

# HUSSmann®



## ***Island and Multi-deck Island Cheese & Deli***

**RI & SI  
Remote Models**



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

***Installation &  
Operation Manual***  
Shipped With Case Data Sheets

**P/N 0446551\_D**  
October 2014

MANUAL- I/O RI & SI ISLAND AND MULTI-DECK

**Spanish 0583767  
French 0521936**



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### WARRANTY

IMPORTANT  
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*Quality that sets industry standards!*

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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)

### Setting Case:

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 Wrench

\*\*\*\*\*

## 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.

## REVISION HISTORY

### REVISION D

1. California Proposition 65 Warning, Page 1-2
2. Replacing Damaged Drain Fitting, Page 3-1  
Page 6-3

### REVISION C

1. Added warning box, page 1-2.
2. Updated *FDA Thermostat* pages 4-6 and 4-7.
3. Added *Cleaning Coils*, page 5-4.
4. Added *Maintaining Fluorescent Lamps*, page 5-5.
5. Added text on page 6-2.
6. Updated Warranty page.

### REVISION B

1. Added ANSI Z535.5 Definitions, page 1-1.
2. Added Serial Plate Location, page 1-2.
3. Added Splashguard Graphic, page 1-6.
4. Added, page 1-15.
5. Changed pitch of Drain Fitting to 1/4 in.
6. Updated NSF Thermometer, pages 4-6 and 4-7.
7. Updated Maintenance Information Page, 5-1
8. Updated Warnings Sections 5 and 6.
9. Removed Copper Coil Repair Information, page 6-4.

### REVISION A

### ORIGINAL ISSUE

## 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**

### HUSSMANN PRODUCT CONTROL

The serial number and shipping date of all equipment is recorded in Hussmann's files for warranty and replacement part purposes. All correspondence pertaining to warranty or parts ordering must include the serial number of each piece of equipment involved. This is to ensure the customer is provided with the correct parts.

### 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.

Separately packaged accessories such as kits and shelves should be carefully unpacked. Check for damage before discarding packaging.

#### **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.

### SHORTAGES

Check your shipment for any possible shortages of material. If a shortage should exist and is found to be the responsibility of Hussmann, notify Hussmann. If such a shortage involves the carrier, notify the carrier immediately and request an inspection. Hussmann will acknowledge shortages within ten days from receipt of equipment.

### 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.

### WARNING

Do not walk on top of case.  
Do not store items or flammable materials atop the case.

For California Businesses:

### WARNING

**This product may contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.**

This warning is the result of the California State law known as the California Safe Drinking Water and Toxic Enforcement Act of 1986, which is commonly referred to as "Proposition 65."

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.

## UNCRATING

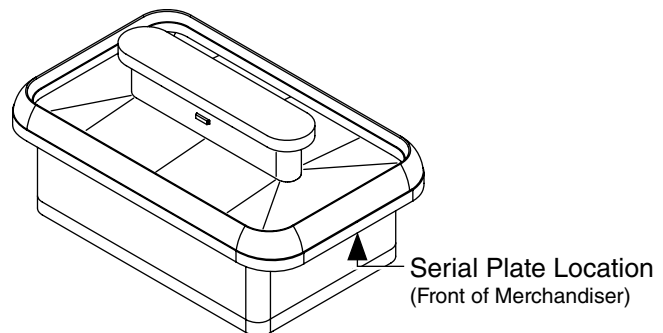
Move the merchandiser as close as possible to its permanent location. Remove the top of the crate and detach the walls from each other. Lift crate from the skid. Unbolt the case from the skid. The fixture can now be lifted off the crate skid. ***Lift only at base of skid!*** Remove any braces and/or skids attached (blanket wrapped merchandisers may have skids). Always check for damage before discarding packaging.

### WARNING

**Do NOT remove shipping crate until the case is positioned for installation.**

## SERIAL PLATE LOCATION

The serial plate is located underneath the right hand side of the ledge liner.



### CAUTION

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

## 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 case.

## LEVELING AND JOINING

Since ends are an integral part of these models, and re-joining sectional models is part of setting, there are no separate end or joining instructions for this family. Sections are sometimes referred to as split cases, or end and center cases.

The sectional construction of models 16 ft (4877 mm) or longer enables them to be shipped in two sections and to be re-joined easily at the job site.

Some models, 16 ft (4877 mm) or less, are shipped as one section and are not re-joined.

A JOINT TRIM KIT is supplied when appropriate to cosmetically mask the sectional joints. This involves applying a vinyl strip to the top of the center air discharge (CAD).

Merchandisers must be installed level to ensure proper operation of the refrigeration system and to ensure proper drainage of defrost water. **It is imperative that cases be leveled from front to back and side to side prior to joining. Leveling the case correctly will solve most operating problems.**

1. Check floor where cases are to be set to see if it's level. Determine where the highest part of the floor is. Cases will be shimmed

off this point. Using case blueprints, measure off and mark on floor the exact dimensions of the case footprint. Snap chalk lines for front and back position of base rail. Mark location of each joint front and back. Use a transit to find the highest point along both lines. Mark the difference, then place the appropriate number of shims required to maintain high-point level.

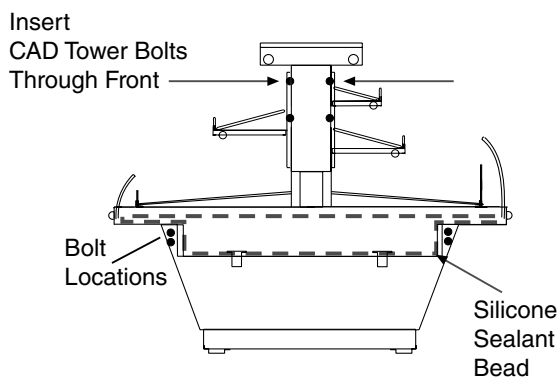


**CAUTION**

**Avoid removing concrete!**  
**Begin lineup at highest point of store floor.**  
**All cases were leveled and joined prior to shipment to ensure closest possible fit when cases are re-joined in the field.**

2. Set first half of case. Case must be shimmed under legs where case is strongest.
3. Set second half of case as close as possible to the first, and level second half to the first using the instructions in step one.
4. Apply liberal bead of case joint sealant (gray silicone) to side of first half. Apply silicone along outline, as illustrated. **Do not use Permagum!** Permagum does not allow cases to draw up tight, and therefore leaves gaps at the joint. The case must be shimmed under base where support is best to prevent damage to case.
5. Slide second case up to first case snugly.
6. Verify the plexiglass is aligned. See plexiglass joining instructions (*Finishing Touches* section) for more information.

7. To compress silicone at joint, use two Jurgenson wood clamps to pull the inside of the bulkheads together. Make sure case is level from front to back and side to side on inside bulkheads at joint. Do not place levels on display pans or on shelves. **Do not use bolts to draw cases tight! Damage may occur.**
8. Make sure cases are tight and bolted together in all places (see diagram). Remove clamps.



Bolt and Sealant Locations

9. Split (or end) cases such as RIE and SIE have an interlock system built into the CAD tower. Joining involves a number of bolts, dependent on the height of the tower.



## FINISHING TOUCHES

After the merchandiser has been leveled and re-joined, and all drip piping, electrical and refrigeration work has been completed, finish the plexiglass joining and install the splash-guards.

## PLEXIGLASS JOINING

**Note:** All split cases are set, leveled and joined together in the factory to ensure proper alignment and tight joints between the cases. To obtain equally tight joints in the field, it is critical to use the GE 1200 silicone supplied to seal case joints. Only silicone allows case joints to pull up tight! **Do not use Permagum!** It will cause large gaps at case joints and prevent plexiglass from joining.

### Parts List

- Plastic rod, 1 in. (25 mm) long,  $\frac{3}{16}$  in. (5 mm) diameter
- Acrylic Solvent Cement (IPS Weldon #40 or comparable, mixing instructions below)
- Masking tape and duct tape (not supplied)

### Instructions

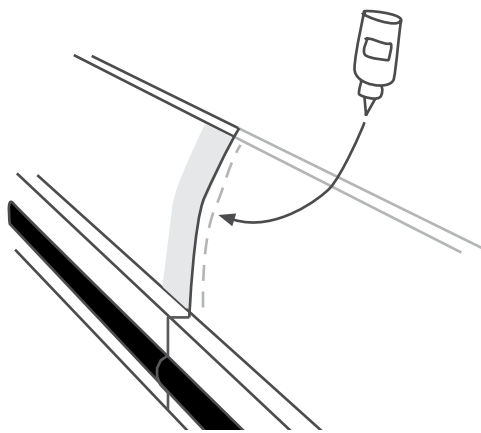
1. Prepare front plexiglass for cement application by placing masking tape not more than  $\frac{1}{16}$  in. (6 mm) from the seam, on both sides, front and back. Tape is to protect plexiglass from cement spill over. Scarring will occur if cement touches clear plexiglass.
2. Separate front plexiglass pieces enough to apply a bead of #40 cement down one edge inside of seam and plastic rod area.



3. Apply cement with applicator to one or both surfaces. **Join immediately.**

**Weldon #40 (2-part) Cement Mixing Instructions**

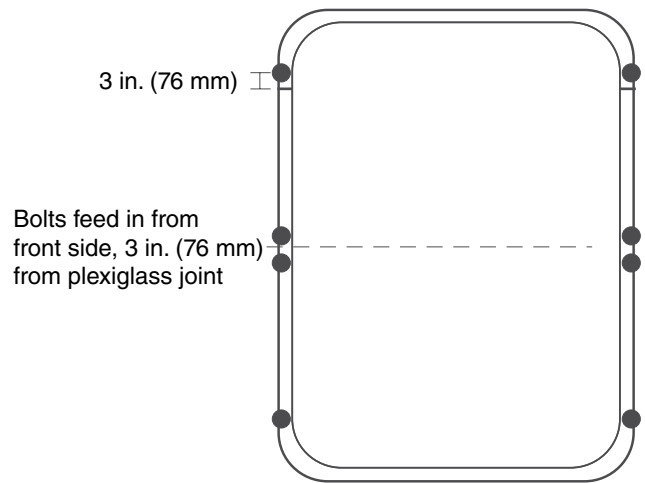
1. Bring Parts A and B to room temperature before mixing.
2. Add Part A to Part B. Quantities have been premeasured at the factory.
3. Stir slowly and evenly to avoid air bubbles. Mix for 1-3 minutes.



4. Realign front plexiglass and push together tightly. Insert the plastic rod until flush with top of plexiglass.
5. Apply just enough pressure to remove any air bubbles. Do not squeeze joint so hard as to force cement out of the joint—a dry joint may result.
6. Apply tape (2 in. duct tape recommended) across face of seam to secure plexiglass from shifting while cement dries.
7. Allow approximately 4 hours to dry at 70°F.

## PERIMETER PLEXIGLASS

When replacing a section of perimeter plexiglass, first remove the applicable bolts holding it in place, as illustrated below.



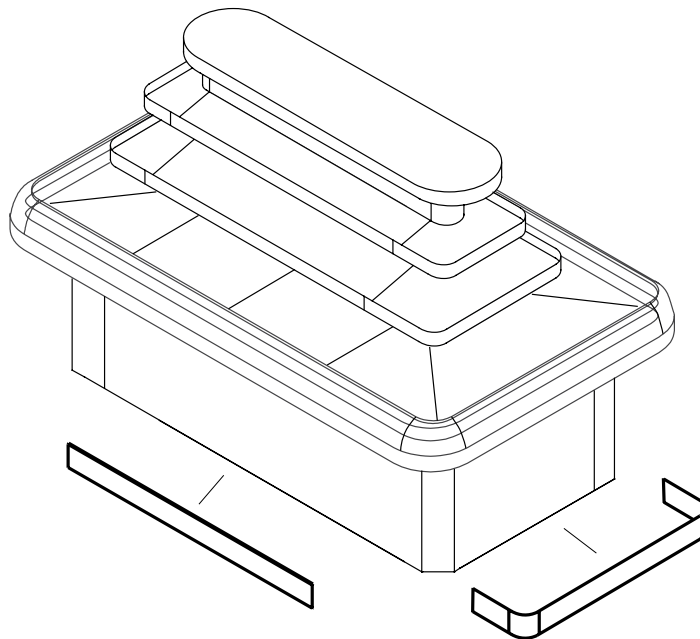
## ACCESS PANELS

All electrical and drain access panels are clearly labeled on the deck of the deli/cheese stand. Access panels for the condensing unit in self-contained models are located on the sides of the stand, at one end. Panels are fitted for removal if the condensing unit has to be taken out.

## INSTALLING SPLASHGUARD

Do not install splashguards until after merchandisers have been leveled and re-joined, and all drip piping, electrical and refrigeration work has been completed. 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. Note that the splashguard must be removable to access components behind it.

1. Remove all dirt and wax, etc. from the area of the splashguard to ensure a secure adhesion.
2. Apply a good contact cement to the trim, allowing for proper dry-time.
3. Install trim to the splashguard so that it is flush with floor. Do not seal trim to floor!



## ELECTRICAL / REFRIGERATION

### MERCHANDISER ELECTRICAL DATA

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

### ELECTRICAL CONNECTIONS

All wiring must be in compliance with NEC and local codes. All electrical connections are to be made in the electrical raceway or *Handy Box*.

### ELECTRICAL SERVICE RECEPTACLES (when applicable)

The optional receptacles located on the exterior of the merchandise are neither intended nor suitable for large motors or other external appliances.

### 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.**

### 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 merchandise's raceway.

#### WIRING COLOR CODE

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

PINK..... REFRIG. THERMOSTAT LOW TEMP.  
LIGHT BLUE . REFRIG. THERMOSTAT NORM TEMP.  
DARK BLUE.. DEFROST TERM. THERMOSTAT  
PURPLE ..... 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.**

## 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 and should be depressurized before attempting to make any connections.**

## REFRIGERANT PIPING

### Connection Location

The refrigerant line outlets are located under the merchandiser towards the center (refer plan view ). Insulate suction lines to prevent condensation drippage on the floor.

### 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 data sheet included with this manual for specific information on the case you are installing.

### Oil Traps

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

## Pressure Drop

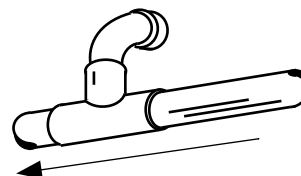
Pressure drop can rob the system of capacity. To keep the pressure drop to a minimum, keep the refrigerant line run as short as possible using a minimum number of elbows. Where elbows are required, USE LONG RADIUS ELBOWS ONLY.

## 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.

## SUCTION LINE

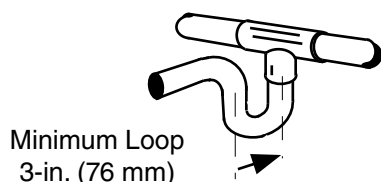
- Pitch in direction of flow.
- May be reduced by one size at one third of case run load and again after the second third. Do not reduce below the case suction line size.
- Case suction lines should enter at the top of the branch line.



Suction Line Return

## LIQUID LINE

- May be reduced by one size after one half the case run load. Do not reduce below the case 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.)



Liquid Line Take Off

## 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 raceway, on the serial plate side (front) of the merchandiser.

## OPTIONAL DEFROST TERMINATION THERMOSTAT

The optional 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 time or temperature.

### Time Termination (Standard)

Should be used for the following types of installations:

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

### Temperature Termination (Optional)

Temperature termination may 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.

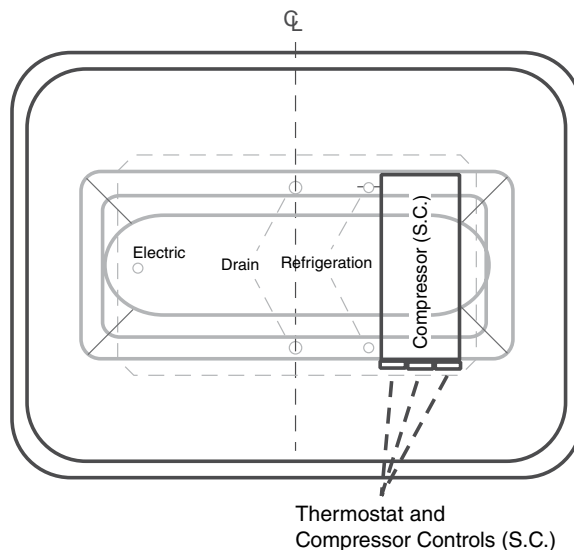
## ACCESS TO EXPANSION VALVES AND DRAIN LINES

### Mechanical

Remove product and product racks from each end of case. Remove refrigeration and drain access panels (labeled). The thermostatic expansion valve (mechanical only) and drain are located under the deck pan at end of the case.

### Electronic (Optional)

The Electronic Expansion valve master and slave cylinder(s) are located under the deck pan on the end of the case.



## ELECTRONIC EXPANSION VALVE (Optional)

A wide variety of electronic expansion valves and case controllers can be utilized. Please refer to valve and controller manufacturers' information sheets. Sensors for electronic expansion valves will be installed on the coil inlet, coil outlet, and in the discharge air. (Some supermarkets require a fourth sensor in the return air.) Case controllers will be located in the electrical wire-way or under the case.

## THERMOSTATIC EXPANSION VALVE ADJUSTMENT

Thermostatic expansion valves must be adjusted to fully feed the evaporator. Before attempting any adjustments, make sure the evaporator is either clear or very lightly covered with frost, and that the fixture is within 10°F of its expected operating temperature.

## MEASURE OPERATING SUPERHEAT

1. Determine the suction pressure with an accurate pressure gauge at the evaporator outlet.
2. From a refrigerant pressure temperature chart, determine the saturation temperature at the observed suction pressure.
3. Measure the temperature of the suction gas at the thermostatic remote bulb location.
4. Subtract the saturation temperature obtained in step No. 2 from the temperature measured in step No. 3. The difference is superheat.
5. Set the superheat for 5°F to 7°F (–15°C to –14°C) average, with a swing tolerance of no more than +/–2°F (1°C).

## DRIP PIPING AND SPLASHGUARDS

### WASTE OUTLET AND WATER SEAL

The waste outlet is located in the center end of these fixtures allowing drip piping to be run under the fixture lengthwise. A water seal is supplied with each fixture. **The water seal is factory installed. Do not tighten the water seal where it connects to the drain fitting. Twisting the water seal “trap” can cause a water leak in the case’s bottom liner. Do not use thread sealant between ABS drain fitting and water seal.**

### 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. PVC-DWV sealant is recommended for drip piping. Follow manufacturer’s recommendations.
2. When connecting drip piping, the water seal must be used as part of the drip piping to prevent air leakage or insect entrance. Store waste drains should be at least 14 in. (356 mm) off center of the case to allow use of the water seal provided. 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.**

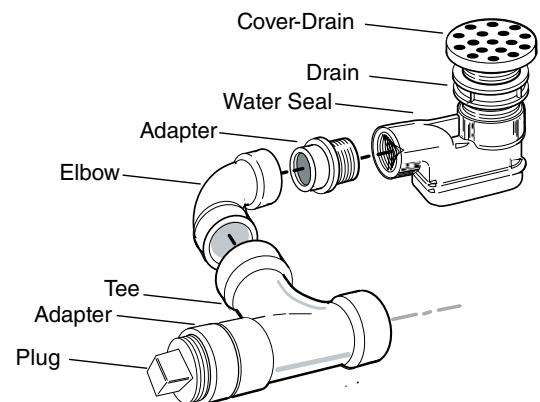
**THE DRAIN AND WATER SEAL ARE FACTORY INSTALLED. DO NOT USE THREAD SEALANT OR OVERTIGHTEN THESE PARTS. DO NOT TWIST WATER SEAL. DAMAGE TO THE DRAIN FITTING OR WATER SEAL MAY OCCUR.**




**RI / SI Water Seal and Piping**



**RI / SI Piping with one drain (both sides)**



3. Pitch the drip piping in the direction of flow. **There should be a minimum pitch of 1/4 in. per ft (6 mm per 300 mm). PVC pipe, when used, must be supported to maintain the pitch and to prevent warping.**
4. Avoid long runs of drip piping. Long runs make it impossible to provide the pitch necessary for good drainage.
5. Provide a suitable air break between flood rim of the floor drain and outlet of drip pipe. 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. Water seal may be insulated to prevent condensation.

## INSTALLING SPLASHGUARDS

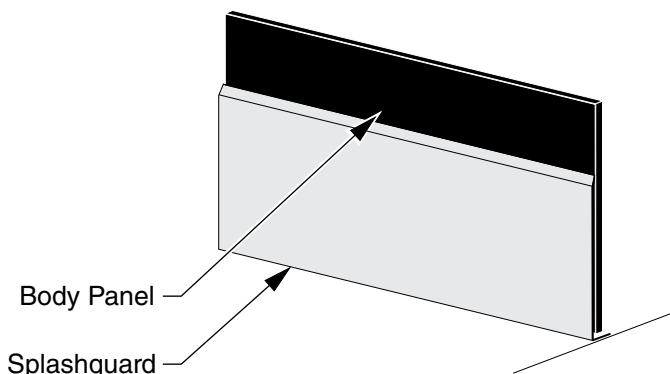
After merchandisers have been leveled and joined, and all drip piping, electrical and refrigeration work has been completed, install the splashguards.

1. Check to be sure that all lower body panels are level with the floor. Tighten screws.
2. Apply double-stick tape to back of splashguard along the top.
3. Position all the splashguard sections before removing backing paper from tape.
4. Once all sections are positioned, remove backing paper from one section and press it firmly against the body panel.
5. Continue, section by section, until all are installed.

## SEALING SPLASHGUARD TO FLOOR

**IF REQUIRED** by local sanitation codes, or if desired by the customer, splashguards may be sealed to the floor using silicone sealant.

1. Remove all dirt, wax and grease from the area of the splashguard where adhesion will be necessary. This is to secure a good, secure installation.
2. Ensure splashguard is flush with floor.
3. Apply sealant at bottom of splashguard and floor. Allow proper drying time according to the directions supplied with the sealant.





## START UP / OPERATION

### START UP

See the display case's Technical Data Sheet for refrigerant settings and defrost requirements. Bring cases down to the operating temperatures listed on the technical data sheet.

### STOCKING

Husmann display cases are not designed to “heat up” or “cool down” product—but rather to maintain product temperature for maximum shelf life.

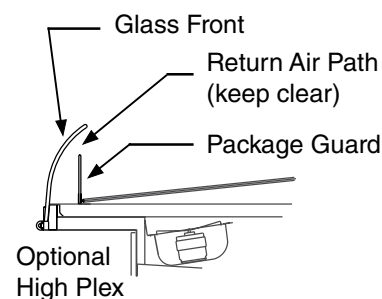
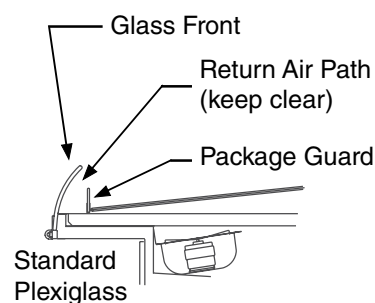
Product should NOT be placed in case until case is at proper operating temperature. Allow case to operate a minimum of 6 hours before stocking with any product.

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.

Improper temperature and lighting will adversely affect food products. Discoloration, dehydration, and spoilage can be controlled with proper use of the equipment and handling of product. Avoid supplemental flood or spot lighting. Factory supplied display lamp intensity is designed for maximum visibility and product life. The use of higher output fluorescent lamps (H.O. and V.H.O.) will shorten the shelf life of the product.

From the time the product is received, through storage, preparation and display, the temperature of the product must be controlled to maximize life of the product. Keep air in and around the case area clean.

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

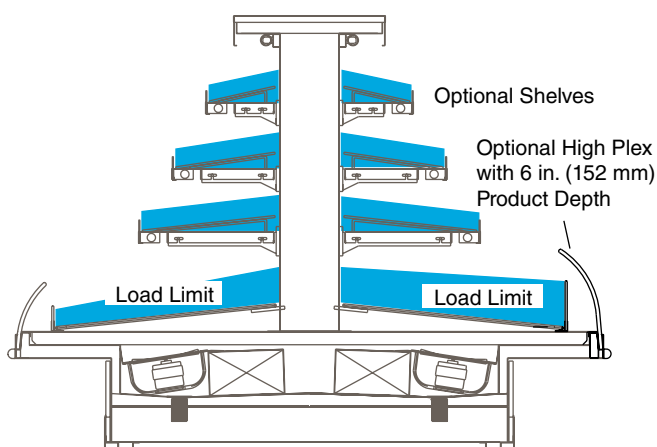
Each merchandiser has a load limit decal. Shelf life of perishables will be short if load limit is violated. **AT NO TIME SHOULD MERCHANDISERS BE STOCKED BEYOND THE LOAD LIMITS INDICATED.**

**LOAD LIMIT**

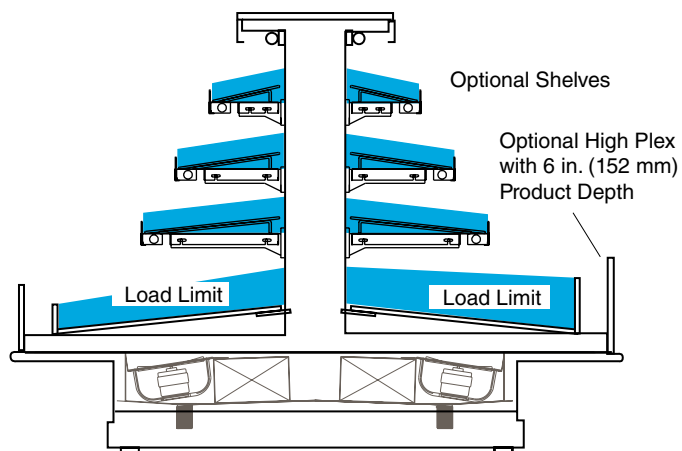
## LOAD LIMIT PROFILES

These illustrations show the typical load limit area for the RI/SI family of cases.

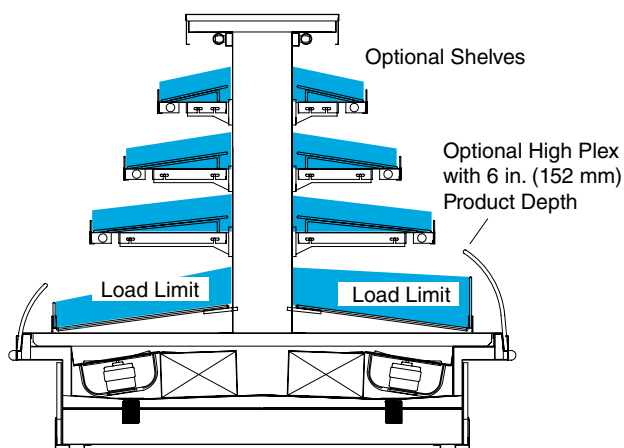
Air flow between the shelves, from the CAD to the return, must be maintained at all times for optimum operating efficiency and to prolong product shelf life.



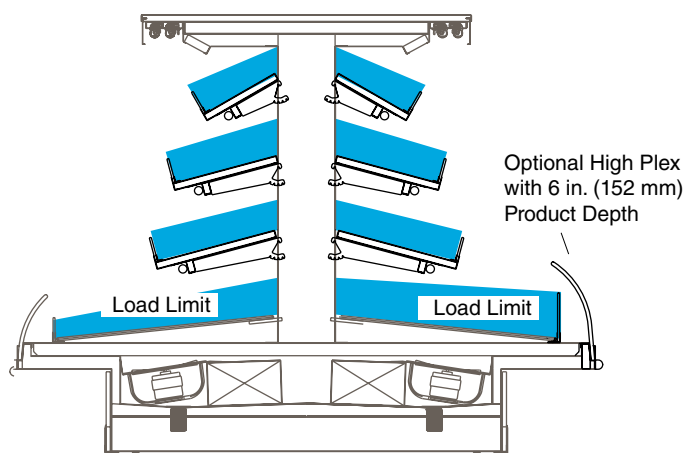
RI3



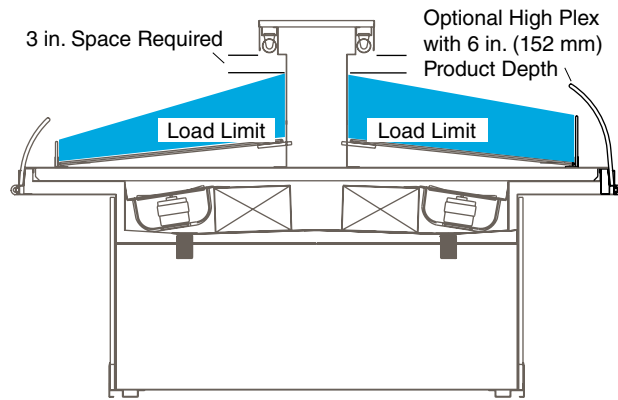
SI3



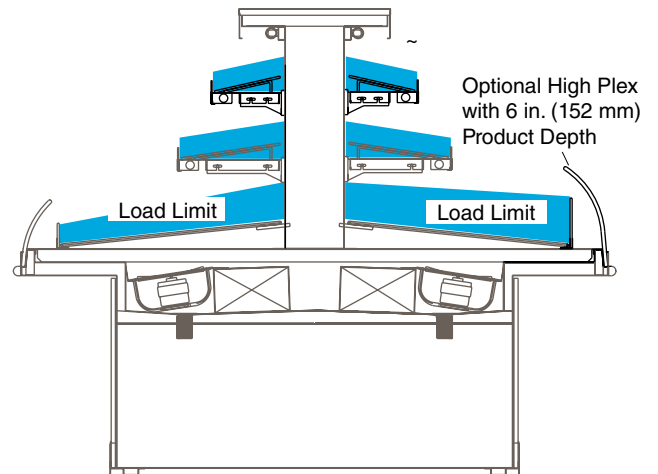
RI3N



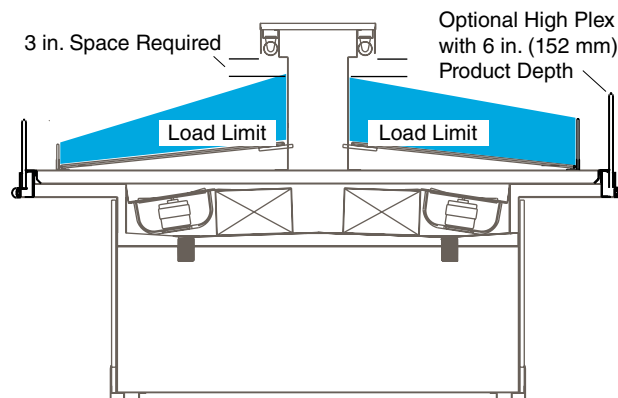
RI4



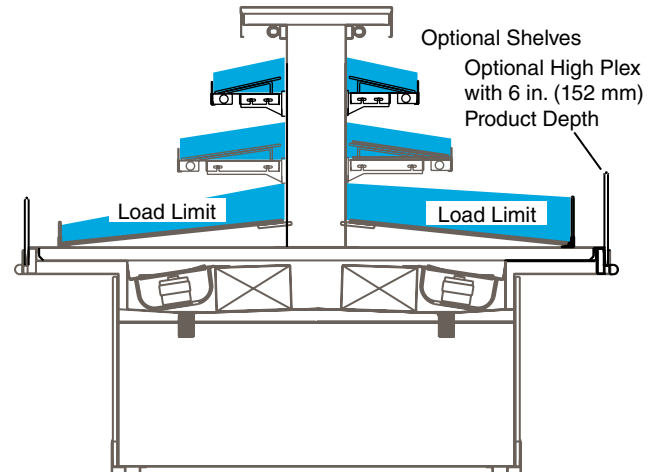
RI1



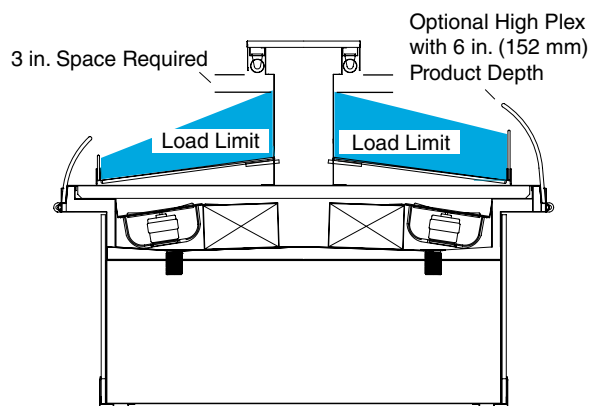
RI2



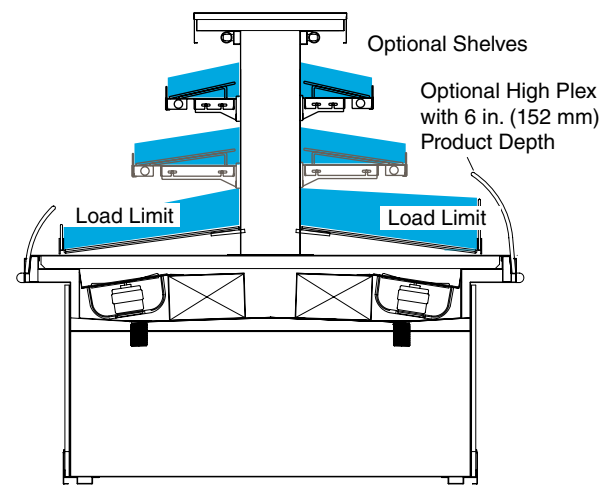
SI1



SI2



RI1N



RI2N

## PROCEDURE FOR INSTALLING LIGHTED SHELVES WITH SINGLE PRONG CONNECTOR



Shelf lighting uses parallel wiring. Please follow these instructions to ensure good contact between male and female connectors.

1. **SHUT OFF POWER TO CASE. REMOVE ALL SHELVES.**
2. **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.



3. Clean the merchandiser as described in the *Care and Cleaning* paragraphs of *Section 5– Maintenance*. **Keep liquid out of sockets.**

4. Verify that power is at the case and turned on. Verify that the case light switch is turned “OFF.” Switch is located in the canopy, on the left, behind first row of lamps.
5. The illustration below shows a typical case.

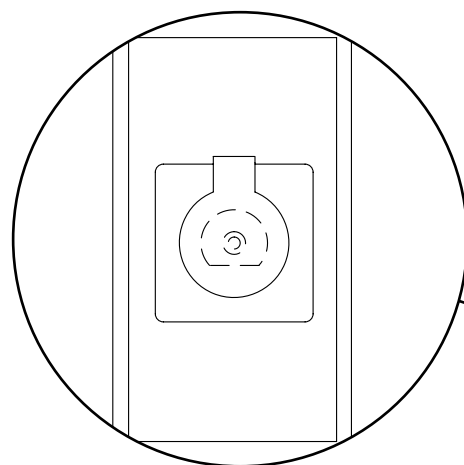


**Canopy Light Switch Location**

Note that other models will have fewer rows of shelves.

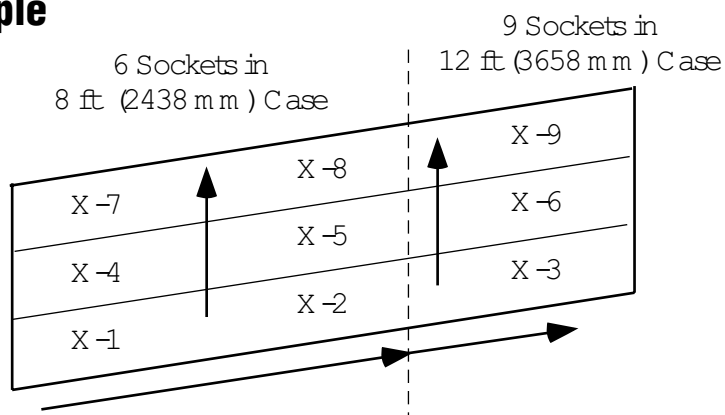
Starting from the left-hand bottom section, choose the location for the first shelf, X-1.

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.***



Socket with Cap Installed

### Example



Always work Left to Right, and Bottom to Top

6. Remove the cap from the rear wall socket and insert the shelf plug in the socket. Secure cord under clip.



7. 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) case. After each shelf on the bottom row is in position, be sure to remove the cap and insert the shelf plug. Push firmly.

8. Turn "ON" the case light switch after the entire bottom row has been installed in either 8 or 12 ft (2438 or 3658 mm) cases. The shelf lights should light.

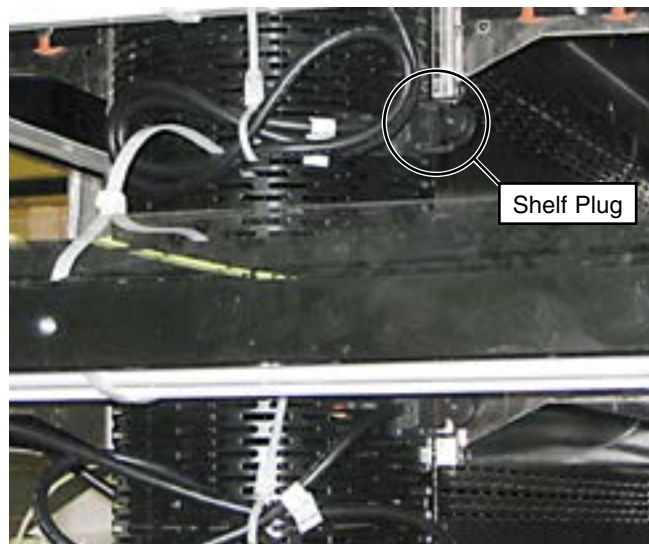
If a shelf lights do not operate,

- A. Turn off light switch.
- B. Make certain the shelf lamps are properly engaged in the shelf lamp holders.
- C. Remove and firmly re-insert each shelf plug.
- D. Turn on light switch.

If lights do not operate after checking the items listed above, **contact the installation contractor.**

9. Using the row of shelves just installed as support, set the next shelf, X-4, in the desired location. Remove the cap and insert the shelf plug. Continue working left to right installing shelves X-5 and X-6.

Note: Since the location for the remaining shelves, X-4 to X-15, may be directly over the rear wall receptacle, the shelf should be



plugged in before engaging brackets in the uprights. The lower shelf will support the weight of the next shelf until it is plugged in. After installing each shelf, verify that its plug is properly connected to its rear wall receptacle. Continue working row by row, bottom up, left to right.

Important:

*If a shelf is plugged in and the lamp does not work, **verify:***

- A. the case light switch is "ON" and
- B. that the shelf lamp is properly engaged in the shelf lamp holders.

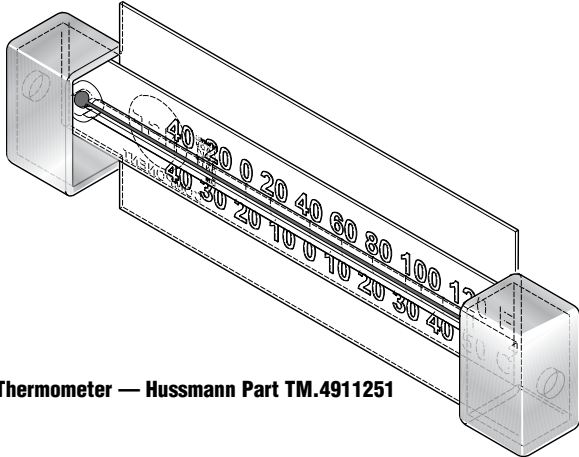
## INSTALLING FDA/NSF REQUIRED THERMOMETER

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).

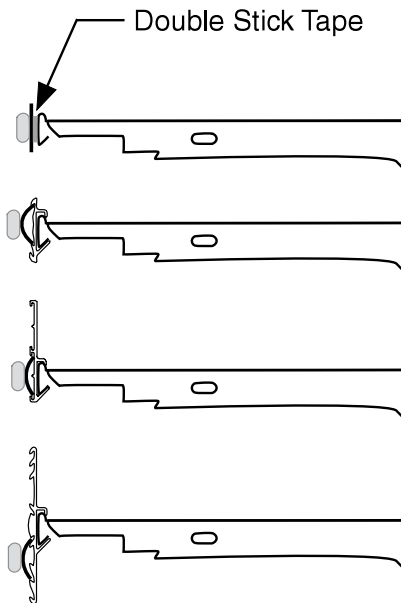
Please note that the tape cannot be exposed after installation.

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



Thermometer — Husmann Part TM.4911251

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

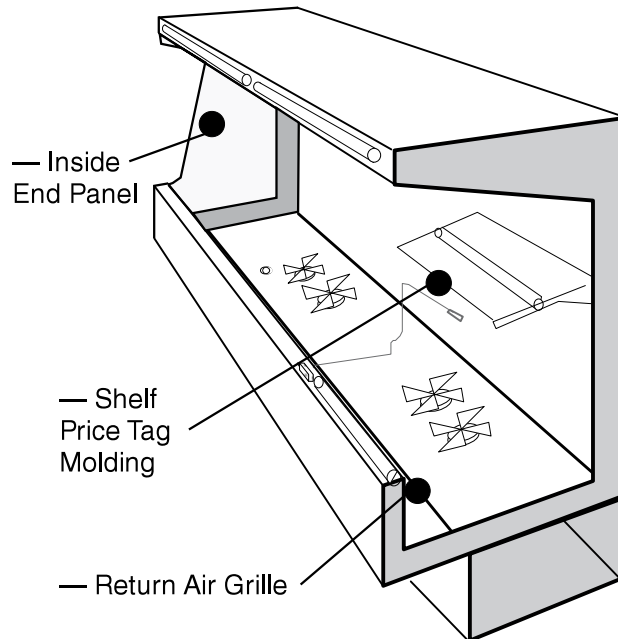
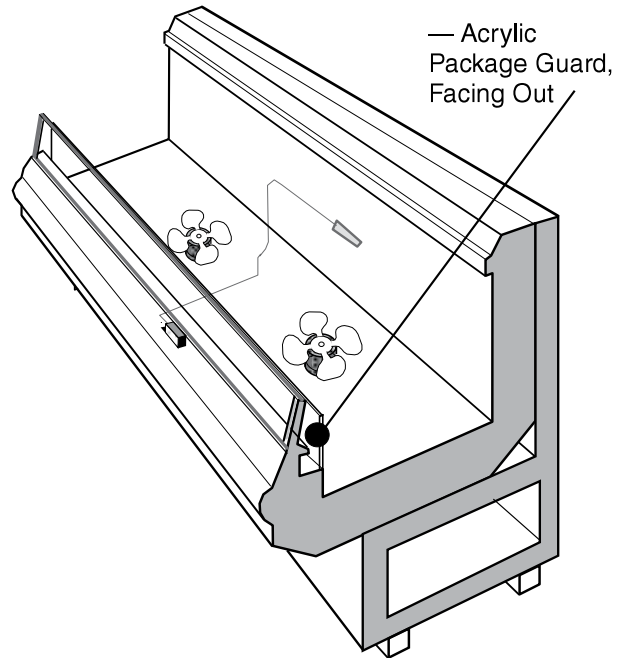


Flexible Plastic  
Fits in Price Tag  
Moldings

Husmann P/N 0429971\_C

10/2007

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



## 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 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.**

**Notes:**



## MAINTENANCE

### CARE AND CLEANING

Regularly scheduled maintenance by a qualified technician will add to the life span of the equipment and save energy because units run more efficiently if they are well maintained. Minor repairs can prevent or delay major replacements, and minimize unscheduled downtime and loss of productivity.



### WARNING

**Prevent injury.**

**ALWAYS SHUT POWER OFF  
during cleaning process.**

Allow the case to cool for at least 45 minutes before cleaning.

#### Fans

Fans should be shut off at the source. All deck pans and air grilles are removable.



### CAUTION

Coil fins are sharp  
and pose risk of bodily injury – use extreme care  
when cleaning around them.

#### 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 and sanitizing solutions with no harm to the surface.



### WARNING

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

### Do NOT Use:

- Abrasive cleansers and scouring pads, as these will mar the finish.
- Coarse paper towels on coated glass or acrylic.
- Ammonia-based cleaners on acrylic parts.
- A hose on lighted shelves or submerge the shelves in water.
- Solvent, oil or acidic based cleaners on any interior surfaces.
- A hose on rail lights, canopy lights or any other electrical connection.

### 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.**
- 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.

## PLEXIGLASS AND ACRYLIC CARE

**DO NOT USE AMMONIA-BASED PRODUCTS TO CLEAN ACRYLIC PARTS. NEVER USE ABRASIVE CLEANSERS OR SCOURING PADS.**

**Cleaning**

Clean with nonabrasive detergent and luke-warm water, using the bare hand to feel and dislodge any caked-on dirt. A soft, grit-free cloth, sponge or chamois may be used, but only as a means of carrying the water to the plastic. Dry with a clean damp chamois or clean soft cloth such as cotton flannel. Do not use hard, rough cloth or paper towels as they will scratch the acrylic.

**Waxing**

Wax should be applied in a thin even coat, and brought to a high polish by rubbing lightly with a clean, dry soft cloth, such as a cotton flannel. Excessive rubbing may cause scratching and/or build up an electrostatic charge which attracts contaminants. Remove an electrostatic charge by blotting with a clean damp cloth.

**Anti-static Coatings**

Anti-static coatings may be used indoors to prevent the accumulation of electrostatic charge for periods of several months so long as the surface is not washed or wiped down with a wet cloth. Between applications, acrylic parts are dusted with a soft clean cloth to maintain appearance. Liquid Anti-static coatings should be applied according to manufacturer's directions.

**WARNING**

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

## 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 CENTER AIR DISCHARGE (CAD) TOWER**

The interior of the CAD tower must be cleaned at least monthly. Frequency is dependent on the ambient conditions of the store.

1. Remove product to cooler.
2. **DISCONNECT THE ELECTRICAL POWER TO THE MERCHANDISER.**

3. Apply compressed air to the moiré (pattern of slots) of the CAD to blow accumulated dust off the internal baffles.
4. Use a soft cloth to wipe down the interior. A mild detergent and sanitizing solution may be used. Do not introduce excess water.
5. Turn on power to merchandiser.
6. Once operating temperature is reached, return product from cooler.
4. Remove panels attached to CAD tower.
5. Verify waste outlets are open, and drip piping is not blocked. Remove loose debris.
6. Use an unpressurized stream of water to wash baffles in the CAD tower. Do not introduce water faster than drain can handle.
7. Clean coil and fans as necessary.
8. Once all surfaces are clean and dry, reassemble in reverse order.
9. Reconnect the electrical power.
10. Once operating temperature is reached, return product from cooler.

**If air cleaning is not done at least monthly, Hussmann recommends washing by a technician at least every 4 months.**



## CAUTION

**DO NOT FLOOD!**  
**Use only enough water necessary**  
**to clean surface.**  
**Water must not drip down the case!**

**Never use ammonia based cleansers, abrasive cleansers, or scouring pads.**



### TECHNICIAN ONLY CAD TOWER CLEANING

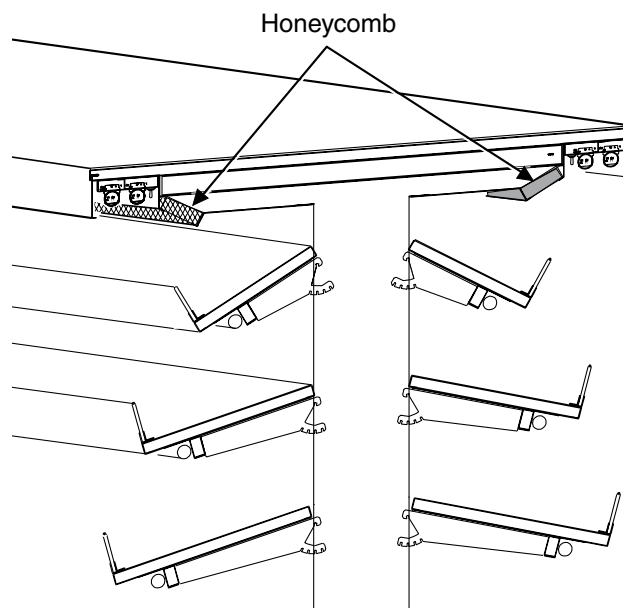
The CAD tower interior should be washed every 12 months to remove all accumulated debris. Hussmann recommends this be performed by a trained technician to prevent damage to the coil or electrical components.

1. Remove product to cooler.
2. **DISCONNECT THE ELECTRICAL POWER TO THE MERCHANDISER.**
3. Remove shelves, display racks, deck pans, CAD gusset, and canopy light channel.

## CLEANING HONEYCOMB ASSEMBLIES RI4, RI4N,

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

1. Remove product to cooler.
2. **DISCONNECT THE ELECTRICAL POWER TO THE MERCHANDISER.**
3. Compress the honeycomb and remove it from its retainer.
4. Clean and dry the honeycomb.
5. After cleaning, replace in reverse order.
6. Turn on power to merchandiser.
7. Once operating temperature is reached, return product from cooler.



## 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.

**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.

**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.

**NOTES:**

## SERVICE

### TIPS AND TROUBLESHOOTING

Before calling for service, check the following:

1. Verify the equipment is connected to the electrical power supply.
2. Check fixture loading. Overstocking case will affect its proper operation.
3. If frost is collecting on fixture and or product, first verify that *Humidity Control* is working properly, then check that store relative humidity is below 55%.
4. Confirm that the defrost schedule is set as specified in the model's Technical Data Sheet.
5. Confirm that the correct temperature setting is being used for the case evaporator coil as specified in the model's Technical Data Sheet.



**IMPORTANT**

**For prompt service** when contacting the factory, be sure to have the case model and serial number from the case serial plate.

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

### **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.**

For access to these fans:

1. Turn off power
2. Remove bottom display racks and deck 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 racks and deck pans, Bring merchandiser to operating temperature before restocking.

### **WARNING**

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

## REPLACING FLUORESCENT LAMPS

Fluorescent lamps are furnished with a shatter-proof protective coating. Replacement lamps must have the same protective coating.

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

This lamp has been treated to resist breakage and must be replaced with a similarly treated lamp in order to maintain compliance with NSF Standards.

### NSF CODE 4.28.1

Contact **HUSSMANN** for replacement.

U.S. & Canada 1-800-922-1919 • Mexico 1-800-890-2900

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.

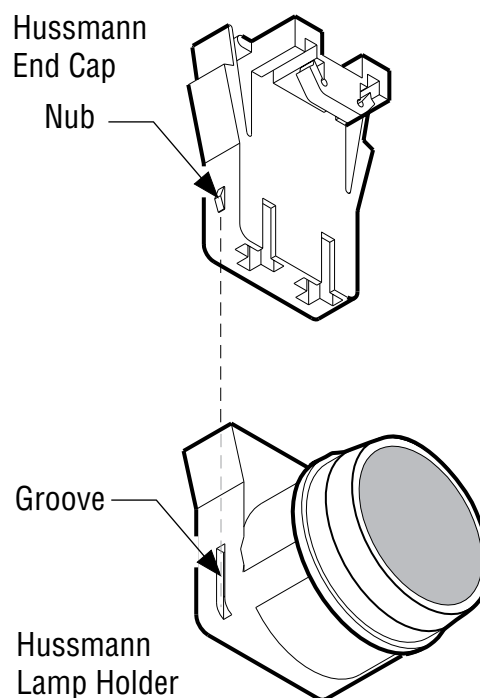
## REPLACING LAMP HOLDERS

The Hussmann Impact 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.

### IMPORTANT!

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

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



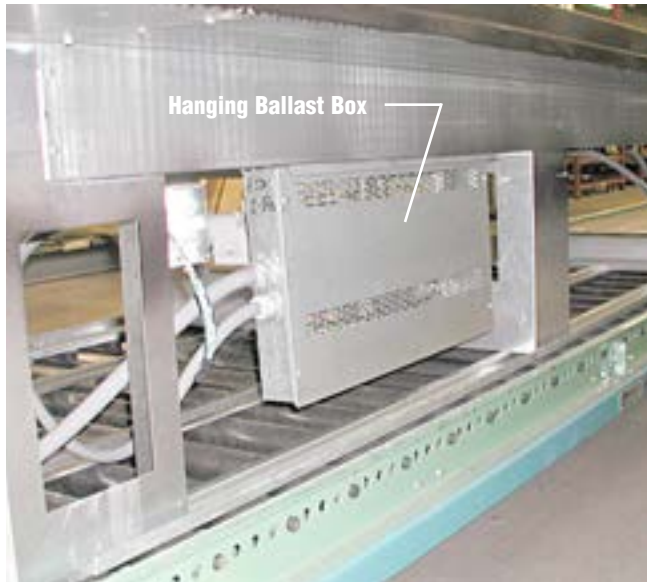
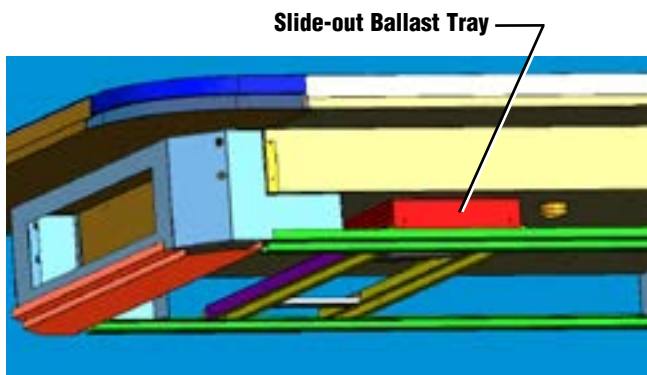
## REPLACING ELECTRONIC BALLASTS

### Canopy and Shelf Lamp Ballasts

The ballasts are located in the ballast tray below the case deck. The switch in the canopy operates both the canopy and the shelf lamps.

1. **DISCONNECT POWER TO THE MERCHANDISER.**
2. Remove the side splashguard and base panels.
3. Depending on model, the ballasts are in either a hanging ballast box, or a slide-out ballast tray. Replace ballast and reassemble parts in reverse order.
4. Reconnect the electrical power.



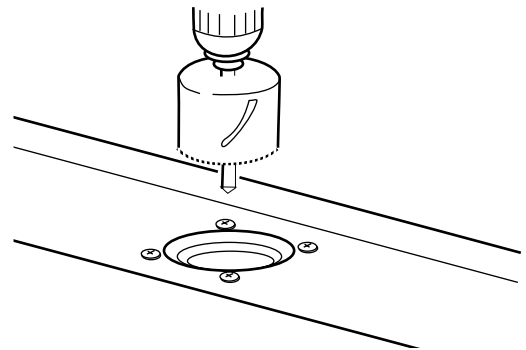
**HANGING BALLAST BOX****SLIDE-OUT BALLAST TRAY****WARNING****— LOCK OUT / TAG OUT —**

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.

**REPLACING DAMAGED DRAIN FITTING**

The following procedure is for the field repair of a broken drain fitting. Drain components require special parts. Contact your Hussmann representative to obtain drain fitting parts.

1. Use a drill with a 1<sup>7</sup>/<sub>8</sub>-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 new drain fitting. Seal the area. Do not use thread sealant between ABS water seal and drain fitting.

**BOTTOM VIEW OF DRAIN FITTING**

**REPAIRING ALUMINUM COIL**

The aluminum coils used in Hussmann cases 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)

**WARNING**

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

A decorative border made of a repeating blue geometric pattern, resembling interlocking squares or a stylized knot, surrounds the entire page content.

# **HUSSmann®**

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

**Husmann Corporation**

12999 St. Charles Rock Road  
Bridgeton, MO 63044-2483  
[www.husmann.com](http://www.husmann.com)