HUSSMANN®

CORPORATION

DMM

MULTIDECK
REFRIGERATED MERCHANDISER
FOR FRESH MEAT PRODUCTS

INSTALLATION / SERVICE INSTRUCTIONS

P/N 352651
July, 1991
Section 1

CONTENTS

IMPORTANT
KEEP IN STORE FOR FUTURE REFERENCE
Quality that sets industry standards

This merchandiser conforms to the
Commercial Refrigerator Manufacturer's Association
Health and Sanitation Standard
CRS-S1-86

HUSSMANN® 12999 St. Charles Rock Road • Bridgeton, MO 63044 USA • (314) 291-2000 • FAX (314) 298-4767

MODEL DESCRIPTION

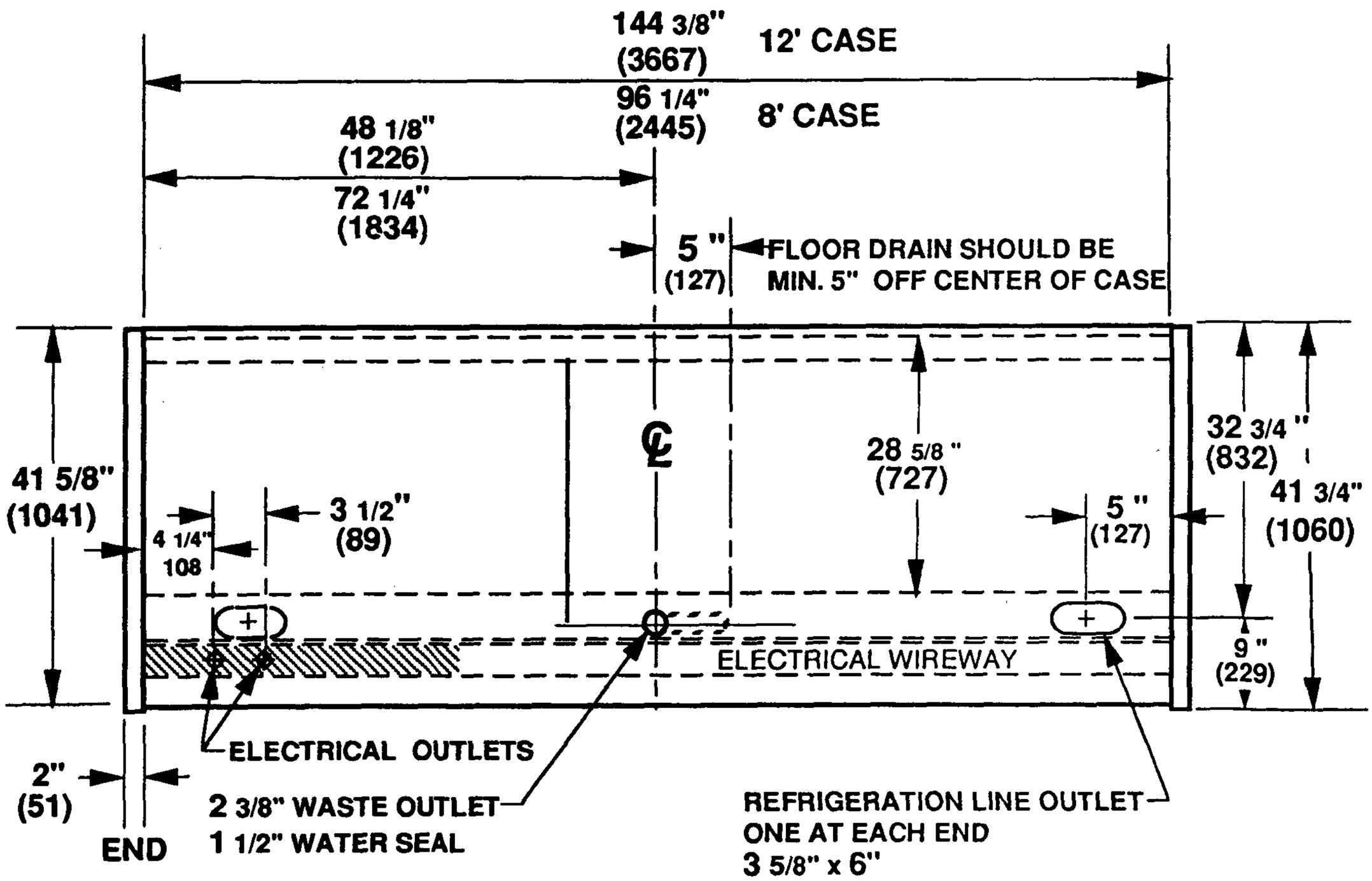
This instruction covers the DMM multidecked refrigerated merchandiser. This merchandiser is designed for fresh meat products. The DMM is a solid back, front loading merchandiser with a 27" high front. DMM merchandisers have 5 levels (4 shelves) and may be ordered in either 8 or 12' lengths.

APPLICATION

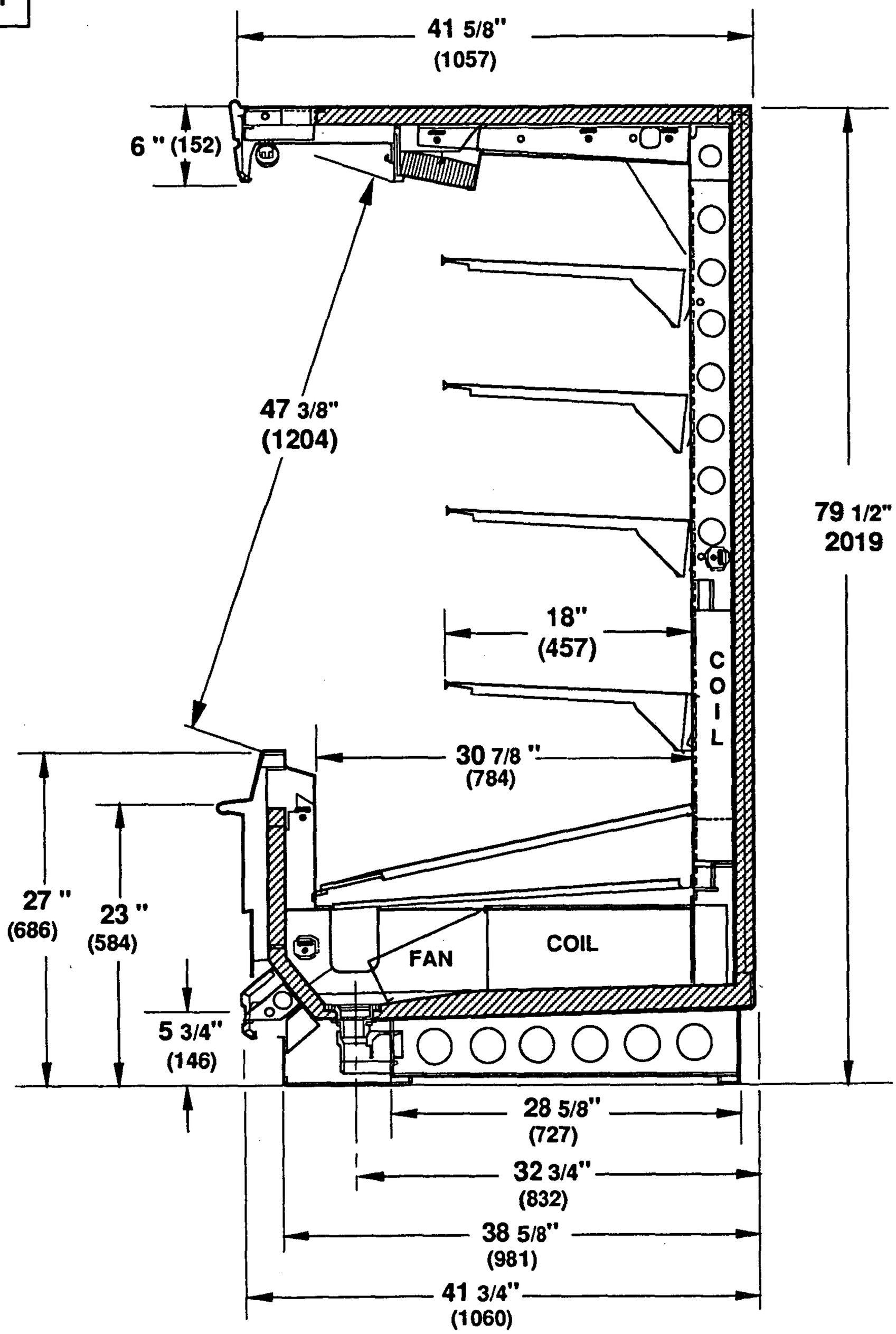
This medium temperature merchandiser is designed for displaying fresh packaged meat products in air conditioned stores where temperature and humidity are maintained at or below 75°F dry bulb temperature and 55% relative humidity.

NOTE: Plan view and cross section measurements are given in inches and in millimeters.

DMM



DMM


41 5/8"
(1057)
6 " (152)
47 3/8"
(1204)
79 1/2"
2019
18"
(457)
COIL
30 7/8 "
(784)
27 "
(686)
23 "
(584)
FAN
COIL
5 3/4"
(146)
28 5/8"
(727)
32 3/4"
(832)
38 5/8"
(981)
41 3/4"
(1060)

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 packing. The carrier will supply inspection report and required claim forms.

SHIPPING BRACES

Move the fixture as close as possible to its permanent location and then remove all packaging and shipping braces. Remove all separately packed accessories such as kits and shelves. Remove and discard the shipping screws at each end of the fan plenum. The plenum is hinged for easy access to the area beneath the evaporator.

WARNING

Do not remove shipping braces until merchandisers are properly lagged to the floor. These merchandisers are top heavy and could tip over causing serious injury.

Merchandisers must be braced before removing the lag bolts.

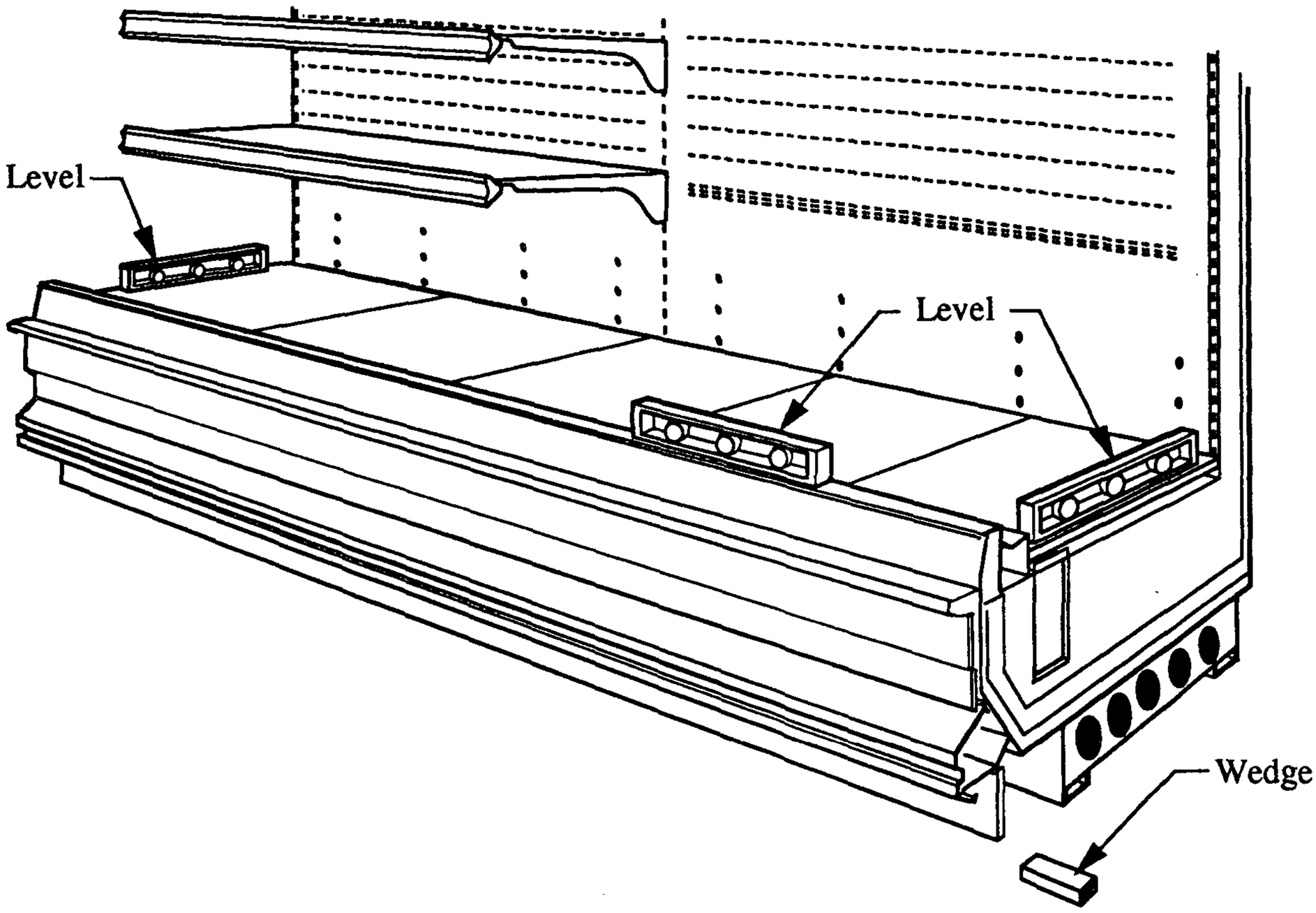
EXTERIOR LOADING

Do NOT walk on top of merchandisers or damage to the merchandisers and serious personal injury could occur. Merchandisers are not structurally designed to support excessive external loading such as the weight of a person.

LOCATION

Like other open merchandisers, these are sensitive to air disturbances. Air currents passing around these merchandisers will seriously impair their operation. Do not allow air conditioning, electric fans, open doors or windows, etc. to create air currents around merchandisers.

To prevent sweating on the exterior surfaces of the merchandisers, there must be a minimum clearance of 4" between the back and/or ends of this fixture and adjacent walls, merchandisers, shelving or coolers. Where high ambient conditions exist, sweating may still occur even with 4" minimum clearance. For these conditions, some method of forced ventilation is required, such as provided by a fan ventilation kit. To install the fan ventilation kit, refer to the kit installation instruction.



LEVELING

Merchandisers must be installed level to ensure proper operation of the refrigeration system and to ensure proper drainage of defrost water. Use a carpenter's level as shown when leveling merchandisers. Leveling shims or wedges are provided with each merchandiser for use if needed. **NOTE:** To avoid removing concrete flooring, begin lineup leveling from the highest point of the store floor.

JOINING

Merchandisers are of sectional construction which means that two or more may be joined in line yielding one long continuous display requiring only one pair of ends. Joint assemblies and instructions are shipped separately.

INSTALLING DRIP PIPING

Poorly or improperly installed drip pipes 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 11/2" drip piping. Never use drip piping smaller than the nominal diameter of the pipe or water seal supplied with the merchandisers.

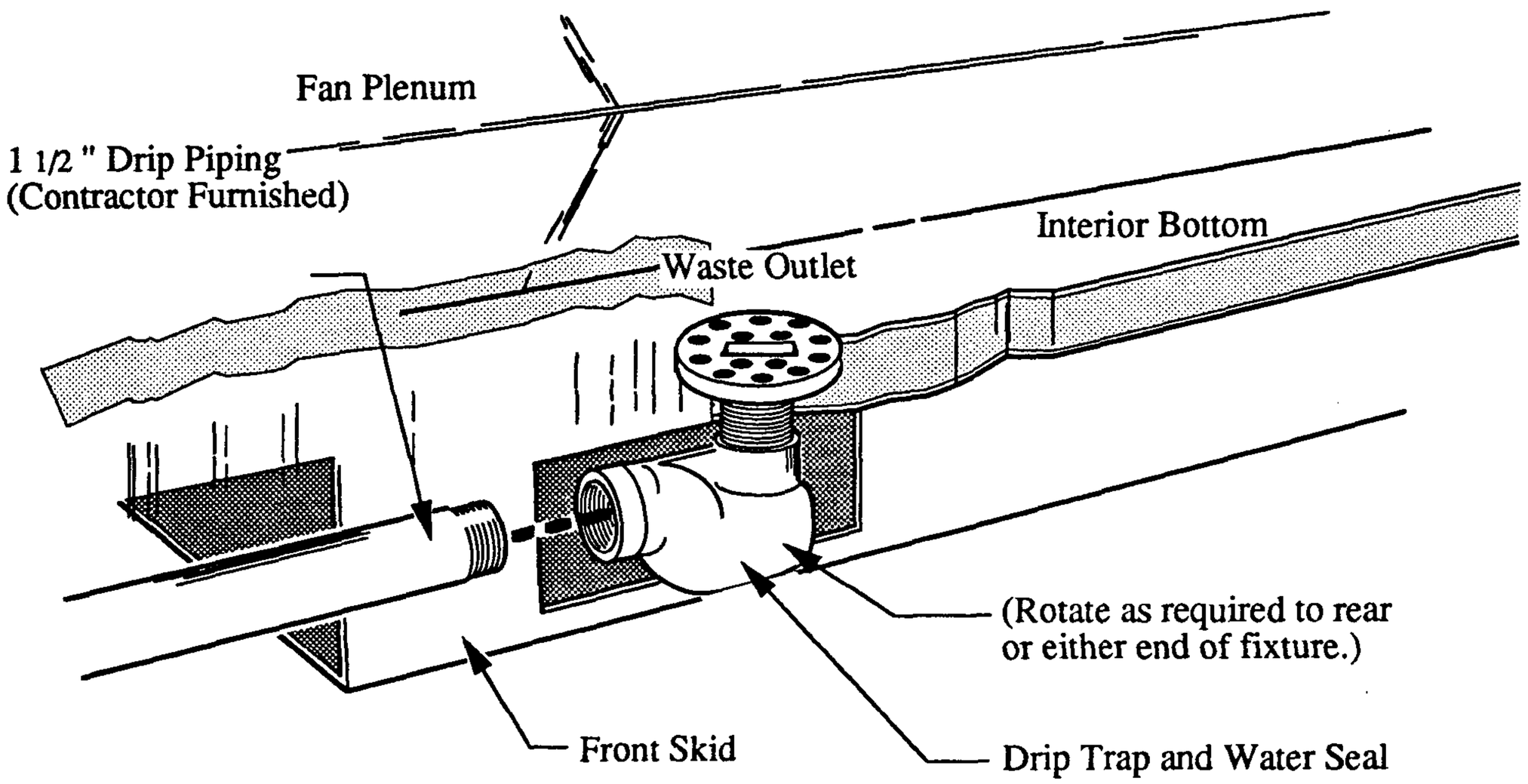
2. When connecting drip piping, the "water seal" must be used as part of the drip piping to prevent air leakage or insect entrance. Never use two water seals in series in any one drip pipe. Double water seals in series will cause a lock and prevent draining.

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 "fall" 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 nonabsorbent insulation material.
   B. Where drip pipes are located in dead air spaces, such as between merchandisers or between a merchandiser and a store wall, provide means to prevent freezing.



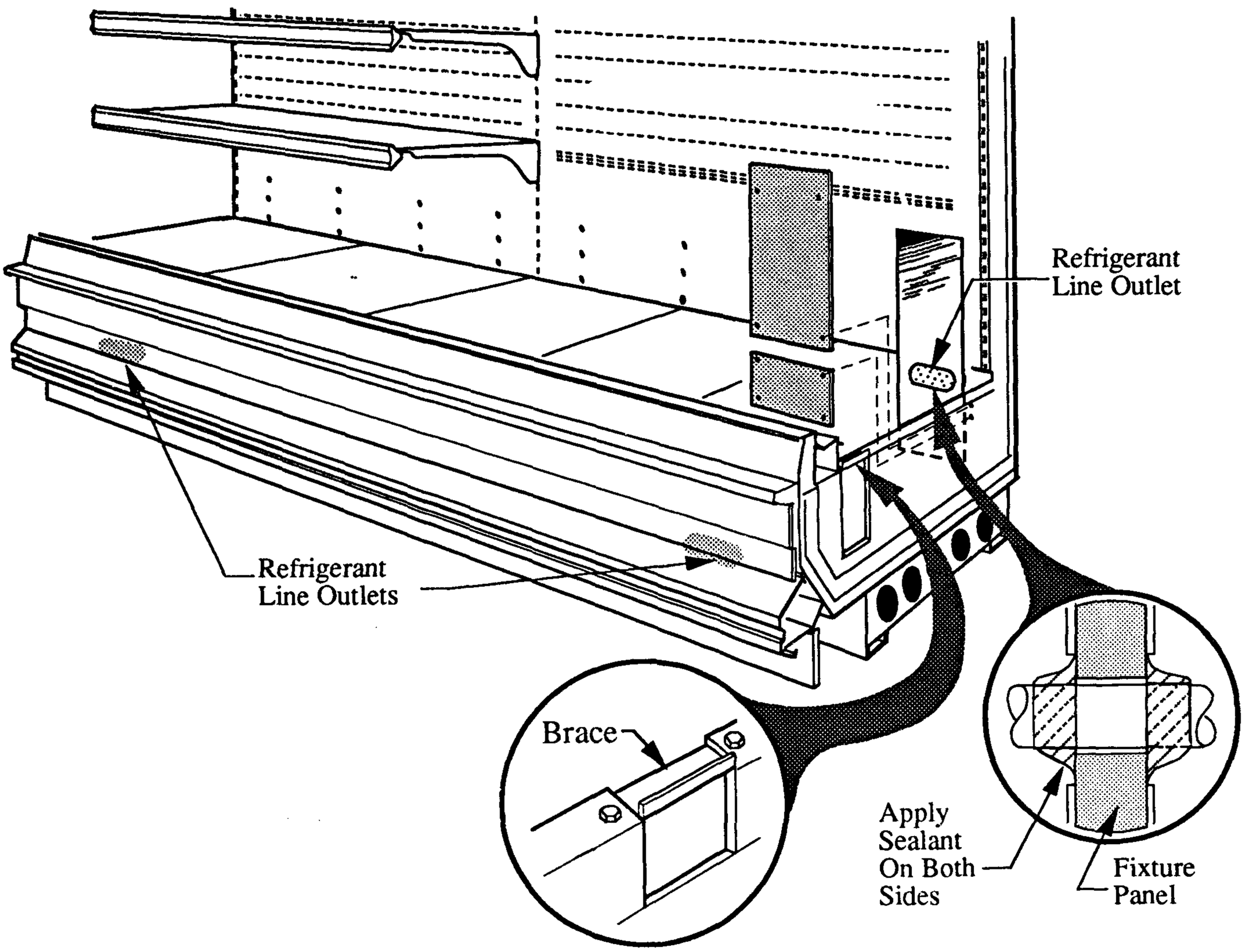
SEALING REFRIGERANT PORT

For a rapid and thorough seal, we recommend that the refrigeration outlets be sealed using an aerosol dispensed urethane insulation. After the urethane has been applied and has set, it should be sealed over on the inside of the case with a butyl caulking to prevent absorption of moisture during cleaning or when case is defrosting. See illustration below.

INSTALLING SPLASHGUARD

The splashguard is shipped inside each merchandiser. After merchandisers have been leveled and joined, and all drip piping, electrical and refrigeration work has been completed, install the splashguard as outlined on the next page. The following splashguard parts are shipped with the merchandisers.

Item	Quantity 8ft	Quantity 12ft	Description
1.	1	1	Splashguard
2.	3	4	Lower Splashguard Retainer
3.	3	4	Plastic Fastener
4.	4	5	#8 x 1/2" Truss Head Sheet Metal Screw



To Install Splashguard

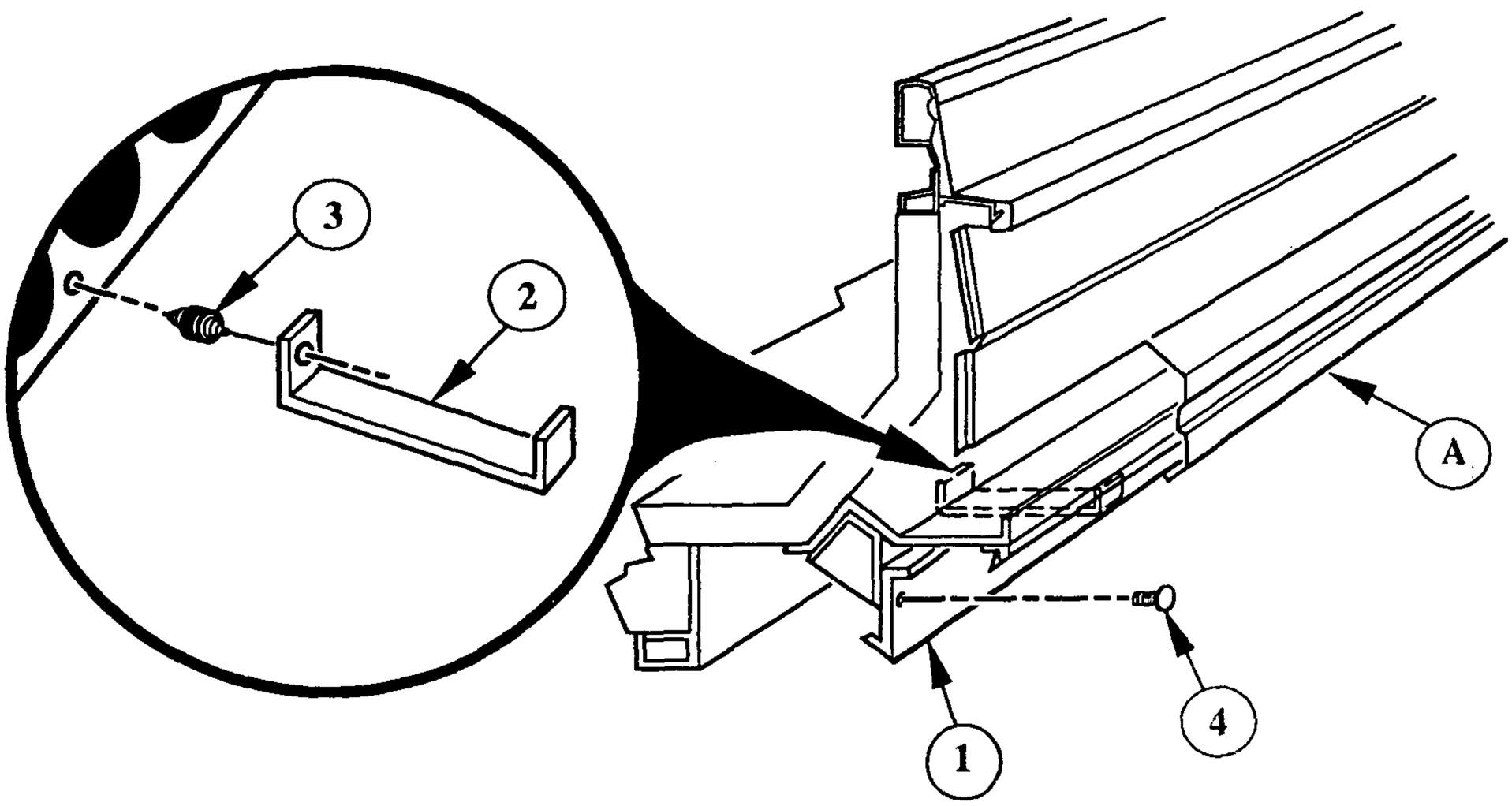
1. To install the Lower Splashguard Retainers (Item 2):
   A. Press one end of Plastic Fasteners (Item 3) into each retainer seating completely.
   B. Position the opposite end of these fasteners into the holes located on the base rail, then tap the end of the retainers with a hammer to seat the fastener. If necessary, temporarily raise the side of the merchandiser slightly while installing.
2. Grasp the Splashguard (Item 1) at midpoint along lower edge, insert upper edge under the merchandiser's Lower Bumper Rail (Item A below) and lower the splashguard to engage the splashguard retainers.
3. Fasten the Splashguard (Item 1) with #8 x 1/2" Truss Head Screw (Item 4) to the nut retainers along upper edge of splashguard.

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 of trim 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.



REFRIGERANT

Check the merchandiser's serial plate to determine the type of refrigerant used. The serial plate is located on the left-hand end of the interior top liner.

REFRIGERANT PIPING

Connection Sizes

Liquid Line	3/8" OD
Suction Line	11/8" OD

Connection Location

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

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

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' 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' from the merchandiser. Additional insulation for the balance of the liquid and suction lines is recommended wherever condensation drippage is objectionable.

REFRIGERATION PARTS LIST (Sporlan Nomenclature)

Refrigerant R502				
DMM	Off Time Defrost Expansion Valve	Distributor	Koolgas Defrost Expansion Valve	*Distributor
8ft	BFRE AC	D115—2—1/4—1	BFRE AC	D116—2—1/4—1
12ft	BFRE CC	D115—2—1/4—2	BFRE CC	D116—2—1/4—2

Refrigerant R22				
DMM	Off Time Defrost Expansion Valve	Distributor	Koolgas Defrost Expansion Valve	*Distributor
8ft	BFVE AC	D115—2—1/4—1	BFVE AC	D116—2—1/4—1
12ft	BFVE AC	D115—2—1/4—1	BFVE AC	D116—2—1/4—1

Refrigerant R12				
DMMs	Off Time Defrost Expansion Valve	Distributor	Koolgas Defrost Expansion Valve	*Distributor
8ft	BFFE CC	D115—2—1/4—1 1/2	BFFE CC	D116—2—1/4—1 1/2
12ft	BFFE CC	D115—2—1/4—2	BFFE CC	D116—2—1/4—2

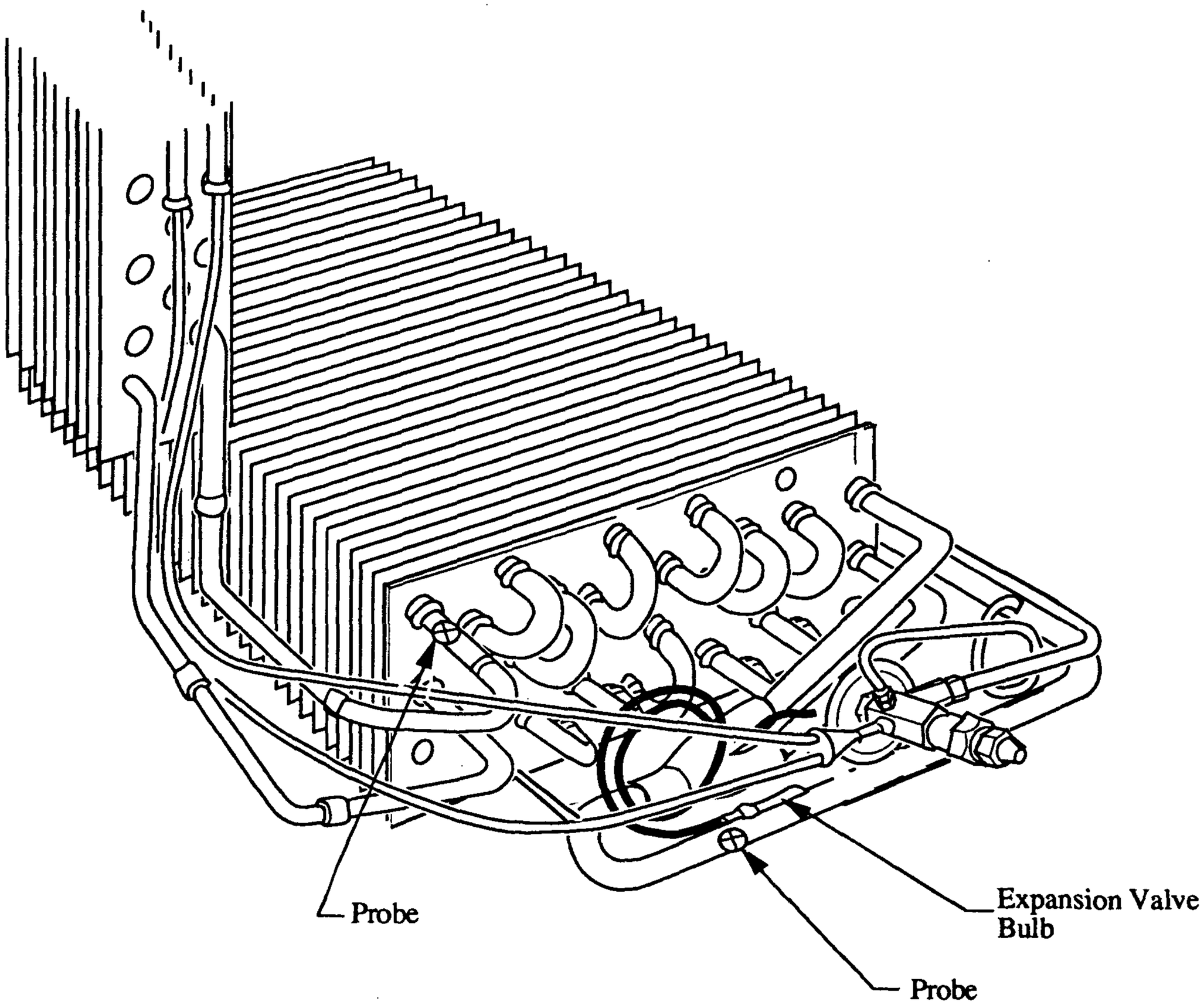
*These distributors are provided with a special 3/8" side outlet port that allows the liquid condensed in the coil during defrost to bypass the expansion valve and flow into the liquid line.

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 low as 0°F). Make adjustments of no more than one-fourth (1/4) turn for Balanced Port TEV and one-half (1/2) turn for "G" Body valves' stem at a time. Wait for at least 15 minutes before rechecking the probe temperature and making further adjustments.



CONTROL SETTINGS

Med-Temp Multideck (1) **Fresh Meat**		Conventional Single Compressor	Parallel Compressor Rack
Discharge Air Temperature °F		24	24
Evaporator Temperature °F		18	18
REFRIGERATION CONTROL		(2)	(5)
EPR	When used, EPR Valve setting must maintain evaporator temperature listed above.		
Thermostat	Cut-out °F	22	22
CDA Valve	Set Point °F	—	22
Pressure (2) Cut-in/Cut-out psig	R502	63/44	—
	R22	52/36	—
	R12	27/16	—
DEFROST CONTROLS		(3)	(6)
Frequency	Every	6 hours	6 hours
Termination			
Pressure psig indoor condenser units only	R502	96	—
	R22	76	—
	R12	42	—
Temperature °F		48	48
Time Refer to **Length** below			
Fail-safe			
minutes	Single Compressor Outdoor Condenser pumpdown included	44	—
	All Other Applications	40	40
Length			
minutes	Koolgas	—	14
	Electric	26	—
	Off Time	40	40
Low Pressure Settings		(4)	
with CDA or Thermostat Temperature Control Cut-in/Cut-out psig	R502	63/30	—
	R22	52/23	—
	R12	27/ 9	—

Footnotes

(1) Measure Discharge Temperature at the center of the discharge honeycomb at the center of the case.

Conventional Single Compressor

(2) Merchandiser temperature may be controlled by the condensing unit's low pressure control or by a thermostat with a 1°F differential. The thermostat will be wired to control the compressor motor contactor. A thermostat is preferred on indoor units and required on outdoor units. If used, low pressure control must cut-out refrigeration at listed discharge air temperatures.

(3) Defrost is Off Time. Indoor condenser units may use pressure or time termination. Outdoor condenser units use time termination. On outdoor units the defrost timer will control a liquid line solenoid beginning a defrost pumpdown 4 minutes before defrost.

(4) Low pressure control settings are applicable to outdoor condenser units where ambient does not fall below 0°F.

Parallel Compressor Rack

(5) Merchandiser temperature must be controlled by a thermostat or a CDA. The CDA sensor will be mounted in the same location as a thermostat sensing bulb. The CDA valve and control board will be mounted on the rack.

(6) Standard Off Time is time terminated.

Optional Koolgas defrost is time terminated. The defrost frequency and lengths listed may require adjustment for specific store conditions. Factors include:

Store temperature and humidity
Low head pressure
Long refrigerant line runs
Seasonal changes
Merchandiser temperature lower than recommended

Stagger defrosts to maintain stable compressor loading and sufficient defrost gas. When practical, defrost when store is closed.

REFRIGERATION THERMOSTAT

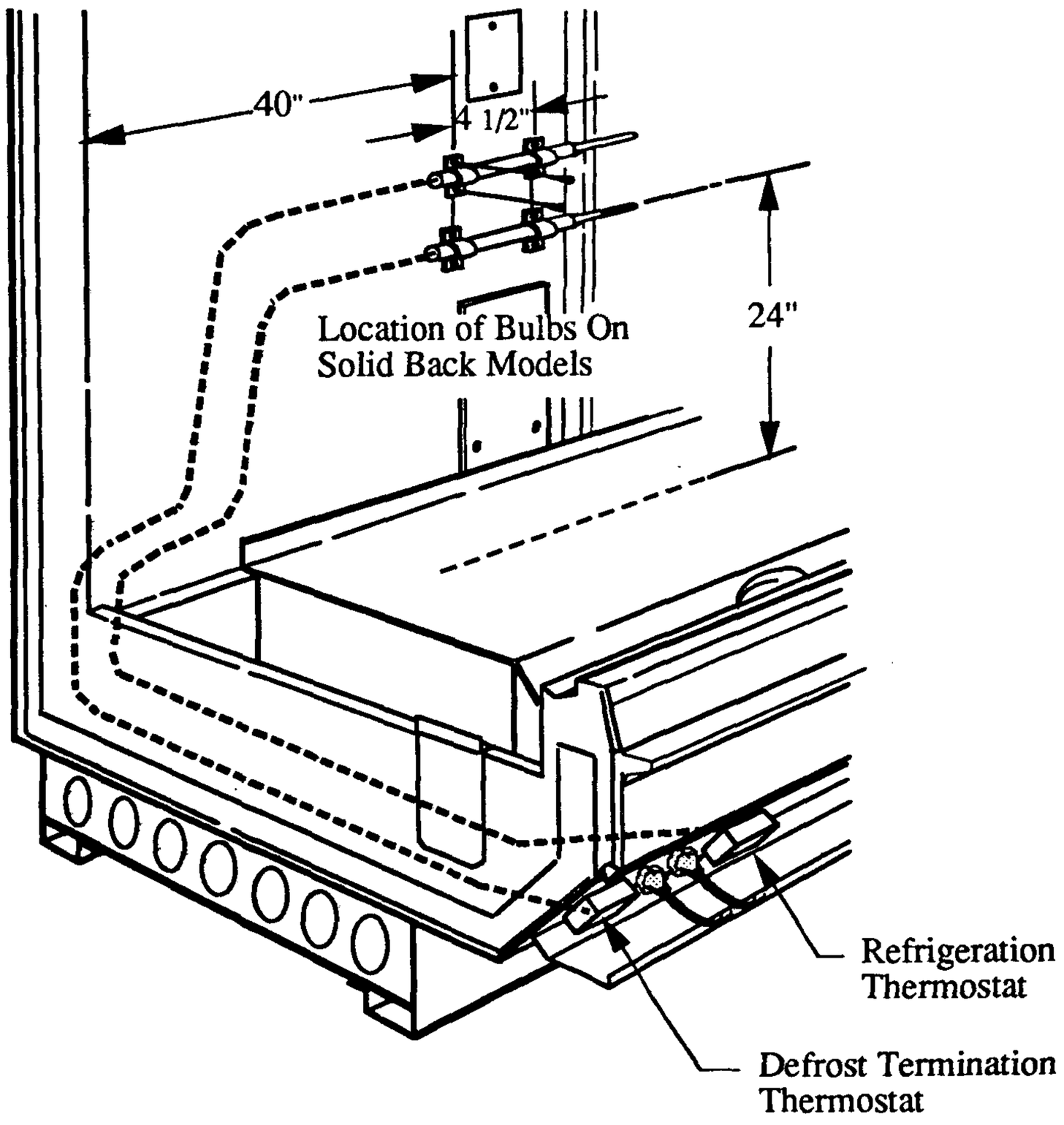
Factory installation of optional thermostat is shown below. The thermostat body is located under the overhang at the left end of the merchandiser. The bulb is located above the coil approximately 40" from the merchandiser's left-hand end. See illustration below.

DEFROST TERMINATION THERMOSTAT

Factory installation of optional Defrost Termination Thermostat is shown below. This thermostat is an adjustable type with the thermostat body and bulb located as shown in the illustration below. Set thermostat to terminate defrost at 50°F discharge air temperature.

CDA SENSOR

Factory installed optional CDA sensor is located where the thermostat bulb would normally be located. Its leads will be routed through the electrical raceway and to the rack control panel. Leads are tagged in the raceway.



CONNECTIONS

All wiring must be in compliance with NEC and local codes. All electrical connections will be made in the electrical raceway behind the lower bumper rail at the left-hand end of the merchandiser. 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.

WIRING COLOR CODE

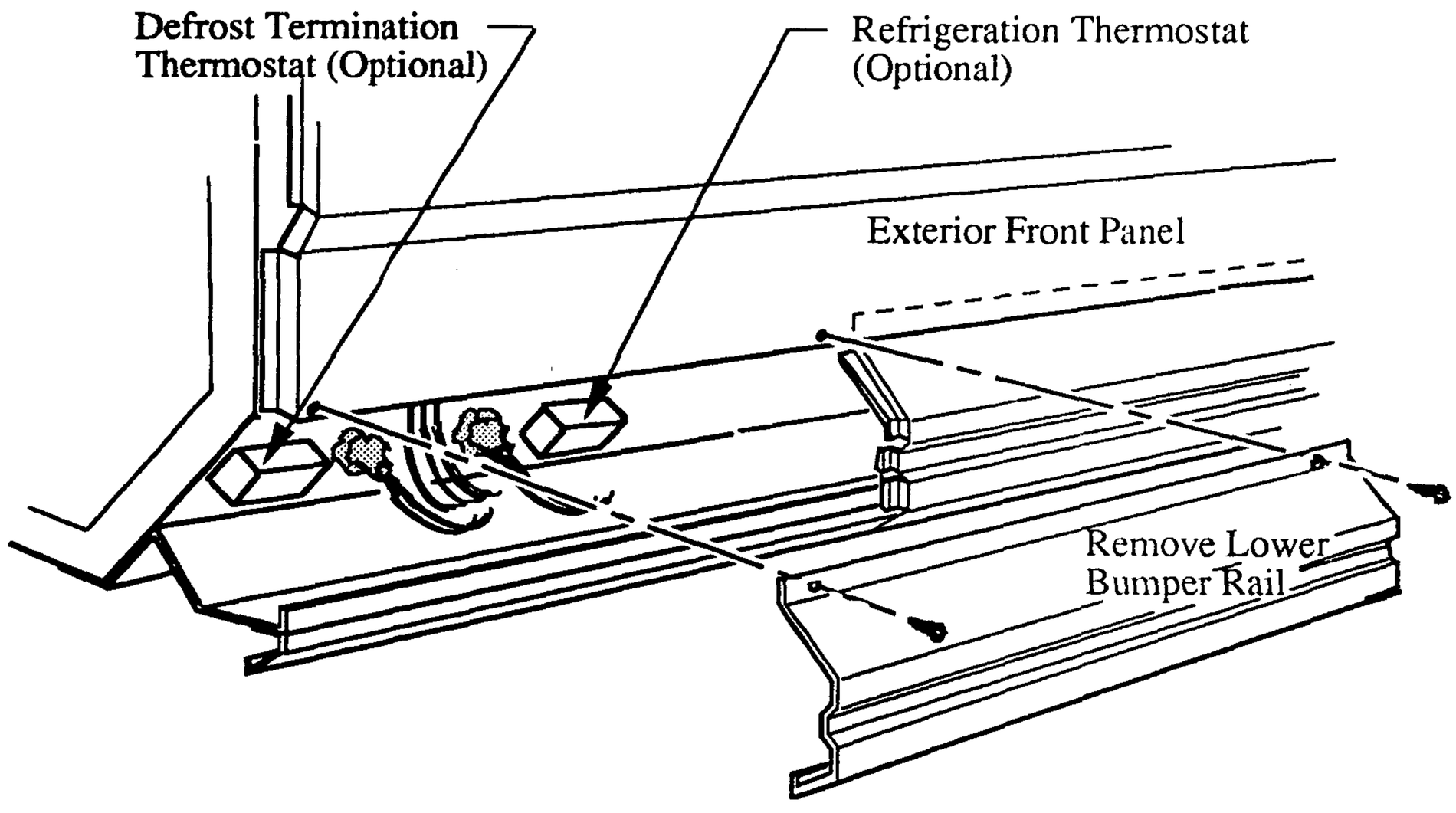
Leads for all electrical circuits are identified by a colored plastic band: neutral wire for each circuit has either White insulation or a White plastic sleeve in addition to the color band.

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



NOTE: After wiring is connected make certain that the merchandiser's wiring access holes are sealed in place so that the refrigerated air does not leak out.

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 Fans	120V 1PH 60Hz Lights—Includes a full complement of lighted shelves. Standard	120V 1PH 60Hz Lights—Includes a full complement of lighted shelves. Option	208V 1PH 60Hz Optional Defrost Heater
	(1)	(2)	(3)	
DMM				
8'	2.8	6.0	6.8	5.2
12'	4.2	9.1	10.2	7.8

(1) Fans must operate continuously. Fans should be on a separate circuit from the lights to avoid turning them off with the store lights.

Each column applies to light configurations listed below:

(2) One row of canopy fluorescent lamps.

(3) Two rows of canopy fluorescent lamps.

Multideck Meat

WARNING

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

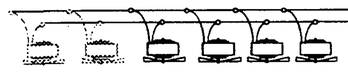
Notes:
Schematic shows both standard and optional components. Not all components will be on each merchandiser.
Check store legend for specifics.
8' merchandiser with 1 canopy light and 1 rail uses 1 two light ballast in the canopy.
Grayed components in 12' models only.

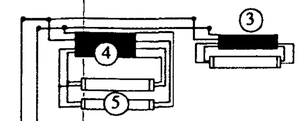
Defrost Heater

(8)

Evaporator Fans

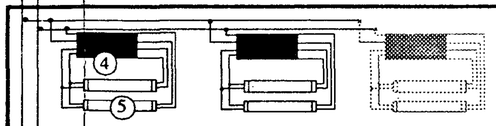
(1) (2)





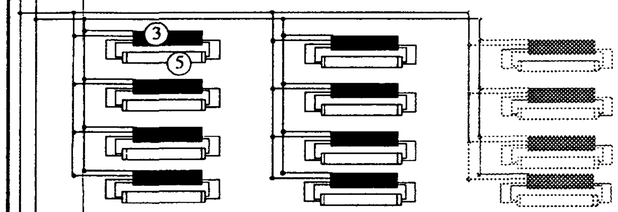
Standard Lighting
1 row fluorescent

(3) (4) (5)



Optional Canopy Lighting
2 rows fluorescent in canopy

(4) (5)



Optional Lighting Shelves
1 single lamp ballast per shelf

(3) (5)

Raceway

Brown
(120V Only)

Red 208V / Yellow 120V

Light Switch

Orange or Tan
(120V Only)

Raceway

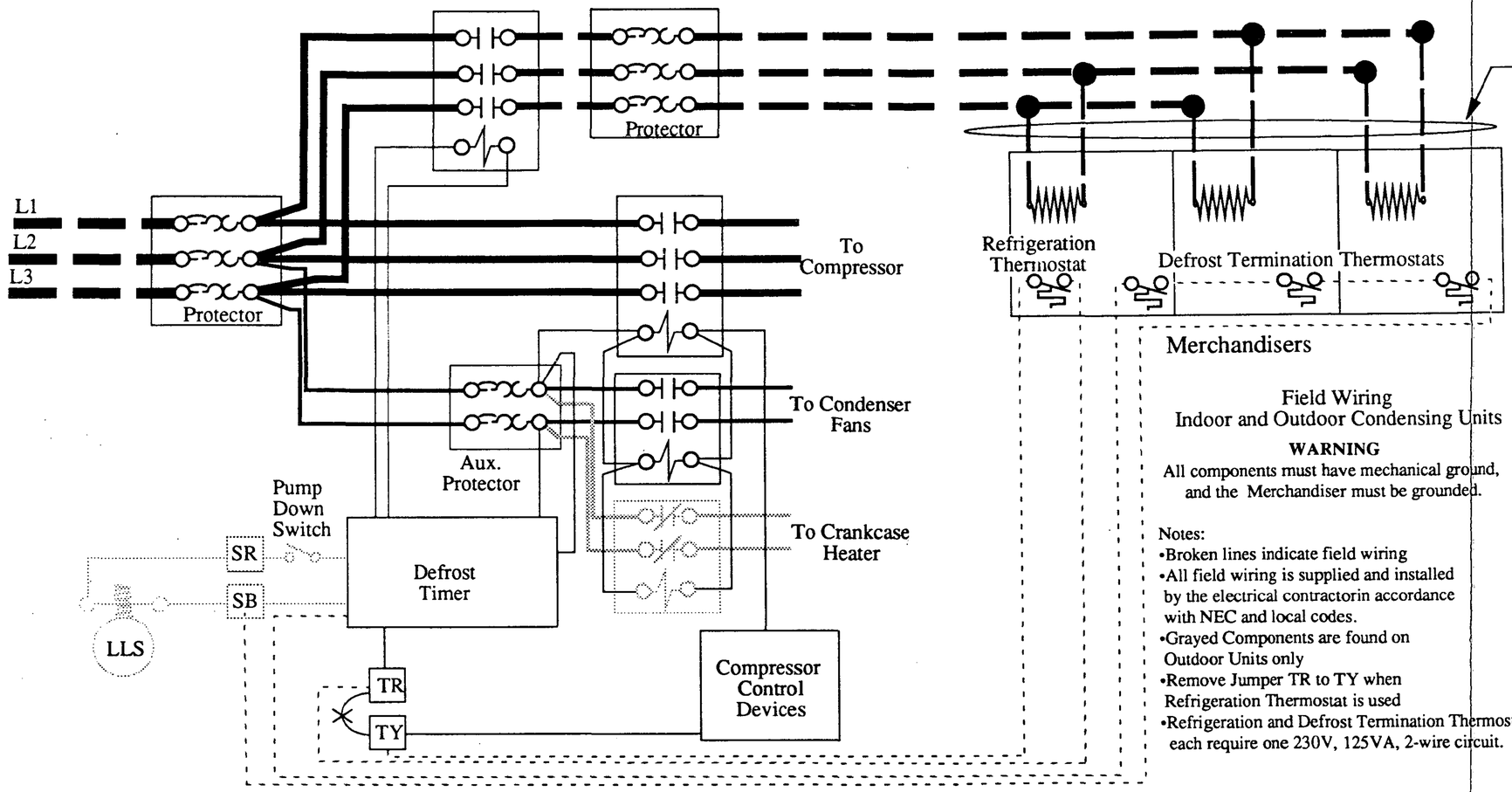
Defrost Termination Thermostat (7)

Refrigeration Thermostat (6)

Light Blue(med-temp)

Dark Blue

To Condensing Unit



Merchandisers

Field Wiring
Indoor and Outdoor Condensing Units

WARNING

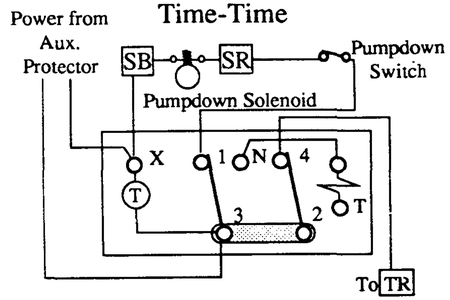
All components must have mechanical ground, and the Merchandiser must be grounded.

Notes:
- Broken lines indicate field wiring
- All field wiring is supplied and installed by the electrical contractorin accordance with NEC and local codes.
- Grayed Components are found on Outdoor Units only
- Remove Jumper TR to TY when Refrigeration Thermostat is used
- Refrigeration and Defrost Termination Thermostats each require one 230V, 125VA, 2-wire circuit.

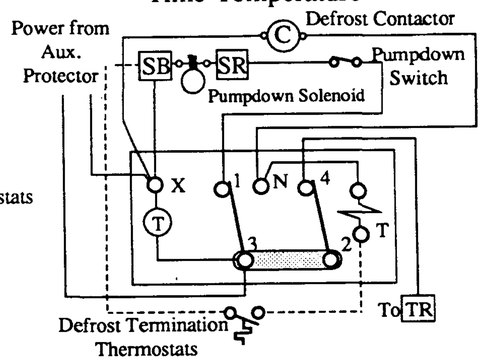
Outdoor A633 Clock

On call for defrost contacts 3-1 open and 3-N close. Four minutes later contacts 2-4 open.

Offtime Time-Time

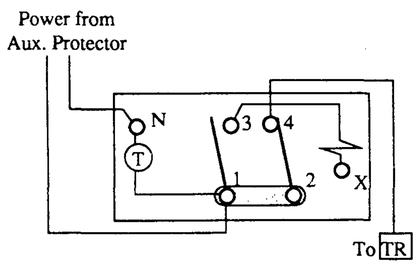


Electric Time-Temperature

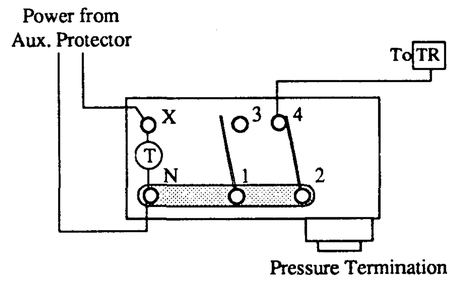


Indoor Offtime

Time-Time 8145 Clock

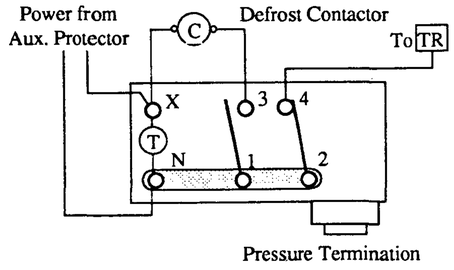


Time-Pressure 8245 Clock

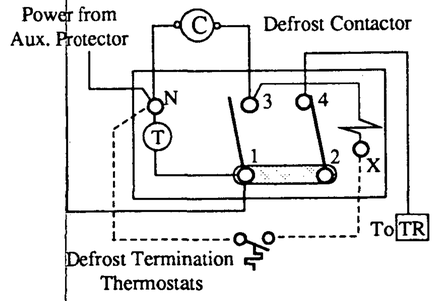


Indoor Electric

Time-Pressure 8245 Clock



Time-Temperature 8145 Clock



REPLACEMENT PARTS LIST

ITEM NUMBER	HUSSMANN PART NO.	DESCRIPTION
1.	047000	Fan Motor, 115V, 9W, CW GE #KSM51ECG3799
2.	124150	Fan Blade, embossing toward motor Morrill #FV800 CW 30S
3.	147082	Ballast GE #6G1063
4.	147080	Ballast GE #6G1022
5.	332531	Fluorescent Lamp GE F40SP30
6.	137880	Refrigeration Thermostat, Optional WR #1609-103
7.	113625	Defrost Termination Thermostat, Optional Penn #A19AGD-21
8.	131434	Defrost Heater, Optional, 8' Models 208V, 5.2A, 40Ω
	131435	Defrost Heater, Optional, 12' Models 208V, 7.8A, 27Ω

CARE AND CLEANING

Long life and satisfactory performance of any equipment is dependent upon the care it receives. To ensure long life, proper sanitation and minimum maintenance costs, merchandisers should be thoroughly cleaned, all debris removed and the interiors washed down, weekly.

To facilitate cleaning, the fan plenum is hinged for easy access to the area beneath the evaporator. The plenum is fastened down for shipping purposes with a screw at each end. If these have not been removed, do so and discard. After cleaning be sure the plenum is properly lowered into position.

CAUTION: SHUT FAN OFF DURING CLEANING PROCESS.

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 NOT Use:

•Mineral oil based solutions, as these will dissolve the butyl sealants used in the merchandisers' construction.

•Abrasive cleansers and scouring pads, as these will mar the finish.

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 water pressure hoses to wash the interior.** These will destroy the merchandisers' 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 merchandisers to dry before resuming operation.

•When cleaning lighted shelves, wipe down with a damp sponge or cloth so that water does not enter the light channel. **Do NOT use a hose or submerge shelves in water.**

STOCKING

Product should not be placed in merchandisers until all refrigeration controls have been adjusted and merchandisers are at proper operating temperature.

At no time should merchandisers be stocked beyond the load limits indicated on the inside of each merchandiser. Shelf life of perishables will be short if load limit (marked on ends) is violated.

The shelves for the multideck models have a designed load limit of 200 pounds per shelf. No more than four rows of shelves should be used.

When stocking, keep packages and signs off the lower return grill. Air discharge and return air grills must be unobstructed at all times to provide proper refrigeration and air circulation performance.

SHELVES

All upper shelves are individually mounted in 1" increments and have two-position brackets permitting shelves to be placed in a flat or down-tilt position. Front product stops are especially recommended when shelves are placed in the down-tilt position.

The 16 and 18" shelves may be placed in any position provided by the double-slotted uprights in the rear wall of the merchandiser. The 20" shelf may be positioned in any of the nine lower upright slots and still be behind the front refrigerated air curtain.

Wire display shelves can be adjusted to several positions permitting shallow displays or volume display (for bulky items such as hams or chickens).

NOTE: Best refrigeration is obtained when shelves are stair stepped, so that no shelf is deeper than the shelf below it. No more than four rows of shelves should be used.

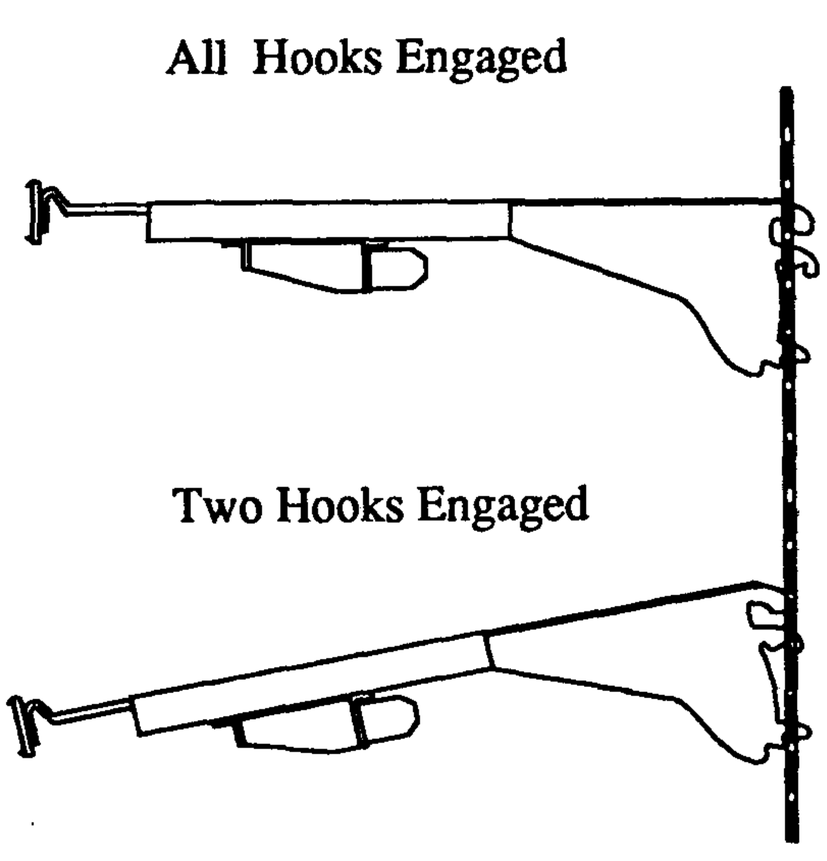
SHELF ALIGNMENT

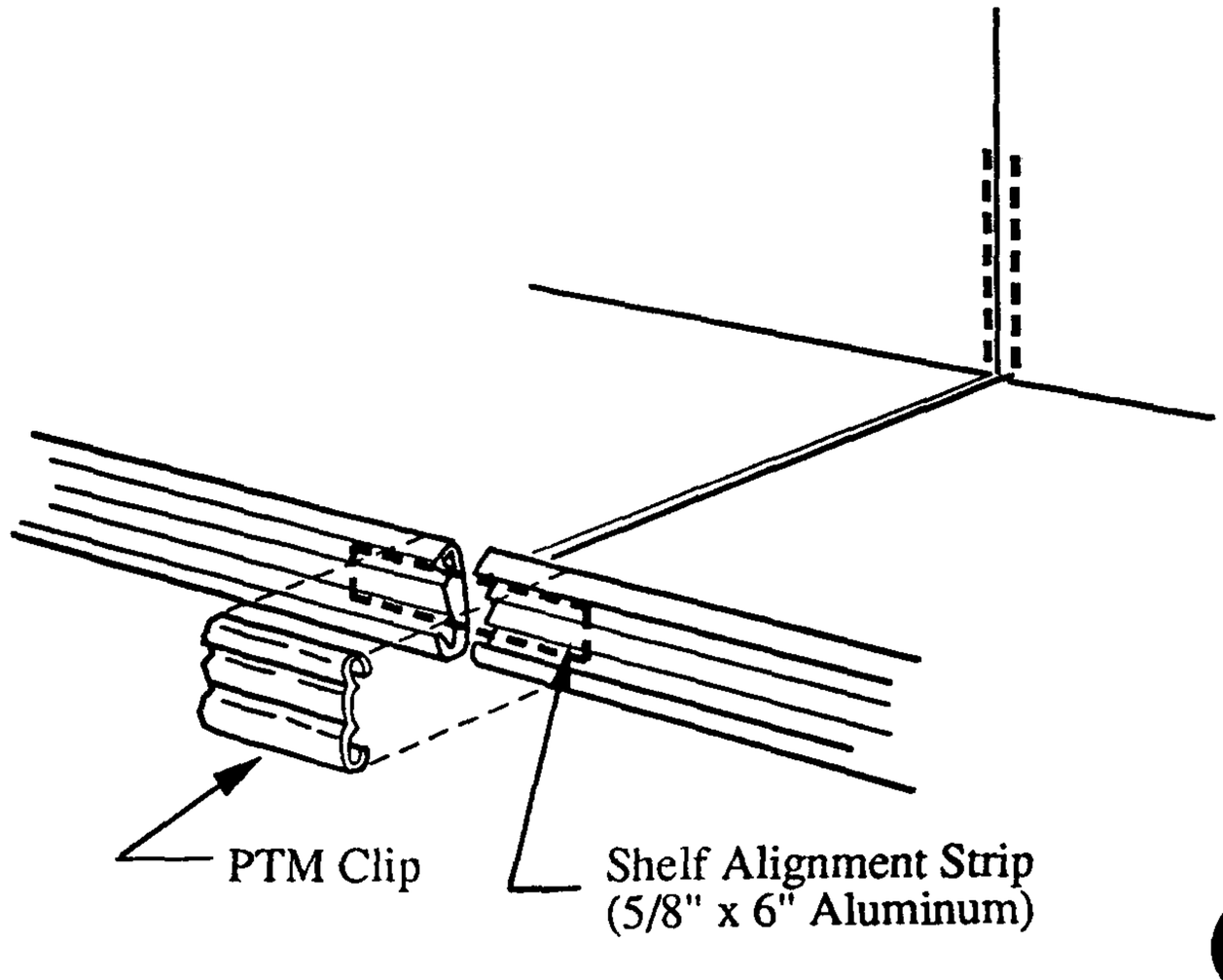
Taped to one of the shelves of each merchandiser is a small plastic bag containing PTM clips and shelf alignment strips. These items are designed to enhance the appearance of the shelves by aligning the front edge of each shelf with that of an adjacent shelf.

When installing the shelves on the merchandisers:

1. Insert one of the alignment strips into the slot behind the front edge of each shelf.
2. After all shelves are installed, slide the strip across the shelf joint wherever two shelves are adjacent. This will lock them together.
3. Snap a PTM clip over the alignment strip.

NOTE: Some PTM styles are pop rivetted to the shelf. In these instances, the alignment strips must be cut in half before inserting them into the shelf.





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.

REPLACING FAN BLADE

The evaporator fans are located at the center front, directly beneath the display pan. Should the fans or blades ever need servicing, always replace the fan blades with the raised embossing side of the blade installed **toward** the motor.

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

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

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.

REPLACING FLUORESCENT LAMPS

Fluorescent lamps are furnished with moisture resistant lamp holders, shields and end caps. Whenever a fluorescent lamp is replaced be certain to reinstall the lamp shields and end caps.

NOTE: Do NOT twist the lamp.

Remove Lamp
To remove a lamp, simply push the lamp away from the lamp holder.

Install Lamp
To install a lamp, align the end caps over the lamp holders and press gently. A slight snap will be felt as the lamp is seated.

REPLACING CANOPY BALLAST

1. Disconnect power to the merchandiser.
2. Remove all fluorescent lamps from the canopy.
3. Remove sheet metal screws along the underside of the light fixture.
4. Grasping the light panel at the area where the top of the panel and the top of the merchandiser meet, pull back and down until the panel is free of support brackets and swings freely.
5. Replace ballast and replace parts in reverse order.

CLEANING HONEYCOMB ASSEMBLIES

Honeycombs should be cleaned every six months. Dirty honeycombs will cause merchandisers to perform poorly. The honeycombs may be cleaned with a vacuum cleaner. Soap and water may be used if all water is removed from the honeycomb cells before replacing. Be careful not to damage the honeycombs.

1. Remove the rear retainer.
2. Holding the honeycomb sections in place, back off the retainer from the honeycomb.
3. Clean and dry the honeycomb.
4. After cleaning replace in reverse order of removal.