HUSSMANN®

EcoVision Door Upgrade

for RGD Merchandisers

Installation & Operation Manual

P/N 0559646_A

December 2015

IMPORTANT

Keep in store for future reference!

MANUAL- KIT INSTALLATION ECOVISION RGD

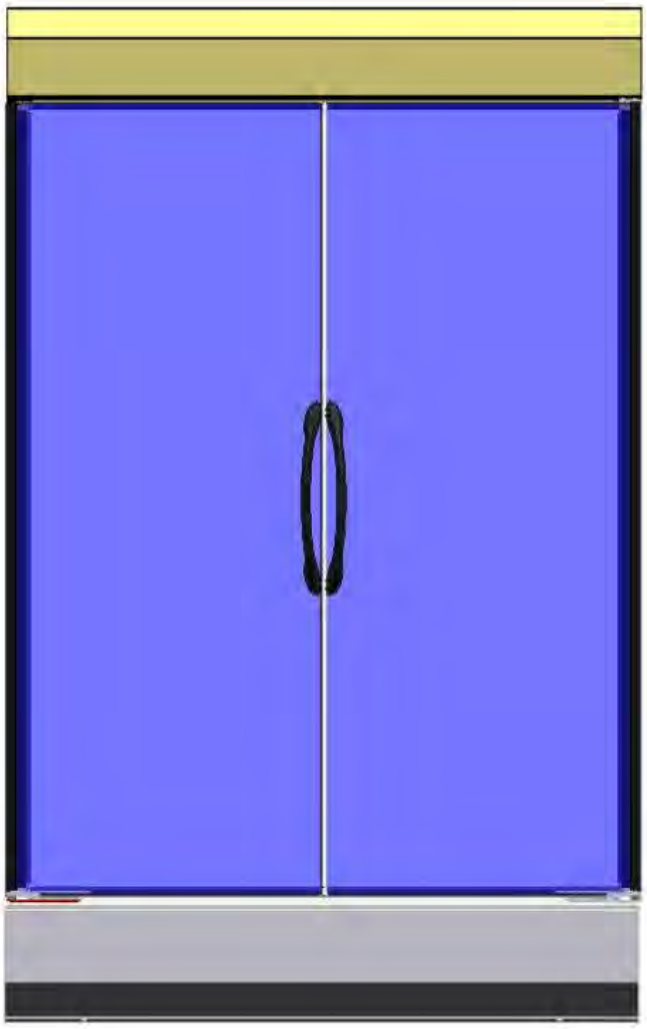
BEFORE YOU BEGIN

Read these instructions completely and carefully.

PERSONAL PROTECTION EQUIPMENT (PPE)

Personal Protection Equipment (PPE) is required whenever servicing this equipment. Always wear safety glasses, gloves, protective boots or shoes, long pants, and a long-sleeve shirt when handling glass.

RGD with Doors Installed



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

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U.S. & Canada 1-800-922-1919 • Mexico 01-800-890-2900
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REVISION HISTORY

REVISION A
1. Original issue

EcoVision Door Installation Tool List

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
Flat Screw Driver
Phillips Screw Driver

⚠ 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 glass and gloves when handling glass.

⚠ WARNING

Do not leave merchandisers unsupported or unattended until all parts are properly 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.

⚠ CAUTION

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

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 door kit(s) by locating the merchandiser's serial plate. The serial plate is located on the interior top panel at the left side of the merchandiser.

Competitor case models may also be outfitted with EcoVision door upgrade kits. Check with your Hussmann representative for details. EcoVision 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.

⚠ WARNING

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

LOCATION

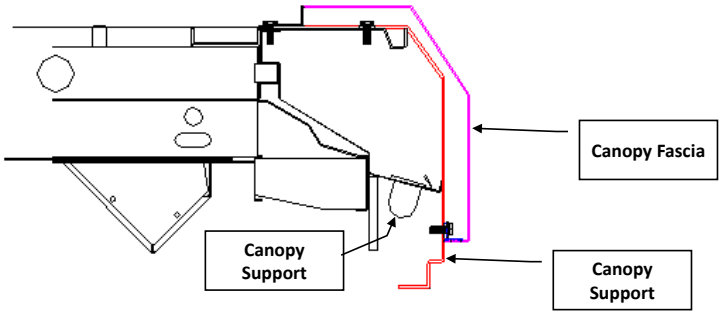
EcoVision doors are designed for merchandisers that display products in air conditioned stores where temperature is maintained at or below 75°F (24°C) and relative humidity is maintained below 55%. Fogging and/or moisture may occur on the doors if merchandisers are operated outside these conditions.

Placing refrigerated merchandisers in direct sunlight, near hot tables or near other heat sources could impair their efficiency, which may cause the doors to fog. Refrigerated merchandisers 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.

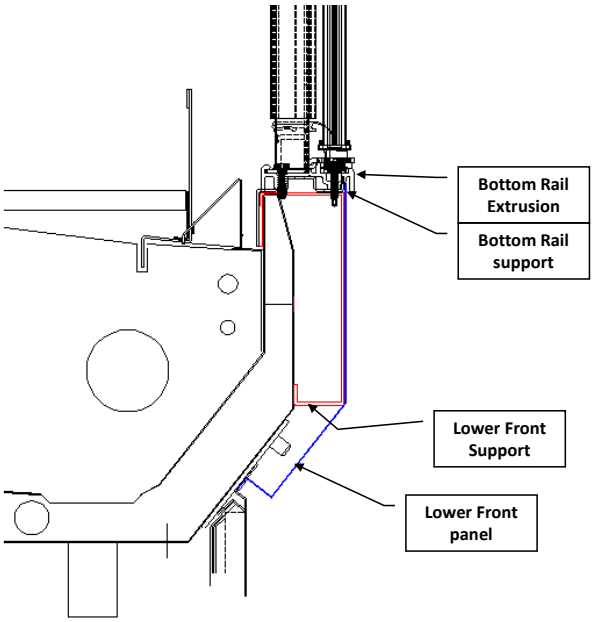
CASE LEVELING

Merchandisers must be installed level to ensure proper operation of the refrigeration system, and to ensure proper drainage of defrost water. Glass alignment is also affected with improper leveling of the merchandisers. All steps of setting, joining and case leveling attention to the glass position is critical. Do not attempt to make glass adjustments prior to case leveling.

Overview of Case Parts



Canopy Support



Bottom Parts

Prepare Merchandiser(s) for Doors:

1 **Carefully unpack EcoVision Door upgrade kit(s), and examine parts. Do not carry doors by the handle. Do not lean doors against objects, or leave them in customer trafficked areas.**

2 **Remove front color panels, canopy fascia, air grilles, deck pans, wire racks, plastic package guard, bumper and bumper retainer. The case should look like the photos at right before doors are added.**

A. Set these items aside some parts will be reinstalled after EcoVision doors are installed.

NOTE: Check for location of the serial plate before removing parts, so the serial plate is not ripped or torn.

The Case(s) are now ready to be outfitted with EcoVision Doors.

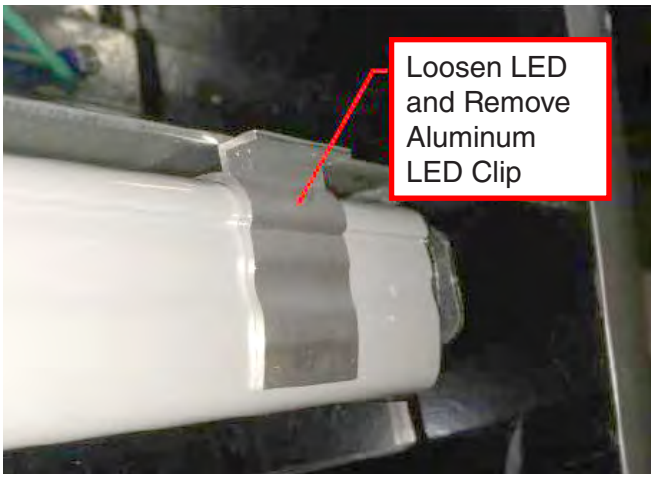
Refer to the door part identifications on the next pages to become familiar with field-installed case parts.

Connect Door Mullion LED Light Wiring

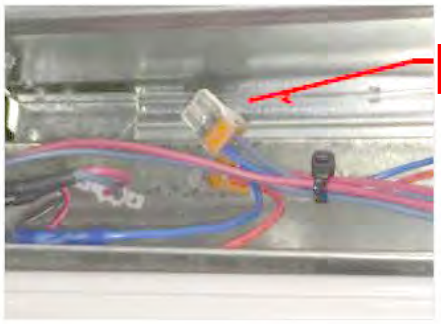
1 **Drill a 1/2” hole in the location shown in the photo below. Install bushing. Connect LED wire harness to LED power supply in the canopy.**

A. Remove stationary clip from LED.

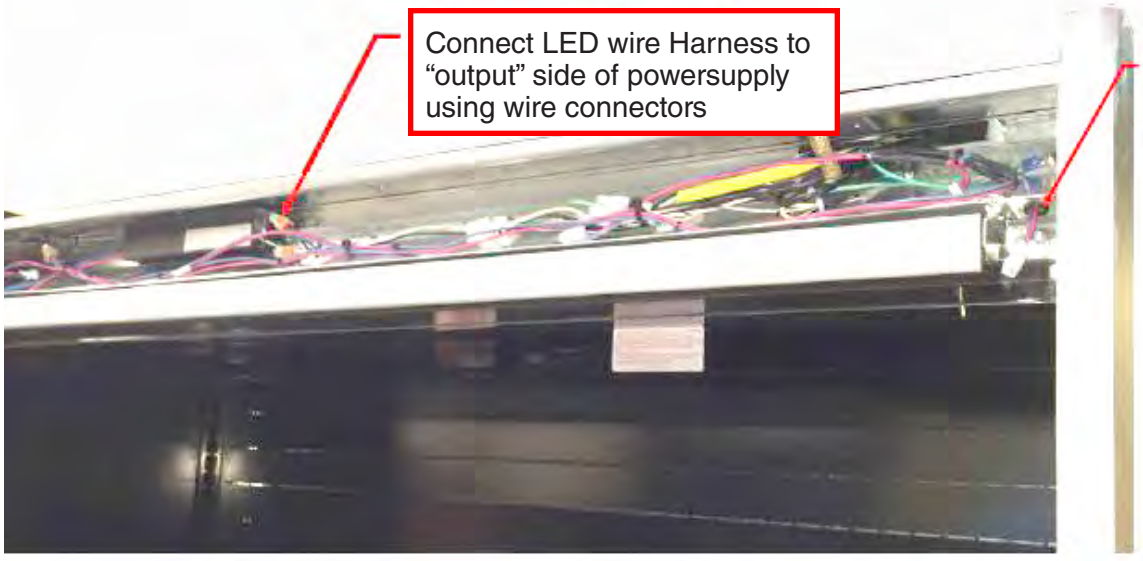
Cut tabs off terminal and run thru bushing



Loosen LED and Remove Aluminum LED Clip



Wire Connector



Connect LED wire Harness to “output” side of powersupply using wire connectors

Drill 1/2 inch hole in plate and install bushing

2 Install Canopy Support and Canopy Fascia

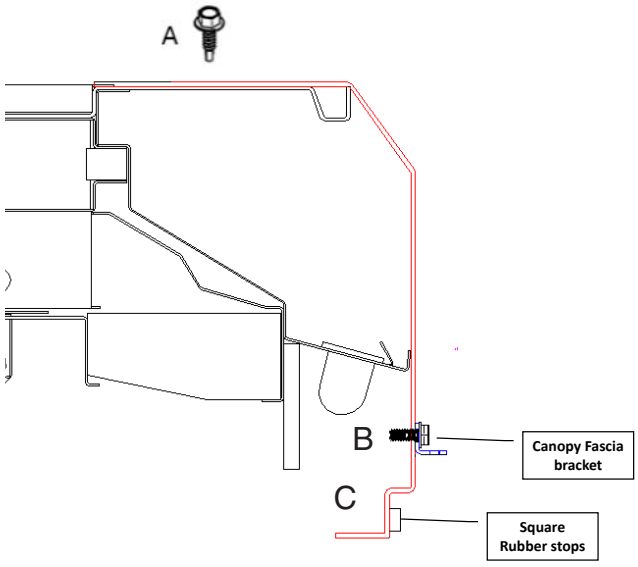
A. Attach Canopy Support to existing bracket using #10-16x3/4" TEK Hex Screw.

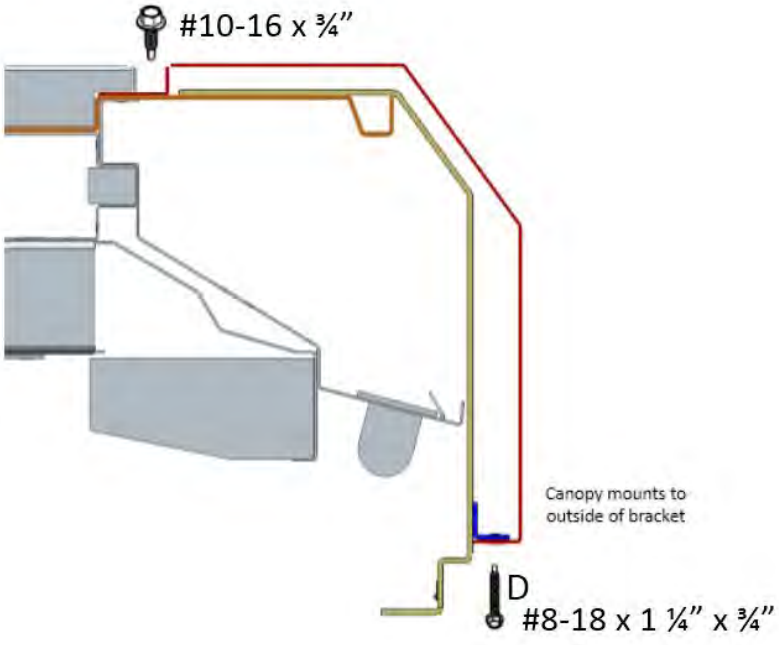
B. Attach Canopy Fascia Bracket to Canopy Support using #10-24 x 1/2" thread cutting screw.

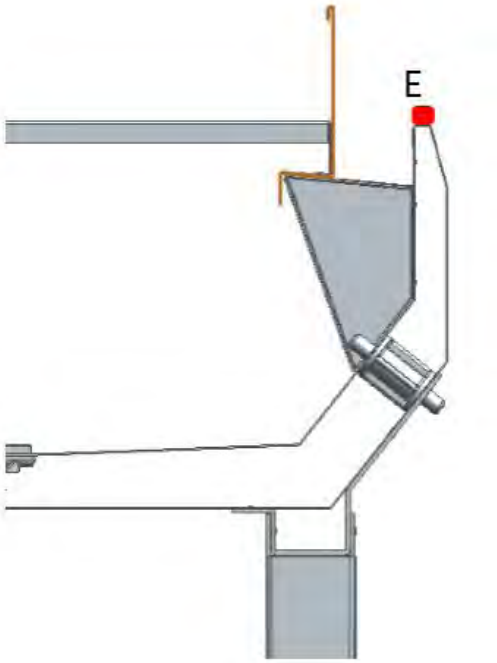
C. Attach two, 1/2" square bumpers to canopy support. Position over dimples on canopy support

D. Attach Canopy Fascia using #10-16 x 3/4 and #8-18x 11/4" hex washer head SS Black#2 BSD screw

E. Attach 1/2" gasket to full length of front







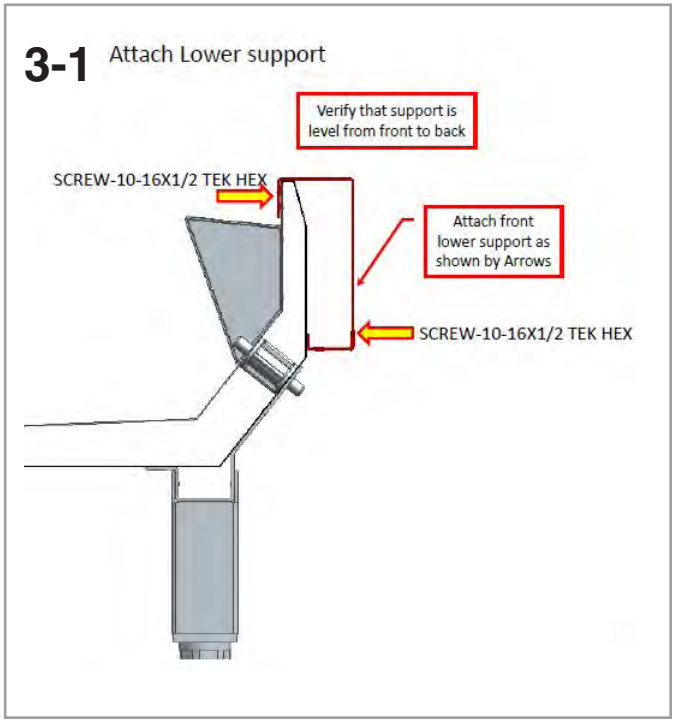
Install Lower Support, Front Color Panel, (position) Bottom Rail Support and Bottom Rail Extrusion

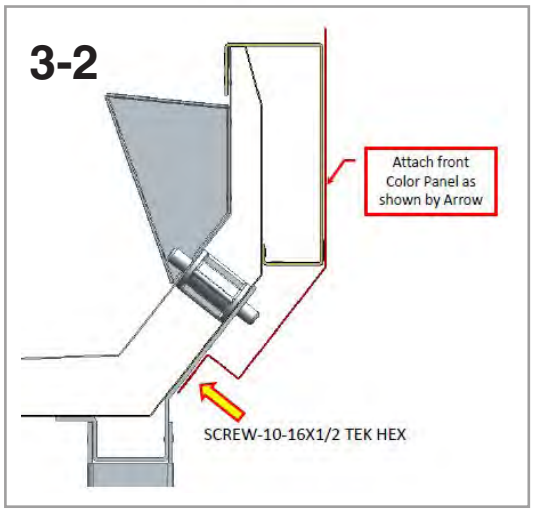
3 **Verify lower support is level and and attach it as shown in 3-1.**

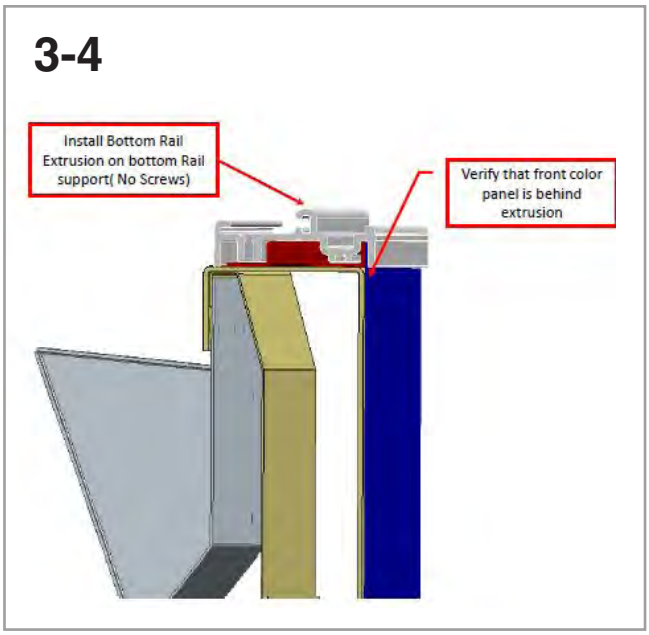
A. Attach Front Color Panel as shown in 3-2.

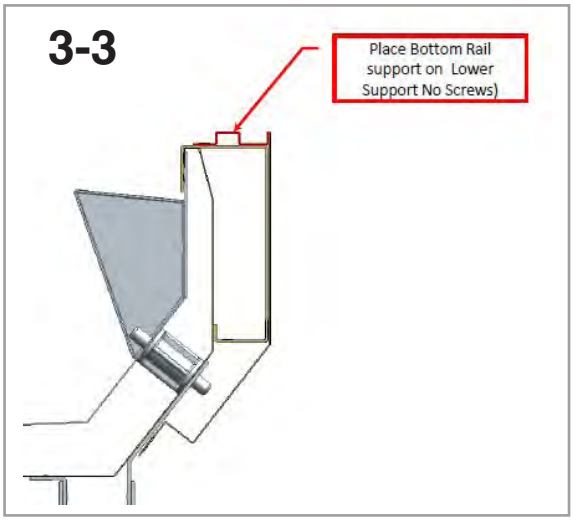
B. Position Bottom Rail Support in place as shown in 3-3.

C. Attach Bottom Rail Support as shown in 3-4.







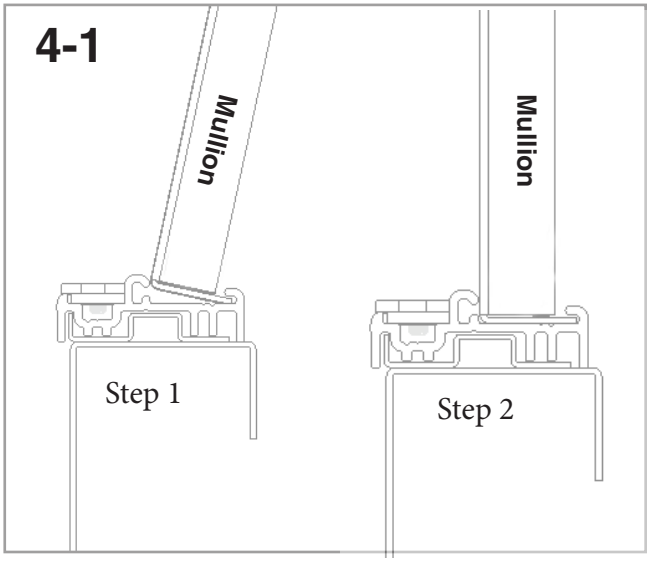


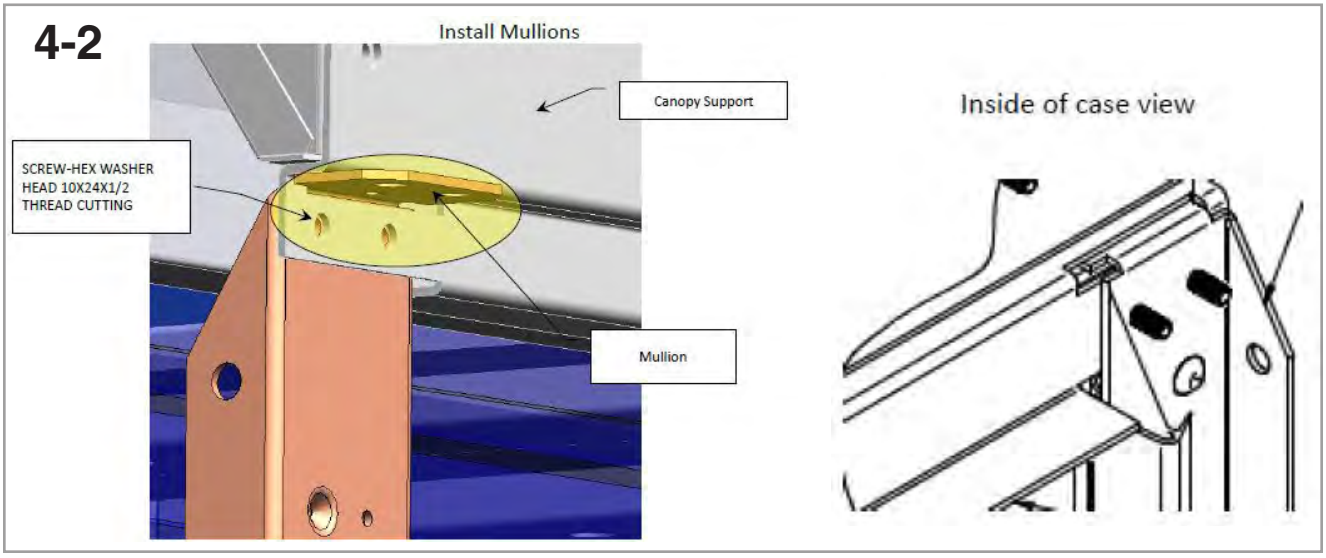
Install Mullions

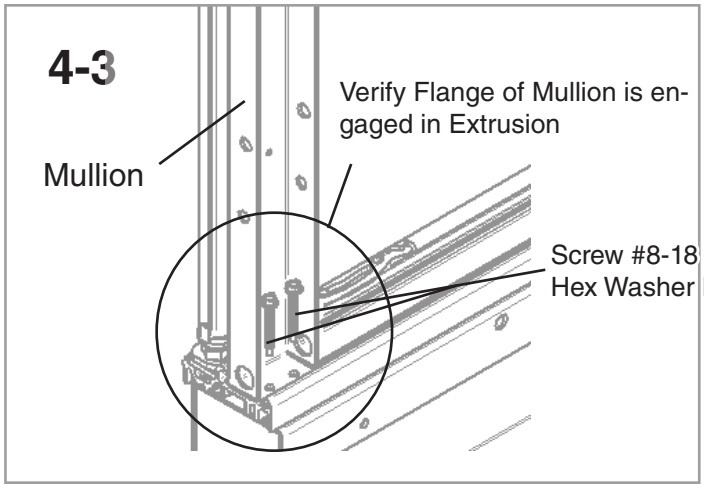
4 **(4-1) Angle bottom of mullion toward inside of case, and engage the flange in the extrusion (Step #1). Straighten mullion as in Step #2.**

A. Engage mullion flange into slot in canopy support 4.2 and slide toward the end of the case. Fasten with #10 thread cutter screw. Repeat for other mullion.

B. Fasten 8-18 x 1-1/4 Hex Washer Head screw at bottom of mullion as shown in 4-3.







NOTE: If mullions have LEDs, the mullion is marked LH, RH and C. The orientation is based on standing outside of the case and looking into it.

5 Insert **Wiper Retainers** into the bottom rail.

A. Install **front lip** (Fig. 5-1) of wiper retainer into plastic extrusion.

B. Squeeze wiper retainer at one end and work toward the other end until fully inserted as shown in Step 2.

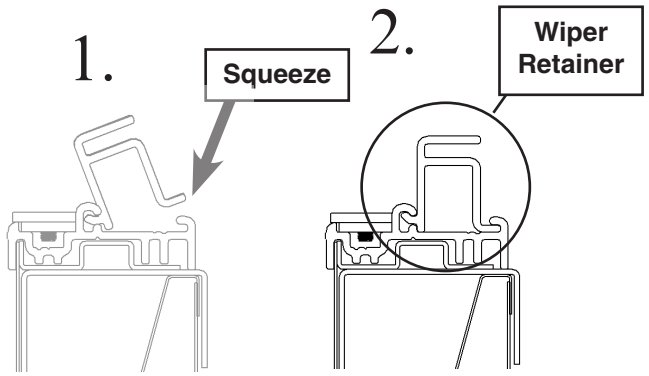
6 Attach **Frame Gasket** and **Door Wipers** around the door frame.

A. Attach bottom frame gasket to retainer as shown in 6-1(1). Start at back and angle gasket.

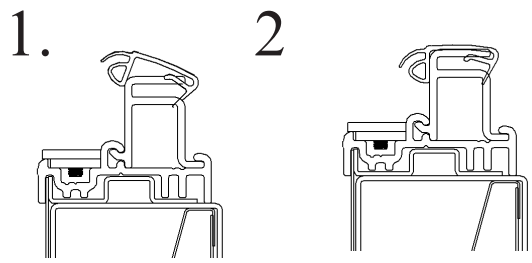
B. Push down on front side of gasket to seat on retainer as shown in 6-1(2). No wiper is required at top opening of door — 3 gaskets per door opening.

C. Install door wipers on mullions as shown in 6-2 & 6-3.

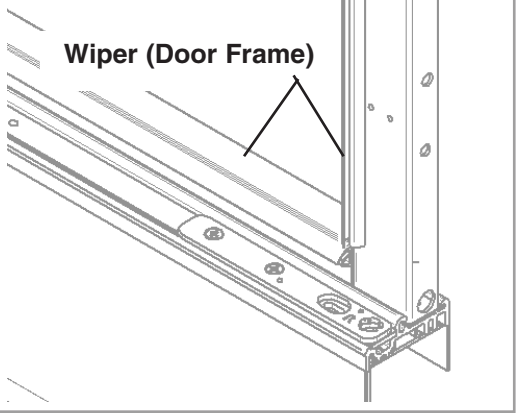
5-1



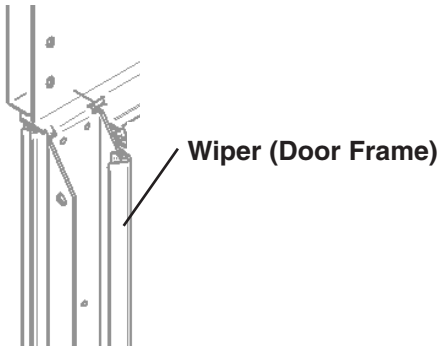
6-1



6-2

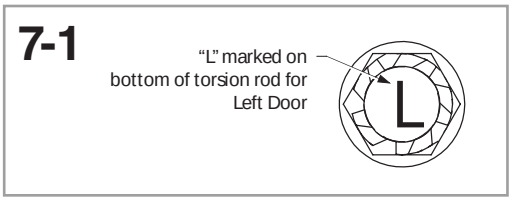


6-3

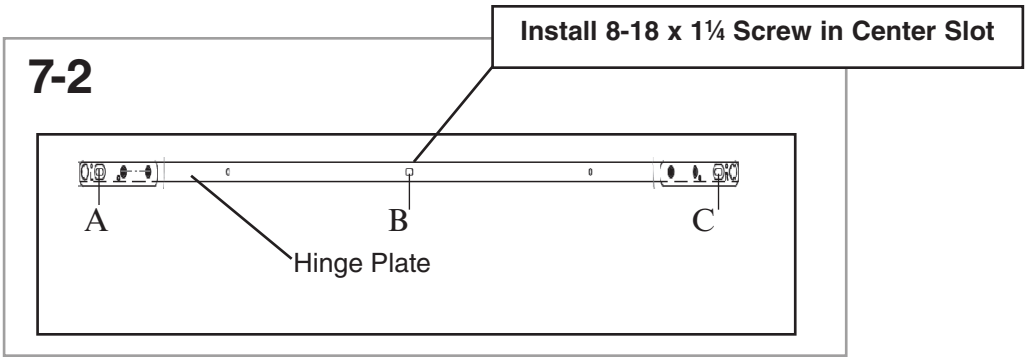


7 Hinge Plates are marked (L)eft and (R)ight at each end. Place Hinge Plate onto bottom of extrusion (7-3) Install one (8-18x1¼ screw) into center of slot of Hinge Plate as shown in 7-2. Screw should be loosely tightened to allow for adjusting Stair Stepping in Doors later.

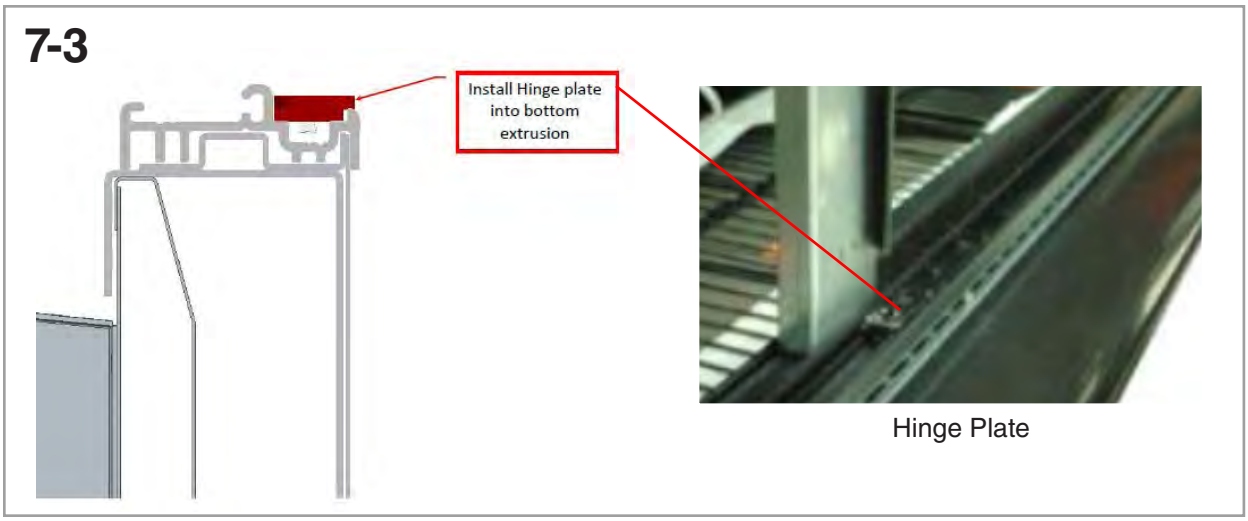
7-1



7-2



7-3



8 Install EcoVision Door.

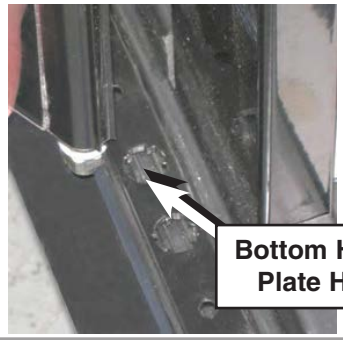
A. Place bottom of door into hinge plate assembly 8-1, and rotate door to seat it completely. Depress push pin on top of door and engage it into the hole in the mullion 8-2. Always hold door with both hands.

B. Install remaining doors. Doors will be adjusted in the next Step.

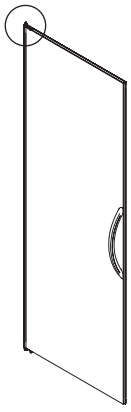
⚠ CAUTION

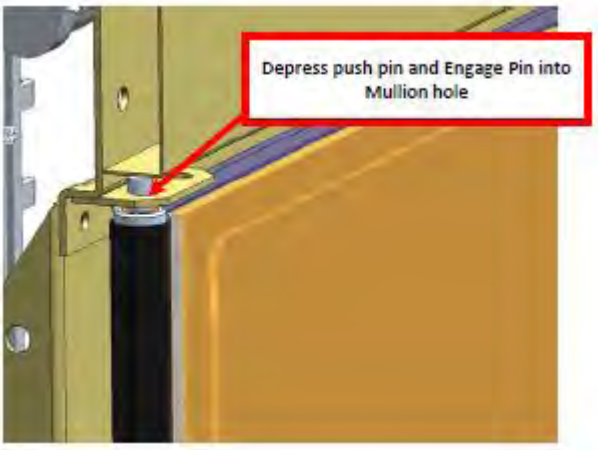
Do not carry doors by handle. Personal injury and damage to the doors may result.

8-1



8-2





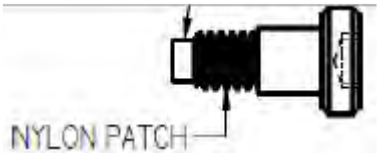
9 Increase / Decrease Door Tension

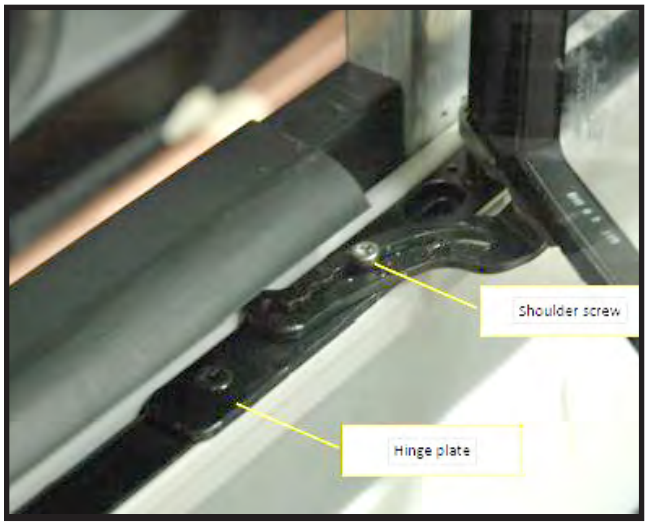
A. Check that each EcoVision door opens and closes properly. The door's closing speed may be adjusted by rotating the adjustable tension rods near the hinge of each door.

B. Use a ½ inch wrench to adjust torsion rod. To increase tension, turn wrench toward the door handle until torsion rod seats in bottom hinge plage assembly. An audible "click" is heard while adjusting. Generally, the torsion rod should be adjusted to 4 or 5 clicks. The maximum amount of clicks is 6. Do not over-torque.

C. Do not over-torque the hinge spring assembly. Lift door up and out of bottom hinge plate to remove door tension. Do not use wrench to decrease door tension as this may damage the star pattern on the bottom hinge plate assembly.

10 Attach the hold open Cam.





A. Attach the hold open cam to the hinge plate using the Shoulder Bolt. Align the slot in the cam over the threads of the hinge plate and install the shoulder bolt through the cam. Never pry the cam open to install. This permently damage the cam.

10a Door Hold Open

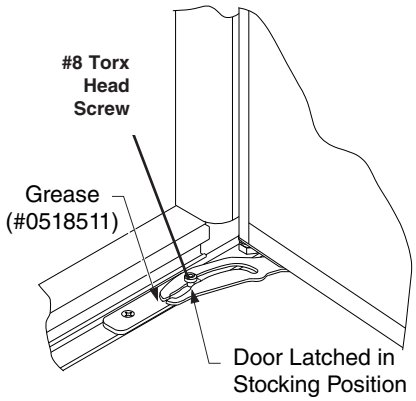
EcoVision doors have a door hold open latch that allows the doors to remain in an open position. This feature is especially useful for stocking the merchandiser with product or cleaning the merchandiser's interior.

Hold open is factory installed on the door. Once door is installed in the bottom hinge plate, fasten #8 torx head screw as shown in 10-1.

The door hold open is located on each door, near the bottom of the door. The hold open latch comes pre-greased from the factory. Verify grease is in the shaded area inside and around the groove in the cam as shown in 10-2. Open door until hold open engages and locks into position. A clicking sound will be heard. To close door push it until it disengages.

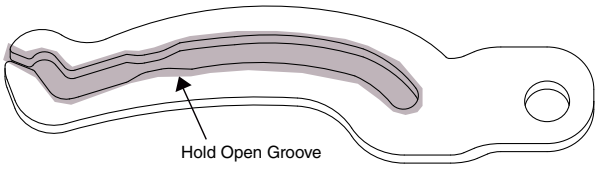
DO NOT pry open Cam to pass shoulder screw onto Cam. This will permanetely damage the cam. Screw must be insert into Cam Slot, and then torqued down.

10-1



Cam slot is positioned over the screw hole then the Torx screw is attached.

10-2



11 Adjusting EcoVision Doors.

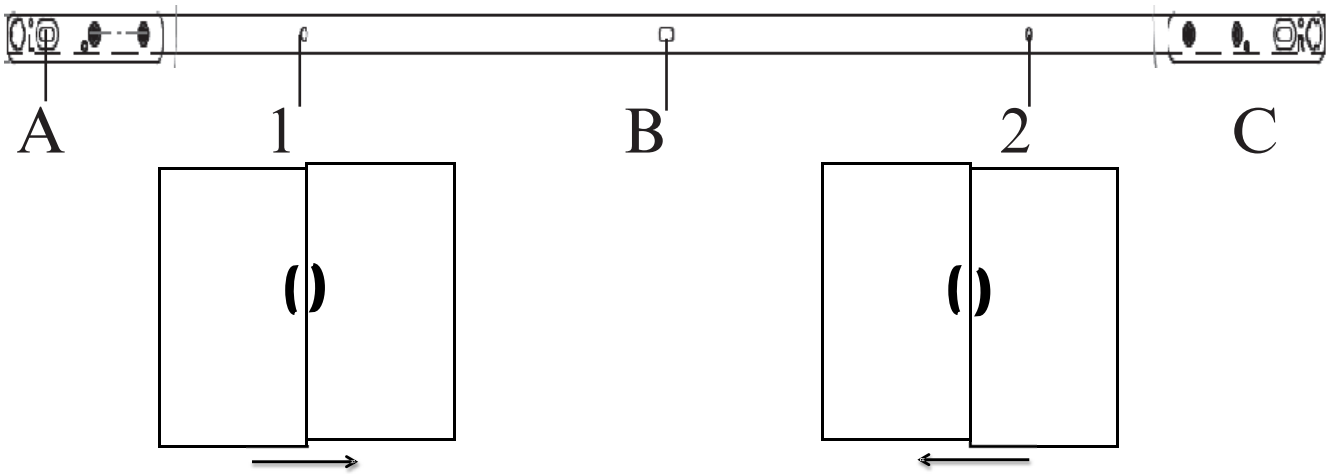
A. Leveling — Merchandisers must be installed level to ensure proper operation of the refrigeration system, and to ensure proper drainage of defrost water.

Glass alignment is also affected with improper leveling of the merchandisers. All steps of settting, joining and case leveling is critical. Attention to the glass position is also critical. Do not attempt to make glass adjustments prior to case leveling.

B. Door Adjustment — Loosen the screws A, B and C as shown below (Do not remove the screws completely).

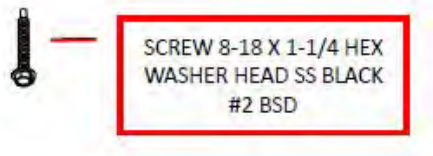
Slide the bottom plate left **or** right until proper alignment is achieved. Retighten the screws A, B and C. Install fasteners in locations 1 and 2 as shown below.

EcoVision Door Alignment - Modular Bottom Hinge Plate



To Correct Shift the Bottom Plate to the Right

To Correct Shift the Bottom Plate to the Left



When doors are level, install remaining screws in hinge plate. Total of 5 screws in each hinge plate.

12 Start up / Stocking

Refer to the merchandiser's Technical Data Sheet for 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.

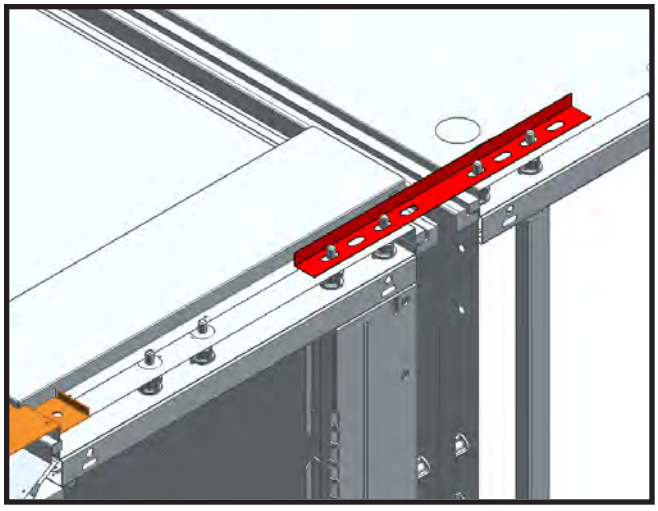
AIR DISCHARGE AND RETURN FLUES MUST REMAIN OPEN AND FREE OF OBSTRUCTION AT ALL TIMES TO PROVIDE PROPER REFRIGERATION AND AIR CURTAIN PERFORMANCE.

13 For back-to-back cases, install case-to-case bracket

A. Remove nuts from canopy. Install bracket and reinstall nuts and reseal.

⚠ CAUTION

Case Tipping may occur if cases are not properly leveled and secured, or if cases are not properly loaded.



14 Apply Sealer to inside of case where mullions meet the end panels. Apply a bead the full length of the mullion.

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.

Oil Return, case performance and product temperature could be negatively impacted without proper evaluation by a Hussmann Application Engineer or qualified professional.

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. 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 percnet, 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.

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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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