

HUSSMANN®

EcoVision II Plus Door Upgrade for D6 Kysor Warren Multi-deck Merchandisers



Installation & Operation Manual

IMPORTANT

Keep in store for future reference!

P/N 0537298_A

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REVISION HISTORY

REVISION A

- 1. Original issue

EcoVision II Plus Door Installation Tool List
(Recommended)

- Level, 4 ft suggested
- Ratchet
- 1/4 in. Socket
- 7/16 in. Socket
- 3/8 in. Socket
- 1/2 in. Open End Wrench
- Battery Drill/Screw Gun
- Rubber Mallet
- Hammer
- Putty Knife
- 4ft Ladder



CAUTION

Caution: Tipping Hazard
Case tipping may occur if cases are not properly leveled and secured.

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.



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.

GENERAL

Verify the merchandiser model(s) to be outfitted with the EcoVision II Plus door kit(s) by locating the merchandiser’s serial plate.

This instruction details the installation of EcoVision II Plus doors for D6 Kysor Warren multi-deck merchandisers.


EcoVision II Plus doors may be installed without the need to remove product from the merchandisers. Check with the store manager, and let them know how long a door lineup will take to complete. The average time to install each door is about 20 minutes. Disassembly of parts from the case is required before installing EcoVision II Plus doors.

WATER MISTERS AND LIGHT RAILS may not be used with glass doors. Remove any mist equipment from case before installing doors.

NOTE

Read these instructions carefully and completely before attempting to install EcoVision II Plus doors.

 **WARNING**
NOT stand or walk on top of merchandiser. Do not store items or flammable materials atop the unit.

 **WARNING**
Do NOT lean glass doors against the merchandiser lineup. Leave them packed in their protective packaging until they are ready to be directly installed in the lineup. Accidental glass breakage can be dangerous. Always wear protective glasses and gloves when handling glass.

 **CAUTION**
Use caution handling glass parts. Always wear safety glasses, long pants, gloves and arm guards when handling glass doors. Do not lean doors against case. Doors should remain in packing crate until it is time to install on to case.

1 Installing EcoVision II Plus Doors requires at least two installers!

- A.** Carefully unpack EcoVision Door upgrade kit(s), and examine parts. Do not carry doors by the handle.

2 Remove existing Top Rail Extrusion and Front Color Panel

Parts will be discarded.



3 Remove entire canopy assembly. Discard canopy assembly.



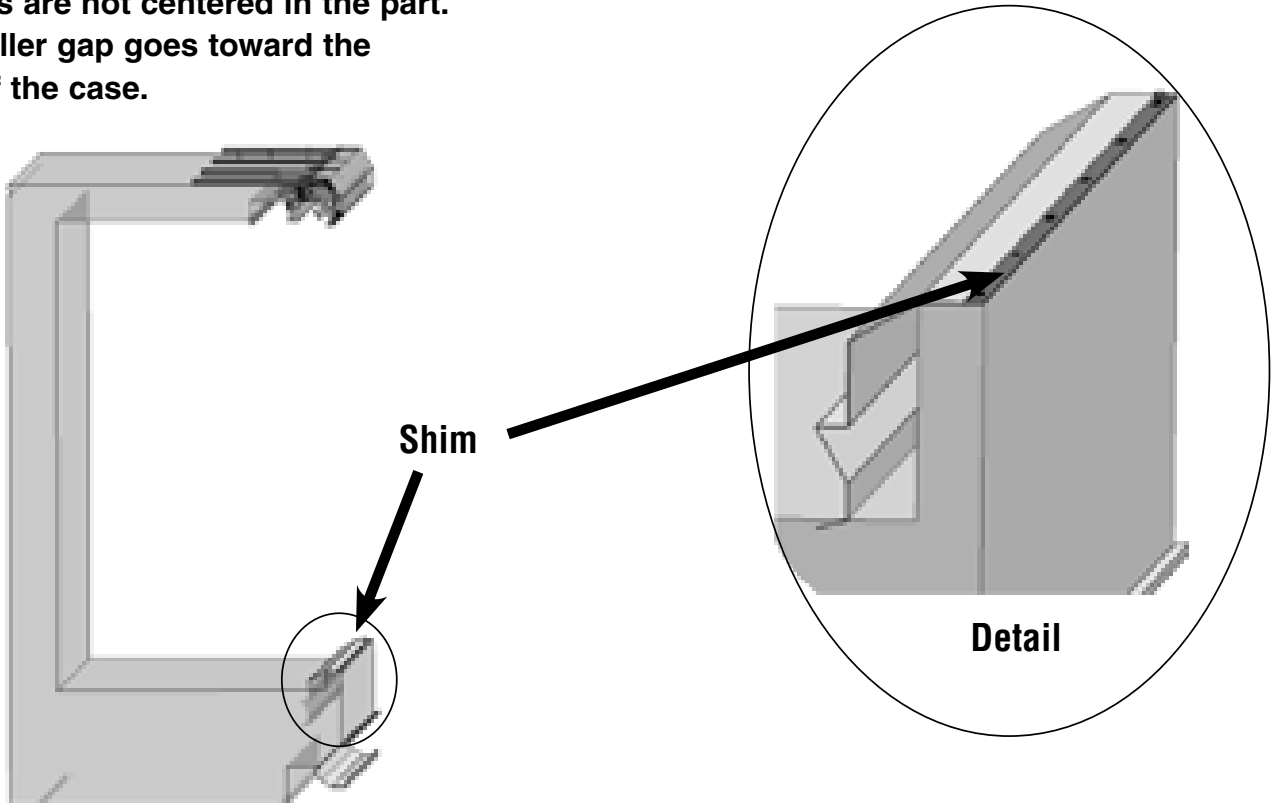
4 Case without Canopy and Light Channel



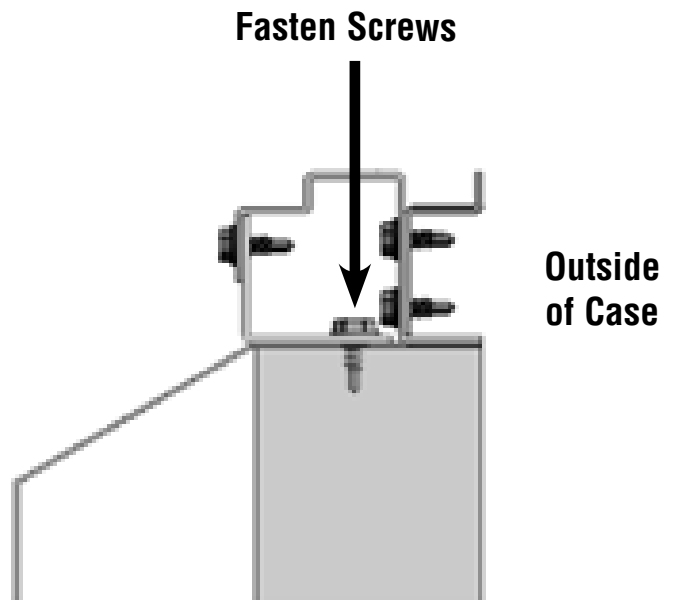
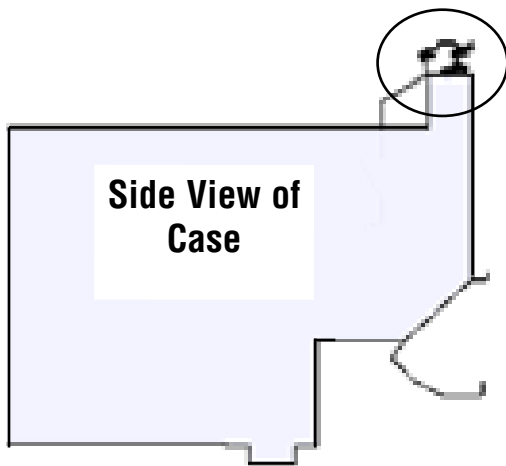
Disassembly is complete. EcoVision doors are ready to be installed.

5 Place shim onto foam bottom.

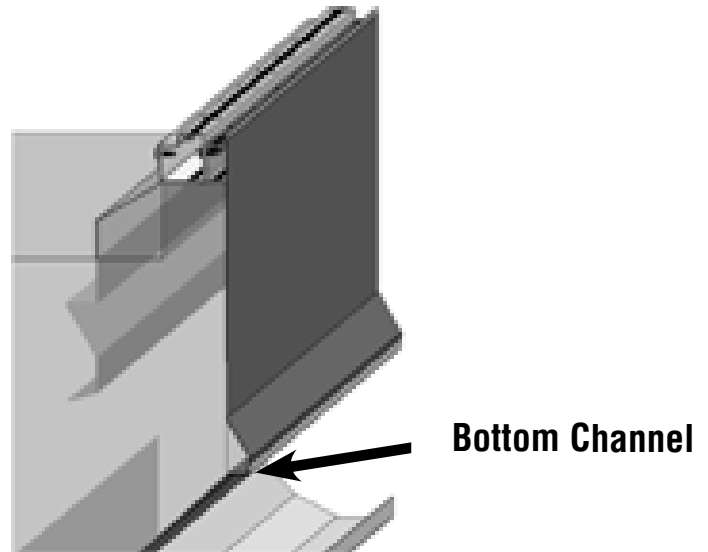
The slots are not centered in the part.
The smaller gap goes toward the
inside of the case.



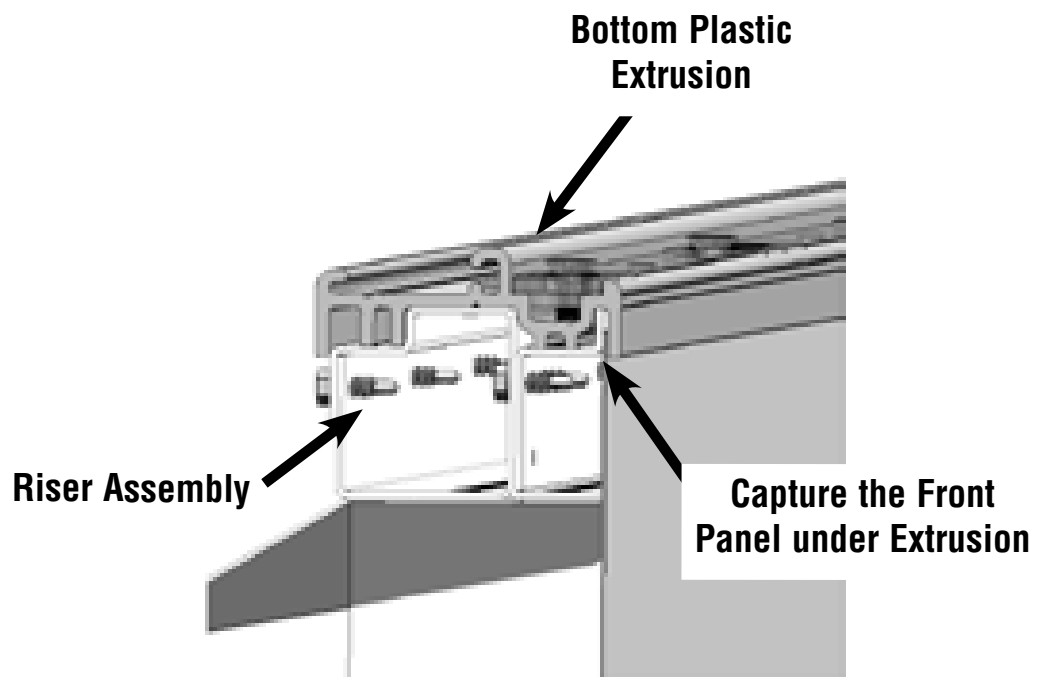
6 Place riser assembly onto foam bottom, and fasten to foam bottom.



- 7** Install front color panel into channel at bottom. There are no screws used to install panel. Panel is held in place by bottom extrusion.



- 8** Place bottom plastic extrusion assembly over the riser assembly. Capture the front panel under the extrusion.

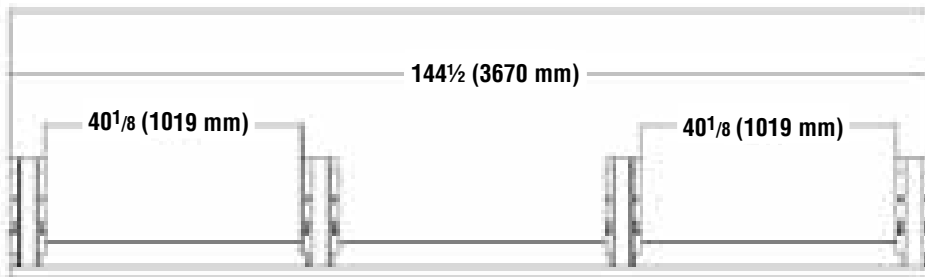


9 Insert reinforcing bracket between foam panel and honeycomb retainer on each end of the case.

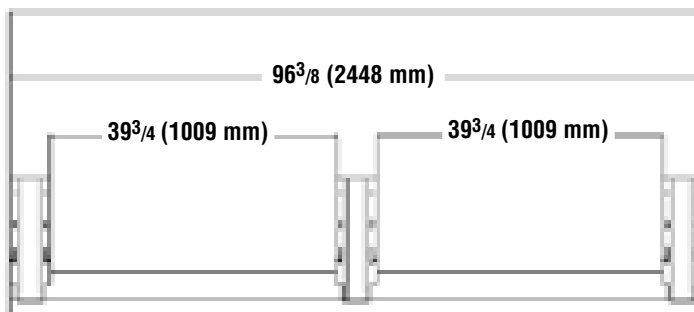
Bracket sits flush with foam panel. If screw from honeycomb retainer is in the way, temporarily remove it. Align the brackets with the foam panel end.



Spacing of Brackets



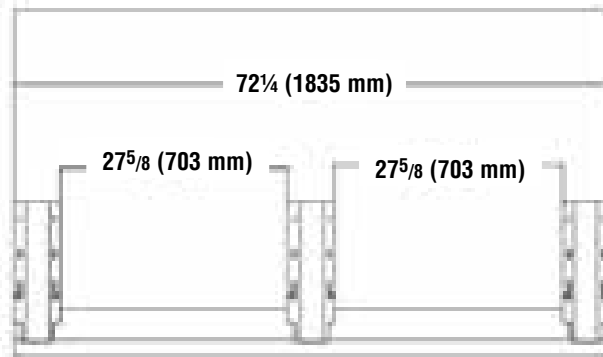
12ft case top supports



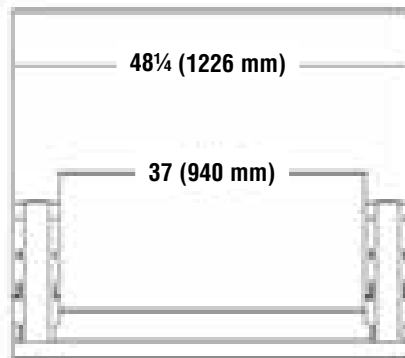
8ft case top supports

Repeat for remainder of brackets. Space brackets at the distances shown.

Spacing of Brackets (Continued)



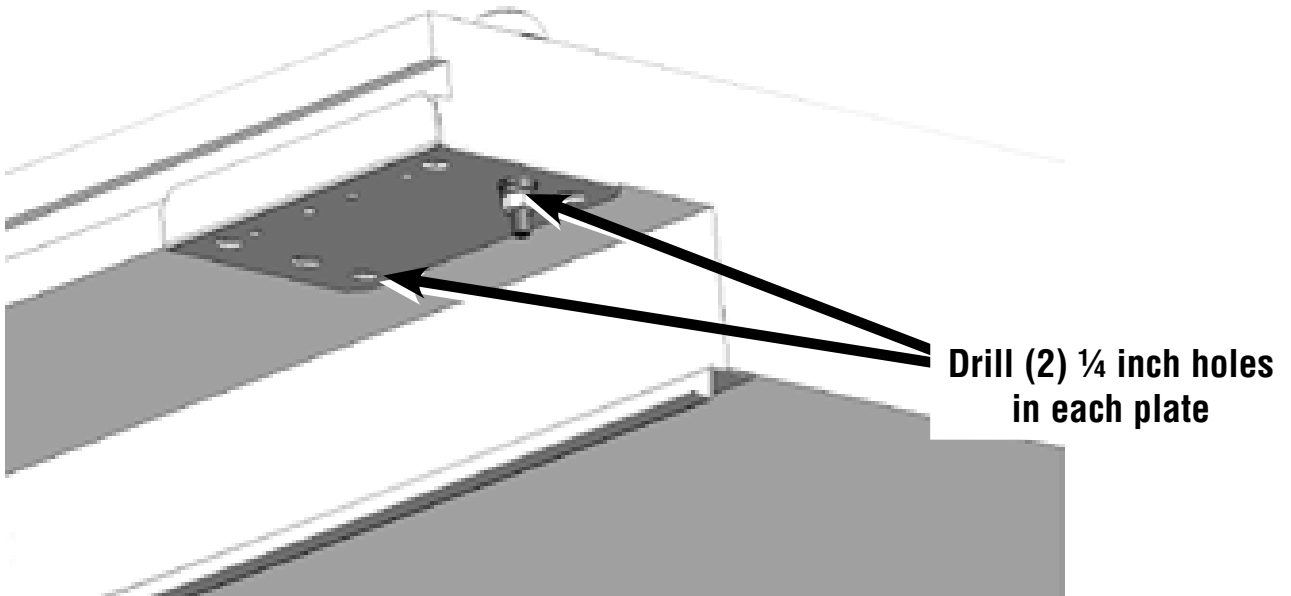
6ft case top supports



4ft case top supports

Repeat for remainder of brackets. Space brackets at the distances shown.

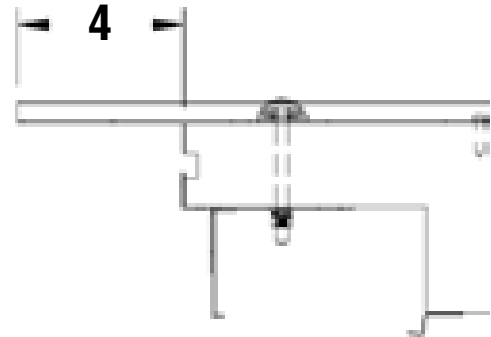
- 10** Drill two ¼ through center slots of reinforcing plate, through the foam top panel using bracket as template.



- 11** Place a canopy support over each foam panel reinforcing bracket. Place canopy support approximately 4 inches past the foam panel.



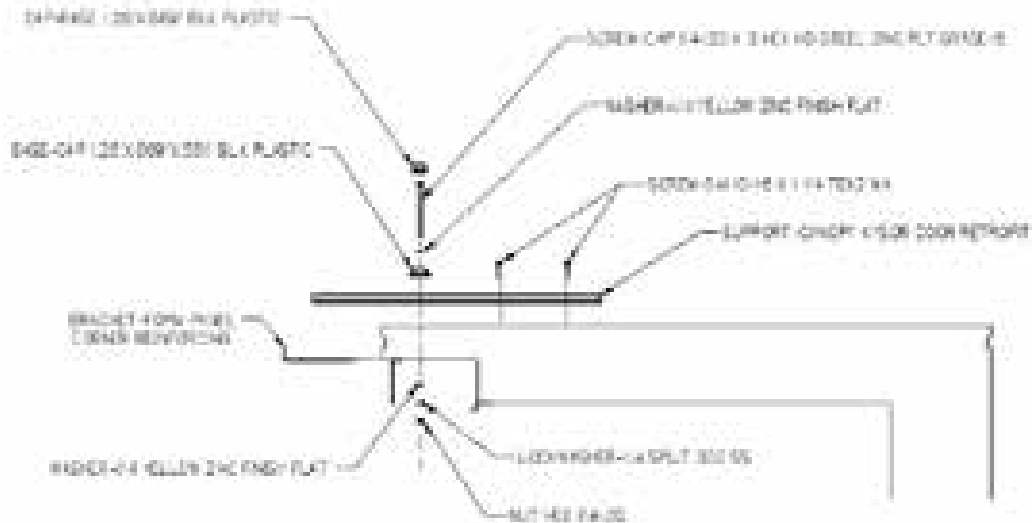
12 Position Canopy support so that it is approximately 4 inches past Foam Canopy.



13 Connect each canopy support to the foam panel bracket with the hardware shown above.

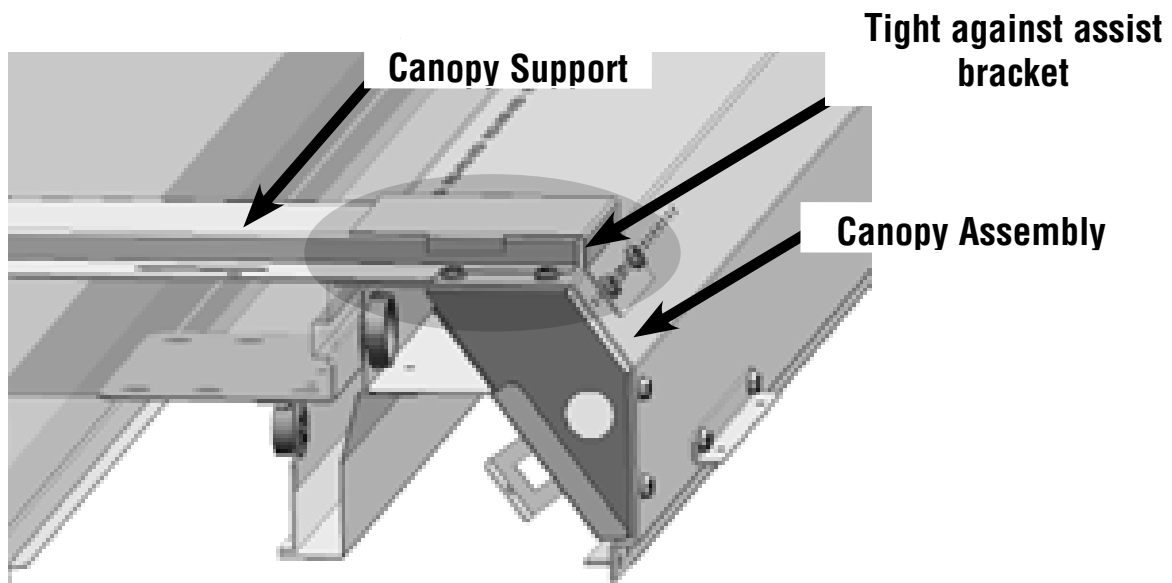
The canopy support should stick out approximately 4 inches past the foam panel. Hand-tighten hardware. (Do not tighten completely)

This allows for adjustment in the canopy to install future parts, and to make sure doors are vertically straight.

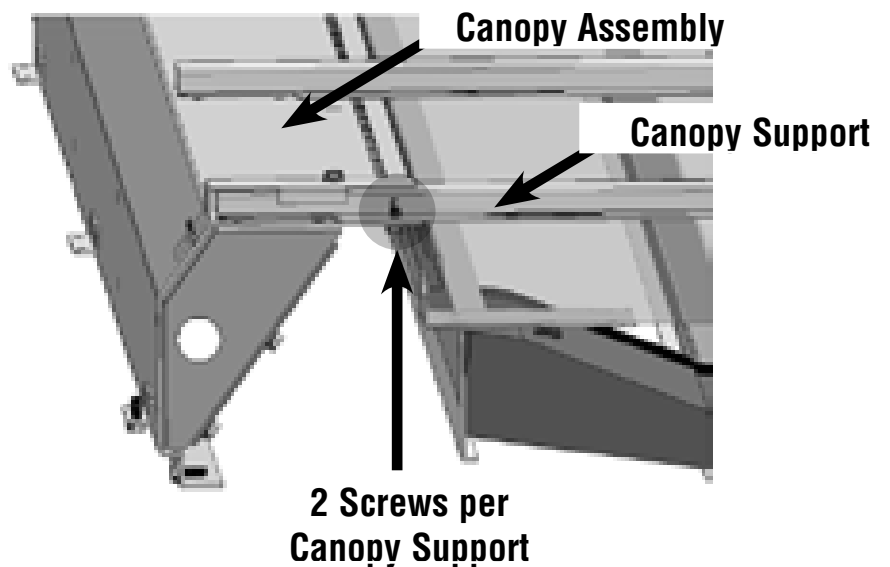


14 Take Canopy Assembly and slide the assist brackets over the canopy supports. Push Canopy assembly until it is tight against the assist bracket. The assist brackets are to assist in holding the canopy assembly in place until screws are fastened.

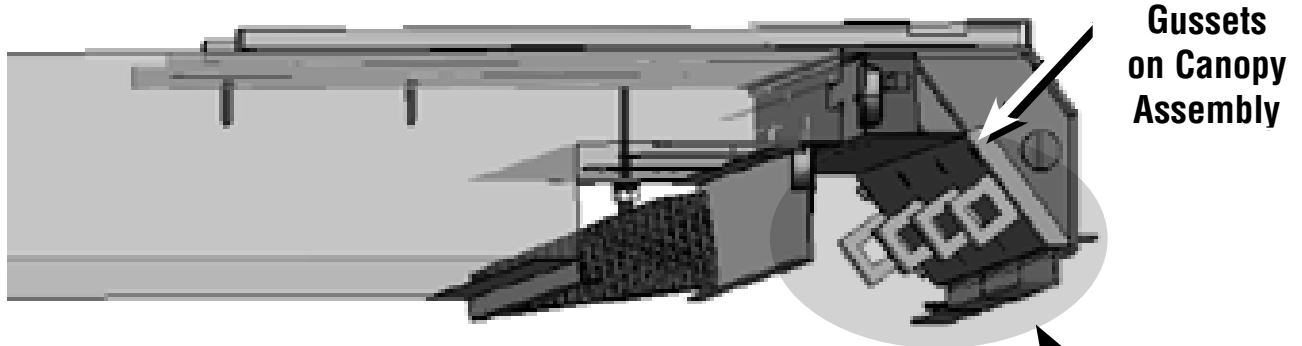
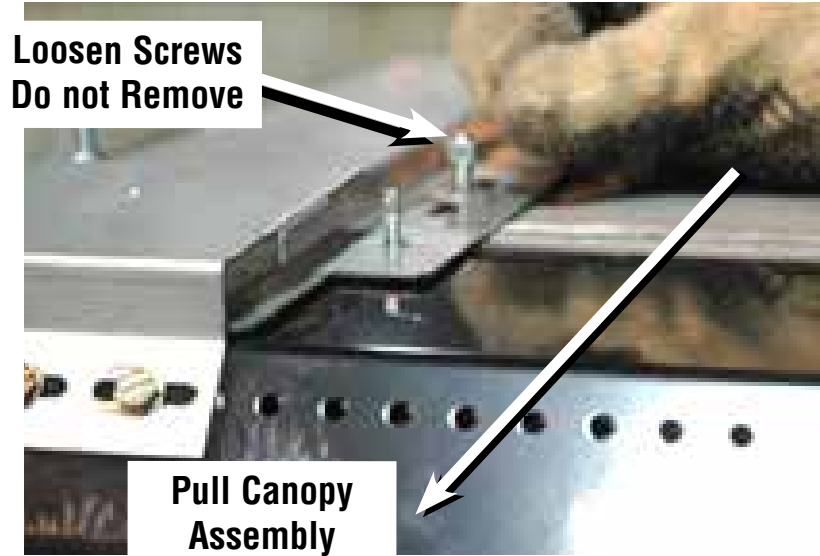
Caution: Do not leave the canopy unsupported until screws have been fastened in next step.



15 The canopy assembly to each canopy support. Once screw on the left side of the bracket, and one screw on the right side.

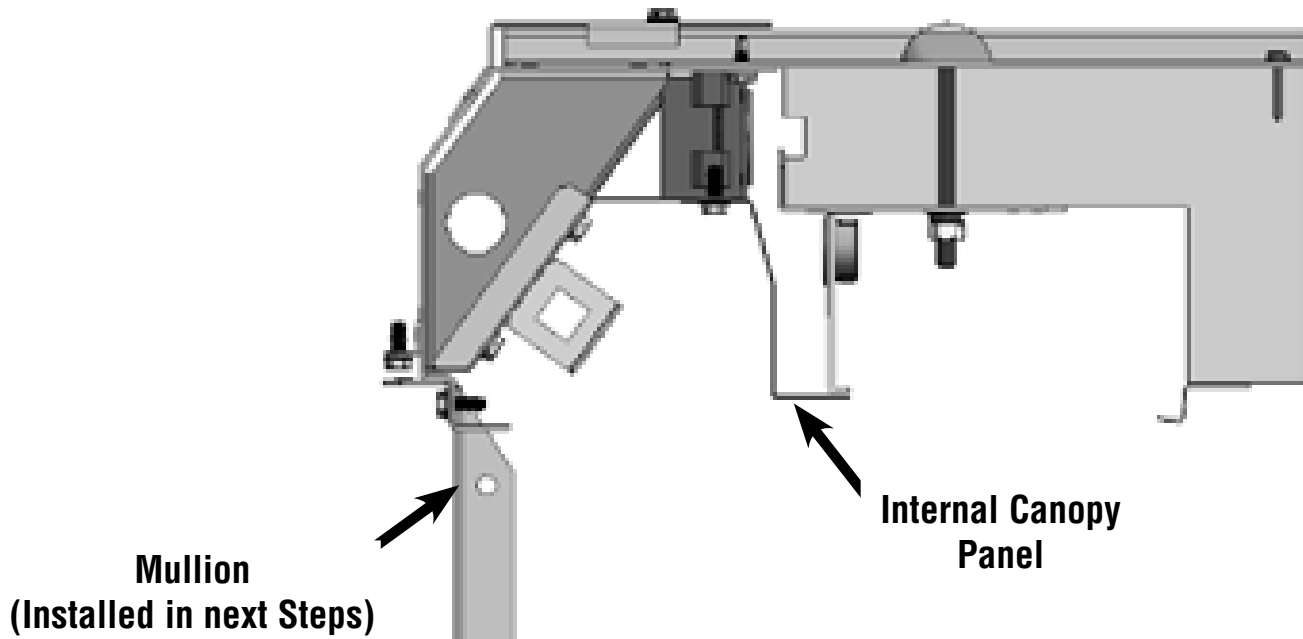


16 Loosen all the nuts on canopy support. This allows for adjustment. Do not remove completely. Pull canopy assembly toward outside of case. This provides room to install the light channel.

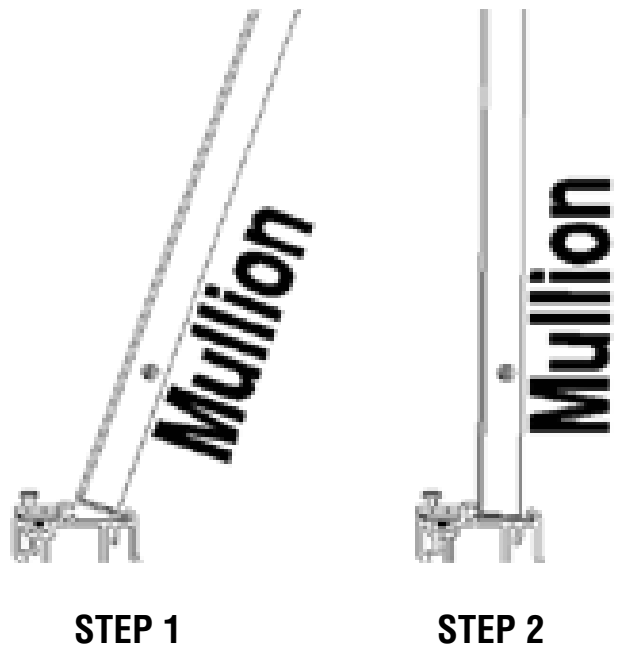


Pull canopy assembly toward outside of case. This provides room to install the light channel.

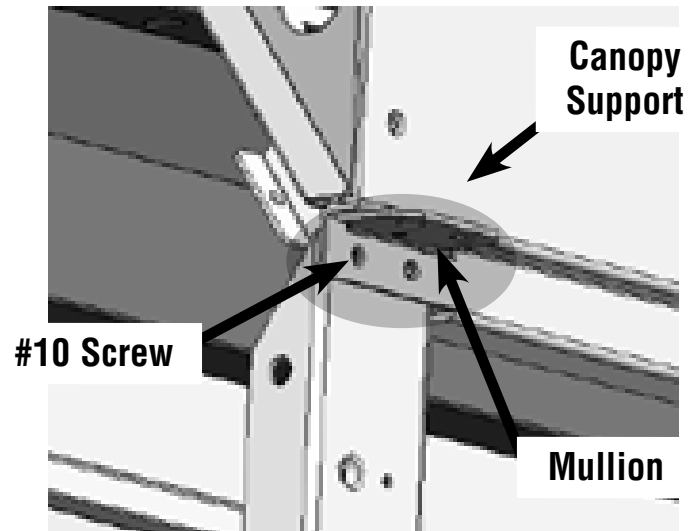
17 Install Internal Canopy Panel



18 Install Mullion — Angle mullion toward inside of case, and engage the flange in the extrusion.(Step #1)



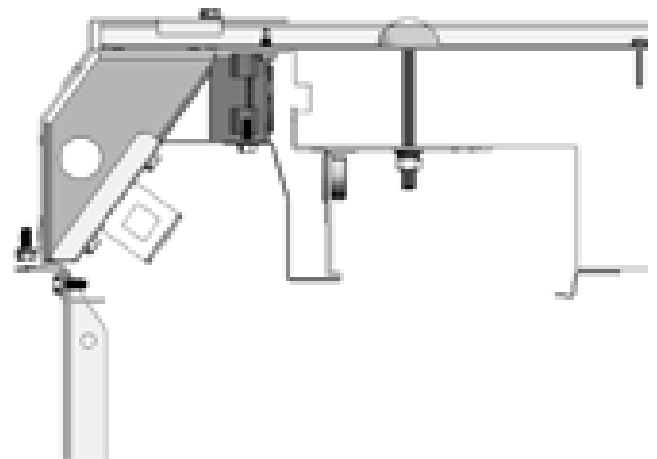
- 19** Engage mullion into slot in canopy support, and fasten with #10 screws. Repeat for all other mullions.



- 20** Place level on each mullion, and move the canopy assembly in or out until the mullion is level.



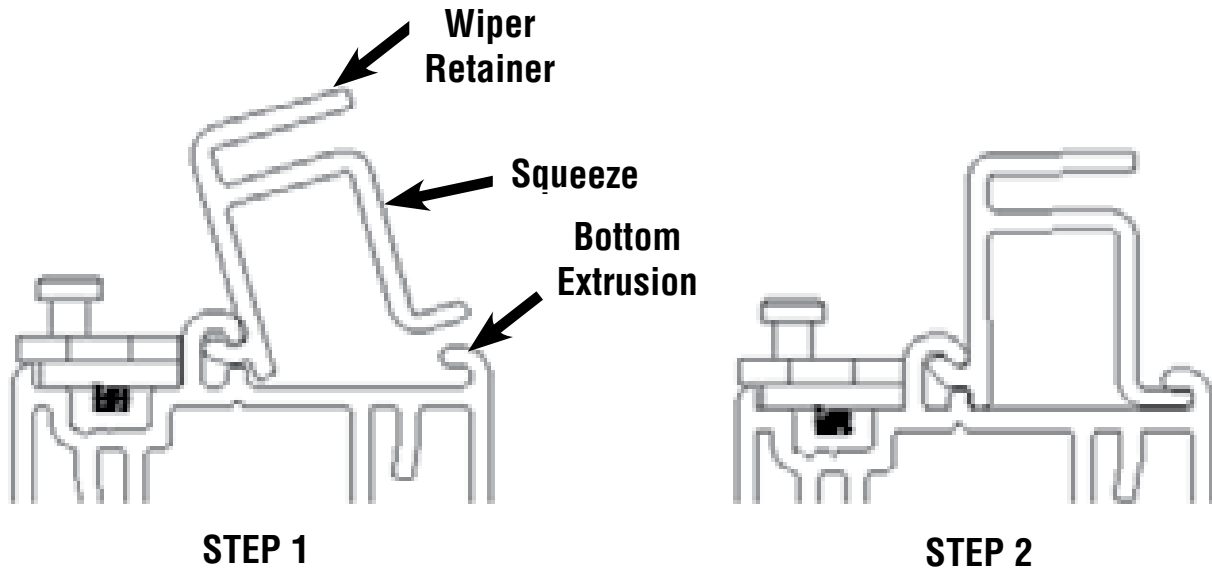
- 21** Once the mullions are level, tighten all the 1/4 inch nuts (20).



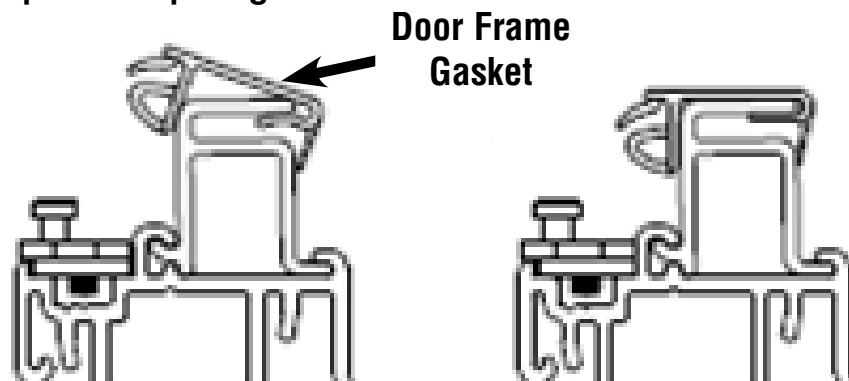
22 Re-Install Honeycombs



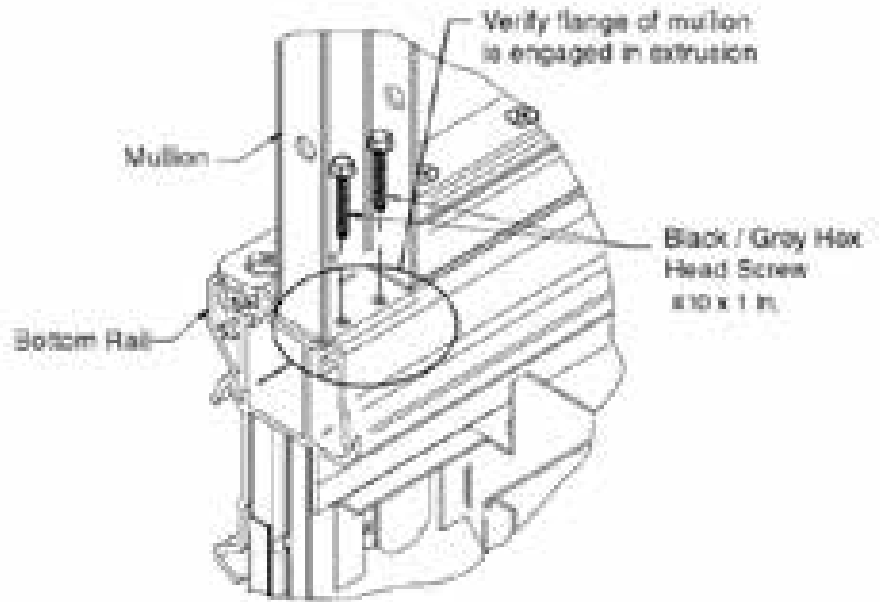
23 Insert wiper retainer into bottom extrusion. Squeeze the wiper retainer, and insert into bottom extrusion.



24 Install door frame gaskets to wiper retainer, mullions and canopy support. 4 Gaskets per door opening.



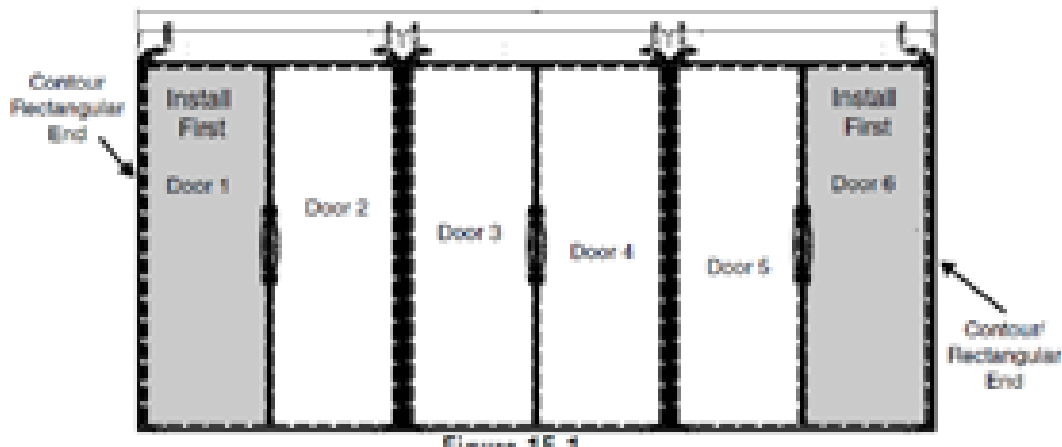
25 Attach Mullions to bottom extrusion
(2) screws to each mullion



26 Install Doors at location or contour/
rectangular ends first. Install door #1
then Door #6, then door 2,3, 4 and 5.

⚠ CAUTION

**DO NOT CARRY DOORS BY HANDLE.
PERSONAL INJURY AND DAMAGE
TO THE DOORS MAY RESULT.**



27 Install Doors

Place bottom of door into hinge plate assembly and seat completely. Depress door pin, and engage it into the hole in the mullion.



28 Adjust Torsion Rods

Adjust torsion rod until door closes smoothly (typically 4 or 5 turns). Use a ½ inch wrench, always adjust toward handle of door or damage may occur. Do not exceed 6 turns.



29 Adjust Cam and Shoulder Bolt

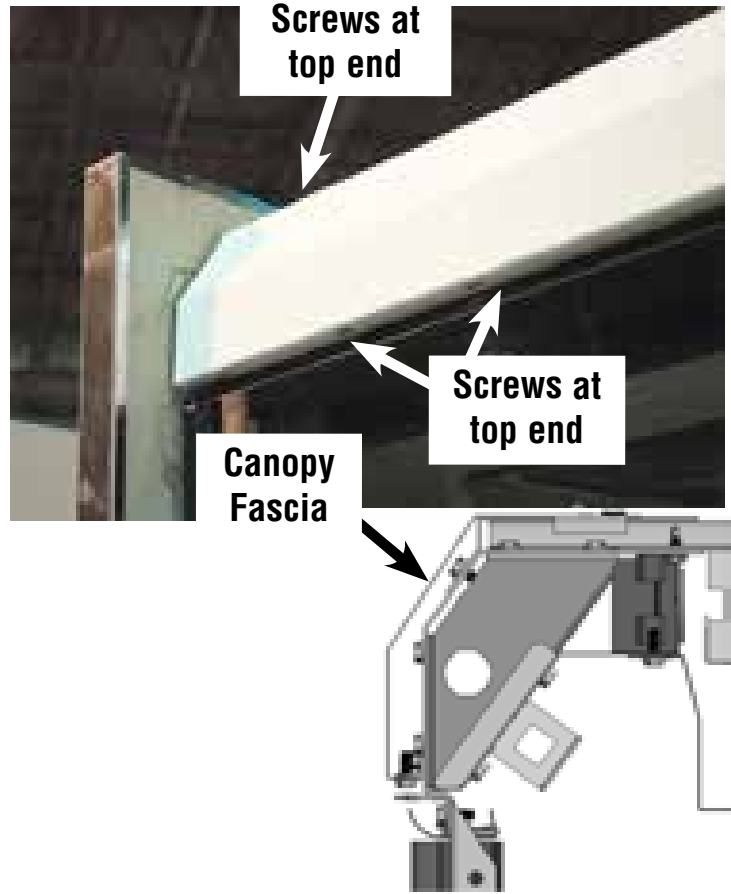
Align the slot in the cam with the threads in the hinge plate, and install shoulder bolt. Never pry the cam open to install. This will permanently damage the cam.



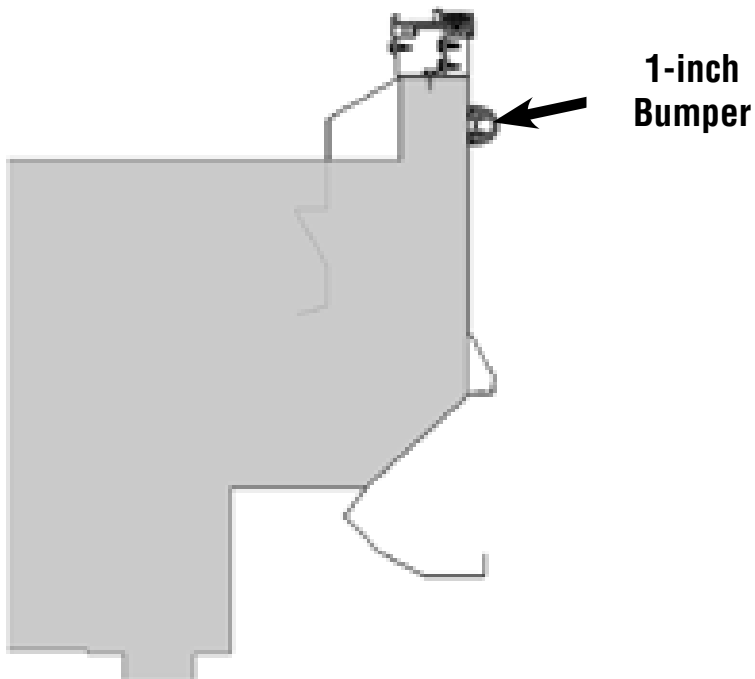
Repeat Installation of Remaining Doors

30 Install Canopy Fascia

Fasten two screws at the top of each end.
Fasten screws at bottom of canopy fascia.



Install 1-inch bumper retainer and bumper.



31 Start up / Stocking

Locate the merchandiser's refrigerant settings and defrost requirements. Bring merchandisers down to the operating temperatures listed on the data sheet.

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

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

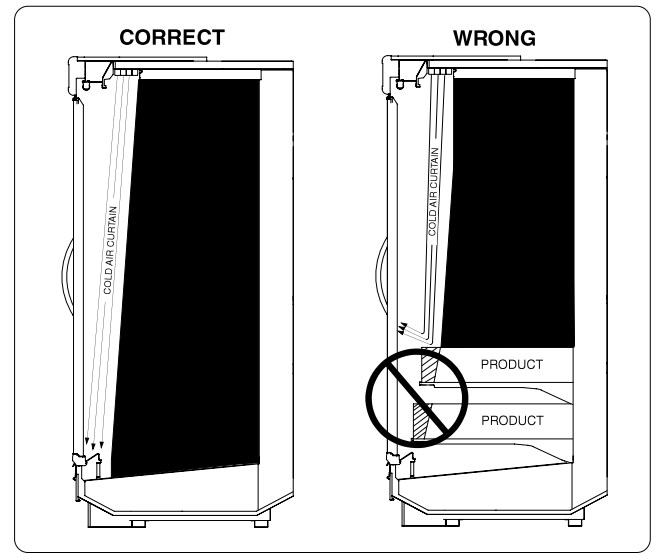


Figure 19-1 — Product Stocking Limits

TECHNICAL GUIDELINE FOR CASE AND REFRIGERATION SYSTEM ADJUSTMENTS

Upgrading your existing store with EcoVision II Plus doors is an excellent way to reduce energy costs. However, adjustments to your equipment may be required as a result of adding doors, because the original equipment was designed for higher refrigeration loads. Below is a list of recommended changes that need consideration for cases, line-ups and the refrigeration system after upgrading to EcoVision II Plus doors in order to maintain optimal performance of the refrigeration equipment.

For a detailed analysis and quote of the specific adjustments needed at your store, please contact your Hussmann sales representative. The Hussmann Team will help ensure that your existing equipment remains at optimal performance after the EcoVision II Plus door upgrade. Without proper evaluation by a Hussmann Application Engineer or qualified professional, oil return, case performance, and product temperature could be negatively impacted.

CASES

A. Thermostatic Expansion Valve (TXV)/ Orifice

Each case may have multiple evaporator coils, and each evaporator coil has a TXV / orifice combination. The setting of the superheat of each coil is critical to the performance of the case. The superheat setting on the valve may require changing to achieve optimal performance of the case.

The change is likely due to the large decrease in case load (the existing valve may not have enough range in its operation to accommodate the smaller load). For non-adjustable valves, add a stem kit, or replace the valve. If you have a non-adjustable Danfoss valve, it must be changed to a valve with superheat adjustment. If you have an adjustable valve, adjust the valve. Recommended superheat is 4° to 7°.

B. If an electronic TXV is used, no change is needed.

LINE-UPS

A. Each line-up of cases has a solenoid valve or Evaporator Pressure Regulator (EPR) by which to control temperature.

If a solenoid valve is used in either the liquid or the suction line, more than likely, these will not have to be changed. An evaluation of the sizing of these lines is required based on the reduced load. If they are oversized or undersized by more than one size, then they should be resized. The reason for this is that these valves, especially if they are in the suction line, require a pressure drop in which to operate. If valves are oversized, this pressure drop may not be strong enough to actuate the valve. This reduction in load allows the case saturated suction temperature to run 3° to 6° warmer, therefore it is recommended that a mechanical or electronic EPR, per line-up, be utilized to optimize case performance and increase energy savings. Rear-load cases must have an EPR added.

If a mechanical EPR is used, sizing to the new load must be considered.

If an electronic EPR is used, the existing valve will need to be checked for full function at the new load.

B. Each line-up of cases has a liquid and suction line from a loop served by the rack, or a run from the rack to the line-up.

The liquid line does not normally need to be changed.

The suction line in every line up needs to be checked and changed as required.

The suction riser is the most important line that must be looked at. If the new load requires a different line size, it must be changed to ensure proper lubricant volume returns back to the compressors.

REFRIGERATION SYSTEM (DX SYSTEM)

A. The DX system itself has many components that must be evaluated. They include:

Compressors: After determining the new BTU/hr load, determine if the existing compressor selection will allow steps from 8% to 20%. If not, a compressor or more compressors may need to be removed or replaced.

When the existing design uses an even number of compressors, a compressor change should be considered if the load was reduced by more than one compressor capacity. Adjusting the compressor output by means of un-loaders, variable frequency drives, or digital technology, may be acceptable alternate solutions.

NOTE: Pay particular attention to affected circuits that are fed by a satellite compressor or conventional unit. That compressor may now be grossly oversized.

Gas Defrost: If the rack is equipped with gas defrost, the main liquid line solenoid and the discharge differential valves should be evaluated. If the existing valve is oversized, a new valve should be considered.

Heat Reclaim - If the rack is equipped with heat reclaim, the new value for available heat should be recalculated. It is possible that the heat reclaim coil will now be oversized. This is especially true if compressor changes have been made. Typically, whole rack BTU/hr reductions of 35 percent and greater would need to be seen.

Discharge Riser: Depending on the drop of BTU/hr to the entire rack, the discharge riser (the piping that goes from the rack to the condenser), may need to be resized. Under most applications this will just need to be checked. If the drop in the total BTU/hr is greater than 35%, a resize is more than likely necessary. If this line is not resized when it is necessary to do so, lubricant return back to the compressors may be an issue.

Condenser: The condenser will not typically need to be replaced. However, if winter control is provided and there is a Total Heat of Rejection (THR) load drop of greater than 40 percent, the winter control valve should be checked.

Receiver Pressure Regulator: The sizing on these series of valves will probably be acceptable and a small reset on the A8/A9 series may be required.

Solenoid Valves: Depending on the manufacturer and function of the solenoid valves, the sizing may need to be looked at. Some models require a pressure drop across the valve in order to close. If the flow through the valve is too small, the pressure drop may not exist and therefore the valve may not operate as designed.

Sub-Cooler: If the rack is sub-cooled and the drop in total BTU/HR is greater than 35 percent, the sub-cooler and its TXVs may need to be resized.

HEATING, VENTILATION, AIR-CONDITIONING SYSTEM (HVAC)

In some instances, the HVAC system is sized based on an assumption that a portion of the refrigeration capacity will be used to reduce the temperature and humidity in the store. This is called “case credits.” This reduction in AC load is calculated based on the “spillover” of the chilled air from these cases by adding doors this “spillover” is eliminated. If these credits were taken, and EcoVision II Plus doors are applied to a major part of the refrigeration load, typically 35 percent or more, the HVAC system needs to be evaluated to see if it can handle the entire air-conditioning load.

In addition to the adjustments above, the following tasks must also be considered:

1. Time required to isolate that portion of the system where the component(s) will be replaced
2. Removal of the refrigerant (per government guidelines)
3. Removal of the part(s) to be replaced
4. Installing the new component(s)
5. Evacuation of that part of the system that was isolated
6. Recharging of the refrigerant that was removed and
7. Setting of each valve/component installed.