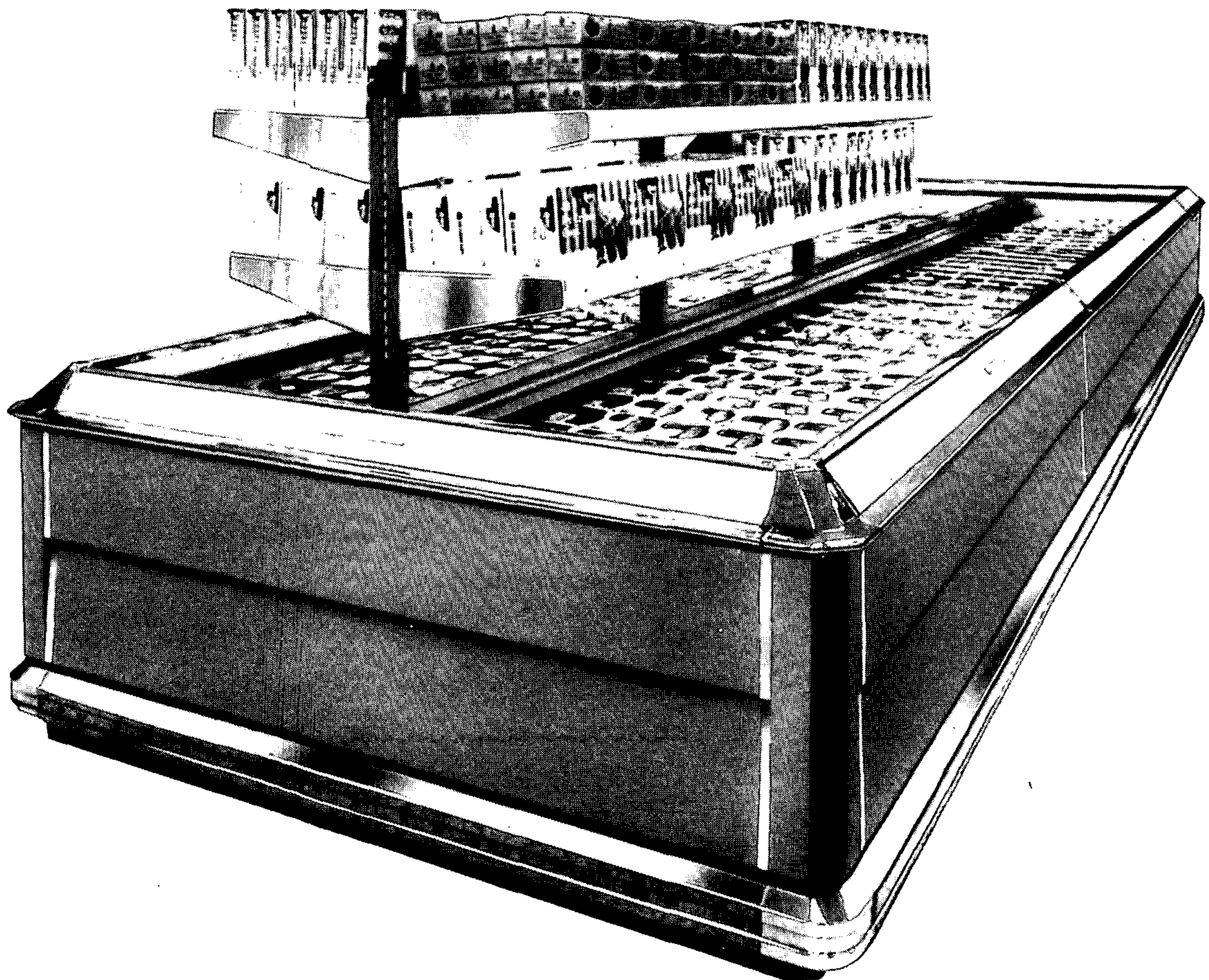


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**GW1, GW1C, GW1T  
GW1E, GW1EC & GW1TE**

REFRIGERATED MERCHANDISERS  
For  
ICE CREAM & FROZEN FOOD

**INSTALLATION / SERVICE INSTRUCTIONS**

**ENG. NO. 358020**

May, 1992  
Supersedes #252615J  
Dated March, 1988  
Section 3



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**WARRANTY**

## MODEL DESCRIPTION

This instruction covers the merchandisers listed below. Basic design features are listed to the right of each merchandiser.

GW18 & GW12	Frozen Food Wide Island Display
GW18C & GW12C*	Ice Cream Wide Island Display
GWIT8 & GWIT12*	Frozen Food and Ice Cream Wide Island Display (Twin temperature)
GWIE90 & GWIE138	Frozen Food Wide Island Display with Unitized End Case
GWIE90C & GWIE138C	Ice Cream Wide Island Display with Unitized End Case
GWITE90 & GWITE138*	Frozen Food and Ice Cream Wide Island Display with Unitized End Case (Twin temperature)

\* Night covers are supplied for ice cream applications.

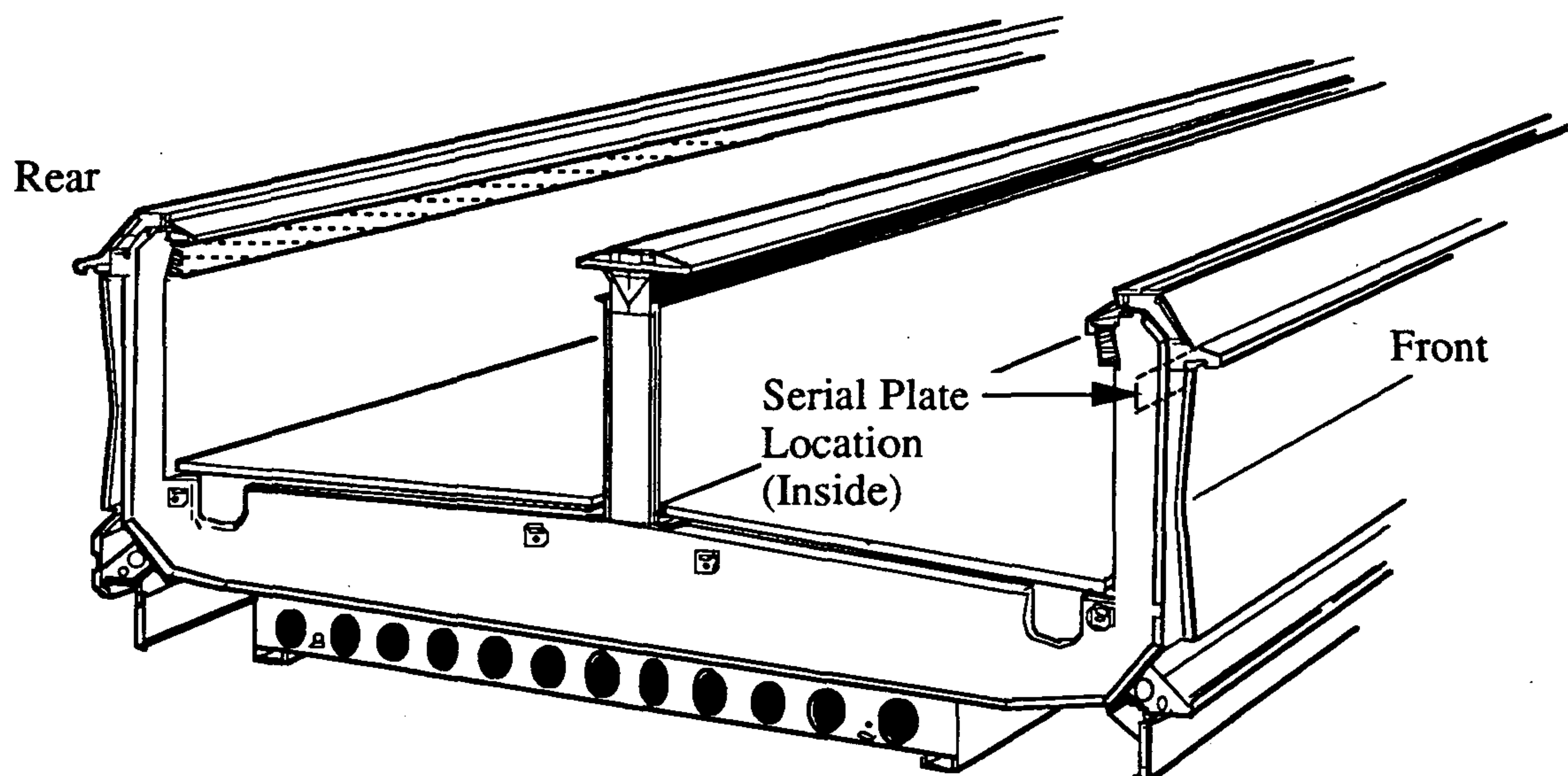
The GWI and GWIT are single-deck, island-type refrigerated merchandisers of frozen food and ice cream.

The GWI models are single temperature merchandisers of either frozen food or ice cream.

The GWIT models are twin temperature merchandisers, equipped to display frozen food and ice cream simultaneously on opposite sides of the center insulated partition.

## APPLICATION

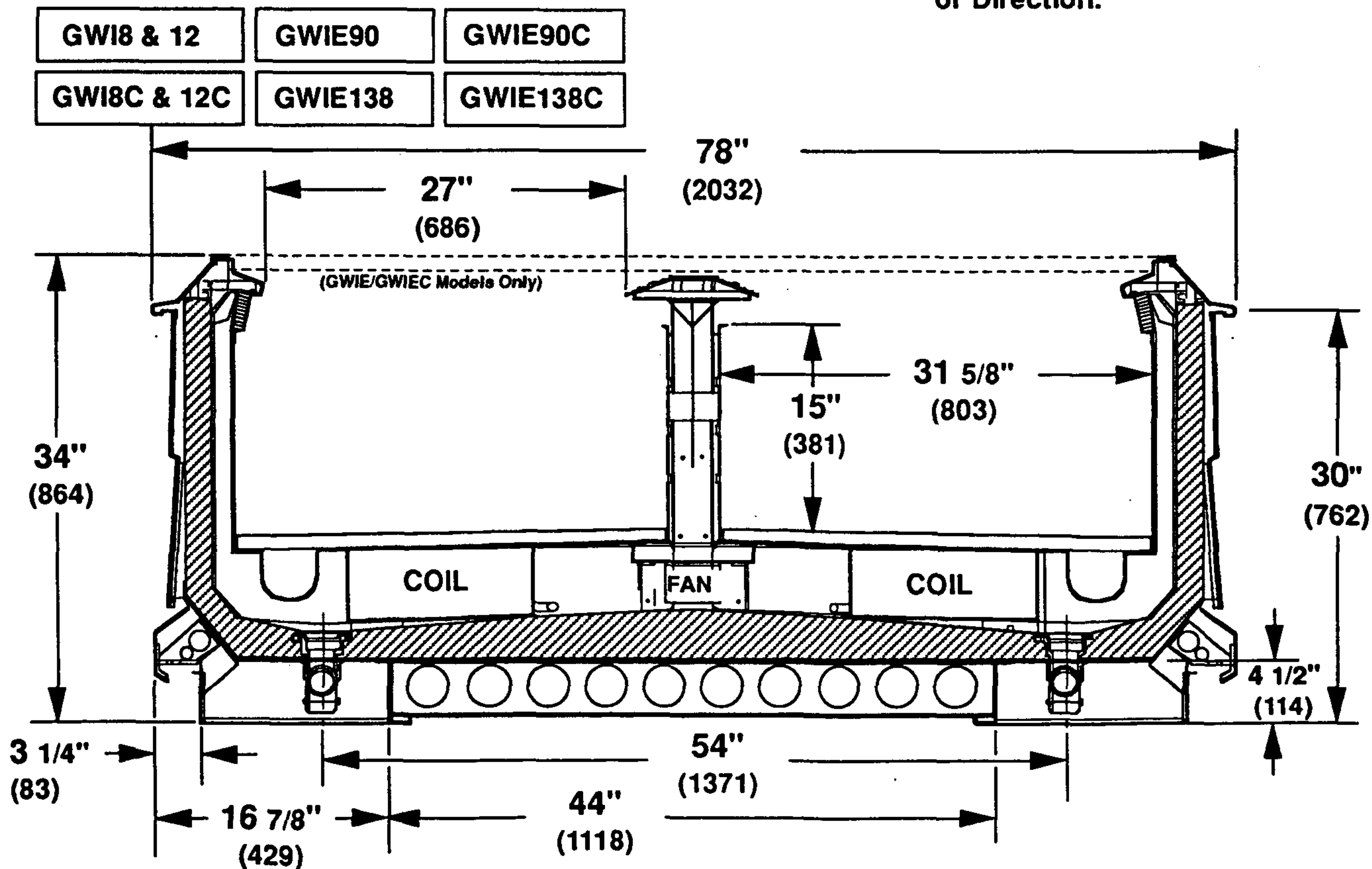
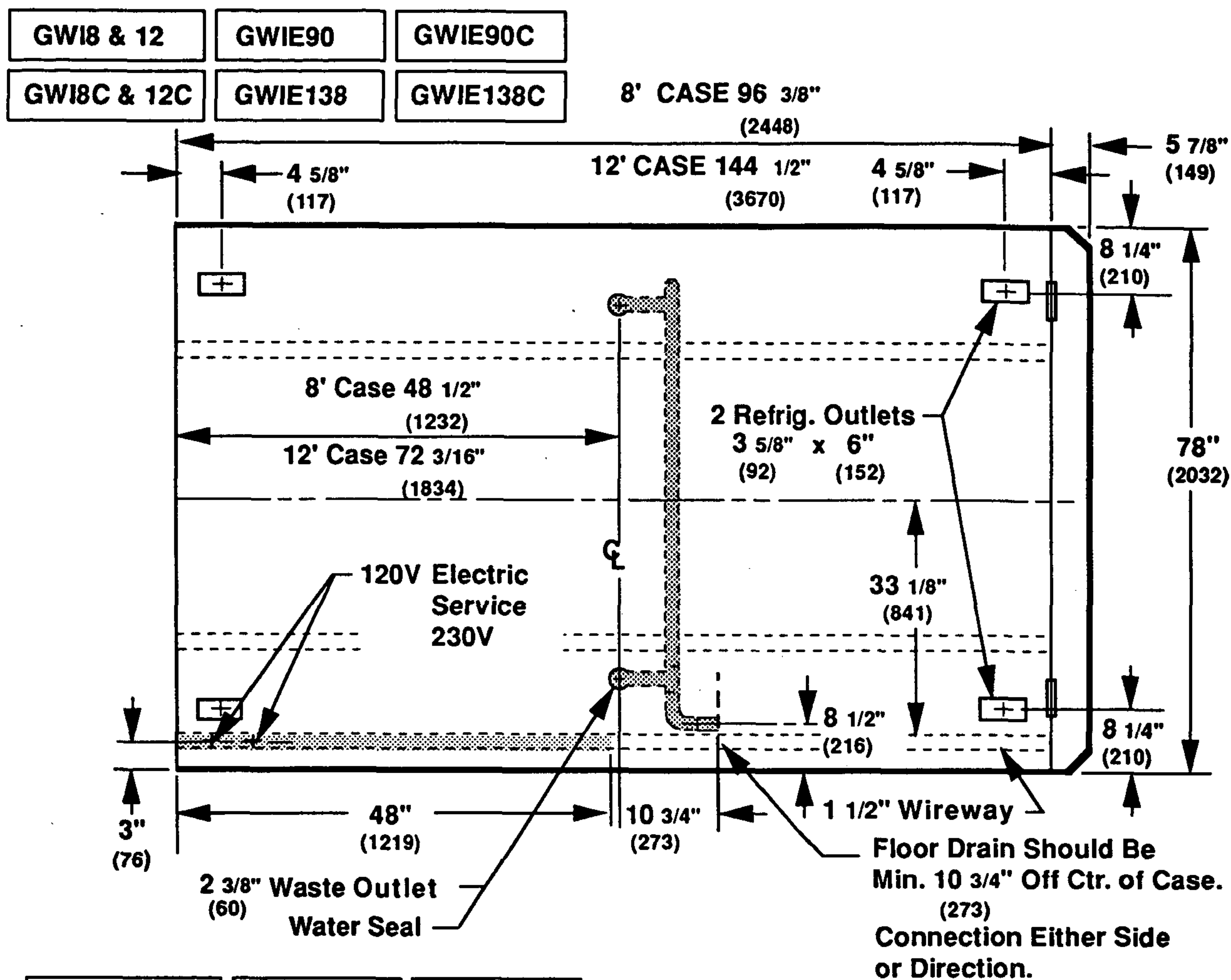
These models have been designed for use in air conditioned stores where temperatures and humidity are maintained at or below 75°F and 55% relative humidity.

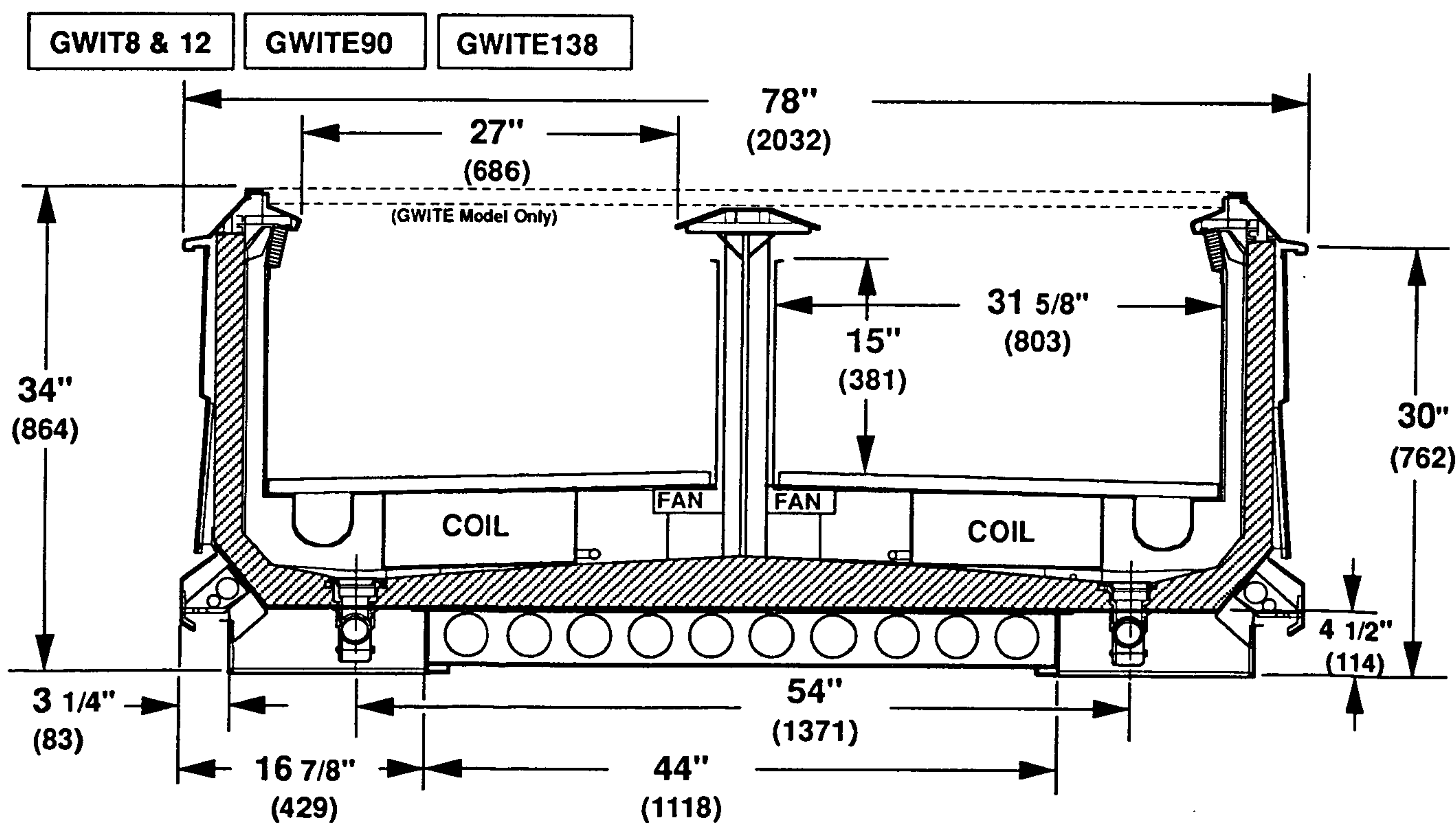
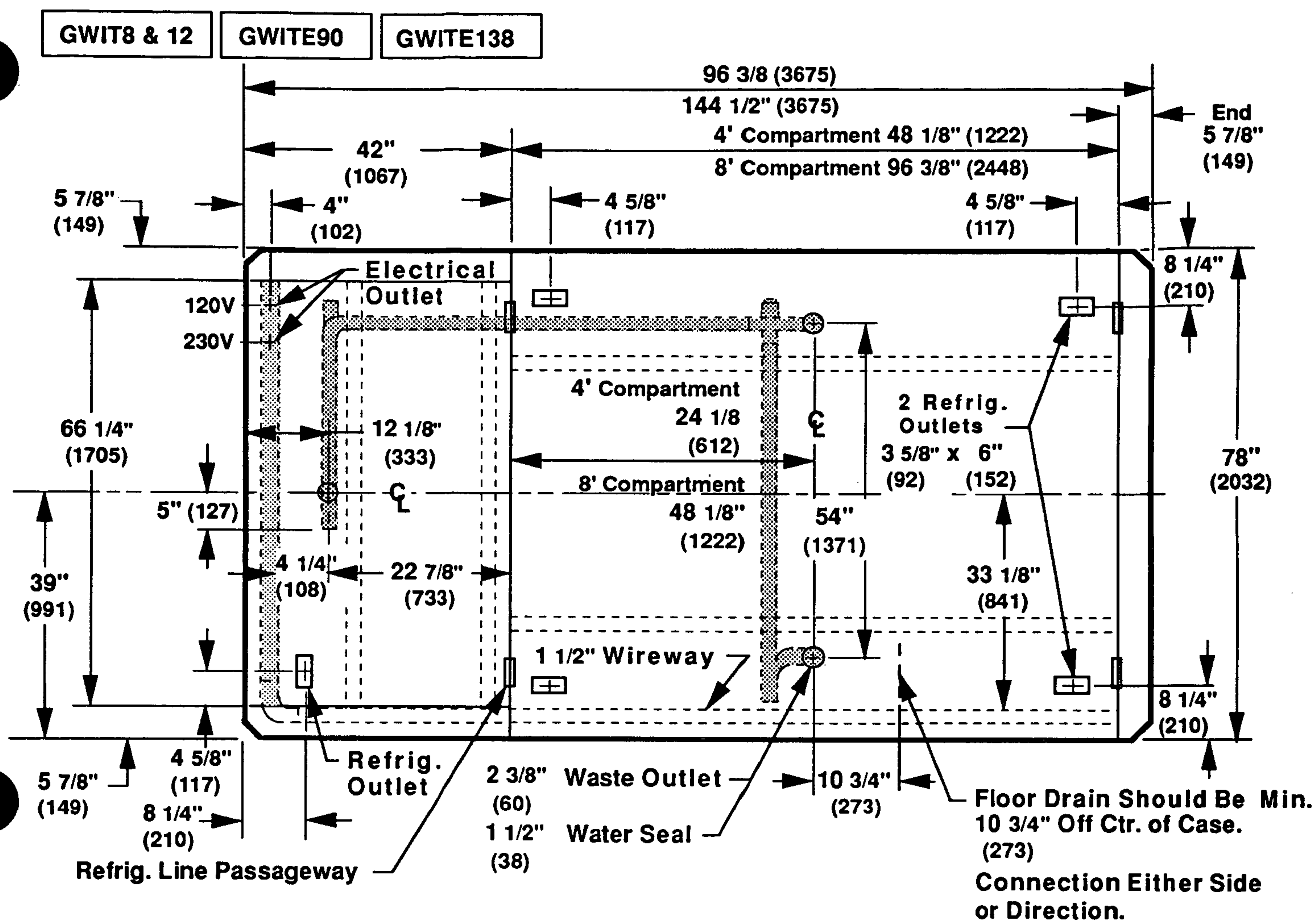




# General Information

1-2







## SHIPPING DAMAGE

All equipment should be thoroughly examined for shipping damage before and during unloading.

This equipment has been carefully inspected at our factory and the carrier has assumed responsibility for safe arrival. If damaged, either apparent or concealed, claim must be made to the carrier.

### Apparent Loss Or Damage

If there is an obvious loss or damage, it must be noted on the freight bill or express receipt and signed by the carrier's agent; otherwise, carrier may refuse claim. The carrier will supply necessary forms.

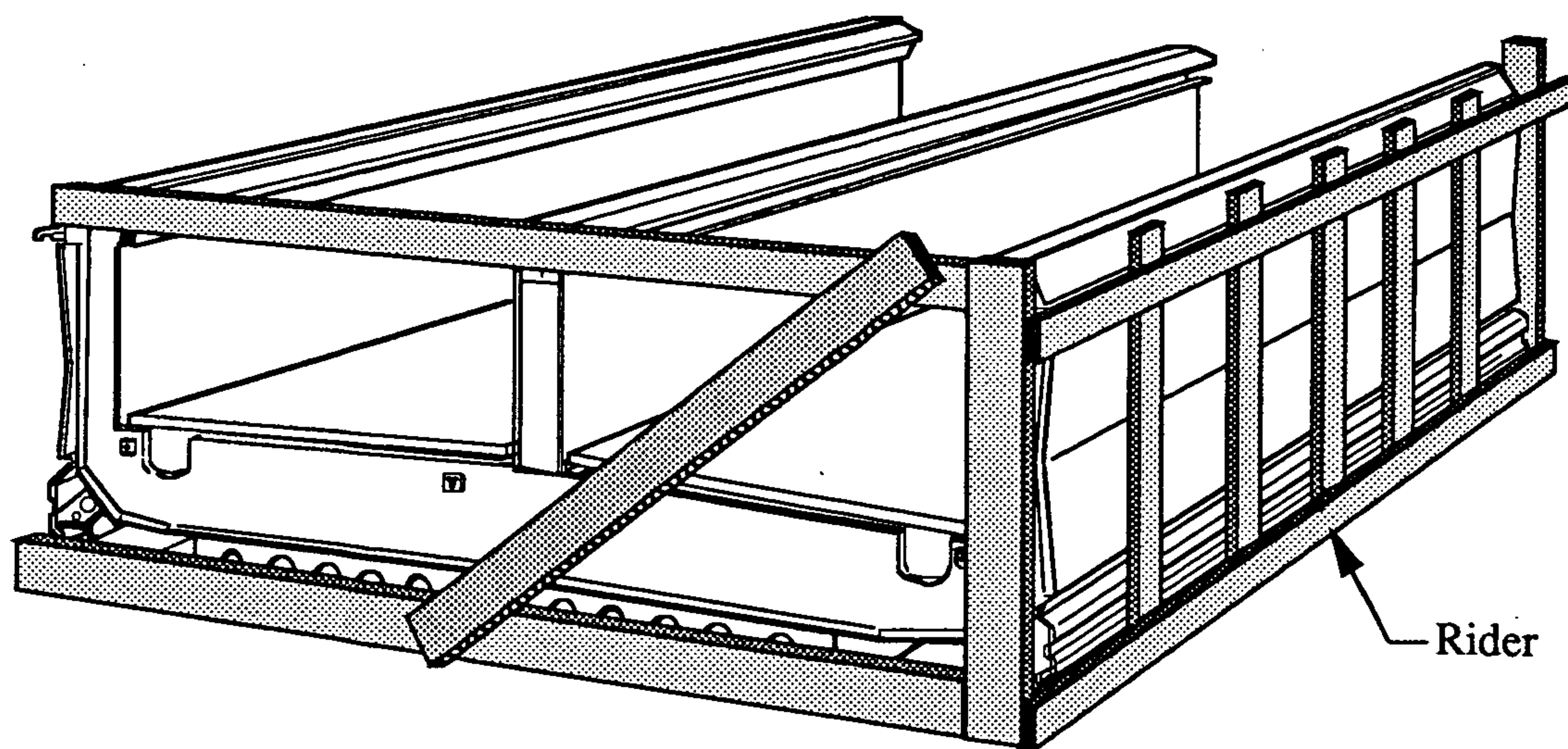
### Concealed Loss Or Damage

When loss or damage is not apparent until after equipment is uncrated, a claim for concealed damage is made. Upon discovering damage, make request in writing to carrier for inspection within 15 days and retain all packaing. The carrier will supply inspection report and required claim forms.

**WARNING:** Exercise caution at all times when moving merchandisers shipped with "L" shaped riders. They are top heavy and should never be left in the vertical position.

## SHIPPING BRACES

Move the merchandiser as close as possible to its permanent location and then remove all packaging and shipping braces. Check for damage before discarding packaging. Remove all separately packed accessories such as kits and shelves.



## Installation

2-2

### LOCATION

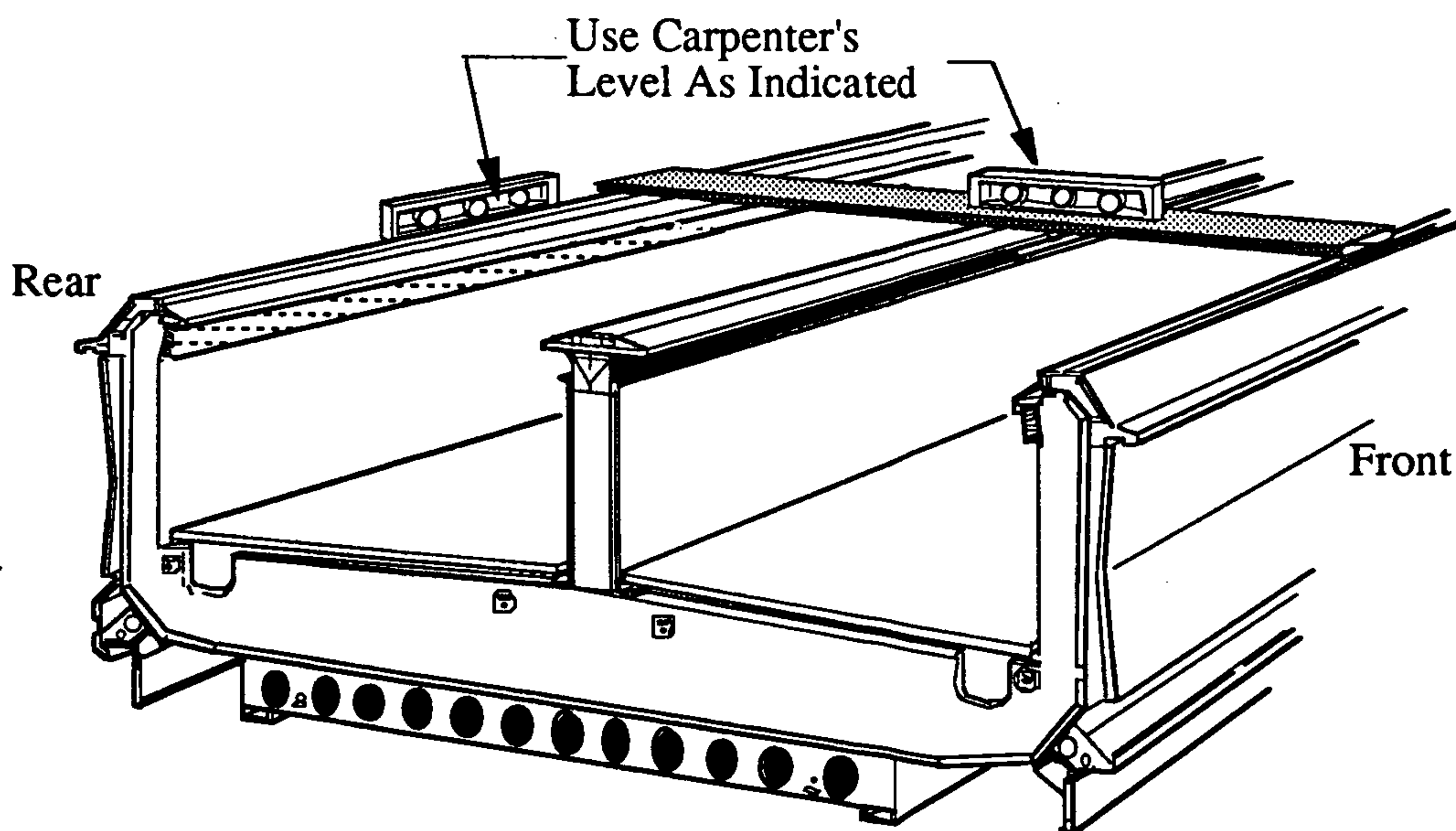
All open merchandisers are sensitive to store air movement. Do not allow air conditioning, electric fans, open doors or windows, etc., to create air currents around these merchandisers.

### LEVELING

Their physical setting and joining is covered in installation instructions contained in the End, Joint and Partition Kits. **MERCHANDISERS MUST BE INSTALLED IN A LEVEL PLANE TO ALLOW PROPER OPERATION OF THE REFRIGERATION COILS AND DRAINING OF DEFROST WATER.** Use a 24-inch carpenter's level, as shown in illustration below, to level. **Note:** To avoid removing concrete flooring, begin lineup leveling from the highest point of the store floor.

### JOINING

These merchandisers are of sectional construction; two or more may be joined in line to give one continuous display with one pair of end assemblies or unitized end cases. For joining, a joint kit is required. Instructions for joining are provided with each kit.





## WASTE OUTLET AND WATER SEAL

The waste outlet is located as shown on the plan views allowing drip piping to be run under the merchandiser lengthwise, to the front or to the rear.

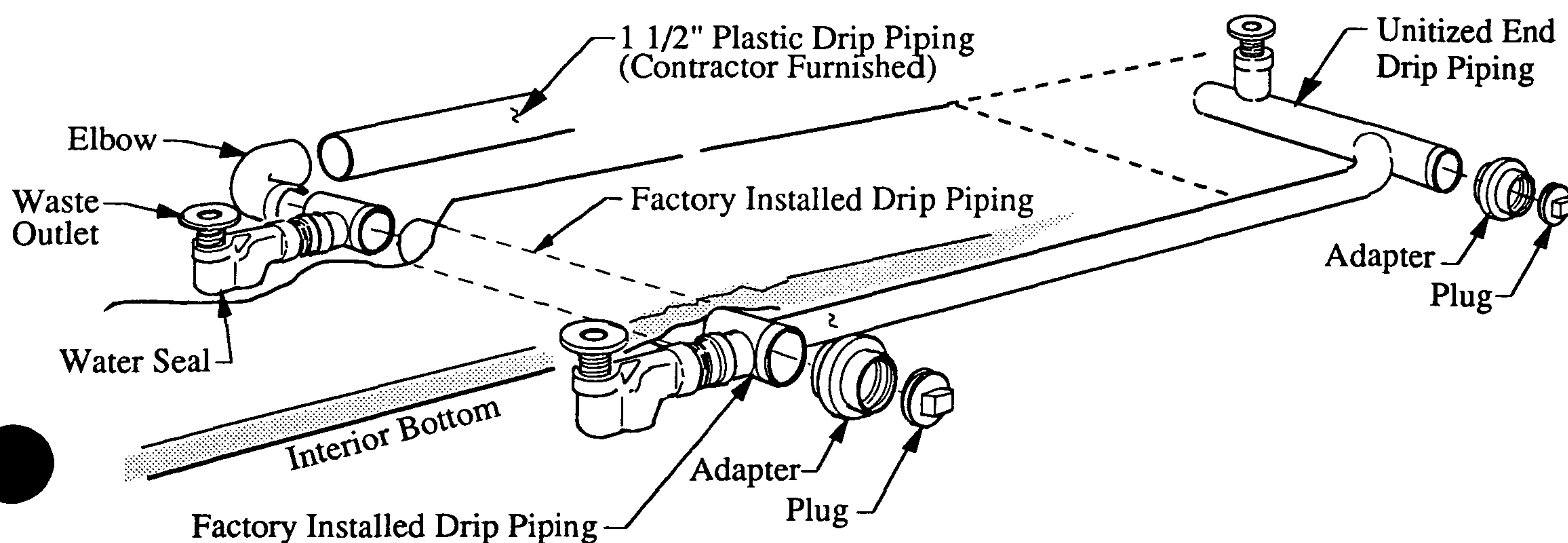
A water seal is supplied with each merchandiser. The water seal must be installed to prevent air leakage and insect entrance into the merchandiser.

**NOTE:** PVC-DWV solvent cement is recommended. Follow the manufacturer's instructions.

## INSTALLING DRIP PIPING

Poorly or improperly installed drip piping can seriously interfere with the operation of the merchandisers and result in costly maintenance and product losses. Please follow the recommendations listed below when installing drip pipes to ensure proper installation

1. Merchandisers are sized for 1 1/2" drip piping. Never use pipe smaller than the nominal diameter of the pipe or water seal supplied with the merchandiser.
2. Store plumbing system floor drains should be at least 1 1/2" off center of merchandiser to allow use of the water seal pipe section. Never use two water seals in series in any one drip pipe. Double water seals in series will cause an air lock and prevent draining.
3. Pitch the drip piping in the direction of flow. There should be a minimum pitch of 1/8" per foot.
4. Avoid long runs of drip piping. Long runs make it impossible to provide the pitch necessary for good drainage.
5. Provide a suitable air break between flood rim of the floor drain and outlet of drip pipe.
6. Prevent drip pipes from freezing:
  - A. Do NOT install drip pipes in contact with uninsulated suction lines. Suction lines should be insulated with a non-absorbent insulation material.
  - B. Where pipes are located in dead air spaces, such as between merchandisers or between a merchandiser and a store wall, provide means to prevent freezing.
7. Hussmann supplied Elbow, Adapter and Plug may be installed on either side of factory installed drip piping.



SPLASHGUARD AND BUMPER RAIL PARTS

Item	Quantity				Description
	GWIC	GWIT	GWIE	GWIEC	
	8 ft	12 ft	90	138	
1.	4	8	6	11	Lower Splashguard Retainer – Merchandiser
2.	2	2	3	3	Lower Splashguard – Merchandiser (1 each side)
3.	–	–	2	2	Lower Splashguard – End
4.	–	–	2	2	Lower Splashguard – Corner
5.	2	2	2	2	Bumper Rail
6.	6	8	–	–	#10x3/4" Hex Head Sheet Metal Screw
7.	8	8	–	–	#8x3/4" Hex Head Sheet Metal Screw
8.	–	–	8	8	#8x1/2" Hex Head Sheet Metal Screw
9.	4	8	6	11	Fastener

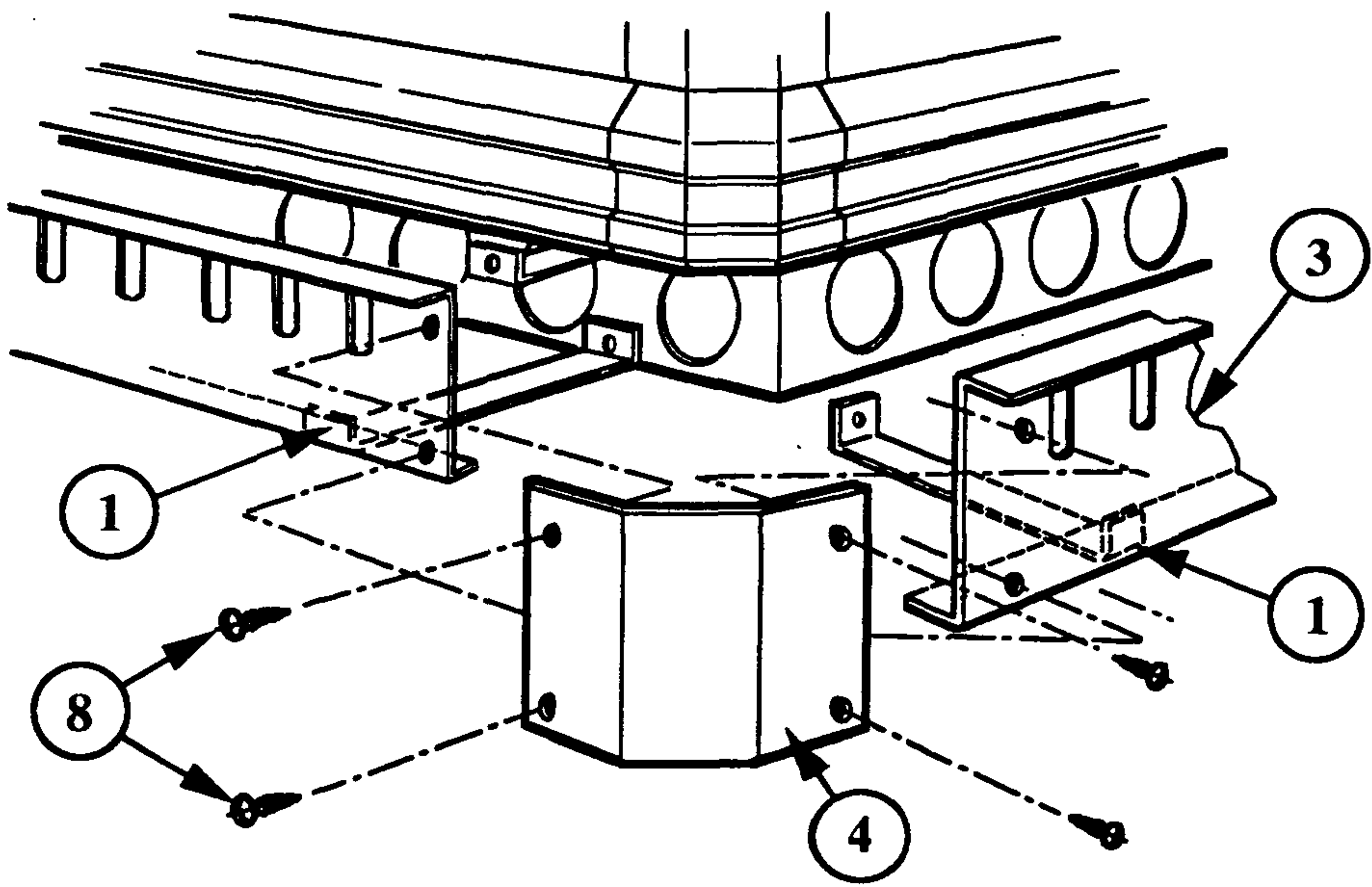
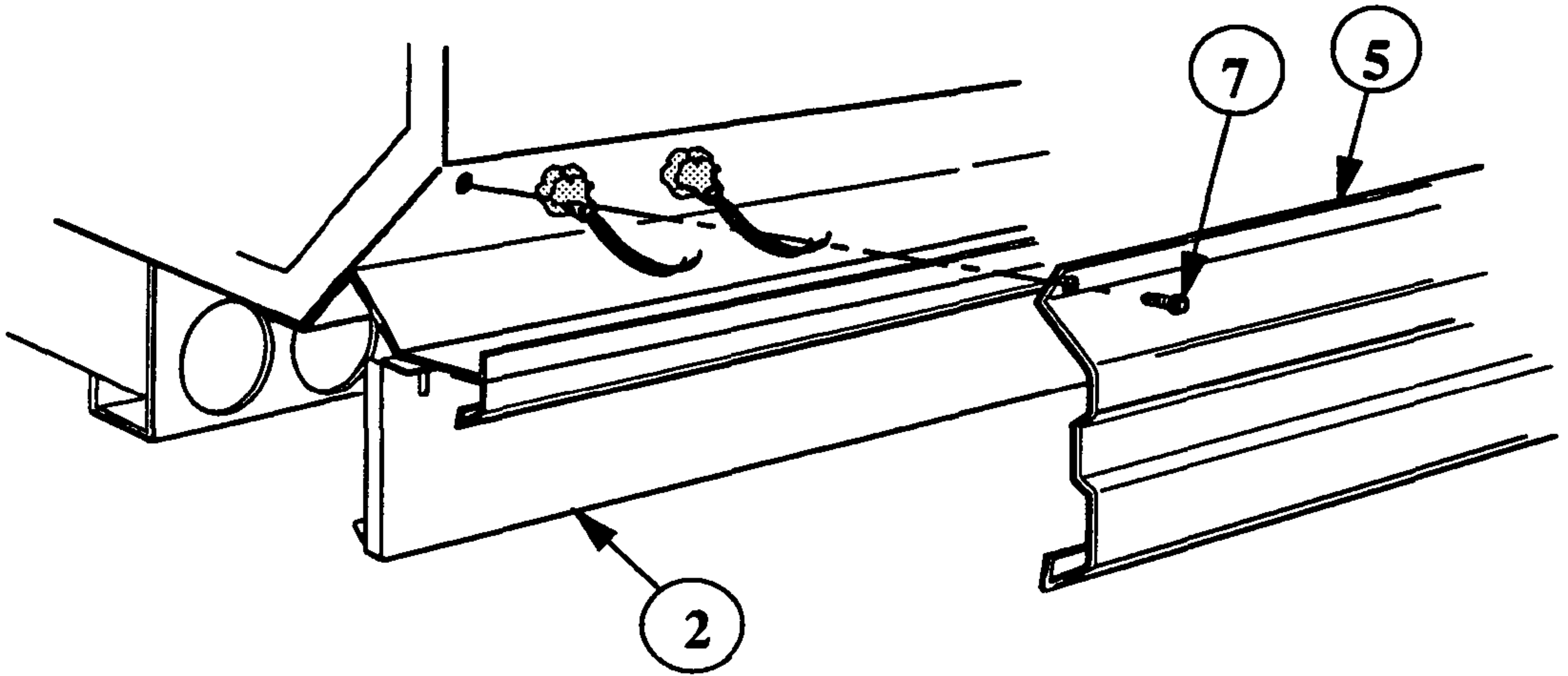
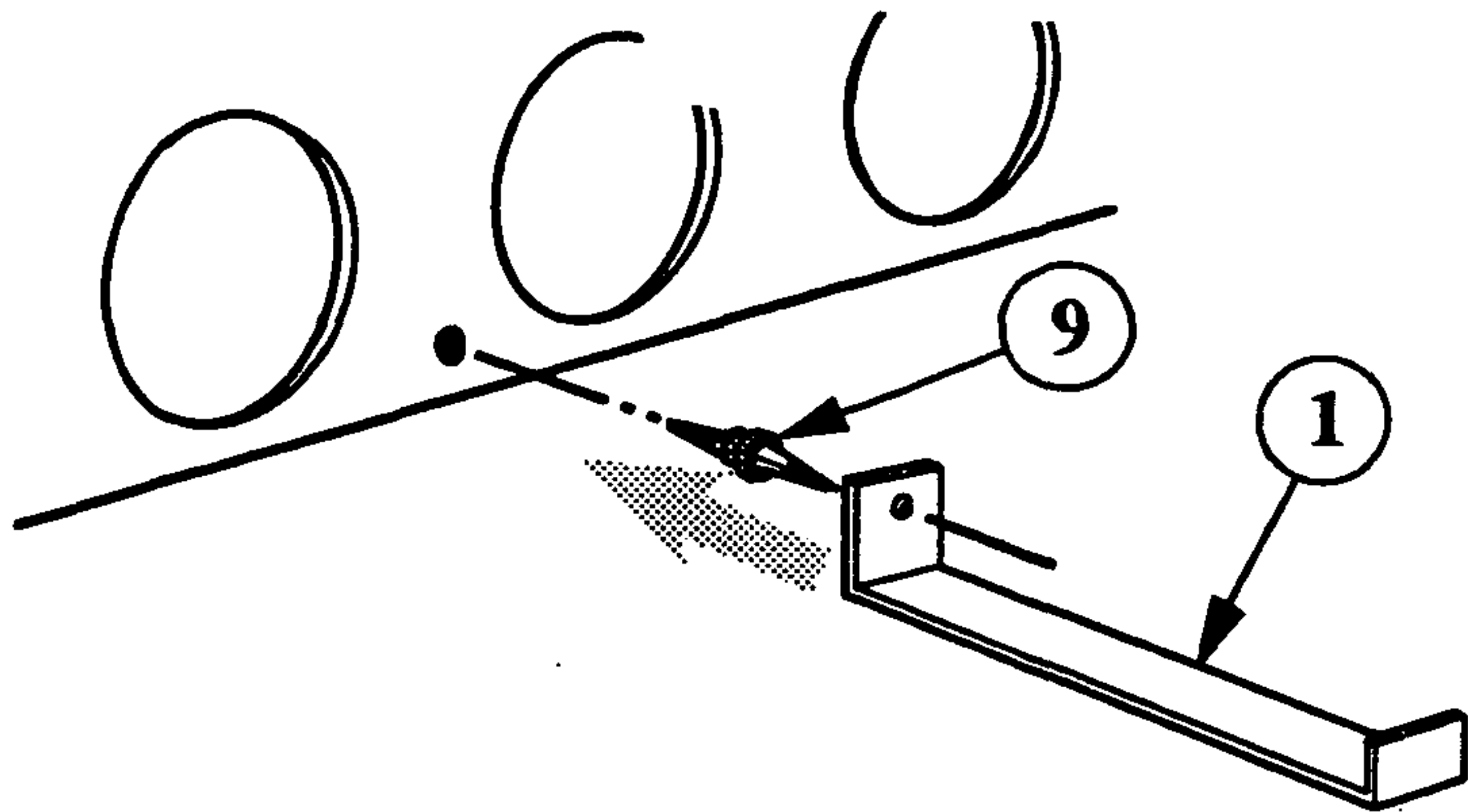
INSTALLING SPLASHGUARDS AND BUMPER RAILS

- (1) To install the Lower Splashguard Retainers – Merchandiser (Item 1):

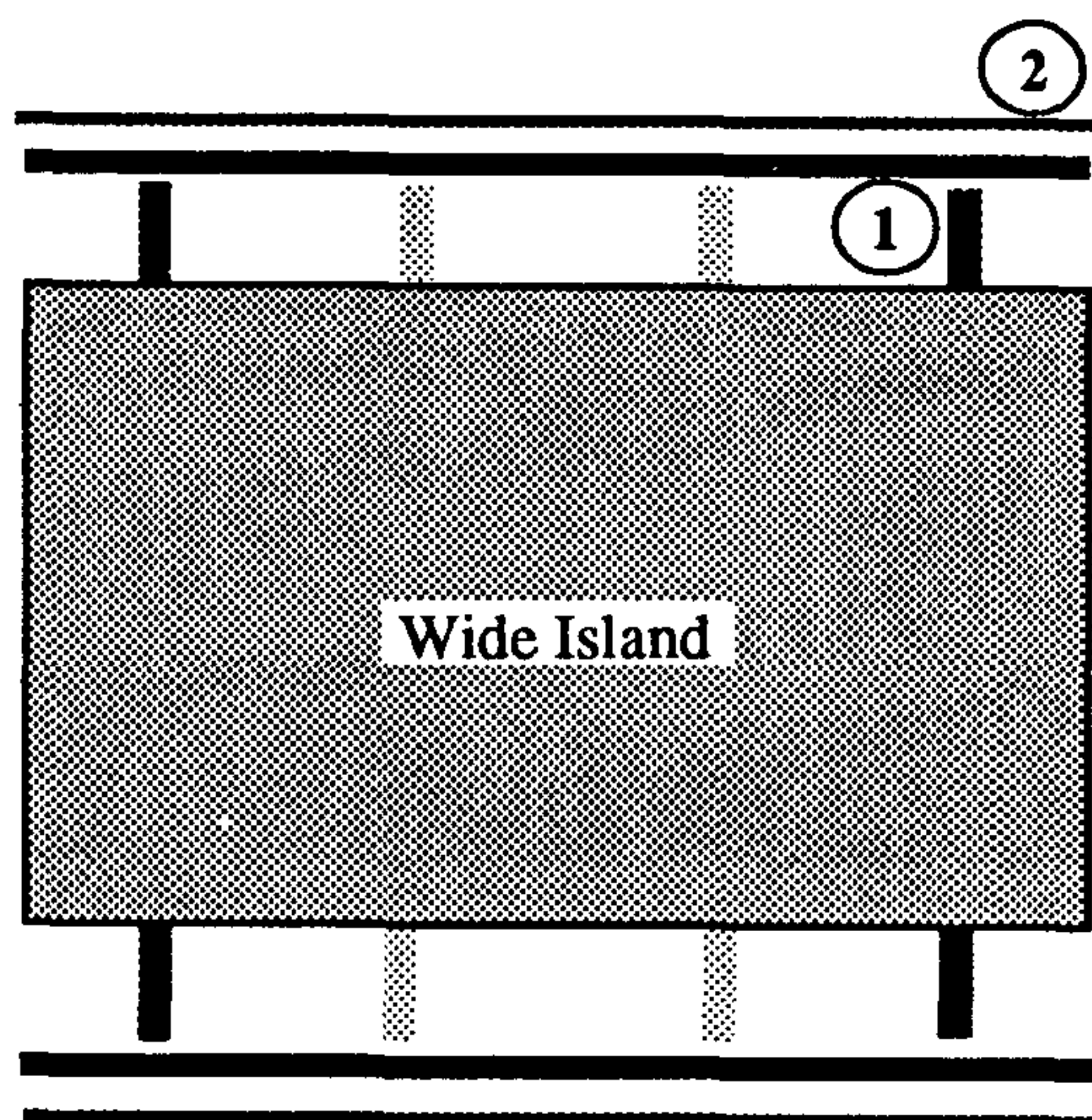
A. Press one end of Plastic Fastener (Item 9) into each retainer, seating completely.

B. Position the opposite end of the fastener to a prelocated base rail hole then tap the end of the retainer with a hammer to seat the fastener. If necessary, temporarily raise the side of the merchandiser slightly while installing.
- (2) Insert Lower Splashguard – Merchandiser (Item 2) onto installed retainers and secure to case mounting brackets with Screws (Item 7).
- (3) Insert Lower Splashguard – End (Item 3) onto retainers and secure to end mounting brackets with Screws (Item 6). Four screws are required per 6 ft merchandiser.
- (4) Install Lower Splashguard Corner (Item 4) with Screws (Item 8). Four screws are required per corner.
- (5) Install Bumper Rail (Item 5) by inserting top edge behind exterior front panel and then hooking bottom over lower retainer. Make sure each Bumper Rail is properly aligned with the others already installed. Drill 1/8" hole for Screws (Item 7) and fasten top end as shown. **Note:** Two bumper rails 4 ft long are supplied with 8 ft and 12 ft cases for joining. Use four screws in each rail. Two bumper rails 2 ft long are supplied with each 6 ft end case. Use two screws in each rail. See drawing for proper location of bumper rails.
- (6) Check overlapping joints of bumper rails for proper alignment when complete. Any misalignment can be corrected by drilling extra holes and adding screws as shown. **Note:** See GWI End Kit Instruction (P/N 145716) for installing End – Bumper Rails and End – Splashguards on 8 ft and 12 ft cases.

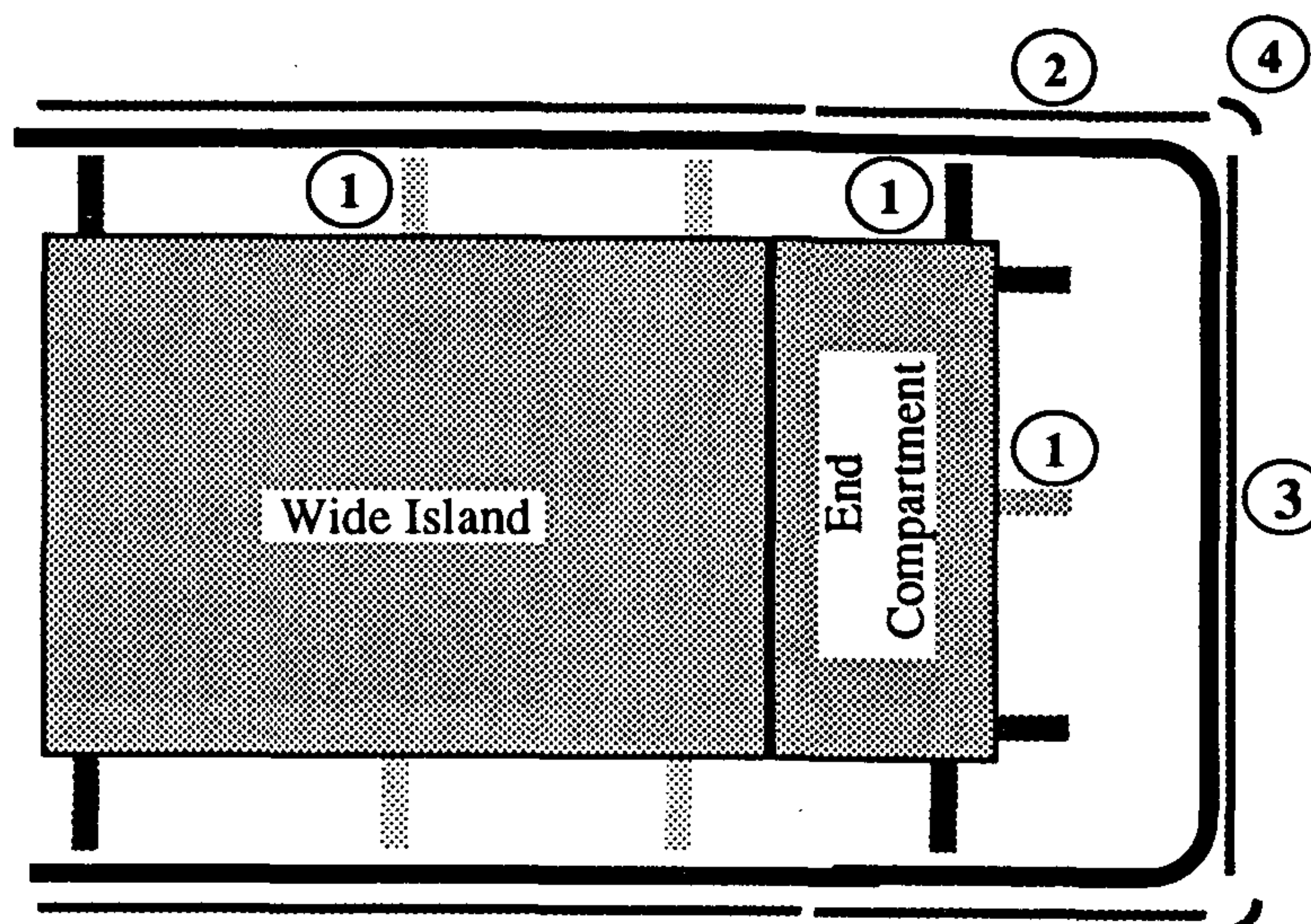




GW/GWIC/GWIT 8 & 12



GWIE/GWIEC/GWITE 90 & 138



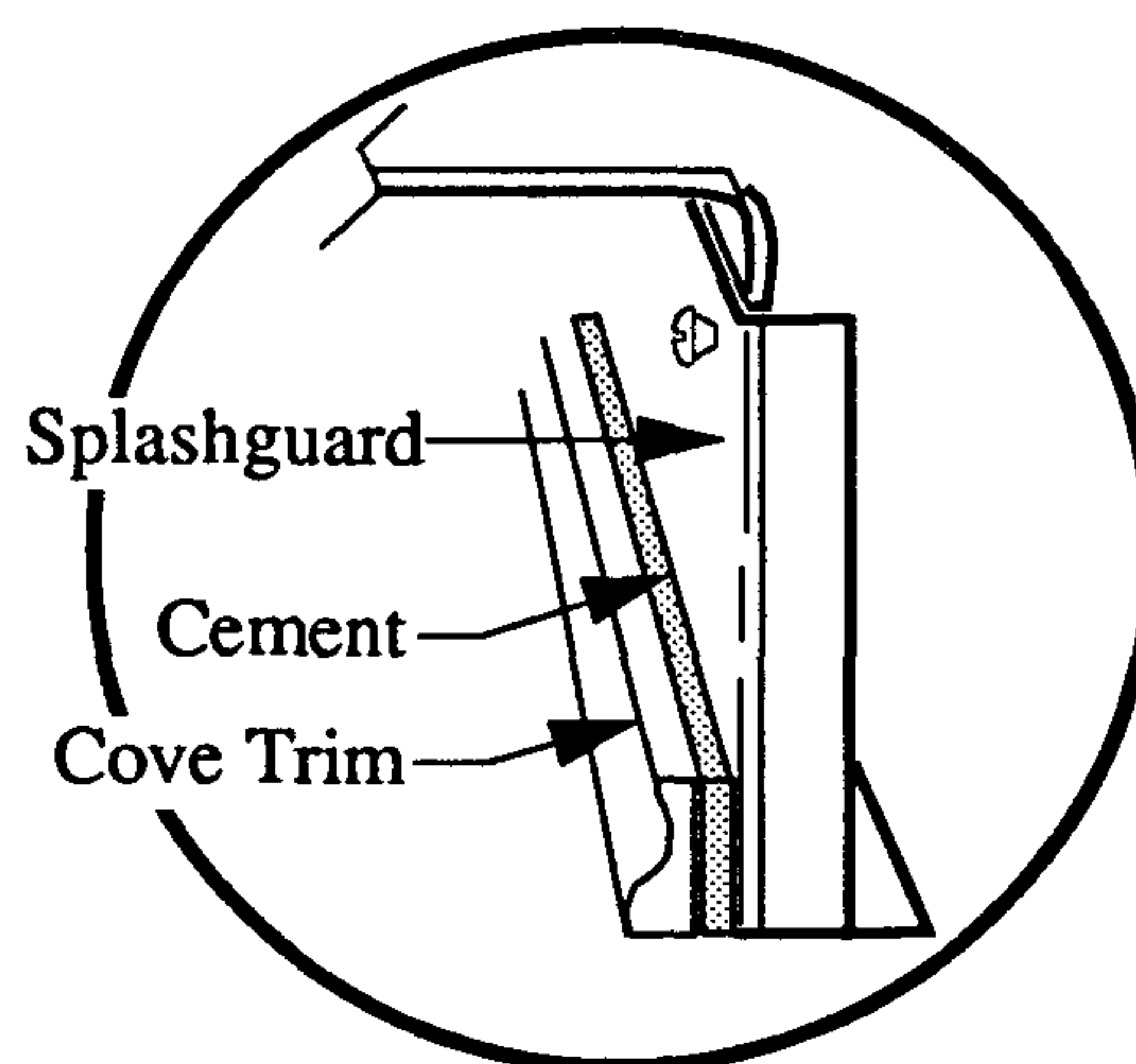
- ① Retainer      8 ft (90)      12 ft (138)
- ② Splashguard
- ③ Splashguard - End      ④ Splashguard Corner

## SEALING SPLASHGUARD TO FLOOR

If required by local sanitation codes or if desired by the customer, the splashguard may be sealed to the floor using a vinyl cove base trim. The size needed will depend on how much the floor is out of level.

To install the trim to the splashguard:

1. Remove all dirt, wax and grease from the area of the splashguard where adhesion will be necessary. This is to ensure a good and secure installation.
2. Apply a good contact cement to the trim and allow proper drying time according to the directions supplied with the cement.
3. Install the trim to the splashguard so that it is lying flush with the floor.



Sealing Splashguard to Floor



## REFRIGERANT

The correct type of refrigerant will be stamped on each merchandiser's serial plate located on the left-hand end of the interior front liner.

## REFRIGERANT PIPING

### Connection Sizes

Liquid Line	3/8" OD
Suction Line	7/8" OD

### Connection Location

The refrigerant line connections are beneath the display pans at the right-hand end of the merchandiser as viewed from the front.

After connections have been made, seal this outlet thoroughly. Seal both the inside and outside. We recommend using an expanding polyurethane foam insulation.

### Multiplexing

Piping of merchandisers operating on the same refrigeration system may be run from merchandiser to merchandiser through the end frame saddles provided for this purpose. **DO NOT RUN REFRIGERANT LINES THROUGH MERCHANDISERS THAT ARE NOT ON THE SAME REFRIGERATION SYSTEM** as this may result in poor refrigeration control and compressor failure.

**NOTE:** If KOOLGAS defrost is used, the liquid line will need to be increased TWO SIZES LARGER inside the merchandiser area. This is necessary to ensure even liquid drainage from all evaporators during defrost.

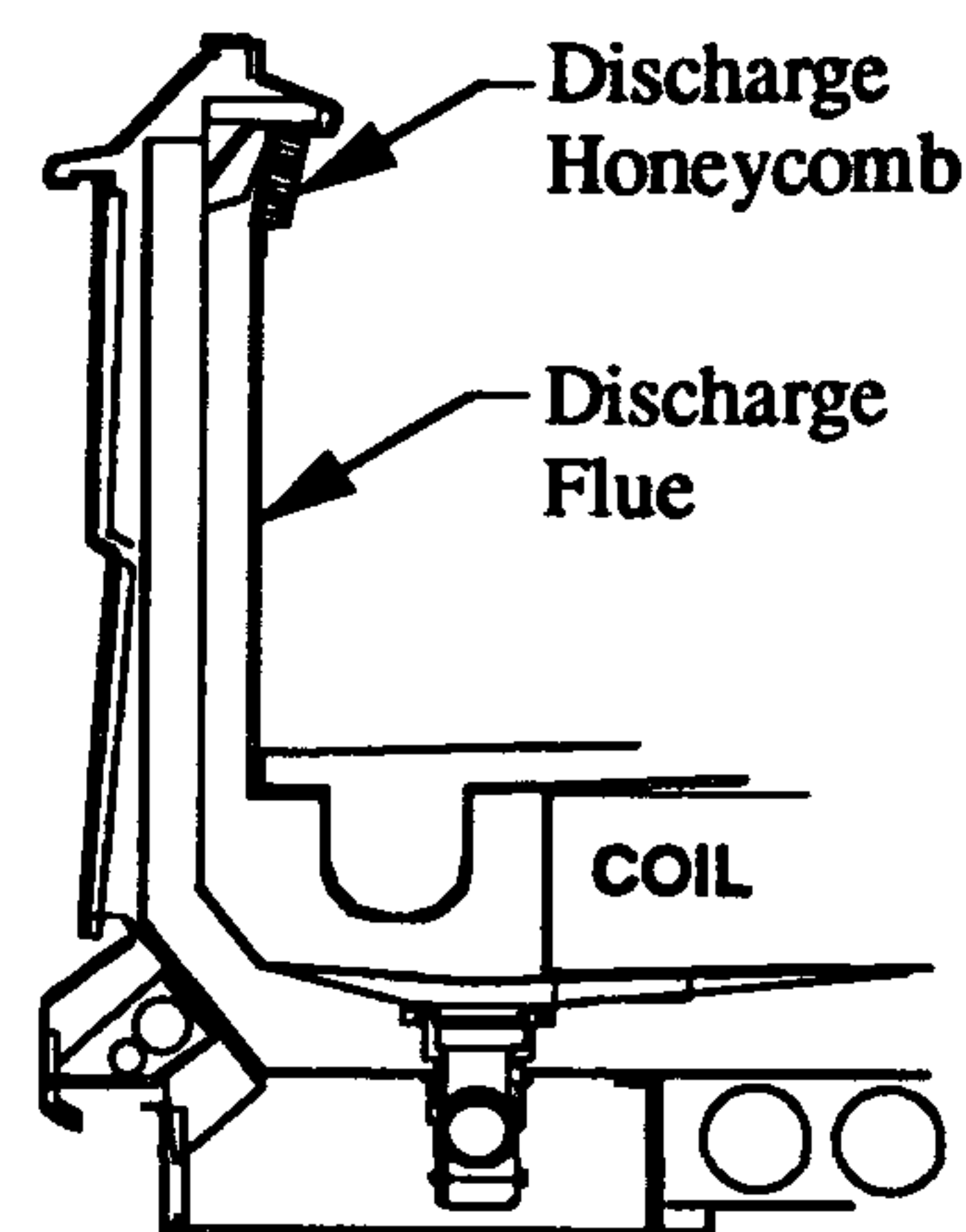
### Line Sizing

Refrigerant lines should be sized as shown on the refrigeration legend that is furnished for the store (not furnished by Hussmann). If a legend has not been furnished, refer to the Hussmann Application Engineering Manual for guidance.

## WARNING

Use extreme care when making refrigeration line connections. Heat from the torch can travel up the discharge flue to the back side of the plastic discharge honeycomb and possibly damage the honeycomb.

To avoid this possibility, we suggest that the section of honeycomb above the area where connections are to be made be removed until connections are complete.



### Oil Traps

P-traps (oil traps) must be installed at the base of all suction line vertical risers.

### Pressure Drop

Pressure drop can rob the system of capacity. To keep the pressure drop to a minimum, keep the refrigerant line run as short as possible using a minimum number of elbows. Where elbows are required, use long radius elbows only.

### Insulation

For merchandisers with other than KOOLGAS defrost: the suction and liquid lines should be clamped or taped together and insulated for a minimum of 30 ft from the merchandiser; for merchandisers with KOOLGAS defrost, the suction and liquid lines should NOT contact each other and should be insulated separately for a minimum of 30 ft from the merchandiser. Additional insulation for the balance of the liquid and suction lines is recommended wherever condensation drippage is objectionable.

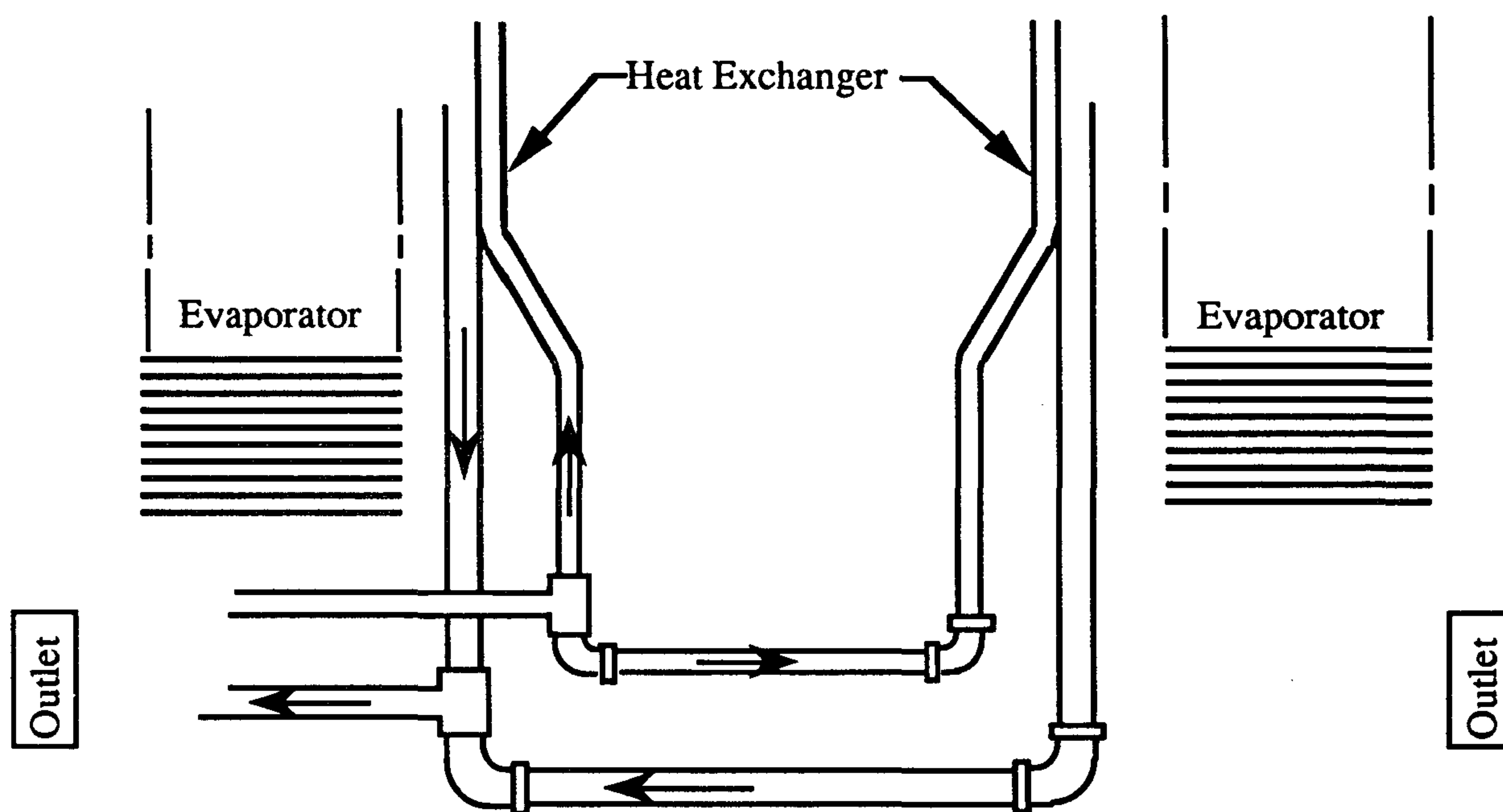
## Refrigeration

3-2

### GW18 & GW112, GW18C & GW112C, MODELS ONLY

The evaporators on these models must be connected parallel to a common refrigeration supply. The material and method are to be supplied by the installing contractor. The refrigerant supply line may enter the refrigerator from either side; install the evaporator connecting lines accordingly.

When installing the connecting lines, we recommend that the tee fittings be installed in a "head-on" position as shown below. This will equalize the suction and refrigeration distribution between both evaporators.





# REFRIGERATION PARTS LIST (Sporlan Nomenclature)

Refrigerant R502				
	Electric Defrost		Koolgas Defrost	
	Expansion Valve	Distributor	Expansion Valve*	Distributor
GW				
GWIC				
GWIT				
8 ft	BFR AZ	—	Y920 BGR AZ	—
12 ft	BFR AZ	—	Y920 BGR AZ	—
GWIE				
GWIEC				
GWITE				
-90 Parent				
Compartment	BFR AAZ	—	Y920 BGR AAZ	—
-138 Parent				
Compartment	BFR AZ	—	Y920 BGR AZ	—
End				
Compartment	BFR AZ	—	Y920 BGR AZ	—

Refrigerant R22				
	Electric Defrost		Koolgas Defrost	
	Expansion Valve	Distributor	Expansion Valve*	Distributor
GW				
GWIC				
GWIT				
8 ft	BFV AZ	—	Y920 BGV AZ	—
12 ft	BFV AZ	—	Y920 BGV AZ	—
GWIE				
GWIEC				
GWITE				
-90 Parent				
Compartment	BFV AAZ	—	Y920 BGV AAZ	—
-138 Parent				
Compartment	BFV AZ	—	Y920 BGV AZ	—
End				
Compartment	BFV AZ	—	Y920 BGV AZ	—

\*These refrigerant expansion valves are provided with a special 3/8" side outlet port that allows the liquid condensed in the coil during defrost to flow into the liquid line.

**NOTE:** Wide Island (GW, GWIC & GWIT) models have two (2) expansion valves. Unitized wide island models (GWIE, GWIEC & GWITE) have three (3) expansion valves.

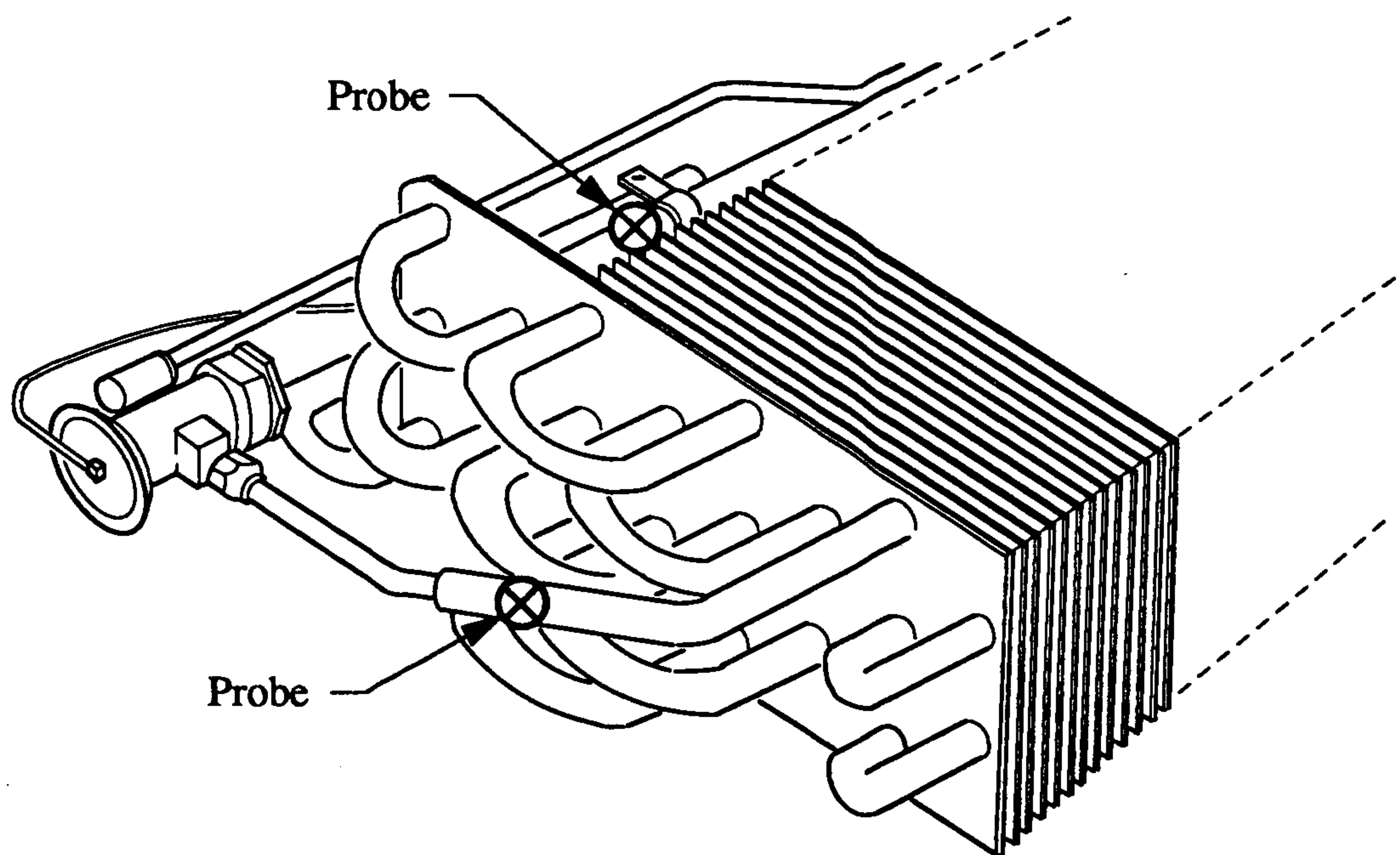


## EXPANSION VALVE ADJUSTMENT

Expansion valves must be adjusted to fully feed the evaporator. Before attempting to adjust valves, make sure the evaporator is either clear or only lightly covered with frost, and that the fixture is within 10°F of its expected operating temperature. Adjust valves as follows:

Attach two (2) sensing probes (either thermocouple or thermistor) to the evaporator, one under the clamp holding the expansion valve bulb and the other securely taped to the coil inlet line (see illustration).

Some "hunting" of the expansion valve is normal. The valve should be adjusted so that during the hunting the greatest difference between the two probes is 3–5°F. With this adjustment, during a portion of the hunting, the temperature difference between the probes will be less than 3°F (at times as little as 0°F). Make adjustments of no more than one-quarter (1/4) turn for Balanced Port TEV and one-half (1/2) turn for "G" Body valves. Wait at least 15 minutes before rechecking the probe temperature and making further adjustments.





## CONTROLS AND ADJUSTMENTS

### Conventional Single Compressor

Refrigeration temperature should be controlled by a refrigeration thermostat (one per condensing unit). When the optional refrigeration thermostat is factory installed, it will be located in the electrical raceway at the left-hand end of the case and with its sensing bulb fastened below the front shelf support.

Defrosts are time initiated and temperature terminated. Each refrigerator will have electric defrost heaters and a defrost termination thermostat. The thermostat is factory installed on a return bend of the evaporator. It is a non-adjustable, single pole, single throw type thermostat.

### Parallel Compressor Rack

Refrigeration temperature may be controlled by either a refrigeration thermostat or a CDA valve (Close on Drop in Air temperature). Both of these controls are optional items and may be ordered factory installed.

The optional refrigeration thermostat is the same as that for conventional multiplexing. The optional CDA valve will have its sensor installed in the same location as the refrigeration thermostat bulb. The valve itself will be installed at the condensing unit. Further information on the CDA valve concerning wiring, adjusting and servicing can be found in the instruction manual furnished with the condensing unit.

Standard defrost is electric defrost, the same as that for conventional multiplexing, and is time initiated and temperature terminated.

KOOLGAS defrost is optional and will be time initiated and time terminated.

CONTROL SETTINGS

Conventional Single Compressor

Application	Refrigeration Controls				Defrost Controls		
	Discharge Air Temperature (1)	Refrigerant	Low Pressure Control		Defrost Frequency	Temperature Termination (3)	Failsafe (4)
			When Thermostat Controls Temperature (2)				
			Cut-Out	Cut-In			
Frozen Food	-10°F	R-502	10 psig	32 psig	Every 24 Hours	52°F	60 min.
		R-22	6 psig	25 psig			
Ice Cream	-20°F	R-502	4 psig	15 psig			
		R-22	0 psig	10 psig			60 min.

FOOTNOTES:

- (1) Discharge air temperature is to be measured by attaching a service thermometer to the discharge honeycomb at the center of the case.
- (2) When a refrigeration thermostat is used to control the refrigeration temperature, set the pressure control as shown, then adjust the thermostat to stop the compressor at the discharge air temperature shown above. Outdoor condensing unit: Refrigeration temperature must be controlled by a refrigeration thermostat.
- (3) Defrost is terminated by a factory installed defrost termination thermostat. If more than one refrigerator is connected to the same condensing unit, the defrost termination thermostat of each refrigerator must be wired in series to the condensing unit defrost timer.

- (4) The failsafe setting must not control the length of the defrost. This is especially important when less than 208 volts are supplied to the defrost heaters or when heavy shopping demands have created excess frost on the evaporator. Defrost must be terminated by the defrost termination thermostat.
- The defrost timer of outdoor condensing units must control a liquid line solenoid for pump-down prior to defrost only. The failsafe setting for outdoor condensing units must be increased 4 minutes to compensate for the pump-down period.
- Reminder: The GWIT model is a twin-temperature refrigerator. Each side must be adjusted for its application.**



**Parallel Compressor Rack**

Application	Refrigeration Control	Defrost Control			
	Discharge Air Temperature (1)	Defrost Frequency	Electric Defrost (2)		KoolGas Defrost
			Temperature Termination (3)	Failsafe (4)	Length of Defrost (5)
Frozen Food	-10°F	Every 24 Hours	52°F	60 min.	20 min.
Ice Cream	-20°F		52°F	60 min.	24 min.

**FOOTNOTES:**

(1) Discharge air temperature is to be measured by attaching a service thermometer to the discharge honeycomb at the center of the case. Adjust the refrigeration control (refrigeration thermostat or CDA valve) to maintain the temperature shown above.

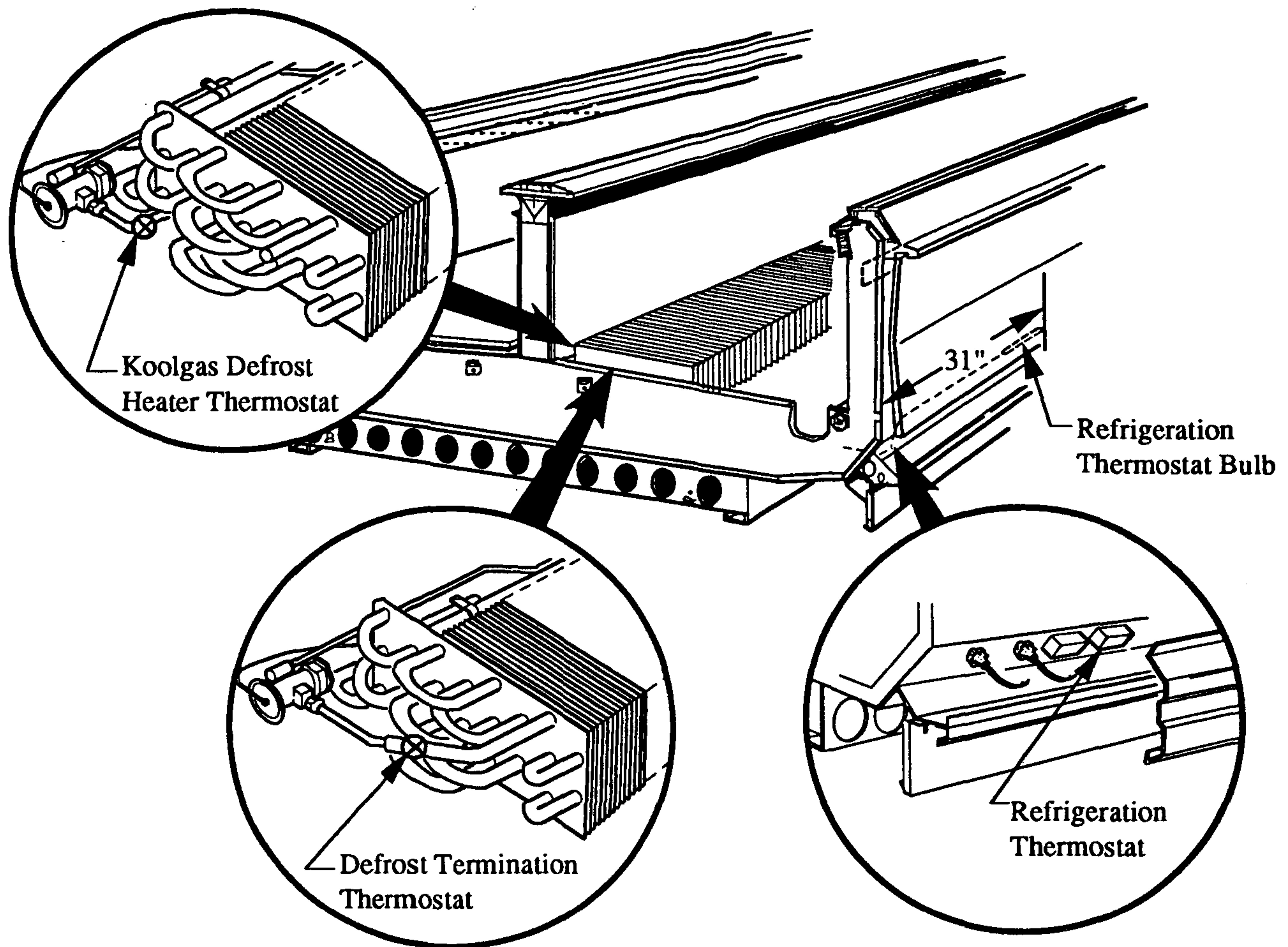
(2) Standard defrost is electric defrost. It is time initiated and temperature terminated.

(3) Defrost is terminated by a factory installed defrost termination thermostat. All like refrigerators connected to the same condensing unit must have their defrost termination thermostats wired in series.

(4) The failsafe setting must not control the length of the defrost. This is especially important when less than 208 volts are supplied to the defrost heaters or when heavy shopping demands have created excess frost on the evaporator. Defrost must be terminated by the defrost termination thermostat.

(5) KOOLGAS defrost is time initiated and time terminated. The defrost lengths listed are based upon laboratory testing. Operation under actual store conditions may require that they be lengthened to accomplish a thorough defrost. Some of the store conditions that contribute to a longer defrost are: low head pressure, long runs of refrigerant lines, store ambient, refrigerator operating temperature lower than that recommended, seasonal ambient changes, etc.

Each system shown on the store legend must have "staggered" defrosts to maintain stable compressor loading and sufficient supply of defrost gas.



## REFRIGERATION THERMOSTAT (OPTIONAL)

When factory installed, this thermostat will be located as shown in the above illustration. The bulb is located in the discharge flue under the display pan and is fastened to the lower lip of the front shelf support. Connect the thermostat into the pilot circuit of the condensing unit. See Wiring Diagram in this Section. (The GWIT model will require two thermostats, one for each side of the fixture.)

electrical raceway and to the rack control panel. Leads are tagged in the raceway. (The GWIT model will require two sensors, one for each side of the fixture.)

## DEFROST TERMINATION THERMOSTAT

This thermostat will be mounted on a return bend of the evaporator as shown in the above illustration. (The GWIT model will have a thermostat on each evaporator.) The thermostat leads will be identified in the electrical raceway. When two or more fixtures operate on the same refrigeration system, this thermostat **MUST** be wired in series. See the Wiring Diagram in this Section.

## CDA SENSOR

The factory installed optional CDA sensor is located where the thermostat bulb would normally be located. Its leads will be routed through the



## CONNECTIONS

All wiring must be in compliance with NEC and local codes. All electrical connections are made in the electrical wireway at the left end of the merchandiser (facing front), except the GWIE which has all electrical connections in the end compartment. The lower kickrail must be removed for access to wiring. The front is identified by locating the serial plate. See illustration.

## IDENTIFICATION OF WIRING

Leads for all electrical circuits are identified by colored plastic bands. These bands correspond to the "color code sticker" (shown below) which is located inside of the merchandiser's raceway.

The defrost heaters, defrost termination thermostats, and refrigeration thermostats are tagged with identification as being either front or rear merchandiser display section defrost and refrigeration controls.

## WIRING COLOR CODE

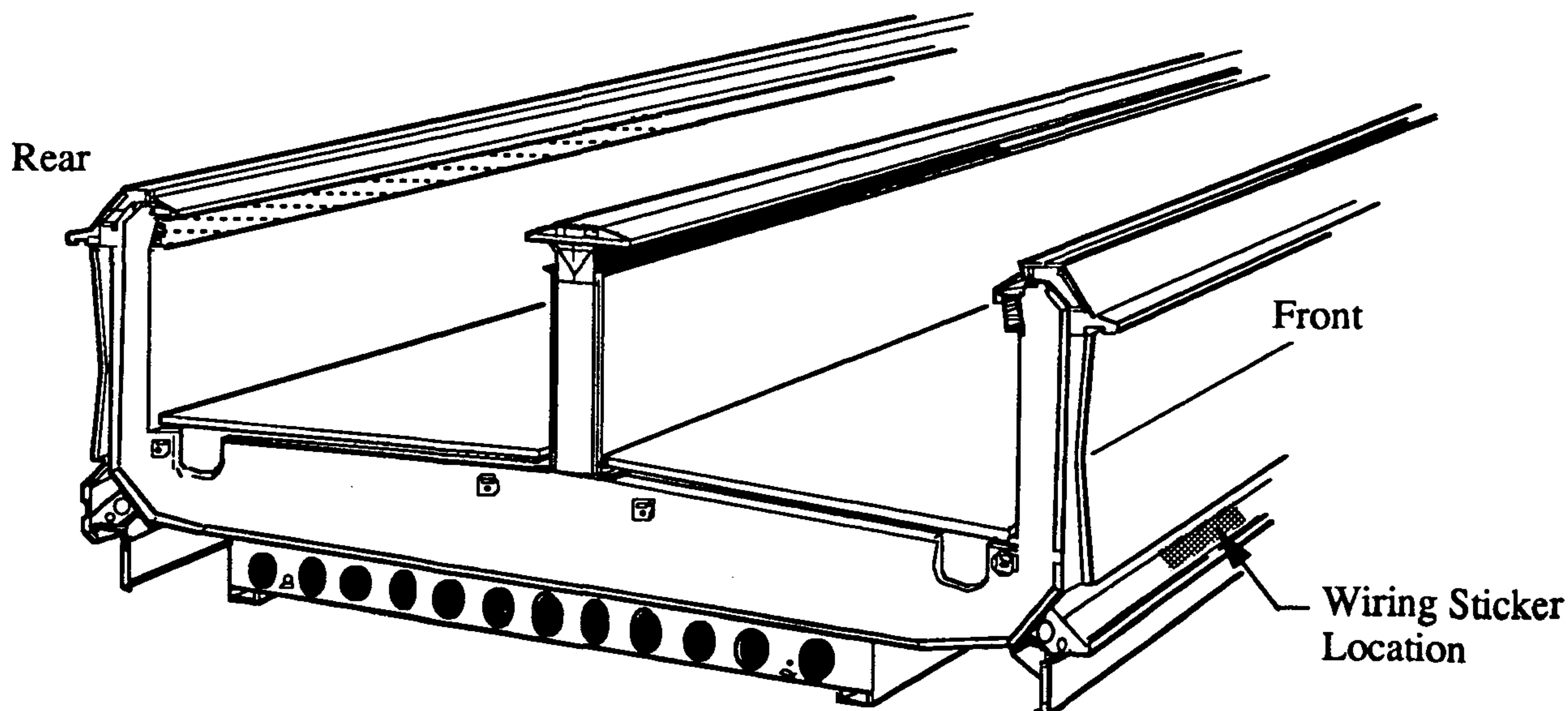
Leads for all electrical circuits are identified by a colored plastic band: neutral wire for each circuit has either White insulation or a White plastic sleeve in addition to the color band.

PINK .....REFRIG. THERMOSTAT LOW TEMP.  
 LIGHT BLUE..REFRIG. THERMOSTAT NORM TEMP.  
 DARK BLUE..DEFROST TERM. THERMOSTAT  
 PURPLE.....ANTI-SWEAT HEATERS  
 BROWN.....FAN MOTORS  
 GREEN\* .....GROUND

ORANGE OR  
 TAN.....LIGHTS  
 MAROON...RECEPTACLES  
 YELLOW....DEFROST HEATERS, 120V  
 RED\* .....DEFROST HEATERS, 208V

\*EITHER COLORED SLEEVE OR COLORED INSULATION

**ELECTRICIAN NOTE: CASE MUST BE GROUNDED**



**FIELD WIRING**

Field wiring must be sized for component amperes stamped on the serial plate. Actual amp draw may be less than specified. Field wiring from the refrigeration control panel to the merchandisers is required for optional defrost termination thermostats and for optional refrigeration

thermostats or CDA sensors. When multiple merchandisers are on the same defrost circuit the defrost termination thermostats are wired in series. Most component amperes are listed below, always check the serial plate.

**Serial Plate Amperages**

Model	120V 1PH 60Hz					208V 1PH 60Hz Optional Defrost Heater
	Fans	Anti-sweat Heaters	Lights (Optional)	Superstructure (Optional)	KOOLGAS Supplemental Heater	
	(1)	(1)	(2)	(3)	(4)	
Frozen Food						
GW18	1.2	1.6	6.5	2.9	0.4	16.4
GW112	1.8	2.4	9.2	3.7	0.4	24.2
GWIE90	1.2	2.5	2.6	1.4	0.5	13.1
GWIE138	1.8	4.0	5.2	2.9	0.5	21.5
Ice Cream						
GW18C	1.2	1.6	6.5	2.9	0.4	16.4
GW112C	1.8	2.4	9.2	3.7	0.4	24.2
GWIE90C	1.2	2.5	2.6	1.4	0.5	13.1
GWIE138C	1.8	4.0	5.2	2.9	0.5	21.5
Twin Temp						
GWIT-8	2.4	1.6	6.5	2.9	0.4	16.4
GWIT-12	3.6	2.4	9.2	3.7	0.4	24.2
GWITE-90	1.8	2.5	2.6	1.4	0.5	13.1
GWITE-138	3.0	4.0	5.2	2.9	0.5	21.5

(1) Fans and anti-sweat heaters should be on a separate circuit from the lights to avoid turning them off with the store lights. Fans are run continuously.

(2) These values apply when lighted shelves are to be used in the optional GWI superstructure.

(3) These values include the current requirement for the anti-sweat heaters in the optional superstructure kit.

(4) This circuit is for the heater that is controlled by a disc type thermostat mounted on the evaporator, and is energized during KOOLGAS defrost only. It may be connected in parallel with the fan and anti-sweat heater circuit.

(5) Electric defrost ONLY. Not required for KOOLGAS defrost.

**The values given are for BOTH sides of the case.**

The GWI requires one circuit – use values shown for sizing wire.

The GWIT requires two circuits – use one-half the values shown for sizing wire.







# Single Deck, Wide Island, Frozen Food / IceCream GWI, GWIC & GWIT

## WARNING

All components must have mechanical ground, and the merchandiser must be grounded.

### Notes:

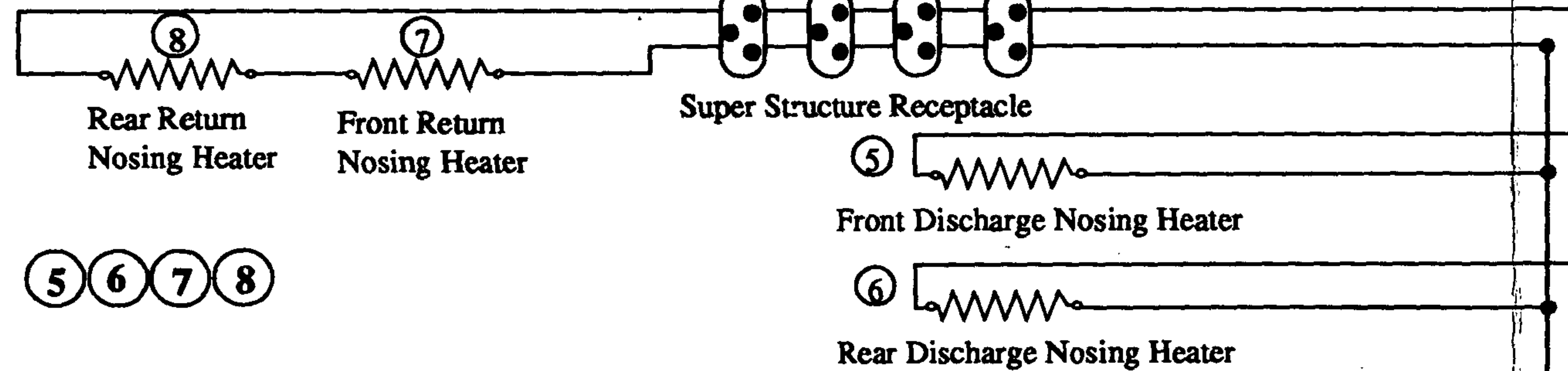
Twin Temperature models will have 2 sets of controls and components.

Schematic Shows Both Standard And Optional Components. Not All Components Will Be On Each Merchandiser.

Check Store Legend For Specifics.

Grayed Components For 12' Only.

### Anti-sweat Heaters



### Evaporator Fans All 8' & 12' models

① ②

Evaporator Fans, Additional Fans for  
Twin Temperature

① ②

Electrical Connection Box

Brown Brown Purple

120V Only

### Electric Defrost Heaters

Finned Heaters ⑪

### Drip Pan Heaters

⑫ ⑬

Koolgas Waste Outlet Heaters  
Twin Temperature  
GWIT Only

Defrost Heater  
Switch ④

Defrost Heater  
Switch ④

Defrost Heater  
Switch ④

Wide Island  
GWI, GWIC Only

Defrost Termination Thermostat  
Twin Temp has 2 ⑭

Refrigeration Thermostat  
Twin Temp has 2 ⑮

Pink (Low-Temp)  
Dark Blue } To Condensing  
Unit

Electrical Connection Box

To Defrost Contactor 208V

120V Only



# Single Deck, Wide Island, Unitized, Frozen Food / IceCream GWIE90, 138 / GWIE90C, 138C / GWITE90, 138

## WARNING

All components must have mechanical ground, and the merchandiser must be grounded.

### Notes

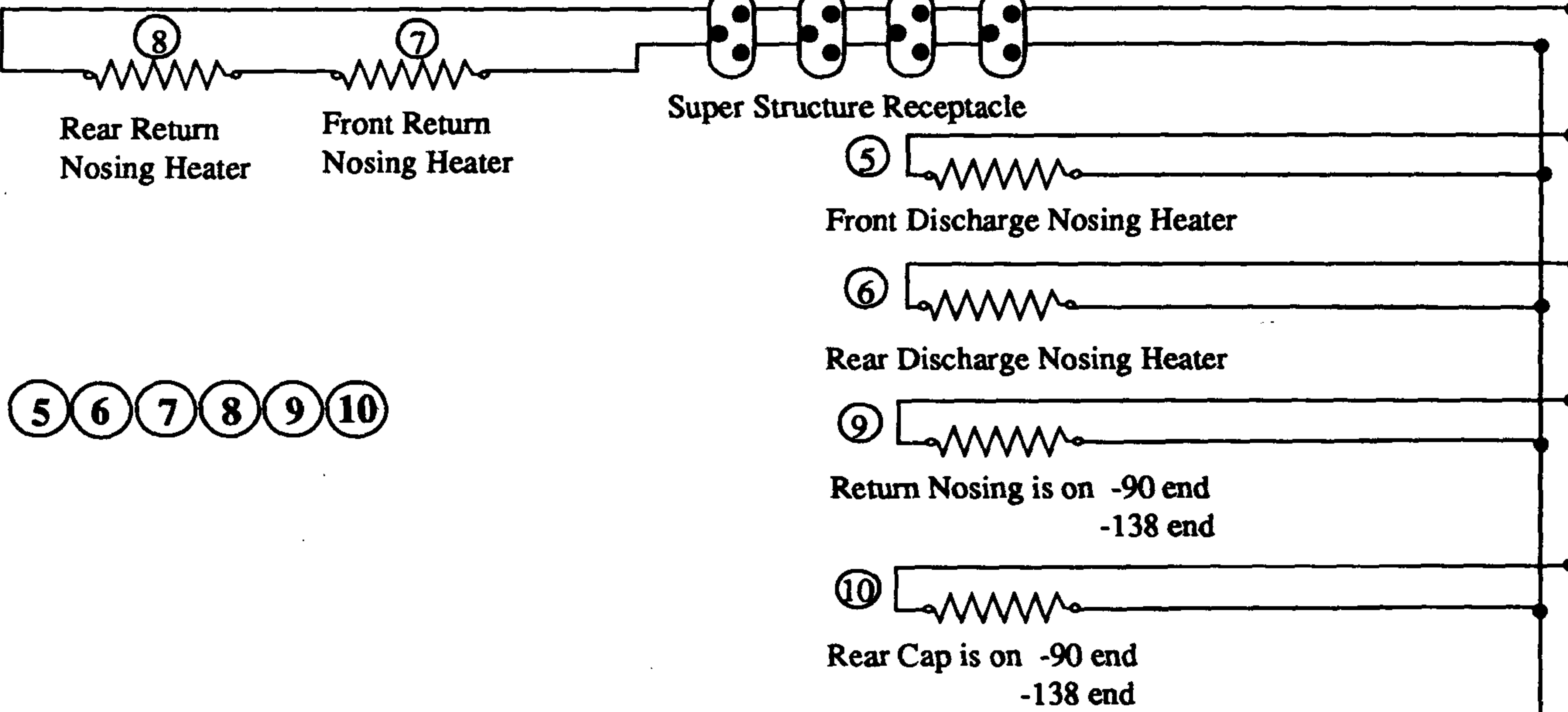
Twin Temperature models will have 2 sets of controls and components.

Schematic Shows Both Standard And Optional Components. Not All Components Will Be On Each Merchandiser.

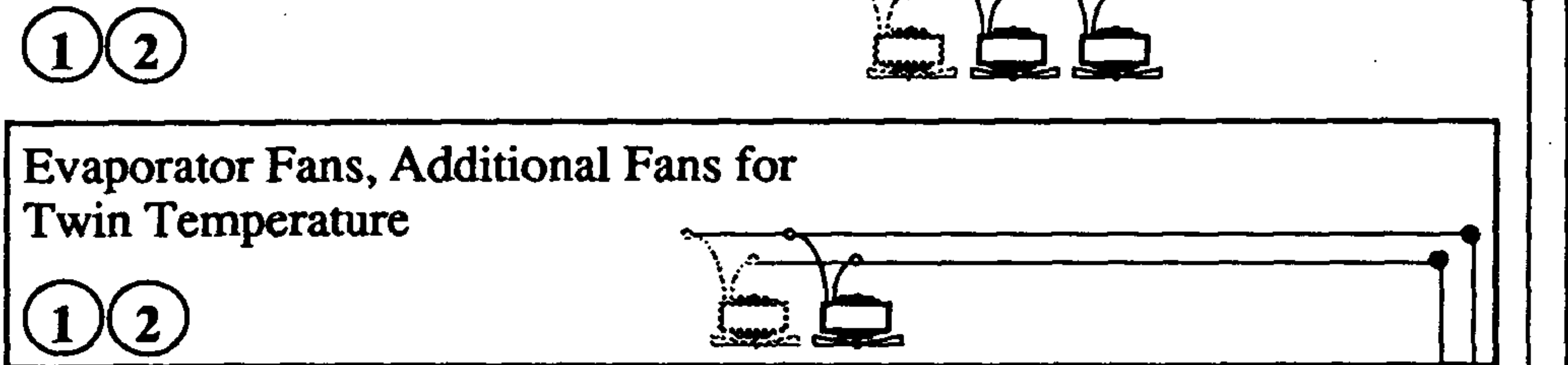
Check Store Legend For Specifics.

Grayed Components For 138 Only.

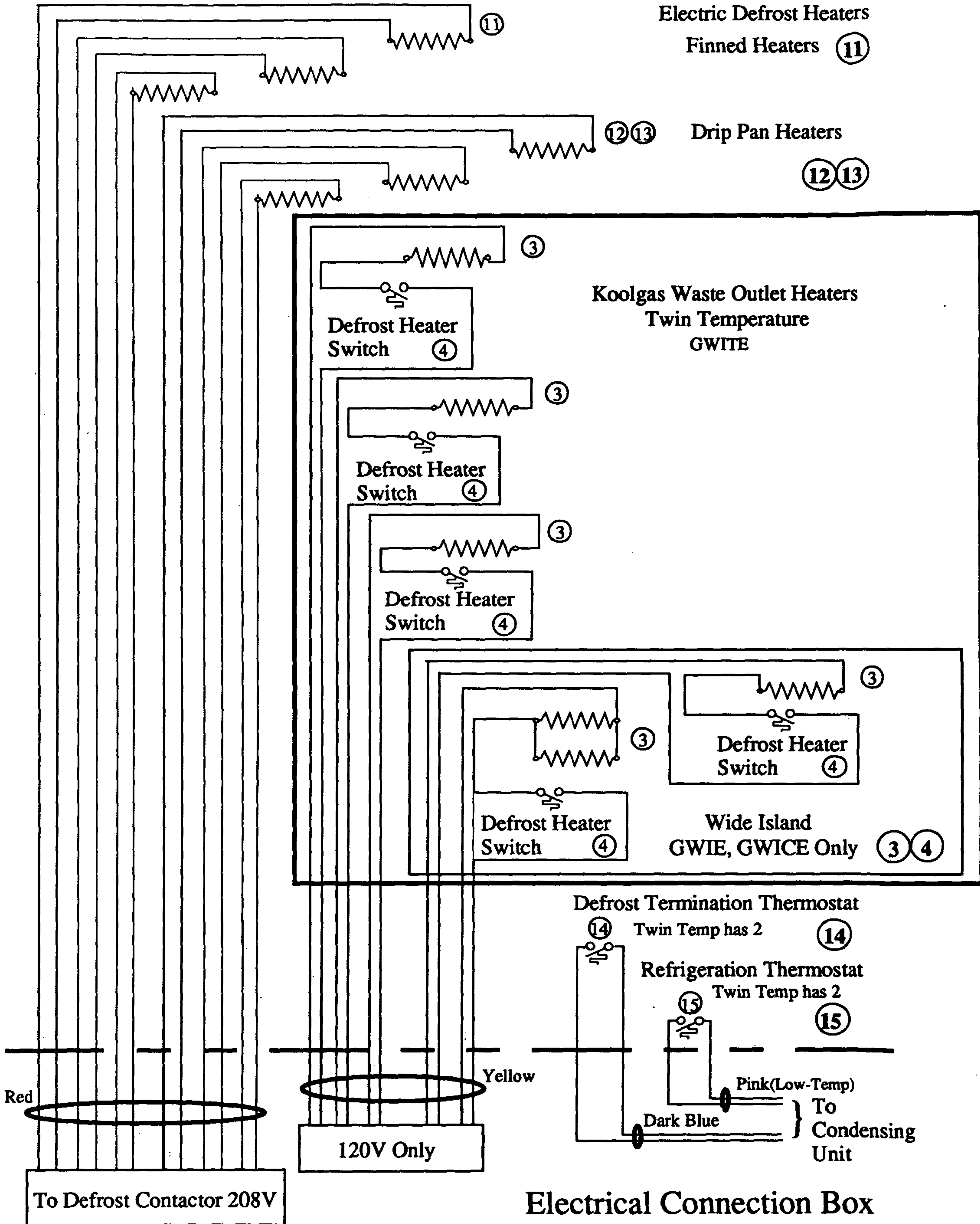
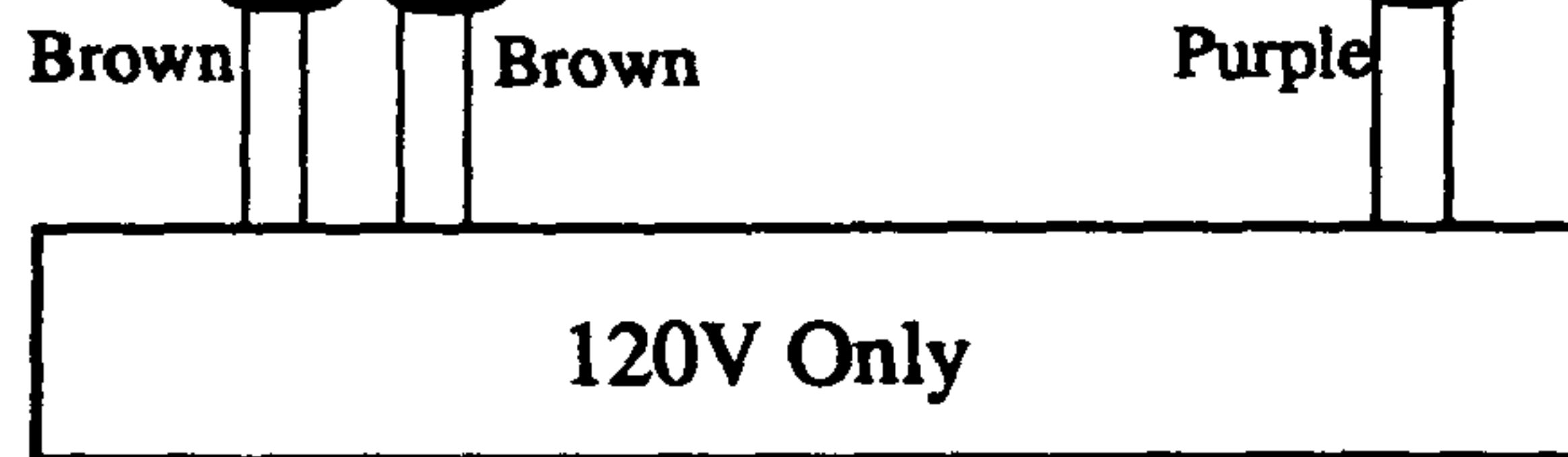
### Anti-sweat Heaters



### Evaporator Fans All 90 & 138 models



### Electrical Connection Box



### Electrical Connection Box

**ELECTRICAL REPLACEMENT PARTS**

ITEM	PART NO.	DESCRIPTION	USED ON
<b>Fans</b>			
1.	0058698	Fan Motor, Evaporator, 120V, 6W, CW GE #KSM51ECG3264	All
2.	0252116	Fan Blade – Morrill FV700 CW 15S Embossing toward motor	GWIT 8 ft & 12 ft GWITE90 & 138
	0136260	Fan Blade – Morrill FV700 CW 20S Embossing toward motor	90, 138 End
	0136261	Fan Blade – Morrill FV700 CW 25S Embossing toward motor	All Other 8 ft & 12 ft All Other 90 & 138
<b>Koolgas Defrost</b>			
3.	0254641	Waste Outlet Heater – 0.16 amp, 120V 109 ohms – KOOLGAS Defrost	All
4.	0119422	Heater Switch, KOOLGAS Defrost T1#20425 F32 – 443 – 915	All
<b>Anti-Sweat Heaters</b>			
5.	0358281	Anti-Sweat Heater – Front Discharge Nosing 0.15 amp, 120V, 782 ohms	90 Parent
	0144751	Anti-Sweat Heater – Front Discharge Nosing 0.21 amp, 120V, 571 ohms	90, 138 End
	0144752	Anti-Sweat Heater – Front Discharge Nosing 0.31 amp, 120V, 389 ohms	All 8 ft 138 Parent
	0144754	Anti-Sweat Heater – Front Discharge Nosing 0.46 amp, 120V, 262 ohms	All 12 ft
6.	0358282	Anti-Sweat Heater – Rear Discharge Nosing 0.15 amp, 120V, 782 ohms	90 Parent
	0144751	Anti-Sweat Heater – Rear Discharge Nosing 0.21 amp, 120V, 571 ohms	90, 138 End
	0144753	Anti-Sweat Heater – Rear Discharge Nosing 0.31 amp, 120V, 389 ohms	All 8 ft 138 Parent
	0144755	Anti-Sweat Heater – Rear Discharge Nosing 0.46 amp, 120V, 262 ohms	All 12 ft



ELECTRICAL REPLACEMENT PARTS

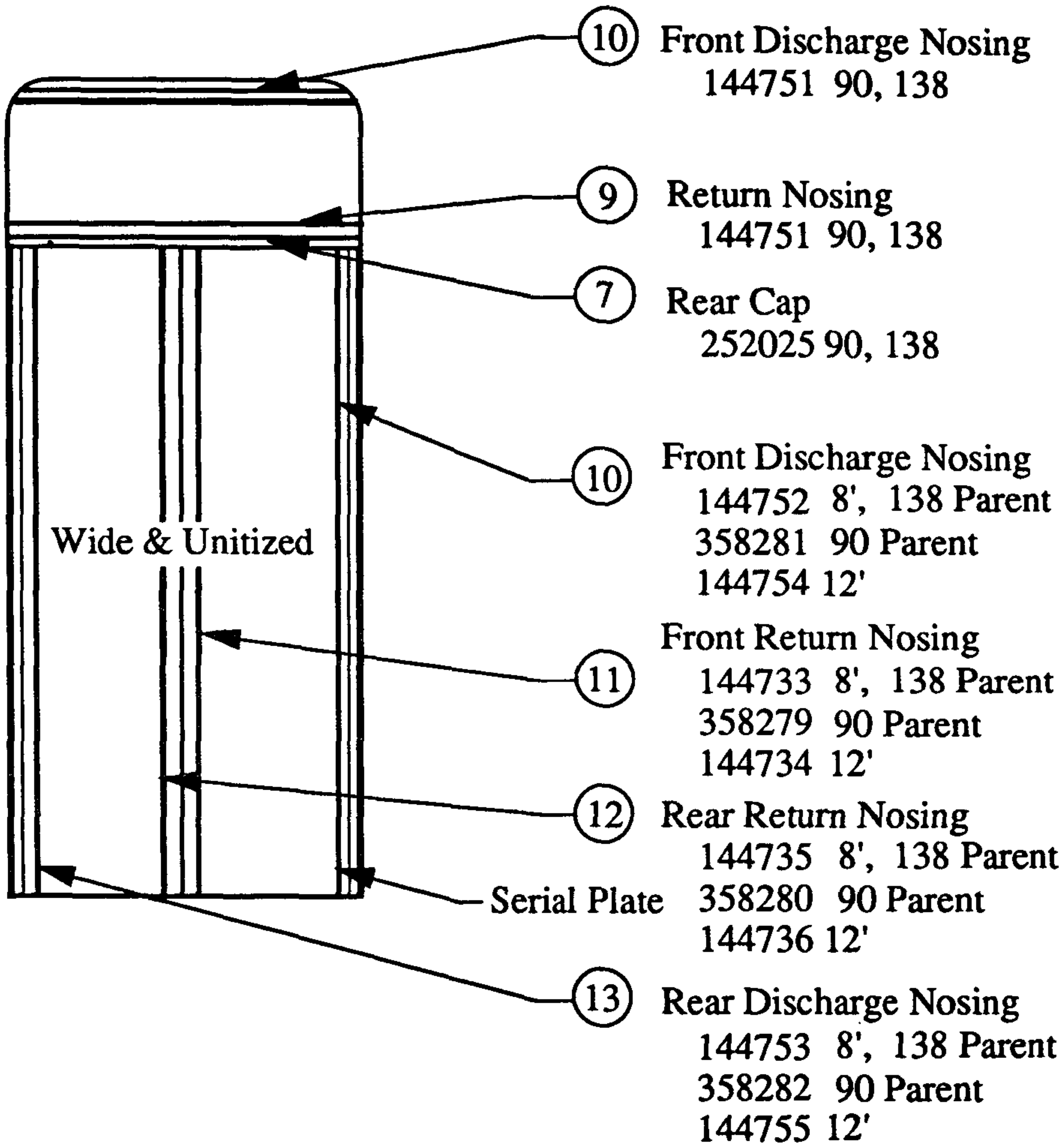
ITEM	PART NO.	DESCRIPTION	USED ON
Anti-Sweat Heaters (Continued)			
7.	0358279	Anti-Sweat Heater – Front Return Nosing 0.98 amp, 120V, 123 ohms	90 Parent
	0144751	Anti-Sweat Heater – Front Return Nosing 0.21 amp, 120V, 571 ohms	90, 138 End
	0144733	Anti-Sweat Heater – Front Return Nosing (see note)	All 8 ft, 138 Parent
	0144734	Anti-Sweat Heater – Front Return Nosing (see note)	All 12 ft
8.	0358280	Anti-Sweat Heater – Rear Return Nosing 0.98 amp, 120V, 123 ohms	90 Parent
	0144735	Anti-Sweat Heater – Rear Return Nosing (see note)	All 8 ft, 138 Parent
	0144736	Anti-Sweat Heater – Rear Return Nosing (see note)	All 12 ft
NOTE: Front and Rear Return Nosing Heaters are connected in series.			
Total ratings are:			
0.95 amp, 120V, 126 ohms			All 8 ft, 138 Parent
1.40 amp, 120V, 86 ohms			All 12 ft
9.	0144751	Anti-Sweat Heater – Return Nosing 0.21 amp, 120V, 571 ohms	90, 138 End
10.	0252025	Anti-Sweat Heater – Rear Cap 0.65 amp, 120V, 185 ohms	90, 138 End

**ELECTRICAL REPLACEMENT PARTS**

ITEM	PART NO.	DESCRIPTION	USED ON
<b>Electric Defrost</b>			
11.	0358283	Defrost Heater – Finned 3.4 amp, 208V, 61.2 ohms	90 Parent
	0252030	Defrost Heater – Finned 5.1 amp, 208V, 41 ohms	90, 138 End
	0144619	Defrost Heater – Finned 6.9 amp, 208V, 30 ohms	All 8 ft, 138 Parent
	0144620	Defrost Heater – Finned 10.2 amp, 208V, 20 ohms	All 12 ft
<b>Drip Pan Heaters</b>			
12.	0358275	Drip Pan Heater – Front 0.59 amp, 208V, 353 ohms	-90 Parent
	0254027	Drip Pan Heater – Front 1.3 amp, 208V, 160 ohms	All 8 ft
	0358483	Drip Pan Heater – Front 1.3 amp, 208V, 160 ohms	-138 Parent
	0254028	Drip Pan Heater – Front 1.9 amp, 208V, 109 ohms	All 12 ft
13.	0358276	Drip Pan Heater – Rear 0.59 amp, 208V, 353 ohms	-90 Parent
	0254025	Drip Pan Heater – Rear 1.3 amp, 208V, 160 ohms	All 8 ft
	0358482	Drip Pan Heater – Rear 1.3 amp, 208V, 160 ohms	-138 Parent
	0254026	Drip Pan Heater – Rear 1.9 amp, 208V, 109 ohms	All 12 ft
<b>Thermostats</b>			
14.	0252122	Defrost Termination Thermostat T.I. #20425F32-497-897	All Electric Defrost
15.	0144732	Refrigeration Thermostat W-R #1701-123	All



Anti-sweat Heaters



## CARE AND CLEANING

Long life and satisfactory performance of any equipment is dependent upon the care it receives. At least every three months the merchandisers should be thoroughly cleaned, all debris removed and the interior washed down. This will ensure long life, proper sanitation, and minimum maintenance costs.

### Exterior Surfaces

The exterior surfaces must be cleaned with a mild detergent and warm water to protect and maintain their attractive finish. **Never use abrasive cleansers or scouring pads.**

### Interior Surfaces

The interior surfaces may be cleaned with most domestic detergents, ammonia based cleaners and sanitizing solutions with no harm to the surface.

### DO:

- Remove the product and all loose debris to avoid clogging the waste outlet.
- Thoroughly clean all surfaces with soap and hot water. **Do NOT use steam or high pressure water hoses to wash the interior. These will destroy the merchandiser's sealing causing leaks and poor performance.**
- Rinse with hot water, but do NOT flood. Never introduce water faster than the waste outlet can remove it.
- Allow the merchandiser to dry before resuming operation.

### Do NOT Use:

- Mineral oil based solutions, as these will dissolve the butyl sealants used in the merchandiser's construction.
- Abrasive cleansers and scouring pads, as these will mar the finish.

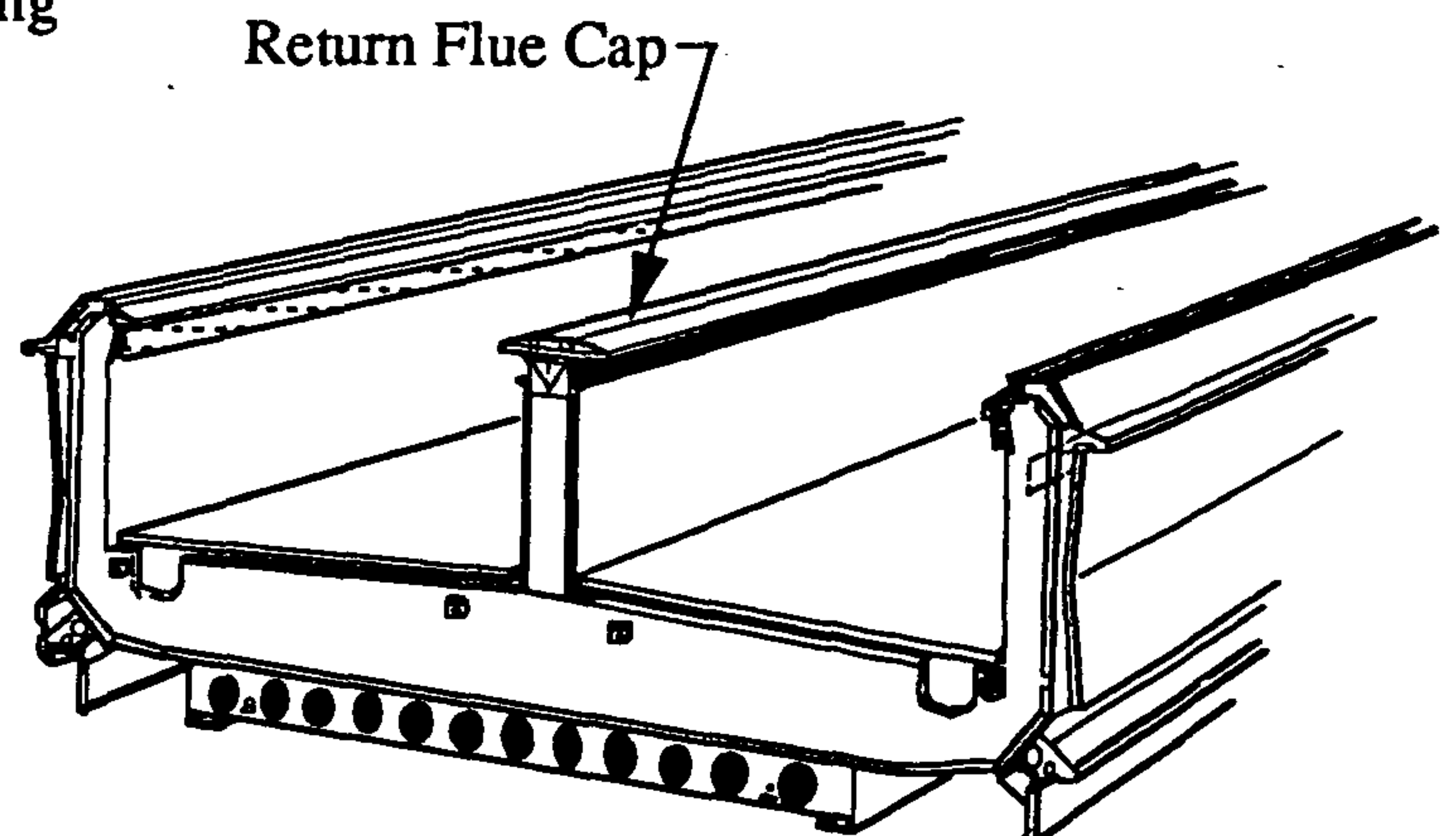
## STOCKING AND STOCK ROTATION

Product should not be placed in merchandiser until it has been in operation for approximately 5 hours. This will allow for adjustments and complete heat removal from the case.

At no time should product be placed above the load limit line clearly marked on the merchandiser, **nor should the discharge or return flues be obstructed. Overloading the merchandiser will result in poor product and case temperature.**

Since ice cream and frozen foods are perishable and should not stay long on display, packages on display for a week should be rotated. Product rotation will also prevent excessive frost accumulation and sticking of packages.

**Items should NOT be displayed on the return flue cap located in the center of the merchandiser.** Condensation will occur on items that are placed on this cap.

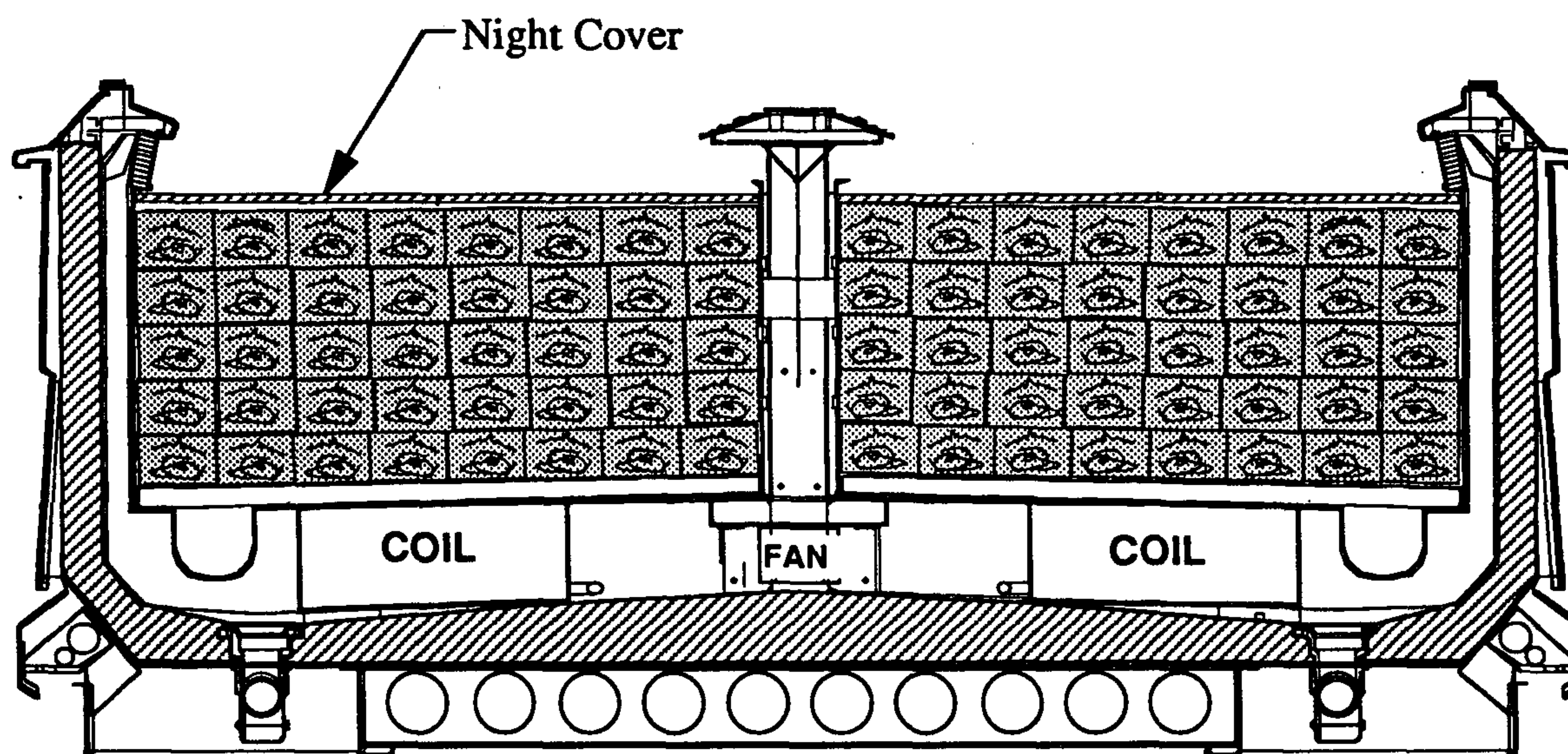




## NIGHT COVER USAGE

Night covers are supplied only when application is for ice cream display. These night covers should be placed flat on top of the packages each night at store closing. They should not extend above the load limit decal or block the air passage between the front honeycomb and the rear return flue.

The night covers are made of polished aluminum which prevents softening of the top packages from radiant heat or defrost air. Other materials that are porous or non-reflective will not give the same results. Frozen food products do not require night cover usage.



**REPLACING ANTI-SWEAT HEATERS**

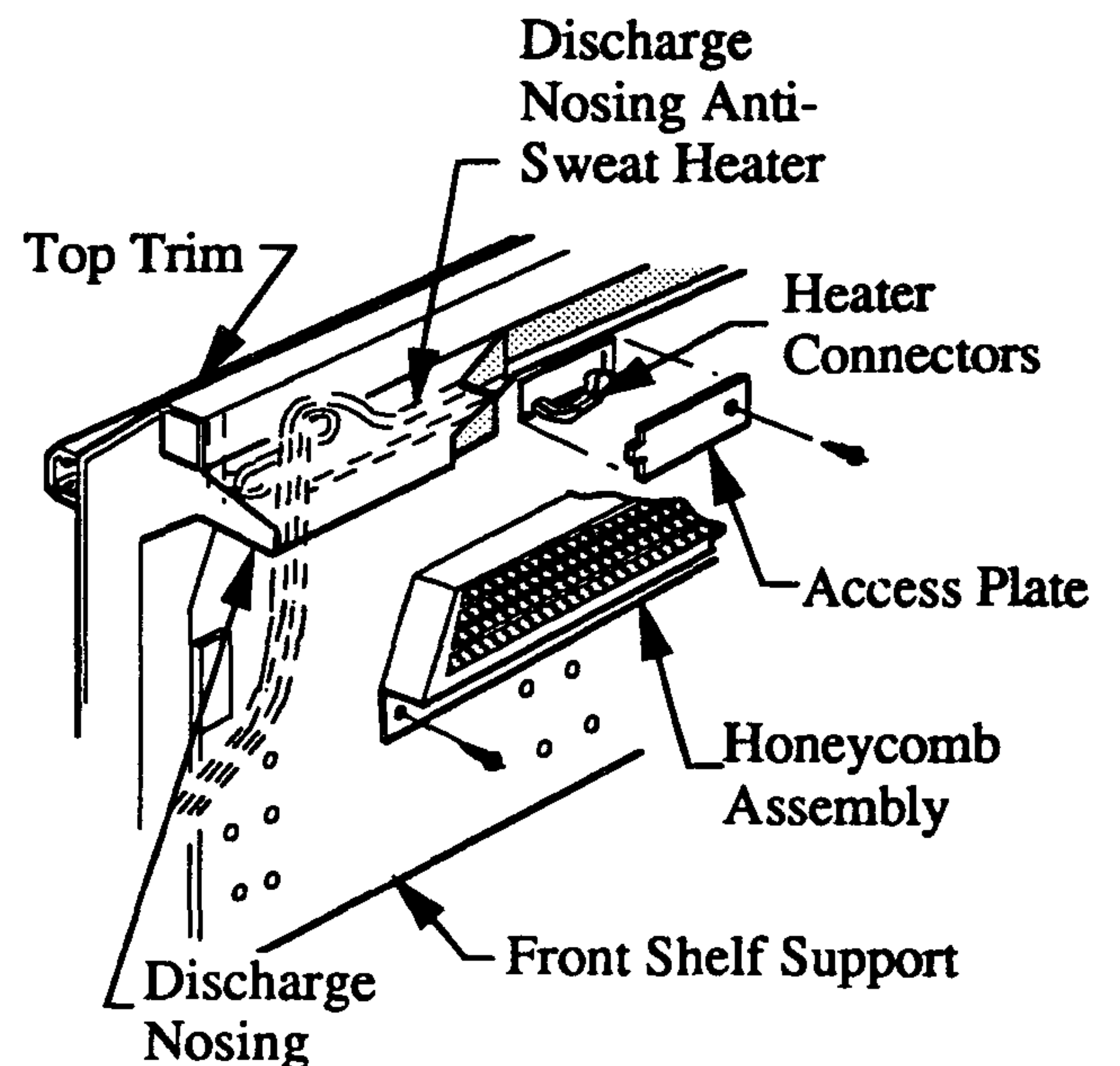
**CAUTION: Do NOT remove heaters by cutting the heater wiring.**  
**Disconnect heater at connector.**

**WARNING**

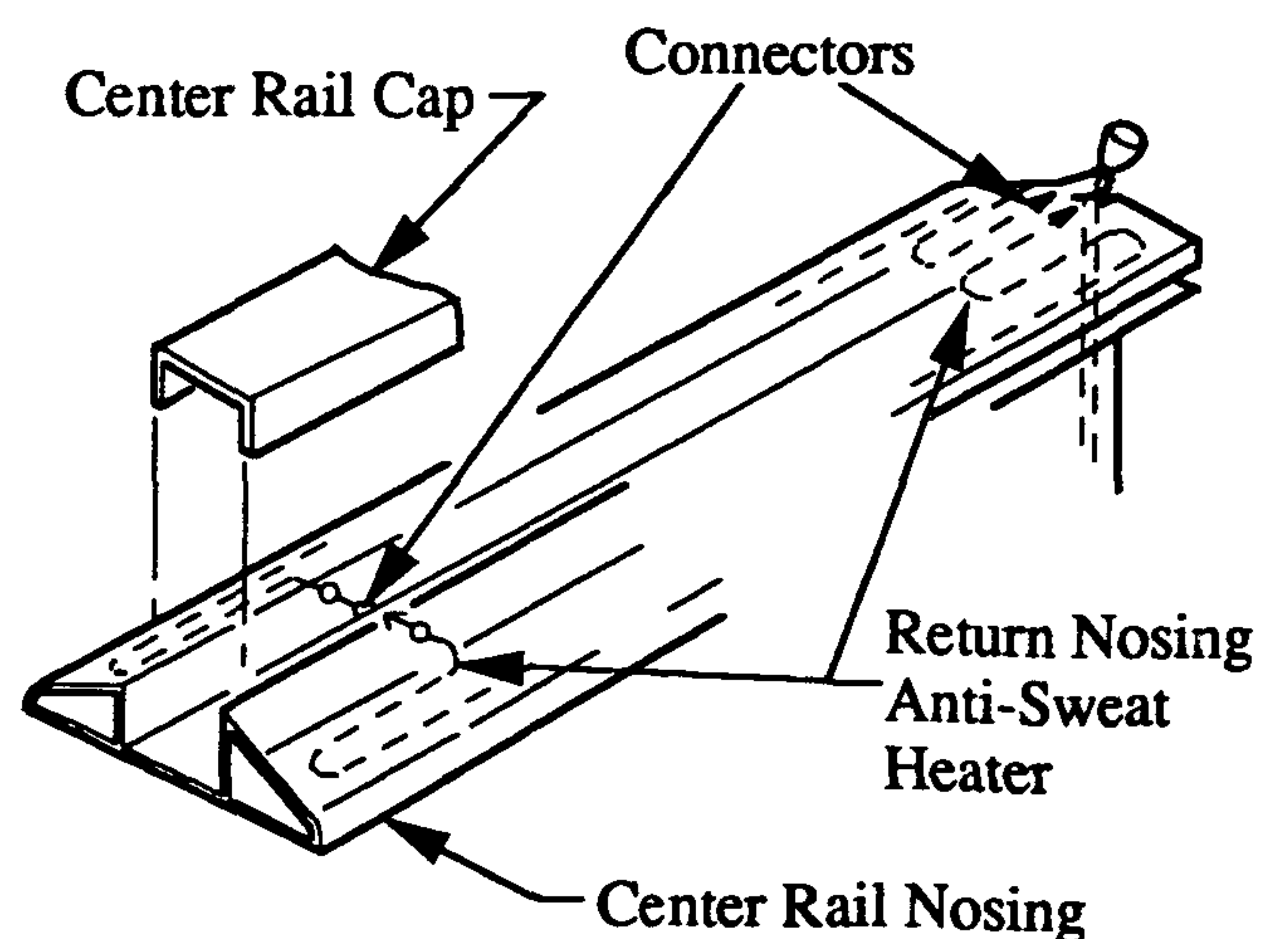
**Always disconnect the electrical power at the main disconnect when servicing or replacing any electrical component. This includes, but is not limited to such items as fans, heaters, thermostats and lights.**

**Discharge Nosing Heater**

1. **TURN OFF POWER TO ANTI-SWEAT HEATER CIRCUIT.**
2. Remove top trim.
3. Remove discharge nosing.
4. Remove honeycomb and access plate.
5. Unplug heater at disconnect.
6. Remove heater.
7. Install new heater in reverse order of removal.

**Return Nosing Heater (Wide Island Only)**

1. **TURN OFF POWER TO ANTI-SWEAT HEATER CIRCUIT.**
2. Remove end center rail covers (left and right).
3. Remove center rail nosings from both sides.
4. Unplug heater at disconnect.
5. Remove heater.
6. Install new heater in reverse order of removal.

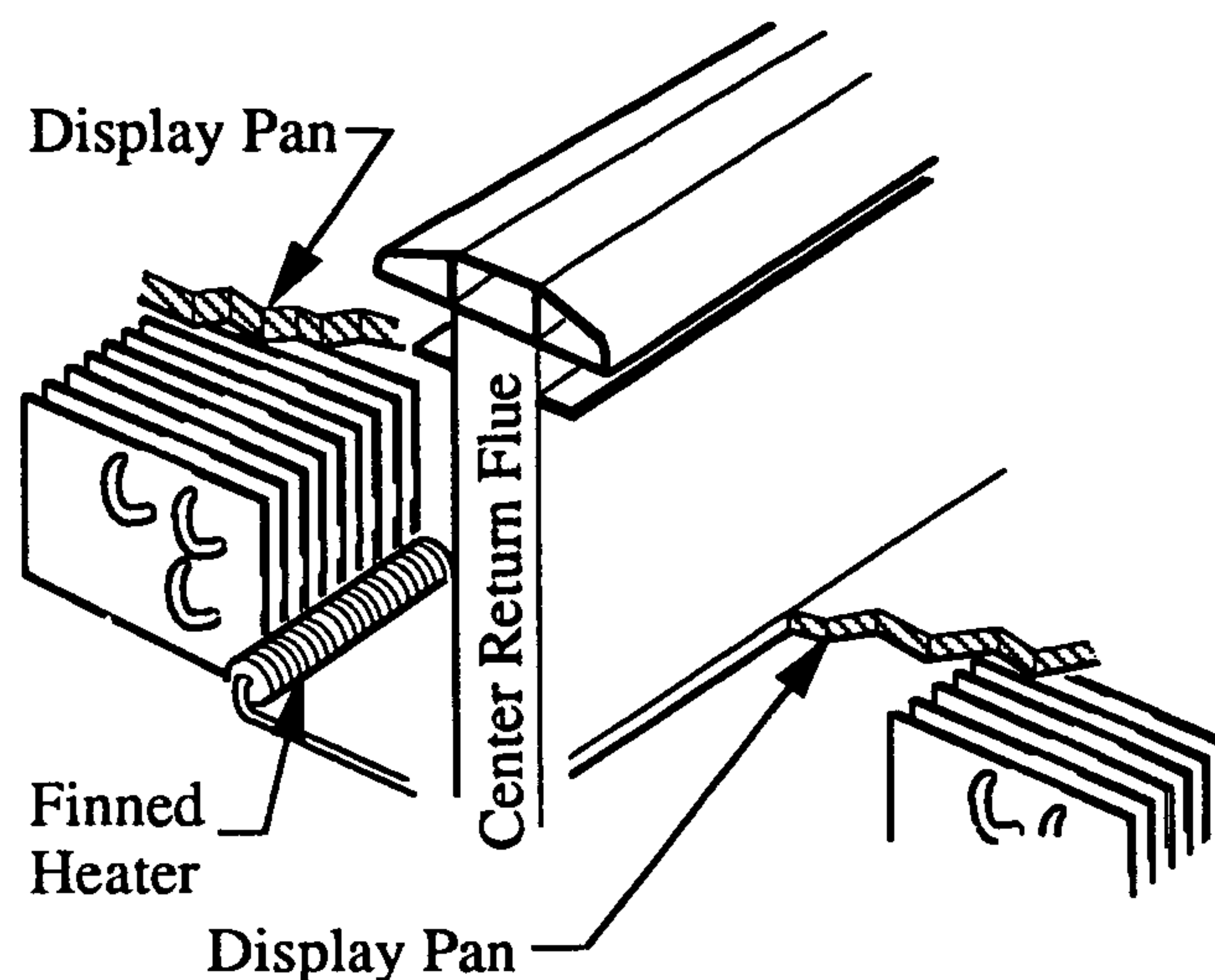




## REPLACING DEFROST HEATERS

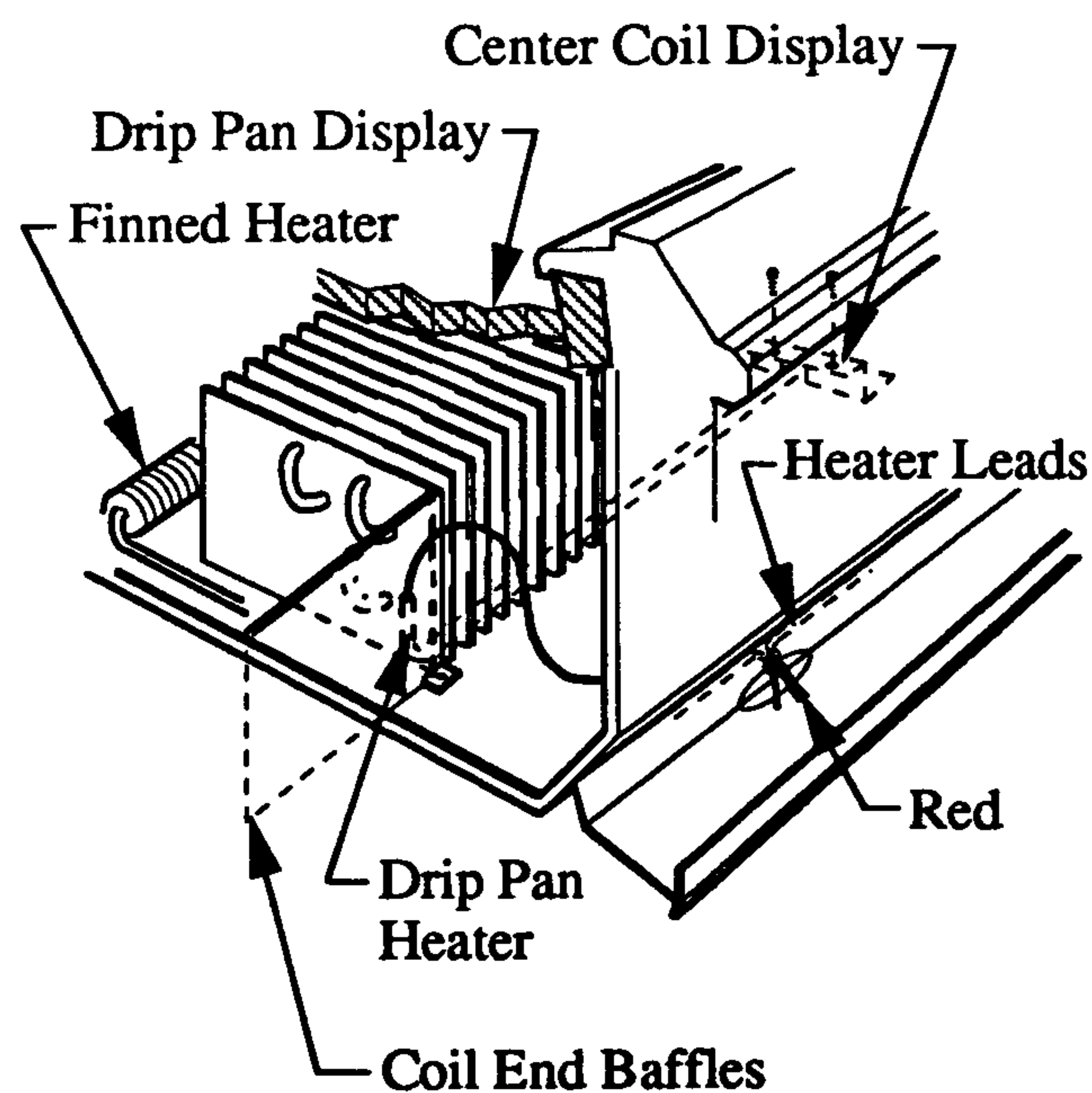
### Finned Heater

1. Turn off power circuit.
2. Remove display pans.
3. Disconnect heater leads from connections inside electrical raceway (left front corner of merchandiser.)
4. Remove heater.
5. Install new heater in reverse order of removal.  
(Be sure to reconnect heater leads to correct condensing unit circuit.)



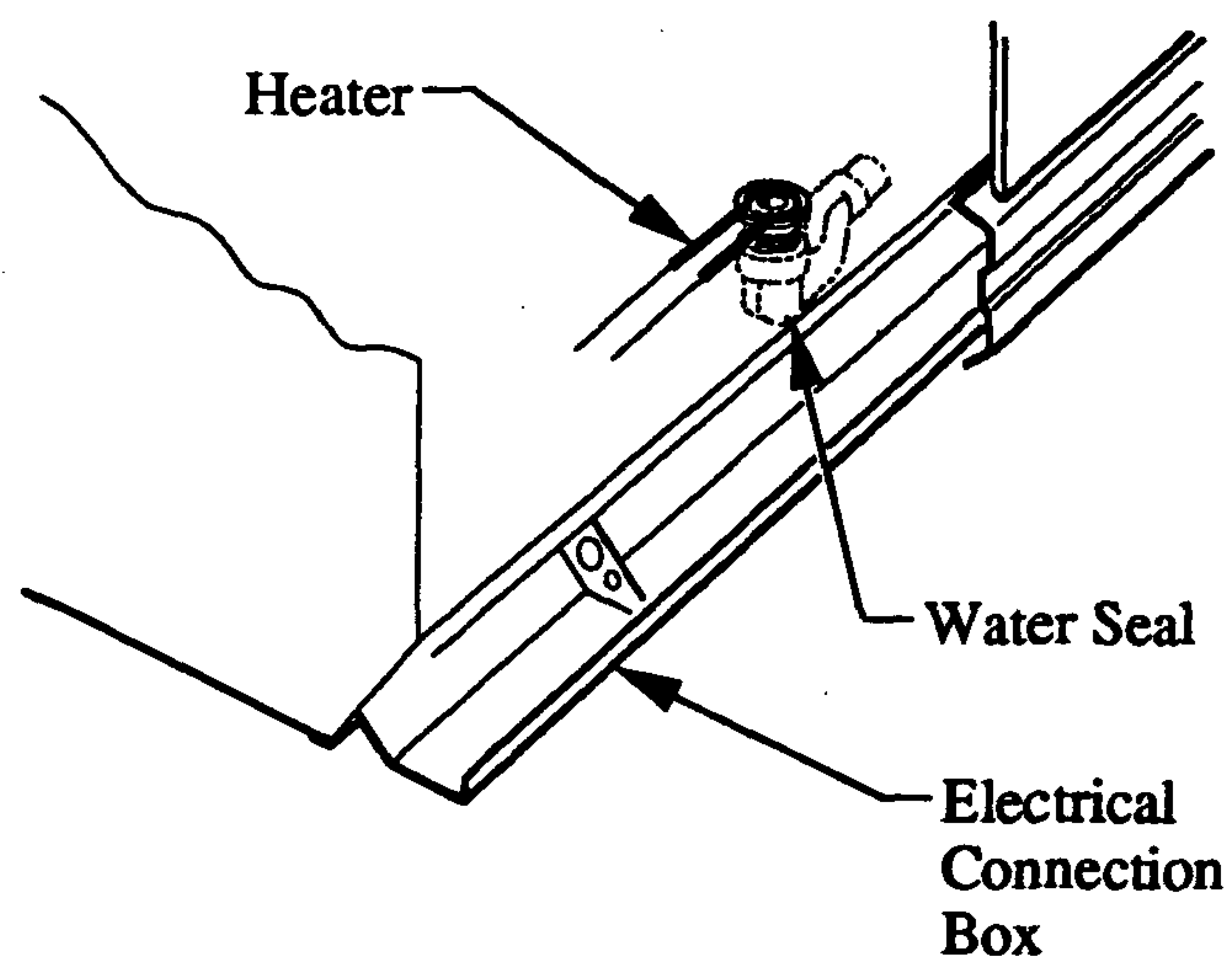
### Drip Pan Heater

1. Turn off power circuit.
2. Loosen front retainer nut of coil at both ends.
3. It may be necessary to remove coil end baffles.
4. Slide the drain pan heater and retainer out from under front of coil
5. Disconnect heater leads from connections inside electrical raceway (left front corner of merchandiser.)
6. Remove heater.
7. Install new heater in reverse order of removal.  
(Be sure to reconnect heater leads to correct circuit.)



## REPLACING WASTE OUTLET HEATER (KOOLGAS DEFROST)

1. TURN OFF POWER TO HEATER CIRCUIT.
2. Unscrew clamps holding heater.
3. Disconnect heater from fan and anti-sweat heater 120 volt circuit.
4. Remove heater.
5. Install new heater in reverse order of removal.  
(Be sure to reconnect heater leads to correct circuit.)



## CLEANING OR REPLACING HONEYCOMB

To remove the discharge honeycomb:

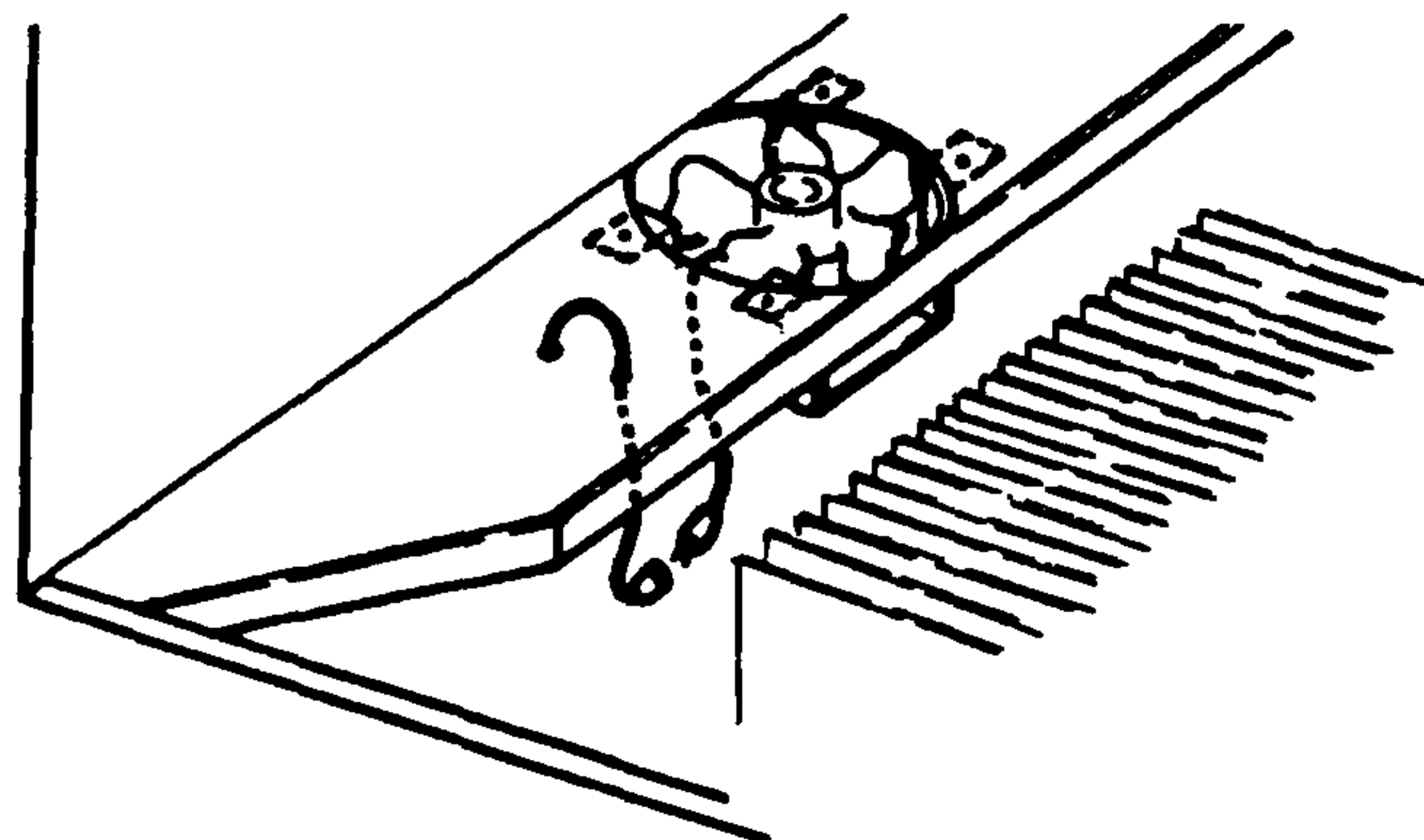
1. Remove screws which fasten the honeycomb discharge assembly to the front shelf support (directly below the honeycomb assembly).
2. Remove the honeycomb discharge assembly.
3. To clean honeycomb use either a vacuum or soap and water. Be sure to rinse the honeycomb and dry it thoroughly prior to replacing it in the merchandiser.
4. Install honeycomb discharge assembly in reverse order. Be sure honeycomb is nested behind plastic extrusion.



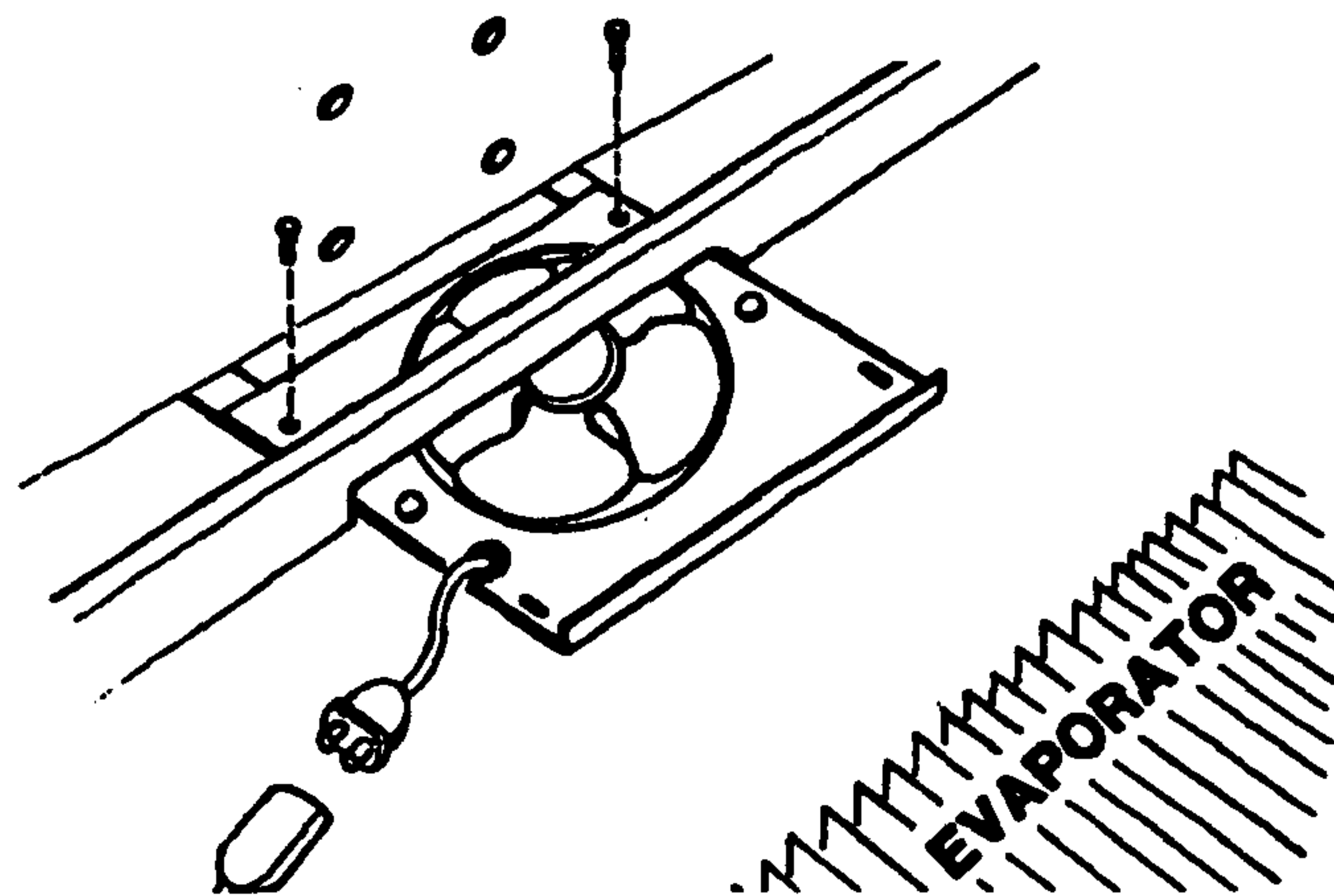
## REPLACING FAN MOTORS AND BLADES

The evaporator fans are located directly beneath the display pans. Should the fans or blades ever need servicing, always replace the fan blades with the raised embossed side of the blade toward the motor.

1. Remove bottom display pans.
2. Disconnect fan from wiring harness.
3. Remove fan blade.
4. Remove screws which hold fan bracket to plenum.
5. Slide fan motor and bracket to toward serial plate side of merchandiser. See illustration
6. Lift bracket and motor up and out through fan plenum.
7. Replace in reverse order.



GWIT



GWI

Wide Island Models

## REPAIRING ALUMINUM COIL

The aluminum coils used in Hussmann merchandisers may be easily repaired in the field. Materials are available from local refrigeration wholesalers.

Hussmann recommends the following solders and technique:

### Solders

Aladdin Welding Products Inc.  
P.O. Box 7188  
1300 Burton St.  
Grand Rapids, MI 49507  
(616) 243-2531

X-Ergon  
1570 E. Northgate  
P.O. Box 2102  
Irving, TX 75062  
(800) 527-9916

### Technique

1. Locate Leak.
2. Remove all pressure.
3. Brush area UNDER HEAT.
4. Use Prestolite torch only. Number 6 tip.
5. Maintain separate set of stainless steel brushes and use only on aluminum.
6. Tin surface around area.
7. Brush tinned surface UNDER HEAT, thoroughly filling the open pores around leak.
8. Repair leak. Let Aluminum melt solder, NOT the torch.
9. Don't repair for looks. Go for thickness.
10. Perform a leak check.
11. Wash with water.
12. Cover with a good flexible sealant.

### NOTE:

Hussmann Aluminum melts at .....1125° F  
Aladdin 3-in-1 rod at .....732° F  
X-Ergon Acid core at .....455° F  
Factory Solder at aluminum  
to copper transitions .....855° F