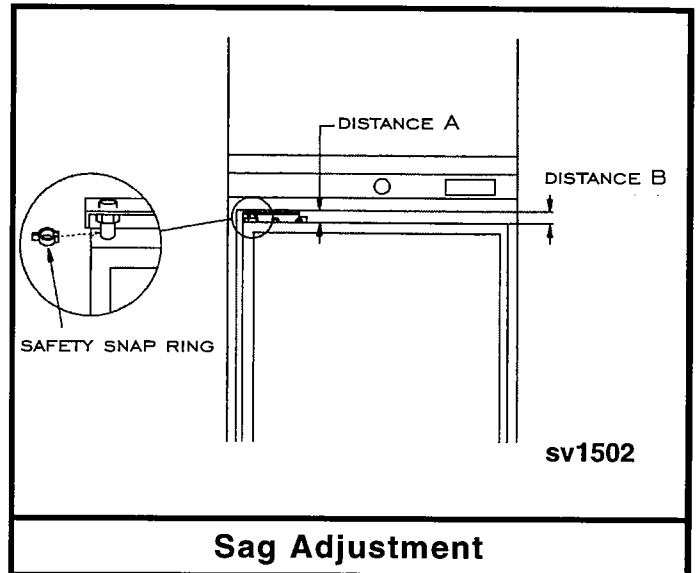
4. Remove hole plugs from new mounting location and install new hole plugs (supplied) into previous mounting holes.

5. Refer to steps 2 and 3 above to install new top and bottom hinge brackets.

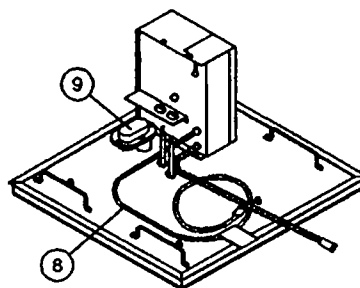
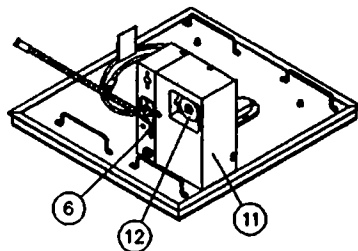
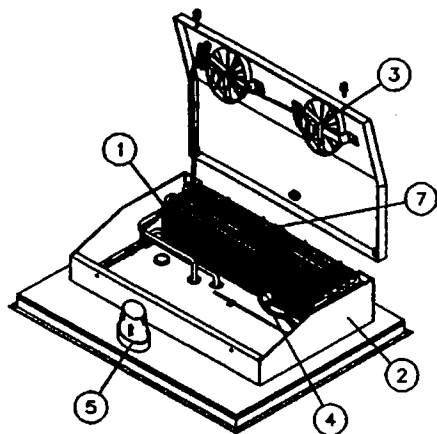
6. Remove and re-configure the top plastic hinge sleeve, torque rod, and hold-open arm stud on door as shown for proper swing.

7. Mount new door switch bumper on the door as shown.

8. Refer to the glass door installation procedures and re-install door onto the cabinet.



## Remote Model Refrigerator/Freezers



sv1480

### Remote Refrigerator/Freezer Components

#### Remote Evaporator Section Components

- |   |                             |  |
|---|-----------------------------|--|
| 1. Evaporator Coil<br>Stub Copper Connections | 6. Main On/Off Switch       | 10. Wiring for Liquid Line<br>Solenoid Valve       |
| 2. Evaporator Housing<br>Freezers Only        | 7. Electric Defrost Heaters | 11. Electrical Control Box                         |
| 3. Evaporator Fan(s)                          | 8. Power Cord - Except FR3  | 12. Defrost Time Clock - Freezers Only             |
| 4. Thermostat                                 | 9. Cabinet Vacuum Release   | 13. Door Heater On/Off Switch<br>Refrigerator Only |
| 5. Interior Cabinet Light                     |                             |  |

#### Field Supplied Components

- |                           |                                     |  |
|---------------------------|-------------------------------------|--|
| 1. Remote Condensing Unit | 4. Liquid Line Solenoid - Pump Down | 7. Separate Power Supply   |
| 2. Expansion Valve        | 5. Low Pressure Cut-Out Control     | 8. Other parts or hardware required<br>to complete the installation. |
| 3. Liquid Line Drier      | 6. Inter-Connecting Tubing          |  |

### Remote Model Refrigerator Specifications

	Refrigerator Evaporator Section Model Number		
	RR1	RR2	RR3
Voltage of Evaporator Section	115/60/1	115/60/1	115/60/1
Power Cord N.E.M.A. Plug Configuration	5-15P	5-15P	5-15P
Total Amperage Evaporator Section Only	Total Amps 1.8	Total Amps 3.2	Total Amps 3.8
Suppled voltage for Liquid Line Solenoid	115/60/1	115/60/1	115/60/1
Remote Condensing Unit Power Supply	Separate Power Supply Refer to condensing unit manufacturer for specifications.		
Minimum BTU/Hour*	2,500	3,800	6,300
	Rating at 30°F/-1.1°C Evaporator		
Nominal HP Rating (Horse Power)	1/3 HP	1/2 HP	3/4 HP
Refrigerant Compatibility	The evaporators have pressure ratings compatible with: R-134A R-22 R-402B R-404A R-507		
Type of Expansion Valve Required	Internally Equalized	Internally Equalized	Internally Equalized

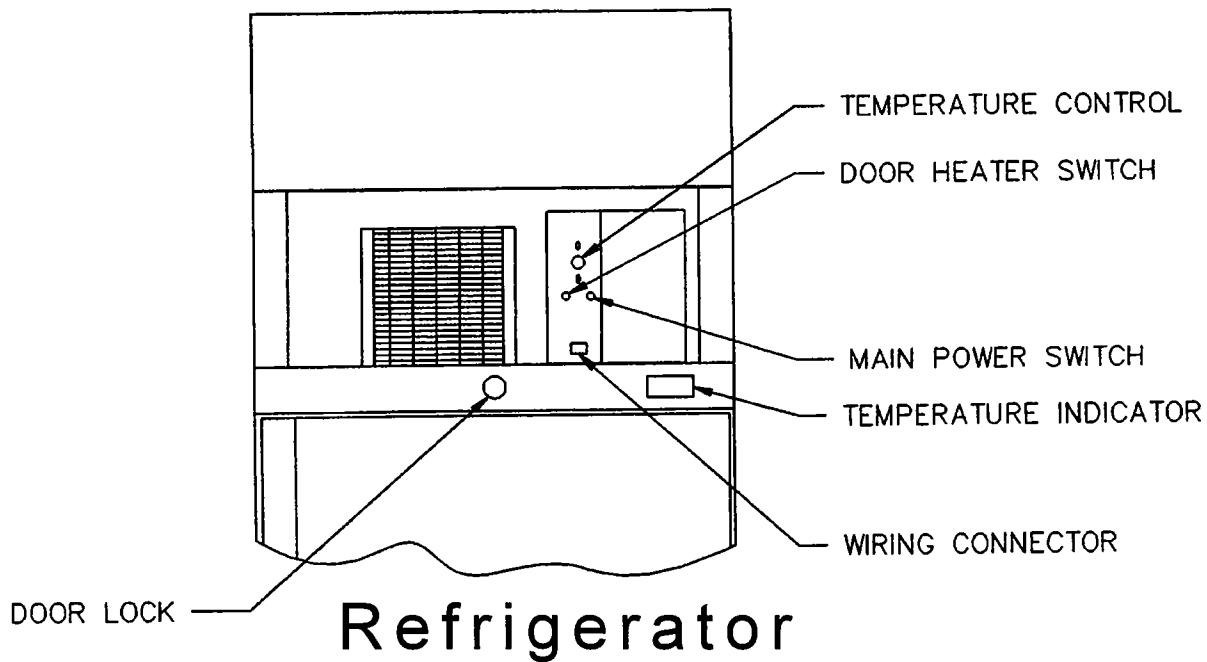
\* Based on Reach-In Cabinet operating in a 100°F room temperature.

<b>Remote Model Freezer Specifications</b>			
	<b>Freezer Evaporator Section Model Number</b>		
	<b>FR1</b>	<b>FR2</b>	<b>FR3</b>
Voltage of Evaporator Section	115/60/1	115/60/1	115/208-230/60/1
Power Cord N.E.M.A. Plug Configuration	5-15P	5-20P	No Power Cord Hard Wired
Total Amperage Evaporator Section Only	Total Amps 6.8	Total Amps 14.3	Min. Circuit Amps 10.9 Max. Fuse Size 15
Supplied voltage for Liquid Line Solenoid	115/60/1	115/60/1	115/60/1
Remote Condensing Unit Power Supply	Separate Power Supply Refer to condensing unit manufacturer for specifications.		
Minimum BTU/Hour*	3,900	5,100	9,000
	Rating at -10°F/-23.3°C Evaporator		
Nominal HP Rating (Horse Power)	3/4 HP	1 HP	1 1/2 HP
Refrigerant Compatibility**	The evaporators have pressure ratings compatible with: R-134A   R-22   R-402B   R-404A   R-507		
Type of Expansion Valve Required	Internally Equalized	Internally Equalized	Externally Equalized

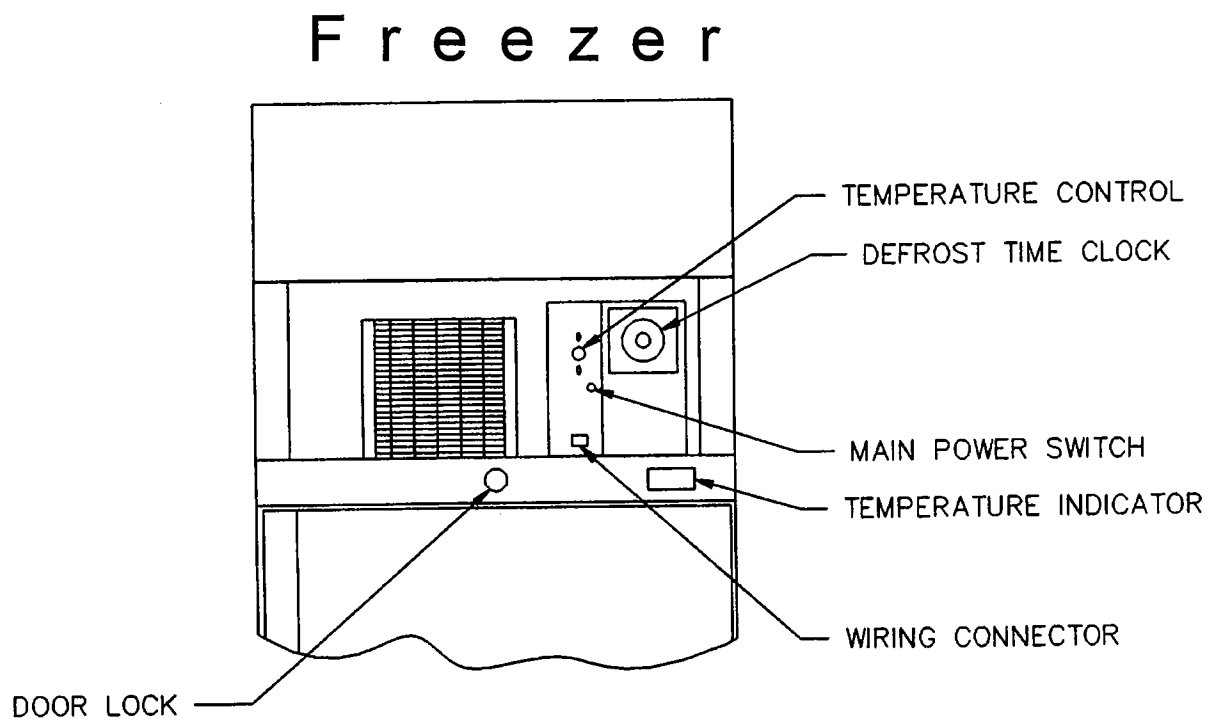
\* Based on Reach-In Cabinet operating in a 100°F room temperature.

\*\* FR3: The evaporator refrigerant distributor provided is compatible with R-402A, R-402B, R-404A, and R-507.

# Owner/Operator Use and Care Guide



### Control Identification and Location



sv1484

## Refrigerator Temperature Control

Adjust the internal cabinet temperature by rotating the cold control. Refrigerators are designed to maintain an inside temperature of approximately 38° F.

**Warning:** A temperature control set at its coldest setting may cause the evaporator area to ice up. Turn the control to a warmer setting if refrigerator evaporator accumulates ice build-up or the inside cabinet temperature falls below freezing.

## Freezer Temperature Control

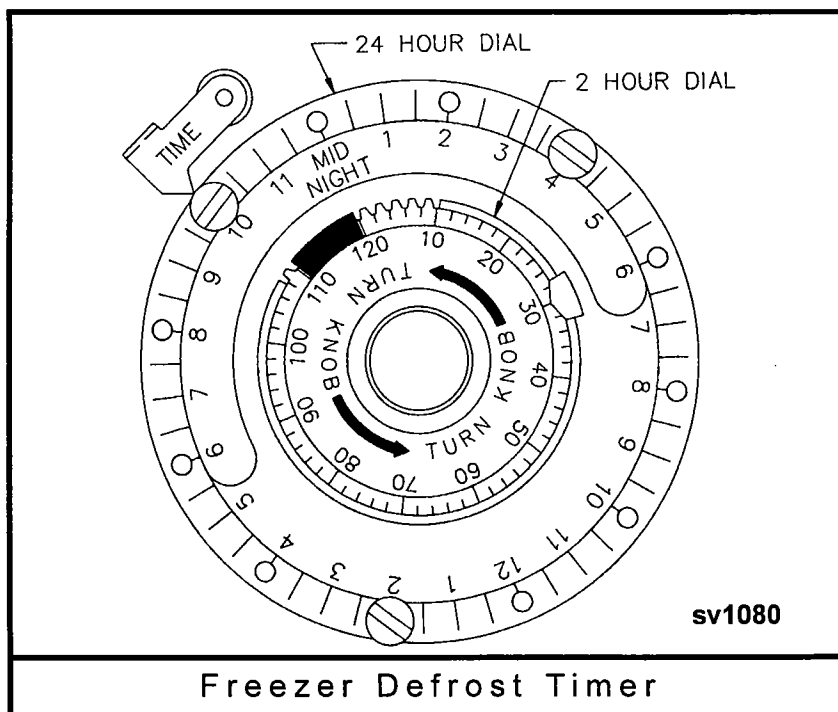
Rotate the cold control to increase or decrease the internal cabinet temperature. Manitowoc freezers are designed to maintain an inside temperature of approximately 0° F. Freezers require a defrost cycle to remove frost from the evaporator coil. Heating elements are positioned on the coil surface that, when energized, defrost the coil.

## Freezer Defrost Timer Settings

The automatic defrost cycle is preset to defrost the evaporator at the same times every day. The defrost timer must be reset to the correct time if the freezer is turned off or loses power. To set the time, grasp the knob in the center of the inner two-hour dial. Turn it counterclockwise to rotate the outer dial. Line up the current time of day on the outer dial with the time pointer.

### Setting Defrost Cycles:

If you wish to change the defrost times or if more defrosts are required, remove the pins from the outer (large) dial and insert them into the time slot(s) required. Be sure to adjust the defrost times to maintain the same operational time between each defrost period.



### Number of Defrost Cycles Per Day

The automatic defrost cycle is preset to defrost the evaporator three times each day; 10:00 P.M., 4:00 A.M. and once again at 2:00 P.M.

**Caution:** Leave at least one (1) hole between adjacent pins.

### Adjusting Defrost Safety Termination

The defrost cycle is normally terminated by a thermodisc and is automatically terminated if a system malfunction occurs. Backup defrost termination is preset at the factory for a 30-minute maximum defrost cycle. Normally, no adjustment is needed. The backup safety defrost length can be reset by pressing down on the inner (two-hour) dial pointer and rotating the pointer until the desired safety time is lined up with the pointer.

## LOADING SHELVES

Load the shelves with space between rows of product to allow chilled air to move around inside the cabinet.

**Caution:** Do not load the shelves with an excess of 125 pounds per shelf.

**Caution:** Acidic products or products containing vinegar must be stored in sealed containers to prevent acid damage to the evaporator coil.

## LIGHT BULB REPLACEMENT

Follow the steps below for easy removal and replacement of the light bulb and its protective cover.

1. Unscrew the light bulb's protective cover and remove it.
2. Remove the spent light bulb and replace it with another 40-watt appliance light bulb.
3. Re-install the light bulb's protective cover.

## Door Heaters

**Freezer:** The door heater wire is connected directly to the power supply and will be on any time the main power supply switch is on.

**Refrigerator:** The refrigerator door heater is controlled by a toggle switch on the front of the electrical box and may be turned on and off as needed.

## INTERIOR/EXTERIOR CLEANING

Mild hand soap and warm water may be safely applied to any of the Reach-In interior or exterior surfaces.

**Caution:** Never apply steel wool, strong acids, or abrasive cleaners.

## CONDENSER CLEANING

A dirty condenser restricts airflow, resulting in excessively high operating temperatures. This reduces efficiency and shortens component life. The washable aluminum filter is designed to catch dust, dirt, lint, and grease. This helps keep the condenser clean.

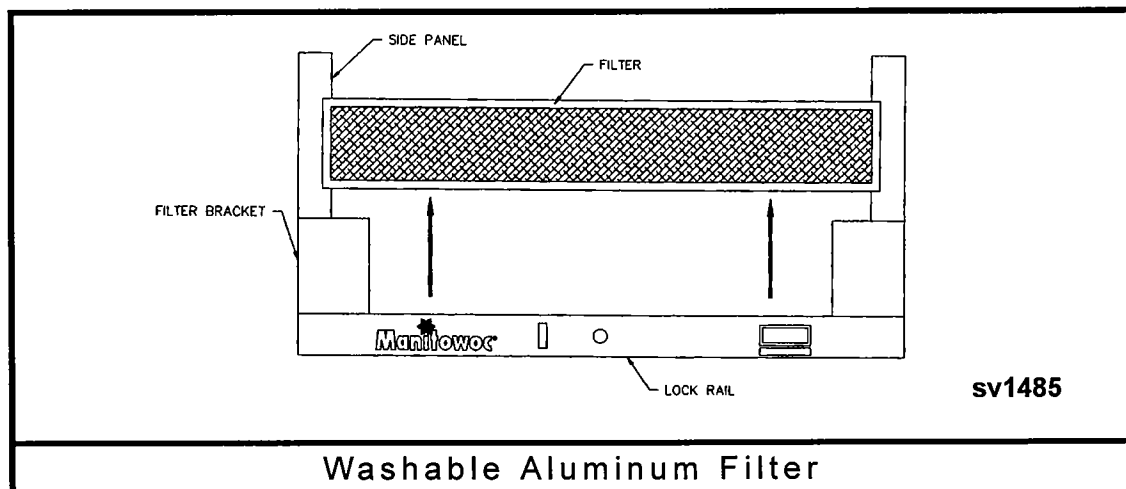
**Warning:** Disconnect the electric power to the reach-in before cleaning the condenser.

**Caution:** The condenser fins are sharp. Use care when cleaning them.

## Cleaning Procedures

The condenser should be cleaned monthly.

1. Clean the filter with a mild soap and water solution.



2. Clean the outside of the condenser with a soft brush or a vacuum with a brush attachment. Brush or wash the condenser from top to bottom - not from side to side. Be careful not to bend the fins. Shine a flashlight through the condenser to check for dirt between the fins.

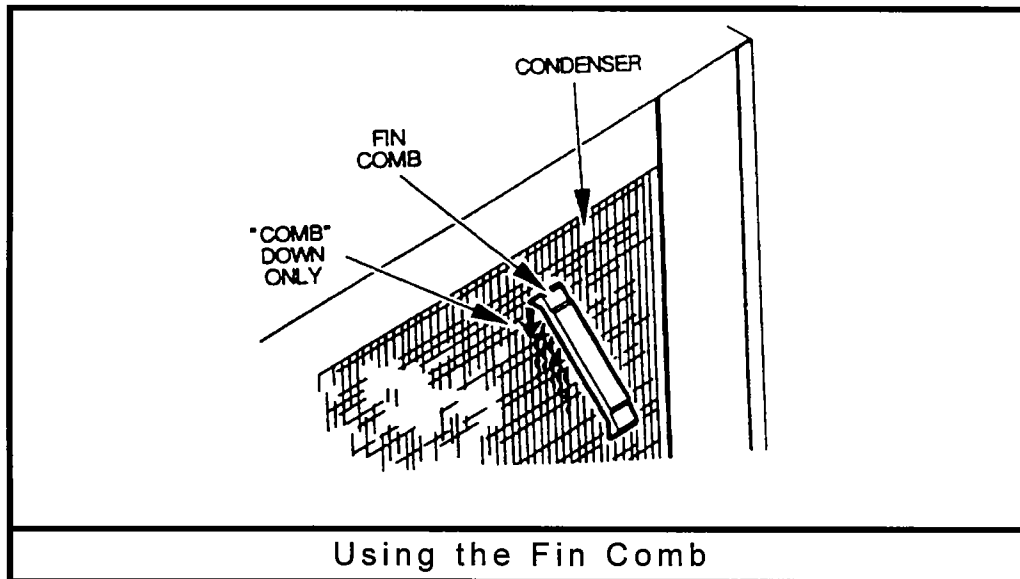
**Note:** If further cleaning is required, use one or both of the following procedures:

Blow compressed air through the condenser from the inside. Take care not to bend the fan blades. Shine a flashlight through the condenser to check that all the dirt is removed.

Or

Clean with a commercial condenser coil cleaner, according to the directions and cautions supplied with the cleaner.

3. Straighten any bent condenser fins with a fin comb.



4. Carefully wipe off the fan blades and motor with a soft cloth, taking care not to bend the fan blades. Wash excessively dirty fan blades with warm soapy water, then rinse thoroughly.

**Caution:** If you are cleaning the condenser fan blades, cover the fan motor to prevent water damage.



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