

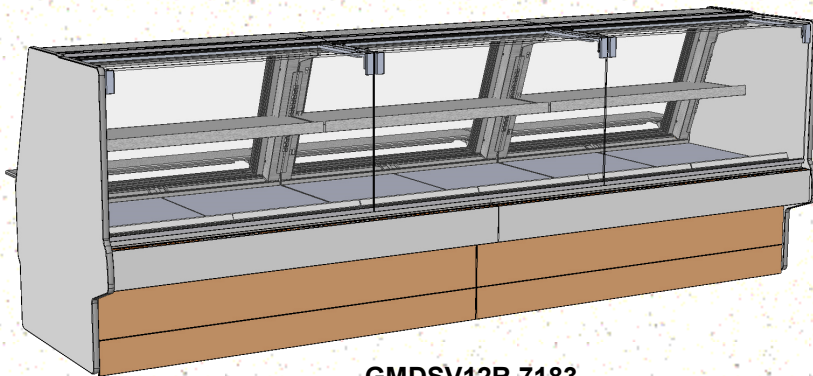
# G-SERIES INSTALLATION AND OPERATING MANUAL

P/N 21-01524

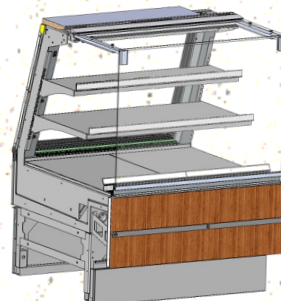
## G-SERIES MID-VOLUME REFRIGERATED SERVICE DELI MERCHANDISERS

- > VERTICAL FRONT GLASS WITH REAR HINGES
- > VERTICAL FRONT GLASS WITH FRONT HINGES
- > REMOTE & SELF-CONTAINED > FULL AND OPEN END PANELS
- > REFRIGERATED-TO-DRY SWITCH AT CASE REAR (OPTIONAL)
- > REAR SLIDING DOORS > OPTIONAL SCALE STAND

**CAUTION!**  
**FRAGILE!**  
**HOLD**  
**GLASS**  
**FIRMLY.**  
**SLOWLY**  
**OPEN &**  
**CLOSE.**



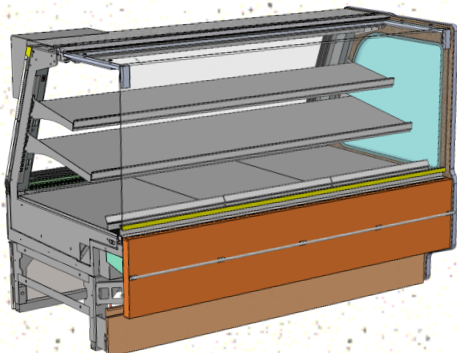
GMDSV12R.7183



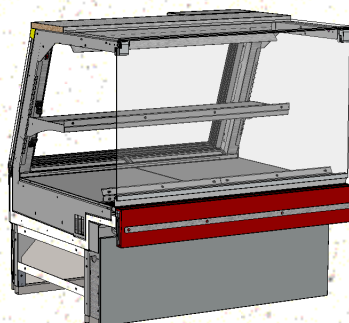
GMDSVC3R



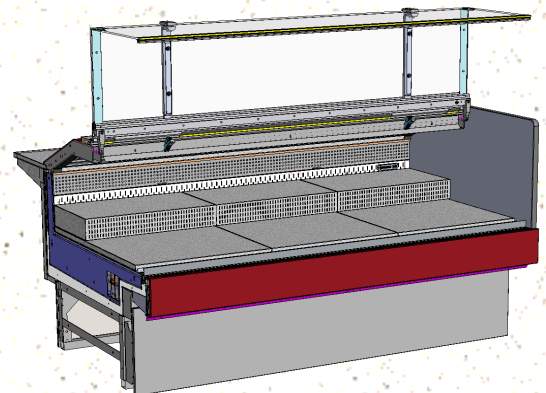
**CAUTION!**  
**FRAGILE!**  
**DO NOT**  
**STRIKE**  
**DECKS**  
**OR PANS**  
**AGAINST**  
**EDGE OF**  
**GLASS.**



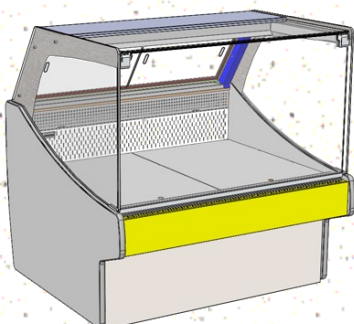
GMDSV6R.7115C



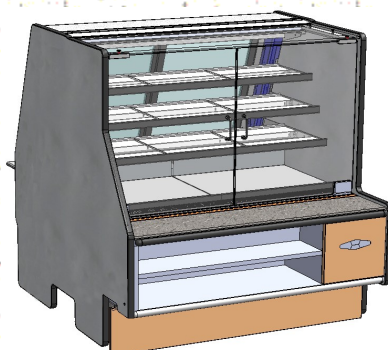
GMDSV4R



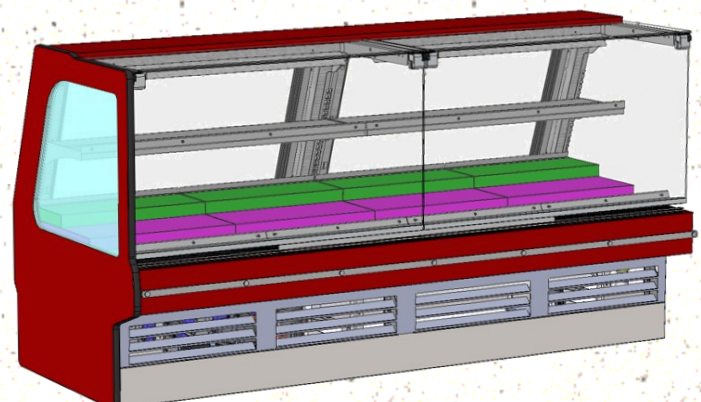
GLDSV6R.6670C



GLDSV4R



GMDSV4R.7503



GMDSV8R



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### --- THIS OPERATING MANUAL INCLUDES (BUT IS NOT LIMITED TO) THE FOLLOWING MODELS ---

|                 |                  |               |                |                |
|-----------------|------------------|---------------|----------------|----------------|
| GLDSV3R         | GLDSV542R.7042B  | GMDSV4R.6806A | GMDSV8R.6694   | GMDSV12R.7115F |
| GLDSV3R.6602    | GLDSV642R.6670C  | GMDSV4R.6694  | GMDSV8R.6749A  | GMDSV12R.7215  |
| GLDSV4R         | GLDSV842R.6670B  | GMDSV4R.6749B | GMDSV8R.7063B  | GMDSV12R.7280  |
| GLDSV6R         | GLDSV842R.7042D  | GMDSV4R.6924  | GMDSV8R.7115D  | GMDSV12R.7695  |
| GLDSV8R         | GLDSV1242R.6670D | GMDSV4R.7215  | GMDSV8R.7183   | GMDSVC3R.6694  |
| GLDSV8R.7183    | GLDSV1242R.6839F | GMDSV4R.7503  | GMDSV8R.7215   | GMDSVC3R.7215  |
| GLDSV10R        | GLDSV1242R.7042F | GMDSV5R.7215  | GMDSV8R.7896   | GMDSVC4R       |
| GLDSV10R.6670A  | GLDSV1242R.7186F | GMDSV6R       | GMDSV8R-RD     | GMDSVC4R.7215  |
| GMDSV10R.7115E  | GMDSV8R          | GMDSV6R.6694  | GMDSV10R.6806E |                |
| GLDSV12R        | GMDSV12R         | GMDSV6R.6806C | GMDSV10R.7215  |                |
| GMDSV12R.7694   | GMDSV3R.6694     | GMDSV6R.7115C | GMDSV12R       |                |
| GLDSV442R.6670F | GMDSV4R          | GMDSV8R       | GMDSV12R.7063D |                |

**OVERVIEW**

- These Structural Concepts merchandisers are designed to merchandise packaged products at 41 °F (5 °C) or less product temperatures (unless custom cases with wire rack shelving).
- Product must be pre-chilled to 41 °F (5 °C) or less prior to being placed in merchandiser.
- Cases should be installed and operated according to this operating manual's instructions to ensure proper performance. Improper use will void warranty.

- For Type 1 Conditions (most cases): ambient conditions are to be at 55% maximum humidity and maximum temperatures of 75 °F (24 °C).
- For Type 2 Conditions: ambient conditions are to be at 55% maximum humidity and maximum temperatures of 80 °F (27 °C).
- If unsure if your unit is Type I or II, see tag next to serial label. See **SERIAL LABEL LOCATION & INFORMATION LISTED / TECH INFO & SERVICE** section in this manual for sample serial labels.

**TYPE**

This unit is designed for the display of products in ambient store conditions where temperatures and humidity are maintained within a specific range.

**COMPLIANCE**

- Performance issues when in violation of applicable NEC, federal, state and local electrical and plumbing codes are not covered by warranty.
- See below compliance guideline.



**ATTENTION  
CONTRACTORS**

**COMPLIANCE**

**This equipment MUST be installed in compliance with all applicable NEC, federal, state and local electrical and plumbing codes.**

**WARNING**

**ELECTRICAL  
HAZARD**

**WARNING**

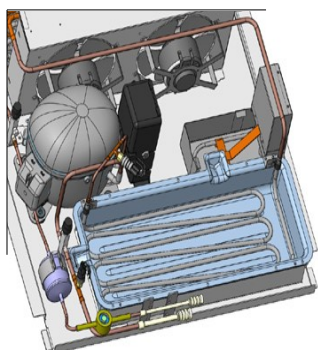
**Risk of electric shock. Disconnect power before servicing unit.  
CAUTION! More than one source of electrical supply is employed with units that have separate circuits.  
Disconnect ALL ELECTRICAL SOURCES before servicing.**

**WARNING**

**KEEP  
HANDS  
CLEAR**

**WARNING**

**Hazardous moving parts. Do not operate unit with covers removed.  
Fan blades may be exposed when deck panel is removed.  
Disconnect power before removing deck panel.**

**CAUTION! CHECK BOTH CONDENSATE PAN AND OVERFLOW PAN**

**Water on floor can cause extensive damage! Before powering up unit:**

- Condensate pan **MUST BE** positioned directly under condensate drain.
- Overflow pan **MUST HAVE** single plug connected to its box. Units with optional Clean Sweep™ **MUST HAVE** two plugs connected.
- **WARNING for self-contained units only!** Overflow condensate pan heater rod is hot! Electric condensate pan must be disconnected and allowed to cool before cleaning or removing from case.



**WARNING: This product can expose you to chemicals, including Urethane (Ethyl Carbamate), which are known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to [P65Warnings.ca.gov](http://P65Warnings.ca.gov).**

## PRECAUTIONS

- Following are important precautions to prevent damage to unit or merchandise.
- Please read carefully!
- See previous page for specifics on **OVERVIEW**, **TYPE**, **COMPLIANCE** and **WARNINGS**.

## WIRING DIAGRAM

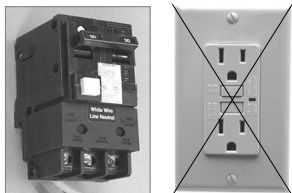
- Each case has its own wiring diagram folded and in its own packet.
- Wiring diagram placement may vary; it may be placed near ballast box, field wiring box, raceway cover, or other related location.

## REFRIGERANT DISCLOSURE STATEMENT

- This equipment is prohibited from use in California with any refrigerants on the "List of Prohibited Substances" for that specific end-use, in accordance with California Code of Regulations, title 17, section 95374.
- This disclosure statement has been reviewed and approved by Structural Concepts and Structural Concepts attests, under penalty of perjury, that these statements are true and accurate.



**CAUTION! LAMP REPLACEMENT GUIDELINES**  
Fluorescent lamps have been treated to resist breakage and must be replaced with similarly treated lamps.  
LED lamps reflect specific size, shape and overall design.  
Any replacements must meet factory specifications.

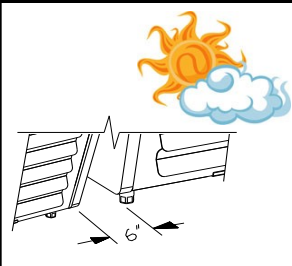


**CAUTION! GFCI BREAKER USE REQUIREMENT**  
If N.E.C. (National Electric Code) or your local code requires GFCI (Ground Fault Circuit Interrupter) protection, you **MUST** use a GFCI breaker in lieu of a GFCI receptacle.



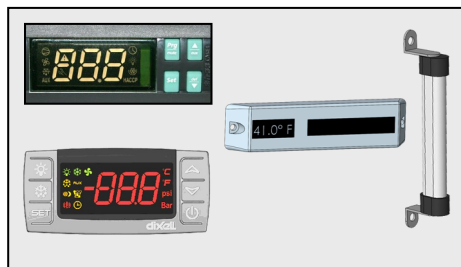
**CAUTION! CASES WITH POWER CORD AND PLUG**  
Risk of electric shock. If cord or plug becomes damaged, replace only with cord and plug of same type.

## CAUTION



## CAUTION! ADVERSE CONDITIONS / SPACING ISSUES

- Performance issues caused by adverse conditions are **NOT** warranted.
- End panels must be tightly joined or kept at least **6-inches** away from any structure to prevent condensation.
- Unit must be kept at least **15-feet** from exterior doors, overhead HVAC vents or any air curtain disruption to maintain proper temperatures.
- Unit must not be exposed to direct sunlight or any heat source.
- Self-Cont. Units: Keep 4" min. air intake / 4" min. air disch. clearance.



## CAUTION!

**DO NOT RELY ON THERMOMETERS OR THERMOSTATS FOR ACTUAL PRODUCT (FOOD) TEMPERATURES.**

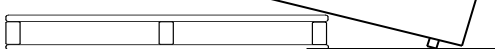
- Thermometers & thermostats reflect air temperatures **ONLY**.
- For **ACTUAL** product (food) temperatures, use a calibrated food thermometer.

## INSTALLATION: REMOVAL FROM SKID, REMOVING LOWER FRONT PANELS

### 1. Remove Case From Skid

- Remove shipping brace that may be securing case to skid.
- Support case to prevent tipping.
- **Caution! Rails can be damaged if case hits floor with heavy force!**
- Carefully slide unit to rear of skid and tip backward off skid.
- Illustration may not reflect every feature or option of your particular case.

← Slide Skid Out



Case can be repositioned with pallet truck when front lower panel is removed. Blocking may be necessary to obtain adequate height.

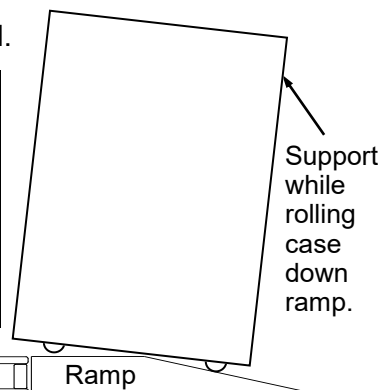
### 2. Remove Case From Skid (Casters)

Remove shipping brackets that may be securing casters to skid

- Place ramp up against skid (to allow case to smoothly slide off from skid).
- Maintain support of case at all times or center of gravity may cause case to fall.
- Unlock Casters. Roll unit to rear of skid.

Roll down ramp and off from skid.

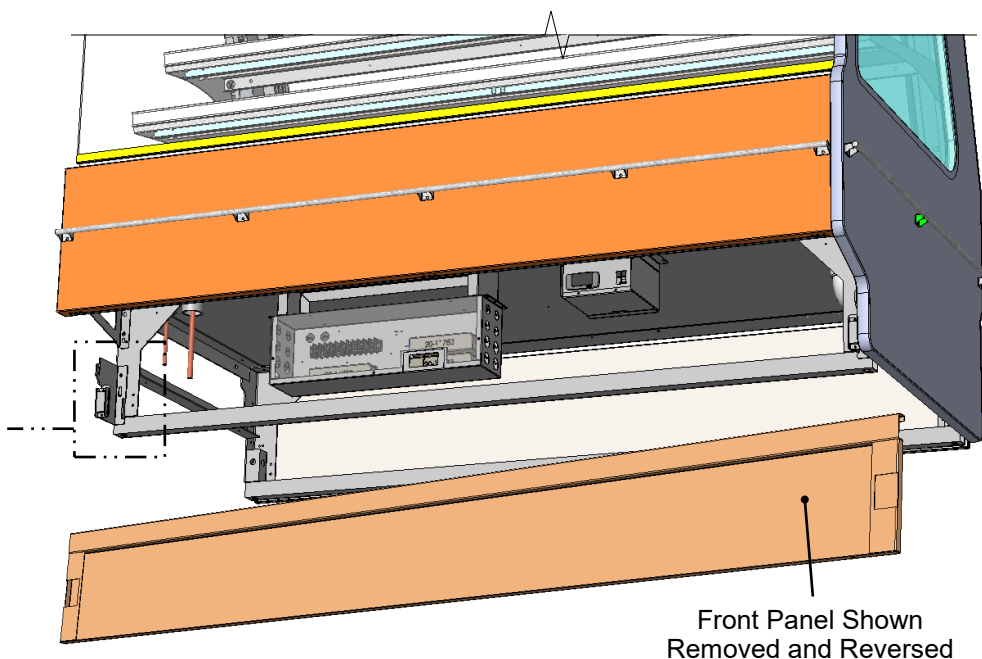
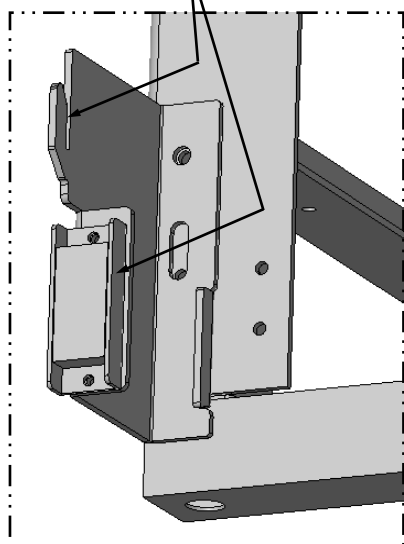
*Note: Illustrations shown reflect a general outline of sample cases and do not reflect features or options of your particular model.*



### 3. Removing Vertical Lower Front Panel (and Rear Panel)

- No screw removal is required to remove lower front/rear panel.
- Simply lift panel slots up and off case hooks.
- Replace in same manner it was removed.
- **Note:** Illustrations below may not exactly reflect every feature or option of your particular case.

Enlarged View of Hook/Magnet For Retaining Front Panel



## 4. Case Adjoinment Instructions

- >> Warranty is void if improper sealant/urethane is used.
- >> Lay generous beads of sealant/urethane as specified.

### A. Prior To Adjoinment - Apply Industrial Grade Urethane Adhesive at Center of Uprights

- Lay a generous bead of industrial grade urethane adhesive at center of uprights (in non-visible areas).
- This urethane adhesive prevents refrigerated air from escaping between cases (causing condensation and reducing refrigeration efficiency) as well as preventing ants or other insects from entering case.
- See industrial grade urethane adhesive illustration below-left.

### B. Adjoining Cases - Using Bolts and Nuts

- Use appropriately sized nuts and bolts for each hole.
- #1 - Hole is accessible through rear sliding door (if you are able to avoid gas cylinder, attach bolt); otherwise start at #2 in bolt/nut attachment process.

- #2 - Holes are accessible through rear sliding door.  
 #3 - Holes are accessible at underside of decking.  
 Decking must be removed to attach bolts/nuts.  
 #4 - Holes are accessible at base frame (through front of case after front toe-kick has been removed).
- Tighten nuts securely (but do not over-tighten).
  - See illustration below.

### C. After Adjoinment - Apply Food Grade Silicone Sealant To Inner And Outer Seams

- After all nuts/bolts are securely attached to case, apply a generous bead of food grade silicone sealant at both inner and outer seams.
- When properly applied, this food grade silicone sealant will prevent water from seeping between cases (into the case or to the floor) as well as crumbs or other residue from entering between case seams.
- See silicone sealant illustration below-left.

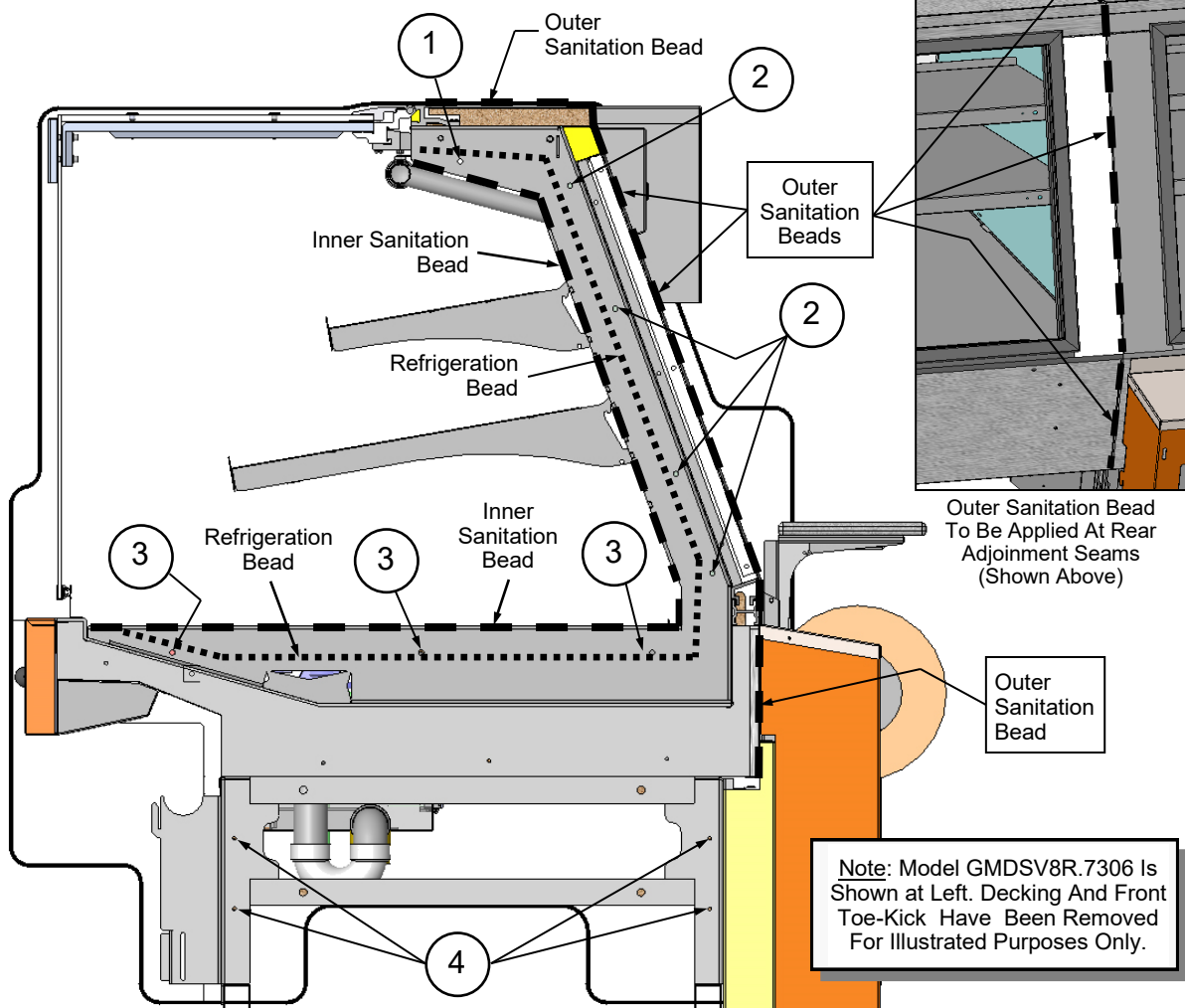
>> You must reattach toe-kick and decking after case adjoinment process is complete.



Industrial Grade Urethane Adhesive (For Refrigeration Bead Applications)



Silver, Black or Clear Silicone Sealant Conforming To NSF/ANSI 51 Specs (For Sanitation)



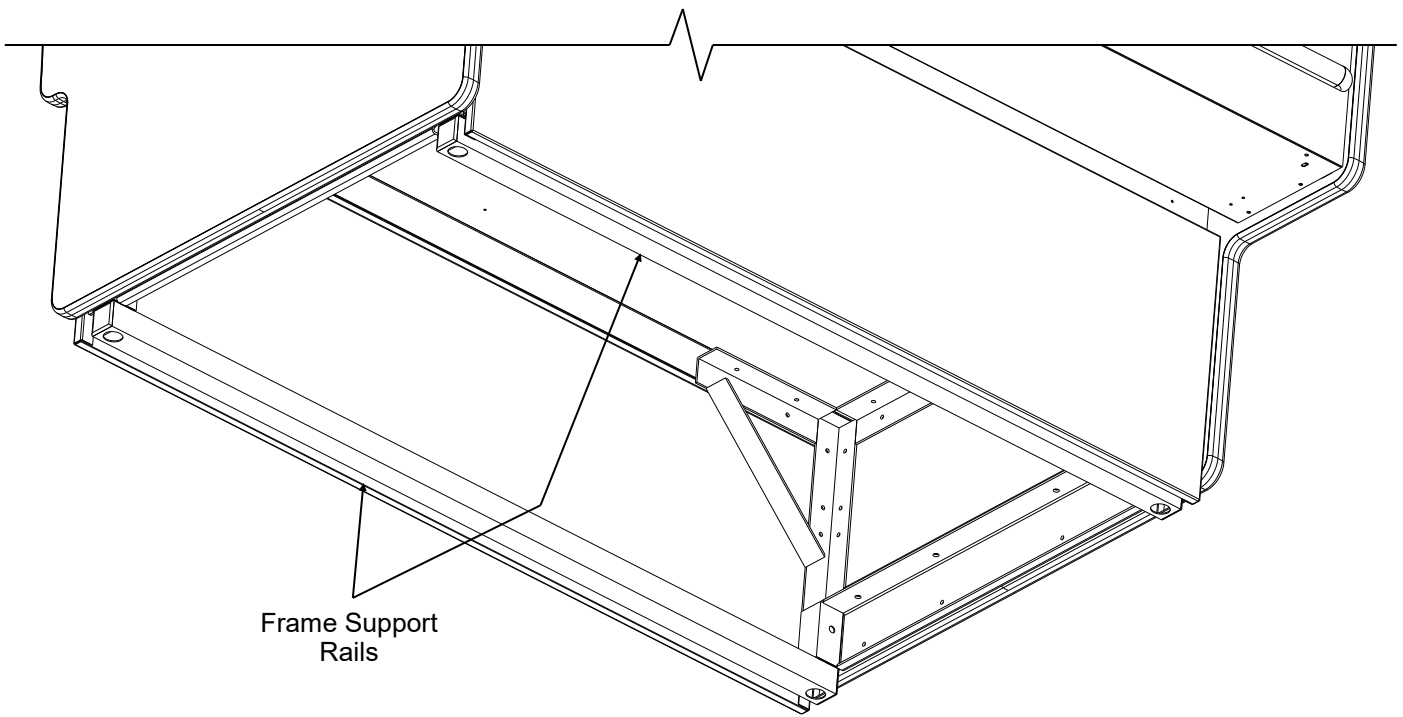
### **5. Position & Align Case Alongside Other Cases**

- Before adjusting levelers (or shimming frame support rails), make certain that the case is in proper position and, if required, aligned with adjoining case.
- This may require the repositioning of the case you are installing or the already positioned case.
- Though case below shows both end panels, case adjoinments routinely consist of end panel removal for case-to-case placement.

### **6. Frame Support Rails Must Be Shimmed**

- Illustration below shows case with frame support rails.
- Shims will be provided with all cases that have frame support rails.
- Use shims to level case.
- ***Note: After case is in position, it must be sealed to floor to prevent entry or leakage of liquid or moisture.***

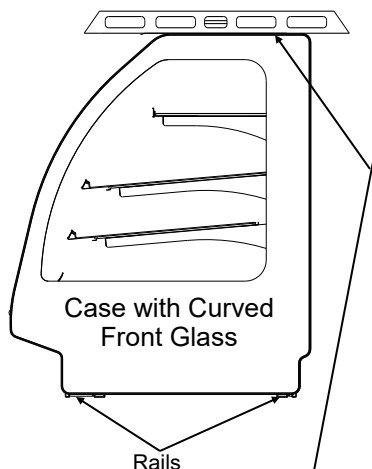
**Note:** Illustration shown may not exactly reflect every feature or option of your particular unit.



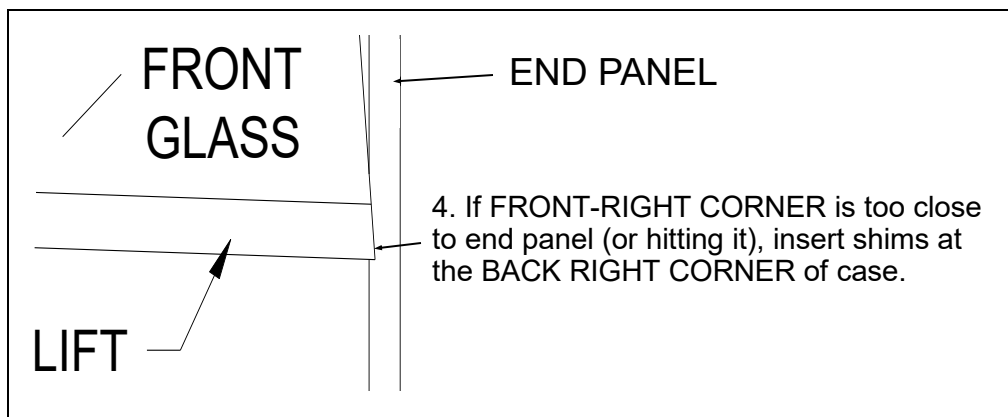
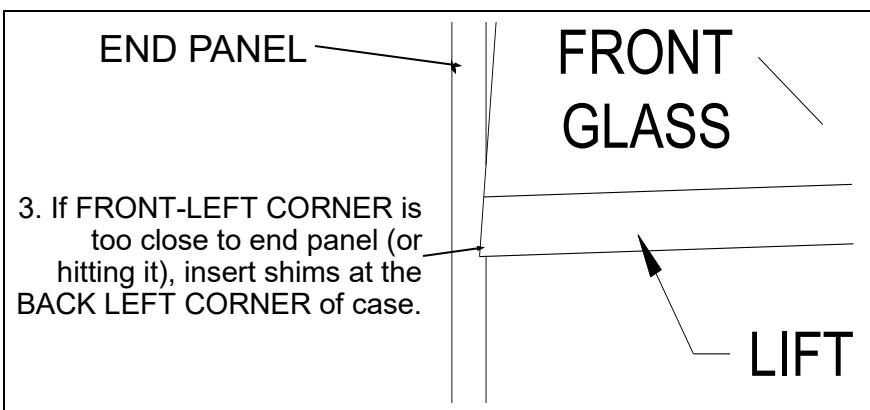
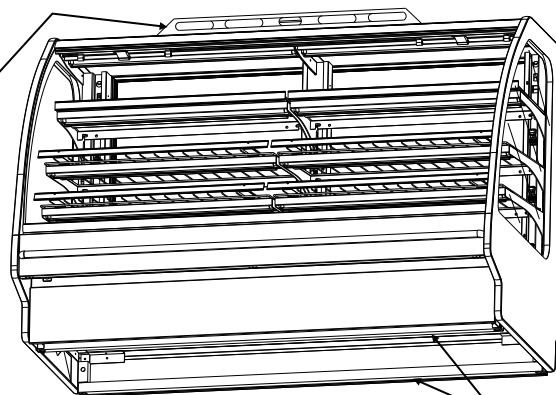
## 7. Front Glass Alignment & Adjustment via Rail System (For Curved and Flat Front Glass)

- Proper alignment of the front glass is important to create and maintain a seal inside the case.
- Improper alignment can cause air leaks compromising the environment inside the case and create condensation.
- Follow the five steps listed below to assure proper front glass alignment.
- Illustrations shown may not exactly reflect every feature or option of your particular case.

1. **Side-to-Side Leveling:** Place a level on top of display case (parallel to front glass). Raise or lower either side of case by inserting shims under the rails to level the case (following steps 3 and 4 below).



2. **Front-to-Back Leveling:**
- Place a level on top of case, perpendicular to the front glass.
  - Raise or lower either side of case by shimming under the rails (following steps 3 & 4 below).
  - Double-check the side-to-side level.



### 5. **Verification:**

- After inserting shims, open and shut the front glass.
- Verify (again) that the front glass is properly aligned at both left-hand and right-hand side of the case.
- If not, repeat the shimming procedure until the front glass is properly aligned along both sides of the case.

**Note:** Illustration shown may not exactly reflect every feature or option of your particular unit.

### 8. Front Glass / Upright / Top Board Adjusting - Applicable To Models GLDS & GLDSV Only

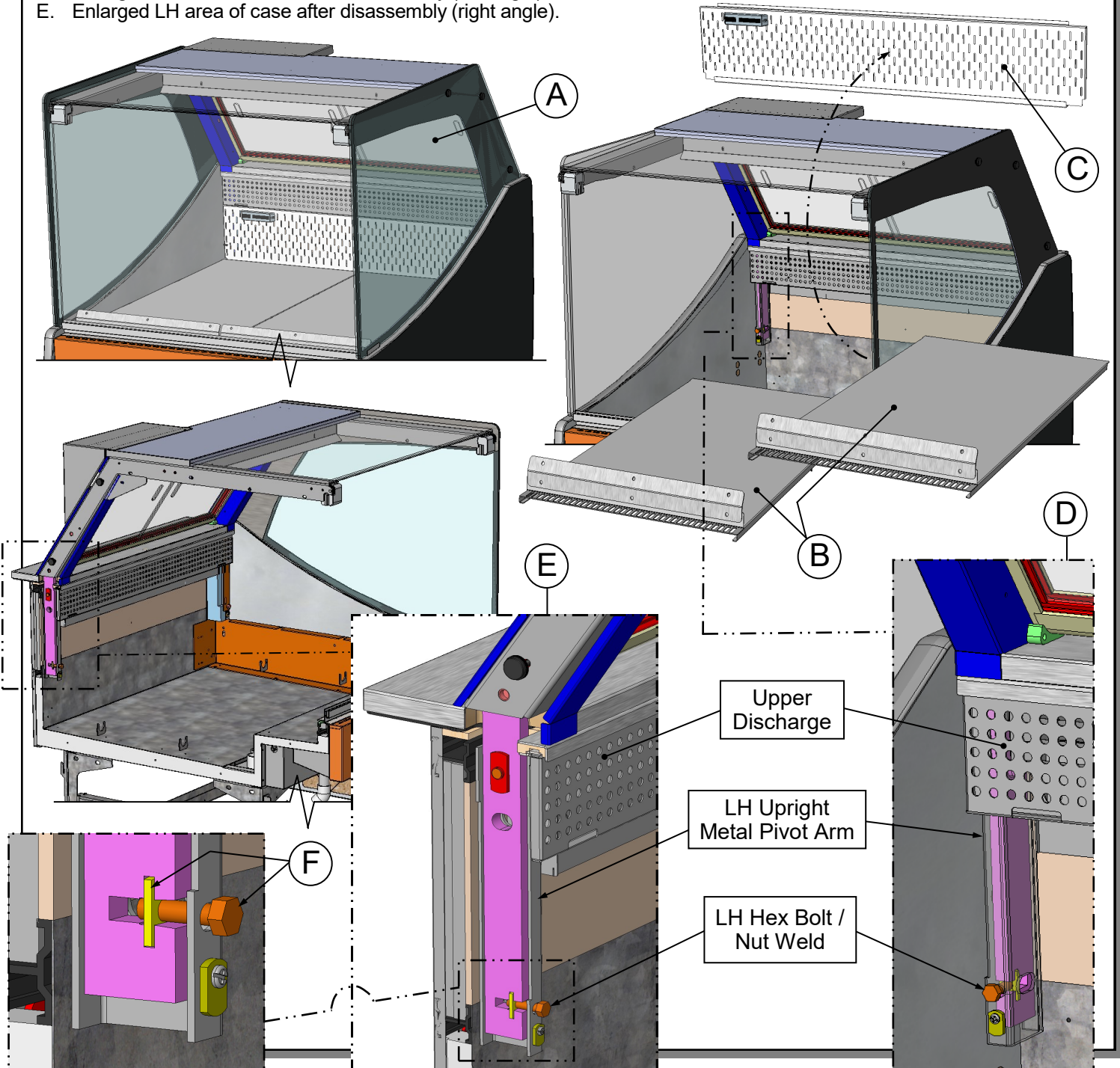
>> **Important:** You must adjust BOTH LH & RH hex head bolts (though ONLY LH bolt adjustment is shown below).  
 >> **Note:** Bolt adjustment may be necessary to properly align front glass, upright & top board (as well as align case with others in lineup).

- A. View of Model GLDSV3R. Your model may differ.
- B. Remove decking. Store safely away from foot traffic.
- C. Remove rear perforated panel. Store safely away from foot traffic.
- D. Enlarged LH area of case after disassembly (left angle).
- E. Enlarged LH area of case after disassembly (right angle).

F. Enlarged view of hex head bolt and weld nut.

#### Adjustment/Leveling Instructions:

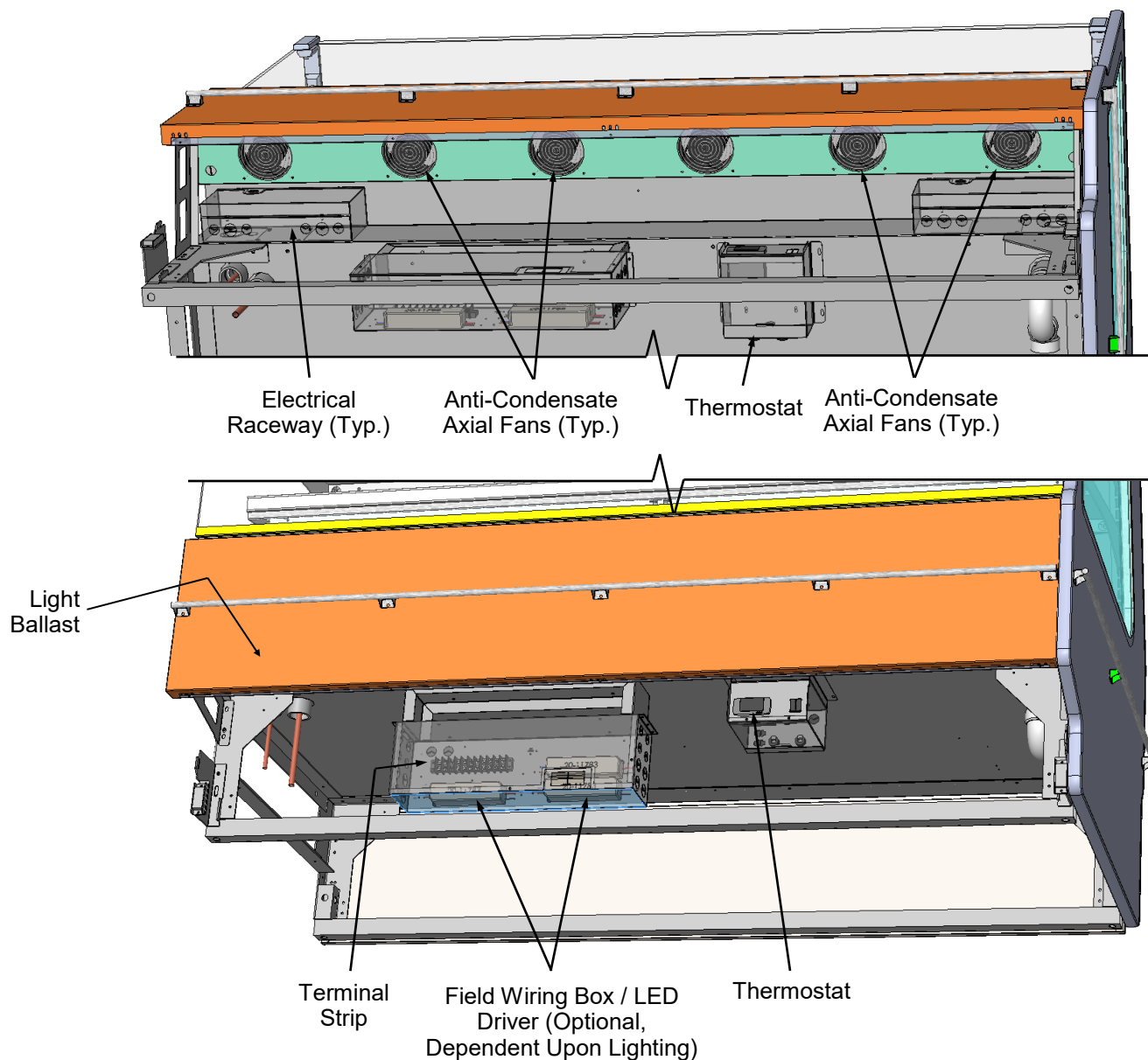
>> Use 1/2" wrench to adjust hex head bolts (BOTH LEFT AND RIGHT though only left bolt is shown in illustrations).  
 >> Turn bolts clockwise to LOWER components.  
 >> Turn bolts counter-clockwise to RAISE components.  
 >> After front glass, upright and top board are adjusted (and/or case is aligned with others in lineup), return panel, decks, etc. to case in reverse order they were removed.



**9. Field Wiring Box / LED Driver / Raceway / LED Driver / Anti-Condensate Axial Fans**

Note: Illustration shown may not exactly reflect every feature or option of your particular unit.

- Probe leads are in probe leads box (on certain models). It is located at customer front-left of case (behind front panel).
- Field wiring box is also located at case front)
- LED driver and terminal strip is also located behind front electrical cover (shown removed for illustrative purposes).
- Screws hold front electrical cover in place. Unscrew and drop electrical cover down and out.
- Anti-condensate axial fans (for front glass) may be accessed (at underside of front panel) by simply removing four screws, and dropping fans down.
- **Caution! Only certified electricians are to access electrical components!**



--- View of Model GMDSV6R.7115C With Front Panel Remove / Electrical Box Cover Transparent ---

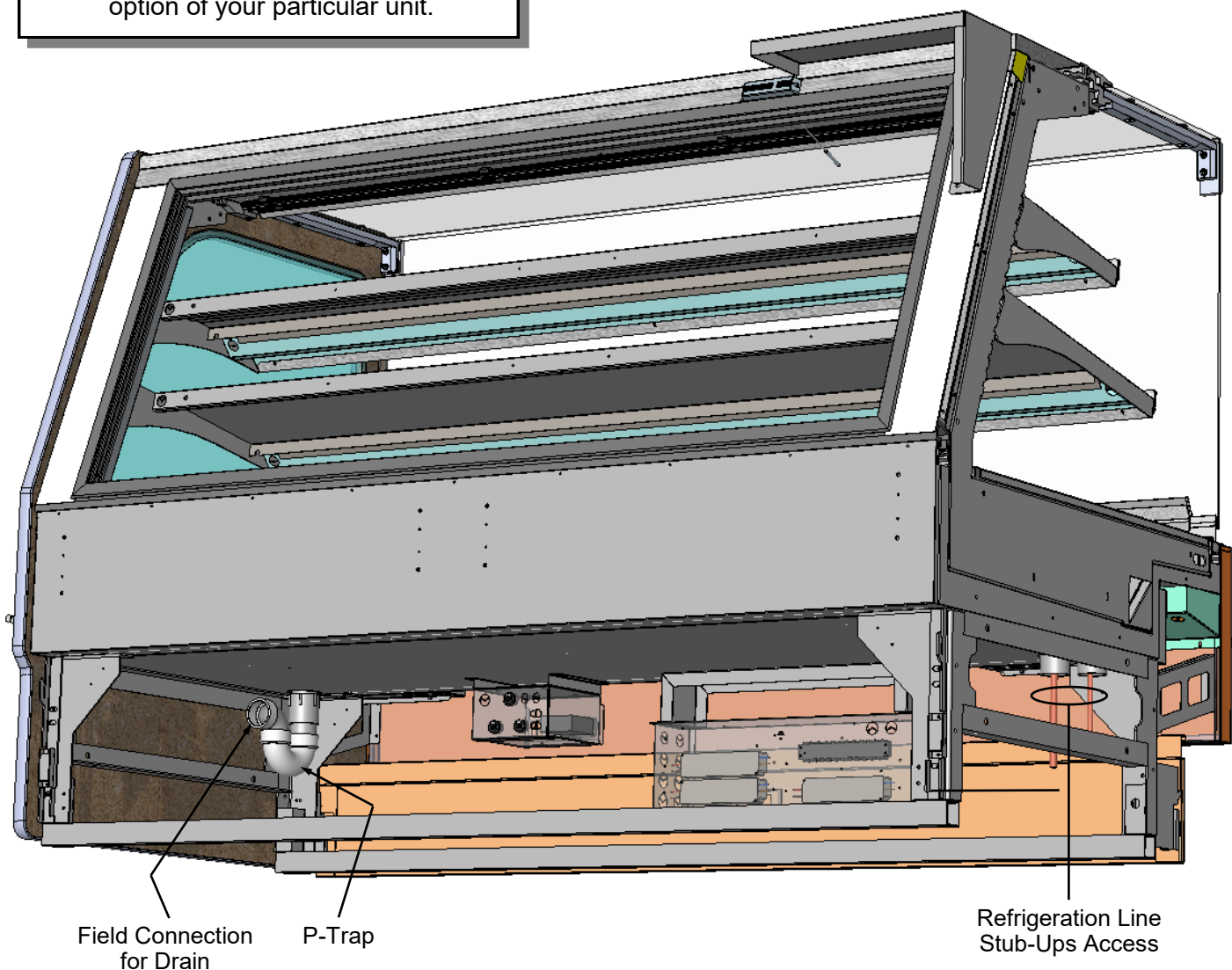
## **10. Refrigeration Line Stub-Up Connections**

- Refrigerant stub-up access is at underside of case.
- Stub-up connections are accessed by removing rear panel (no screws required).
- Run case-to-case connections through cutouts in base.
- Sweat the high and low pressure connections.
- Fill access hole with suitable filler to insure watertight integrity of tub.
- Note: Illustration below may not reflect every feature or option of your particular case.

## **11. Drains**

- Cases have drains at left and right hand sides.
- Longer cases may have drain at case center.
- Drain field connection location as shown.
- See next page for illustration of TXV Valve, Drains, Refrigeration Line Stub-Ups Access, etc.
- Depending upon drain access needs, either front or rear panel may be removed to gain access to drain stub-up.
- 1.5" male PVC stub-up connection is under case.
- Drain stub-up may be at case center in extended length cases.
- Connect tub drain to floor drain. Maintain 1/4" fall per foot to provide proper drainage.

Note: Model GMDSV6R.7115C (model shown) may not reflect every feature or option of your particular unit.



## 12. Scale Stand / Ethernet CAT5 / Receptacle

- Optional scale stand location and illustration is shown below.
- Route the scale stand cord through into receptacle (shown below).
- Plug scale stand cord into receptacle as shown in illustration below.
- Depending upon options chosen, CAT5 (Category 5) network cable outlet may also be available at scale stand base (as shown below).

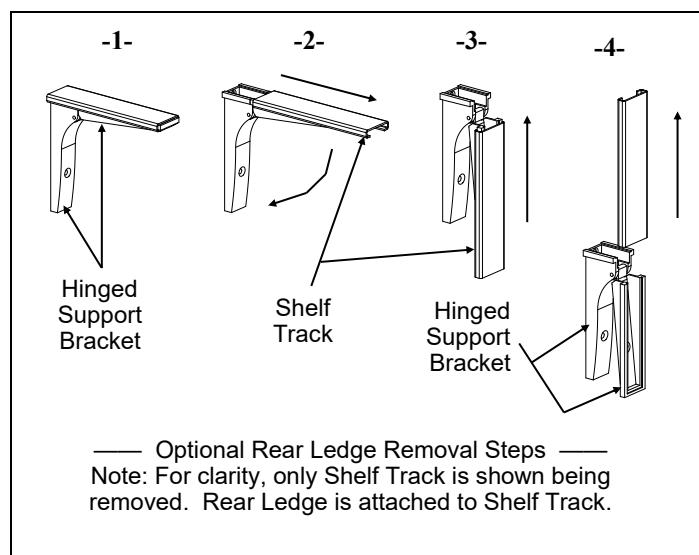
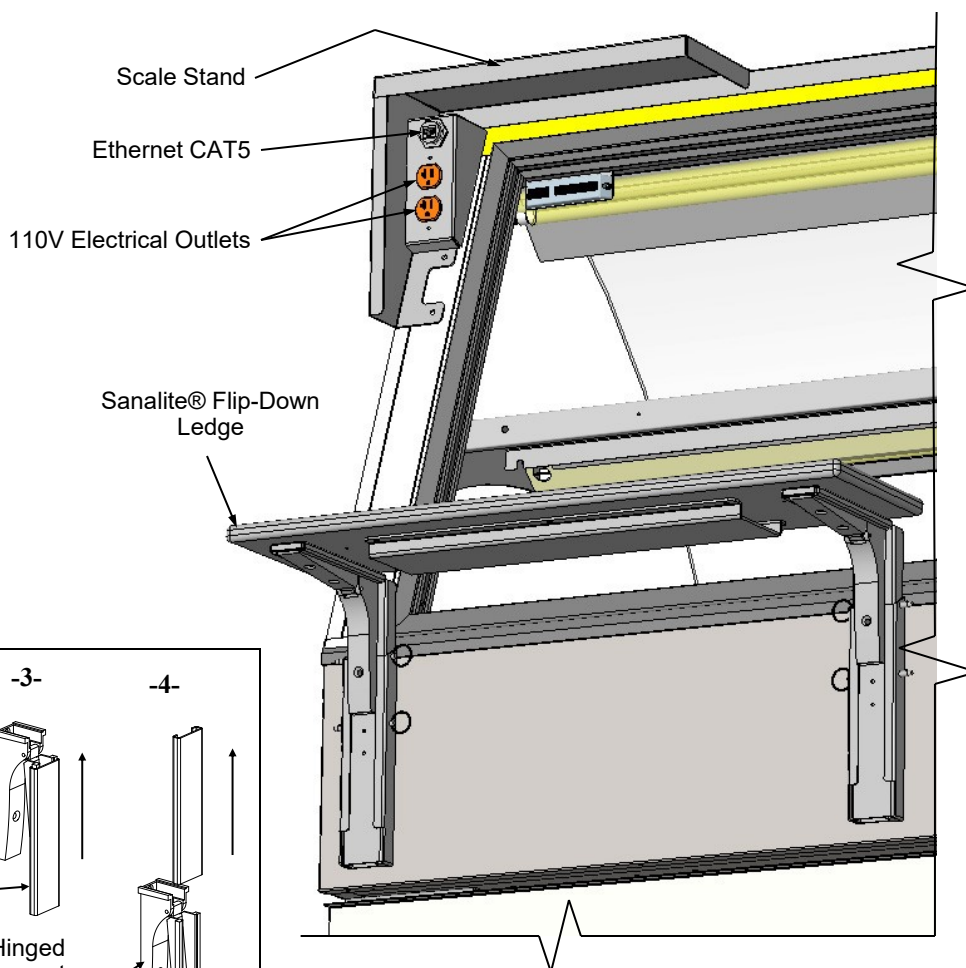
## 13. Rear Ledge

Rear Ledge is connected to Shelf Track. See below for Rear Ledge removal steps.

Rear ledge step-by-step removal method is as follows:

1. Hinged Support Bracket is shown in its standard upright position.
- 2 & 3. While upright, Rear Ledge must be slid away from case and then rotated downward to vertical position.
- 3 & 4. From the shelf's lowered position, lift from bottom edge upward to disengage shelf track (and attached Rear Ledge) from bracket.

Note: Illustrations shown may not exactly reflect every feature or option of your particular case.

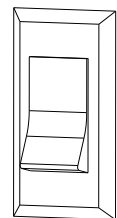


Note: Illustration shown may not exactly reflect every feature or option of your particular unit.

## START-UP AND OPERATION

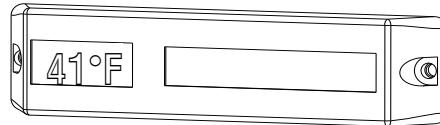
### Start-Up And Operation

- Unit will energize when properly field wired.
- Evaporator coil fans will automatically turn on. From the front of the case, lift glass and remove the decking; check to see that the coil fans are all functioning properly.
- Lights switch is accessible at case front-left, near upright. See illustration below.
- Turn light switch on. All lights should come on at the same time. First time lighting may require a short warm up-period for the bulbs.
- Slightly dim or a flickering of new bulbs is normal.
- If lights do not turn on, check all raceway plugs. The lighting is wired in series so **all lights must be plugged in or receptacles capped** in order for the case to light.
- Refrigeration section has been tested to maintain temperature at or below 5 °Celsius / 41 °Fahrenheit.
- Note: Thermometers provided with equipment reflect internal air temperature only (not actual food temperature). Use probe thermometers to determine actual product temperatures.

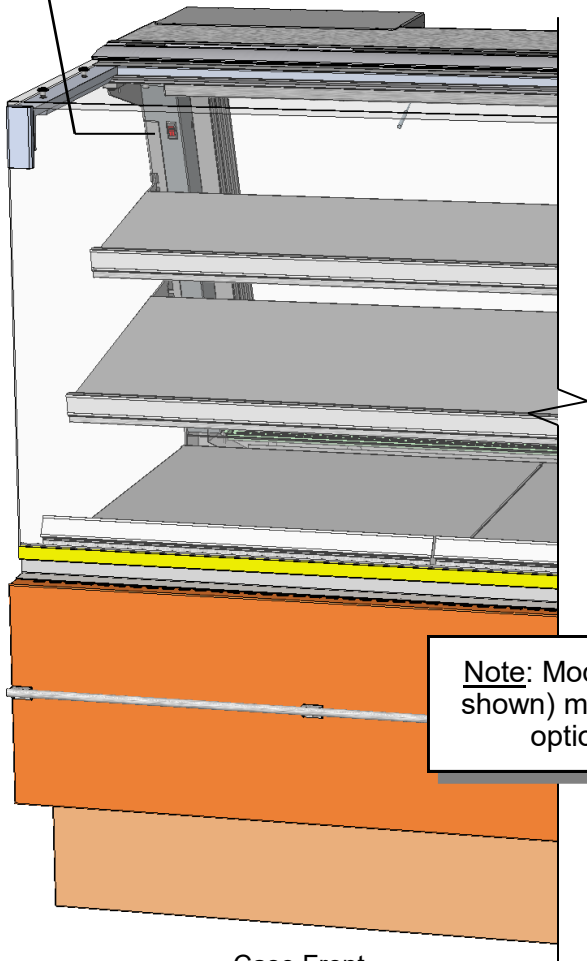


Light Switch

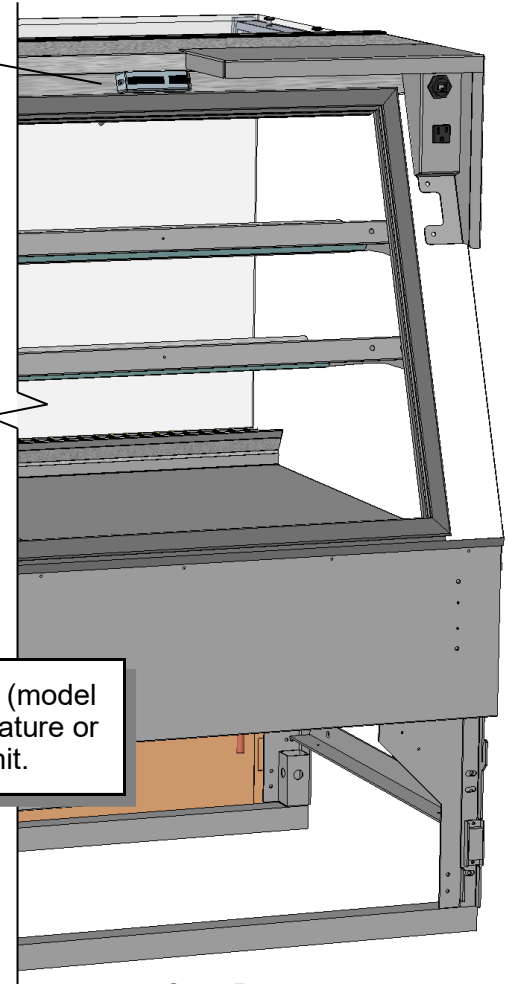
Digital Thermometer (Shown)



or Spirit-Filled Thermometer



--- Case Front ---



--- Case Rear ---

Note: Model GMDSV6R.7115C (model shown) may not reflect every feature or option of your particular unit.

## 1. LED Style Light Fixtures

### Removal of Faulty LED Lights:

- Contact Structural Concepts' Technical Service Department for replacement LED lights.
- Turn off LED light switch.
- To remove faulty LED light, follow these steps:
  - A. Disconnect plug from LED light.
  - B. Using both hands, grasp LED light assembly (with its magnetic mounting clips). Pull downward and off its shelf (or header).
  - C. Remove magnetic mounting clips from LED light by pressing against flange part of clip with thumb.

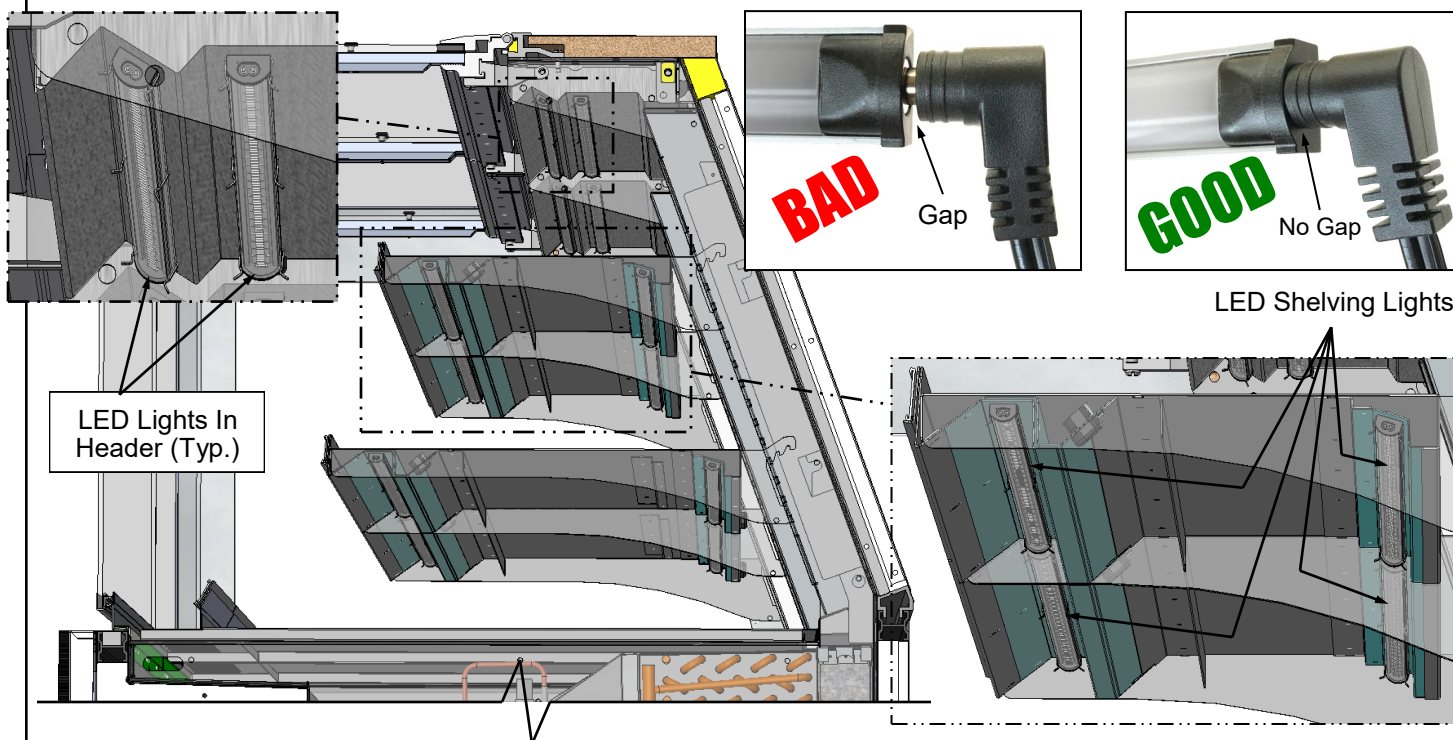
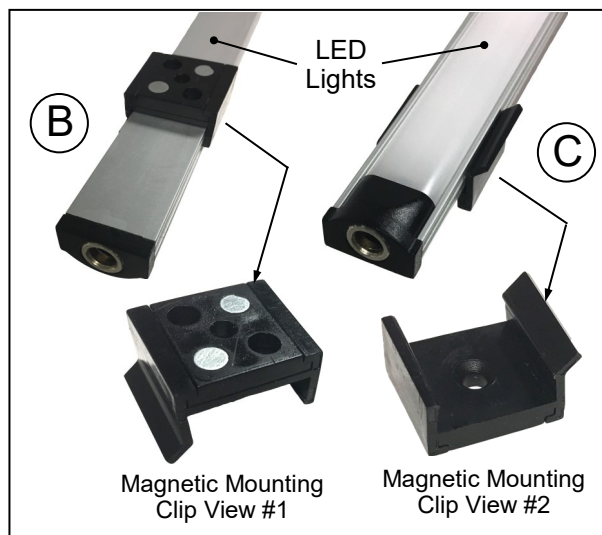
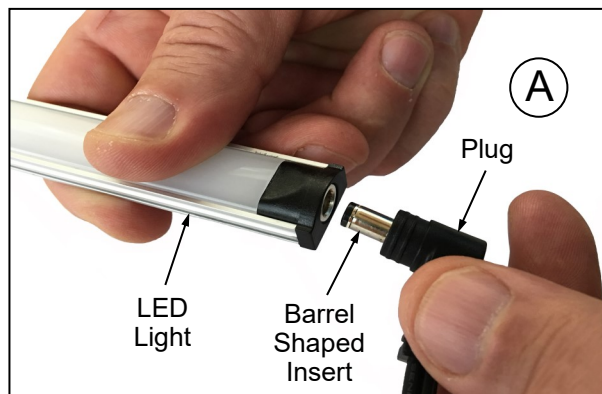
>> **Note:** Mounting clips MAY be riveted to shelf or header. In such instances, simply remove LED light from mounting clips by pressing against flange part of clips with thumb.

### Replacement of LED lights:

- Attach magnetic mounting clips onto LED light.
- Adjust magnetic mounting clips so they are equally spaced on LED light.
- Reattach LED light assembly to its shelf/header.
- Position properly in shelf/header.

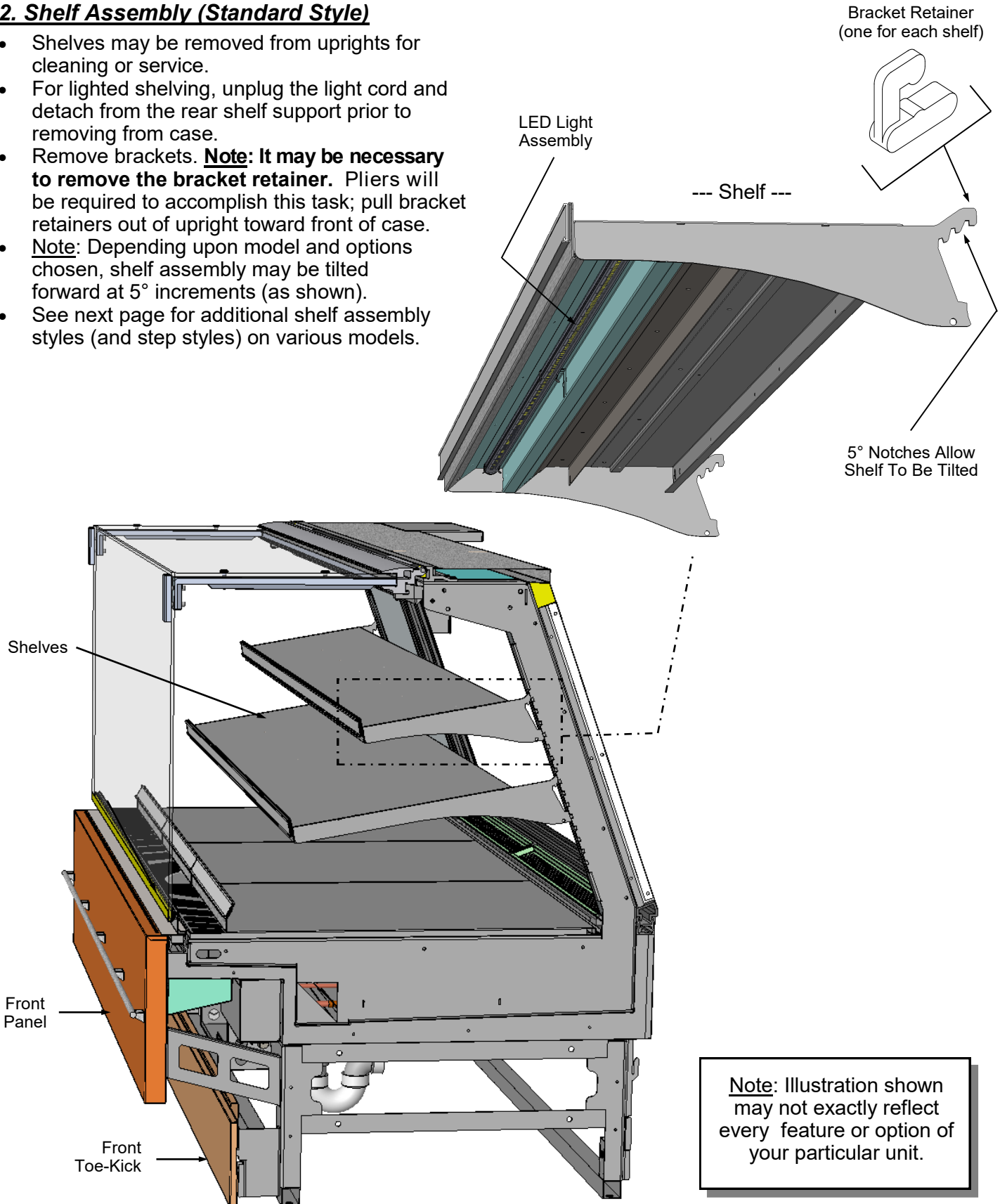
>> **Note:** If mounting clips are riveted to shelf (or header), attach by placing LED in base of clip and then snapping into clip at FLANGE SIDE.

- Press plug's barrel-shaped insert deep into LED light.
- **Important:** If plug is not inserted ALL THE WAY IN the LED light's orifice, the light may not energize. See "BAD" vs. "GOOD" insertion illustrations below-right.
- Turn LED light switch back on.



## 2. Shelf Assembly (Standard Style)

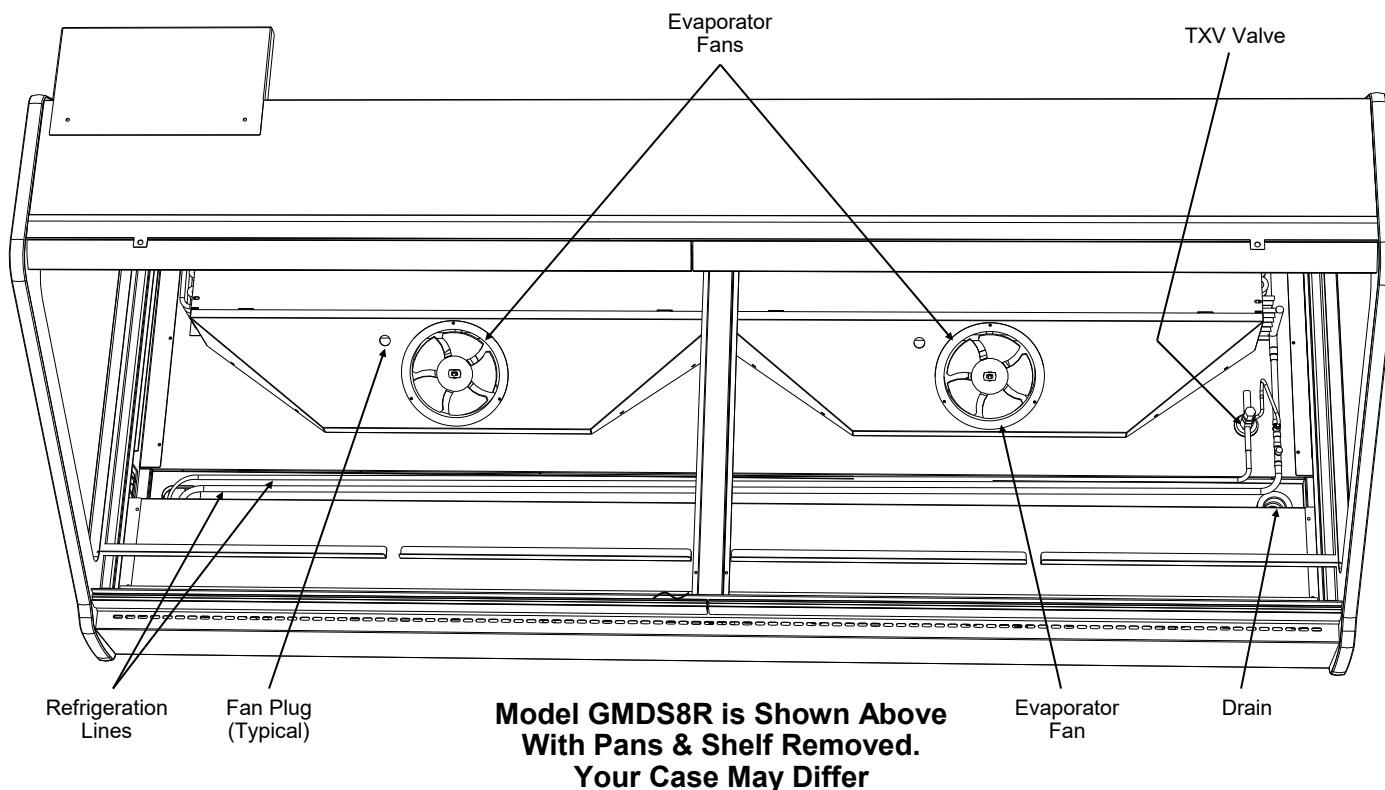
- Shelves may be removed from uprights for cleaning or service.
- For lighted shelving, unplug the light cord and detach from the rear shelf support prior to removing from case.
- Remove brackets. **Note: It may be necessary to remove the bracket retainer.** Pliers will be required to accomplish this task; pull bracket retainers out of upright toward front of case.
- **Note:** Depending upon model and options chosen, shelf assembly may be tilted forward at 5° increments (as shown).
- See next page for additional shelf assembly styles (and step styles) on various models.



### **3. Drain and Expansion Valve Access**

- The drain and expansion valve are both accessible from the front of the case.
- Unplug the fans (one plug per side) and remove the fastener from the access panel in the front right (or left) corner of the unit.
- The drain and the expansion valve (TXV) is directly below the access panel.

Note: Illustration shown may not exactly reflect every feature or option of your particular unit.



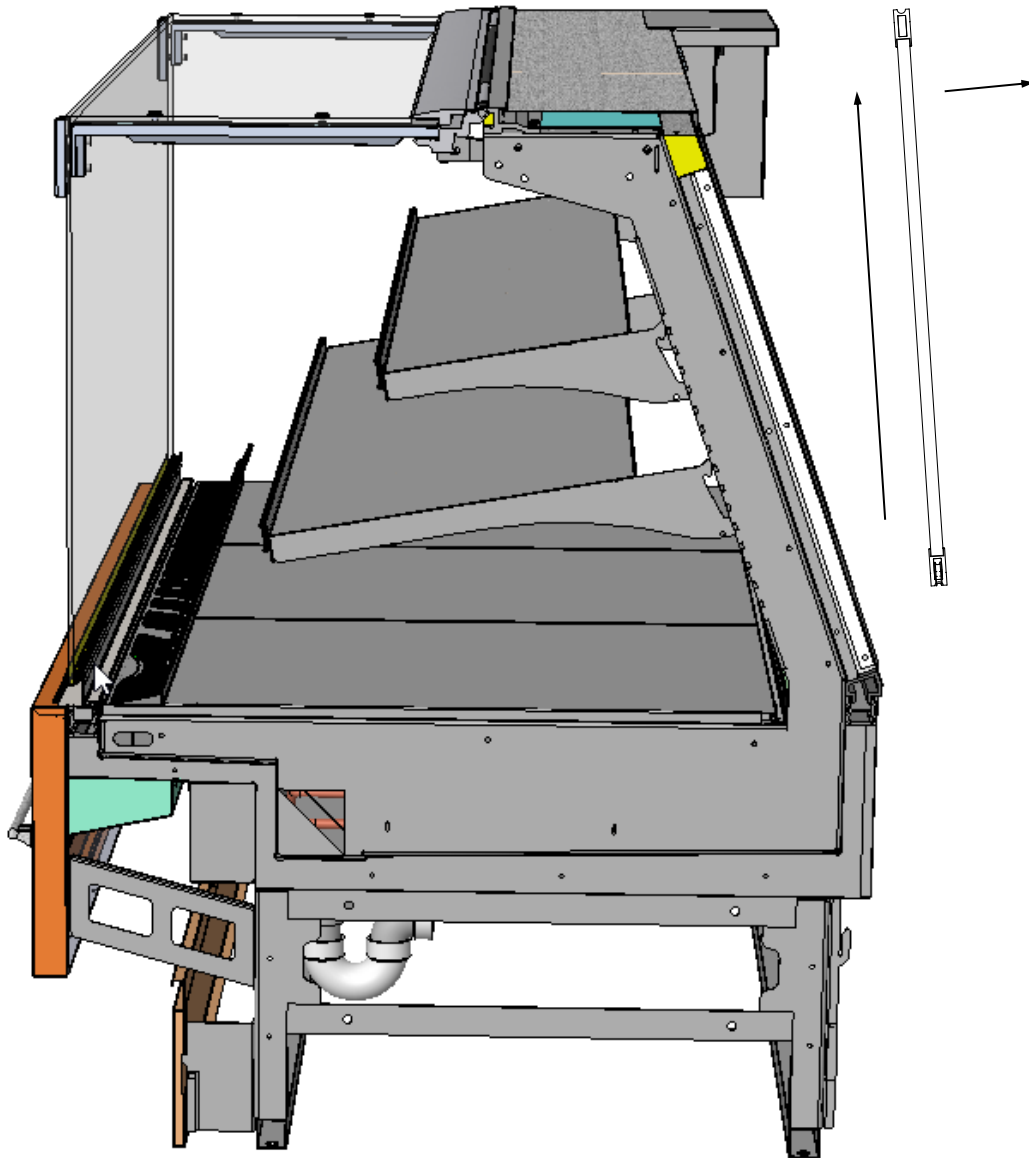
### 4. Removing the Rear Sliding Doors

Note: Doors are not interchangeable. There is an inner and outer door. The outer must be removed first and replaced last.

- The outer door is the right hand door (from the service side or rear of case).
- It is identified by a stop located at the lower right hand corner to the inside of the case.
- Move doors toward the center of the case.
- Individually lift each door up toward the top of the case; pivot the bottom of the door out.

- Carefully set rear sliding doors down to prevent them from falling.
- Replace rear sliding doors in reverse order they were removed.

Note: Model GMDSV6R.7115C (shown) may not exactly reflect every feature or option of your particular unit.



--- Case With Set of Rear Sliding Doors ---

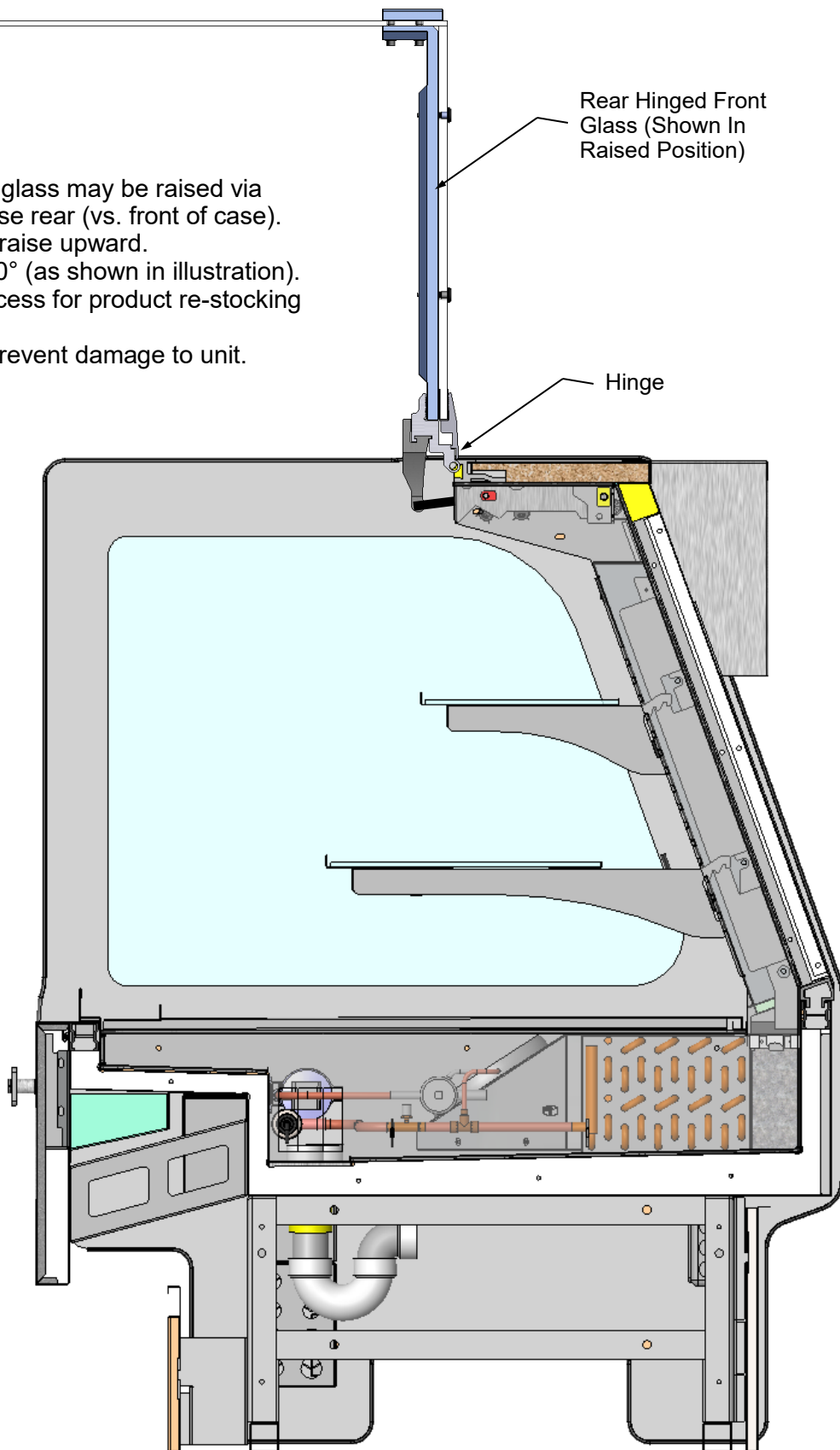
Lift Handle

Rear Hinged Front  
Glass (Shown In  
Raised Position)

### **5. Rear Hinged Front Glass**

- Models have UV-glued front glass may be raised via hinge that is located near case rear (vs. front of case).
- Simply grasp lift handle and raise upward.
- Front glass will raise up to 90° (as shown in illustration).
- Raised glass allows front access for product re-stocking and/or cleaning purposes.
- Lower front glass slowly to prevent damage to unit.

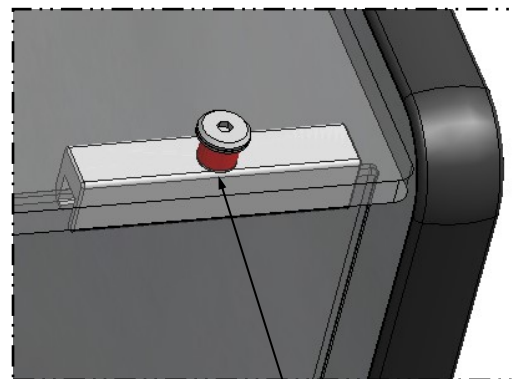
Hinge



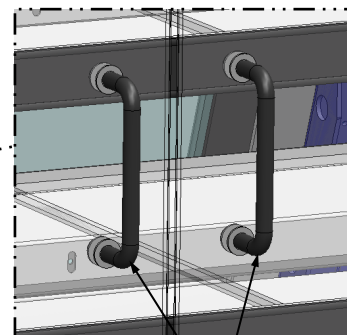
**Note:** Model shown  
may not reflect every  
feature or option of your  
particular unit.

### **6. Front Hinged Glass Doors**

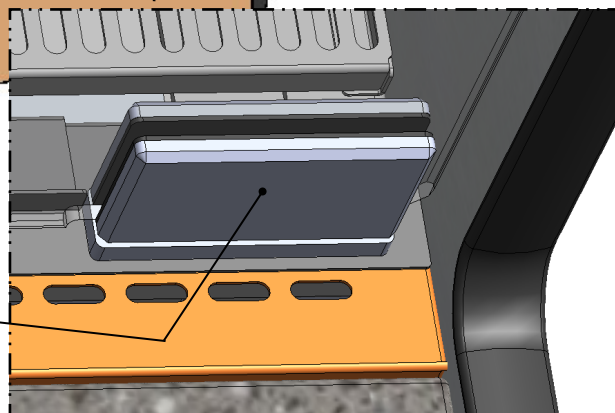
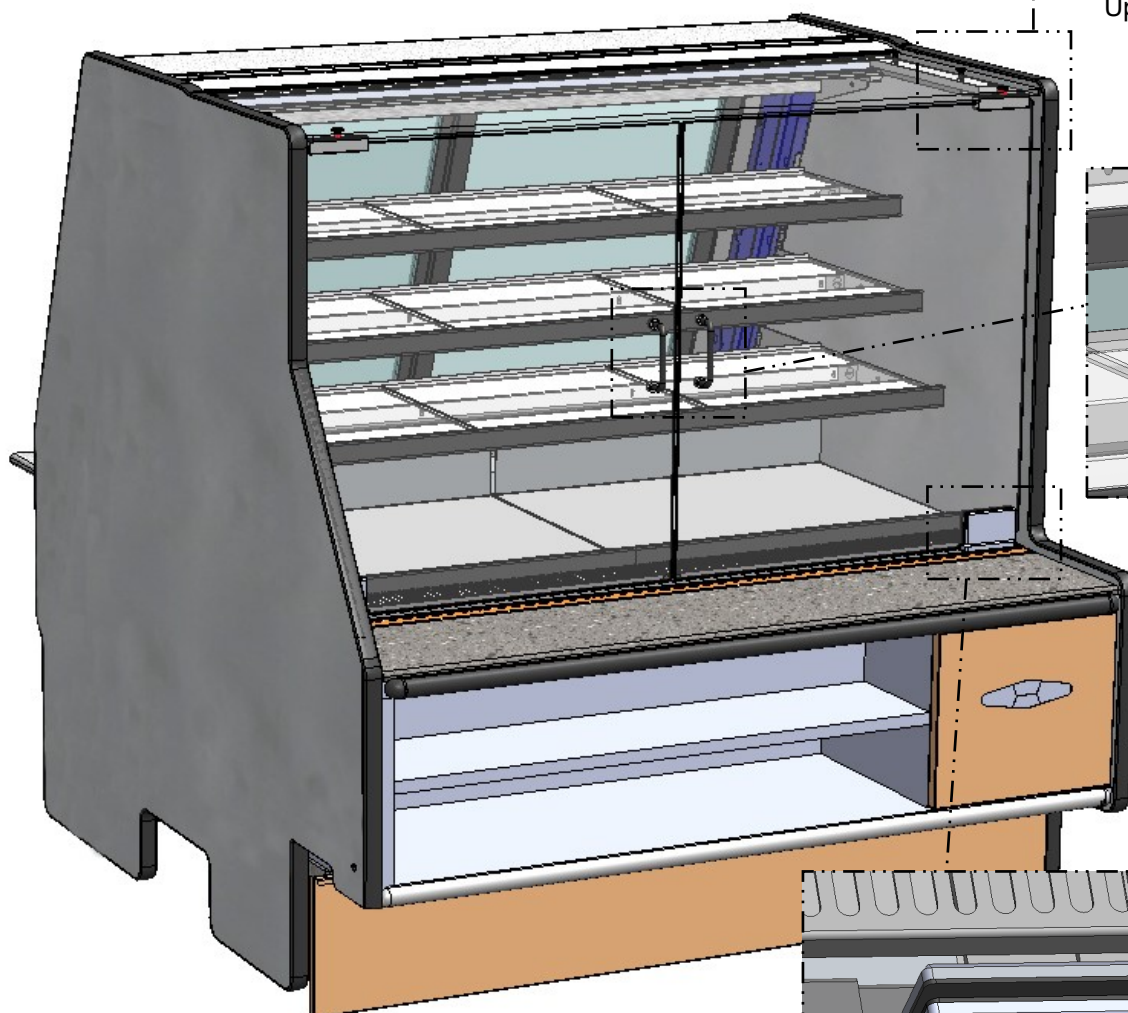
- Doors with hinges at front (at left and right sides) are to be opened with handles (a center of case).
- Carefully grasp handles and slowly pull outward.
- Doors will open.
- Close doors slowly to prevent slamming or jarring glass.
- Model GMDSV4R.7503 is shown below. Your model may differ.



Upper Hinge  
(Typ.)



Door Handles



Lower Hinge  
(Typ.)

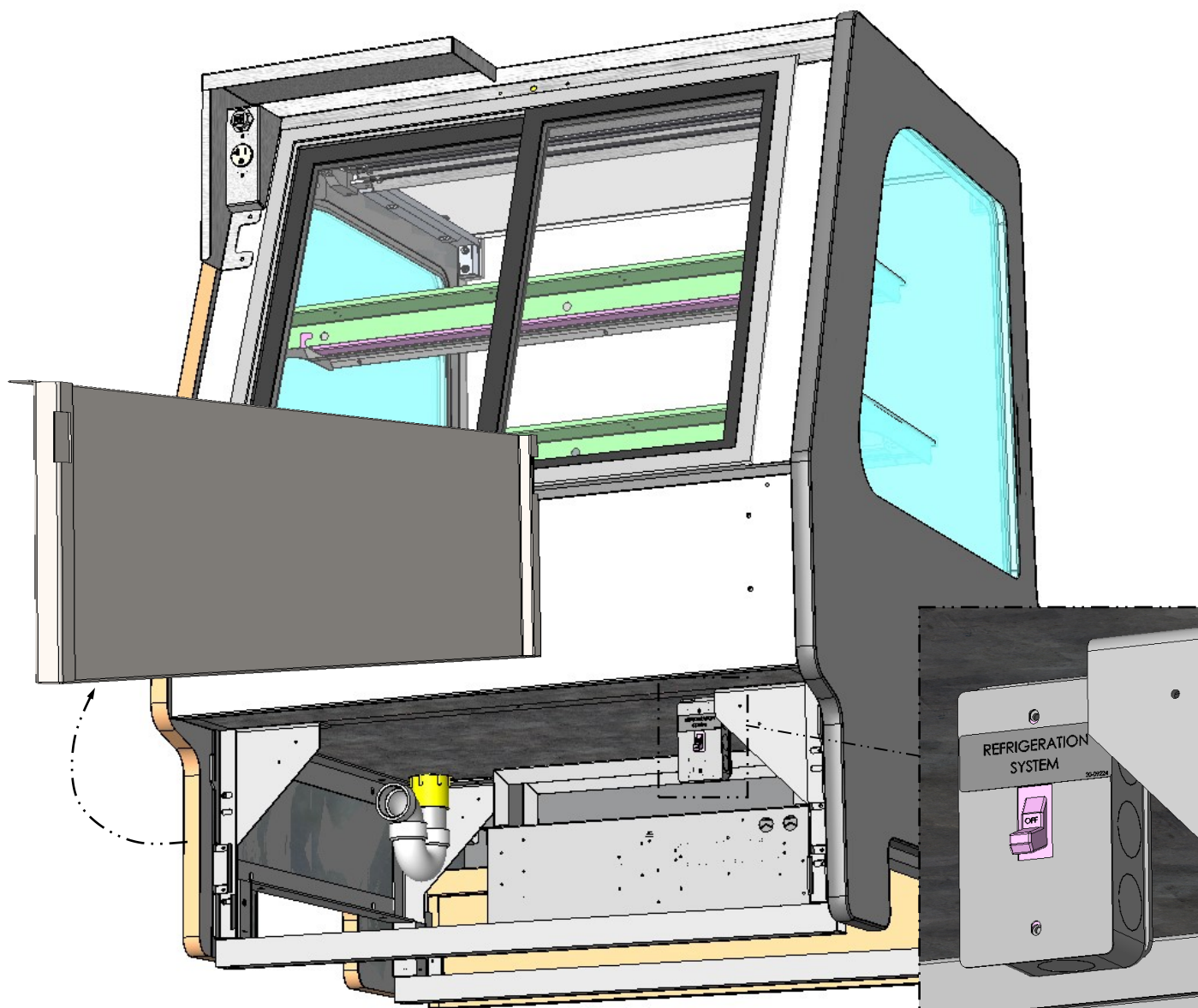
**7. Refrigerated to Dry Switch (Optional)**

Certain models may be able to switch from refrigerated to dry (non-refrigerated).

- To access switch, simply lift rear toe-kick up and off case (as shown below).

- Only authorized store personnel are to access switch.
- After unit has been set to desired state (either refrigerated or dry) via rear switch, return rear toe-kick to case.

Note: Illustration shown may not reflect every feature or option of your particular unit.

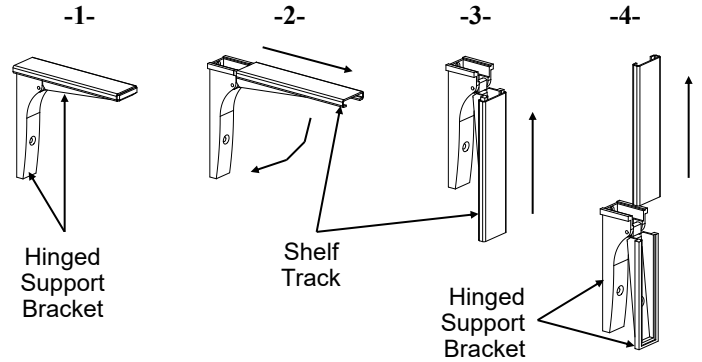


--- Case With Single Set of Rear Sliding Doors ---

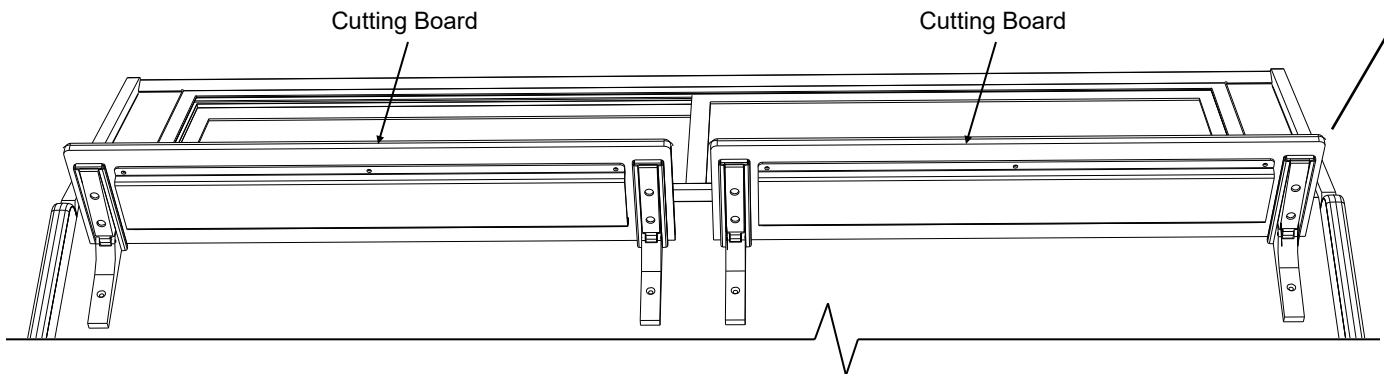
### **8. Cutting Board / Rear Ledge Removal Steps**

The illustrations at right and below reflect step-by-step removal method.

1. Hinged Support Bracket is shown in its standard upright position.
- 2 & 3. While upright, Rear Ledge must be slid away from case and then rotated downward to vertical position.
- 3 & 4. From the shelf's lowered position, lift from bottom edge upward to disengage shelf track (and attached Rear Ledge) from bracket.



————— Rear Ledge Removal Steps —————  
 Note: For clarity, only Shelf Track is shown being removed. Rear Ledge is attached to Shelf Track.

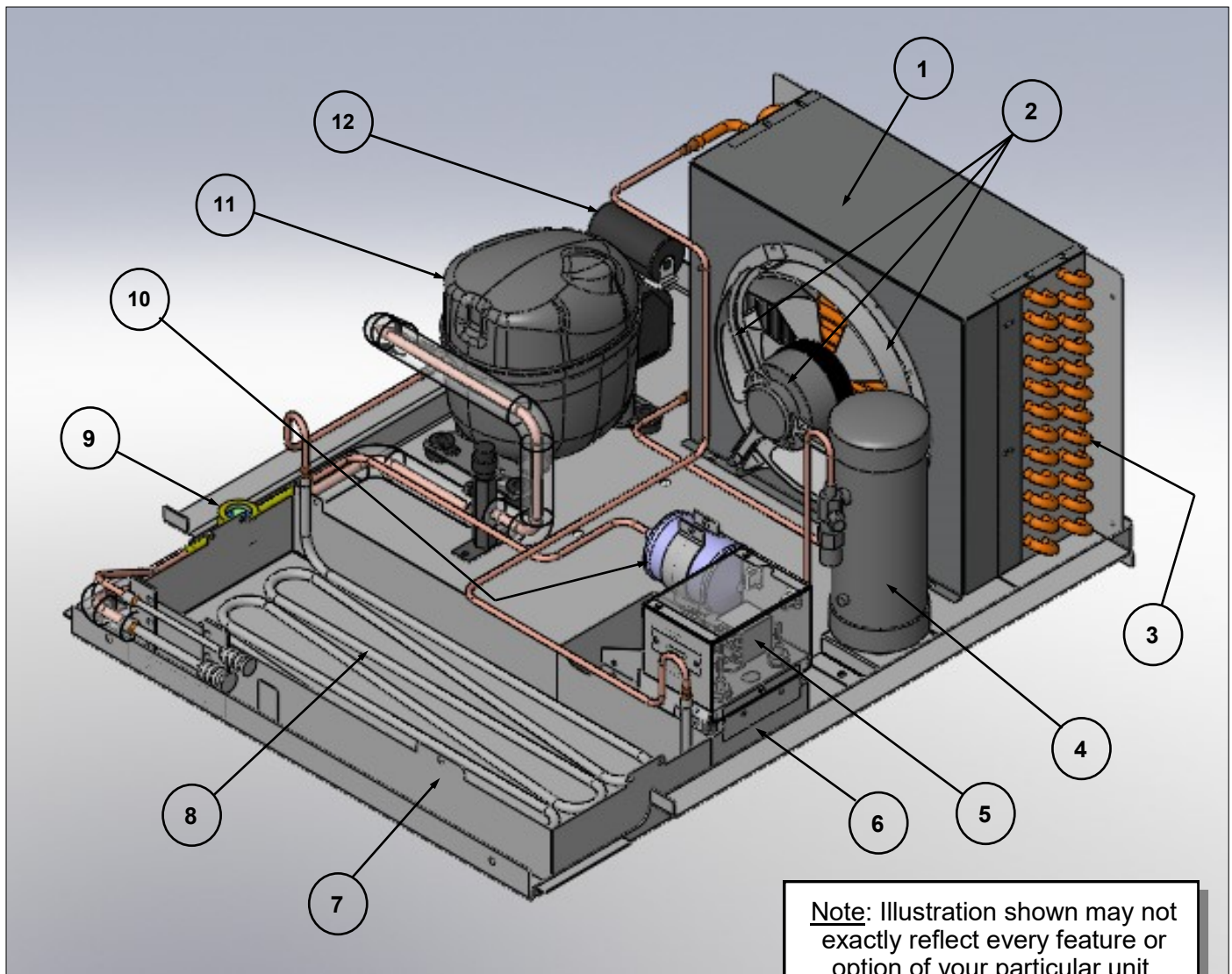


**Note:** Illustration shown may not exactly reflect every feature or option of your particular unit.

## 9. General EnergyWise Condenser Package Configuration

- Note: Your particular compressor may have slightly different refrigeration package layout.

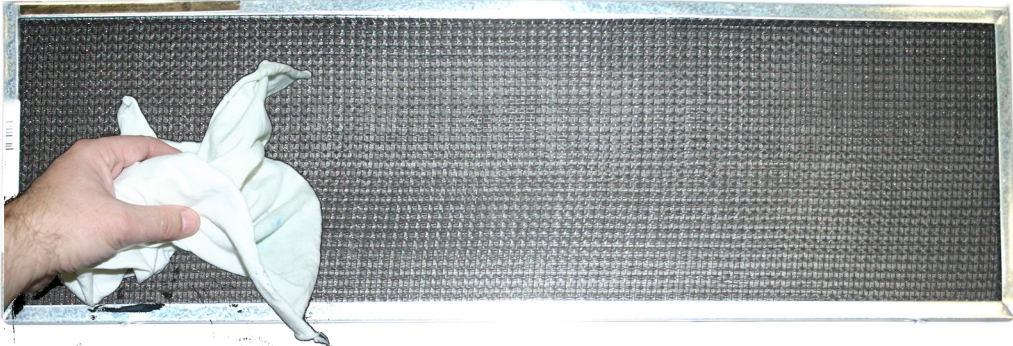
|   |                                                                                                                                |    |                                           |
|---|--------------------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------|
| 1 | Fan Shroud / Condenser Coil Cover: (Optional: May Have Shroud Attached to House Clean Sweep™ Automatic Condenser Coil Cleaner) | 7  | Hot Gas Condensate Evaporator Pan         |
| 2 | Fan Motor & Bracket                                                                                                            | 8  | Hot Gas Loop                              |
| 3 | Condenser Coil Tubing                                                                                                          | 9  | Sight Glass                               |
| 4 | Receiver                                                                                                                       | 10 | Filter / Drier                            |
| 5 | Electrical Box (To Overflow Condensate Pan)                                                                                    | 11 | Hot Gas Loop Compressor                   |
| 6 | Overflow, Hot Gas Condensate Evaporator Pan                                                                                    | 12 | Start Components, Hot Gas Loop Compressor |



# CLEANING SCHEDULE - INTERIOR: TO BE PERFORMED BY STORE PERSONNEL

| AREA     | FREQ.   | INSTRUCTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Interior | Daily   | <b>Decks:</b> Wipe off decks with moist cloth dipped in mild soap and water solution.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|          | Weekly  | <b>Extended Manual Defrost (For Units With Misting System Only):</b> <ul style="list-style-type: none"> <li>Units with misting system can have ice buildup occur (causing case to operate outside acceptable temperatures). Such models include GMDSV8R.7063B and GMDSV12R.7063D. However, misting systems may also be on other models.</li> <li>To prevent ice buildup, case must be placed in extended manual defrost until all ice that may have built up in evaporator coils has thawed. This procedure may take several hours.</li> <li>If uncertain of proper extended manual defrost procedure, see your controller's instruction guide OR contact your facility's maintenance/service manager.</li> </ul> |
|          | Monthly | <b>Tub and Drain (Trained Service Providers Only):</b> <ul style="list-style-type: none"> <li><b>Caution! Turn off power to unit before proceeding.</b></li> <li>Area at underside of decking must be kept free of debris which could clog tub and drain. To access drain area, remove the deck and fan shroud.</li> <li>Use spray bottle and brush to dislodge residue. Use wet-vac on tub, trough and drain to remove residue.</li> <li><b>Caution! Avoid splattering water over the case and surrounding areas!</b></li> </ul>                                                                                                                                                                                 |
|          | Monthly | <b>Condensing Coil:</b> <ul style="list-style-type: none"> <li>Remove grille (by lifting up and off).</li> <li>Use air pressure or industrial strength vacuum; clean dust and dirt that may collect on the condenser coil.</li> <li><b>Caution! Coil fins are sharp. Handle with care!</b></li> <li>Replace rear grille. No screw attachment is necessary.</li> </ul>                                                                                                                                                                                                                                                                                                                                             |

# CLEANING SCHEDULE - EXTERIOR: TO BE PERFORMED BY STORE PERSONNEL

| AREA     | FREQ.   | INSTRUCTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Exterior | Daily   | <b><u>All Glass / Mirrors:</u></b> Clean side glass, front glass and mirrors with household or commercial glass cleaner. Clean out door track with moist cloth.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|          | Daily   | <b><u>Rear Sliding Door Exterior Glass:</u></b> Clean with household or commercial glass cleaner.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|          | Daily   | <b><u>End Panels, Front Panel, Toe-Kick, etc.:</u></b> Wipe off all surfaces with warm water and mild soap solution and non-abrasive cloth.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|          | Weekly  | <b><u>Wood, Laminate and Painted Surfaces:</u></b> Clean with mild soap and water solution and a soft cloth .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|          | Weekly  | <b><u>Magnetic Condenser Coil Filter (Self-Contained Units Only):</u></b> <ul style="list-style-type: none"> <li>• This filter helps prevent dust particles from entering condenser coil.</li> <li>• It is usually accessible at case rear.</li> <li>• Clean magnetic condenser coil filter by following either step 1 or 2; then follow step 3: <ol style="list-style-type: none"> <li>1. To clean by hand, (without using dishwasher), remove magnetic condenser coil filter from case. Use a rag or soft-bristled brush to wipe off excess dust particles from filter. Submerge in warm, soapy water. Use soft-bristled brush to remove dust, dirt, grease and grime that may collect on filter. Rinse thoroughly. Skip to step #3.</li> <li>2. As magnetic condenser coil filter is dishwasher safe, remove from case (no screw removal required) and use a rag or soft-bristled brush to wipe off excess dust particles from filter. Run in normal dishwasher cycle. Remove from dishwasher. Go to next step.</li> <li>3. Dry with soft cloth or paper towel (as shown below) or allow to air dry. Replace.</li> </ol> </li> </ul>  |
|          | Monthly | <b><u>Under Case Cleaning:</u></b> Remove front toe-kick (or rear panel). Vacuum under case to remove all dust and dirt. Replace front toe-kick (or rear grille) when complete.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## CLEANING SCHEDULE -STAINLESS STEEL: TO BE PERFORMED BY STORE PERSONNEL

### General Stainless Steel Surface Cleaning (To Be Performed As Often As Needed):

- Certain grades of stainless steel, and some are more prone to corrosion than others.
- Stainless steel can become exposed to a wide variety of contaminants, which if left untreated can cause stains and rust.
- Stainless steel requires a specific cleaning procedure to maintain its sheen and remain rust-free.
- Wash with a solution of liquid dishwashing detergent and hot water.
- Rinse with pure hot water from spray bottle. Wipe with clean sponge. This will remove soap residue that can lodge in stainless steel's microscopic grooves, causing rust.
- Dry with clean, soft cloth or paper towel.
- **Caution!** *To prevent rust, you MUST rinse with pure hot water from a spray bottle while wiping with clean sponge after EACH cleaning.*
- **Caution!** *Never clean with scouring powder or steel wool as they can mar, scratch and/or erode the surface of stainless steel. When the surface properties of stainless steel have been compromised, rust can form.*

### Brightening:

- **Method 1:** Brighten by polishing with a soft cloth or sponge with a solution of one part vinegar to 2 parts water in a spray bottle.
- **Method 2:** Sprinkle baking soda on sponge and rub gently with soft cloth or sponge.
- **Caution!** *To prevent rust, you MUST rinse with pure hot water from a spray bottle while wiping with clean sponge after EACH cleaning.*
- Dry with clean, soft cloth or paper towel.

### Removing Streaks or Stains:

- **Method 1:** Place two teaspoons of rubbing alcohol on a microfiber cloth or pad. Rub the cloth along the grain of the appliance until the entire area has been wiped. The rubbing alcohol will air dry itself.
- **Method 2:** Dip soft cloth or sponge in club soda and rub gently over area of concern.
- **Caution!** *To prevent rust, you MUST rinse with pure hot water from a spray bottle while wiping with clean sponge after EACH cleaning.*
- Dry with clean, soft cloth or paper towel.

### Polishing:

- Place a dab of olive oil onto clean soft cloth. Spread over area until a light sheen is observed. Use pressure to "work the oil" into the small grooves in the surface. Apply firm, steady pressure using small circular motions.
  - > **Dry buff:** Remove excess oil with clean cloth or paper towel using small circular motions.
  - > **Wet buff:** Use an ounce or white vinegar with clean cloth or paper towel using small circular motions.
  - > Continue wiping until oily finish has been removed.
- **Caution!** *To prevent rust, you MUST rinse with pure hot water from a spray bottle while wiping with clean sponge after EACH cleaning.*
- Dry with clean, soft cloth or paper towel.

### Removing Rust:

- If rust has begun to form, there are a variety of products that can treat it.
- Among these are CLR® (calcium, lime and rust remover) and Chemetall Oakite 33 (rust, oxides and scale remover).
- **Caution!** *To prevent food contamination, personal injury or further corrosion, carefully follow the recommended cleaning precautions and instructions.*

**PREVENTIVE MAINTENANCE - TO BE PERFORMED BY TRAINED SERVICE PROVIDERS ONLY**

**WARNING! TURN OFF CASE BEFORE PERFORMING PREVENTIVE MAINTENANCE!**

| PREVENTIVE MAINTENANCE | FREQ.     | INSTRUCTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Case Exterior          | Quarterly | <p><b><u>Condensing Coil:</u></b></p> <ul style="list-style-type: none"> <li>Remove rear grille to access area. Simply lift up and off.</li> <li>Roll/slide out condenser package. <b>Note:</b> At initial slide-out, it may be necessary to remove two (2) compressor pan shipment screws to slide it out from under case.</li> <li><b>Warning! Coil fins are sharp. Handle with care!</b></li> <li><b>Caution! Airborne dust can contaminate food!</b> Use wet rags to cover area where air pressure is blowing.</li> <li>Use air pressure or industrial strength vacuum; clean dust and dirt that may collect on condenser coil.</li> <li>Slide/roll condensing package back under case.</li> <li>Return rear grille to case.</li> </ul>                                                                                                                                                                                                                                                                                                                                 |
|                        | Quarterly | <p><b><u>Under Case Cleaning:</u></b> Once refrigeration package is clear of unit, vacuum under case to remove all dust and dirt that collects under case.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Case Interior          | Quarterly | <p><b><u>Tub, Coil, Drain, Evaporator Fans, Brackets:</u></b></p> <ul style="list-style-type: none"> <li>Remove decking.</li> <li>Use vacuum to clean entire area.</li> <li>After vacuuming, clean area with warm water, clean cloth, and mild soap solution.</li> <li>Remove any debris that may clog drain.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                        | Quarterly | <p><b><u>Refrigeration Package/Compressor Area (Self-Contained Units Only):</u></b><br/> <b>Caution! Be certain to disconnect power from case before cleaning refrigeration package!</b></p> <ul style="list-style-type: none"> <li><b>Warning! Overflow condensate pan is HOT! Disconnect power from case and allow to cool before cleaning evaporator pan!</b></li> <li>Slide/roll compressor package out from under case.</li> <li>Use a scrub-brush and a de-scaling solution such as CLR® (to prevent corrosion, lime and rust). Follow instructions as to proper dilution, safety precautions and scrubbing method.</li> <li>After thoroughly cleaning pan with scrub-brush and solution, rinse thoroughly with clean water (in spray bottle) and wipe dry with sponge or paper towel.</li> <li>Use moist cloth to wipe off dust &amp; debris that collects on various parts (fans, sight glass, overflow pan, etc.).</li> <li>Slide refrigeration assembly back under case.</li> <li>Replace front panel and lower grille via hooks (no screws required).</li> </ul> |

## TROUBLESHOOTING - TO BE PERFORMED BY STORE PERSONNEL (UNLESS NOTED OTHERWISE)

| CONDITION                                 | TROUBLESHOOTING                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ice Is Forming on Evaporator Coils</b> | Perform extended manual defrost weekly. See <b><i>CLEANING SCHEDULE - TO BE PERFORMED BY STORE PERSONNEL</i></b> section in manual for additional information.                                                                                                                                                               |
| <b>Product Is Drying Out</b>              | <u>Trained Service Providers Only</u> : Check the relative humidity in the store.                                                                                                                                                                                                                                            |
| <b>Water Is On The Floor</b>              | <u>Trained Service Providers Only</u> : Check that the drain trap is free of debris.                                                                                                                                                                                                                                         |
|                                           | Check that the drain hose is correctly positioned over hot gas condensate pan.                                                                                                                                                                                                                                               |
|                                           | <u>Trained Service Providers Only</u> : Check store conditions. <ul style="list-style-type: none"> <li>• For NSF® Type 1 Conditions (most cases): ambient conditions are to be at 55% max. humidity / 75 °F.</li> <li>• For NSF® Type 2 Conditions: ambient conditions are to be at 55% maximum humidity / 80 °F.</li> </ul> |
| <b>Fan Emits Excessive Noise</b>          | <u>Trained Service Providers Only</u> : Check that the case is aligned, level and plumb.                                                                                                                                                                                                                                     |
|                                           | <u>Trained Service Providers Only</u> : Check evaporator fan for cleanliness.                                                                                                                                                                                                                                                |
|                                           | <u>Trained Service Providers Only</u> : Unplug/power off fan motors. Check motor shaft for bearing wear.                                                                                                                                                                                                                     |
|                                           | <u>Trained Service Providers Only</u> : Check that fan motors are securely mounted in brackets.                                                                                                                                                                                                                              |
|                                           | <u>Trained Service Providers Only</u> : Verify that fan blades are securely mounted to fan motor.                                                                                                                                                                                                                            |
|                                           | <u>Trained Service Providers Only</u> : Check that nothing is preventing blade rotation.                                                                                                                                                                                                                                     |
|                                           | <u>Trained Service Providers Only</u> : Check that the fan shroud is properly secured.                                                                                                                                                                                                                                       |
| <b>Fans Not Working</b>                   | Check that the MAIN power switch is on.                                                                                                                                                                                                                                                                                      |
|                                           | <u>Trained Service Providers Only</u> : Check that fans are plugged in at the fan shroud.                                                                                                                                                                                                                                    |
|                                           | <u>Trained Service Providers Only</u> : Check for foreign material obstructing fan performance.                                                                                                                                                                                                                              |
|                                           | <u>Trained Service Providers Only</u> : Check that fan blades freely rotate within fan shrouds.                                                                                                                                                                                                                              |
|                                           | <u>Trained Service Providers Only</u> : Check that power is going to fans.                                                                                                                                                                                                                                                   |
|                                           | <u>Trained Service Providers Only</u> : Check that fan wiring is connected on terminal blocks                                                                                                                                                                                                                                |
| <b>Digital Control Display Is Blank</b>   | Check that the MAIN power switch is on.                                                                                                                                                                                                                                                                                      |
|                                           | <u>Trained Service Providers Only</u> : Check the circuit breaker box for tripped circuits.                                                                                                                                                                                                                                  |
| <b>System Not Operating</b>               | <u>Trained Service Providers Only</u> : Check that the utility power is on.                                                                                                                                                                                                                                                  |
|                                           | Check that the MAIN power switch is on.                                                                                                                                                                                                                                                                                      |
|                                           | <u>Trained Service Providers Only</u> : Check the circuit breaker box for tripped circuits.                                                                                                                                                                                                                                  |

## TROUBLESHOOTING - TO BE PERFORMED BY STORE PERSONNEL (UNLESS NOTED OTHERWISE)

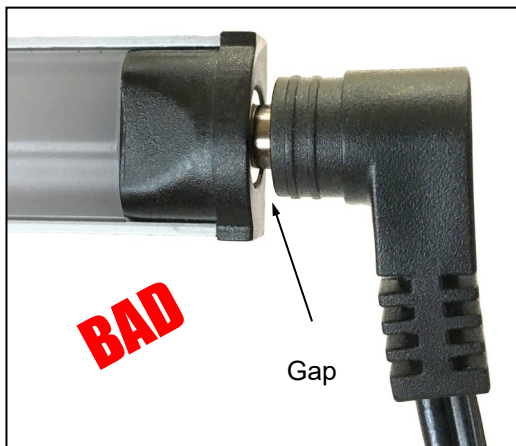
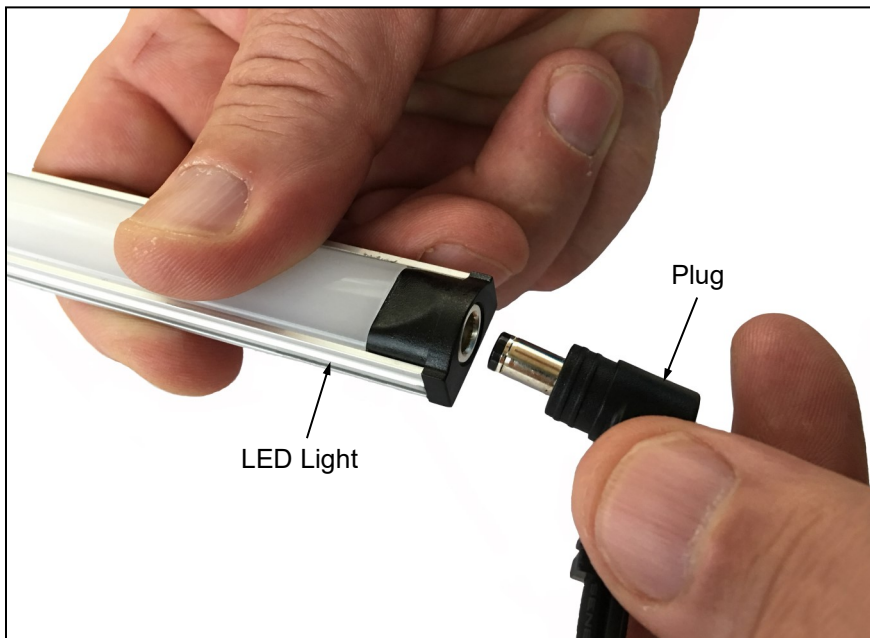
| CONDITION                               | TROUBLESHOOTING                                                                                                                                                                                                                                                 |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Not Holding Temperature</b>          | If a large amount of warm product was added to the case, it will take time for the temperature to adjust. Unit needs product to be pre-chilled.                                                                                                                 |
|                                         | Temperature changes during defrost mode but will return to normal. Fourth LED will indicate defrost cycle in progress.                                                                                                                                          |
|                                         | Check that case is not in sun or near a heat or air-conditioning vent.                                                                                                                                                                                          |
|                                         | If case is located near outside doors, temperature fluctuation can hinder unit's ability to maintain temperature.                                                                                                                                               |
|                                         | Check that condenser coil has been cleaned.                                                                                                                                                                                                                     |
|                                         | Check air return grilles for obstructions.                                                                                                                                                                                                                      |
|                                         | <u>Trained Service Providers Only</u> : Check sight glass for flashing and/or low charge.                                                                                                                                                                       |
|                                         | <u>Trained Service Providers Only</u> : Check set point temperature; it may be adjusted too high.                                                                                                                                                               |
| <b>Condensing Unit Is Not Operating</b> | Check that the power is turned on.                                                                                                                                                                                                                              |
|                                         | Determine if temperature controller settings are properly set. See your case's serial label for your model's specified settings. See <b>SERIAL LABEL LOCATION &amp; INFORMATION LISTED / TECH INFO &amp; SERVICE</b> section in manual for label location, etc. |

## TROUBLESHOOTING - TO BE PERFORMED BY STORE PERSONNEL (UNLESS NOTED OTHERWISE)

| CONDITION                      | TROUBLESHOOTING                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Case Lights Not Working</b> | <p>Check that light switch is in the <i>ON</i> position.</p> <ul style="list-style-type: none"> <li>• See <b><i>CASE DESIGN, CONT'D: LED LIGHTS / LED LIGHT SWITCH LOCATIONS</i></b> section in manual for switch location (regardless of case design).</li> </ul>                                                                                                                                                                                                                   |
|                                | <p>If case is not hard-wired, check that power cord is properly connected to wall outlet.</p>                                                                                                                                                                                                                                                                                                                                                                                        |
|                                | <p>Check that ALL of the light plugs are properly connected to the LED light.</p> <ul style="list-style-type: none"> <li>• Plug must be inserted ALL THE WAY into the LED light orifice (with no gap).</li> <li>• See illustrations below-left.</li> </ul>                                                                                                                                                                                                                           |
|                                | <p>Power may not be reaching the case.</p> <ul style="list-style-type: none"> <li>• Contact store management to have trained service provider perform troubleshooting.</li> <li>• Troubleshooting to be performed by trained service providers only is on next page.</li> </ul>                                                                                                                                                                                                      |
|                                | <p>If case light still do not come on, it may need to be replaced.</p> <ul style="list-style-type: none"> <li>• Contact Structural Concepts' Technical Service Department for replacement light (see <b><i>TECHNICAL SERVICE</i></b> section of this manual for contact information).</li> <li>• To replace, disconnect plug from existing LED light. Disconnect LED light from its brackets. Replace with new LED light. Insert plug ALL THE WAY into LED light orifice.</li> </ul> |

## TROUBLESHOOTING - TO BE PERFORMED BY TRAINED SERVICE PROVIDERS ONLY

| CONDITION                   | TROUBLESHOOTING                                                                                                                                                                                                                                               |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Case Lights Are Not Working | See <b><i>TROUBLESHOOTING (TO BE PERFORMED BY STORE PERSONNEL)</i></b> section in manual (previous sheet) for most common troubleshooting solutions.                                                                                                          |
|                             | Check power. <ul style="list-style-type: none"><li>• If power is not supplied to the case, facility may have faulty power distribution.</li><li>• If power is supplied to the case but lights are not energized, case's power supply may be faulty.</li></ul> |



# TROUBLESHOOTING - CONDENSING SYSTEM (BY TRAINED SERVICE PROVIDERS ONLY)

| CONDITION              | TROUBLESHOOTING                                                                                                                                                             |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Head Pressure Too High | Check that the condensing coil is not dirty or covered.                                                                                                                     |
|                        | Check that condensing fans are working.                                                                                                                                     |
|                        | Check that refrigerant is not overcharged.                                                                                                                                  |
|                        | Perform sub-cooling check and verify that no contaminants are in system.                                                                                                    |
|                        | Check that liquid line filter dryer is not plugged.                                                                                                                         |
|                        | Check that close-offs are intact (around condensing coil) and that air is not recirculating.                                                                                |
|                        | Check that store ambient temperature isn't above maximum allowed. See <b>OVERVIEW / TYPE / COMPLIANCE / WARNINGS / PRECAUTIONS / WIRING / PLUGS</b> section in this manual. |
| Head Pressure Too Low  | Check if sight glass is flashing or showing low charge.                                                                                                                     |
|                        | Check that suction pressure isn't too low.                                                                                                                                  |
|                        | Check that compressor reed valves aren't bad. Look for high suction/low head pressure. Perform pump-down.                                                                   |

## TROUBLESHOOTING - EVAPORATOR SYSTEM (BY TRAINED SERVICE PROVIDERS ONLY)

| CONDITION                    | TROUBLESHOOTING                                                                                                                            |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Low Suction Pressure</b>  | Check if sight glass is flashing or showing low charge.                                                                                    |
|                              | Check that expansion valve (TXV) isn't restricted. Check element charge.                                                                   |
|                              | Check that liquid line or filter isn't restricted. Check that refrigeration lines and/or hoses are not kinked on either high or low sides. |
|                              | Check that evaporator fan motors are working.                                                                                              |
|                              | Check that superheat is between 6 °F to 8 °F.                                                                                              |
|                              | Check that there is no air recirculation around evaporator coil.                                                                           |
|                              | Check that evaporator coil is not iced up.                                                                                                 |
| <b>High Suction Pressure</b> | Check for refrigerant overcharge.                                                                                                          |
|                              | Check that compressor reed valves aren't bad. Look for high suction/low head pressure. Perform pump-down.                                  |
|                              | Check that the "cooling load" isn't high. Product must be pre-chilled before placing in refrigerated section of case.                      |
|                              | Check that case is at least <u>15-feet</u> from exterior doors, overhead HVAC vents or any air curtain disruption.                         |
|                              | Check that unit is not exposed to direct sunlight via windows or any other heat source (ovens, fryers, etc.).                              |
|                              | Check that superheat adjustment isn't low.                                                                                                 |
|                              | Check TXV bulb installation <ul style="list-style-type: none"> <li>a. Poor thermal contact.</li> <li>b. Warm location.</li> </ul>          |

### Serial Label Location & Information Listed / Technical Information & Service

- Serial labels are located near the electrical access on your case.
- Serial labels contain electrical, temperature & refrigeration information, as well as regulatory standards to which the case conforms.
- For additional technical information and service, see the *TECHNICAL SERVICE* page in this manual for instructions on contacting Structural Concepts' Technical Service Department.
- See images below for samples of both refrigerated and non-refrigerated serial labels.



**Structural Concepts**  
888 E. Porter Rd · Muskegon, MI 49441

**FOR PARTS AND SERVICE**  
CALL 1-800-433-9489




3048256  
CONFORMS TO UL STD 471  
CONFORMS TO NSF STD 7  
CERTIFIED TO CAN/CSA  
STD C22.2 NO 120

**ENCORE<sup>®</sup>** MODEL HV74RSS SCROLL  
SERIES SERIAL NO.

**SAMPLE ONLY**

|                     |                    |
|---------------------|--------------------|
| ELECTRICAL RATING   | 120/1/60 24A       |
| REFRIGERANT         | R404A AMOUNT ?? OZ |
| DESIGN PRESSURE     | HIGH 450 LOW 200   |
| MINIMUM CIRCUIT     | 30A                |
| MAXIMUM OVERCURRENT | 30A                |

**SAMPLE ONLY**

|                   |                                                         |
|-------------------|---------------------------------------------------------|
| Super Heat Temp   | 8-10°F                                                  |
| BTUH Requirements | 9,738 BTUH @ 20° F SST                                  |
| Defrost           | 6 defrosts per day, 45° F termination, 45 min. failsafe |

**SAMPLE ONLY**

----- Sample Serial Label For Refrigerated Case -----



**Structural Concepts**  
888 E. Porter Rd · Muskegon, MI 49441



3048256  
CONFORMS TO UL STD 65  
CERTIFIED TO CAN/CSA  
STD C22.2 NO 120

**Addenda<sup>®</sup>** PC5682 txtRemote  
txtSerialNumber

120 VOLTS 60 HZ SINGLE PHASE 1.84AMP

FOR PARTS OR SERVICE CALL  
STRUCTURAL CONCEPTS  
AT  
1-800-433-9489

**SAMPLE ONLY**

----- Sample Serial Label For Non-Refrigerated Case -----

# CAREL

## ir33 platform

Integrated Electronic  
Microprocessor Controller



### Programming The Instrument

#### To Modify Defrost, Differential and Other Parameters

**Prg**  
**mute**

**Set**

1. Press & hold "Prg" & "SET" keys together for at least five (5) seconds; display will flash "0," representing password prompt.

**▲**  
**aux**

2. Press ▲ until password "22" is reached.

**Set**

3. Press "SET" key to confirm password.

**▲**  
**aux**

**def**  
**▼**

4. Press ▲ or ▼ to reach a category to be modified.

**Set**

5. Press "SET" to modify selected parameter.

**▲**  
**aux**

**def**  
**▼**

6. Increase or decrease the value using the ▲ or ▼ button respectively.

**Set**

7. Press the "SET" key to temporarily save the new value and return to the parameter display.

**Prg**  
**mute**

8. Press & hold the "Prg" key for 5 full seconds to save changes. This will also mute the audible alarm (buzzer) and deactivate the alarm relay.

#### Warning! Save Your Parameter Settings!

1. To store the new parameter values, PRESS and HOLD the "Prg" key for at least 5 seconds.
2. All modifications made to parameters will be lost if you do NOT press a button within 60 seconds. Should this "timeout" occur, normal operational settings (prior to modifications being made) will resume.
3. If the instrument is switched off before pressing the "Prg" key, all modifications to parameters will be lost.

#### To Activate Manual Defrost

**def**  
**▼**

Press and hold "def" key for at least 5 seconds.

#### To Activate / Deactivate Auxiliary Output

**▲**  
**aux**

Press and hold the "aux" key for 1 second.

**Prg**  
**mute**

**▲**  
**aux**

**Set**

**def**  
**▼**

#### How To Change Reading From Fahrenheit (°F) To Celsius (°C)

**Prg**  
**mute**

**Set**

1. Press and hold "Prg" and "SET" keys together for at least 5 seconds; display will show "0" (password prompt).

**▲**  
**aux**

2. Press ▲ until password "22" is reached.

**Set**

3. Confirm by pressing "SET" key.

**▲**  
**aux**

**def**  
**▼**

4. Press ▲ or ▼ until reaching the parameter "/ 5."

**Set**

5. Press "SET" to modify this selected parameter.

**▲**  
**aux**

**def**  
**▼**

6. Press ▲ or ▼ to change value to desired setting: "0" for Celsius (°C) or "1" for Fahrenheit (°F).

**Set**

7. Press "SET" key to temporarily save the new value and return to the display of the parameter.

**Prg**  
**mute**

8. Press & hold "Prg" key for 5 full seconds to save changes. **Note! All values will automatically convert to new scale. No conversion is required.**

#### To Reset Any Alarms With Manual Reset

**Prg**  
**mute**

**▲**  
**aux**

Press and hold the "Prg" and "aux" key for at least 1 second.

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Structural Concepts Document - Revision B Date: 4/25/2019

# CAREL

## ir33 platform

### Integrated Electronic Microprocessor Controller



### User Interface - Display

| ICON | FUNCTION         | DESCRIPTION                                                                                                                                                                                                                                           | ON                                                                        | Normal operation<br>OFF                 | BLINK                                                                                                           | Start up                      |
|------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------|
|      | COMPRESSOR       | ON when the compressor starts. Flashes when the activation of the compressor is delayed by safety times.                                                                                                                                              | Compressor on                                                             | Compressor off                          | awaiting activation                                                                                             |                               |
|      | FAN              | ON when the fan starts. Flashes when the activation of the fan is prevented due to external disabling or procedures in progress.                                                                                                                      | Fan on                                                                    | Fan off                                 | awaiting activation                                                                                             |                               |
|      | DEFROST          | ON when the defrost is activated. Flashes when the activation of the defrost is prevented due to external disabling or procedures in progress.                                                                                                        | Defrost in progress                                                       | Defrost not in progress                 | awaiting activation                                                                                             |                               |
|      | AUX              | Flashes if the anti-sweat heater function is active, ON when the auxiliary output (1 and/or 2) selected as AUX (or LIGHT in firmware version 3.6) is activated.                                                                                       | AUX auxiliary output active (version 3.6 light auxiliary output active)   | AUX auxiliary output not active         | Anti-sweat heater function active                                                                               |                               |
|      | ALARM            | ON following pre-activation of the delayed external digital input alarm. Flashes in the event of alarms during normal operation (e.g. high/low temperature) or in the event of alarms from an immediate or delayed external digital input.            | Delayed external alarm (before the time 'A7' elapses)                     | No alarm present                        | Alarms in norm. operation (e.g. High/low temperature) or immediate or delayed alarm from external digital input |                               |
|      | CLOCK            | ON if at least one timed defrost has been set. At start-up, comes ON for a few seconds to indicate that the Real Time Clock is fitted.                                                                                                                | If at least 1 timed defrost event has been set                            | No timed defrost event set              | Alarm clock                                                                                                     | ON if real-time clock present |
|      | LIGHT            | Flashes if the anti-sweat heater function is active, ON when the auxiliary output (1 and/or 2) selected as LIGHT is activated (in firmware version 3.6 it does not flash in anti-sweat heater mode and comes on when the dead band output is active). | Light auxiliary output on (version 3.6 dead band auxiliary output active) | Light auxiliary output off              | Anti-sweat heater function active (version 3.6 does not flash in anti-sweat heater mode)                        |                               |
|      | SERVICE          | Flashes in the event of malfunctions, for example E2PROM errors or probe faults.                                                                                                                                                                      |                                                                           | No malfunction                          | Malfunction (e.g. E2PROM error or probe fault). Contact service                                                 |                               |
|      | CONTINUOUS CYCLE | ON when the CONTINUOUS CYCLE function is activated. Flashes if the activation of the function is prevented due to external disabling or procedures in progress (E.g.: minimum compressor OFF time).                                                   | CONTINUOUS CYCLE operation activated                                      | CONTINUOUS CYCLE function not activated | CONTINUOUS CYCLE operation requested                                                                            |                               |

### Summary Table of Alarm and Signals: Display, Buzzer and Relay

| Code | Icon on the display | Alarm relay | Buzzer | Reset            | Description                                                               |
|------|---------------------|-------------|--------|------------------|---------------------------------------------------------------------------|
| rE   | flashing            | on          | on     | automatic        | virtual control probe fault                                               |
| E0   | flashing            | off         | off    | automatic        | room probe S1 fault                                                       |
| E1   | flashing            | off         | off    | automatic        | defrost probe S2 fault                                                    |
| E2   | flashing            | off         | off    | automatic        | probe S3 fault                                                            |
| E3   | flashing            | off         | off    | automatic        | probe S4 fault                                                            |
| E4   | flashing            | off         | off    | automatic        | probe S5 fault                                                            |
| '    | No                  | off         | off    | automatic        | probe not enabled                                                         |
| LO   | flashing            | on          | on     | automatic        | low temperature alarm                                                     |
| HI   | flashing            | on          | on     | automatic        | high temperature alarm                                                    |
| AFr  | flashing            | on          | on     | manual           | antifreeze alarm                                                          |
| IA   | flashing            | on          | on     | automatic        | immediate alarm from external contact                                     |
| dA   | flashing            | on          | on     | automatic        | delayed alarm from external contact                                       |
| dEF  | on                  | off         | off    | automatic        | defrost running                                                           |
| Ed1  | No                  | off         | off    | automatic/manual | defrost on evaporator 1 ended by timeout                                  |
| Ed2  | No                  | off         | off    | automatic/manual | defrost on evaporator 2 ended by timeout                                  |
| Pd   | flashing            | on          | on     | automatic/manual | maximum pump down time alarm                                              |
| LP   | flashing            | on          | on     | automatic/manual | low pressure alarm                                                        |
| AtS  | flashing            | on          | on     | automatic/manual | autostart in pump down                                                    |
| cht  | No                  | off         | off    | automatic/manual | high condenser temperature pre-alarm                                      |
| CHT  | flashing            | on          | on     | manual           | high condenser temperature alarm                                          |
| dor  | flashing            | on          | on     | automatic        | door open too long alarm                                                  |
| EE   | flashing            | off         | off    | automatic        | E2prom error, unit parameters                                             |
| EF   | flashing            | off         | off    | automatic        | E2prom error, operating parameters                                        |
| ccb  | Signal              |             |        |                  | start continuous cycle request                                            |
| ccE  | Signal              |             |        |                  | end continuous cycle request                                              |
| dFb  | Signal              |             |        |                  | start defrost call                                                        |
| dFE  | Signal              |             |        |                  | end defrost call                                                          |
| On   | Signal              |             |        |                  | switch ON                                                                 |
| off  | Signal              |             |        |                  | switch OFF                                                                |
| rES  | Signal              |             |        |                  | reset alarms w/manual reset / reset HACCP alarms / reset temp. monitoring |

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Structural Concepts Document - Revision B Date: 4/25/2019

**CAREL****ir33 platform**Integrated Electronic  
Microprocessor Controller

### Summary Table of Operating Parameters

| CODE | PARAMETER                              | UOM*  | TYPE | MINIMUM | MAXIMUM | DEFAULT                                                                                                                                                                                                         |
|------|----------------------------------------|-------|------|---------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| /5   | Select Celsius (°C) or Fahrenheit (°F) | flag  | C    | 0       | 1       | For Case Specific Defaults See Serial Label Located Near Electrical Access On Your Case.<br><br>For Additional Technical Information Call Structural Concepts Technical Service Dept. at 1(800) 433.9490 Ext. 1 |
| /c1  | Calibration of probe 1                 | °C/°F | C    | -20     | 20      |                                                                                                                                                                                                                 |
| /c2  | Calibration of probe 2                 | °C/°F | C    | -20     | 20      |                                                                                                                                                                                                                 |
| St   | Temperature set point                  | °C/°F | F    | r2      | r1      |                                                                                                                                                                                                                 |
| rd   | Control delta                          | °C/°F | F    | 20      | 0.1     |                                                                                                                                                                                                                 |
| dl   | Interval between defrosts              | hours | F    | 0       | 250     |                                                                                                                                                                                                                 |
| dt1  | End defrost temperature, evaporator    | °C/°F | F    | -50     | 200     |                                                                                                                                                                                                                 |
| dP1  | Maximum defrost duration, evaporator   | min   | F    | 1       | 250     |                                                                                                                                                                                                                 |
| d6   | Display on hold during defrost         | -     | C    | 0       | 2       |                                                                                                                                                                                                                 |
| dd   | Dripping time after defrost            | min   | F    | 0       | 15      |                                                                                                                                                                                                                 |
| d/1  | Display of defrost probe 1             | °C/°F | F    | -       | -       |                                                                                                                                                                                                                 |

\* Unit Of Measure

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## STRUCTURAL CONCEPTS TECHNICAL SERVICE CONTACT INFORMATION & LIMITED WARRANTY

### **TECH SERVICE/WARRANTY CONTACT INFO:** **1 (800) 433-9490 / EXTENSION 1**

**DAYS/HOURS AVAILABLE:**  
**MONDAY - FRIDAY (CLOSED HOLIDAYS)**  
**8:00 a.m. TO 5:00 p.m. EST**

### **YOU MUST HAVE THE FOLLOWING INFO AVAILABLE BEFORE CONTACTING STRUCTURAL CONCEPTS:**

**SERIAL NO. / MODEL NO. / STORE NO. / STORE  
ADDRESS / DETAILS (PHOTOS, LEAK LOCATIONS,  
DAMAGE, STORE'S AMBIENT CONDITIONS, ETC.)**

# LIMITED WARRANTY

**Overview:** All sales by Structural Concepts Corporation (hereafter referred to as "SCC") are subject to the following limited warranty. "Goods" refers to the product or products being sold by SCC.

**Warranty Scope:** Warranty is for equipment sold in the United States, Canada, Mexico and Puerto Rico. Equipment sold elsewhere may carry modified warranties.

**Warranty; Remedies; Limitations:** The limit of liability of SCC toward the exchange cost of the original compressor motor (and/or any other components) is one year parts and labor. If any Goods are found to be of faulty material or workmanship within one year of the original F.O.B. (free on board) unit shipment, SCC will, at its option (after inspection by an authorized representative), replace or pay the reasonable cost of replacement of the faulty Goods. If warranty claim is not made within this one year time period, SCC is not bound to warrant Goods. A motor-compressor (and/or any other components) replaced during the warranty shall not exceed manufacturer's current established wholesaler's exchange price. If replacement motor-compressor (and/or other components) is available via storage facility, parts truck, etc., SCC mandates that readily accessible replacement components be used toward repair of Goods; in such instances, SCC will replace such equipment (at its own expense) after confirmation of its use/placement on defective unit. SCC shall not be charged an additional fee, up-charge or expense for such replacement Goods. If SCC is unable to repair or replace the defective Goods, SCC shall issue a credit to the Purchaser for full or partial purchase price, as SCC shall determine. The replacement or payment in the manner described above shall be the sole and exclusive remedy to Purchaser for a breach of this warranty. If any Goods are defective or fail to conform to this warranty, SCC will furnish instructions for their disposition. No Goods shall be returned to SCC without its prior consent.

SCC's liability for any defect in the Goods shall not exceed the purchase price of the Goods. SCC SHALL HAVE NO LIABILITY TO PURCHASER FOR CONSEQUENTIAL DAMAGES OF ANY KIND WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, PERSONAL INJURY, PROPERTY DAMAGE, LOST PROFITS, OR OTHER ECONOMIC INJURY DUE TO ANY DEFECT IN THE GOODS OR ANY BREACH OF SCC, SCC SHALL NOT BE LIABLE TO THE PURCHASER IN TORT FOR ANY NEGLIGENT DESIGN OR MANUFACTURE OF THE GOODS, OR FOR THE OMISSION OF ANY WARNING THEREFROM.

SCC shall have no obligation or liability under this warranty for claims arising from any other party's (including Purchaser's) negligence or misuse of the Goods or environmental conditions. This warranty does not apply to any claim or damage arising from or caused by improper storage, handling, installation, maintenance, or from fire, flood, accidents, structural defects, building settlement or movement, acts of God, or other causes beyond SCC's control.

Except as expressly stated herein, SCC makes no warranty, express, implied, statutory or otherwise as to any parts or goods not manufactured by SCC. SCC shall warrant such parts or Goods only (I) against such defects, (II) for such periods of time, and (III) with such remedies, as are expressly warranted by the manufacturer of such parts or Goods. Notwithstanding the foregoing, any warranty with respect to such parts or Goods and any remedies available as a result of a breach thereof shall be subject to all of the procedures, limitations, and exclusions set forth herein.

THE WARRANTIES HEREIN ARE IN LIEU OF ALL WARRANTIES, EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE. IN PARTICULAR, SCC MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

No representative, agent or dealer of SCC has authority to modify, expand, or extend this Warranty, to waive any of the limitations or exclusions, or to make any different or additional warranties with respect to Goods.

**Period of Limitations:** No claim, suit or other proceeding may be brought by Purchaser for any breach of the foregoing warranty or this Agreement by SCC or in any way arising out of this Agreement or relating to the Goods after one year from the date of the breach. In the interpretation of this limitation on action for a breach by SCC, it is expressly agreed that there are no warranties of future performance of the goods that would extend that period of limitation herein contained for bringing an action.

**Indemnifications:** Purchaser agrees to indemnify, hold harmless, and defend SCC if so requested, from any and all liabilities, as defined herein, suffered, or incurred by SCC as a result of, or in connection with, any act, omission, or use of the Goods by Purchaser, its employees or customers, or any breach of this Agreement by Purchaser. Liabilities shall include all costs, claims, damages, judgments, and expenses (including reasonable attorney fees and costs).

**Remedies of SCC:** SCC's rights and remedies shall be cumulative and may be exercised from time to time. In a proceeding or action relating to the breach of this Agreement by Purchaser, Purchaser shall reimburse SCC for reasonable costs and attorney's fees incurred by SCC. No waiver by SCC of any breach of Purchaser shall be effective unless in writing nor operate as a waiver of any other breach of the same term thereafter. SCC shall not lose any right because it has not exercised it in the past.

**Applicable Law.** This Agreement is made in Michigan; it is governed by and interpreted according to Michigan law. Any lawsuit arising out of this Agreement or the Goods may be handled by a federal or state court whose district includes Muskegon County, Michigan, and Purchaser consents that such court shall have personal jurisdiction over Purchaser.

**LED Lighting Components Within Lighting System:** Supermarket: 5-year LED warranty from date of shipment. Foodservice: 2-year LED warranty from date of shipment. After one year, warranty does not include labor or other costs incurred for diagnosing, repairing, removing, installing, shipping, servicing, or handling of either defective part or replacement parts. Remedy of repair or provision of a replacement part without charge shall be the exclusive remedy for any warranty claim. The replacement LED and/or power supply assumes the unused portion of warranty remaining on unit(s). A 90-day warranty will apply for any LED sold as a service part. Warranty claim must include serial and model number of unit as well as date code on defective LED lighting component(s). Manufacturer may request return of defective part(s) at customer's expense to initiate claim.

**Glass Material:** Glass (UV-bonded glass, glass sneeze guards, glass enclosures, glass held in place via posts, etc.) is only warranted to FIRST POINT OF DELIVERY.

**Miscellaneous:** If any provision of this Agreement is found to be invalid or unenforceable under any law, the provision shall be ineffective to that extent and for the duration of the illegality, but the remaining provisions shall be unaffected. Purchaser shall not assign any of its rights nor delegate any of these obligations under this Agreement without prior written consent of SCC. This Agreement shall be binding upon and inure to the benefit of SCC and Purchaser and each of their legal representatives, successors and assignees. SCC warrants its products to be free of defects in materials and workmanship under normal use and service for a period of one (1) year from the date of delivery.

This warranty is extended only to the original purchaser for use of the Goods. It does not cover normal wear parts such as plastic tongs, tong holders, tong cables, bag holders, or acrylic dividers.

**General Conditions:** All service labor and/or parts charges are subject to approval by SCC. Contact Customer Service Dept. in writing, by phone, fax or email.

All claims must contain the following information: (1) model & serial code number of equipment; (2) the date and place of installation; (3) the name and address of the agency which performed the installation; (4) the date of the equipment failure; and (5) a complete description of the equipment failure and all circumstances relating to that failure.

Once the claim has been determined to be a true warranty claim by SCC's Customer Service Department, the following procedure will be taken: (1) replacement parts will be sent at no charge from SCC on a freight prepaid basis; (2) reimbursement for service labor will be paid if the following conditions have been met - (a) prior approval of service agency was awarded from the Customer Service Department; and (b) an itemized statement of all labor charges incurred is received by the Customer Service Department. The cost of the service labor reimbursement will be based on straight time rates and reasonable time for the repair of the defect.

If problems occur with any compressor, notify SCC's Customer Service Department immediately. Any attempt to repair or alter the unit without prior consent from the Customer Service Department will render any warranty claim null and void. This warranty and protection plan does not apply to any condensing unit or any part thereof which has been subject to accident, negligence, misuse, or abuse, or which has not been operated in accordance with the manufacturer's recommendations or if the serial number of the unit has been altered, defaced, or removed.

**One Year Limit of Liability:** After SCC's one-year parts and labor warranty on the original F.O.B. (free on board) unit has expired, SCC is not liable for either the equipment or labor costs of repairing or replacing the motor compressor, nor any other components that were included in the original F.O.B. (free on board) unit.