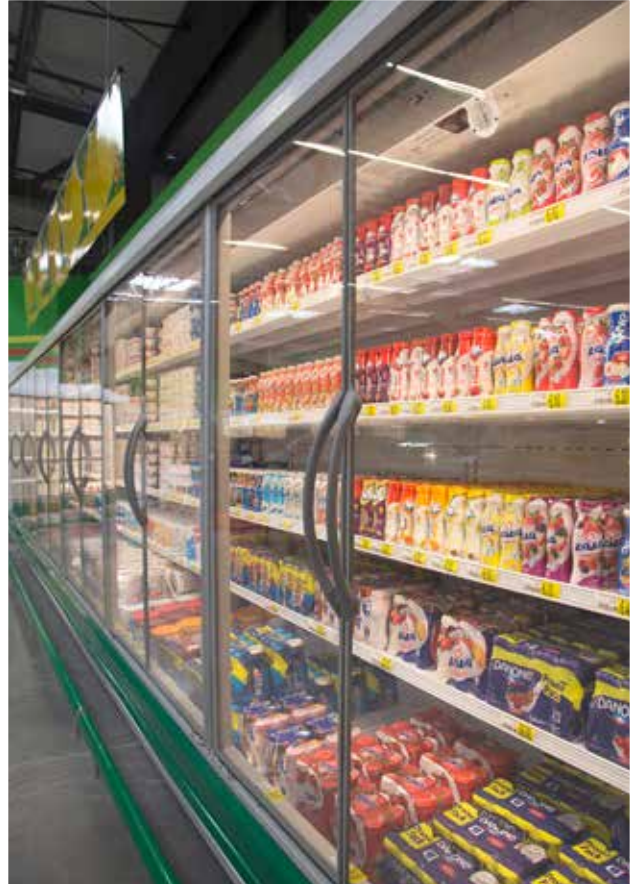


EcoVision Door Upgrade for Insight Medium Temperature Merchandisers



Installation & Operation Manual

P/N 0558873_A

January 2016

English 0558873_A
Spanish 0558874_A

IMPORTANT

**Keep in store for future
reference!**

MANUAL- KIT INSTALLATION ECOVISION INSIGHT



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.

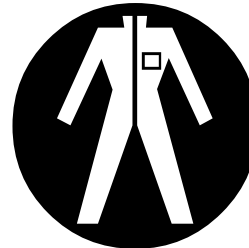
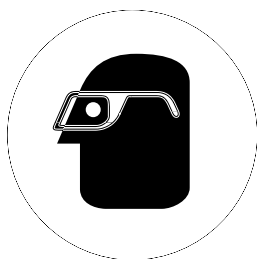


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REVISION HISTORY

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

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.



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.



CAUTION

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



WARNING

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

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.

Prepare Merchandiser(s) for Doors:

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

2 Remove front Bumper, Display Pans, Wire Racks, Return Air Grille and Rail Extrusion

A. Set these items aside. Parts will be reinstalled after EcoVision doors are installed. Rail will be discarded and replaced with new rail extrusion.

NOTE: Check for location of the serial plate before removing top rail.

B. Temporarily remove light channel bracket for canopy door support installation.

Replace Hand Rail
with Bottom Door Rail

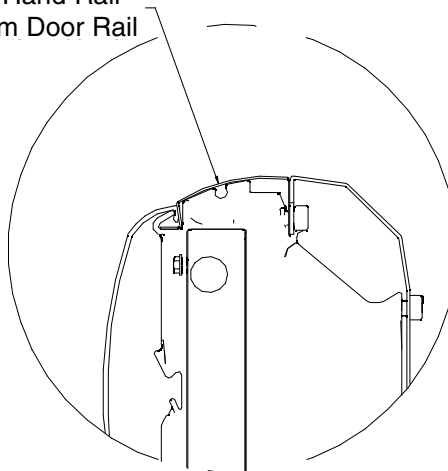


Figure 2-1 — Remove Hand Rail

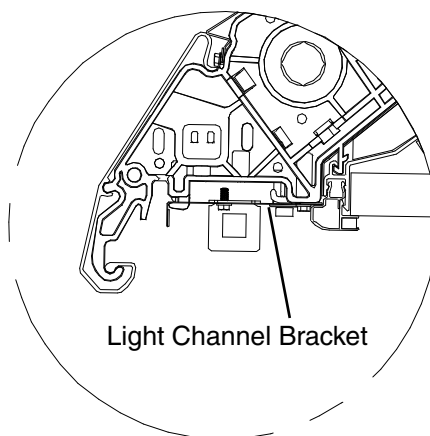
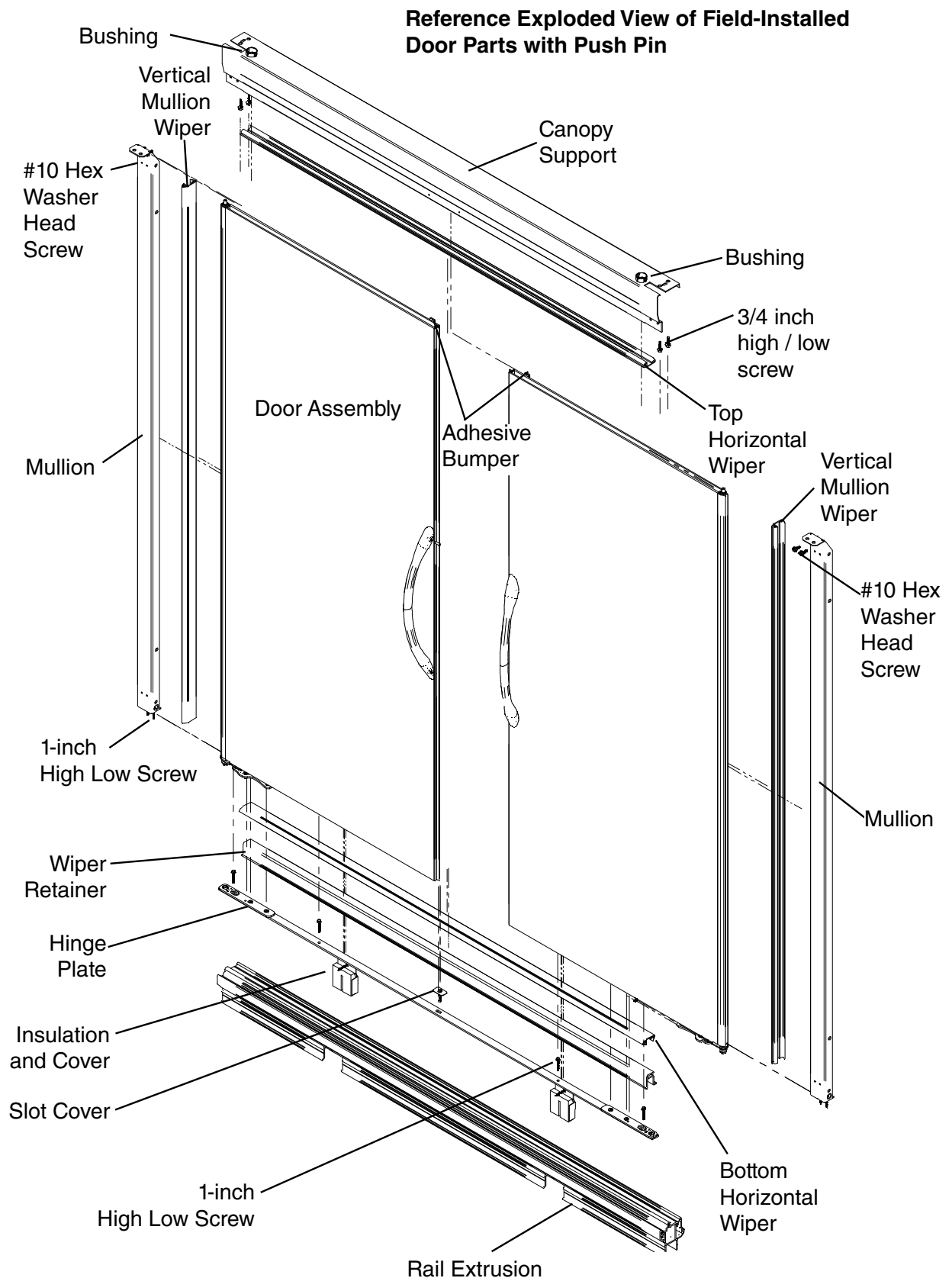
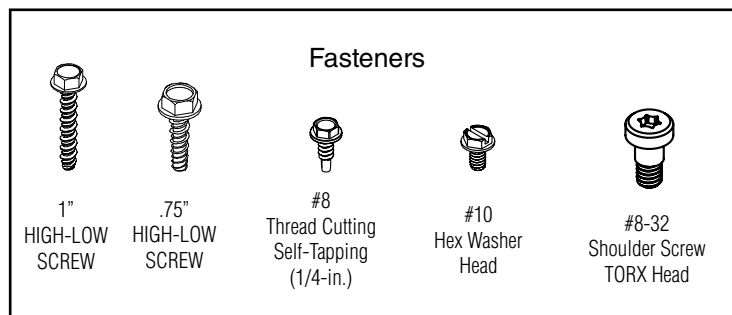


Figure 2-2 — Remove Light Channel

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

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





3 Install New Door Rail Assembly to Case.

A. Space bottom door rail assembly evenly from each end of the case. Fasten bottom door rail assembly to case with #8 screws as shown in Figure 3-1.

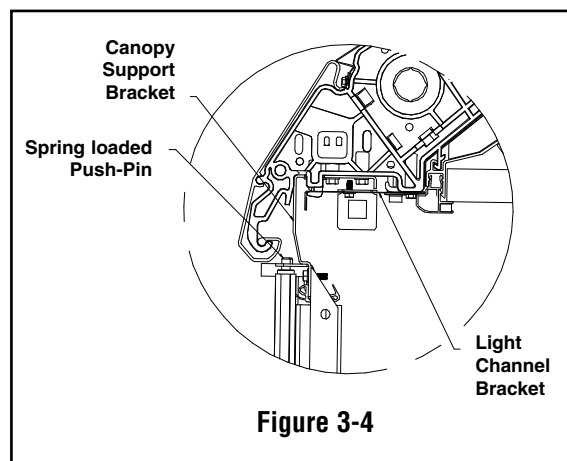
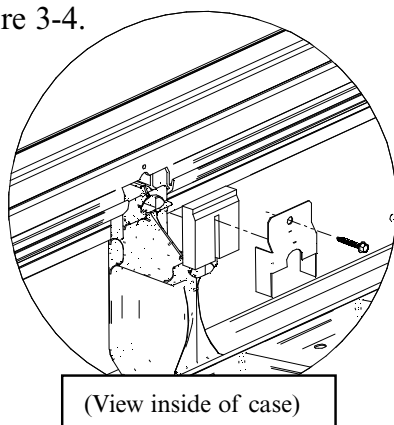
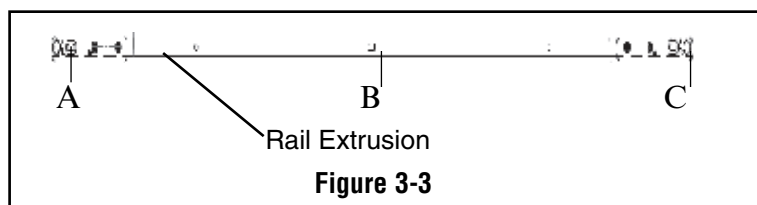
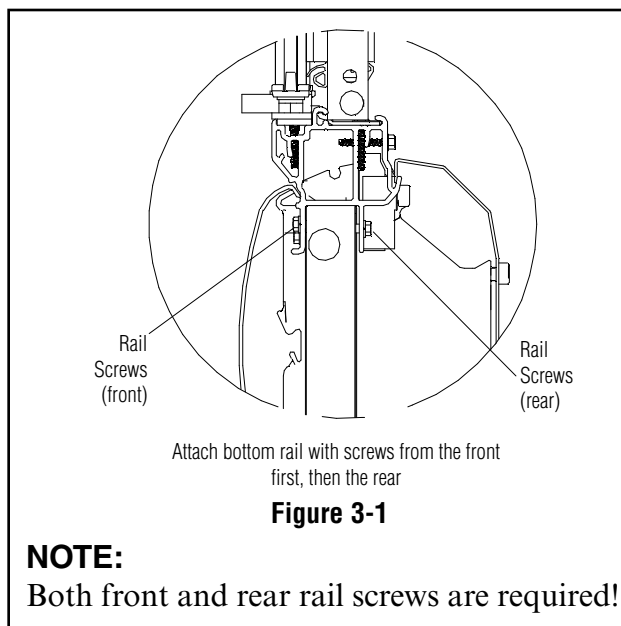
NOTE: These screws will be covered when the lower front panel and bumper is replaced.

B. Insert foam insulation and foam covers. Attach with 1" high-low screws - Figure 3-2.

C. Place rail plate on top of rail extrusion. Attach 1" high-low screws in positions A, B and C as shown in Figure 3-3.

D. Install canopy support bracket using .75" high low screws.

E. Reinstall light channel bracket as shown in Figure 3-4.



4 Fasten Mullions.

The mullions may contain factory installed LEDs. These are marked as LH & RH for left and right as standing in front of the case.

A. Slide bottom back side of mullions into bottom rail (1.). Tilt top of mullion toward inside of case to engage bottom lip of mullion into extrusion (2.), see Fig. 4-1. Level mullions before attaching to bottom rail. Fasten top of mullion to canopy support as shown in Fig. 4-2 with #10 screws.

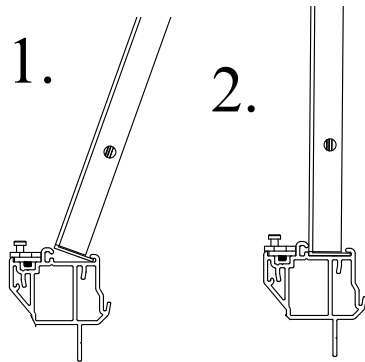


Figure 4-1

NOTE: Only blunt-tip screws may be used.
Only one screw is required on end mullions.

B. Fasten 1" **high-low screws** at bottom rear of mullions as shown in Figure 4-3.

NOTE: Mullions may be used on the left, or the right side of merchandiser.

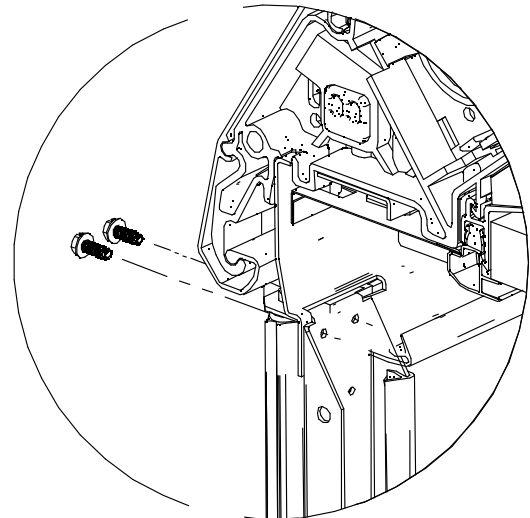


Figure 4-2

Fasten door Mullion with
High-Low Screws

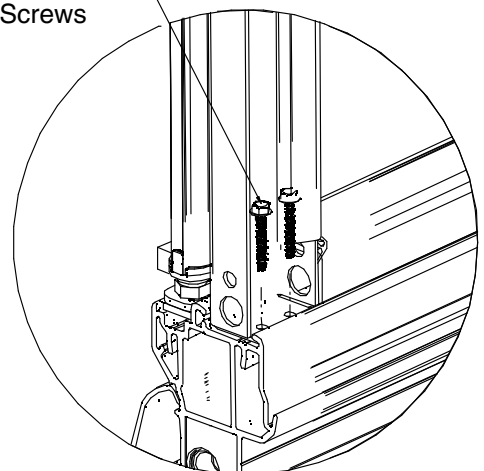


Figure 4-3

5 Install EcoVision Center Mullions.

A. Slide bottom back side of center mullions into bottom rail as shown in Fig. 5-1, similar to mullions.

B. Angle top of mullion toward inside of case, and engage bottom of mullion into the bottom rail extrusion. The mullion should be centered between the torsion rod holes as shown in Fig. 5-2 and Fig. 5-3. Level mullions before attaching to bottom rail.

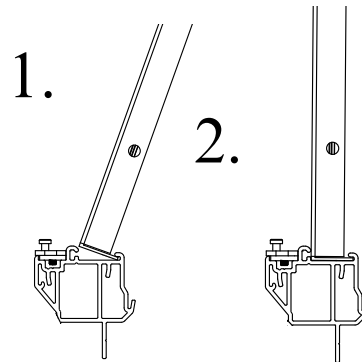
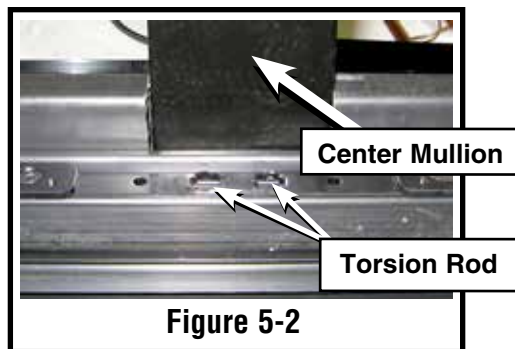


Figure 5-1

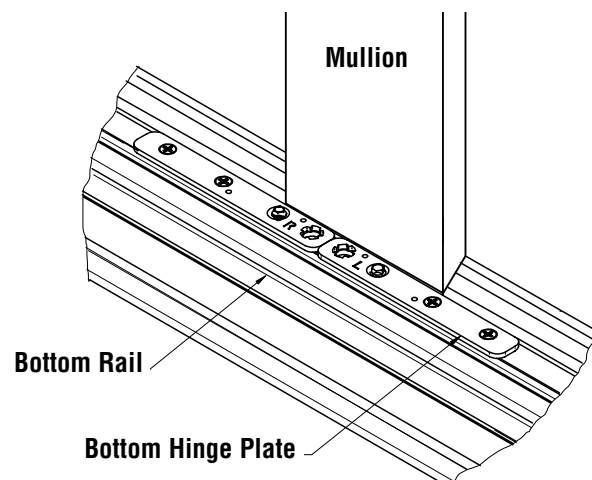


Figure 5-3

6 Insert Wiper Retainers into the bottom rail.

A. Install **front lip** (Fig. 6-1) of wiper retainer into plastic extrusion.

B. Squeeze wall of wiper retainer until it seats in the extrusion.

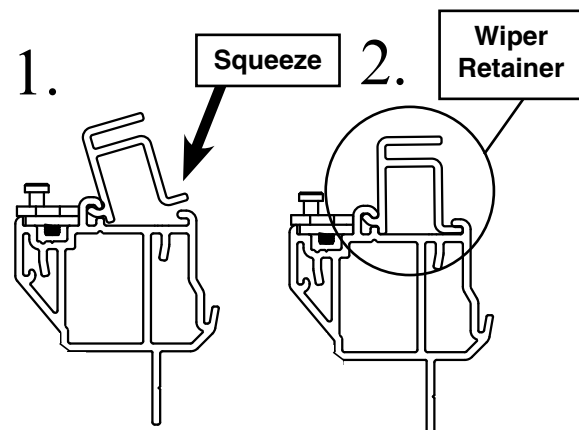


Figure 6-1

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

A. Attach bottom frame gasket to retainer as shown in Fig. 7-1. Start at back and angle gasket.

B. Push down on front side of gasket to seat on retainer as shown in Fig. 7-2.

C. Install door wipers on mullions and canopy support as shown in Fig. 7-3 & 7-4.

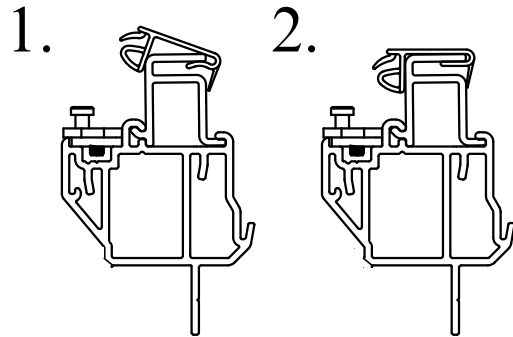


Figure 7-1

Figure 7-2

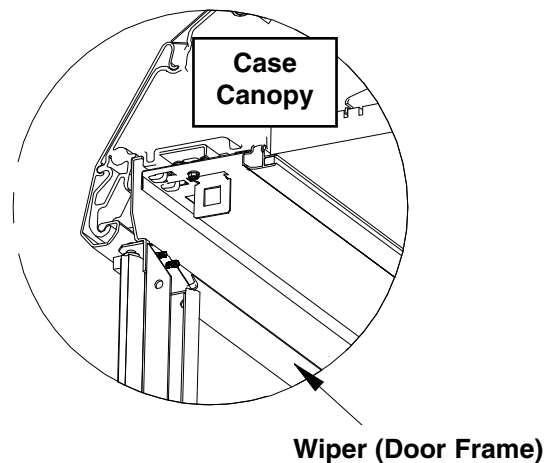


Figure 7-3

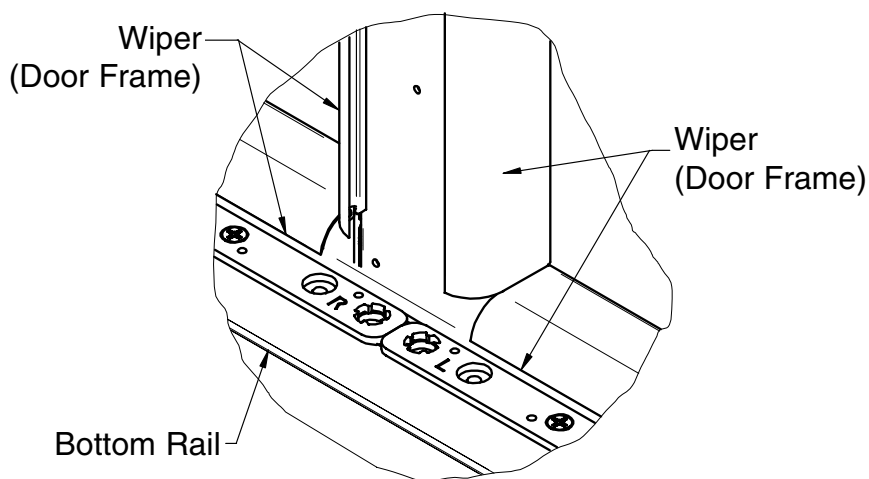


Figure 7-4

8 Install EcoVision Door(s). Adjust closing tension on each door as it is installed as shown in Step 9

Install the doors closest to Contour/
Rectangular ends first (Door 1 & 6). See Fig.
8-1.

B. Raise door up and position torsion rod at the bottom of the door into bottom hinge plate hole as shown in Fig. 8-3. Lean door back, and push pin into mullion.

C. 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.

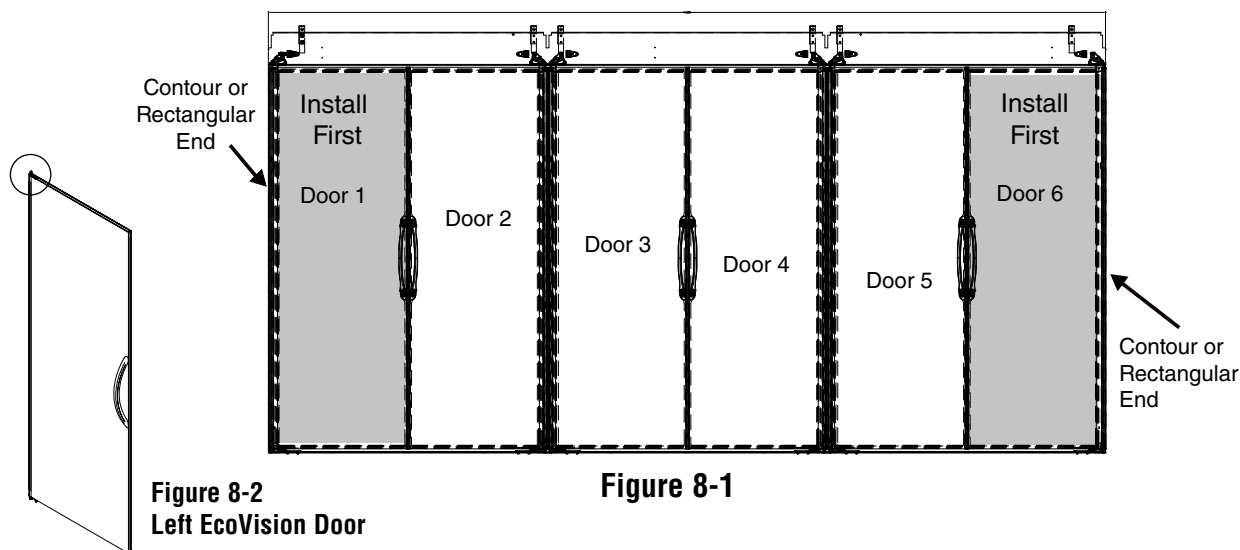
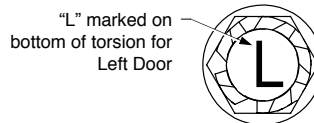
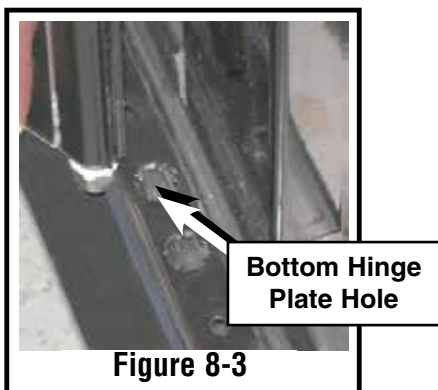


Figure 8-2
Left EcoVision Door



9 Adjusting EcoVision Doors.

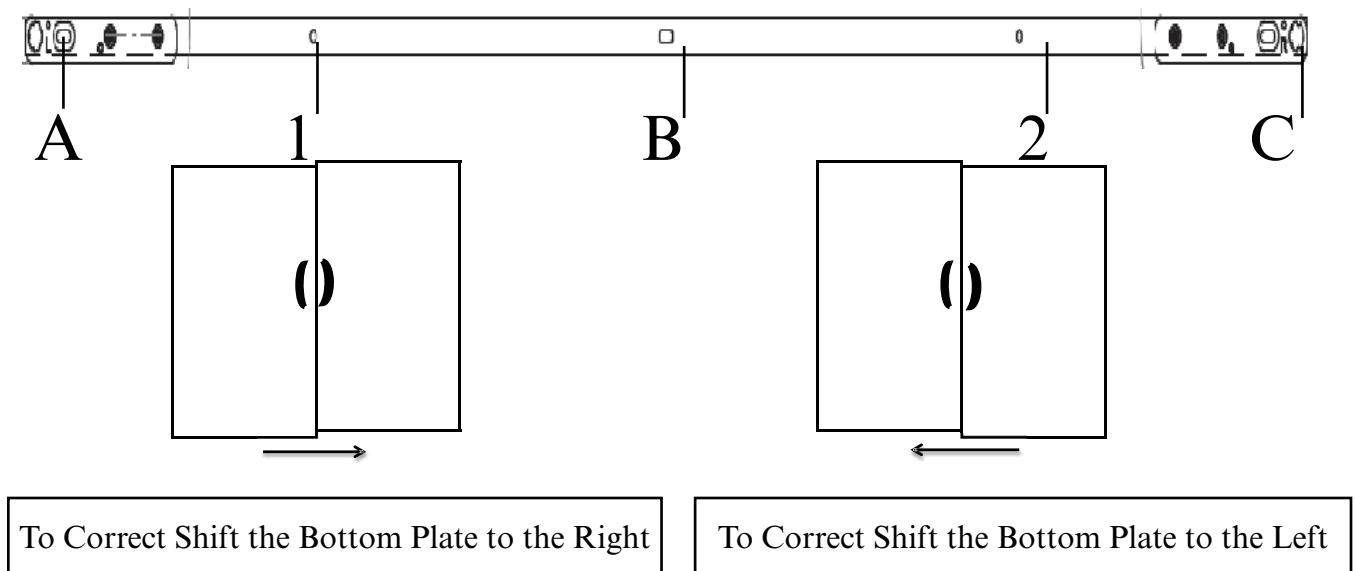
A. Leveling — Merchandisers must be installed level to ensure proper operation of the refrigeration system, and to ensure proper drainage of defrost water.

Glass alignment is also affected with improper leveling of the merchandisers. All steps of setting, 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 and 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



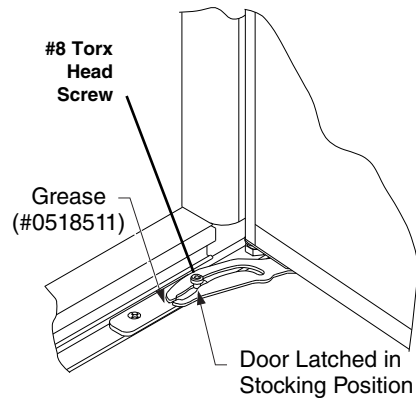
10 Door Hold Open

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 Figure 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 Fig. 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 permanently damage the Cam. Screw must be insert into Cam, and then torqued down.



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

Figure 10-1

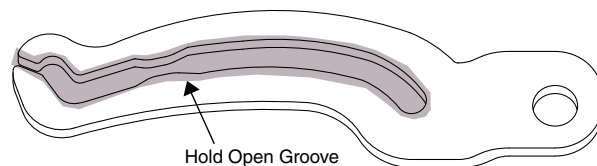


Figure 10-2

11 Replace bumpers, deck pans and wire racks, and return air grille.

12 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 tension rod. To increase tension, turn wrench toward the door handle until tension rod seats in bottom hinge plate assembly. An audible “click” is heard while adjusting. Generally, the tension rod should be adjusted to 4 or 5 clicks. The maximum amount of clicks is 6. Do not over-torque. See next step if the wrench can not be put on the tension rod because of interference with the contour / rectangular end.

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.

13 Adjusting Door Tension Rods —

(2 operators required, one to hold door, the other adjusts tension). Occasionally, the “ends” may interfere with making adjustments to the tension rods.

A. Remove screws from plate assembly bottom hinge. Slide the bottom of the door and the hinge assembly away from the contour / rectangular end so that the wrench will fit on the tension rod. Adjust the tension rod to the desired tension. Move door back to original position and reinsert screw into plate assembly bottom hinge. See Fig. 13-1.

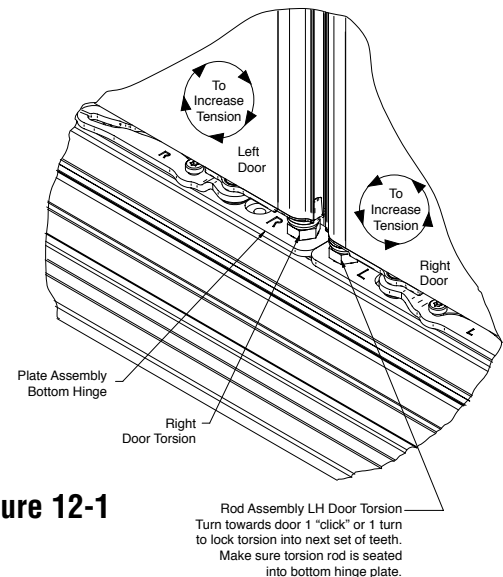


Figure 12-1

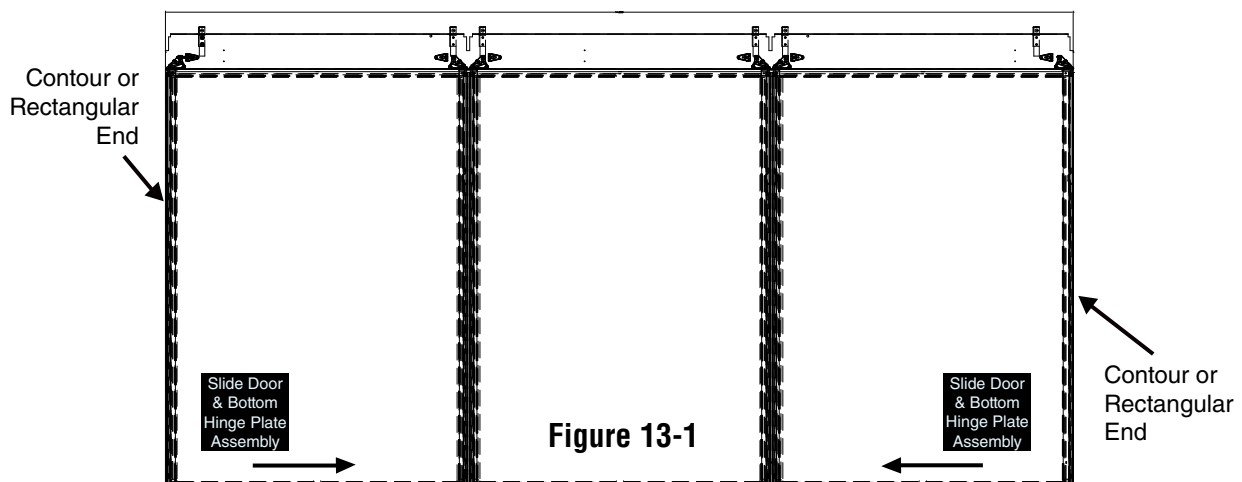


Figure 13-1

14 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.



CAUTION

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

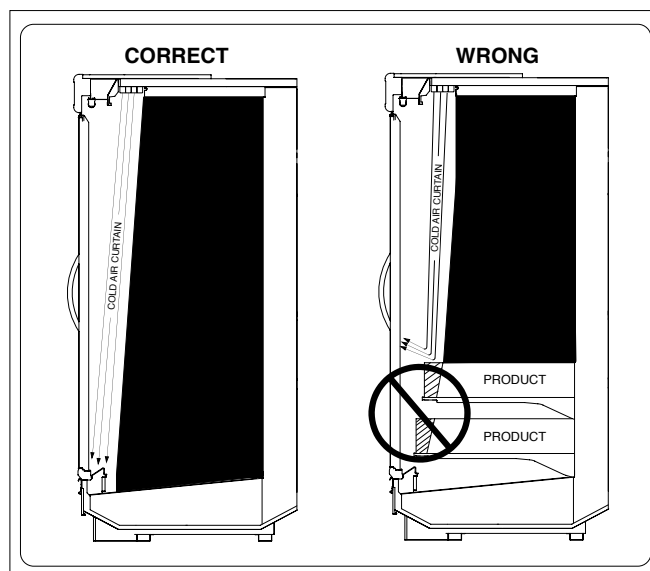


Figure 21-1 — Product Stocking Limits

Weight Limits for Merchandiser Shelving

Nominal Shelf Depth	Maximum Load Limit
12 in. (305 mm)	125 lb (56.7 kg)
14 in. (357 mm)	125 lb (56.7 kg)
16 in. (406 mm)	200 lb (90.7 kg)
18 in. (457 mm)	200 lb (90.7 kg)
20 in. (508 mm)	250 lb (113.4 kg)
22 in. (559 mm)	250 lb (113.4 kg)
24 in. (610 mm)	250 lb (113.4 kg)
Heavy Duty Beverage Shelf 16 in. (406 mm)	300 lb (136 kg)
Heavy Duty Beverage Shelf 18 in. (457 mm)	320 lb (145.1 kg)
Heavy Duty Beverage Shelf 20 in. (508 mm)	350 lb (158.8 kg)
Heavy Duty Beverage Shelf 22 in. (559 mm)	350 lb (158.8 kg)
Heavy Duty Beverage Shelf 24 in. (610 mm)	350 lb (158.8 kg)

*Shelf load limits at 0° tilt

Merchandiser Shelf Depths	Recommended	Maximum
Narrow (37 in.) Merchandiser Depths	16 in. (406 mm)	18 in. (457 mm)
Standard (42 in.) Merchandiser Depths	22 in. (559 mm)	24 in. (610 mm)

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% 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%, 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%, 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% 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.**

Hussmann Corporation, Corporate Headquarters: Bridgeton, Missouri, U.S.A. 63044-2483 01 October 2012