

# HUSSmann®



## *Shop Around Medium Temperature*

Dairy, Delicatessen and Produce  
Merchandisers



**IMPORTANT**

**Keep in store for  
future reference!**

## *Installation & Operation Manual*

Shipped With Technical Data Sheets

**P/N 0518265\_E**

November 2018

MANUAL- I/O SHOP AROUND MEDIUM TEMPERATURE

English P/N 0518265  
Spanish P/N 0538825  
French P/N 0538826



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### WARRANTY

## IMPORTANT

KEEP IN STORE FOR FUTURE REFERENCE

*Quality that sets industry standards!*

**HUSSMANN®**

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## INSTALLATION TOOL LIST

### Unloading From Trailer:

Lever Bar (also know as a Mule,  
Johnson Bar, J-bar, Lever Dolly, and pry  
lever)  
Moving Dolly

### Setting Case Line-Up:

Level, 4 ft suggested  
Ratchet  
1/4 in. Socket  
5/16 in. Socket  
1/2 in. Socket  
Battery Drill/Screw Gun  
Caulking Gun  
10 in. Adjustable Crescent Wrench

## REVISION HISTORY

### REVISION E — November 2018

1. Updated Misting System Warning, Page 2-4

### REVISION D — August 2018

1. California Prop. 65 update

### REVISION C — October 2013

1. Added warning box, page 1-2.
2. Added *Maintaining Fluorescent Lamps*, page 5-4.
3. Revised *Replacing Fluorescent Lamps*, page 6-2.

### REVISION B — December 2012

1. Added LED light fixtures, Page 4-4
2. Added cleaning coils, Page 5-4

### REVISION A — November 2010

Original Issue

\*\*\*\*\*

## ANSI Z535.5 DEFINITIONS



• **DANGER** – Indicate[s] a hazardous situation which, if not avoided, will result in death or serious injury.



• **WARNING** – Indicate[s] a hazardous situation which, if not avoided, could result in death or serious injury.



• **CAUTION** – Indicate[s] a hazardous situation which, if not avoided, could result in minor or moderate injury.

• **NOTICE** – *Not related to personal injury* – Indicates[s] situations, which if not avoided, could result in damage to equipment.

## INSTALLATION

### 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**

The exterior frames on these cases provide space for air circulation. However, in high ambient conditions, sweating may still occur. If this happens install a method of forced ventilation such as a fan ventilation kit.

### Wide Island Fronts

**BE SURE TO POSITION WIDE ISLAND MERCHANDISER FRONTS PROPERLY.**

The front of wide island merchandisers is readily identified by the location of the serial plate (see leveling drawing on next page). 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.

### 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.

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.



This warning does not mean that Hussmann products will cause cancer or reproductive harm, or is in violation of any product-safety standards or requirements. As clarified by the California State government, Proposition 65 can be considered more of a 'right to know' law than a pure product safety law. When used as designed, Hussmann believes that our products are not harmful. We provide the Proposition 65 warning to stay in compliance with California State law. It is your responsibility to provide accurate Proposition 65 warning labels to your customers when necessary. For more information on Proposition 65, please visit the California State government website.

**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.

**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 case 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.

**NOTE:**

Be careful not to damage the factory installed end while moving the case. 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

**CAUTION**

**Do NOT store items or flammable materials atop the case.**

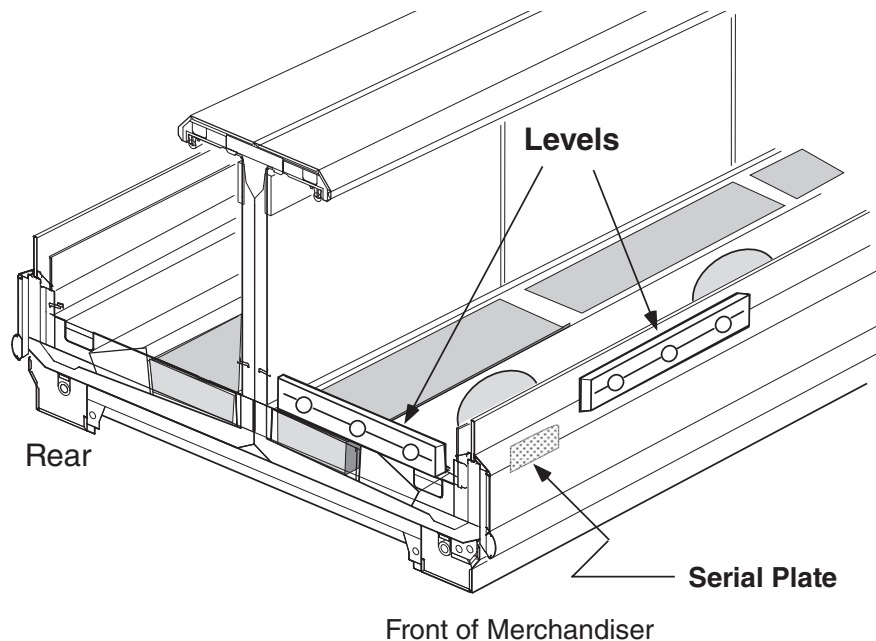
## LEVELING

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 big enough 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.



**NOTE:** Do not place levels on Display Pans or on Shelves.



## 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.

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

### Prep Case

1. Check to be sure that merchandisers are level and that the factory-installed nut retainers and alignment pins are in place. Locate Joint Kit and check contents against parts list.
2. Remove shelves (if installed), display racks, pans, front shelf supports and front air grilles from the right end.
3. Remove the rear panel(s) from the right end. On multi-deck cases remove the lower back panel first. To remove a panel lift it up from its bottom edge and out. No tools are required.

### Apply Gaskets

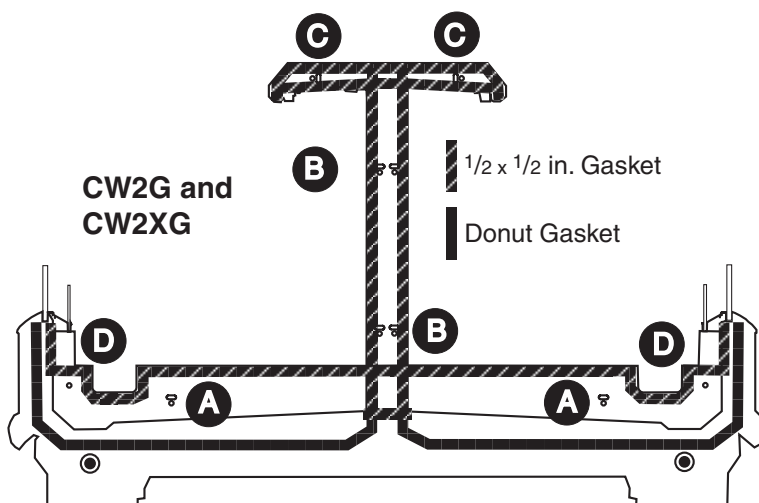
1. Insert donut gasket into the end frame horizontal recess across the bottom and up the front of one merchandiser as shown.
2. Apply the 1/2 in. (13 mm) gasket around the perimeter of case and across the top as shown. Be sure to overlap gaskets as shown. Check to be sure that there are no gaps between gasket and merchandiser.

### Fasten Cases

1. Move the second merchandiser into position against the first. Match the alignment pins with the corresponding holes.
2. Fasten fronts together using cap screws, flat washers, lock washers and nuts. Tighten only until front panels touch. **Do not tighten fully.**
3. Use the cap screws, flat washers and lock washers provided in the joint kit to draw merchandisers together at rear. **Do not tighten fully.**
4. Draw canopies of multi-deck wall merchandisers together by inserting threaded rod through top shoe as shown. Fasten each end with washers and nuts. **Tighten only until canopies touch.**

5. Tighten joints in the order shown (A, B, C, D) until gaskets are compressed, and cases join smoothly.

**Tighten in Order Shown**



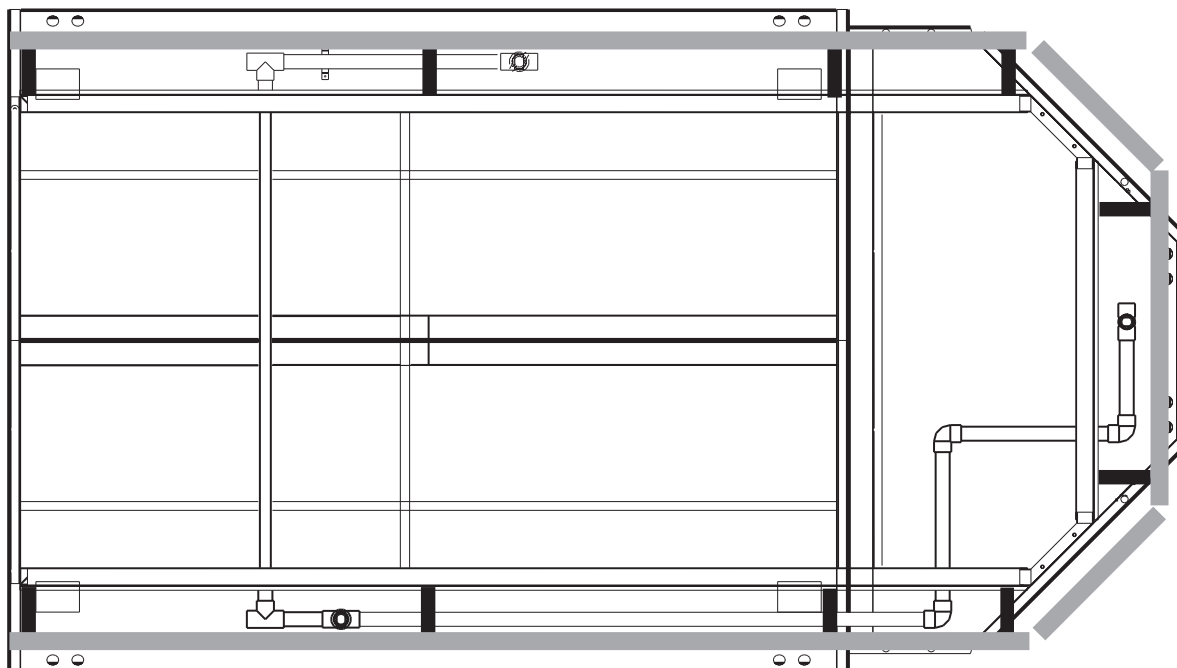
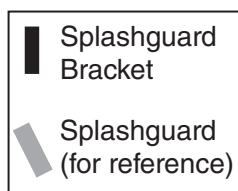
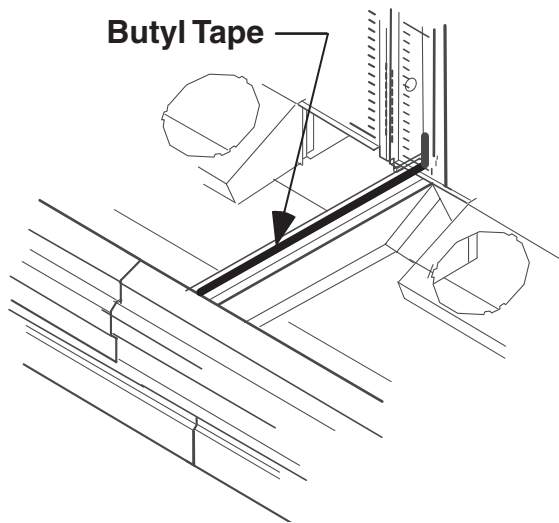
### IMPORTANT

- **Do not stretch gasket,** especially around corners.
- **Do not butt gaskets;** always overlap them as shown.
- **Remove paper backing** after gasket has been applied.



**Seal Merchandisers**

1. Apply Butyl Tape across the bottom joint. Be sure to extend the tape up the back and front of the case.
2. Use field-supplied silicone to fill any gaps between the front support brackets.



Front of CW2U-138

**INSTALL SPLASHGUARD BRACKETS**

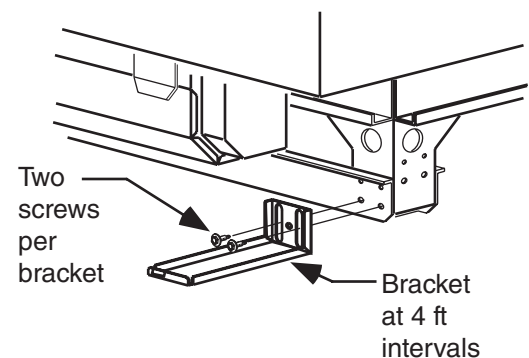
The splashguard and brackets are shipped inside each case.

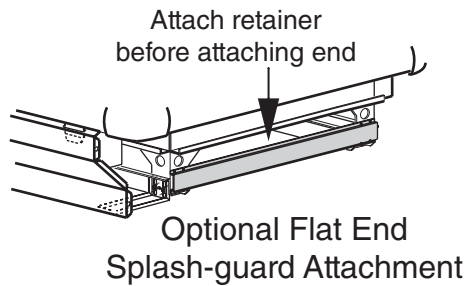
**Install splashguard brackets before piping case.** Use two screws per bracket. Attach brackets every 4 feet at pre-drilled locations.

Install splashguard brackets on faceted end in locations shown.

After merchandisers have been leveled and joined, and all drip piping, electrical and refrigeration work has been completed, install the splashguards as described in Section 3.

**Optional flat end:** The flat end splashguard retainer is installed last, as shown.

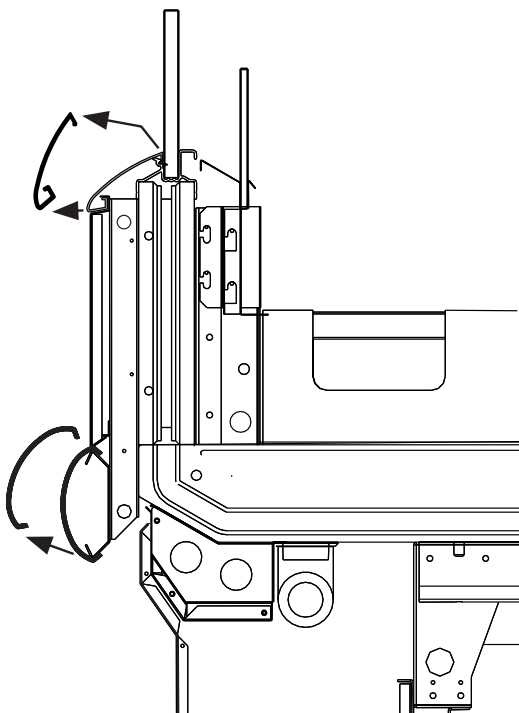




## OFFSETTING BUMPERS AND TOP RAIL

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

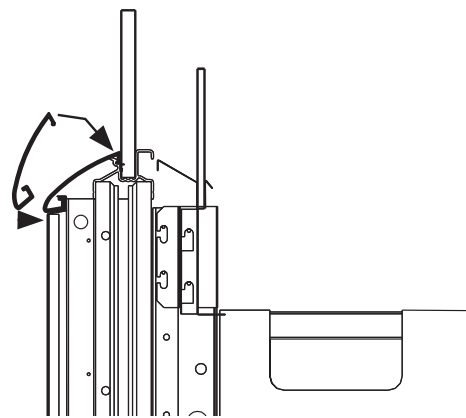
1. Do not remove factory-installed faceted bumpers or top rails of the CW2 models. Do not expose bumpers or top rails to excessive heat or direct sun as this may cause distortion of the material.
2. Remove full-length factory-installed top rails and bumpers from cases as follows:



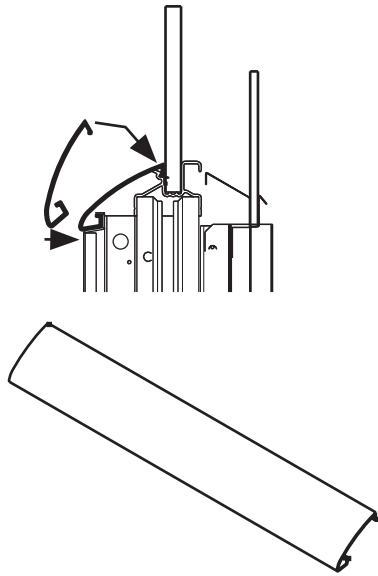
- a. To remove top rails, push rail toward the back of the case with one hand while lifting the top edge with the other hand. A flat screwdriver may be used carefully as a pry. (Refer to preceding drawing.)
- b. Starting at one end, carefully peel bottom of top rail free of the retainer and set the rail inside the case.
- c. Remove bumpers by pulling bumper away from bumper retainers.

There are no starter bumpers for CW2 models. Full-length bumpers and top rails are installed without internal trim or fasteners.

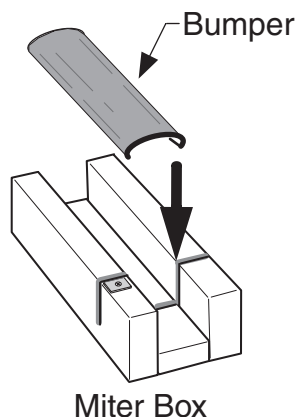
3. Starting at the left end of the line up, install the first full-length bumper by pushing it into place, touching the faceted bumper. Make sure that no gaps exist between sections. Continue installing the bumpers the length of the line up. Do NOT install the last upper bumper section at this time. This section will be installed in the last step.
4. Return to the left end of the line up and position the top rail as shown on next page.



5. Push the bottom portion of the top rail section into the retainer. Use one hand to push the top rail toward the rear of the case while using the other hand to "snap" the top section down over the edge as shown.

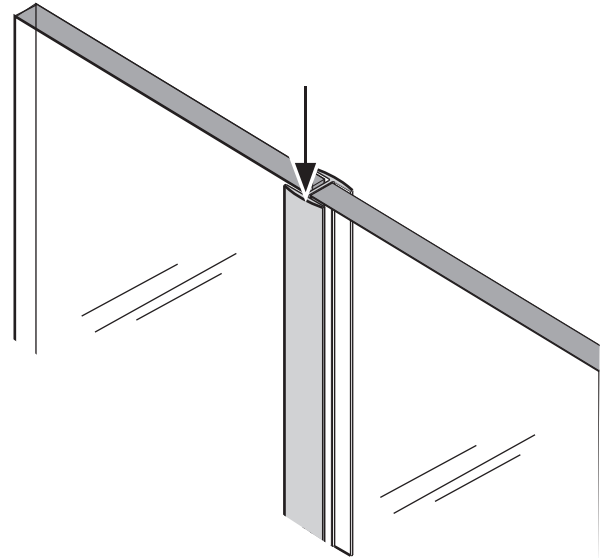


6. Continue installing the top rails the length of the line up. Do NOT install last section at this time.
7. Once all except the last sections of the bumper and top rail have been installed refrigerate the case line up for at least six (6) hours. **The last sections of bumper and top rail should be kept inside a refrigerated case or cooler during this time.** This will allow the bumpers and top rails to contract.
8. Go to the right end of the line up and tap the top rail and bumpers to close any gaps.
9. Measure and cut last sections of top rail and bumpers. Use a miter box and fine-tooth saw to cut last bumpers and top rail to length. Install the last sections.



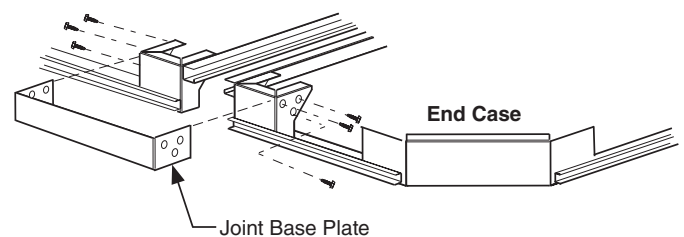
**Note:** If part of plastic top rail pops loose, remove that section of top rail and re-install according to Step 5. Trying to re-install only the popped part may not secure the top rail, and may damage the top rail, color panel and light channel.

10. Slide alignment strips between front glass sections at each joint.



### CW2 End Case Only

Install the base plate as shown below when joining a CW2 end merchandiser to the lineup.



### INSTALLING PARTITIONS

To join same temperature fixtures on different defrost cycles, an acrylic partition kit is required. To join unlike fixtures, or like fixtures operating at different temperatures, a 1½ in. (38 mm) partition kit is required. Instructions for installing the partitions are included with the kit.

NOTES

## REFRIGERATION / ELECTRICAL

### REFRIGERANT

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

### WARNING

Refrigeration lines are under pressure.  
Refrigerant must be recovered 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.

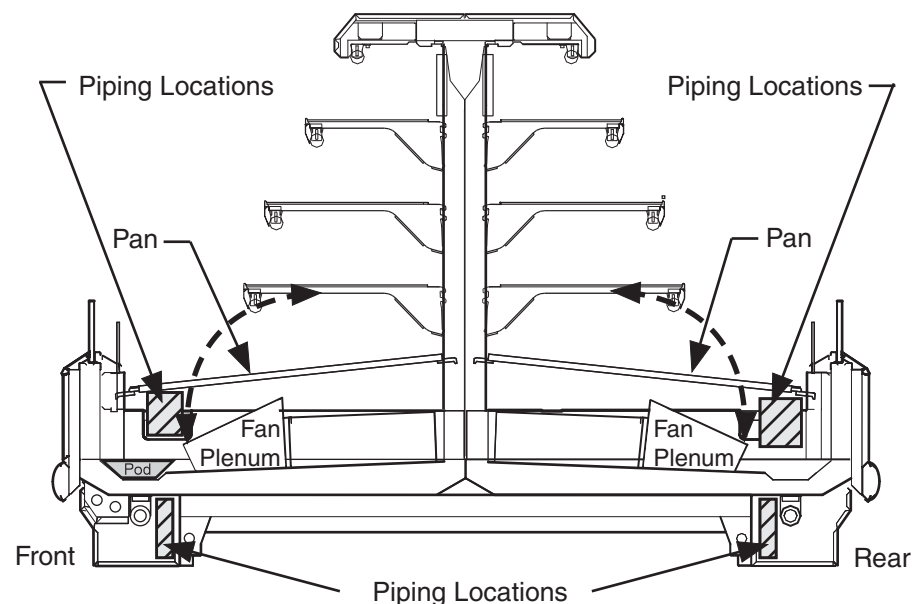
#### Multiplexing

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 BRANCH** as this may result in poor refrigeration control and compressor failure.

Interconnecting piping inside the merchandiser must be located as shown below to allow room for lifting the hinged fan plenums and for clearance beneath the display pans. Or the interconnecting piping may be run outside the merchandiser in the wireway area shown.

#### Line Sizing

Refrigerant lines should be sized as shown on the refrigeration legend that is furnished for the store or according to ASHRAE guidelines. Refer to the information on the next page for branch line piping of Hussmann Equipment.



#### 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.

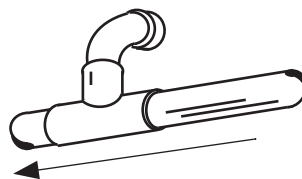
### INSULATION

The suction and liquid lines should be clamped or taped together and insulated for a minimum of 30 feet from the merchandiser. Additional insulation for the balance of the liquid and suction lines is recommended wherever condensation drippage is objectionable or lines are exposed to ambient conditions.



**It is the contractor's responsibility to install merchandiser(s) in accordance with all local building and health codes.**

### SUCTION LINE

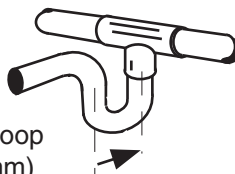


Suction Line Return

- Pitch in direction of flow.
- May be reduced by one size at one third of case run load and again after the second third. Do not reduce below the case suction line size.

Merchandise suction lines should enter at the top of the branch line.

### LIQUID LINE



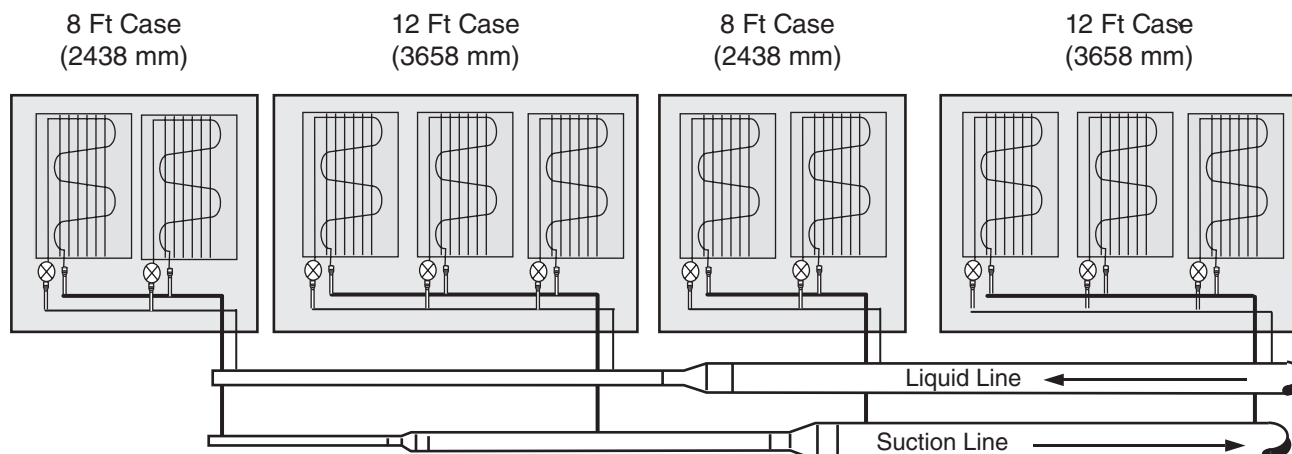
Minimum Loop  
3-in. (76 mm)

Liquid Line Take Off

- May be reduced by one size after one half the case run load. Do not reduce below the merchandiser liquid line connection size.

- Take-offs to case liquid lines should exit the bottom of the branch liquid line. Provide an expansion loop for each evaporator take-off. (Minimum 3 in. (76 mm) loop.)

### Offtime Defrost



## REFRIGERATION THERMOSTAT

The bulb for the optional refrigeration thermostat is located in the discharge air of the evaporator. The optional refrigeration thermostat is located 5 ft (1524 mm) from the left-hand end, just past the wireway, on the serial plate side (front) of the merchandiser.

## DEFROST TERMINATION THERMOSTAT

The standard disc type defrost termination thermostat is not adjustable. This thermostat is clamped to the suction line of the coil on the left-hand end of the serial plate side (front) of the merchandiser.

## DEFROST SEQUENCES

These merchandisers require defrost cycles for proper operation. Refer to the data sheets for application data.

The Time Clock initiates defrost. The evaporator fans continue to circulate air across the evaporator coil, melting any frost build-up. Defrost can be terminated by either temperature or time.

### Temperature Termination

Temperature termination should be used for the following types of installations:

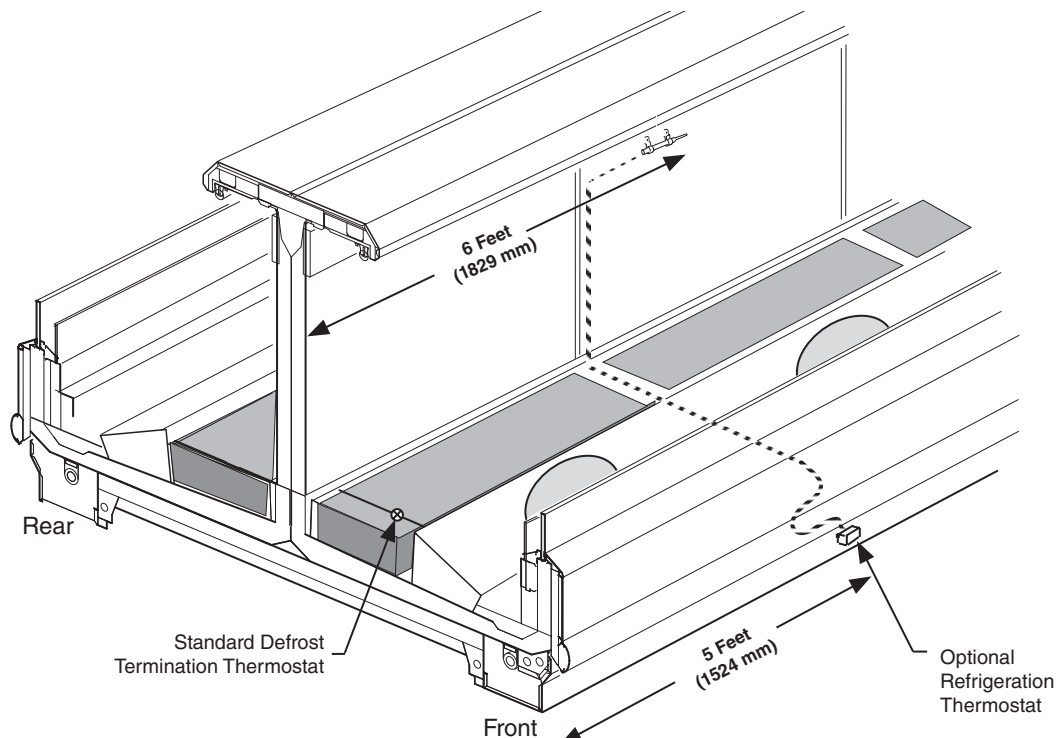
1. Parallel systems with EPRs or suction stop solenoids
2. Single compressor units without pump-down cycle.

### Time Termination

Should be used for the following types of installations:

1. Parallel systems with thermostat and liquid solenoid.
2. Single compressor units with pump-down.

To use time termination, simply do not wire the termination thermostat.





## MERCHANDISER ELECTRICAL DATA

Technical data sheets are shipped with this manual. The data sheets provide merchandiser electrical data, electrical schematics, parts lists and performance data. Refer to the technical data sheets and merchandiser serial plate for electrical information.

## ELECTRICAL CONNECTIONS

All wiring must be in compliance with NEC and local codes. All electrical connections *including both supply circuits* are to be made in the electrical *Handy Box*.

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

## WARNING

Hussmann does not recommend using spray hoses or misting systems due to risk of serious injury or death from electrical shock. Do not use spray hoses or misting systems on cases with shelf or rail lighting.

## FIELD WIRING

Field wiring must be sized for component amperes stamped on the serial plate. Actual ampere draw may be less than specified.

## IDENTIFICATION OF WIRING

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

## WARNING

— LOCK OUT / TAG OUT —

To avoid serious injury or death from electrical shock, 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 doors, lights, fans, heaters, and thermostats.

## 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 ..... 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**

**THESE ARE MARKER COLORS. WIRES MAY VARY.**

## DRIP PIPING AND SPLASHGUARDS

### 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 case front). A water seal is supplied with each fixture. The water seal must be installed to the waste outlet to prevent air leakage and insect entrance into the fixture.

#### NOTE:

**Water seal outlet must clear front skid rail.**

A Tee, adapter, plug and 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. Please follow the recommendations listed below when installing drip pipes to ensure proper installation.

1. Never use drip piping smaller than the nominal diameter of the pipe or water seal supplied with the merchandiser.
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 AN AIR LOCK AND PREVENT DRAINING.**
3. Pitch the drip piping in the direction of flow. There should be a minimum pitch of 1/4 in. per ft (20 mm per 1 m).
4. Avoid long runs of drip piping. Long runs make it impossible to provide the pitch necessary for good drainage.



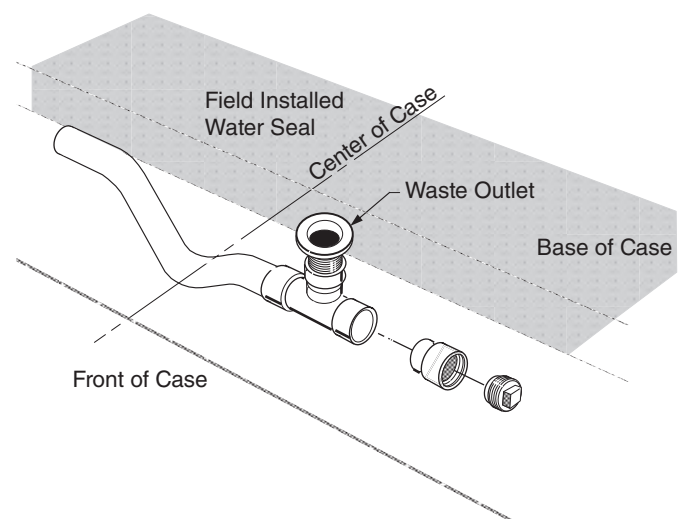
## CAUTION

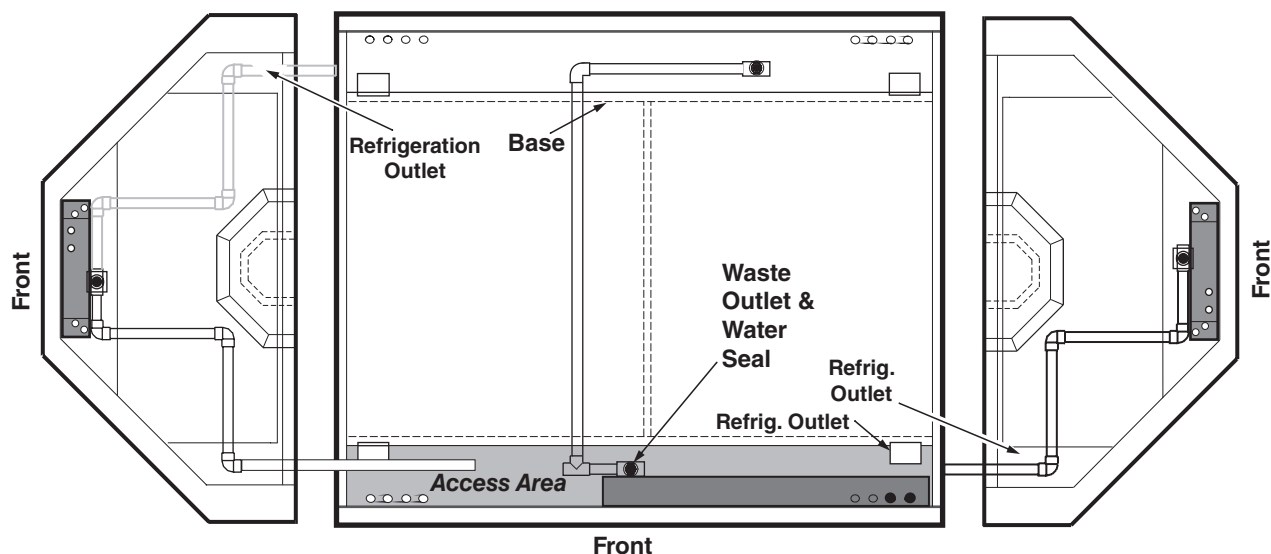
**Splashguard brackets MUST be installed before piping case.**

5. 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.



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.





See the merchandiser data sheet set for dimensions. Each waste outlet will be interconnected with factory installed drip piping. When unitized cases are joined, or an end case is to be joined to a lineup of CW2 models, the waste outlet can be interconnected. A drain piping connect kit is required to change piping from front to back as shown.

Each merchandiser is supplied with a 2 in. (51mm) water seal, an adapter, a plug and a street ell. The street ell and water seal must be installed to prevent air leakage and insect entrance into the merchandiser. They should be installed as shown above.

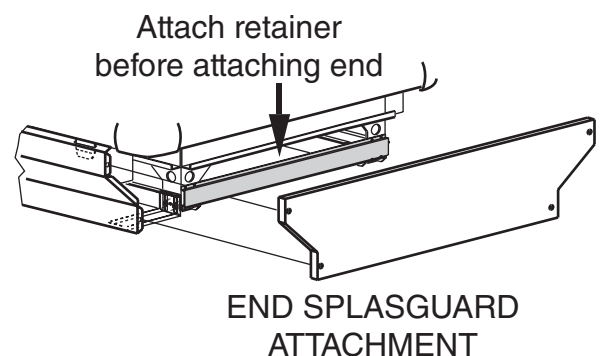
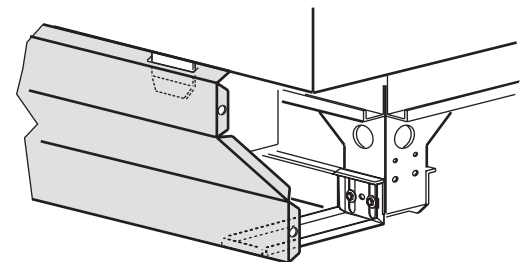
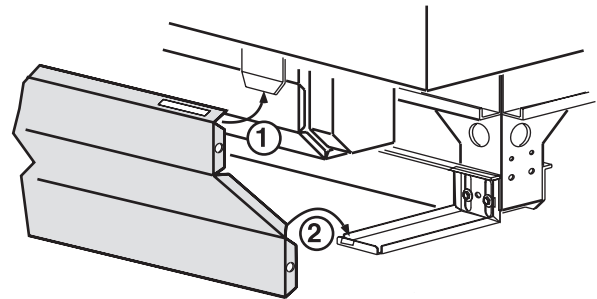
## INSTALLING SPLASHGUARDS

The splashguards are shipped inside each case.

***Install splashguard brackets before piping case.*** 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 case as shown.
3. Push splashguard up onto tabs until lower edge of splashguard swings onto bracket. Lower bottom of splashguard onto bracket tabs.
4. Install the front and back splashguards first. The left and right end angle splashguards have two pre-drilled flanges on each end. Use one screw to fasten each flange behind the front and back splashguards at pre-drilled holes.
5. Install end facet splashguard on brackets; use four screws in pre-drilled holes to fasten the end facet splashguard to the left and right end angle splashguards.



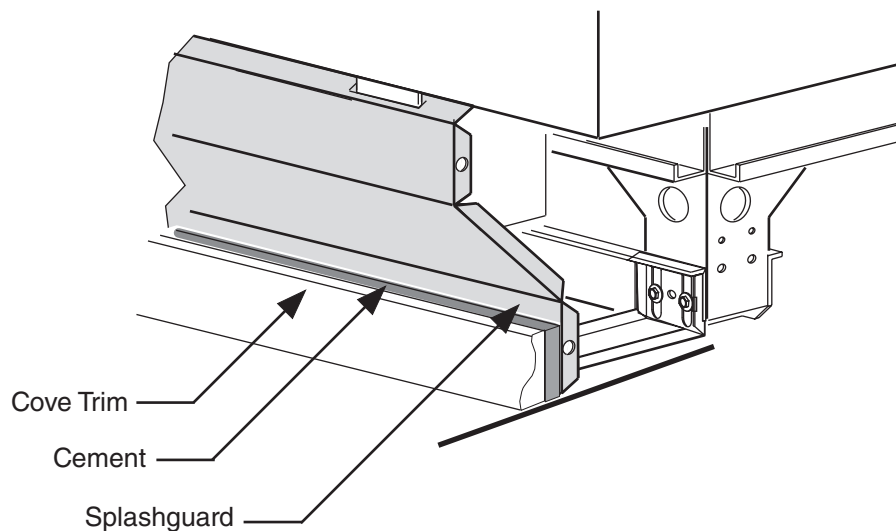
***Optional flat end:*** The flat end splashguard is installed last, as shown.

**SEALING SPLASHGUARD TO FLOOR**

**IF REQUIRED** by local sanitation codes, or if desired by the customer, 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 / OPERATION

### 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 four foot 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. Removal of this cap during case maintenance will result in refrigerant loss unless the system is first isolated and the refrigerant recovered.



### 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.

### LOAD LIMITS

Each merchandiser has a load limit decal. Shelf life of perishables will be short if load limit is violated.

**AT NO TIME SHOULD MERCHANDISERS BE STOCKED BEYOND THE LOAD LIMITS INDICATED.**

**LOAD LIMIT**

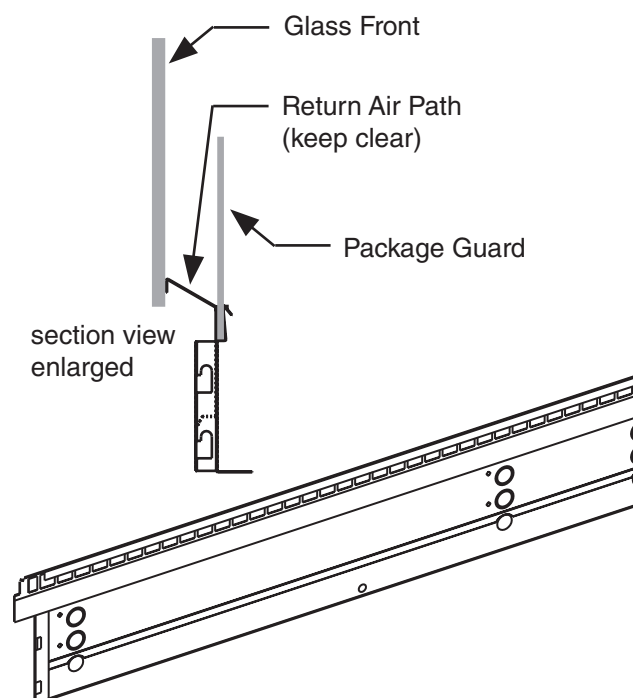
**DO NOT BLOCK HONEYCOMB.**

### STOCKING

Hussmann recommends one or two shelves be used in each CW2 merchandiser section, and two or three shelves be used in each CW2X merchandiser section. Shelves for end compartments are single-position 180-degree shelves: either flat, or tilted. End compartments should not be used to display fresh-cut meat. Product should **NOT** be placed in merchandisers until case 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.



## SHELF MAXIMUM WEIGHT LIMITS

Hussmann merchandiser shelves are designed to support the maximum weight load limits as indicated in the table below. Exceeding these maximum weight load limits may cause damage to the shelf or shelves, damage to the merchandiser, damage to store products, and potentially create a hazardous condition for customers and staff.

**Weight Limits for Merchandiser Shelving**

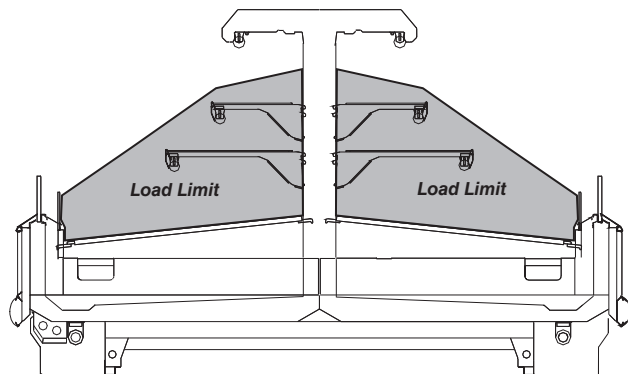
Nominal Shelf Depth	Maximum Load Limit
12 in. (305 mm)	125 lb (56.7 kg)
14 in. (357 mm)	125 lb (56.7 kg)
16 in. (405 mm)	200 lb (90.7 kg)
18 in. (457 mm)	200 lb (90.7 kg)

\*Shelf load limits at 0° tilt

Exceeding the indicated maximum weight load limits constitutes misuse as described in the Hussmann Limited Warranty.

## LOAD LIMIT PROFILE

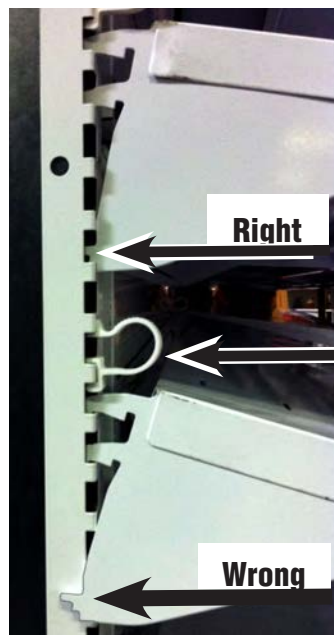
The illustration below shows the typical load limit area for the CW2 family of merchandis-



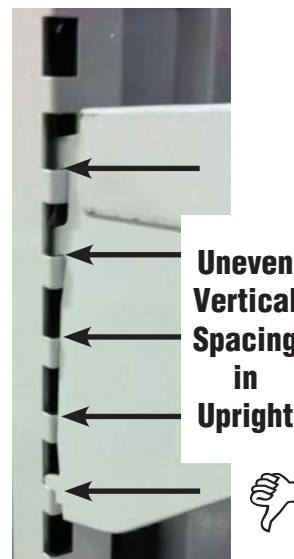
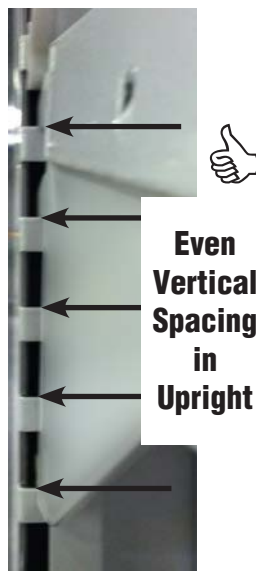
ers.

## INSTALL SHELVES

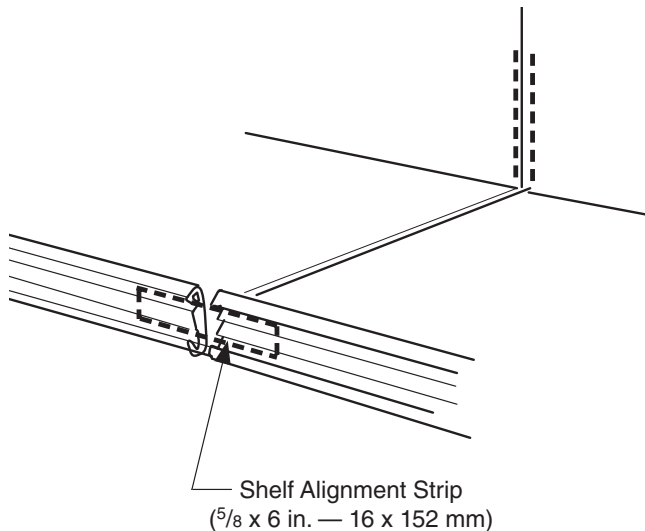
Begin with the lowest row of shelves. Verify the shelf brackets are at 90 degrees to shelf. Keep shelf level from side to side while tilting the front down to insert the lowest tab in the shelf upright. Use a level on each shelf, or count slots in each upright and mark with tape to ensure rows of shelves stay level. Tabs must be seated firmly into position in the uprights before loading shelves.



**Remove Shipping Clips**





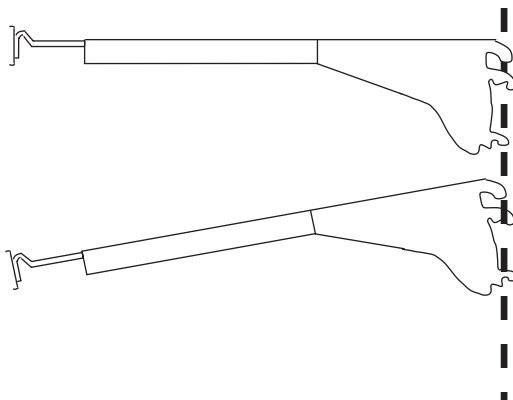


## SHELF ALIGNMENT

Taped to one of the shelves of each merchandiser is a small plastic bag containing shelf alignment strips. These strips 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 shelves:

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.



## CAUTION

ENSURE SHELF TABS ARE LOCKED INTO SHELF UPRIGHTS BEFORE LOADING SHELVES.

## MULTI-DECK SHELF CONFIGURATION

The bottom display shelves can be adjusted to accommodate shallow or volume displays (bulky items such as hams or chickens). The upper shelves are individually mounted in 1 in. (25 mm) increments and have two-, three-, or four-position brackets permitting shelves to be placed in a flat or down-tilt position (see illustration). Front product stops are recommended when shelves are placed in the down-tilt position.

Merchandiser performance will be degraded if peg shelves are used without baffles. Unauthorized specialty shelving may cause poor merchandiser performance also. Consult your Hussmann representative to ensure optimum performance of all Hussmann equipment.

## LED LIGHT FIXTURES

If your merchandiser has LED fixtures (light emitting diode), the procedure for installing the lighted shelves is the same as shown on the next page. However, instead of ballasts that run fluorescent lamps, your merchandiser is equipped with 24VDC power supply that provides DC power to operate the LEDs. EcoShine II LED lights work well for dimming or on/off operation using an occupancy sensor (optional kits).

They can be turned on and off in a cold environment with no warm-up time and no negative impact on lamp life. Hussmann EcoShine II LED light fixtures normally perform for up to 50,000 hours.



**LED  
Shelf Light  
Plug**



**LED Shelf Light Receptacle**

## PROCEDURE FOR INSTALLING LIGHTED SHELVES

Follow these instructions to ensure good contact between male and female connectors.



Shelf Light Plug



Shelf Light Receptacle

1. Remove produce from shelf and place in cooler. **SHUT OFF POWER TO THE MERCHANDISER.**

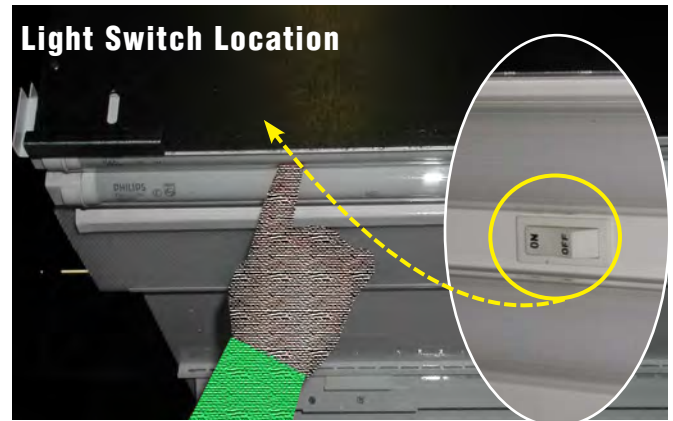


## WARNING

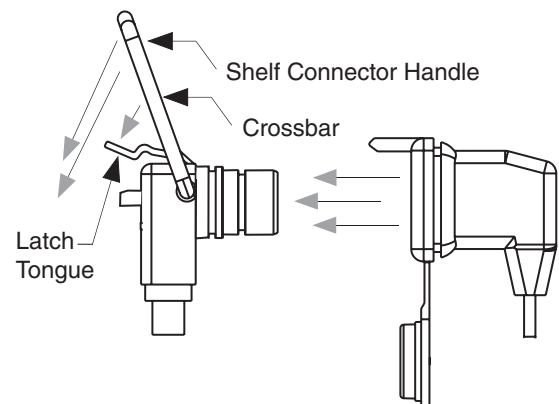
### — LOCK OUT / TAG OUT —

*To avoid serious injury or death from electrical shock, 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 doors, lights, fans, heaters, and thermostats.*

2. Turn off Canopy Light Switch. Remove all packed shelves.



3. Remove shelf connectors from power sockets. Always grip shelf connector by the handle when removing from socket. **PULL handle DOWN AND THEN OUT to disengage.** Note that latch tongue must depress to disengage plug.



4. *Engage each power socket cap and ensure that each cap is fully seated before cleaning.* Ensure the proper seating of the cap at all times when the plug is not engaged.

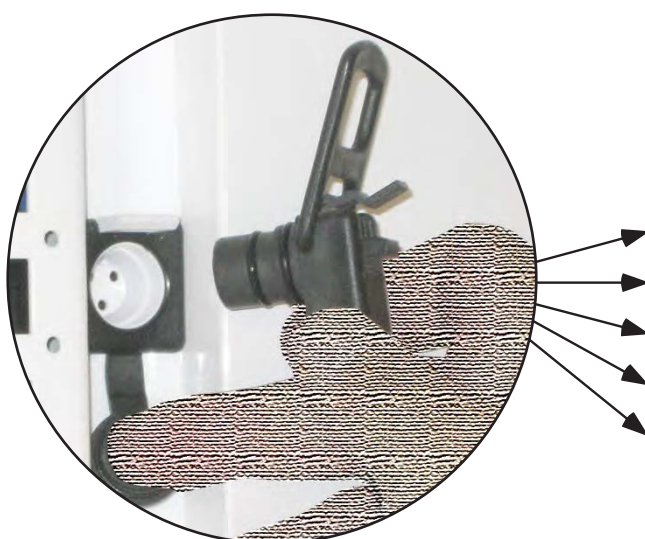
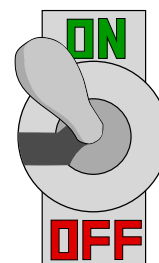
## 4-6 MAINTENANCE

5. Clean the merchandiser as described in the **Care and Cleaning** paragraphs of *Section 5 – Maintenance*. **Keep liquid out of sockets.** (Allow merchandiser shelves to dry before turning on shelf power.)
6. Verify that power is at the merchandiser and turned on. Verify that the merchandiser light switch is turned “OFF.” Switch is located in the canopy, on the left, behind first row of lamps.
7. See the illustration below. It is typical of D5, C5, and D6 models. Note that other models will have fewer rows of shelves. Starting from the left-hand bottom section, choose the location for the first shelf, X-1.
8. Working from left to right, install the next shelf, X-2, to the right of the first shelf you installed. Always work from left to right and from the bottom up in each 8 ft (2438 mm) and 12 ft (3685 mm) merchandiser.
9. After each shelf on the bottom row is in position, be sure to remove the cap and insert the shelf connector. Push firmly.
10. Turn “ON” the merchandiser light switch after the entire bottom row has been installed in either 8 or 12 ft (2438 or 3658 mm) merchandisers. The shelf lights should light.

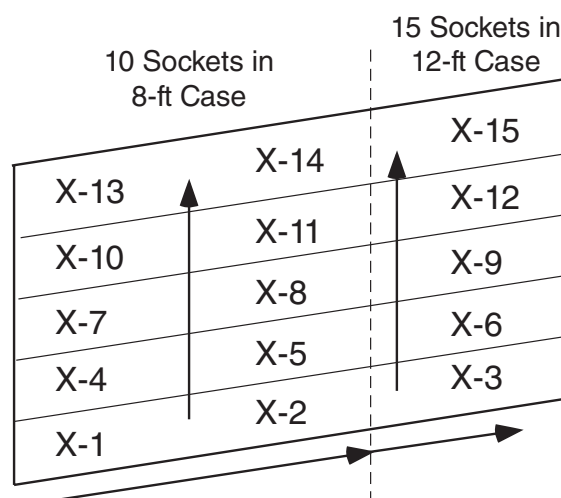
Secure the shelf in the slotted upright. Make certain that the shelf is level and that ends are in the same slot on the left and right upright. ***It is important that shelf brackets be properly seated in the slotted upright.***

If a shelf LED or fluorescent lights do not operate:

- A. Turn off light switch.
- B. Remove and firmly re-insert each shelf plug.
- C. Turn on light switch.

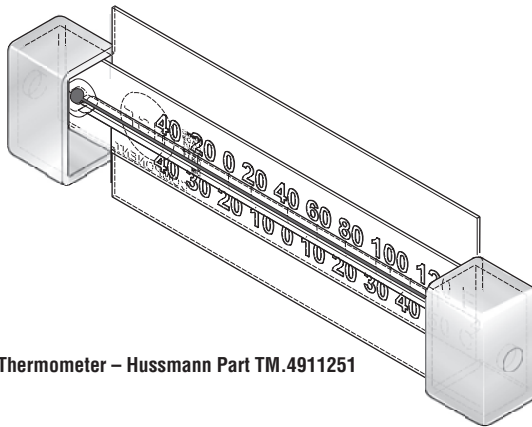


Shelf Socket



Always work Left to Right  
and Bottom to Top

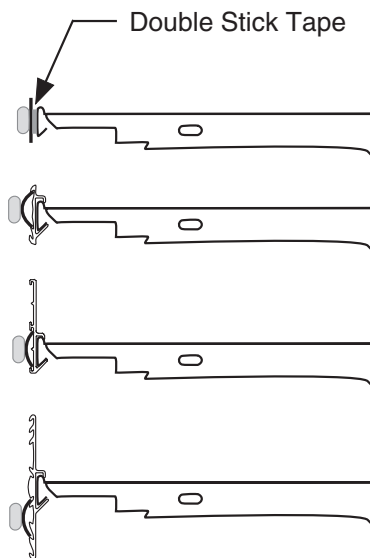
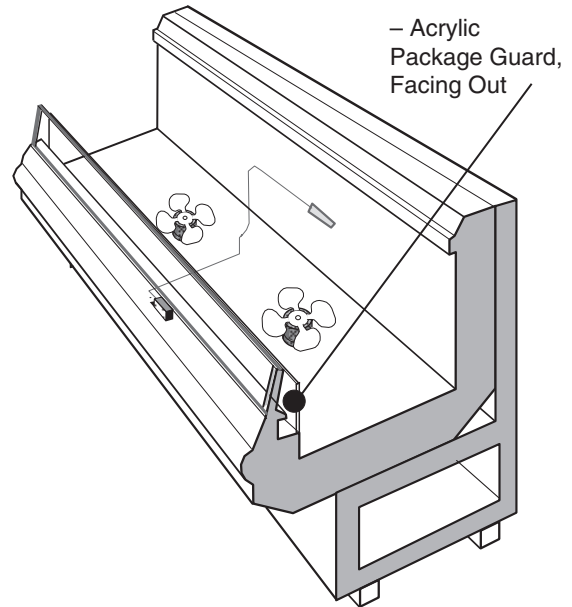
## This is an NSF-7 & US FDA Food Code Required Thermometer



Thermometer – Hussmann Part TM.4911251

Hussmann Corporation • 12999 St. Charles Rock Road • Bridgeton, MO 63044-2483  
U.S. & Canada 1-800-922-1919 • Mexico 1-800-522-1900 • www.hussmann.com  
© 2007 Hussmann Corporation

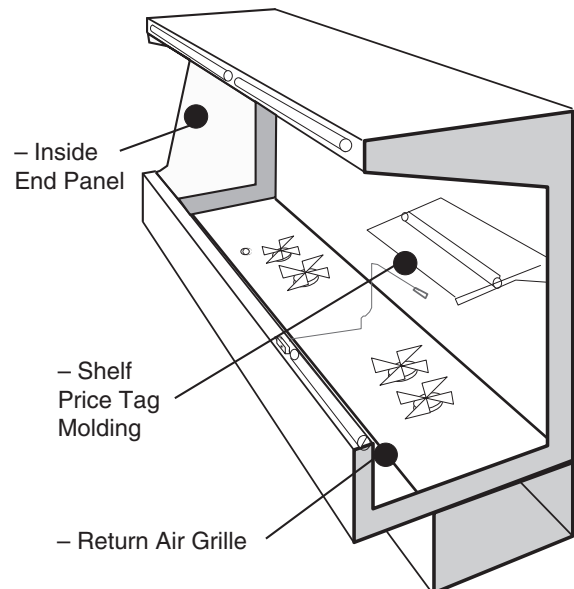
### Suggested Mounting Locations in Single Deck Glass Front Impact Merchandisers



Flexible Plastic  
Fits in Price Tag  
Moldings

Hussmann P/N 0429971\_C

10/2007



### Suggested Mounting Locations in Multi-deck Merchandisers

# Important – Please read!

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This thermometer is provided in response to United States  
Food and Drug Administration (US FDA) Food Code [ <http://www.fda.gov/> ]  
and  
National Sanitation Foundation (NSF / ANSI) Standard 7 [ <http://www.nsf.org/> ]

---

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 with 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.



## MAINTENANCE

### 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.

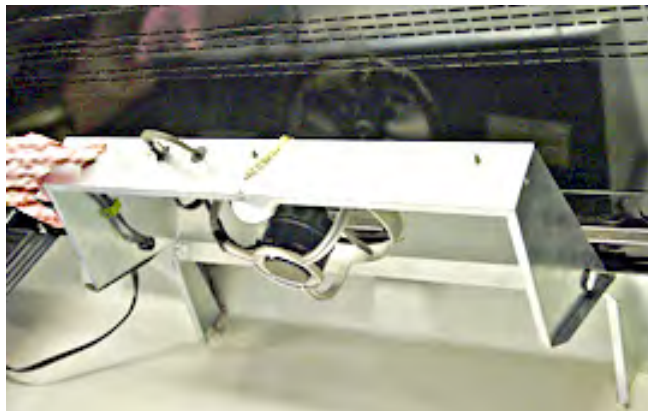
#### Fan Plenum

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.

Extra care must be taken when cleaning the CW2 end compartments as the left and right fan plenums are not hinged.

**! WARNING**

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



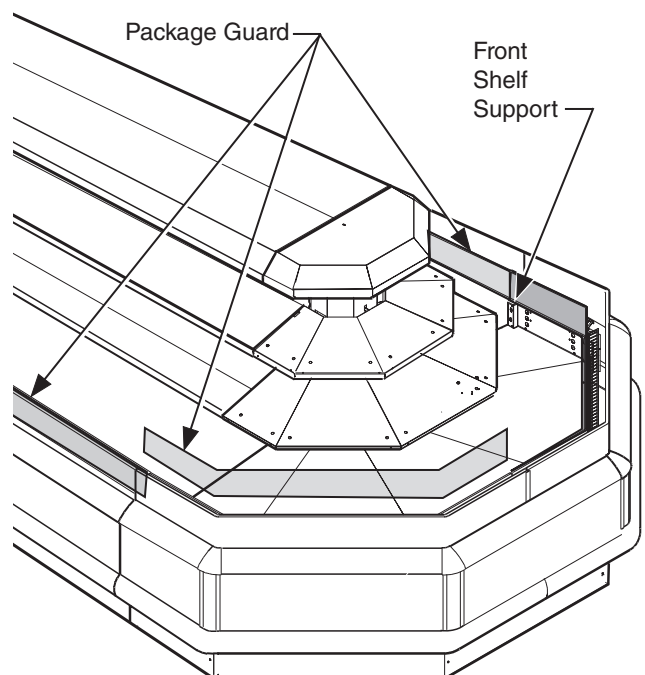
**! WARNING**

**Product will be degraded and may spoil if  
allowed to sit in a non-refrigerated area.**

#### Removable Front Shelf Support

The front shelf support may be removed to facilitate cleaning. Simply lift out package guard. The front shelf support can then be lifted out as shown below.

After cleaning, replace front shelf support and acrylic package guard.





### 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:*

- 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.

### *Do:*

- Remove the product and all loose debris to avoid clogging the waste outlet.
- Store product in a refrigerated area such as a cooler. Remove only as much product as can be taken to the cooler 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.
- Wipe down lighted shelves 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.**
- After cleaning is completed, turn on power to the merchandiser.

### CLEANING MIRRORS

Mirrors are sheets of clear glass that have very thin reflective and protective coatings applied to one side. These coatings are susceptible to deterioration if certain cleaning solutions and even water are allowed to come in contact with them. Every precaution should be taken to keep all liquids away from the coated side of the mirrors. **IF LIQUIDS ARE ALLOWED TO FLOW ALONG THE FACE SIDE OF THE MIRROR TO ITS EDGE, THE LIQUID CAN SEEP UP BETWEEN THE COATING AND THE GLASS, CAUSING SERIOUS DAMAGE.**

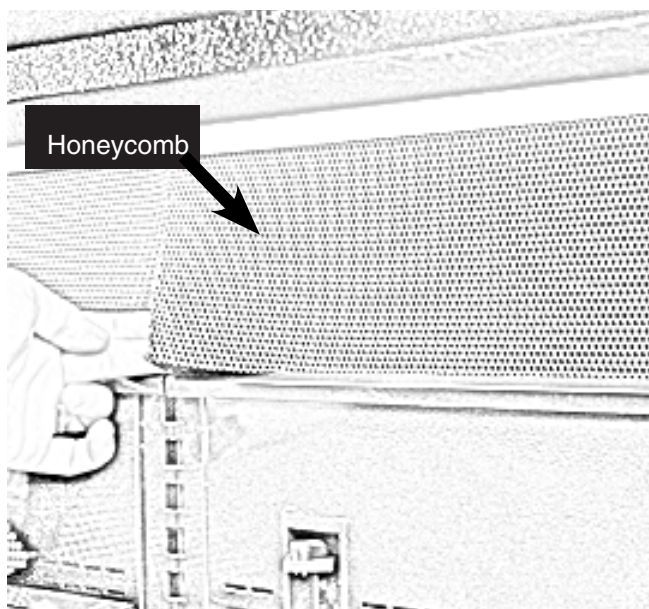
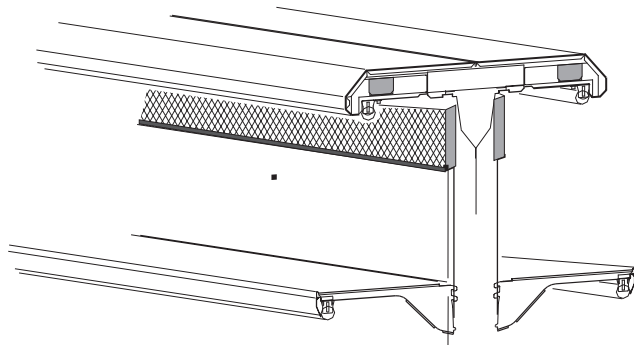
### **To Help Prolong the Life of the Mirrors:**

- Use only mild glass cleaning products or a weak solution of vinegar and water.
- Do NOT spray liquids on the mirrors. Dampen the cleaning cloth, then use the cloth to wipe the mirror.
- Wipe water from the mirrors immediately to prevent difficult to remove water spots and also to prevent the water from reaching the mirror's edge.
- Never use dirty cloths, scrapers or any other abrasive materials for cleaning.

## 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.

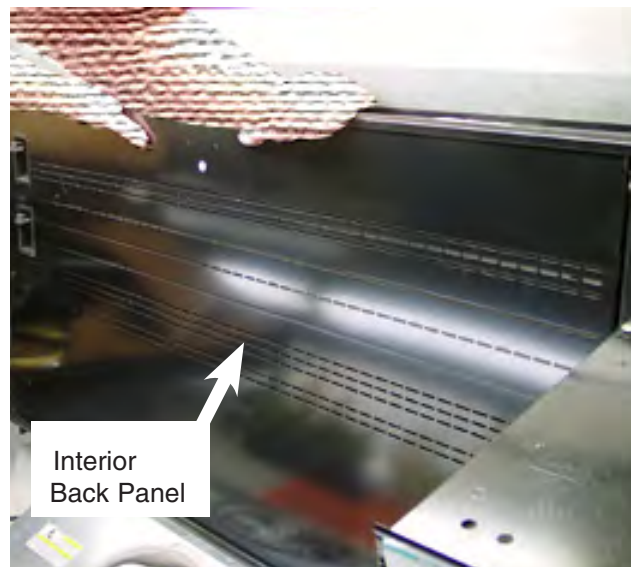
1. Compress the honeycomb and remove it from its retainer.
2. Clean and dry the honeycomb.
3. After cleaning, replace in reverse order.



## REMOVING INTERIOR BACK PANELS

The interior back panels may be removed for cleaning and to gain access to the evaporator coils. Remove the rear interior back panels as follows:

1. **DISCONNECT THE ELECTRICAL POWER TO THE MERCHANDISER.**
2. Remove shelving.
3. Remove the honeycomb.
4. Grasp the top of the rear panel. Lift the panel up, then pull forward and out.
5. Replace parts in reverse order.
6. After cleaning or servicing the merchandiser, reconnect the electrical power.



### CLEANING STAINLESS STEEL SURFACES

Use non-abrasive cleaning materials, and always polish with grain of the steel. Use warm water or add a mild detergent to the water and apply with a cloth. Always wipe rails dry after wetting.

Use alkaline chlorinated or non-chlorine containing cleaners such as window cleaners and mild detergents. Do not use cleaners containing salts as this may cause pitting and rusting of the stainless steel finish. Do not use bleach. Clean frequently to avoid build-up of hard, stubborn stains. A stainless steel cleaning solution may be used periodically to minimize scratching and remove stains.

Rinse and wipe dry immediately after cleaning. Never use hydrochloric acid (muriatic acid) on stainless steel.

### CLEANING COILS

***NEVER USE SHARP OBJECTS AROUND COILS. Use a soft brush or vacuum brush to clean debris from coils. Do not puncture coils!*** Do not bend fins. Contact an authorized service technician if a coil is punctured, cracked, or otherwise damaged.

**ICE** in or on the coil indicates the refrigeration and defrost cycle is not operating properly. Contact an authorized service technician to determine the cause of icing, and to make adjustments as necessary. To maintain product integrity, move all product to a cooler until the unit has returned to normal operating temperatures.

### MAINTAINING FLUORESCENT LAMPS

Fluorescent lamps should not be allowed to run to failure. If a re-lamp schedule is not in place, the tubes should be inspected for signs of degradation (blackened ends). Degraded or failed tubes should be replaced.

Allowing severely degraded lamps to operate may cause a ballast failure or could expose the lamp holder to excessive heat. Replacing degraded bulbs is more cost effective than replacing ballast and lamp-holders.

Traditional re-lamp programs are 18- to 24-month intervals. In the absence of a re-lamp program, a yearly inspection of the lighting system is recommended.

1. Inspect all lamp sockets and plug-receptacle connections for signs of arcing. Replace any component that shows signs of arcing.
2. Make sure all unused receptacles have their close-off covers securely installed.
3. Make sure proper cleaning procedures are followed. Lights and fans **MUST** be turned off when a case is cleaned and **MUST** be allowed to dry before turning power back on.
4. Do not use a pressure nozzle to clean inside a case.

**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.

**Notes:**

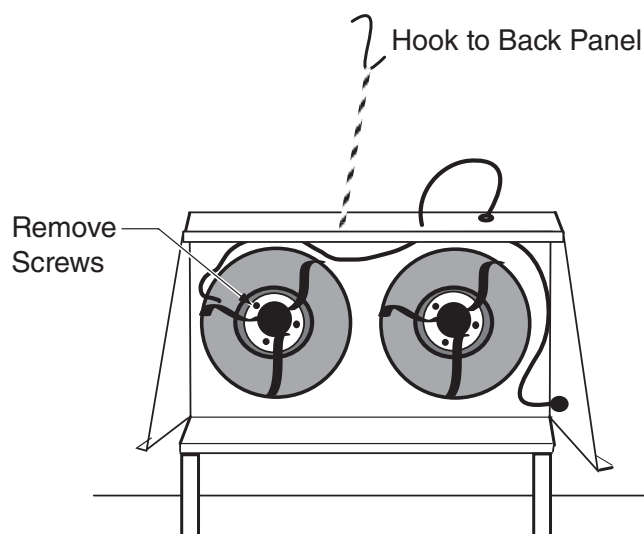
## SERVICE

### REPLACING FAN MOTORS AND BLADES

See cross section for 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 EMBOSING (PART NUMBER ON PLASTIC BLADES) POSITIONED AS INDICATED ON THE PARTS LIST.** (Refer to the case data sheet for each model.)

For access to these fans:

1. Turn off power
2. Remove bottom display pans.
3. **Disconnect fan from wiring harness.**
4. Remove fan blade.
5. Lift fan plenum and remove screws holding bottom of motor to fan basket.
6. Replace fan motor and blade.
7. Lower fan plenum.
8. Reconnect fan to wiring harness.
9. Turn on power
10. Verify that motor is working and blade is turning in the correct direction.
11. Ensure the plenum rests on the case bottom with no gaps.
12. Replace display pans, Bring merchandiser to operating temperature before restocking.



## ! WARNING

— LOCK OUT / TAG OUT —

*To avoid serious injury or death from electrical shock, 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 doors, lights, fans, heaters, and thermostats.*

### CW2 Unitized End

For access to these fans:

1. Turn off power
2. Remove bottom display pans.
3. **Disconnect fan from wiring harness.**
4. Lift off the rear shelf support.



## ! WARNING

**Product will be degraded and may spoil if allowed to sit in a non-refrigerated area.**

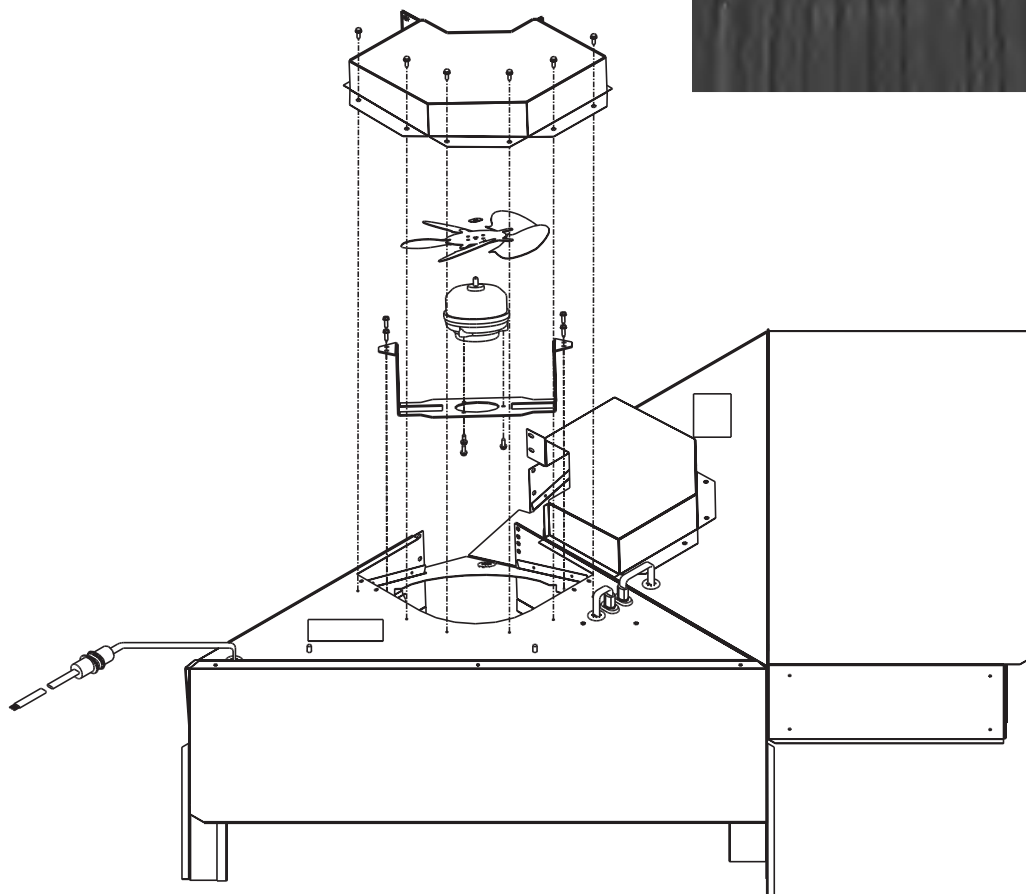


## Continuing

**REPLACING FAN MOTORS AND  
BLADES****CW2 Unitized End**

5. Remove screws from fan cover; remove cover.
6. Remove screws that hold fan bracket to plenum. Lift fan/motor/bracket assembly out of plenum.
7. Replace fan motor and blade.
8. Reassemble in reverse order.
9. Turn on power
10. Verify that motor is working and blade is turning in the correct direction.
11. Close air gaps under fan plenum. Warmer air moving into refrigerated air reduces effective cooling. Use silicone sealant to close gaps.
12. Replace display pans, Bring merchandiser to operating temperature before restocking.

Shelf Support removed.  
Two screws used on side  
of cover in addition to  
six around base of cover  
(as shown on left side of  
end case).

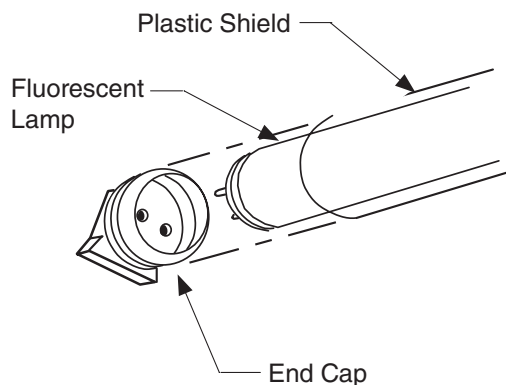




## REPLACING FLUORESCENT LAMPS

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.

The switch in the canopy operates both the canopy and the shelf lamps. The rail lamp switch is located on the rail.



### CAUTION

Fluorescent lamps contain mercury vapor. Mercury exposure at high levels can harm the brain, heart, kidneys, lungs, and immune system of people of all ages. Do not break or puncture fluorescent lamps. Dispose of, or store, all fluorescent lamps in accordance with Federal (40 CFR 273), State, and local hazardous waste requirements. Refer to <http://www.epa.gov/mercury/about.htm>

**Fluorescent Lamp Disposal:** The United States Environmental Protection Agency has information regarding environmentally-safe fluorescent lamp waste management programs.

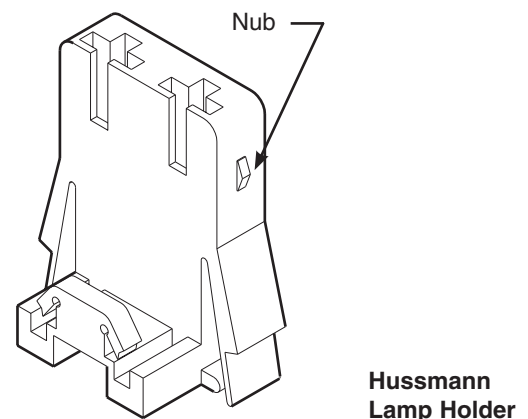
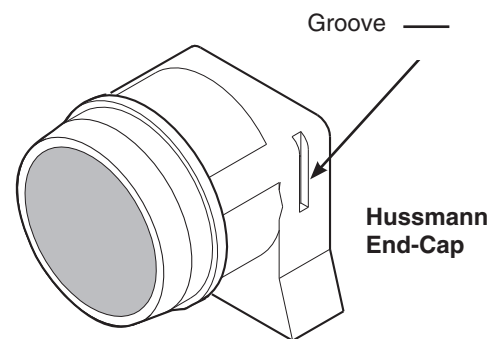
On the Net: EPA Web site:  
<http://www.epa.gov/osw/hazard/wastetypes/universal/lamps/recycle.htm>

## REPLACING LAMP HOLDERS AND END CAPS

The Hussmann lamp holder is designed to snap into the sheet metal of the case. The lamp holder has a locking 'nub' which fits inside the groove of specially designed end caps.

Inspect all lamp sockets and plug-receptacle connections for signs of arcing. Replace any component that shows signs of arcing.

Make sure all unused receptacles have their close-off covers securely attached.



### IMPORTANT!

Always replace lamp holders and end caps with Hussmann lamp holders and end caps.

Use of non-Hussmann parts may result in poor electrical contact and short lamp life.

## REPLACING ELECTRONIC BALLASTS

### Canopy and Shelf Lamp Ballasts

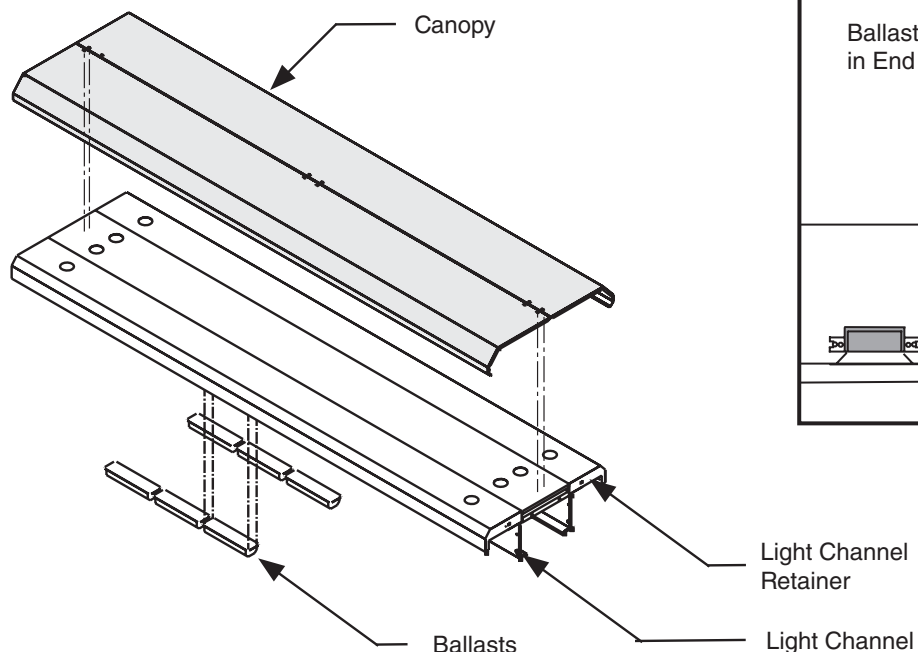
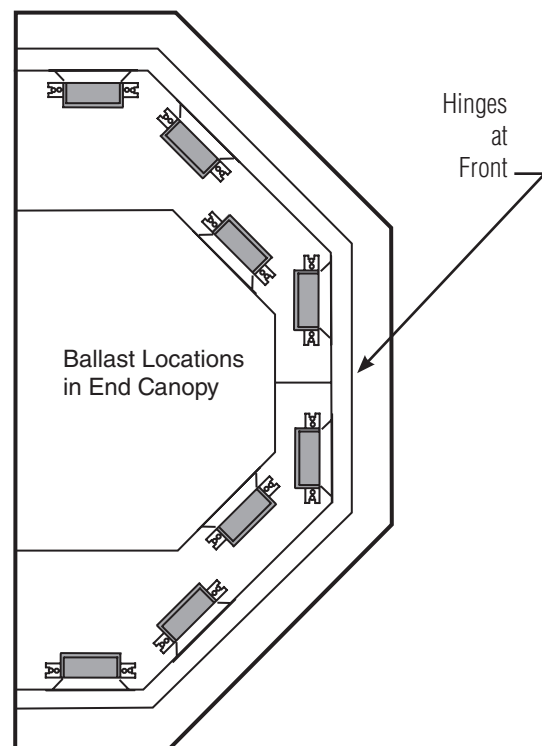
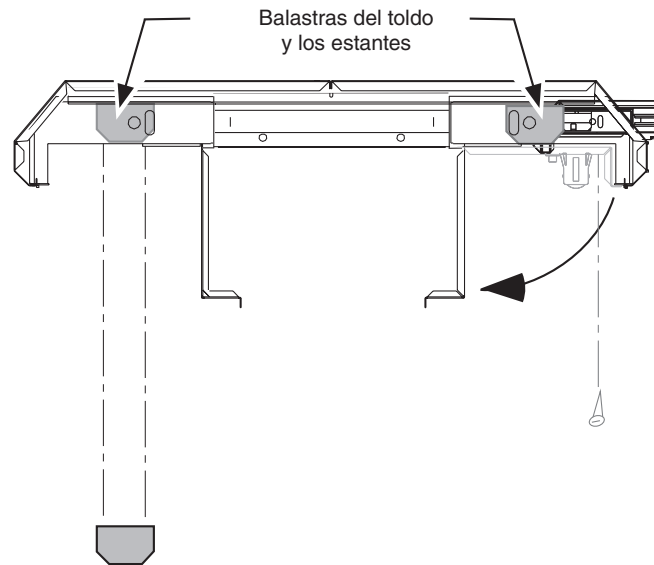
These ballasts are located at the top of the merchandiser inside the canopy. The switch in the canopy operates both the canopy and the shelf lamps.

1. **DISCONNECT POWER TO THE MERCHANDISER.**
2. Remove fluorescent lamps from the canopy.
3. Remove the screws that secure the light panel.
4. Grasping the light panel at the area where the panel and the canopy meet, pull back and down until the panel swings freely.

**Note:** Light panels in the end compartment are hinged at the front.

5. Replace ballast and reassemble parts in reverse order.

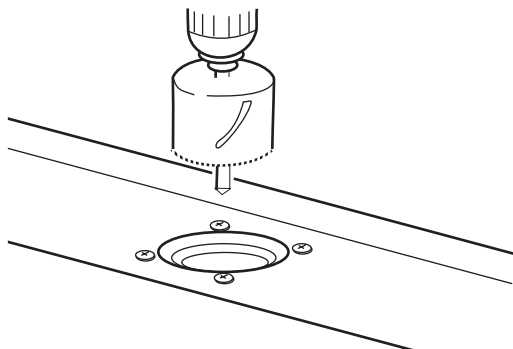
6. Reconnect the electrical power.



## REPLACING DAMAGED DRAIN FITTING

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

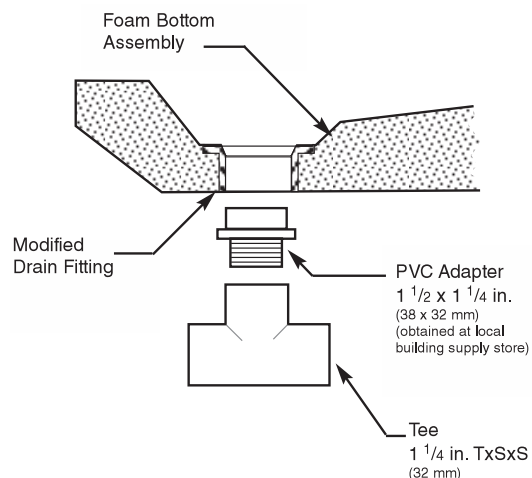
1. Use a drill with a 17/8-inch (48 mm) hole saw to drill out the bottom of the drain fitting. Be sure to drill completely through fitting and bottom liner.



Drain Fitting Viewed from Inside Case

2. Insert adapter into drain fitting. **Do NOT use thread sealer on ABS drain fitting. If sealer is used the ABS drain fitting may crack or leak!** (Tee should be tightened no more than 4 turns.) Do not over-tighten threads.

3. Apply teflon tape to threaded end of adapter and screw into threaded end of tee.



Do NOT use Thread Sealer on Drain Fitting!

End Section View



## WARNING

— LOCK OUT / TAG OUT —

*To avoid serious injury or death from electrical shock, 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 doors, lights, fans, heaters, and thermostats.*

**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 (607°C)  
Aladdin 3-in-1 rod at 732°F (389°C)  
X-Ergon Acid core at 455°F (235°C)

**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®**

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

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