HUSSMANN®

EcoVision II Door Upgrade

for Excel Medium Temperature Merchandisers

Installation & Operation Manual

IMPORTANT

Keep in store for future reference!

P/N 0515528_H

Excel Series

October 2020

MANUAL- EXCEL ECOVISION IO

Spanish P/N 0527293

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.

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

12999 St. Charles Rock Road • Bridgeton, MO 63044-2483
U.S. & Canada 1-800-922-1919 • Mexico 01-800-890-2900
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REVISION HISTORY

REVISION H
1. Added California Warning and Gasket Step 14

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

⚠ CAUTION

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

* *

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.

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

SHIPPING DAMAGE

All equipment should be thoroughly examined for shipping damage before and during unloading.

This equipment has been carefully inspected at our factory. Any claim for loss or damage must be made to the carrier. The carrier will provide any necessary inspection reports and/or claim forms.

GENERAL

Verify the merchandiser model(s) to be outfitted with the door kit(s) by locating the merchandiser's serial plate. The serial plate is located on the inside of the foam bottom at the left side of the merchandiser.

The EcoVision upgrade kit may be applied to the following Hussmann merchandiser models as of the date this manual was written:

D6XULEP
D6XURLE

D6NXLE
D6NXLEP

C6XE
C6XEP

C6XLE
C6XLEP
C6XLRE

D5XLE
D5XLEP
D5XLRE
C5XLE
C5XLEP

D5XULEP
D5XURLE

D5NXE
D5NXEP

D5NXLE
D5NXLEP
C5NXLE

D5XHE
D5XHEP

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

NOTE

Narrow Excel cases require additional brackets when outfitting with doors. See Page 6 for bracket installation details.

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

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

LOCATION

EcoVision II 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 settting, 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 II Door upgrade kit(s), and examine parts. Do not carry doors by the handle.**

2 **Remove Canopy Fascia(s) from the merchandiser(s).**

To remove canopy fascia panel:

A. Remove the screws above the canopy fascia. Canopy screws are located on top of the merchandiser at each end of the canopy fascia.

B. Unhook the canopy fascia panel by lifting out from the center at the bottom as shown in Fig. 2-1 & 2-2.

Figure 2-1 — Unhook Canopy Fascia (Contour Canopy Shown)

C. Set the canopy fascia aside. Canopy fascia will be replaced after EcoVision II Plus doors are installed.

Figure 2-2 — Remove Canopy Fascia

D. Remove the forward 9/16 in. nuts from top of canopy and set aside. Nuts will be replaced later in the instruction.

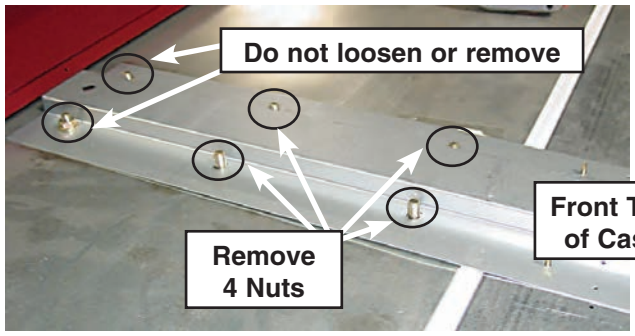


Figure 2-3 — Remove Canopy Fascia

WARNING

Be sure not to remove all the fasteners in the canopy. If all fasteners are removed, the canopy will become unstable and may fall, causing serious personal injury.

3 Remove front Bumper as shown in Fig. 3-1.

A. Set bumper aside. Bumper will be reinstalled after EcoVision II Plus doors are installed.

WARNING

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

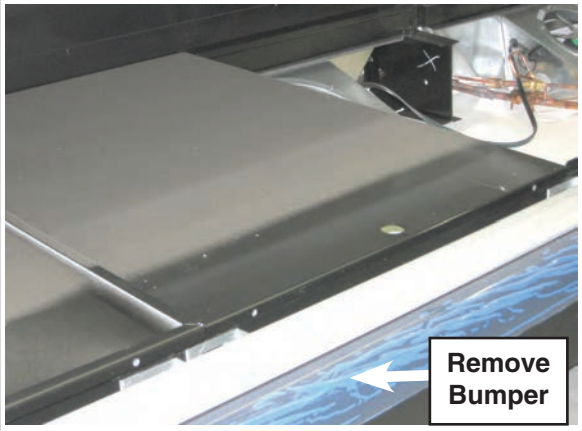


Figure 3-1 — Remove Bumper

4 **Remove 1/4 in. screws from the front of the Rail Extrusion. Remove Front Color Panel and set aside. It will be reinstalled later.**

NOTE: Check for location of the serial plate before removing top rail. **DO NOT DAMAGE THE SERIAL PLATE WHEN REMOVING TOP RAIL.** Most cases do not require the removal of the deck pans or product from the bottom shelf, because the rail extrusion can be removed.

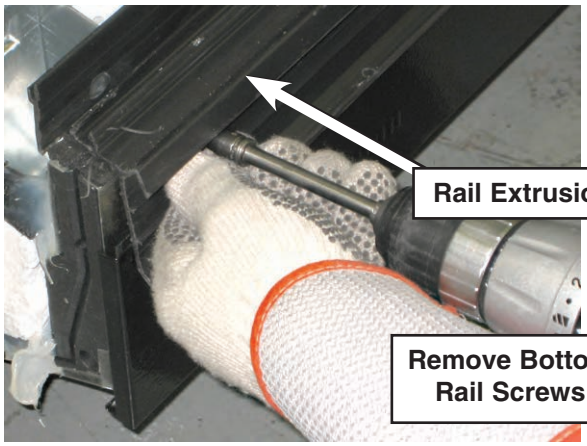


Figure 4-1 — Remove Screws

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

Refer to the door part identifications on the next page to become familiar with the standard case parts.

Parts are subject to change. Contact Performance Parts for questions or to order replacement parts: https://parts.hussmann.com/

Screw
(¼ × ¾ in.
Thread Cutting)

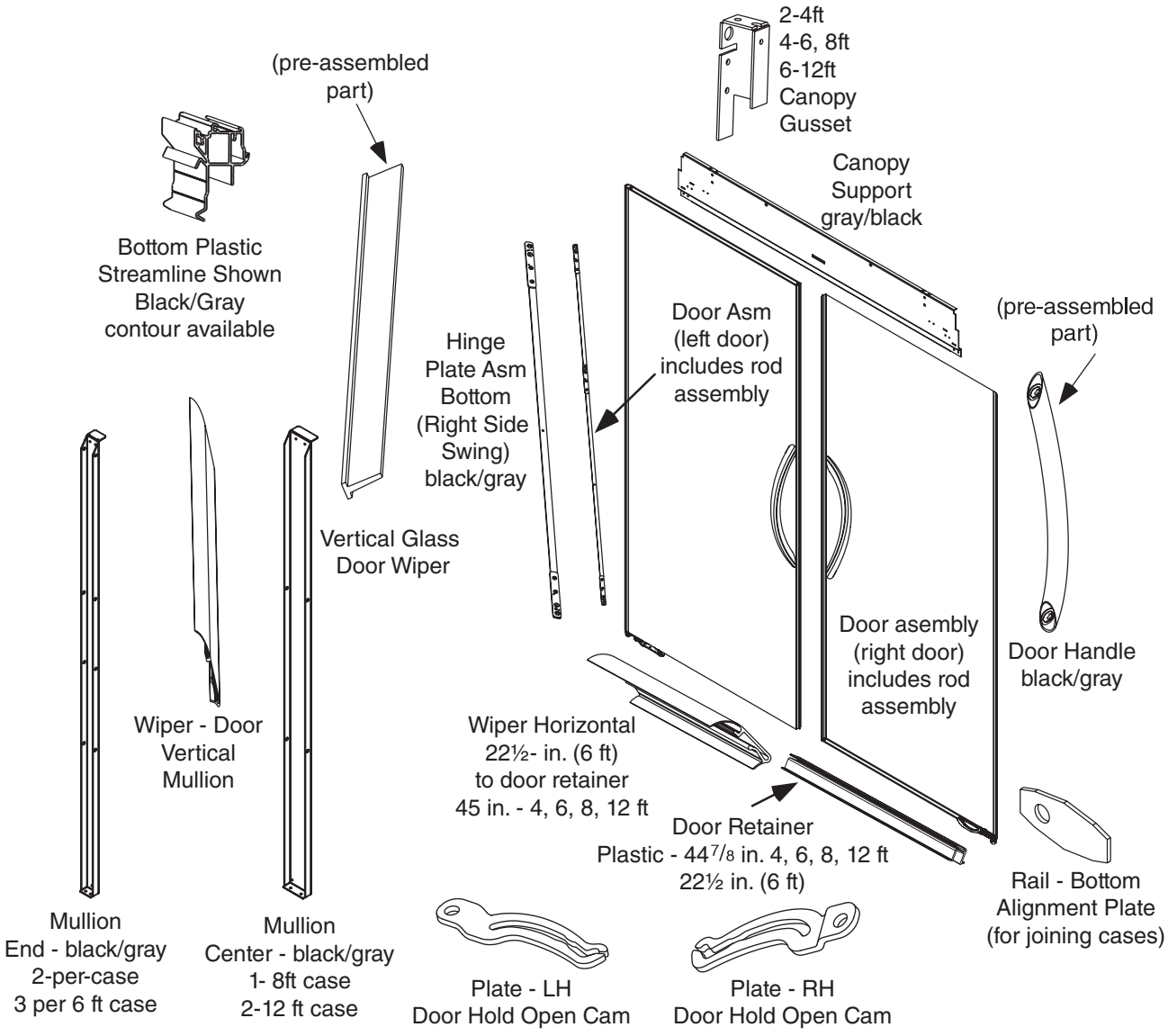
#8
Thread Cutting
Self-Tapping
(¼- in.)

#10
Hex Washer
Head

Hex
Head Screw
(black/gray)

#8-32
Shoulder Screw
TORX Head

#8-32 x ½
Hex Head
Type F



EcoVision Door — Parts Identification

5 Install Bottom Door Rail Assembly to Foam Bottom.

A. Space bottom door rail assembly evenly from each end of the case. Reinstall color panel and fasten bottom door rail assembly to case with #8 screws. The screw at the bottom will hold the front color panel in place.

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

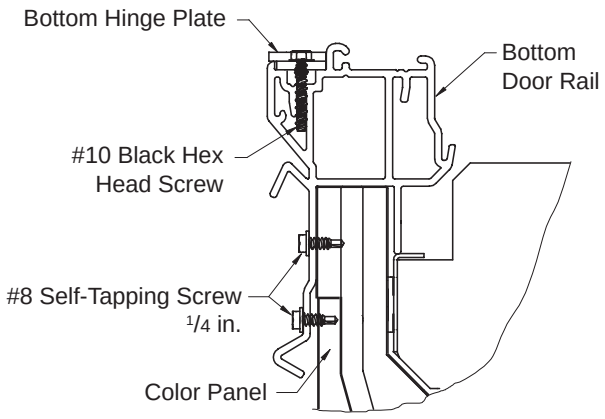


Figure 5-1

6 Fasten Canopy Gussets.

A. Remove two screws from top inside of canopy. Install canopy gusset into same location using the same screws from previous step.

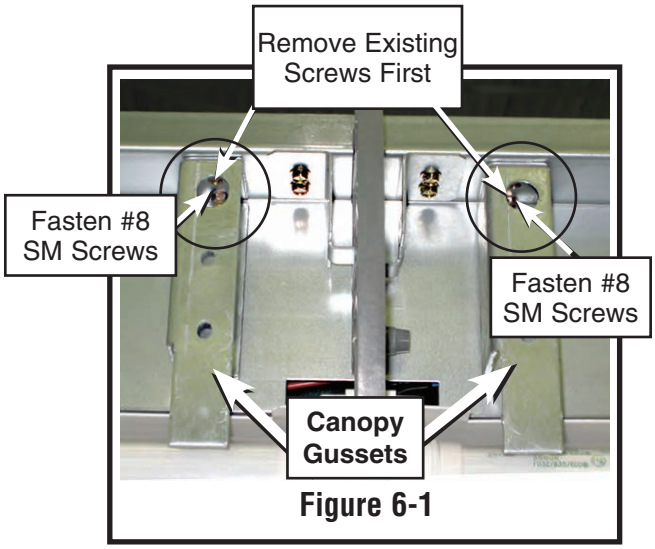


Figure 6-1

7 Follow these step if outfitting doors on a **NARROW** case. Skip to Page 10, Step 11 if outfitting door on a **STANDARD** case.

Additional brackets are used in the case canopy for narrow merchandisers. The canopies in these cases are recessed and require the installation of brackets that extend the case canopy to complete door installation.

A. Remove the existing screws from top of the case canopy as shown in Fig. 7-1.

B. Use the screw that were just removed to install canopy extension bracket as shown in Fig. 7-2 and 7-3.

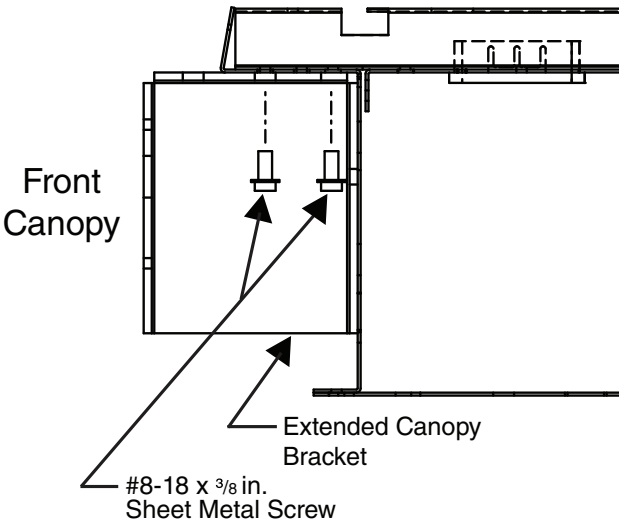


Figure 7-2

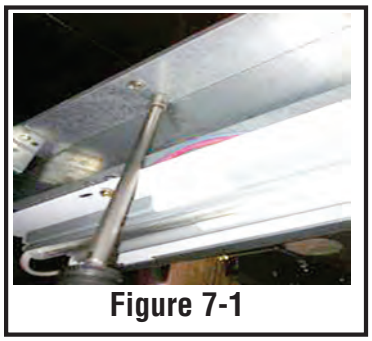


Figure 7-1

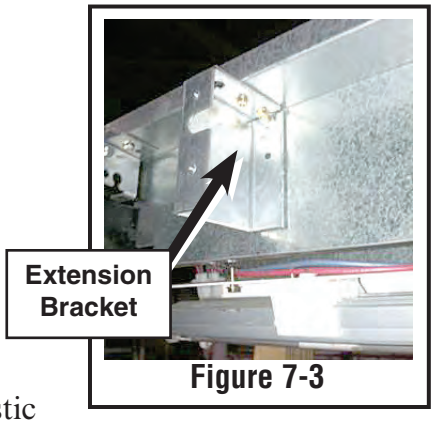


Figure 7-3

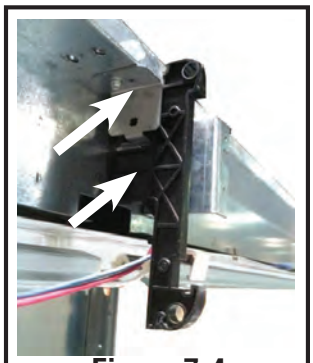


Figure 7-4

C. Remove night curtain brackets and plastic end caps as shown in Fig. 7-4.

D. Install #8-32 x ½-HX HD Thread Cut screw into each corner to temporaily hold the extended canopy retainer in place as shown in Fig. 7-5.

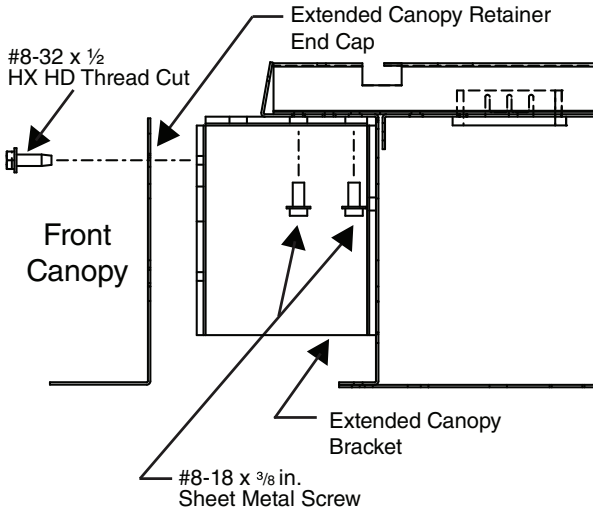


Figure 7-5

8 Attach Gussets to each Extended Canopy Bracket.

A. Attach gussets as shown in Fig. 8-1.

B. The #8 screws that were temporarily installed in the previous step can be removed after at least two gussets are installed.

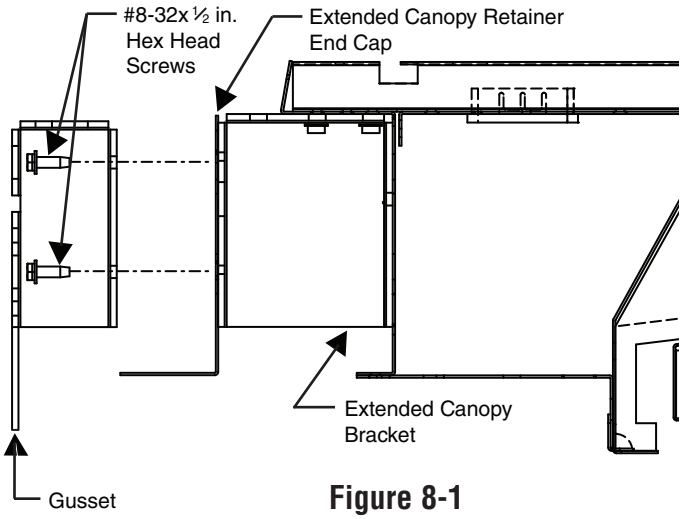


Figure 8-1

9 Install Extended Canopy Support to top of case.

A. Angle Canopy Support Assembly as shown in Fig. 9-1.

B. Straighten plate until flange connects with bracket install screws as shown in Fig. 9-2.

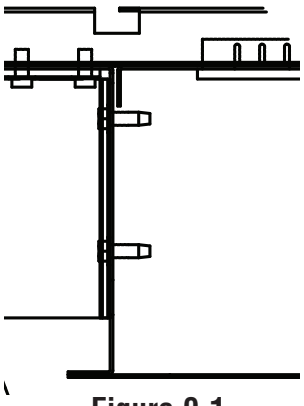


Figure 9-1

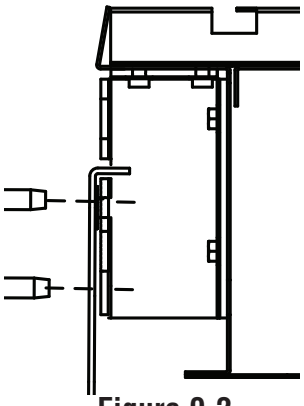


Figure 9-2

C. Replace plastic end caps and night curtain brackets as shown in Fig. 9-3 and 9-4.

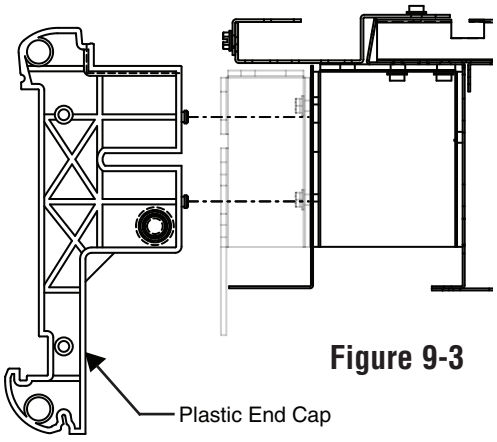


Figure 9-3

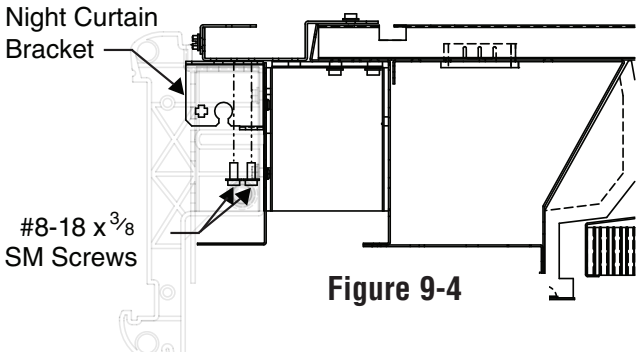
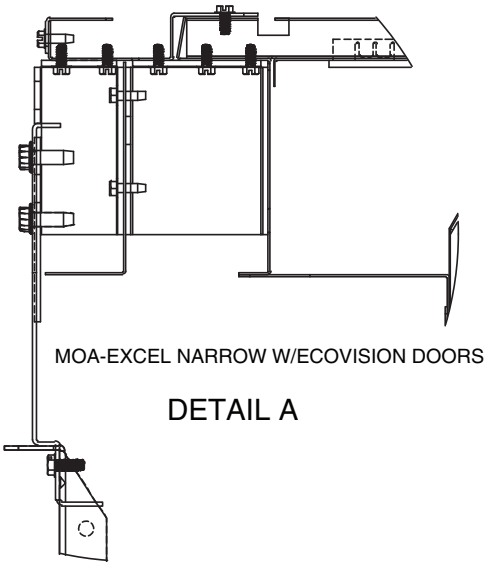
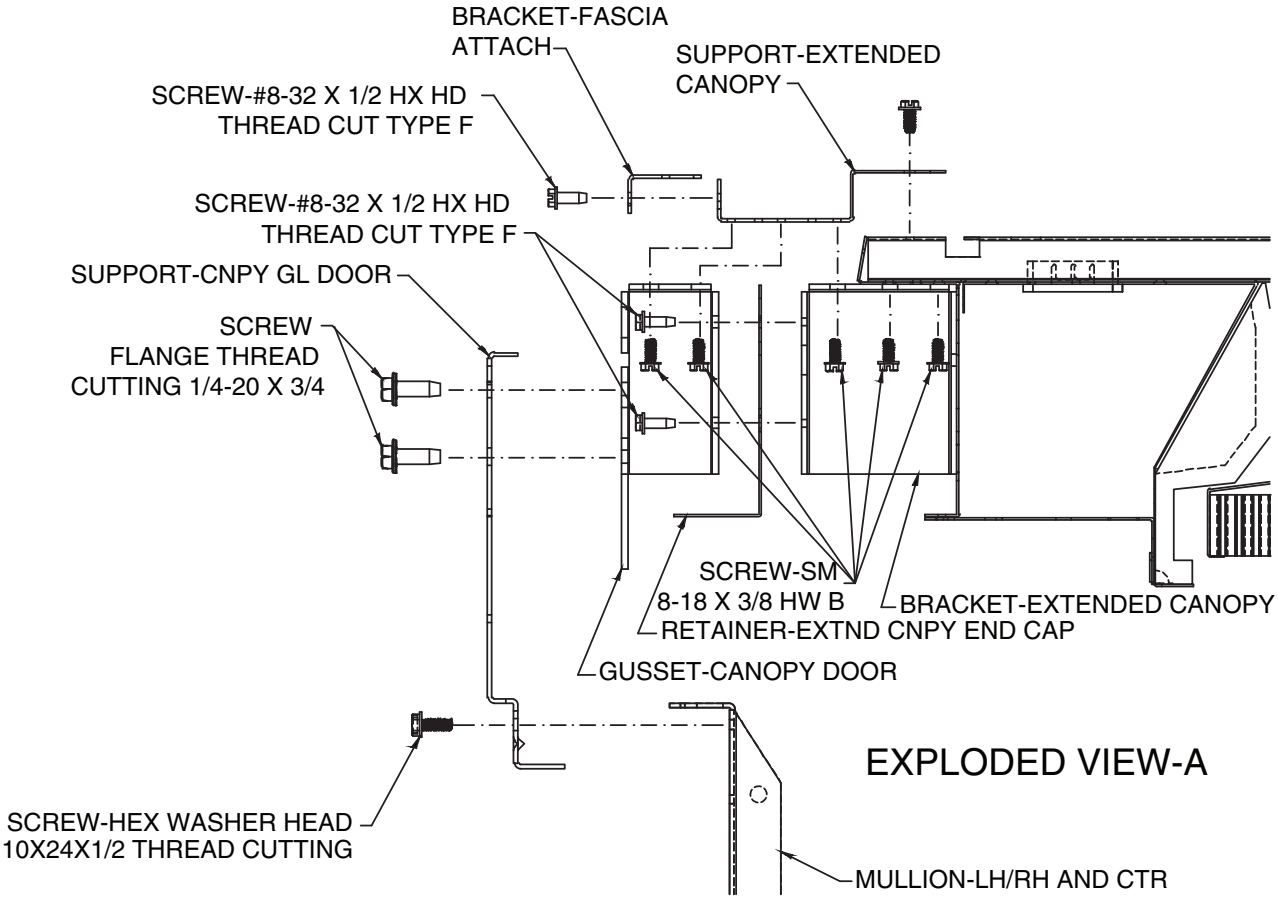


Figure 9-4

10 Exploded view of Door Extended Canopy Brackets for Narrow Merchandisers

NOTE:
Misters kits must be removed before installing doors.





11 Fasten EcoVision II **End Mullions.**

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

A. Slide bottom back side of end mullions into bottom rail (1.). Tilt top of mullion toward inside of case to engage bottom lip of mullion into extrusion (2.), see Fig. 11-1. Fasten top of mullion to canopy support as shown in Fig. 11-2 with #10 screws.

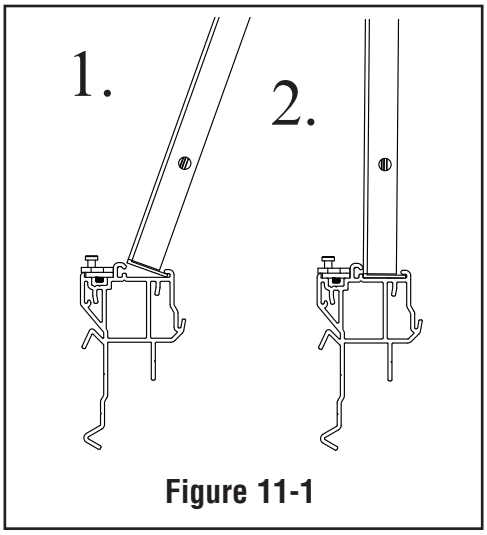


Figure 11-1

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

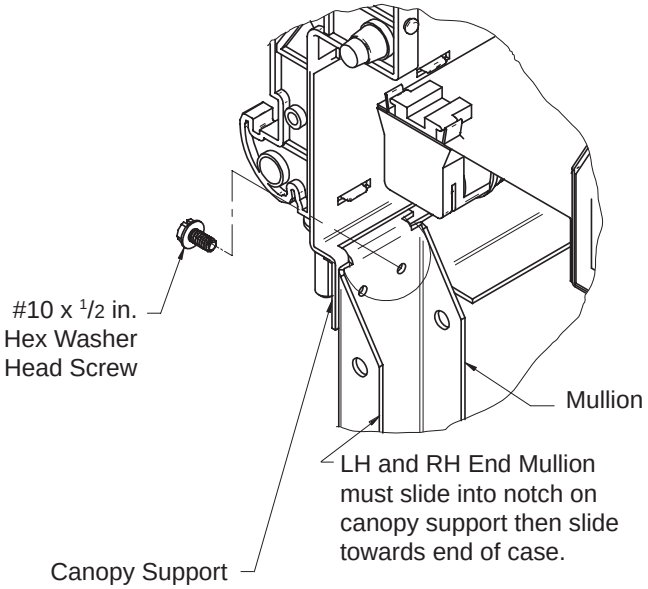


Figure 11-2

B. Fasten **Black / Grey Hex Head Screws** at bottom rear of mullions as shown in Fig. 11-3.

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

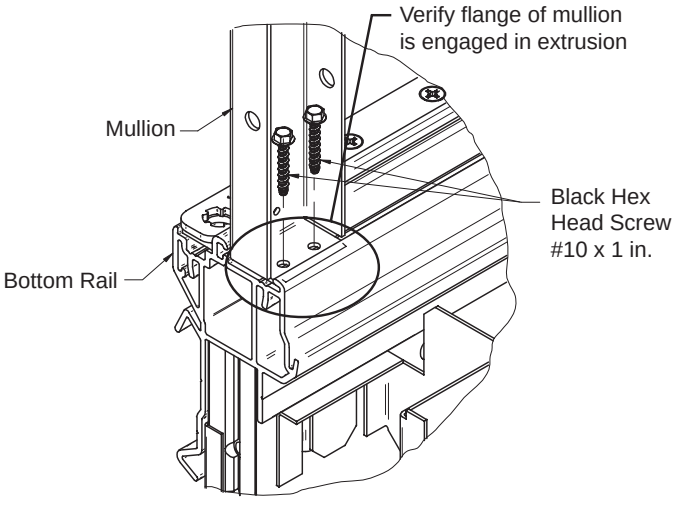


Figure 11-3

12 Fasten **Center Mullions**.

A. Slide bottom back side of center mullions into bottom rail as shown in Fig. 12-1, similar to end 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. 12-2 and Fig. 12-3.

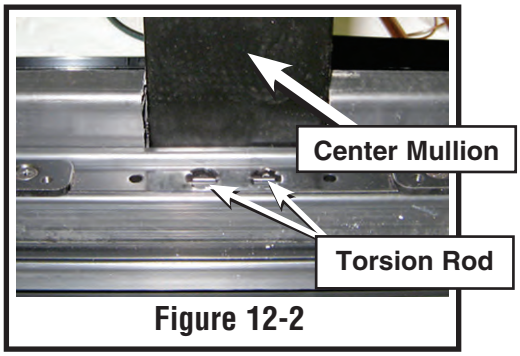


Figure 12-2

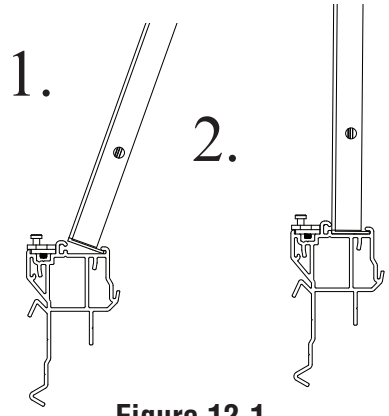


Figure 12-1

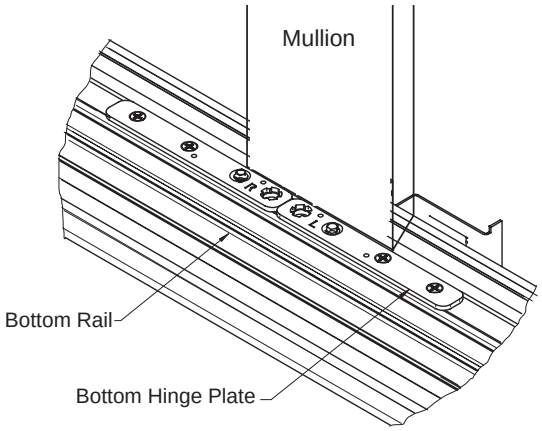


Figure 12-3

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

A. Install **front lip** (Fig. 13-1) of wiper retainer into plastic extrusion.

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

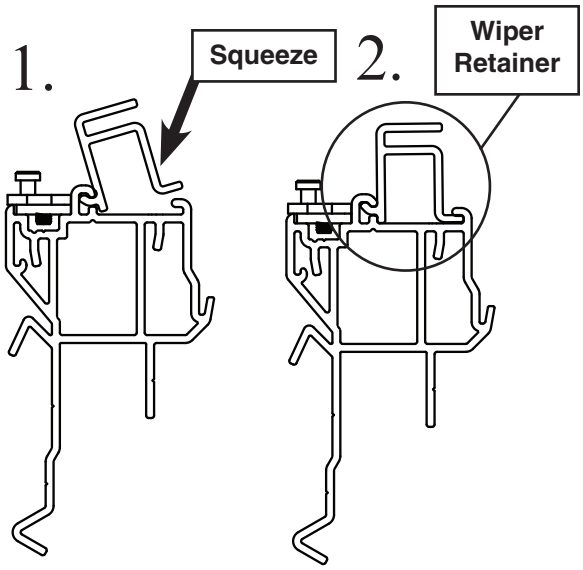


Figure 13-1

14 Attach ½ inch gaskets to end mullions. Attach gasket to each left and right end mullion (End mullions are thinner than the center mullions). The photo shows the mullion already installed at the end of the right side of the case.

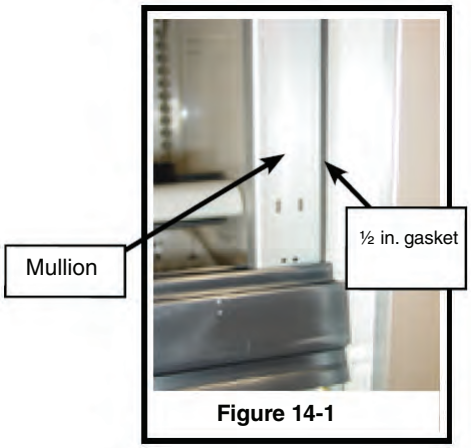


Figure 14-1

15 Attach vertical and horizontal **Door Wipers**

A. Attach bottom frame gasket to retainer as shown in Fig. 14-1. Start at back and angle gasket.

B. Push down on front side of gasket to seat on retainer as shown in Fig. 14-2.

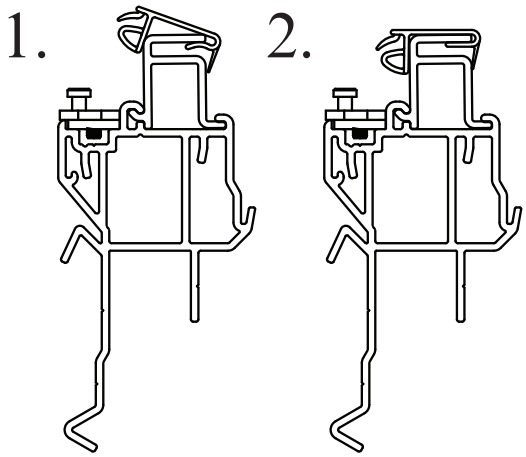


Figure 14-1 **Figure 14-2**

C. Install remaining wipers on mullions and canopy support as shown in Fig. 14-3 & 14-4..

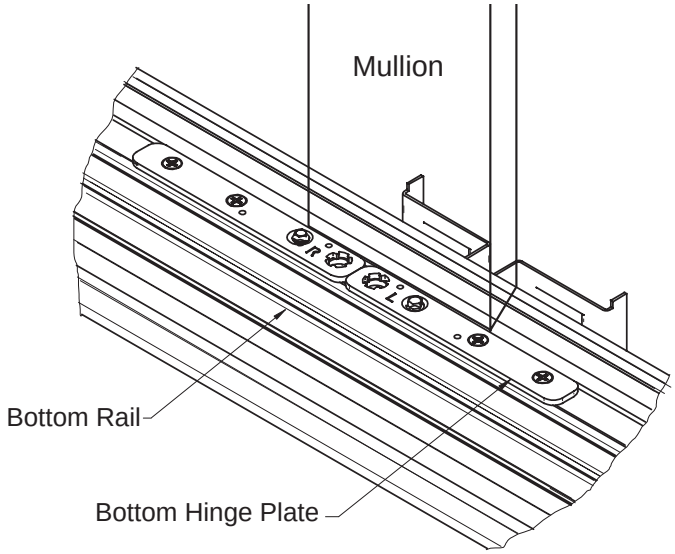


Figure 14-3

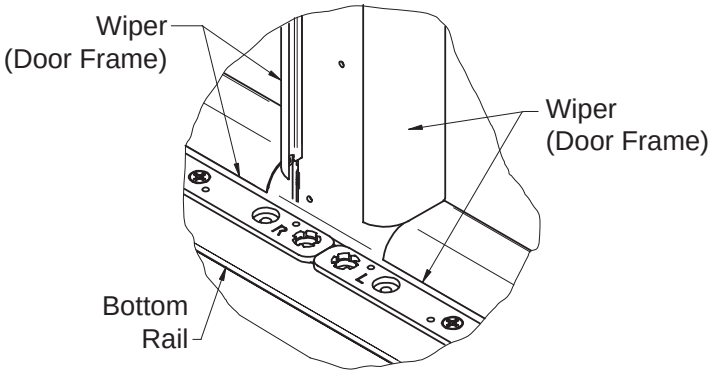


Figure 14-4

16 Install Door(s) Adjust closing tension on each door as it is installed as shown in Step 19 and Step 20.

Install the doors closest to Contour/ Rectangular ends first (Door 1 & 6). See Fig. 15-1.

A. Insert Bottom of Door into hinge Plate as shown in Figure 15-2.

B. Depress pin in door and engage pin in mullion as shown in Figure 15-3.

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.

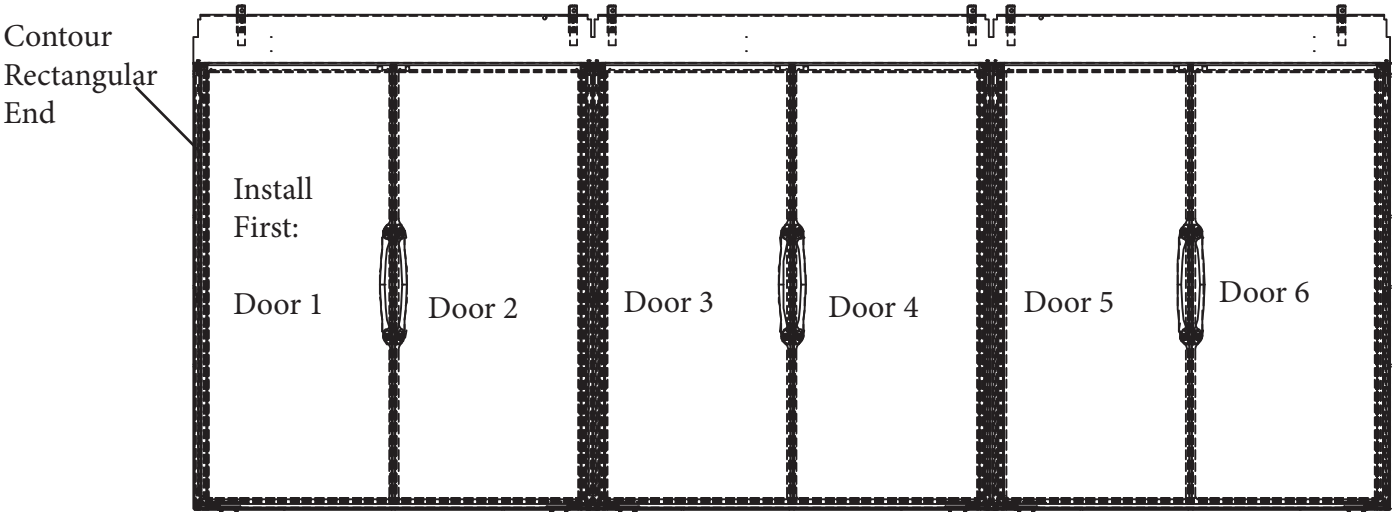


Figure 15-1

Figure 15-2

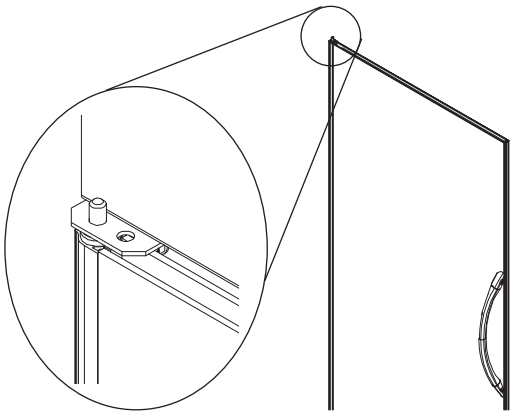


Figure 15-3
Left EcoVision Door

17 Adjusting EcoVision Doors.

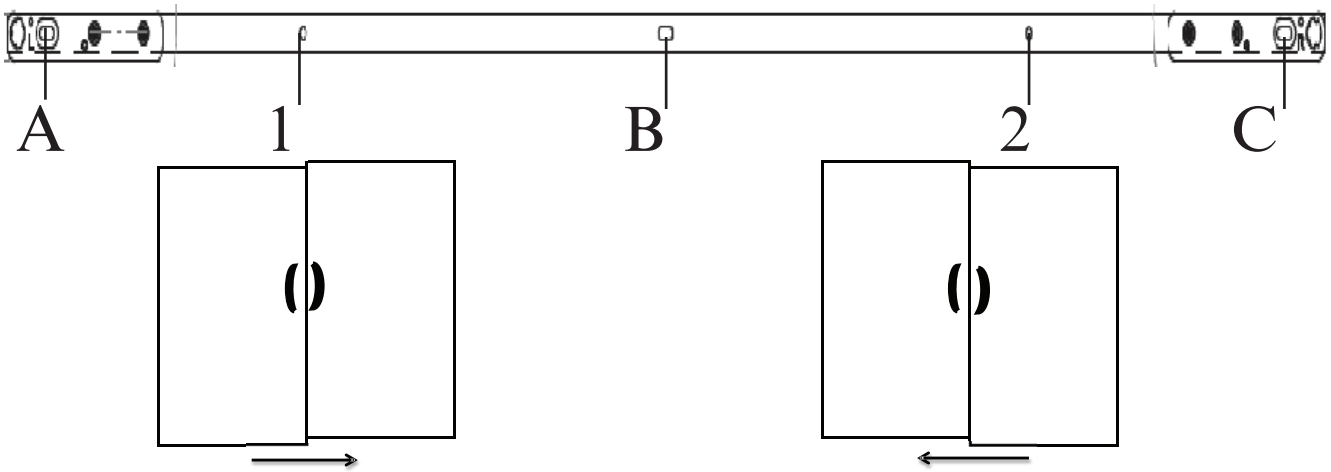
A. Leveling — Merchandisers must be installed level to ensure proper operation of the refrigeration system, and to ensure proper drainage of defrost water.

Glass alignment is also affected with improper leveling of the merchandisers. All steps of settting, joining and case leveling attention to the glass position is 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



To Correct Shift the Bottom Plate to the Right

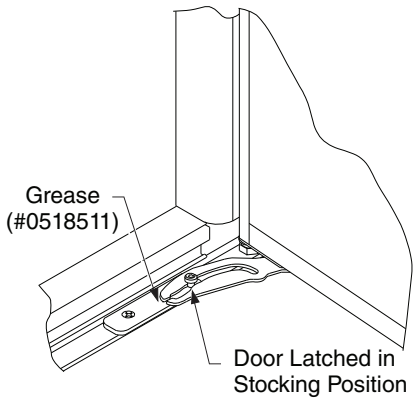
To Correct Shift the Bottom Plate to the Left

17 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.

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. 17-2. 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, and then torqued down.



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

Figure 17-1

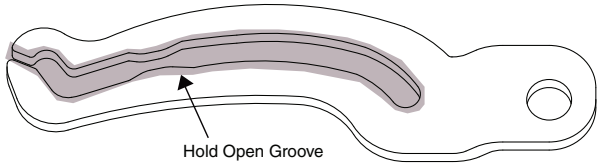


Figure 17-2

18 Replace lower front panels, bumpers, canopy fascia and deck pans.

A. Reinstall all 9/16 inch nuts and tighten to canopy.

Figure 18-1 — Replace Canopy Fascia

⚠ WARNING

Failure to reinstall canopy nuts could cause case parts to become loose and fall, causing serious personal injury.

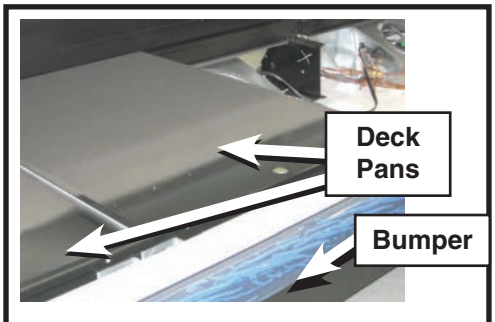


Figure 18-2

19 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. See next step if the wrench can not be put on the torsion 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.

20 Adjusting Door Tension Rods —

near ends of case (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 torsion rod. Adjust the torsion rod to the desired tension. Move door back to original position and reinsert screw into plate assembly bottom hinge. See Fig. 20-1.

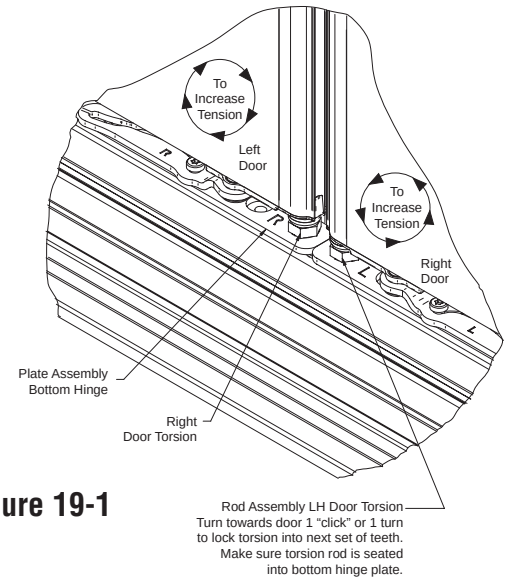


Figure 19-1

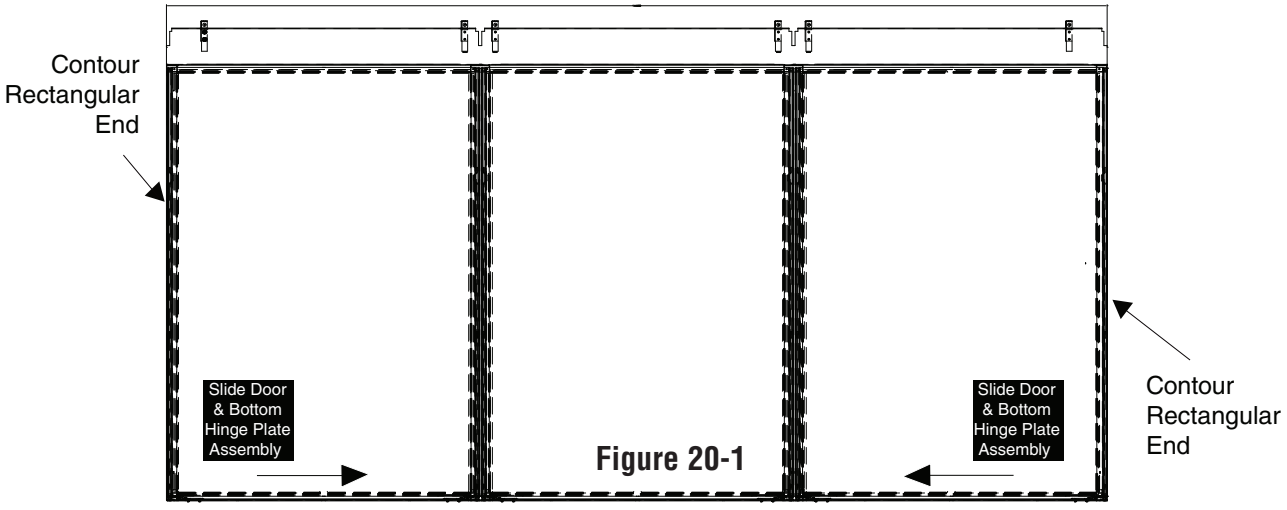
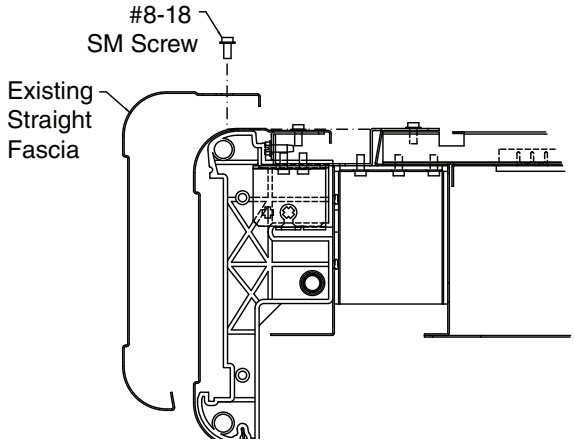


Figure 20-1

Install fascia attachment bracket as shown below.



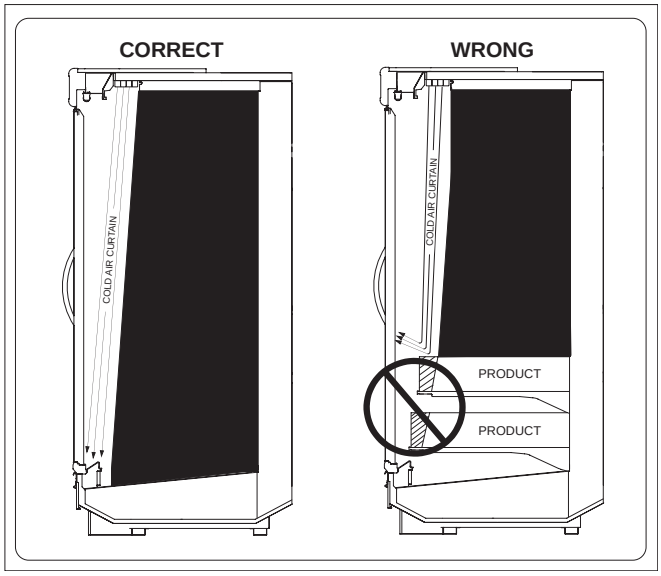


Figure 21-1 — Product Stocking Limits

21 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.

SEE NEXT PAGE FOR DIRECTIONS FOR INSTALLING OPTIONAL STABILITY KITS FOR NARROW EXCEL CASES.

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	Recomended	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)

⚠ CAUTION

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

22 Installing Optional Stability Bracket Kits for Narrow Excel Cases

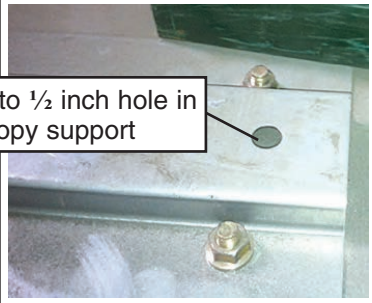


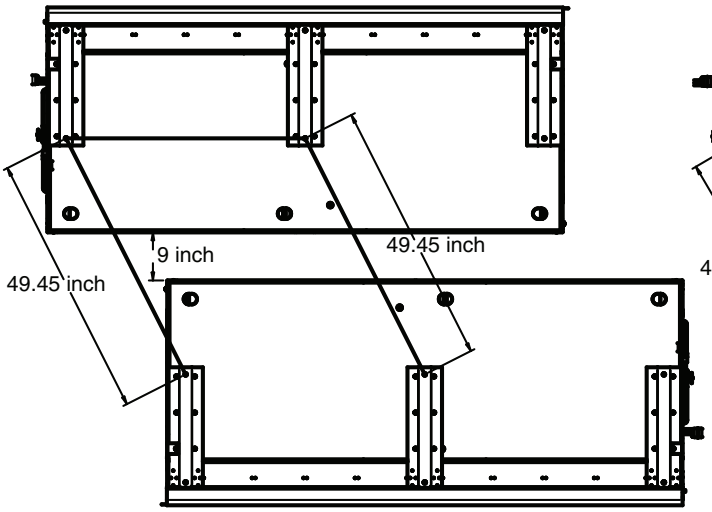
Figure 22-1

Figure 22-2

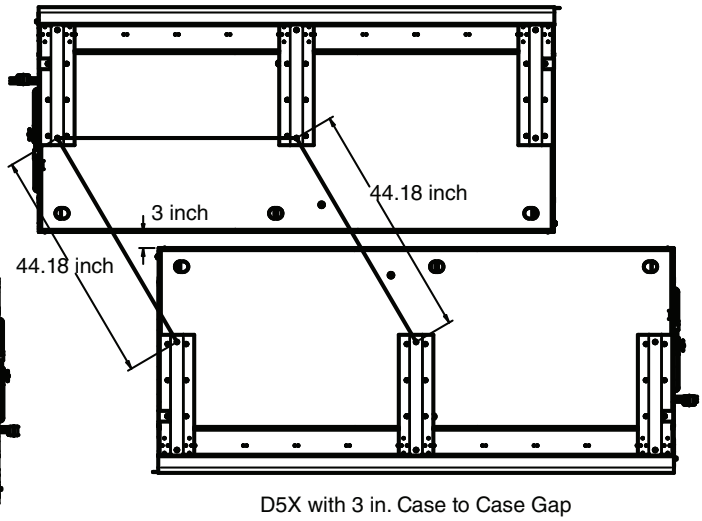
A. For back-to-back cases:

Connect canopy supports together using ½ inch hole in support and unistrut. No angled cuts of unistrut required. Cases can be offset from each other and unistrut can still be installed.

Slide nut under canopy support and align with hole. Place unistrut over hole. Place bolt through washer and unistrut, and connect to nut and tighten.



D5X with 9 in. Case to Case Gap



D5X with 3 in. Case to Case Gap

B. For anchoring case to wall:

Mount unistrut to the store wall supports, then connect the existing anti-tip brackets to unistrut. Supply brackets and wood screws and washers are used to mount unistrut to wall.

TECHNICAL GUIDELINE FOR CASE AND REFRIGERATION SYSTEM ADJUSTMENTS

Upgrading your existing store with EcoVision II 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 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 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 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.

1 End Filler Installation — End fillers are installed to close off openings on contour end panels of a lineup of Excel cases.

A filler kit is used to convert a contour end into a rectangular end. This fills the gap of the contour end without the expensive of replacing the contour end with a new rectangular end.

Interior and exterior panels are fastened to the existing ends, and a piece of foam is placed between them. Then the panels are pop riveted to the existing panel, and a new piece of end trim is placed on it. Below is an exploded view of the end filler kit parts and the contour end panel.

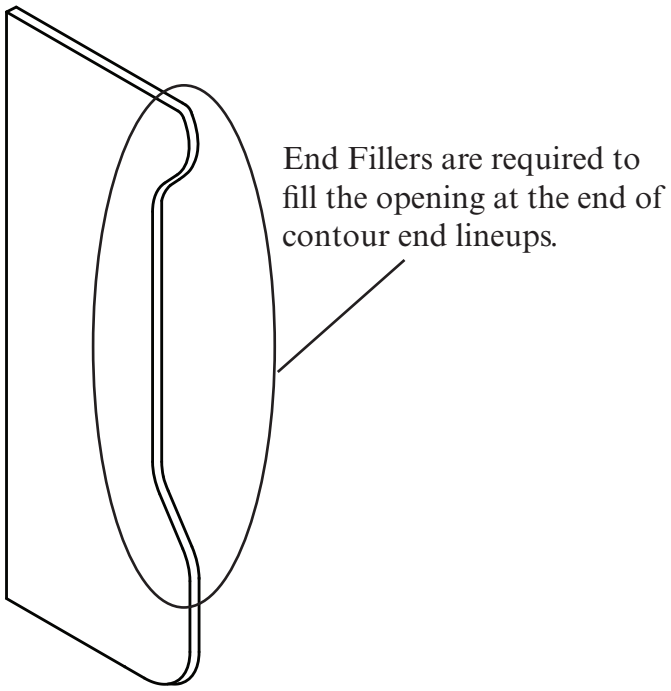


Figure 1-1

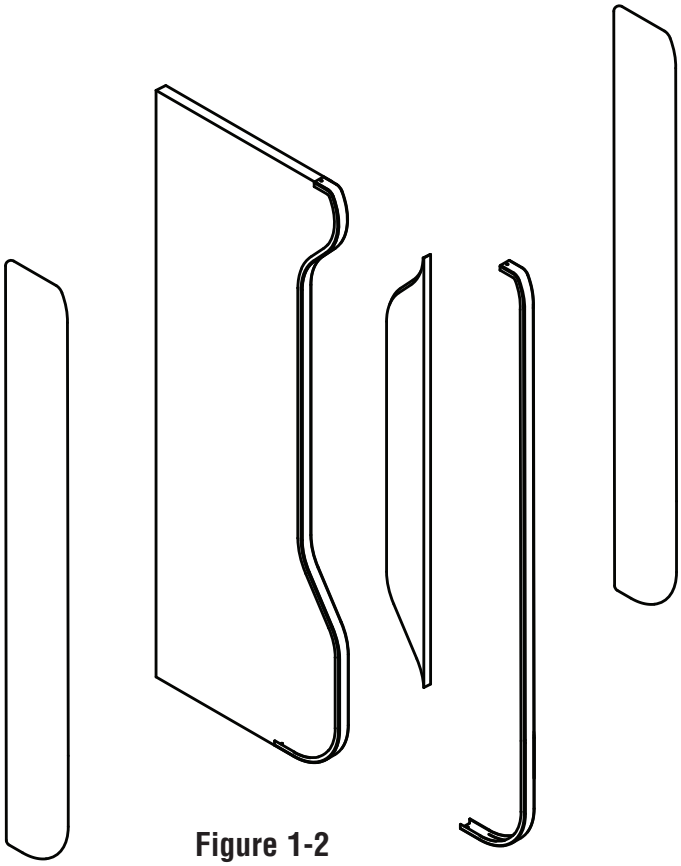


Figure 1-2

2 **Remove screws from top and bottom of the end. Remove the trim piece and discard as shown in Fig. 2-1**

A. Install 2 strips of ½ in. gasket to the end as shown in Fig. 2-2.

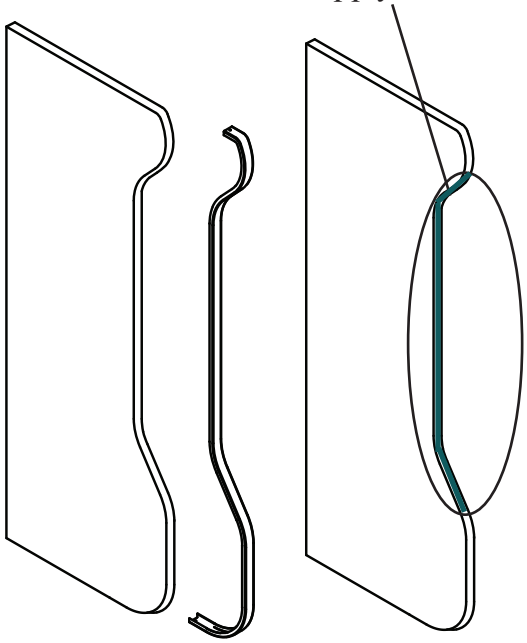


Figure 2-1

Figure 2-2

B. Get insulation and hold it up to end. Trace outline of End and cut insulation to fit opening. The profile should now look like a rectangular end as shown in Fig. 2-3

C. Temporily attach exterior end filler panel with two #8 screws, insert foam cutout, repeat for interior end filler panel. (The end filler panels will hold the insulation in place.) as shown in Fig. 2-4.

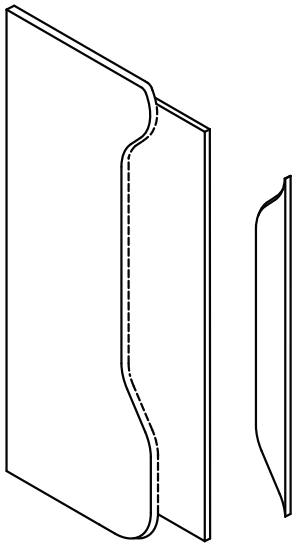


Figure 2-3

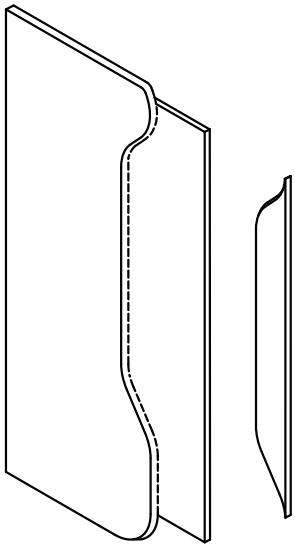


Figure 2-4

3 **Install trim piece over two end fillers, and attach with screws at top and bottom in the pre-punched holes on the end fillers, drill 1/8 in. holes through the end into foam.**

A. Insert stainless steel rivets into holes and fasten end filler to existing end. Remove temporary #8 screws and install stainless steel pop rivets.

B. Drill 1/8 in. holes in side of trim piece near center of end filler panel

C. Install stainless steel pop rivets into both sides of trim.

D. Verify no sharp edges on stainless steel pop rivets.

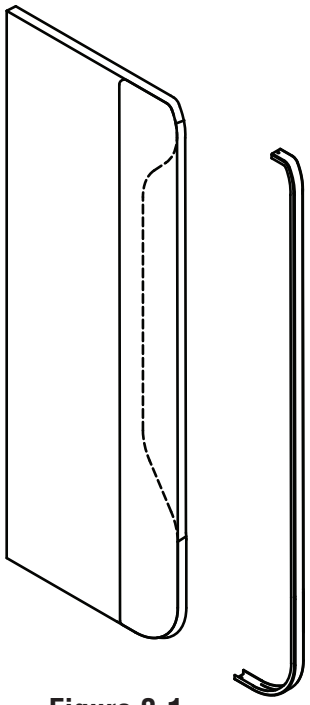


Figure 3-1

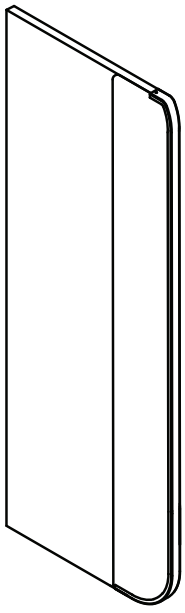


Figure 3-2