

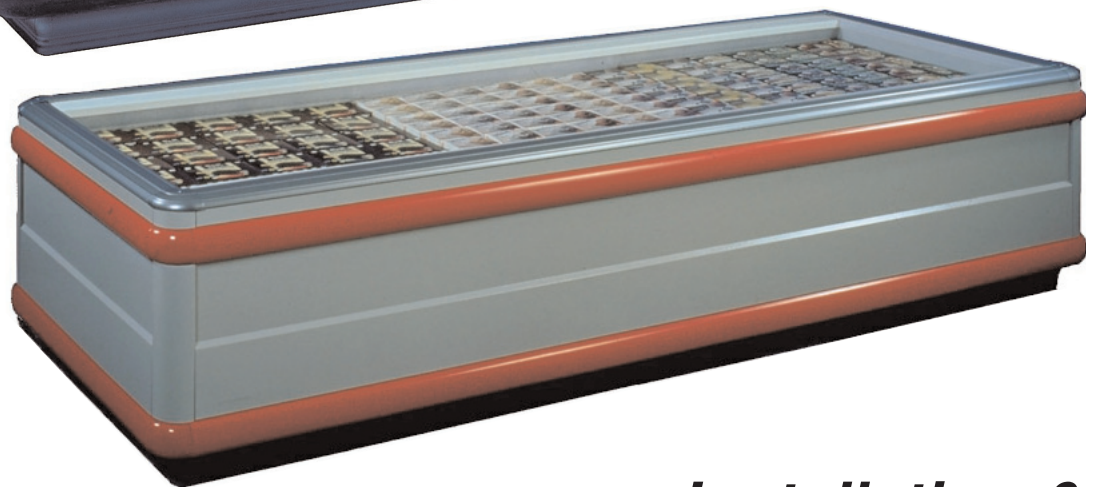
# HUSSMANN®

## ***IMPACT***™ Merchandisers



## ***Low Temperature***

Single Deck Wall & Island Merchandisers



## ***Installation & Operation Manual***

Shipped With Case Data Sheets

**IMPORTANT!**  
Keep in store for  
future reference.

**P/N 0395730F**

Impact Series

March 2005

## Table of Contents

### INSTALLATION

NSF Certification .....	1-1
Location .....	1-1
Shipping Damage .....	1-1
Exterior Loading .....	1-2
Merchandisers Shipped	
With End Installed .....	1-2
Shipping Braces .....	1-2
Leveling .....	1-2
Joining Instructions .....	1-3
Installing Bumpers .....	1-3
Top Rails .....	1-4
Glass Top Rails .....	1-5
Glass Trim .....	1-5
Installing Flue Glass .....	1-6

### REFRIGERATION / ELECTRICAL

Refrigerant .....	2-1
Refrigerant Piping .....	2-1
Insulation .....	2-2
Front to Rear and/or End Interconnects ...	2-2
Refrigeration Thermostat .....	2-2
Defrost Termination Thermostat .....	2-2
CDA Sensor (Optional) .....	2-2
Merchandiser Electrical Data .....	2-3
Field Wiring .....	2-3
Electrical Connections .....	2-3
Identification of Wiring .....	2-3

### DRIP PIPING AND SPLASHGUARDS

Waste Outlet and Water Seal .....	3-1
Installing Drip Piping .....	3-1
Installing Splashguards .....	3-2
Sealing Splashguard to Floor .....	3-3

### START UP / OPERATION

Start up .....	4-1
Stocking .....	4-1
Load Limits .....	4-1
Installing FDA/NSF Required Thermometer	4-1
Load Limit Profiles .....	4-2

### MAINTENANCE

Care and Cleaning .....	5-1
Cleaning Under Merchandisers .....	5-2
Removing Scratches from Bumper .....	5-2
Cleaning Honeycomb .....	5-2
Removing Rear Flue Glass / Honeycomb for Cleaning (LIG & LNG) .....	5-3
Reinstalling Wire Racks, Pans, and Interior Panels .....	5-4

(Continued on next page)

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

## Table of Contents (Continued)

### SERVICE

Replacing Fan Motors and Blades . . . . .	6-1
Replacing Modular Electric Defrost Heater . . . . .	6-2
Replacing Nosing Anti-sweat Heater . . . . .	6-3
Replacing Drip Pan Heater . . . . .	6-5
Replacing Damaged Drain Fitting . . . . .	6-6
Removing Thermopane Glass Assembly . . . .	6-7
Replacing Glass Perimeter Anti-sweat Heater . . . . .	6-8
Repairing Aluminum Coil . . . . .	6-10

### WARRANTY

### REVISION *F*

1. Changed starter-bumper information, page 1-3.
2. Added bumper film removal, page 1-4.
3. Added 15 Oct 2003 Warranty.

## NSF CERTIFICATION

These merchandisers are manufactured to meet ANSI / National Sanitation Foundation (NSF®) Standard #7 requirements. Proper installation is required to maintain certification. Near the serial plate, each case carries a label identifying the type of application for which the case was certified.

**ANSI/NSF-7 Type I – Display Refrigerator / Freezer  
Intended for 75°F / 55%RH Ambient Application**

**ANSI/NSF-7 Type II – Display Refrigerator / Freezer  
Intended for 80°F / 55%RH Ambient Application**

**ANSI/NSF-7 – Display Refrigerator  
Intended for Bulk Produce**

## LOCATION

These merchandisers are designed for displaying products in air conditioned stores where temperature is maintained at or below the ANSI/NSF-7 specified level and relative humidity is maintained at or below 55%.

Placing refrigerated merchandisers in direct sunlight, near hot tables or near other heat sources could impair their efficiency.

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

To prevent sweating on the exterior surfaces, there must be a minimum clearance of 4 in. (102 mm) between merchandisers, other fixtures and store walls.

Product should always be maintained at proper temperature. This means that from the time the product is received, through storage, preparation and display, the temperature of the product must be controlled to maximize the life of the product.



## WARNING

**Exercise caution at all times when moving merchandisers with up-tilt riders. They are top heavy and should NEVER be left in the vertical position.**

## Wide Island Fronts

BE SURE TO POSITION WIDE ISLAND MERCHANDISER FRONTS PROPERLY. The front of a wide island merchandiser is readily identified by the location of the serial plate (see leveling drawing.) Since all electrical and refrigeration connections will be made at the front side, the fronts will need to be positioned according to the store plan layout.

## SHIPPING DAMAGE

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

This equipment has been carefully inspected at our factory. Any claim for loss or damage must be made to the carrier. The carrier will provide any necessary inspection reports and/or claim forms.

## 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.

## Concealed Loss Or Damage

When loss or damage is not apparent until after equipment is uncrated, retain all packing materials and submit a written request to the carrier for inspection, within 15 days.



## CAUTION

**Do not walk or put heavy objects on merchandiser.**

## 1-2 INSTALLATION

### EXTERIOR LOADING

**Do NOT walk on top of merchandisers** or damage to the merchandisers and serious personal injury could occur. THEY ARE NOT STRUCTURALLY DESIGNED TO SUPPORT EXCESSIVE EXTERNAL LOADING such as the weight of a person. Do not place heavy objects on the merchandiser.

### MERCHANDISERS SHIPPED WITH END INSTALLED

If the merchandiser was shipped with the end installed, two long bolts were used to hold the shipping brace to the end. If the shipping bolts are reinserted after removing the brace, they will extend into the product area. **THEREFORE, BE SURE TO REPLACE THESE BOLTS WITH THE SHORTER BOLTS PROVIDED.**

Be careful not to damage the factory-installed end while moving the merchandiser. Make sure that tools are positioned past the end and beneath the merchandiser's support bar.

### SHIPPING BRACES

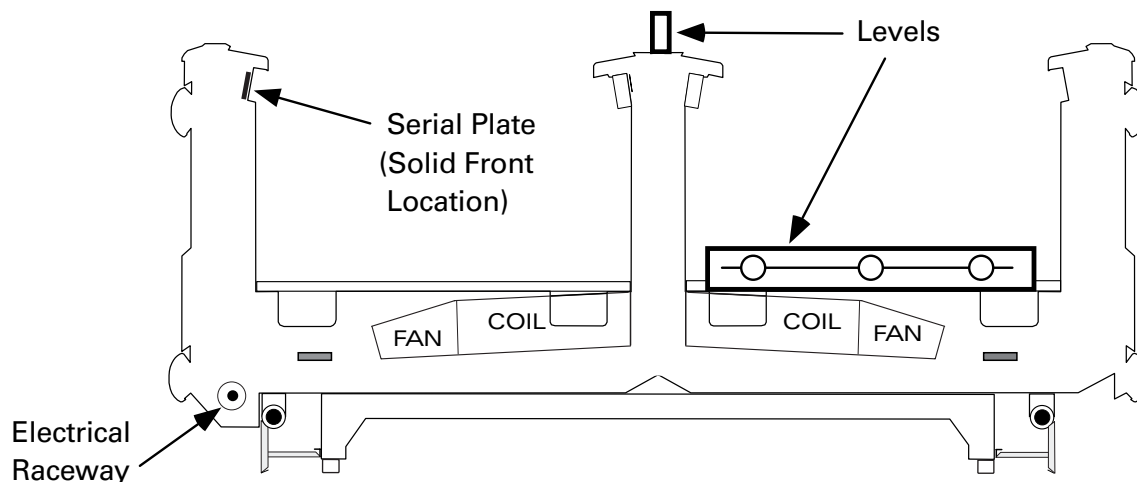
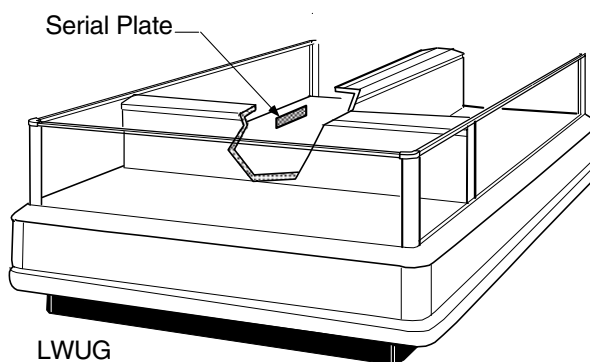
Move the merchandiser as close as possible to its permanent location and then remove all packaging. Check for damage before discarding packaging. Remove all separately packed accessories such as kits and shelves.

### LEVELING

Merchandisers must be installed level to ensure proper operation of the refrigeration system and to ensure proper drainage of defrost water. When leveling merchandisers, use a carpenter's level as shown. Leveling shims are provided with each merchandiser for use if needed. The shims are 12 in. (305 mm) long and 3 in. (76 mm) wide so that you can level adjoining merchandisers at the same time using one shim.

#### Notes:

- **BEGIN LINEUP LEVELING FROM THE HIGHEST POINT OF THE STORE FLOOR.**
- If shimming two corners, check to see if a shim is needed in the center of the merchandiser. If a gap exists between the support rail of the merchandiser and the floor, a shim should be placed in the center.



## JOINING INSTRUCTIONS

Sectional construction means that two or more merchandisers may be joined in line yielding one long continuous display requiring only one pair of ends. To join like merchandisers, use the joining parts and instruction shipped with each merchandiser. To join unlike merchandisers, or merchandisers of different temperature applications, an insulated 1½ in. (38 mm) partition kit is required. Partition kits are shipped separately; instructions are included with each kit.

ALL JOINTS MUST BE AIR-TIGHT TO PREVENT FORMATION OF ICE OR CONDENSATION.

**Refer to separate Joining Instruction shipped with merchandiser.**

Do NOT install the last bumper sections at this time. These sections will be installed in the last step (see next page).

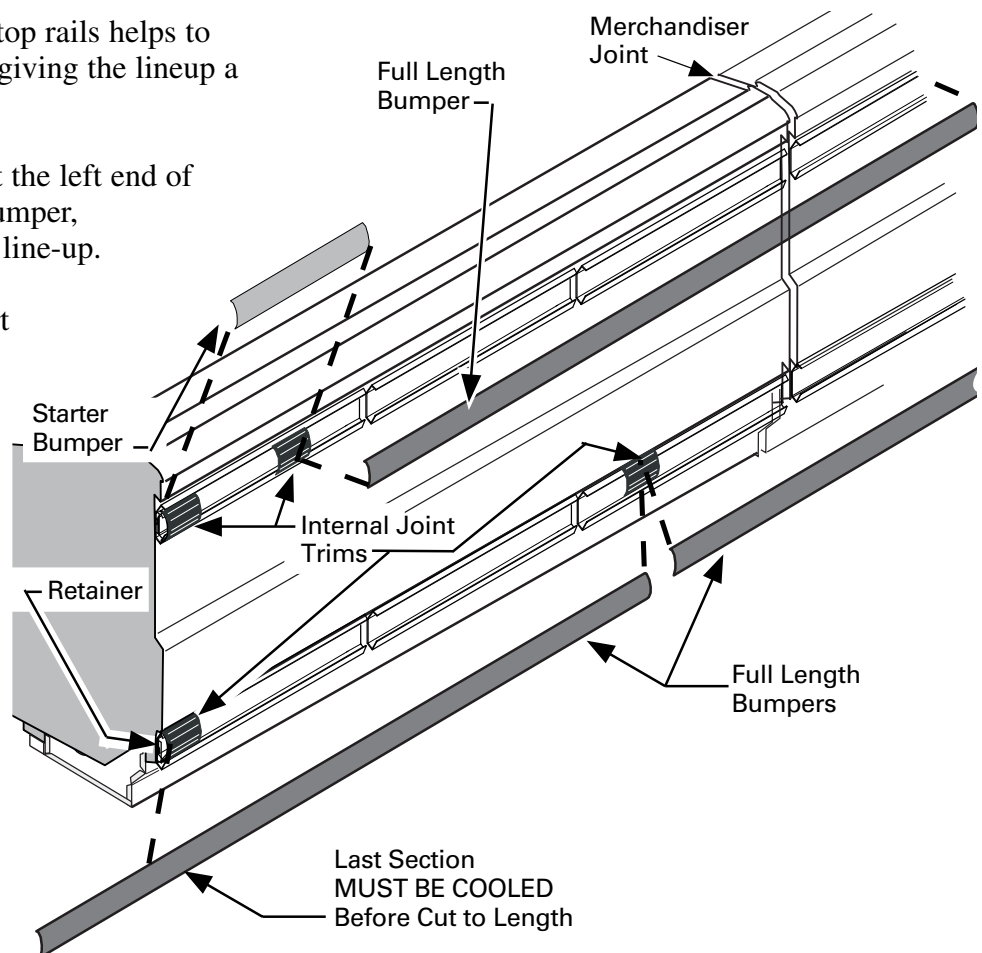
Once all except the last section of upper bumper and lower bumper have been installed, refrigerate the merchandiser line-up for at least six (6) hours. **The last sections of bumper should be kept inside a refrigerated merchandiser or cooler during this time** to allow the bumpers to contract.

## INSTALLING BUMPERS

Offsetting the bumpers and top rails helps to disguise the joint locations, giving the lineup a smoother look.

For the top bumper, begin at the left end of the line-up. For the lower bumper, begin at the right end of the line-up. A starter bumper is factory-installed with end kits. Insert the internal joint trim, then add the full-length bumper.

Align each bumper section with its retainer and push into place, working from the end of the line-up. Install full length bumpers and internal joint trims offset across joints. Make sure that no gaps exist between sections. Continue installing bumpers the length of the line up.

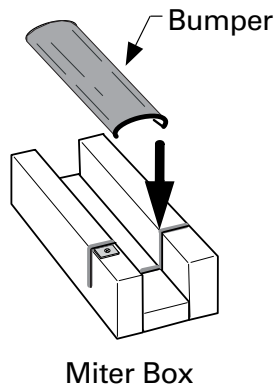




## 1-4 INSTALLATION

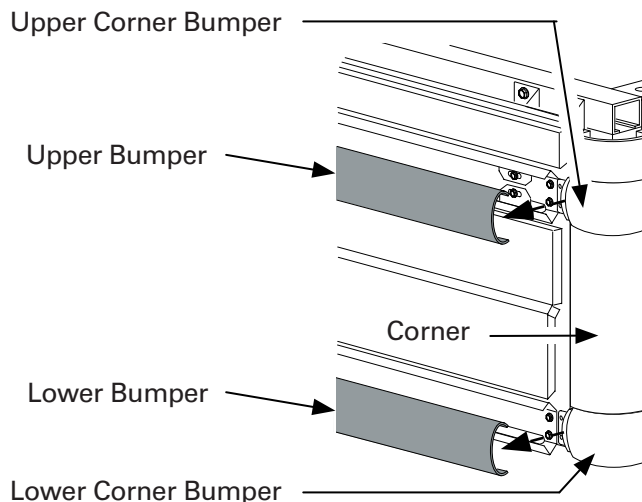
Before installing the last full-length sections, measure each remaining space. Use a miter box and fine-tooth saw to cut last bumpers to length. Install the last sections.

Remove protective film from bumper and top rail once installation is complete.



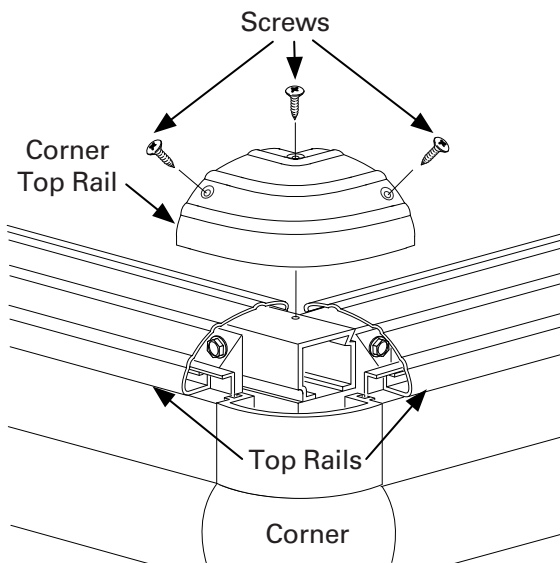
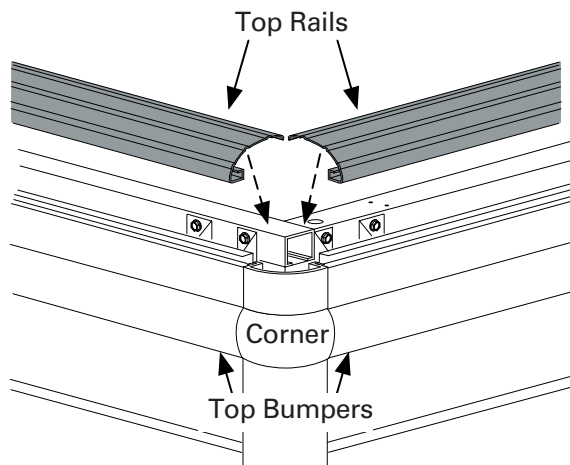
End bumpers are factory-installed.

To remove installed bumpers, it may be necessary to use a small (dull) tool such as a screwdriver to help pry up one corner edge while pushing the bumper toward the color panel. A screwdriver is needed to remove bumper corners.



### TOP RAILS

Top rails are factory-installed. Joint trims are supplied; refer to the separate Joining instruction. Ends are factory installed with top rails.



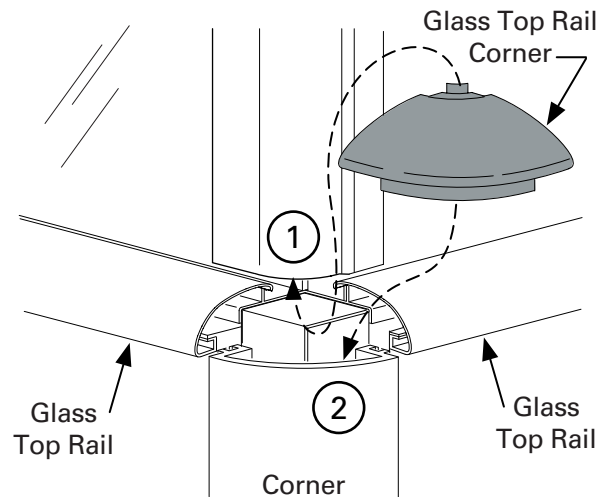
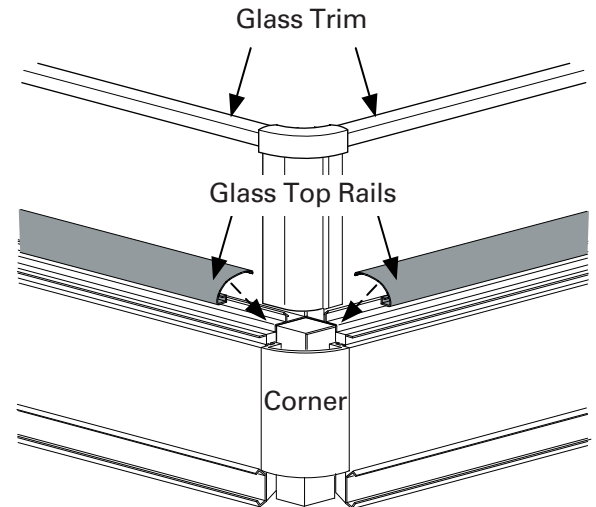
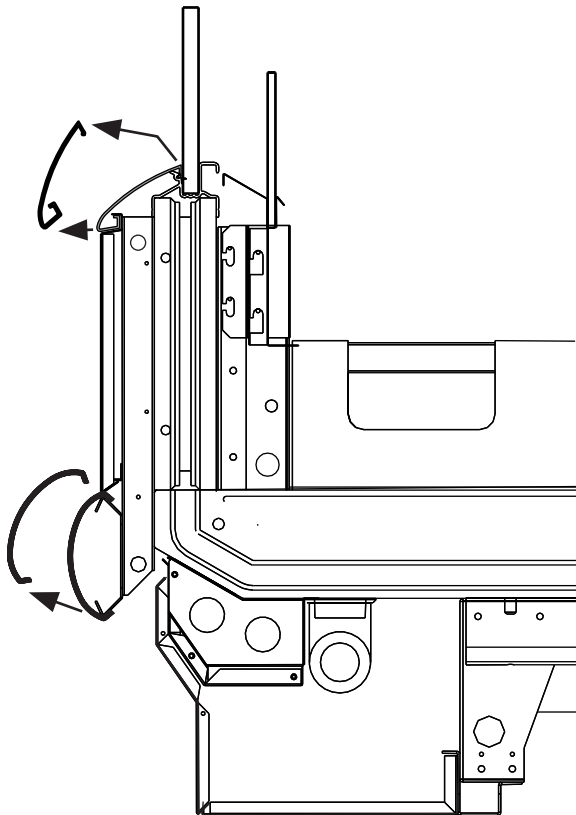
Optional Stainless Steel Top Rail

## GLASS TOP RAILS

Glass top rails are factory-installed. Internal color trims are used under the glass top rail at joints. Carefully remove glass top rails before joining. Once line-up is complete, re-install glass top rails with internal color trims. Ends are factory installed with glass top rails.

## GLASS TRIM

The trim on top of the glass is factory-installed. Standard plastic trim is friction fit. Optional stainless steel trim uses a foam sheet between the glass and trim to prevent trim from slipping. Screws hold corner trim in place.



Applying  
Standard  
Trim

OUTSIDE OF CASE



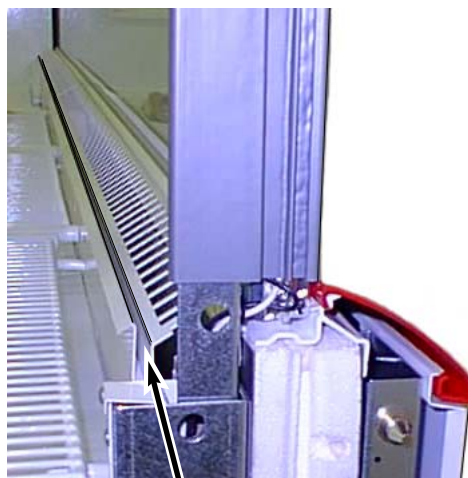
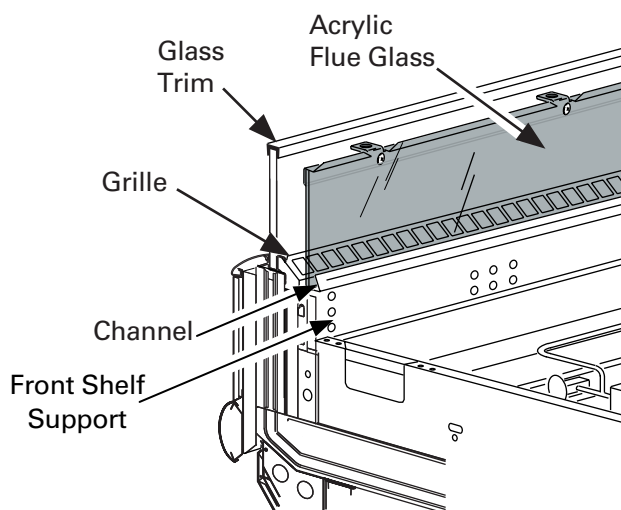
Standard  
Plastic Trim



## 1-6 INSTALLATION

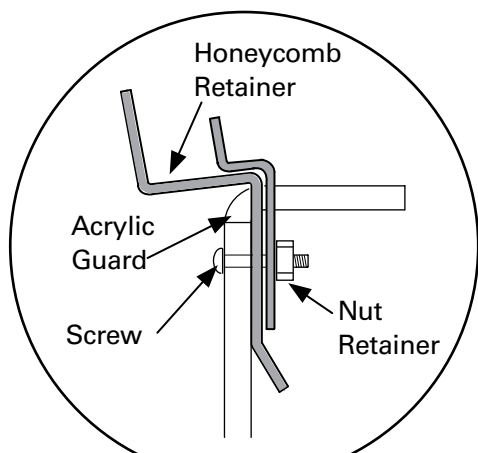
### INSTALLING FLUE GLASS (GLASS FRONT MODELS)

The acrylic flue glass must be installed in the channel to ensure efficient operation. Each section of flue glass has tabs to hold it away from the front glass.

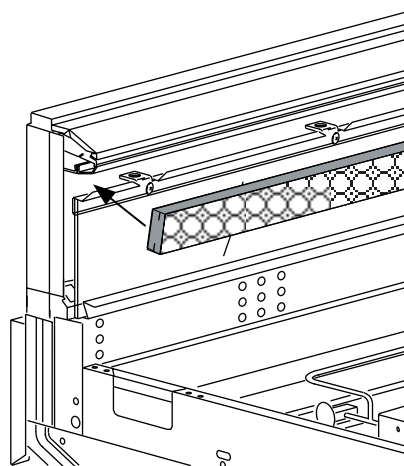


**Flue Glass Channel**

LIG and LNG models only have a honeycomb retainer attached to the rear flue glass.



*Rear Flue Glass / Honeycomb Retainer Assembly  
LIG And LNG Models Only*



## REFRIGERANT

The correct type of refrigerant will be stamped on each merchandiser's serial plate. The merchandiser refrigeration piping is leak tested, factory sealed and pressurized. Before making refrigeration hookups, depress Schrader valve to ensure that coils have maintained pressure during shipment.



### WARNING

Refrigeration lines are under pressure and should be depressurized before attempting to make any connections.

## REFRIGERANT PIPING

### Connection Location

The refrigerant line connections are at the right-hand end of the merchandiser (as viewed from the front) beneath the display pans. A sticker marks the location of the connection "pod." The installer must saw a hole through the pod to exit the merchandiser.

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



### CAUTION

Splashguard brackets **MUST** be installed before piping merchandiser.

### Multiplexing

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

Interconnecting piping inside the merchandiser must be positioned to allow room for lifting the hinged fan plenums and for clearance beneath the display pans.

### Line Sizing

Refrigerant lines should be sized as shown on the refrigeration legend that is furnished for the store or according to ASHRAE guidelines.

**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.

### 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.

## 2-2 REFRIGERATION / ELECTRICAL

### INSULATION

#### **With GAS Defrost**

The suction and liquid lines should NOT contact each other and should be insulated separately for a minimum of 30 ft (9144 mm) from the merchandiser.

#### **With OTHER Than Gas Defrost**

The suction and liquid lines should be clamped or taped together and insulated for a minimum of 30 ft (9144 mm) from the merchandiser.

#### **With EITHER of Above**

Additional insulation for the balance of the liquid and suction lines is recommended wherever condensation drippage is objectionable or the lines are exposed to ambient conditions.

### **FRONT TO REAR AND/OR END INTERCONNECTS**

The wide island merchandisers are factory equipped with separate piping and air systems for each compartment, and are thus all capable of twin-temperature operation. This is a standard feature.

If the wide island merchandiser is to be run at a single temperature, factory installed piping interconnect kits are available.

### REFRIGERATION THERMOSTAT

The refrigeration thermostat body is located in the electrical raceway. The bulb, when factory installed, is located in the discharge flue. Wide Island models will have two thermostats – one on each side of the merchandiser.

### DEFROST TERMINATION THERMOSTAT

The standard disc type defrost termination thermostat is not adjustable. This thermostat is clamped to the coil inlet tube.

### CDA SENSOR (OPTIONAL)

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. Wide Island models will have two sensors – one on each side of the merchandiser.

**MERCHANDISER ELECTRICAL DATA**

Merchandise data sheets for specific models are shipped with this manual. The data sheets provide merchandise electrical data, electrical schematics, parts lists, and performance data. Refer to the merchandise data sheets and merchandise serial plate for electrical information.

**FIELD WIRING**

Field wiring must be sized for component amperes stamped on the serial plate. Actual ampere draw may be less than specified. Field wiring from the refrigeration control panel to the merchandisers is required for defrost termination thermostats and for optional refrigeration thermostats. When multiple merchandisers are on the same defrost circuit, the defrost termination thermostats are wired in series.

**ALWAYS CHECK THE SERIAL PLATE FOR COMPONENT AMPERES.**

**ELECTRICAL CONNECTIONS**

All wiring must be in compliance with NEC and local codes. All electrical connections are to be made in the electrical raceway on the serial plate side of the merchandiser (front).

**IDENTIFICATION OF WIRING**

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

The defrost heaters, defrost termination thermostats and refrigeration thermostats on the wide island models 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 wire insulation color or 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 .....CONDENSATE 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: Use copper conductor wire only.  
 MERCHANDISER MUST BE GROUNDED**

## WASTE OUTLET AND WATER SEAL

The waste outlet is located in front of the fan plenum 6 ft (1829 mm) from the left-hand end of the merchandiser (facing merchandiser front). A water seal is supplied with each merchandiser. The water seal must be installed at the waste outlet to prevent air leakage and insect entrance into the merchandiser.

### NOTE:

**Water seal outlet must clear front skid rail.**  
Refer to Data Sheets for dimensions.

A tee fitting, an adapter, a plug and a street ell are also supplied with each merchandiser.

## INSTALLING DRIP PIPING

Poorly or improperly installed drip pipes can seriously interfere with the merchandiser's operation and result in costly maintenance and product losses. Improperly installed drip pipes can cause condensate to form on the outside of drip pipes.

Refer to the data sheet shipped with each model to correctly locate piping. Please follow the recommendations listed below when installing drip pipes to ensure proper installation.

- Never use drip piping smaller than the nominal diameter of the pipe or *water seal* supplied with the merchandiser.
- When connecting drip piping, the *water seal* must be used as part of the drip piping to prevent air leakage or insect entrance. The water seal must be installed with the waste outlet at the main drain point of each merchandiser. 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.**

- Pitch the drip piping in the direction of flow. There should be a minimum pitch of  $\frac{1}{8}$  in. per ft (3 mm per 305 mm).



## CAUTION

**Splashguard brackets MUST be installed before piping merchandiser.**

- Avoid long runs of drip piping. Long runs make it impossible to provide the pitch necessary for good drainage.

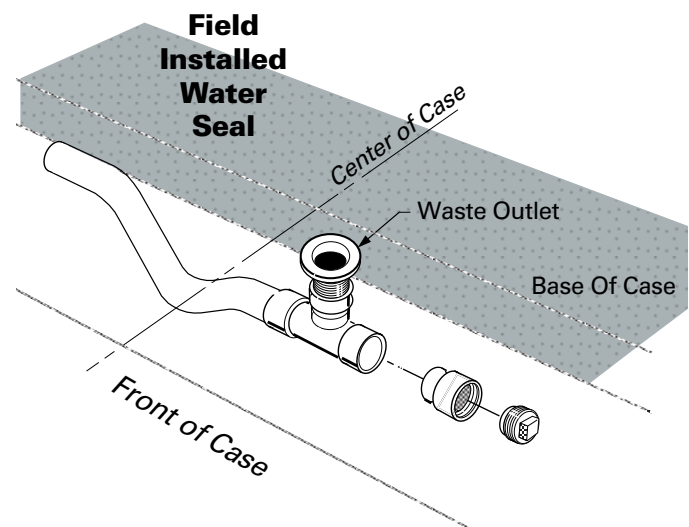
- Provide a suitable air break between flood rim of the floor drain and outlet of drip pipe. To meet code on low base merchandisers, it may be necessary to install a field-supplied drip pipe reducer. An alternative is to cut the last section of drip pipe at an angle.



- Prevent drip pipes from freezing:

– Do NOT install drip pipes in contact with uninsulated suction lines. Suction lines should be insulated with a non-absorbent insulation material.

– 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.



## 3-2 DRIP PIPING AND SPLASHGUARDS

### INSTALLING SPLASHGUARDS

The splashguard and brackets are shipped inside each merchandiser.

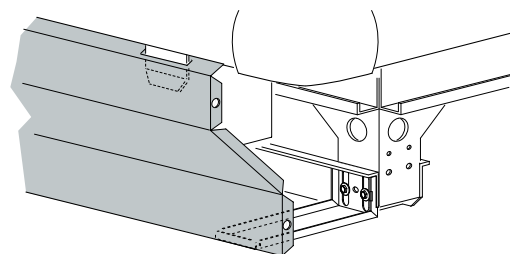
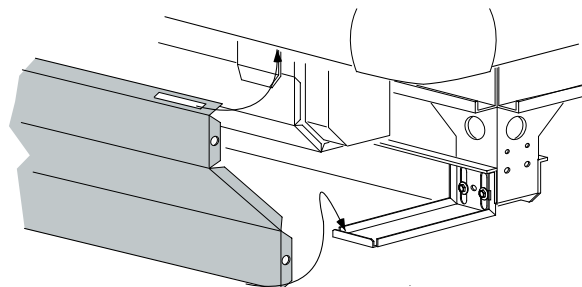
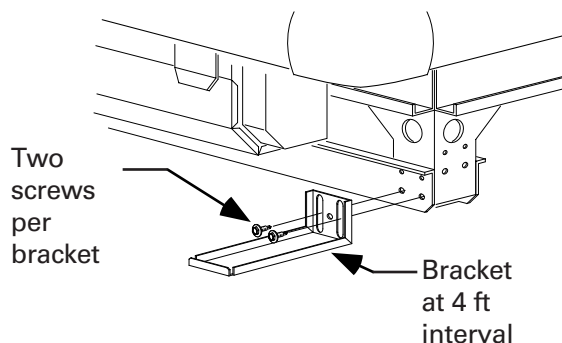
Install splashguard brackets before piping merchandiser. Use two screws per bracket; attach brackets every 4 ft (1219 mm) at pre-drilled locations.

After merchandisers have been leveled and joined, and all drip piping, electrical and refrigeration work has been completed, install the splashguards.

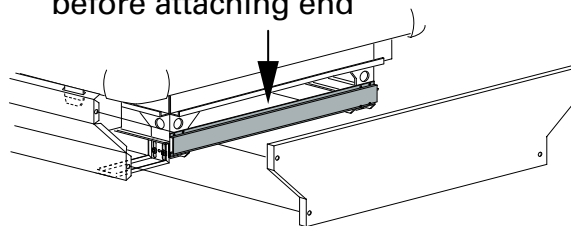
#### To Install Splashguards:

1. Check to be sure that all splashguard brackets are level with the floor. Tighten screws.
2. Align splashguard so that slots in the top of splashguard match the tabs extending from the base of the merchandiser as shown.
3. Push splashguard up onto tabs until lower edge of splashguard swings onto bracket. Lower bottom of splashguard onto bracket tabs.

The end splashguards are installed last, as shown.



Attach retainer before attaching end

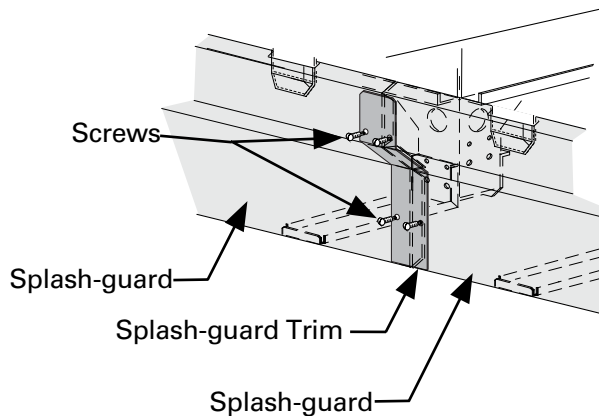


#### End Splashguard Attachment



### Installing Trim on Optional Stainless Steel Splashguard

A trim piece is installed when joining optional stainless steel splashguards. Use slotted screws provided.

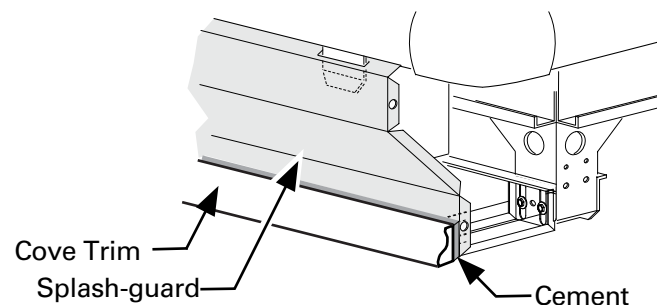


### SEALING SPLASHGUARD TO FLOOR

**IF REQUIRED** by local sanitation codes, or if desired by the customer, stainless steel splashguards 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 cove 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. **DO NOT SEAL THE TRIM TO THE FLOOR.**
4. **If required by local health codes** the Cove Trim may be sealed to the floor, using a silicone-type sealer. Sealant must be removed and replaced when servicing.



## START UP

See the merchandiser's Data Sheet Set for refrigerant settings and defrost requirements. Bring merchandisers down to the operating temperatures listed on the data sheet.

Each 4 ft (1219 mm) section has its own evaporator coil and pre-set non-adjustable thermostatic expansion valve (TEV). No adjustment is required. **DO NOT REMOVE THE CAP ON THE TEVs.** This cap is to be removed only for valve disassembly.



### CAUTION

REMOVAL OF THE TEV CAP WILL RESULT IN REFRIGERANT LOSS UNLESS THE SYSTEM IS FIRST ISOLATED AND THE REFRIGERANT RECOVERED.

The TEV has been factory set to provide the recommended performance settings as specified on the merchandiser data sheets.

## STOCKING

Product should NOT be placed in merchandisers until merchandiser is at proper operating temperature.

Proper rotation of product during stocking is necessary to prevent product loss. Always bring the oldest product to the front and set the newest to the back.

AIR DISCHARGE AND RETURN FLUES MUST REMAIN OPEN AND FREE OF OBSTRUCTION AT ALL TIMES to provide proper refrigeration and air curtain performance. Do not allow product, packages, signs, etc. to block these grilles. Do not use non-approved shelving, baskets, display racks, or any accessory that could hamper air curtain performance.

## LOAD LIMITS

Each merchandiser has a load limit decal.

### LOAD LIMIT

Shelf life of perishables will be short if load limit is violated. Overstocking will adversely affect product temperature and merchandiser efficiency. Recommended load limit profiles are shown on the next page.



### WARNING

**At no time should merchandisers be stocked beyond the load limits indicated.**

## INSTALLING FDA/NSF REQUIRED THERMOMETER

The following pages provide the same information that ships with the thermometer.

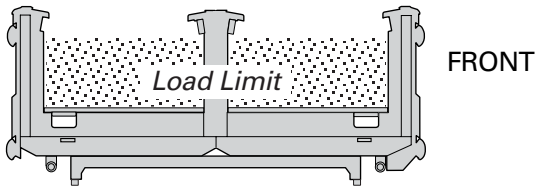
**This requirement does not apply to display refrigerators intended for bulk produce (refer to page 1-1).**

Please note that the tape cannot be exposed after installation.

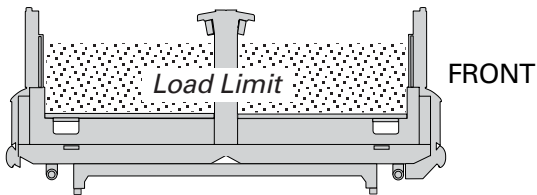
## 4-2 START-UP / OPERATION

### LOAD LIMIT PROFILES

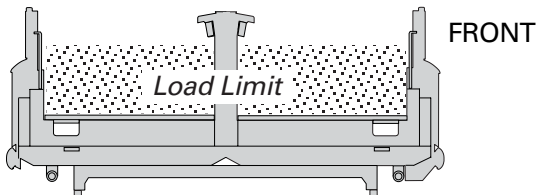
**LW**



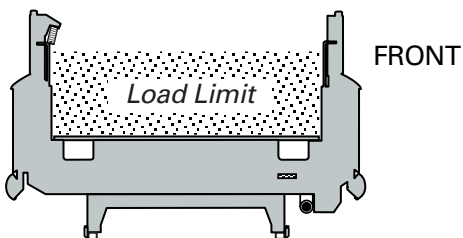
**LWG**



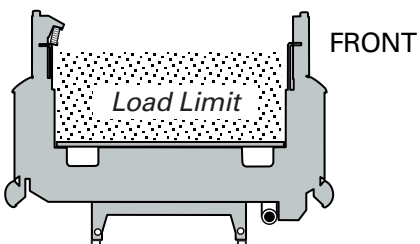
**LWGH**



**LIGH**

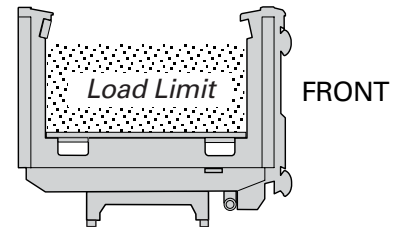


**LNGH**



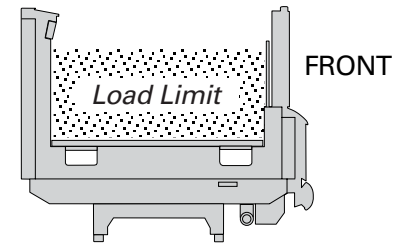
**L**

**LWE**

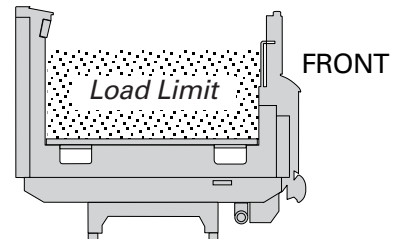


**LG**

**LWEG**



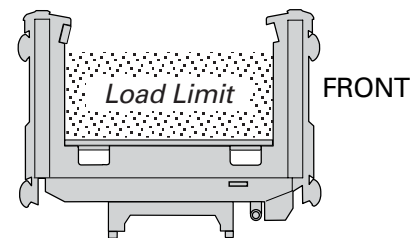
**LWEGH**



**LN**

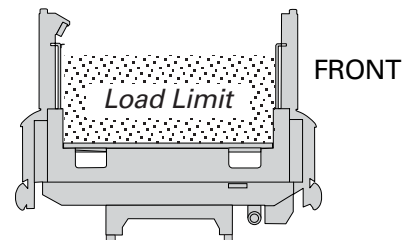
**LNM**

**LI**

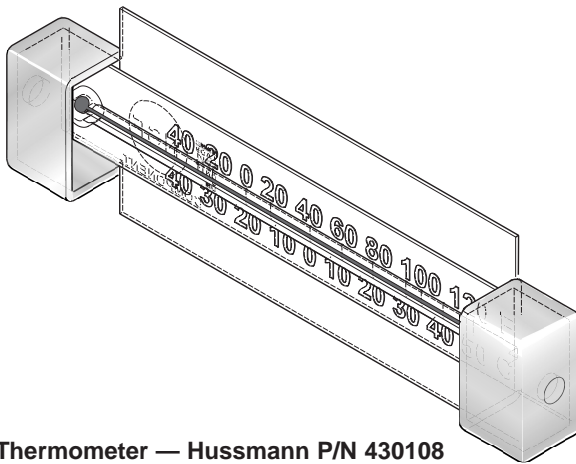


**LNG**

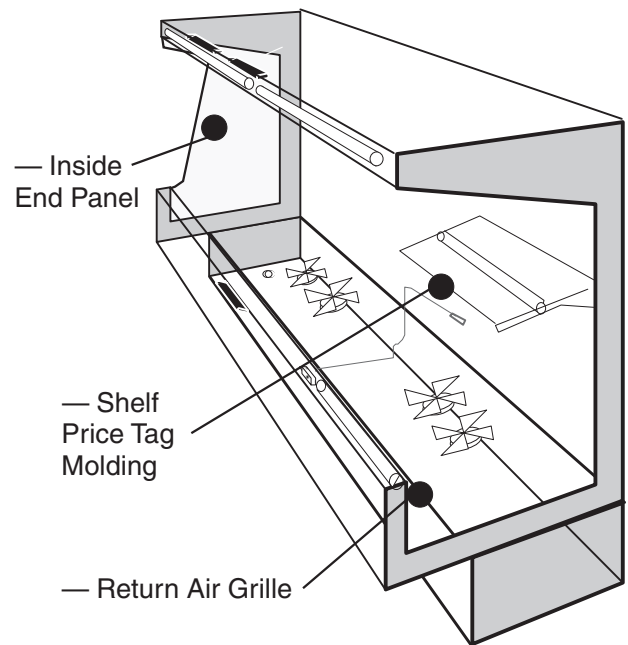
**LIG**



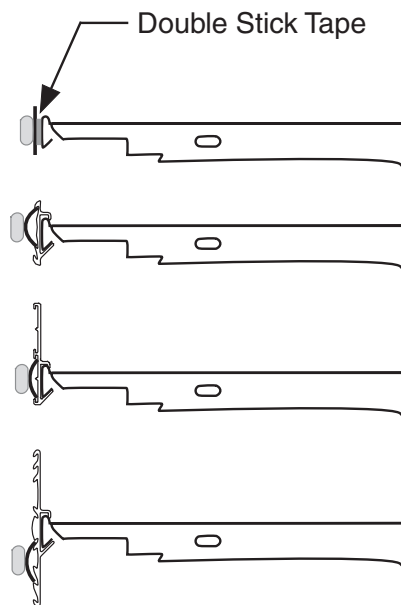
## This is an NSF-7 & 1999 FDA Food Code Required Thermometer



Thermometer — Hussmann P/N 430108

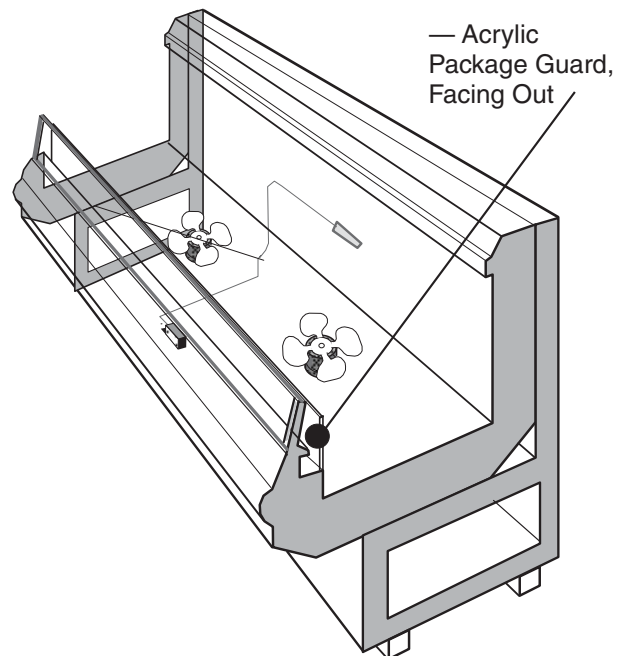


Suggested Mounting Locations  
in Multi-deck Merchandisers



Flexible Plastic  
Fits in Price Tag  
Moldings

Suggested Mounting Locations  
in Single Deck Glass Front  
Impact Merchandisers



## 4-4 START-UP / OPERATION

### Excerpt from ANSI / NSF-7:

#### 5.30 Temperature indicating devices

**5.30.1** Each refrigerated storage compartment and cabinet shall have at least one securely mounted temperature indicating device that clearly displays the air temperature in the compartment. A temperature indicating device shall not be required in beverage coolers or units intended solely for the storage and/or display of ice cream and other frozen desserts.

**5.30.2** The temperature display of a temperature indicating device shall be visible immediately upon opening a door to the refrigerated compartment or shall be visible from the equipment exterior without opening a door to the compartment. The sensing element of the device shall be easily cleanable and located to reflect the temperature in the warmest part of the food storage compartment.

Open display refrigerators shall have a temperature indicating device that is easily cleanable and located to reflect the warmest part of the food storage compartment. Open display refrigerators shall include a thermometer and installation instructions for installing the thermometer in the warmest part of the food storage compartment, as determined by the manufacturer.

### Excerpt from 1999 FDA Food Code:

#### 4-204.112 Temperature Measuring Devices.

(A) In a mechanically refrigerated or hot FOOD storage unit, the sensor of a TEMPERATURE MEASURING DEVICE shall be located to measure the air temperature in the warmest part of a mechanically refrigerated unit and in the coolest part of a hot FOOD storage unit.

(B) Except as specified in ¶(C) of this section, cold or hot holding EQUIPMENT used for POTENTIALLY HAZARDOUS FOOD shall be designed to include and shall be equipped with at least one integral or permanently affixed TEMPERATURE MEASURING DEVICE that is located to allow easy viewing of the device's temperature display.

*(C) Paragraph (B) of this section does not apply to EQUIPMENT for which the placement of a TEMPERATURE MEASURING DEVICE is not a practical means for measuring the ambient air surrounding the FOOD because of the design, type, and use of the EQUIPMENT, such as calrod units, heat lamps, cold plates, bainmaries, steam tables, insulated FOOD transport containers, and salad bars.*

## Important – Please read!

Each installation will be different depending on how the unit is stocked, shopping patterns in the department and ambient conditions of the store. The suggested locations provided herein are possible locations. It is the responsibility of the purchaser / user to determine the location within the food storage area of the unit that best meets the code requirements above.

The thermometer may need to be moved several times to find the warmest location. Mounting options include flexible plastic for price tag molding application, magnet applied to back of flexible plastic for steel end wall, and double stick tape. Tape must not be exposed after installation.

Questions about either code should be addressed to local agencies or other appropriate officials.

**Keep with merchandiser  
or give to store manager — do not destroy.**

Hussmann P/N 429971A

11/2000

## 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, these merchandisers should be thoroughly cleaned, all debris removed and the interiors washed down, weekly.

### Fan Plenum

To facilitate cleaning, the fan plenum is hinged. After cleaning be sure the plenum is properly lowered into position OR PRODUCT LOSS WILL RESULT due to improper refrigeration.

### Exterior Surfaces

The exterior surfaces should 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:*

- Abrasive cleansers and scouring pads, as these will mar the finish.
- A hose on lighted shelves or submerge the shelves in water.
- Solvent, oil or acidic based cleaners on any interior surfaces.

### **WARNING**

**Do NOT use HOT water on COLD glass surfaces. This can cause the glass to shatter and could result in personal injury. Allow glass fronts, ends and service doors to warm before applying hot water..**

#### *Do:*

- Remove the product and all loose debris to avoid clogging the waste outlet.
- Store product in a refrigerated area such as a freezer. Remove only as much product as can be taken to the freezer in a timely manner.
- **First turn off refrigeration, then disconnect electrical power.**
- 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.**
- Lift hinged fan plenum for cleaning. Hook chain in rear panel to secure plenum during cleaning. **BE SURE TO REPOSITION THE FAN PLENUM AFTER CLEANING MERCHANDISER.**
- Take care to minimize direct contact between fan motors and cleaning or rinse water.
- Rinse with hot water, but do NOT flood. **NEVER INTRODUCE WATER FASTER THAN THE WASTE OUTLET CAN REMOVE IT.**
- Allow merchandisers to dry before resuming operation.
- After cleaning is completed, turn on power and refrigerant to the merchandiser.
- Verify that merchandiser is working properly.

### **WARNING**

**ALWAYS SHUT POWER OFF DURING CLEANING PROCESS.**

### **WARNING**

**Do NOT allow product to sit in a non-refrigerated area.**



## 5-2 MAINTENANCE

### CLEANING UNDER MERCHANDISERS

Remove splashguards not sealed to floor. Use a vacuum with a long wand attachment to remove accumulated dust and debris from under the merchandiser.

### REMOVING SCRATCHES FROM BUMPER

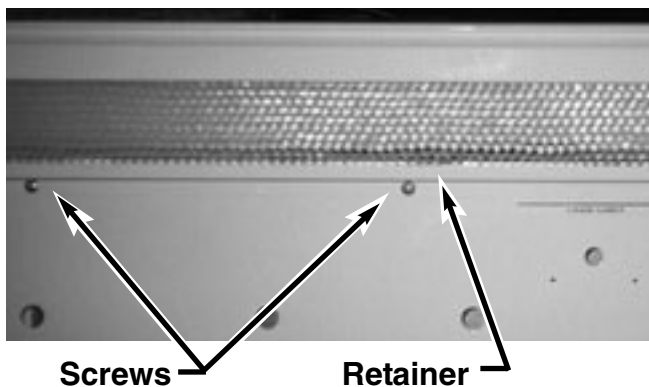
Most scratches and dings can be removed using the following procedure.

1. Use steel wool to smooth out the surface area of the bumper or top rail.
2. Clean area.
3. Apply vinyl or car wax and polish surface for a smooth glossy finish.

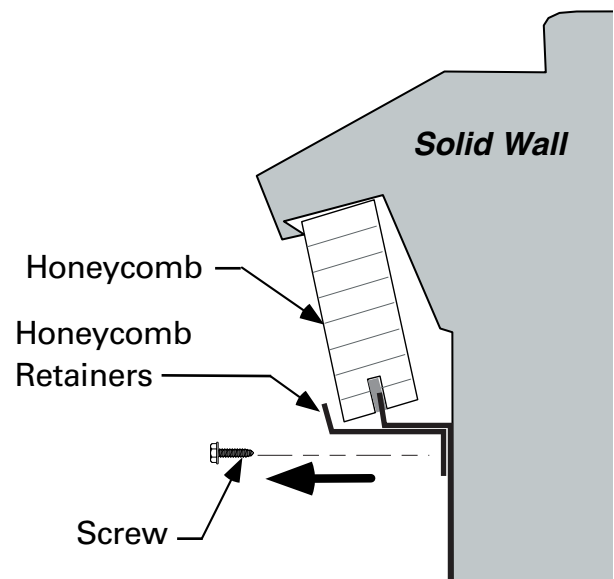
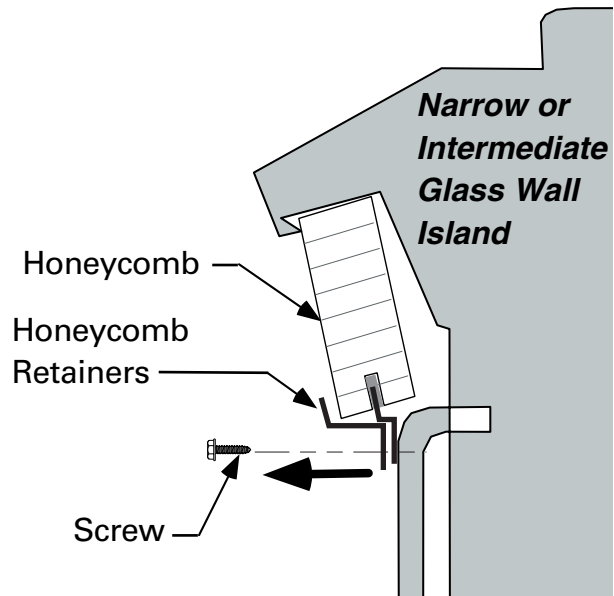
### CLEANING HONEYCOMB

Honeycombs should be cleaned every six months. Dirty honeycombs will cause merchandisers to perform poorly.

1. To remove the honeycomb, loosen or remove screws in honeycomb retainer; then compress honeycomb upward to remove.



2. Clean the honeycomb. Be careful not to damage honeycomb. The honeycomb may be cleaned with a vacuum cleaner. Soap and water may be used if the honeycomb is removed from the merchandiser.
3. When completely dry, re-install honeycomb in retainers and tighten screws.



## REMOVING REAR FLUE GLASS / HONEYCOMB FOR CLEANING (LIG & LNG)

Compress the honeycomb upward to remove it from its retainer.

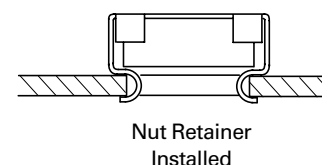
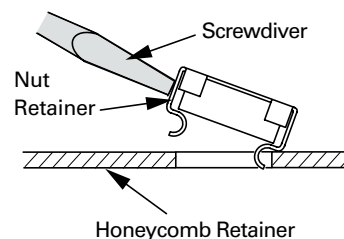
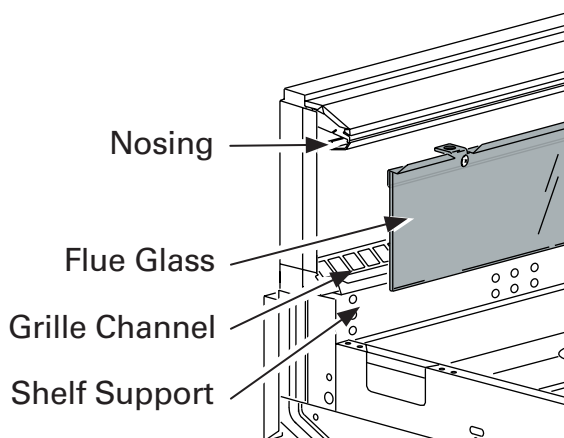
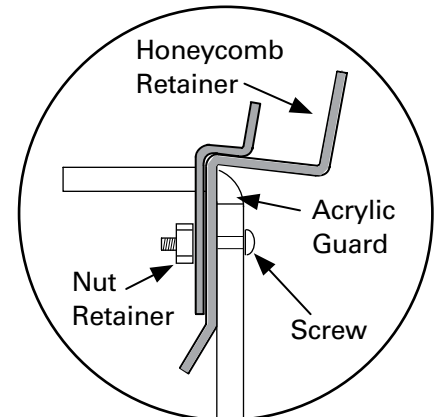
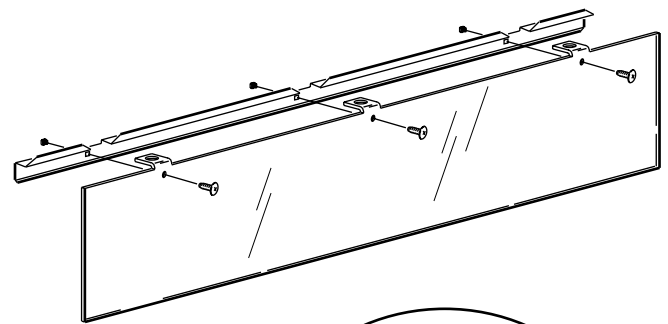
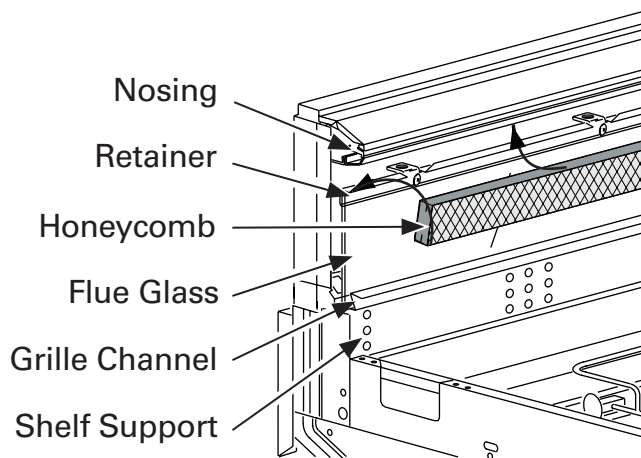
Lift the flue glass / honeycomb retainer assembly out of the grille channel.

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

**NEVER USE ABRASIVE CLEANSERS OR SCOURING PADS.**

Remove any debris from grille channel. Dry flue glass/retainer and reassemble in reverse order.

Illustrations below show how the acrylic flue glass and honeycomb retainer are assembled, if replacement is necessary.



## 5-4 MAINTENANCE

### REINSTALLING WIRE RACKS, PANS, AND INTERIOR PANELS

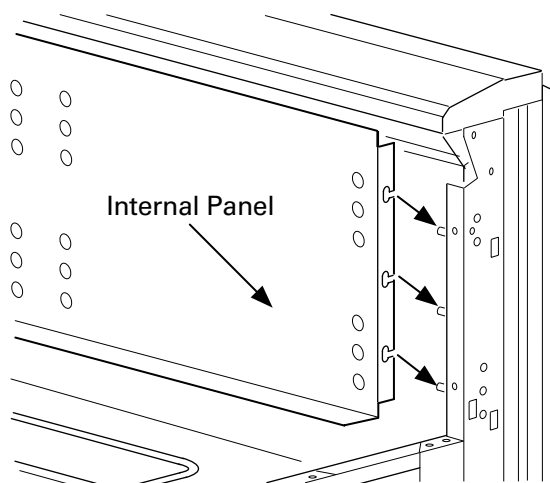
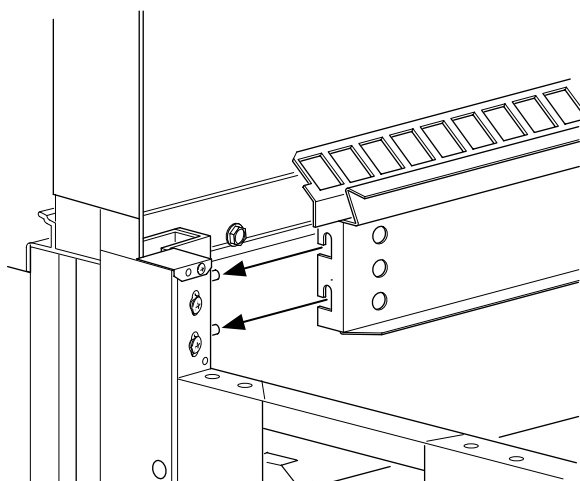
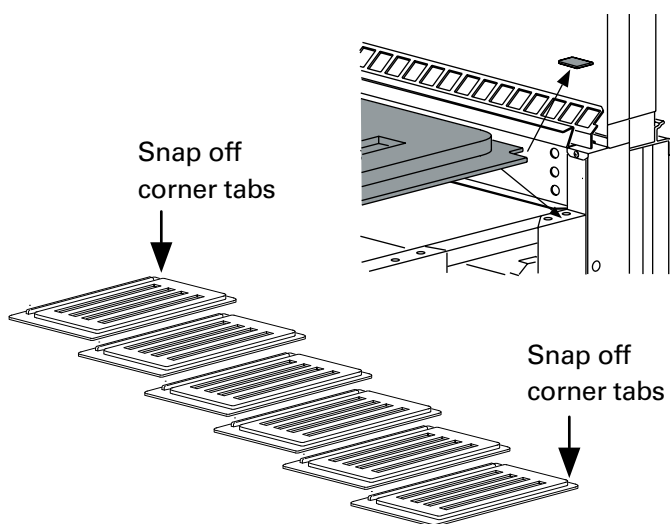
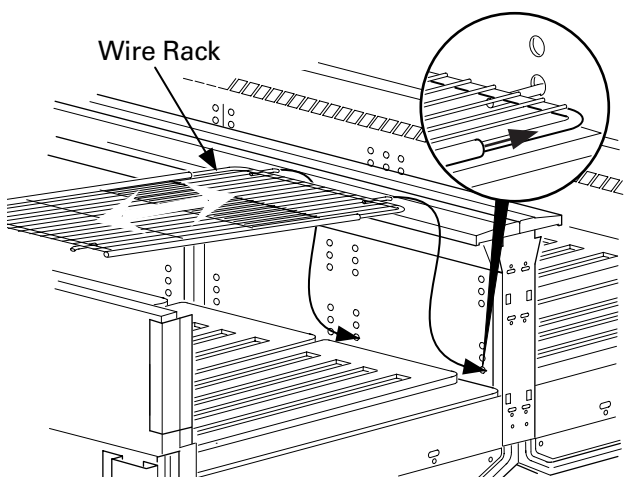
With the honeycomb assembly removed, all interior wire racks, drip pans, and shelf support panels may be lifted out without tools.

The wire rack telescopes to allow tilted displays or removal of the rack. Ensure full insertion of rack supports into front and rear panels before loading.

Drip pans overlap when properly installed. Note corner tabs at each end section.

Front and rear internal panels rest on fillister screws. Do not pry at edges of panels. If panels do not lift easily, insert a screwdriver into a rack support hole and lightly tap the screwdriver to raise the panel.

Reinstall in reverse order.



## REPLACING FAN MOTORS AND BLADES

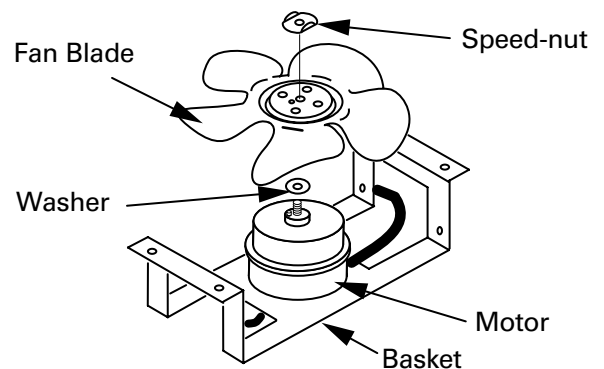
Refer to the data sheet shipped with each merchandiser to determine location of evaporator fans. Should it ever be necessary to service or replace the fan motors or blades be certain that the fan blades are re-installed correctly. **THE BLADES MUST BE INSTALLED WITH RAISED EMBOSSING (PART NUMBER ON BLADES) POSITIONED AS INDICATED ON THE PARTS LIST OF THE DATA SHEET.**

For access to these fans:

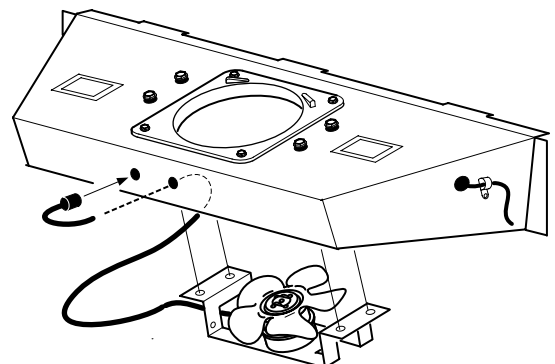
1. Turn off power.
2. Remove wire racks and bottom display pans.
3. **Disconnect fan from wiring harness.**
4. Remove Speed-nut, fan blade, and washer.
5. Lift fan plenum and remove screws holding bottom of motor to fan basket.
6. Replace fan motor. Make certain harnesses are not caught or otherwise damaged.
7. Lower fan plenum. Replace washer, fan blade, and Speed-nut.
8. Reconnect fan to wiring harness. Turn on power.
9. Verify that motor is working and blade is turning in the correct direction.

## **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.**



**Make Sure Fan Blade Spins Freely!**



## 6-2 SERVICE

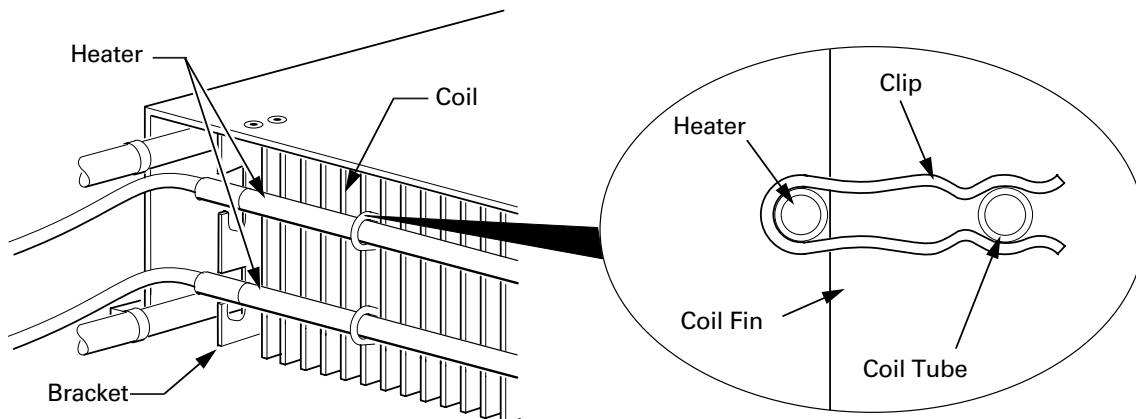
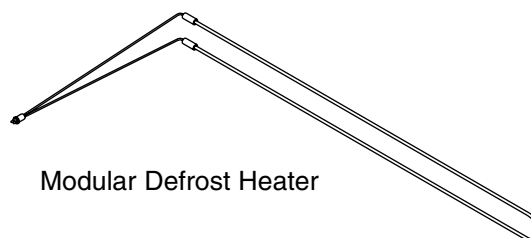
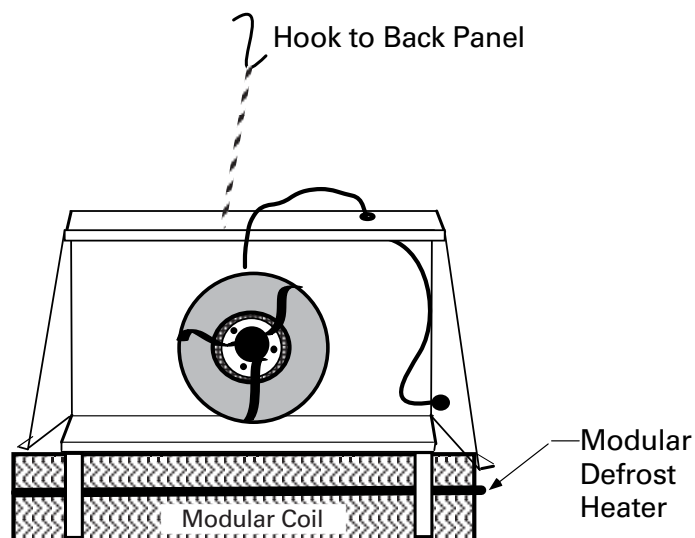
### REPLACING MODULAR ELECTRIC DEFROST HEATER

These heaters are attached to the front of the modular coils. They may be accessed by lifting the fan plenums. To replace:

1. Turn off power to merchandiser.
2. Remove wire display racks and bottom display pans from the section of the compartment being serviced.
3. Hinge up and fasten the modular fan plenum to the interior back panel with chain and hook provided.
4. Unplug the heater from the heater harness.
5. Remove the heater from the face of the coil. Be sure to save the attachment clips for the new heater.
6. Install new heater.
7. Reposition fan plenum and reconnect power.
8. Verify heater is working properly.

### **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.**



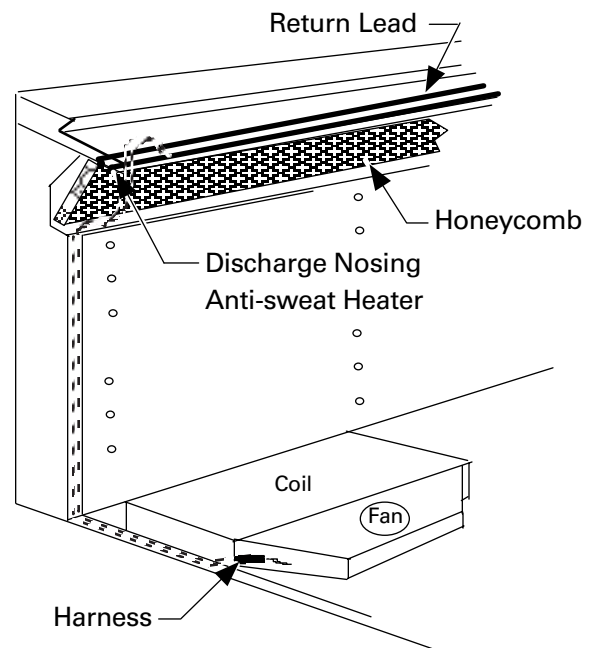
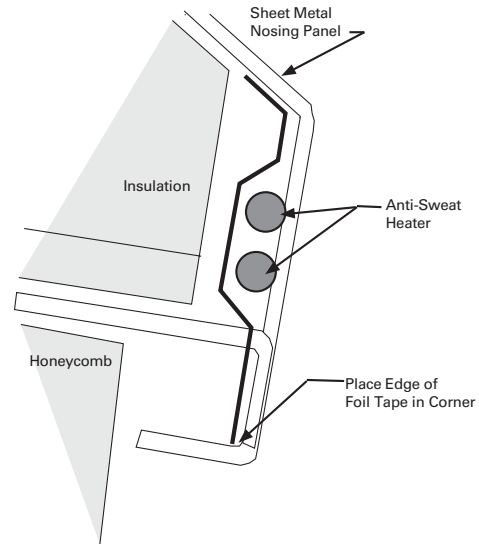
Clips to be located 5-6 inches from bracket

## REPLACING NOSING ANTI-SWEAT HEATER

Refer to illustrations on next page for location of nosing anti-sweat heaters in each model.

To replace the heater:

1. Turn OFF the power to the merchandiser.
2. Remove the interior panels from under the nosing heater to be replaced by lifting them up and out.
3. Remove interior panel support bracket.
4. Remove existing screws from sheet metal nosing panel; remove panel.
5. Remove insulation.
6. Unplug and remove existing anti-sweat heater taped to sheet metal nosing panel. In most applications anti-sweat heater plug is routed on LH side from front of case. On LWU, LWUG End compartment, heater plug is routed on RH side from front of case.
7. Tape Anti-Sweat Heater as shown and route plug to Jumper Harness. If Price Tag Molding is installed, allow clearance between screws and wiring. Make sure that the edge of foil tape is seated properly. Failure to do so will cause damage to the wiring and heater.
8. Reinstall insulation, sheet metal nosing panel screws, interior panel support bracket and interior panels.
9. Turn on power to merchandiser and check for proper operation.



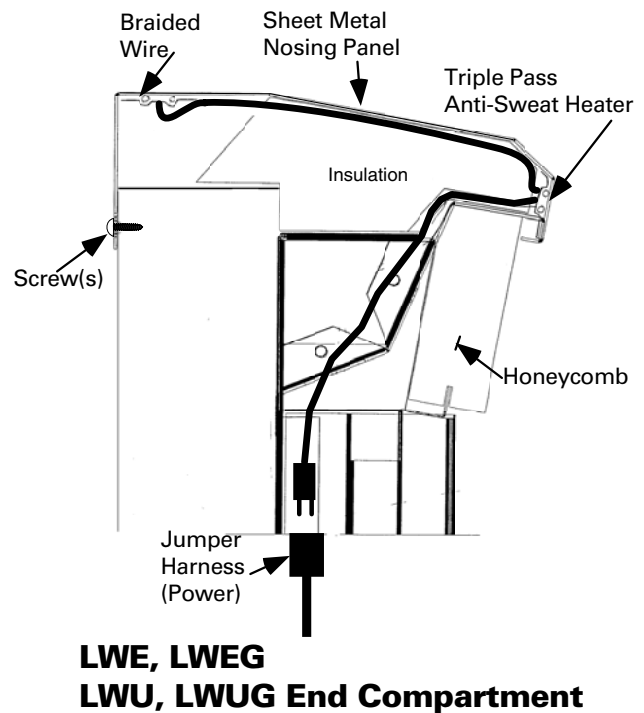
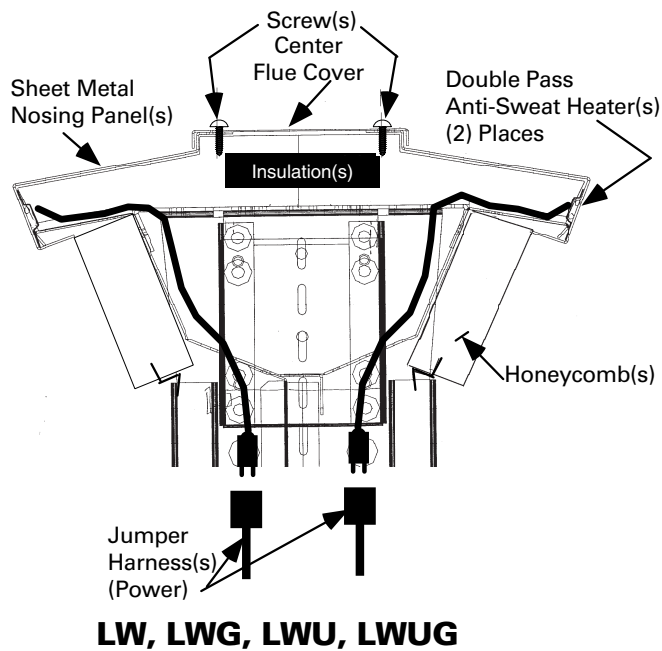
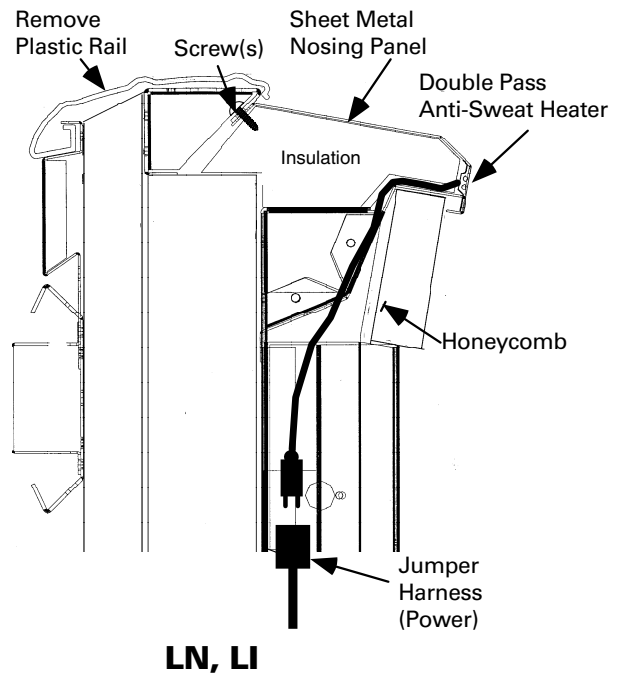
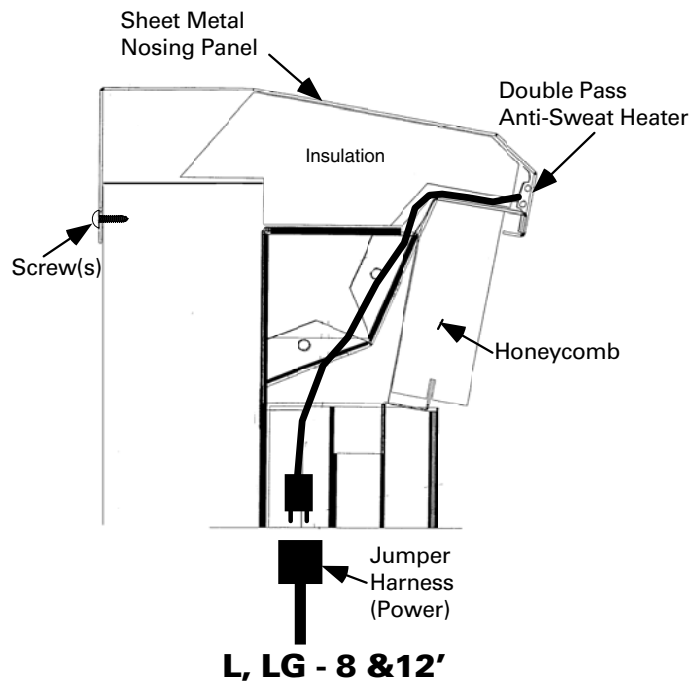
## WARNING

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.



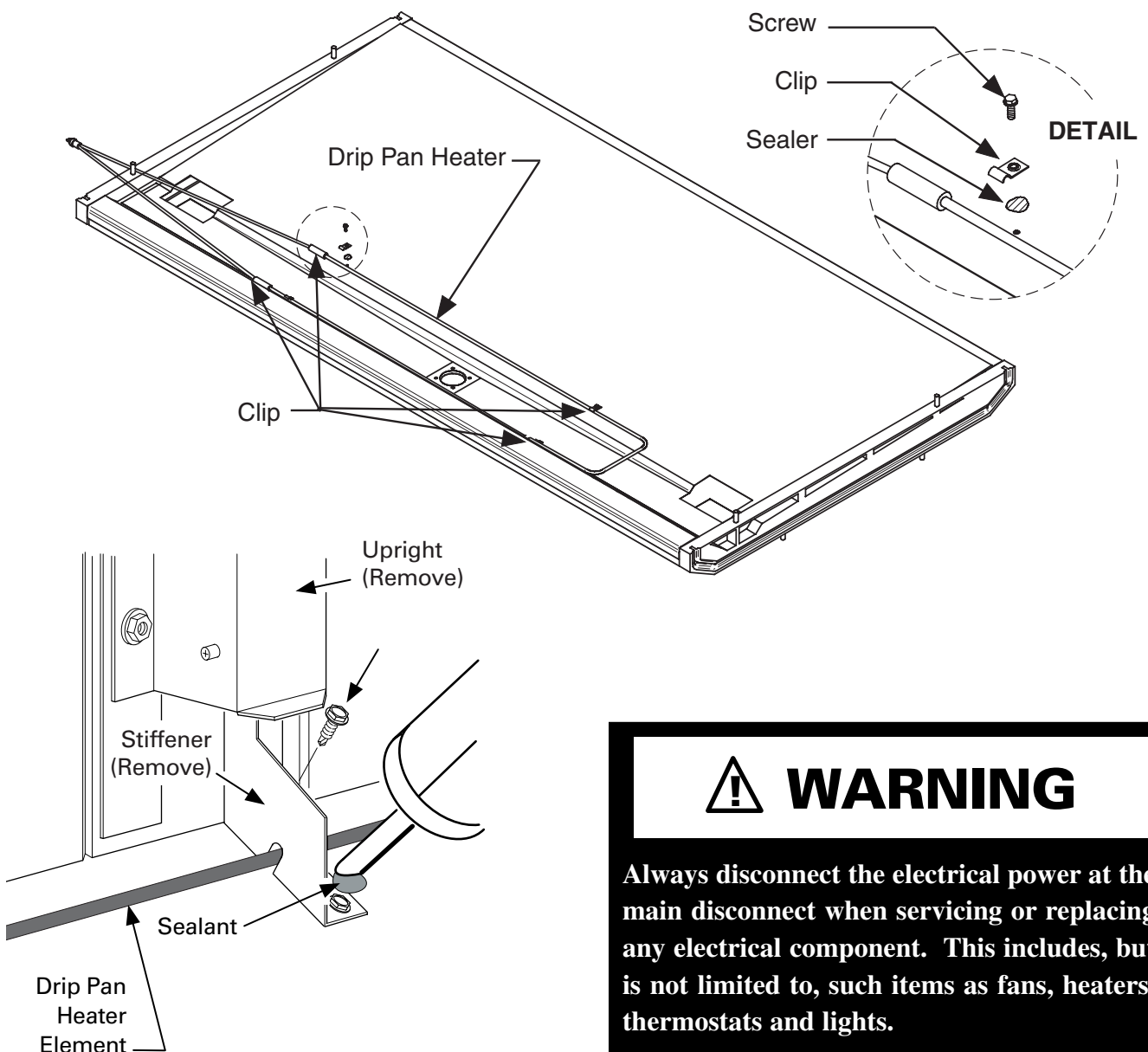
## 6-4 SERVICE

### Cross Sections Showing Application of Nosing Anti-Sweat Heater



**REPLACING DRIP PAN HEATER**

1. Turn off power to the merchandiser.
2. Remove wire display racks, bottom display pans, and internal panels from the compartment being serviced.
3. Unplug the heater from the heater harness.
4. Remove the upright and stiffener.
5. Remove all screws and clips, then remove the heater.
6. Install new heater. Re-apply acrylic sealer under clips. Carefully *return clips to their original position*. Replace broken clips.
7. Reinstall upright and stiffener. Use acrylic sealer on screws.
8. Reconnect harness and power.
9. Verify that heater is working properly.



## ⚠ **WARNING**

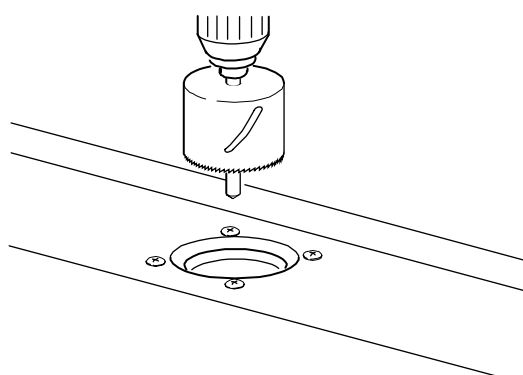
**Always disconnect the electrical power at the main disconnect when servicing or replacing any electrical component. This includes, but is not limited to, such items as fans, heaters, thermostats and lights.**

## 6-6 SERVICE

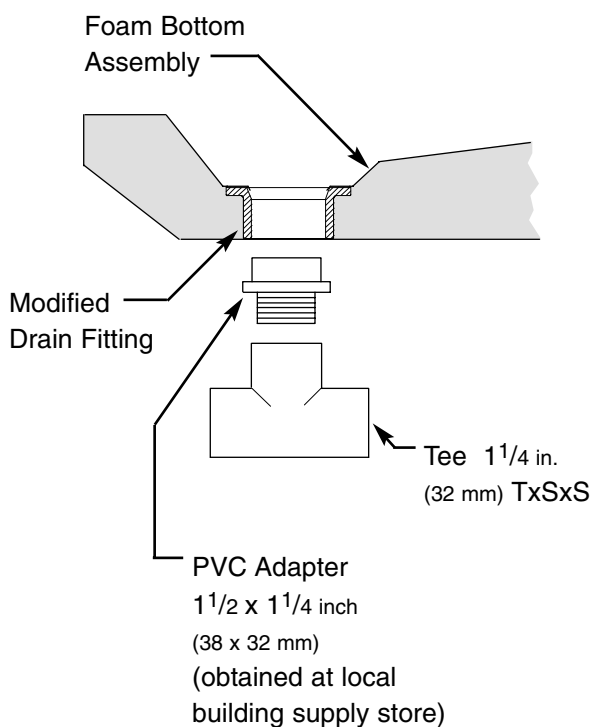
### REPLACING DAMAGED DRAIN FITTING

The following procedure is for the field repair of a broken drain fitting.

1. Use a drill with a 1 7/8-in. (48 mm) hole saw to drill out the bottom of the drain fitting. Be sure to drill completely through fitting and bottom liner.
2. Apply teflon tape to threaded end of adapter and screw into threaded end of tee.
3. Apply an ABS and PVC compatible primer and sealer to adapter and inside of drain. Insert adapter into drain fitting.



**Drain Fitting  
Viewed from Inside Merchandiser**



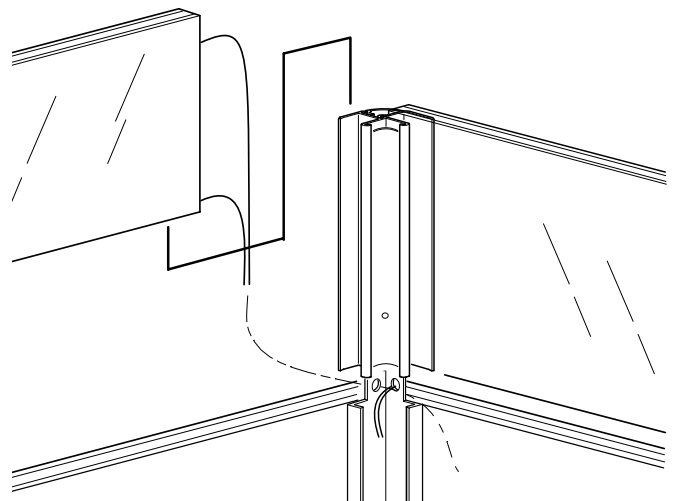
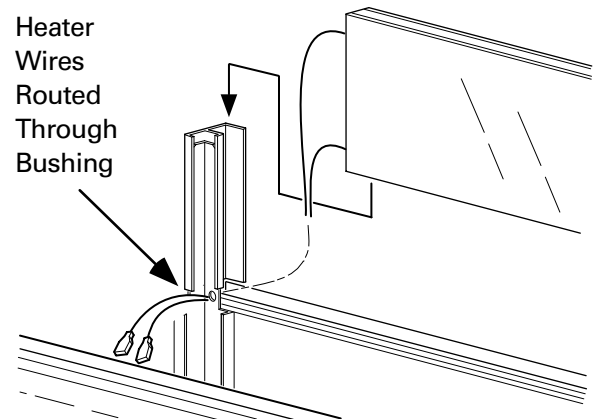
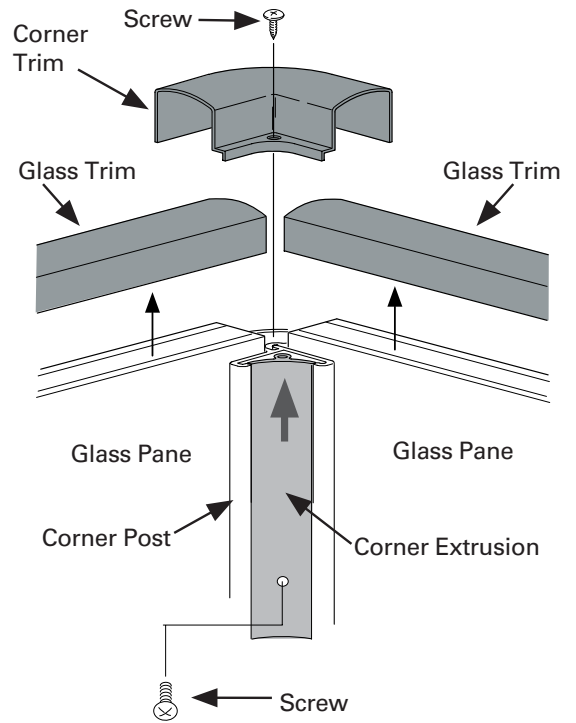
**End Section View**

## REMOVING THERMOPANE GLASS ASSEMBLY

**Requires TWO (2) people**

*Always use gloves when handling glass.*

1. Turn off power to merchandiser.
2. Remove acrylic flue glass, wire racks, drip pans, and shelf support panels. Remove glass top trim and, if applicable, corner extrusion..
3. Disconnect the perimeter heater and glass pane heater lead wires from the wiring junctions at each end of the glass assembly (four leads). The connections are located just under the return grille at each end of the glass assembly.
4. With one person standing at each end of glass, lift the thermopane glass assembly straight up to remove it from its retainer channel and the end posts.
5. To install glass, have one person hold each end of the thermopane glass assembly and carefully lower it into the retainer channel and end posts.
6. Reconnect perimeter heater and glass pane heater lead wires.
7. Turn on power. Verify that heaters are working properly.



## 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.**

## 6-8 SERVICE

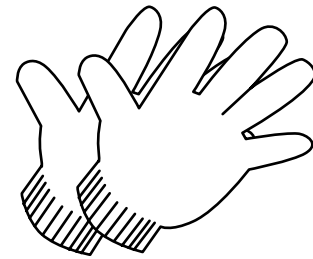
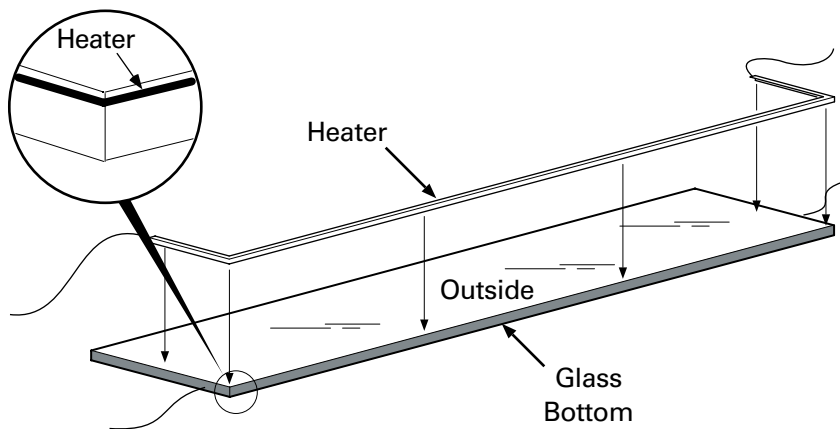
### REPLACING GLASS PERIMETER ANTI-SWEAT HEATER

#### FOR MERCHANTISERS MANUFACTURED *BEFORE NOVEMBER 1999:*

1. Follow the instructions for removing the thermopane glass assembly.
2. Remove the perimeter heater from the glass assembly, being sure to remove all the foil backing.
3. Install the new heater on the glass assembly.  
**BE SURE THE WIRE ELEMENT RUNS ALONG THE EDGE OF THE OUTER PANE OF GLASS.**
4. Reinstall the thermopane assembly and re-connect leads and power.
5. Verify heater is working properly.

### **WARNING**

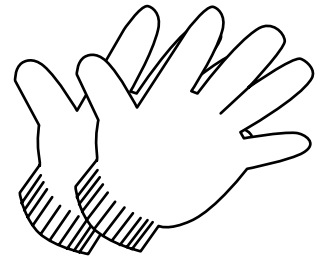
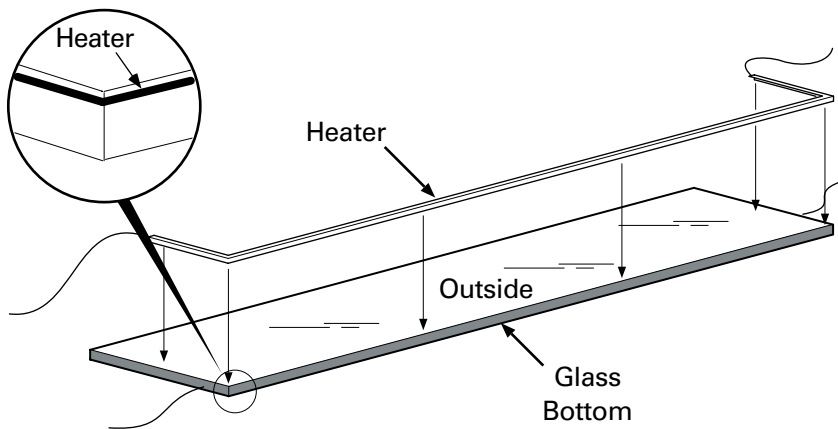
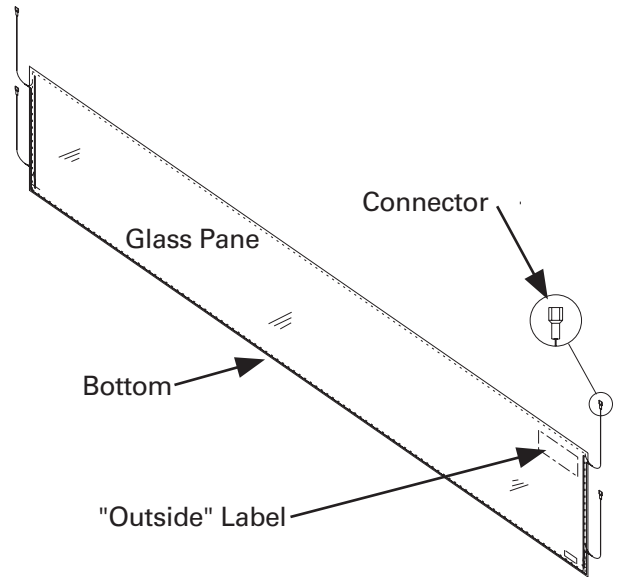
**Always disconnect the electrical power at the main disconnect when servicing or replacing any electrical component. This includes, but is not limited to, such items as fans, heaters, thermostats and lights.**



**Always Use Gloves  
When Handling Glass!!**

**FOR MERCHANDISERS MANUFACTURED  
AFTER NOVEMBER 1999:**

1. Follow the instructions for removing the thermopane glass assembly.
2. The perimeter heater is imbedded in the glass pane. Cut top wire off each end of the glass.
3. Install the new heater on the glass assembly.  
**BE SURE THE WIRE ELEMENT RUNS  
ALONG THE EDGE OF THE OUTER  
PANE OF GLASS.**
4. Reinstall the thermopane assembly and re-connect leads and power.
5. Verify heater is working properly.



**Always Use Gloves  
When Handling Glass!!**



## 6-10 SERVICE

### 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  
Phone: 1-800-645-3413  
Fax: 1-800-645-3414

X-Ergon  
1570 E. Northgate  
P.O. Box 2102  
Irving, TX 75062  
Phone: 1-800-527-9916

#### NOTE:

Hussmann Aluminum melts at .....1125°F  
Aladdin 3-in-1 rod at .....732°F  
X-Ergon Acid core at .....455°F

#### 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.

# **HUSSmann®**

**The full product warranty is available from our website,  
[www.hussmann.com](http://www.hussmann.com)**

To obtain additional information or other support,  
contact your Hussmann representative.  
Please include the model and serial number of the product.