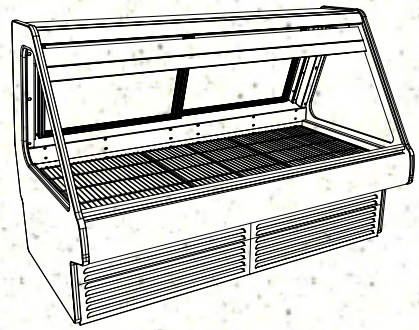
READ AND SAVE THESE INSTRUCTIONS

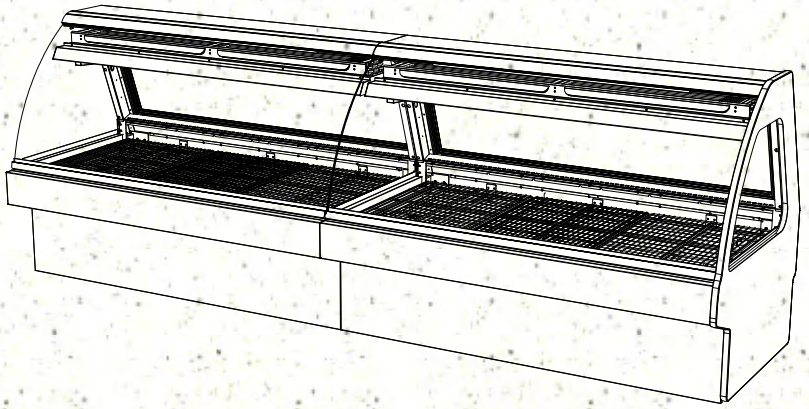
G-SERIES INSTALLATION AND OPERATING MANUAL

PN 5-4467

G-SERIES GMG GRAVITY & BLOWER COIL MEAT & SEAFOOD REFRIGERATED SERVICE UNITS

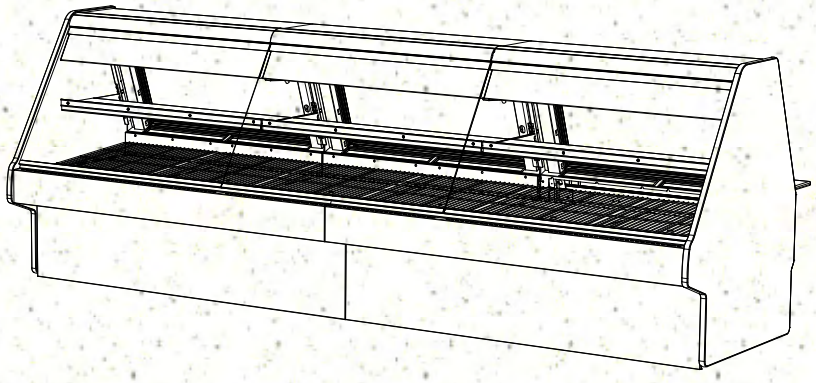


Model GMG6 Meat Case: Self-Contained Unit Rear Sliding Doors Intact / Wire Racks Used (Instead of Ice Pans used in Meat Case Models GMG4)

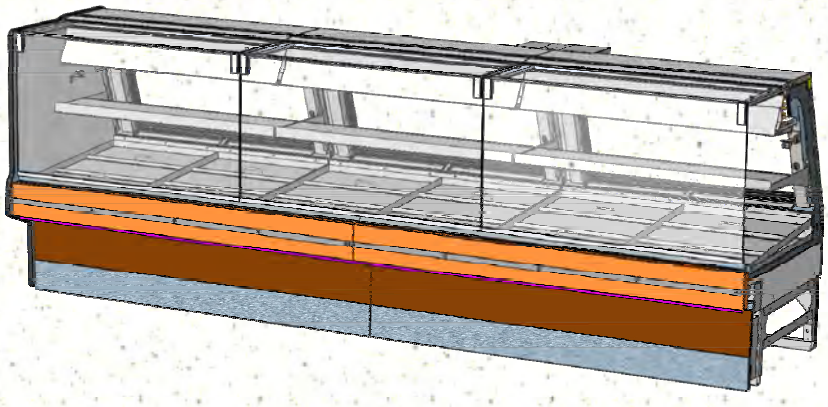


Model GMG12 Meat Case: Remote Unit / Rear Sliding Doors Removed. Wire Racks Used (Instead of Ice Pans as used in Seafood Model GMG4)

Model GMG4 Seafood Case: Remote Unit Rear Sliding Doors Removed. Ice Pans Used (Instead of Wire Racks as used in Meat Case Models GMG6, GMG8 and GMG12)

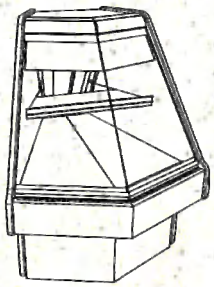


Model GMG12 Hybrid Unit Meat Case: Remote Unit / Gravity Coil (Upper), Evaporator Coil (Lower) and Shelf / Rear Sliding Doors Removed. Wire Racks Used (Instead of Ice Pans as used in Seafood Model GMG4)



Model GMGV12: Remote Service Unit / Mid-Volume Angled Back With Gravity Coil and Vertical "Lift-Up" Front Glass / Rear Sliding Doors (Shown Removed) / Ice Pans Used (Instead of Wire Racks as used in Meat Case) / Optional Paper Roller

Model GMGX4 Blower Coil Wedge Case: Remote Unit / Single Rear Hinged Door / Ice Pans Used (Instead of Wire Racks as used in Meat Case Models GMG6, GMG8 and GMG12)



Manual Is Applicable To The Following Models*
GMGX4, GMG4, GMG6, GMG8, GMG8.6552, GMG12 & GMGV12

*Note: This manual may also be applicable to models NOT listed herein.

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TABLE OF CONTENTS

OVERVIEW

- This merchandiser is designed to merchandise unpackaged product at a range of 33°F to 38°F (1 °C to 3 °C) product temperatures.
- Cases should be installed and operated according to this operating manual's instructions to insure proper performance. Improper use will void warranty.

TYPE I vs. TYPE II ENVIRONMENTAL CONDITIONS

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

- Type I display refrigerators are intended for use in an area where environmental conditions are controlled and maintained so that the ambient temperature does not exceed 75 °F (24 °C) and 55% maximum humidity.
- Type II display refrigerators are intended for use in an area where environmental conditions are controlled and maintained so that the ambient temperature does not exceed 80 °F (27 °C) and 60% maximum humidity.
- 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.

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.

WARNINGS

- This sheet contains important warnings to prevent injury or death.
- Please read carefully!

PRECAUTIONS, CORD/PLUG MAINTENANCE & WIRING DIAGRAM INFORMATION

- See next page for ***PRECAUTIONS, CORD/PLUG MAINTENANCE*** and ***WIRING DIAGRAM*** information.

COMPLIANCE

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

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

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.

WARNING

Condenser Pan is Hot!
Disconnect and allow to cool before cleaning or removing from case.

PRECAUTIONS

- Following are important precautions to prevent damage to unit or merchandise. Please read carefully!
- See previous page for specifics on ***OVERVIEW, NSF 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, or raceway cover.

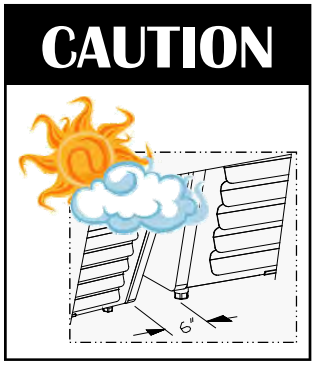
CAUTION! LAMP REPLACEMENT GUIDELINES

LED lamps reflect specific size, shape and overall design. Any replacements must meet factory specifications.

Fluorescent lamps have been treated to resist breakage and must be replaced with similarly treated lamps.

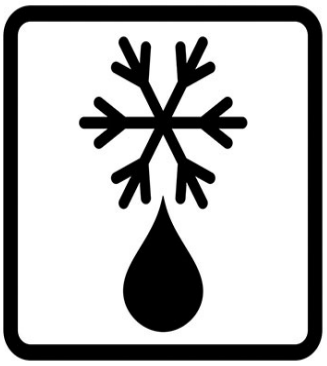
CAUTION! GFCI BREAKER USE REQUIREMENT

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! ADVERSE CONDITIONS / SPACING ISSUES

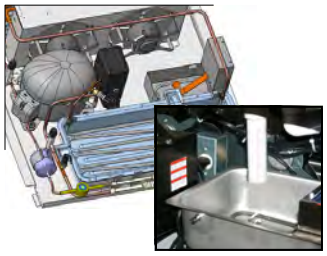
- **Performance issues caused by adverse conditions are NOT warranted.**
- **End panels must be tightly joined or kept at least 6-inches away from any structure to prevent condensation.**
- **Unit must be kept at least 15-feet from exterior doors, overhead HVAC vents or any air curtain disruption to maintain proper temperatures.**
- **Do not expose to direct sunlight or heat source (ovens, fryers, etc.).**
- **Tile floors, low ceilings or small rooms increase noise level. Whisper Cool compressor blanket or remote units resolve noise level issues.**



CAUTION! IF YOUR MERCHANDISER HAS AN UPPER REFRIGERATION SYSTEM, IT MUST BE TURNED OFF, THOROUGHLY DEFROSTED AND CLEANED AT LEAST WEEKLY!

For optimum performance, maintenance is required at least weekly.

1. **Cleaning controls switch is NOT supplied by SCC, but it may be provided by others. If a switch is accessible, flip to "OFF" position. If not, contact facility manager to turn off upper refrigeration system.**
2. **Allow upper refrigeration system to thoroughly defrost.**
3. **Clean its interior by washing and sanitizing.**



CAUTION! CHECK BOTH CONDENSATE PAN AND OVERFLOW PAN

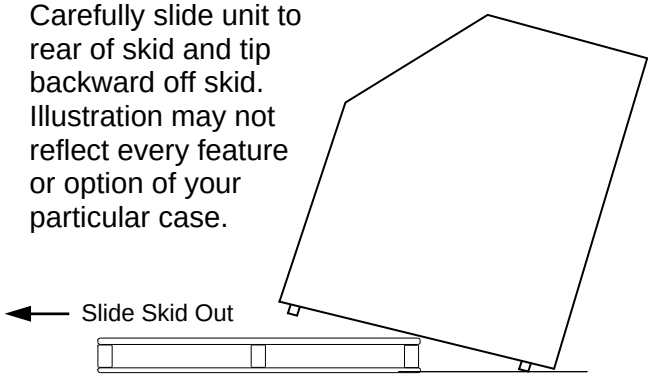
Water on floor can cause extensive damage! Before powering up unit:

- **Position condensate pan DIRECTLY UNDER the condensate drain.**
- **Overflow pan MUST HAVE single plug connected to its box. Units with optional Clean Sweep™ MUST HAVE two plugs connected.**

INSTALLATION: REMOVAL FROM SKID, REMOVING LOWER FRONT PANEL / REAR PANEL

1. Remove Case From Skid (Rails)

- 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.



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

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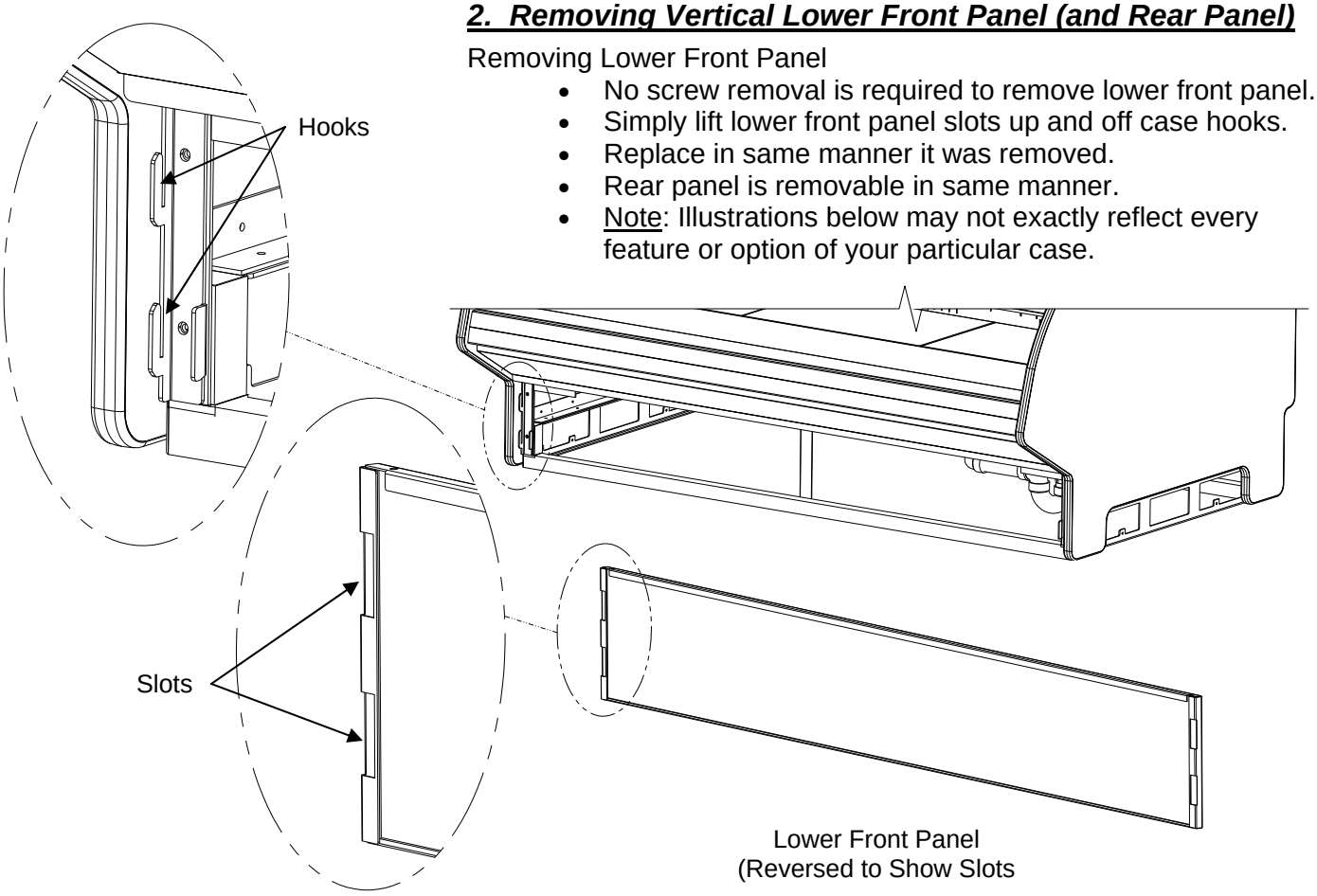
2. Removing Vertical Lower Front Panel (and Rear Panel)

Removing Lower Front Panel

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



Lower Front Panel
(Reversed to Show Slots

INSTALLATION, CONT.: POSITIONING & ALIGNING CASE / BOLTING & CAULKING UNITS TOGETHER

3. Position & Align Case Alongside Other Cases

- Before adjusting levelers (or shimming frame support rails), make certain that 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.

4A. Bolting and Caulking Units Together (Non-Vertical Glass Case Style)

> Model GMG4 shown for illustrative purposes only.
> Follow these steps to assure a secure, level lineup.

A. Begin lineup leveling from highest point of floor.
B. After 'first' case is level, apply industrial grade butyl caulk on non-visible areas (at case end). Use industrial grade silicone sealant on visible areas (at case end). See caulk/silicone illustrations at lower-left.
C. Form Two (2) Caulk/Sealant Lines: (Sanitation and Refrigeration). See illustration at mid-right for outline of caulk/sealant lines.
D. Line up 'second' case bolt-hole to bolt-hole to 'first' case.
E. Using SCC-supplied bolts (and/or screws) found in installation packet, insert bolts in bolt hole locations (shown below). You may need to remove decking to access lower bolt holes.
F. Caution! Front of cases MUST be flush with each other! After leveling, cases are to be same height.
G. Using SCC-supplied nuts & bolts, **lightly tighten** each of the 5 to 8 bolts in a cross-wise pattern. Work your way around the pattern, tightening more firmly at each pass. Do not firmly tighten one bolt and then start on the next!
H. After the cases are bolted together, level the 'second' case. Repeat this process for each case to be adjoined.
I. After all lined-up cases are level, seal all seams with industrial grade silicone sealant.

Sanitation Bead — · — · — · —

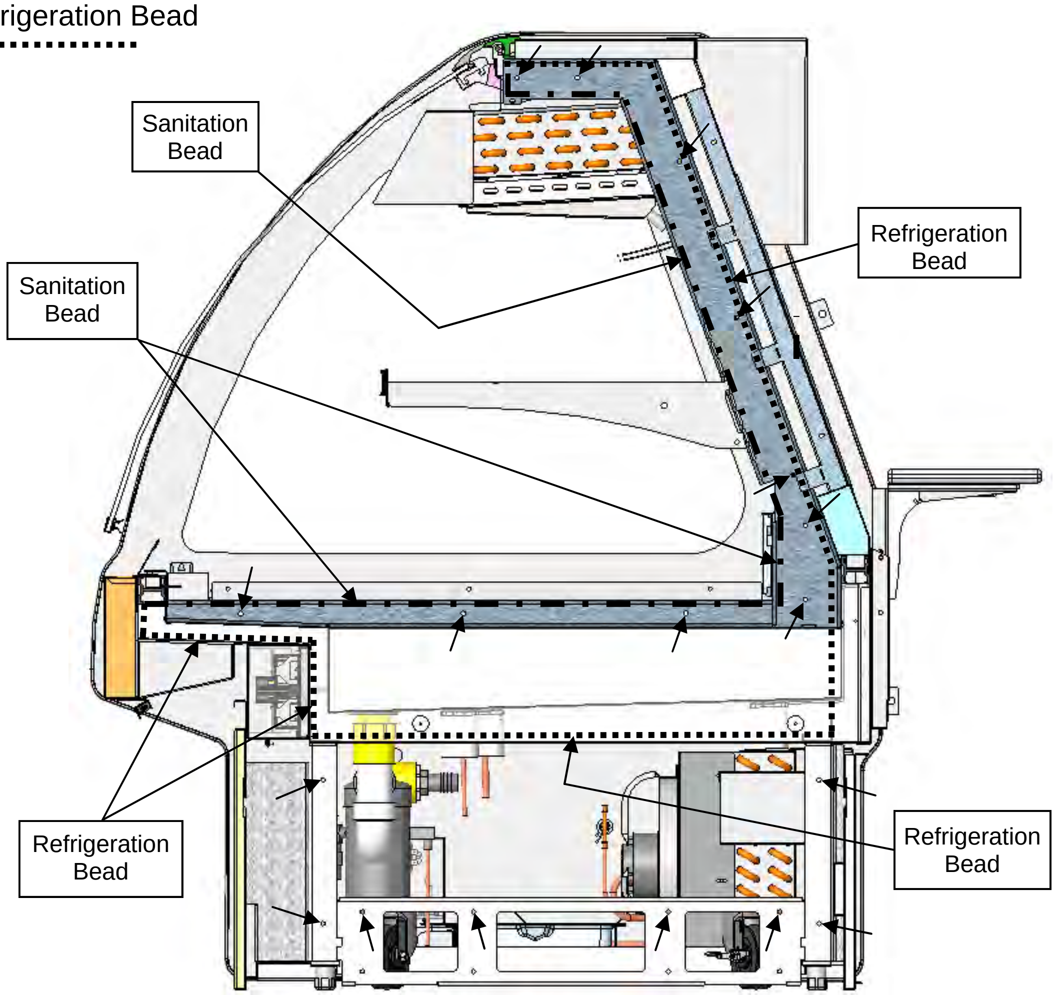
Refrigeration Bead ·············

Approximate hole locations pointed at with arrows (←) for bolting units together.

Note: Model GMG4 is shown for illustrative purposes only.

Butyl is to be used on non-visible areas.

Silicone is to be used on visible areas.



4B. Bolting and Caulking Units Together (Vertical Glass Case Style)

Follow these steps to assure a secure, level lineup.

A. Begin lineup leveling from highest point of floor.
B. After 'first' case is level, apply industrial grade butyl caulk on non-visible areas (at case end). Use industrial grade silicone sealant on visible areas (at case end). See caulk/silicone illustrations at lower-left.
C. Form Two (2) Caulk/Sealant Lines: (Sanitation and Refrigeration). See illustration at mid-right for outline of caulk/sealant lines.
D. Line up 'second' case bolt-hole to bolt-hole to 'first' case.
E. Using SCC-supplied bolts (and/or screws) found in installation packet, insert bolts in bolt hole locations (shown below). You may need to remove decking to access lower bolt holes.
F. Caution! Front of cases MUST be flush with each other! After leveling, cases are to be same height.
G. Using SCC-supplied nuts & bolts, **lightly tighten** each of the 5 to 8 bolts in a cross-wise pattern. Work your way around the pattern, tightening more firmly at each pass. Do not firmly tighten one bolt and then start on the next!
H. After the cases are bolted together, level the 'second' case. Repeat this process for each case to be adjoined.
I. After all lined-up cases are level, seal all seams with industrial grade silicone sealant.

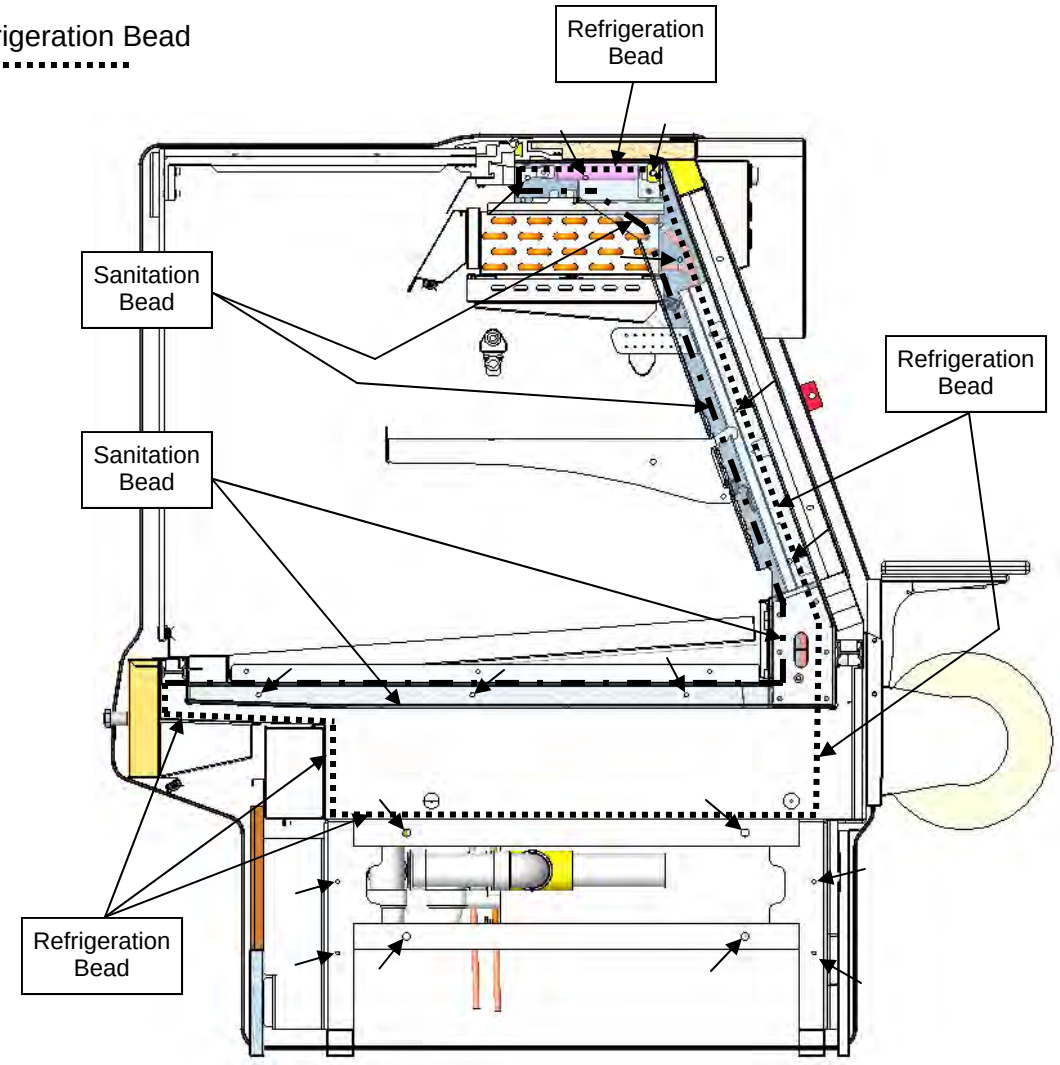
Sanitation Bead — Refrigeration Bead

Approximate hole locations pointed at with arrows (←) for bolting units together.

Note: Model GMGV12 is shown for illustrative purposes only.

Butyl is to be used on non-visible areas.

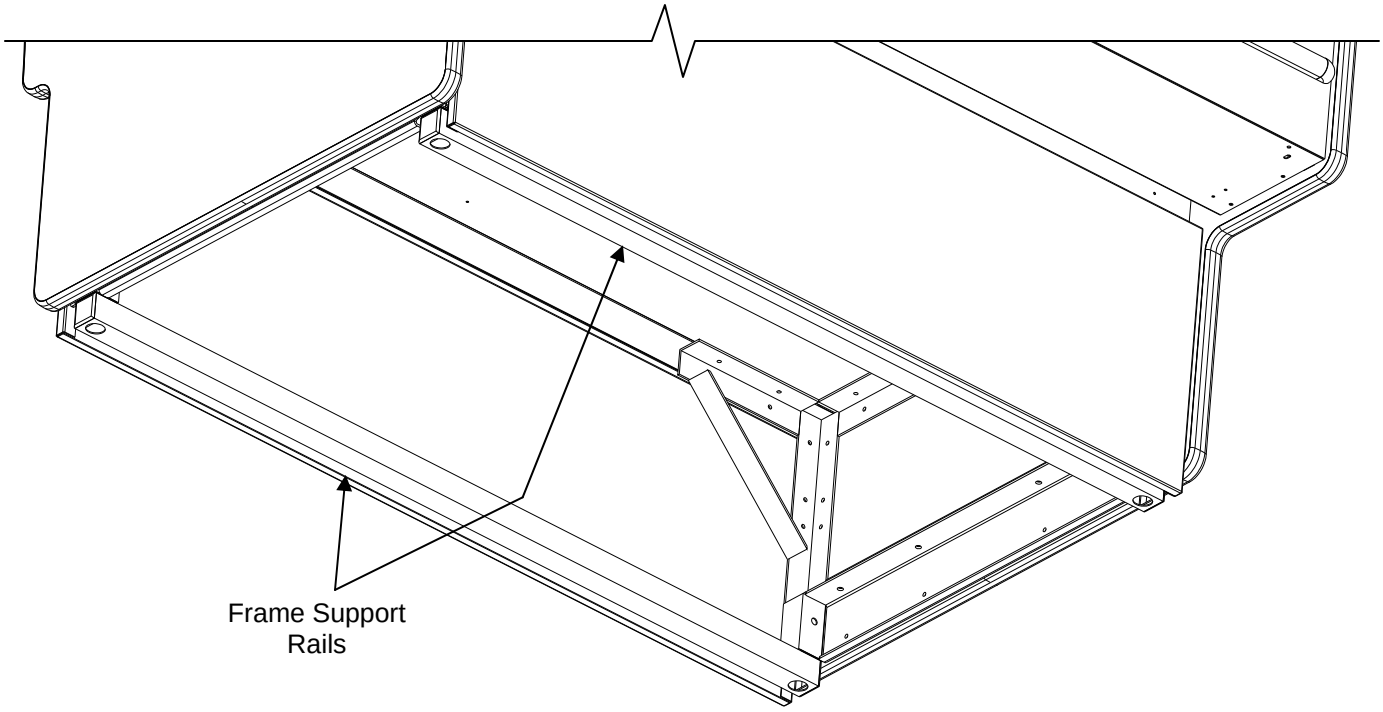
Silicone is to be used on visible areas.



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

5. Frame Support Rails Must Be Shimmed

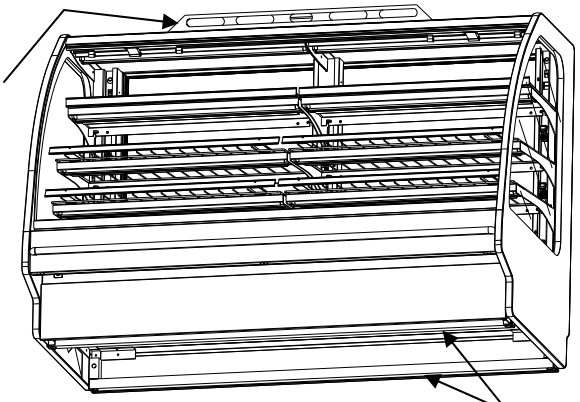
- Illustration below shows case with frame support rails.
- Shims will be provided with all cases that have frame support rails.
- Use shims to level case.
- ***Note*: After case is in position (and, if required, adjoined) it must be sealed to floor to prevent entry or leakage of liquid or moisture.**

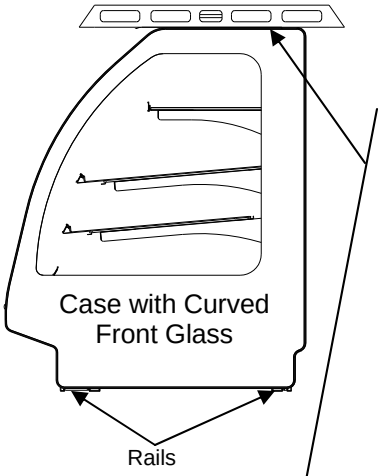


6. Front Glass Alignment & Adjustment via Rail System (For Curved and Flat Front Glass)

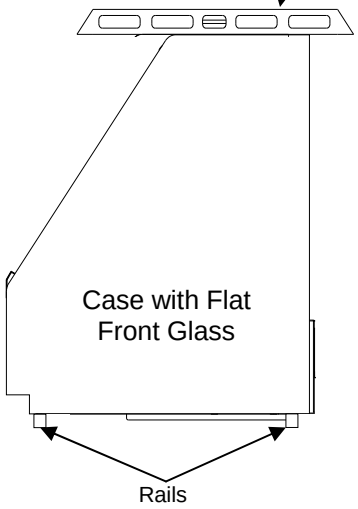
- Proper alignment of the front glass is important to create and maintain a seal inside the case.
- Improper alignment can cause air leaks compromising the environment inside the case and create condensation.
- Follow the five steps listed below to assure proper front glass alignment.
- Illustrations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

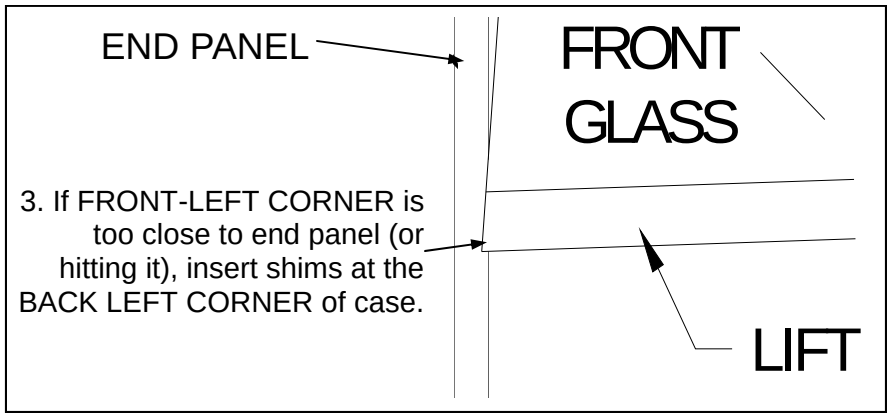
1. Side-to-Side Leveling: Place a level on top of display case (parallel to front glass). Raise or lower either side of case by inserting shims under the rails to level the case (following steps 3 and 4 below).

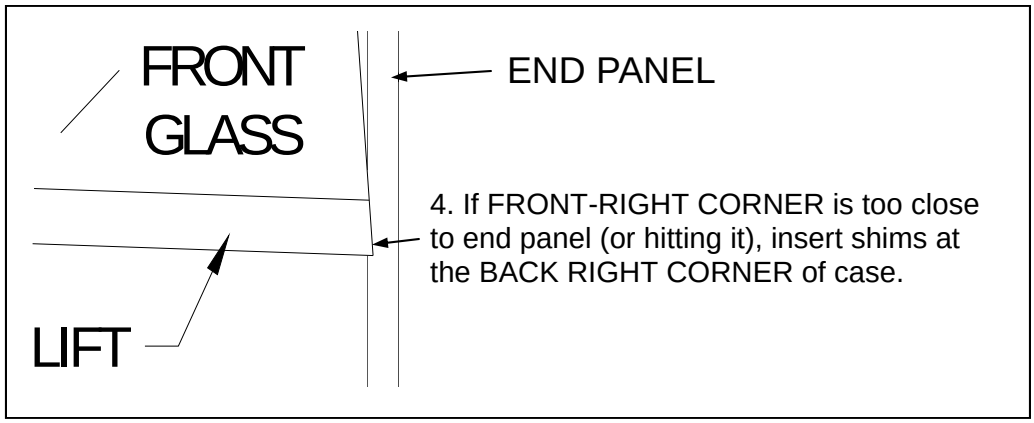




2. Front-to-Back Leveling:
- Place a level on top of case, perpendicular to the front glass.
- Raise or lower either side of case by shimming under the rails (following steps 3 & 4 below).
- Double-check the side-to-side level.







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.

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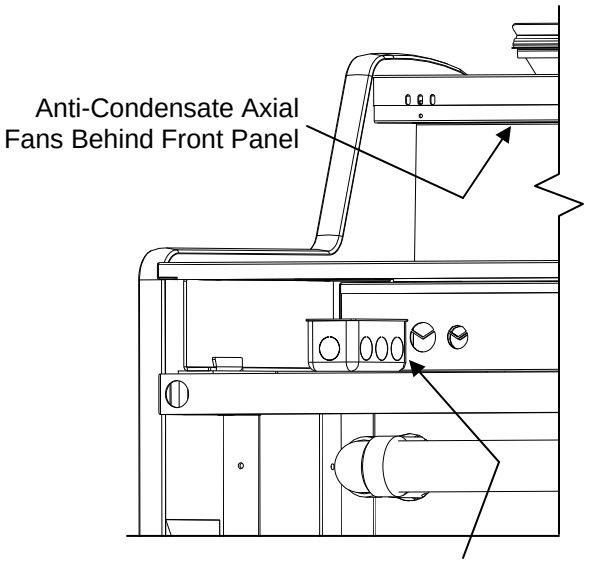
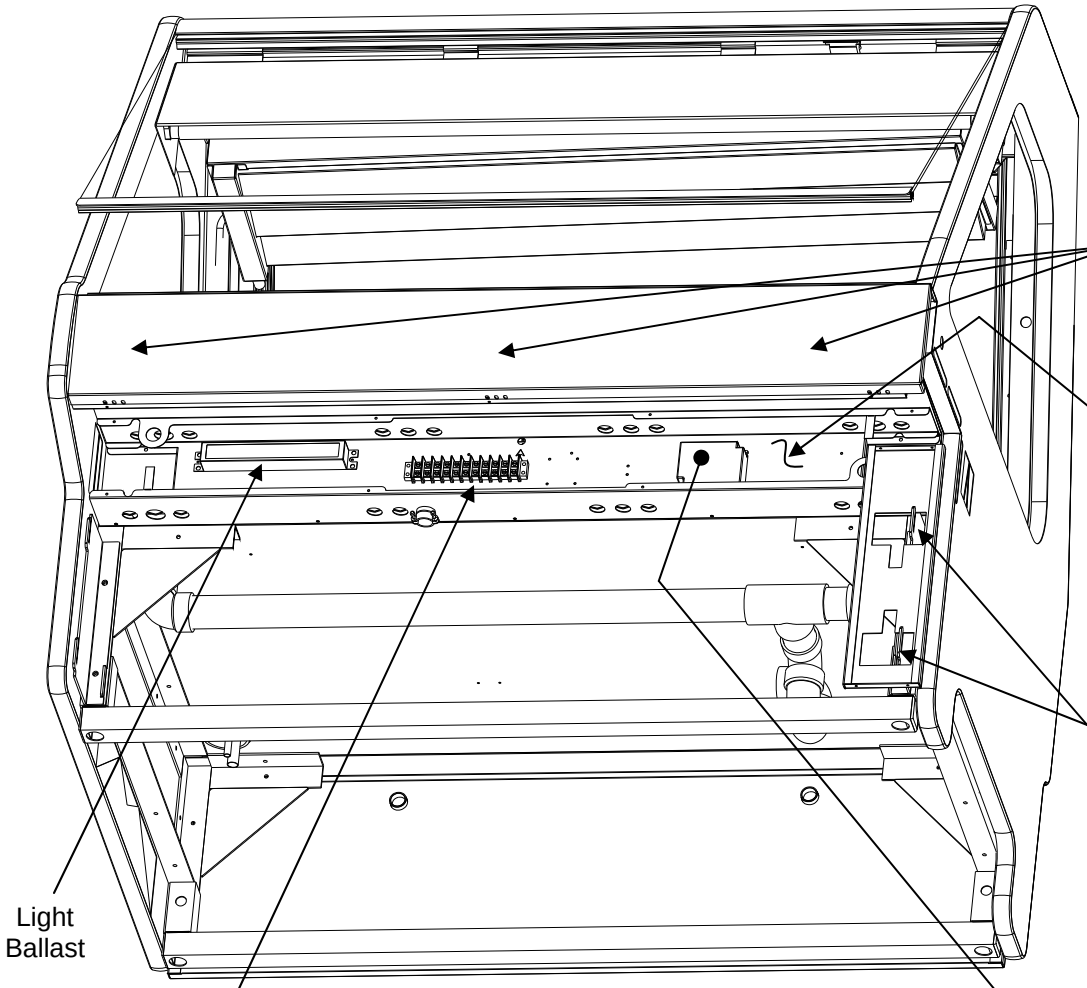
7. Probe Leads Box / Field Wiring Box / Ballast (or Optional LED Driver) / Terminal Strip / Axial Fans

- Probe leads are in probe leads box. It is located at customer front-left of case (behind front panel).
- Field wiring box is also located at front left of case (behind front panel)
- Ballast (or optional 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 & out.
- Anti-condensate axial fans may be accessed (behind of front panel) by simply removing four (screws), and dropping fans down.
- ***Caution! Only certified electricians are to access electrical components!***





View of Case With Front Panel and Electrical Cover Removed

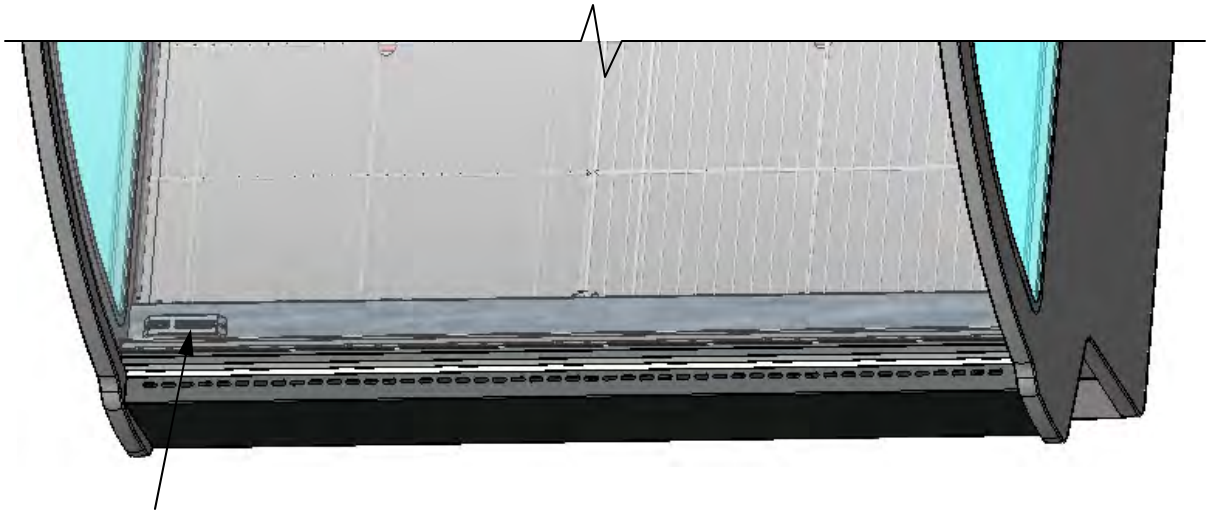
8. Thermometer Placement & Purpose

- Thermometers are usually located behind front glass. However, locations may vary depending upon model.
- Thermometers may be either spirit-filled or digital. They reflect internal air temperature only (not actual food temperature).
- Use probe thermometers to determine actual product temperatures.

9. Scale Stand / CAT-5 Connector / Outlets

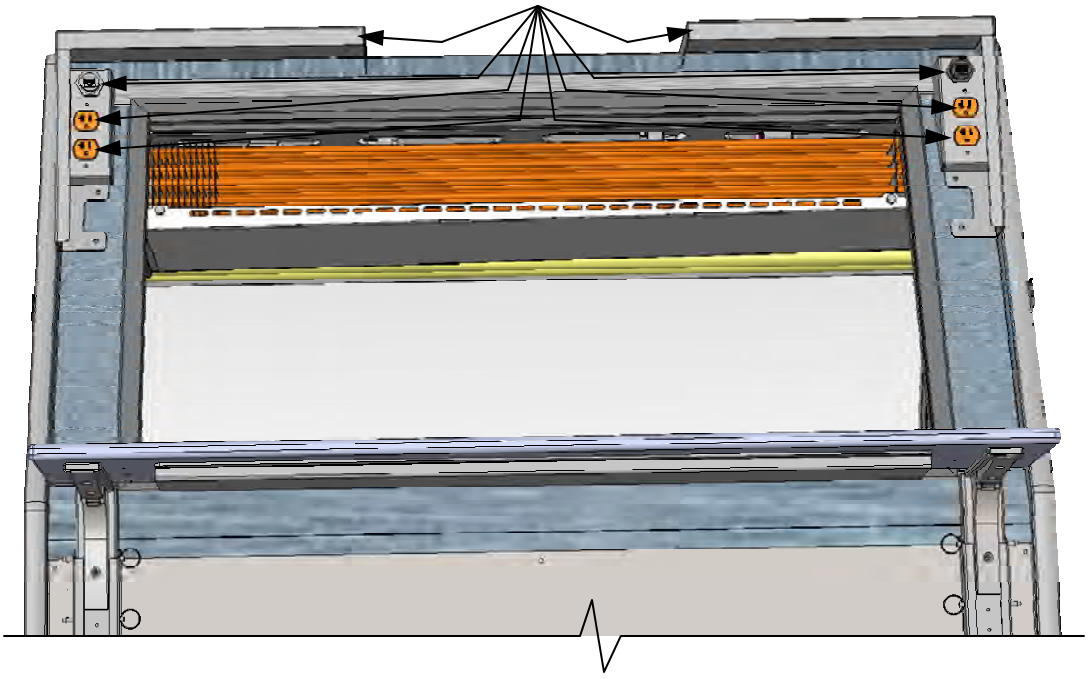
- Scale stands are optional. Location and number of scale stands may vary depending upon model.
- See illustration below.

10. Paper



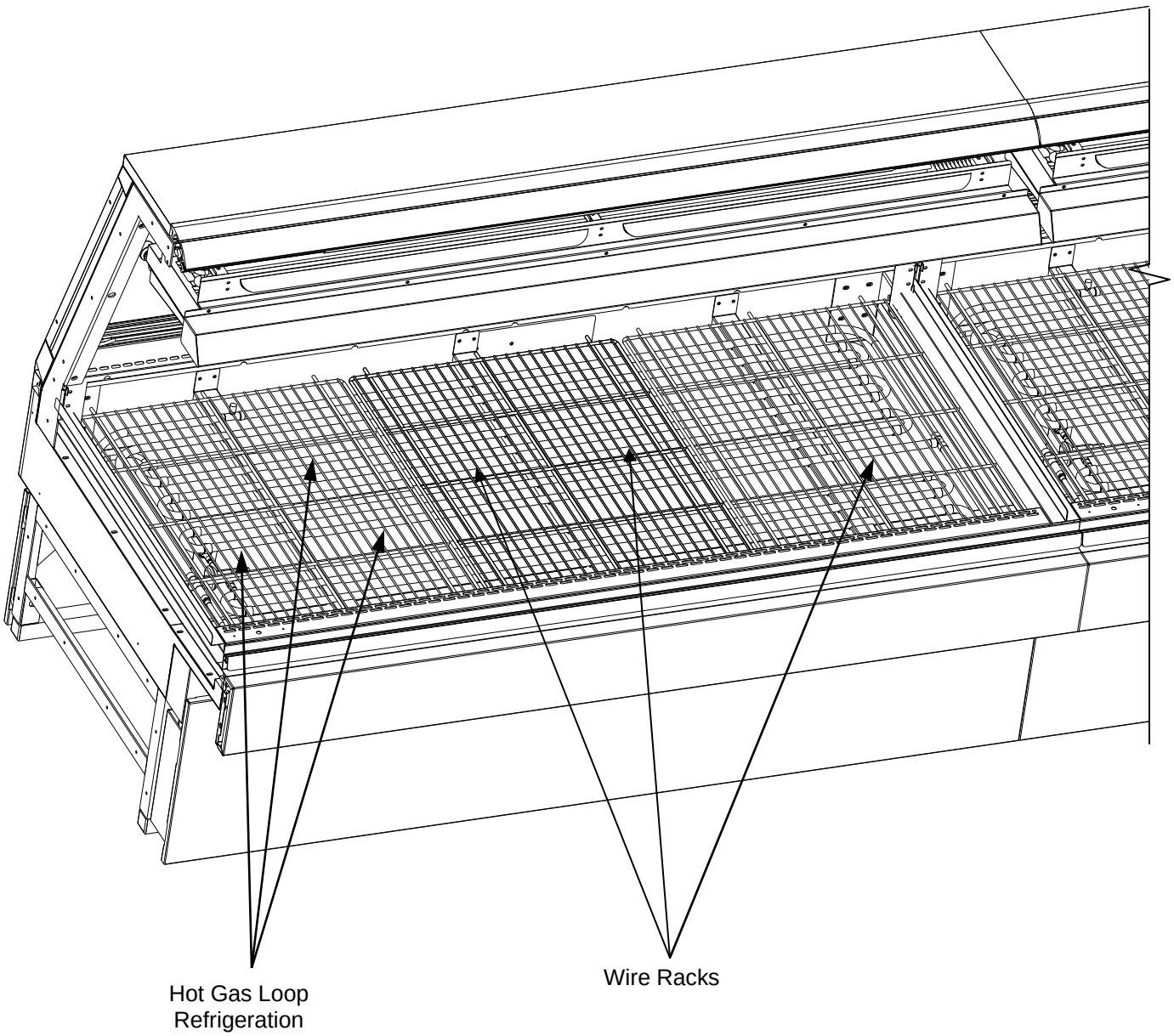
Thermometer At Front Of Case

Scale Stands, CAT-5 Connectors and 120V Outlets at Case Rear



1. Wire Racks Access and Removal (Meat Cases Only)

- Wire racks are placed directly over hot gas loop refrigeration system (including TXV valves).
- There are no separate deck pans.
- See next page for view of unit after removal of wire racks.



Model GMG12 Shown Above.
Your Case May Differ

> Case is Shown After Removal of Wire Racks

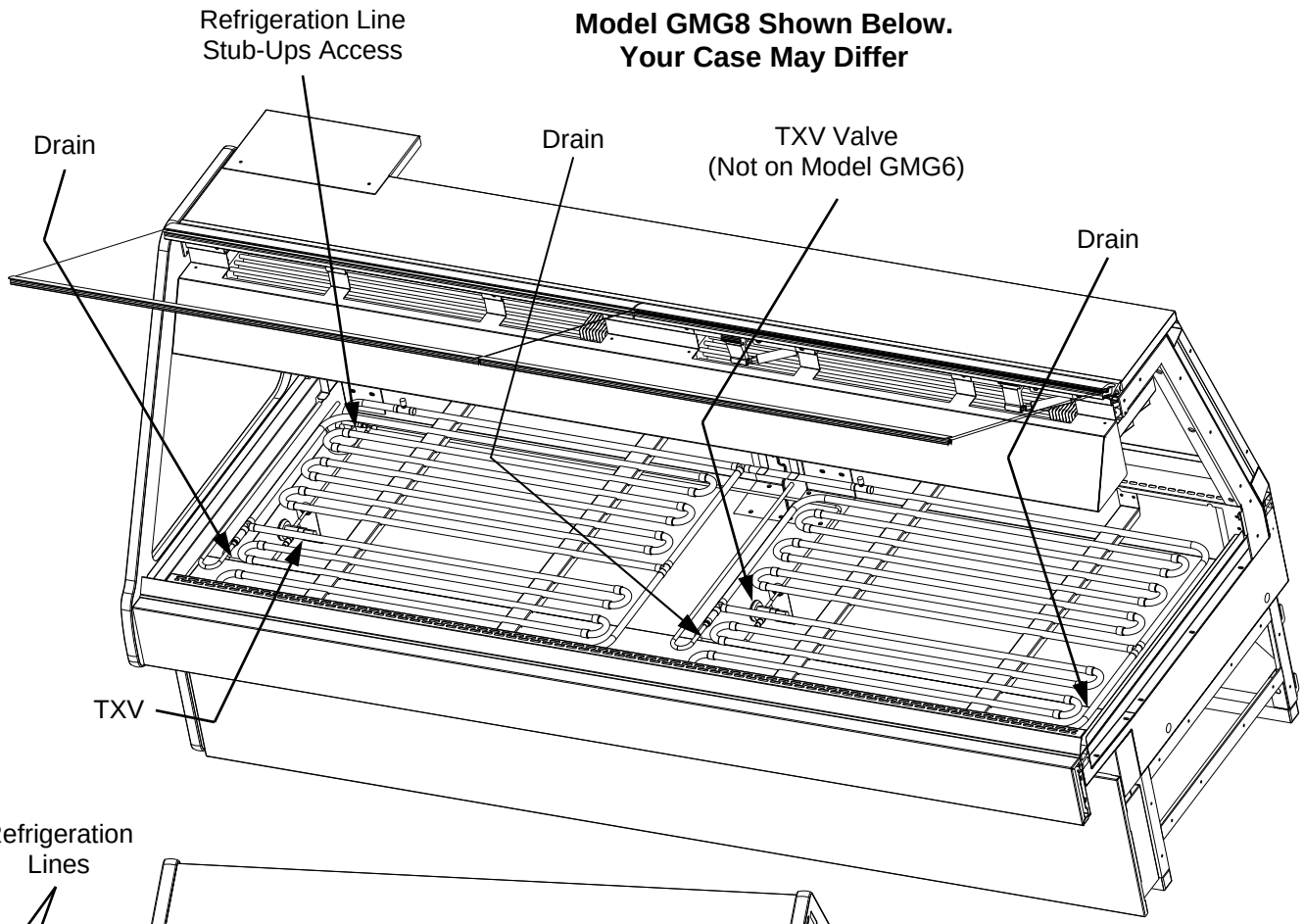
2. Refrigeration Line Routing

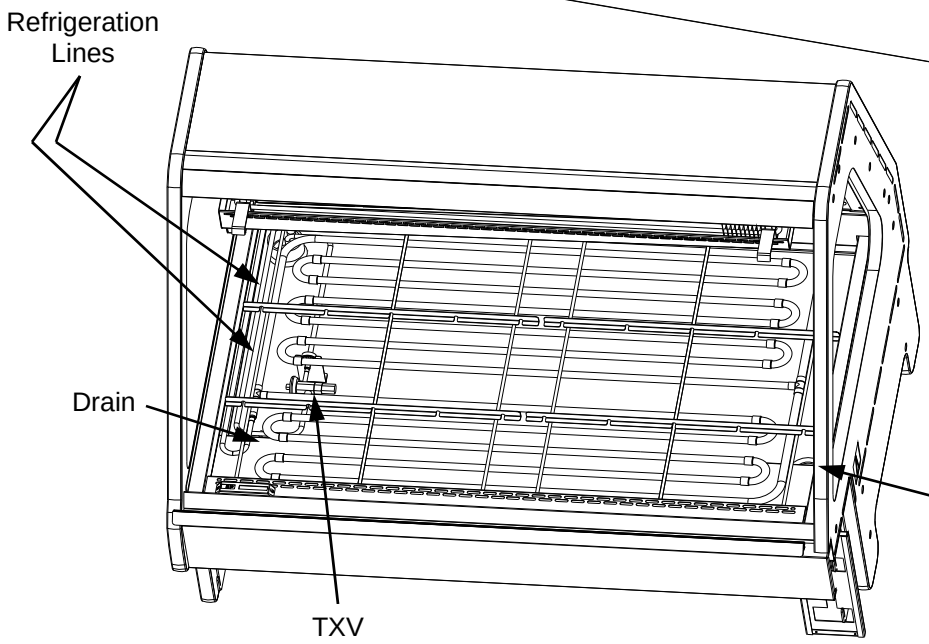
- Refrigerant line routing location is shown below.
- Illustration below may not reflect every feature or option of your particular case.

3. Drains and TXV Valve

- Cases have drains at left and right hand sides.
- Longer cases also have drain at case center.
- Illustration below may not reflect every feature or option of your particular case.

Model GMG8 Shown Below. Your Case May Differ

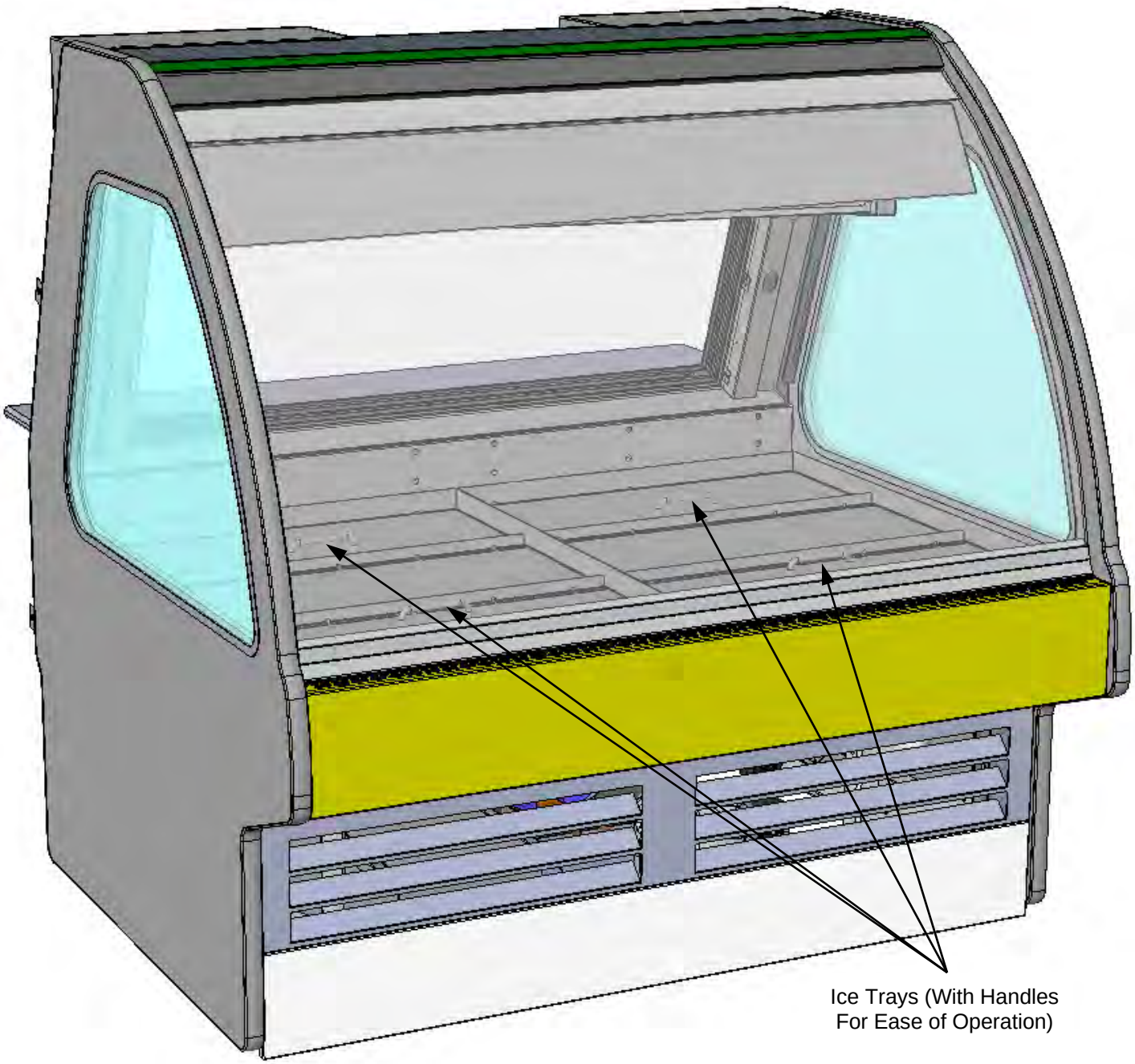




Model GMG4 Shown At Left. Your Case May Differ

1. Ice Trays Access and Removal (Seafood Cases Only)

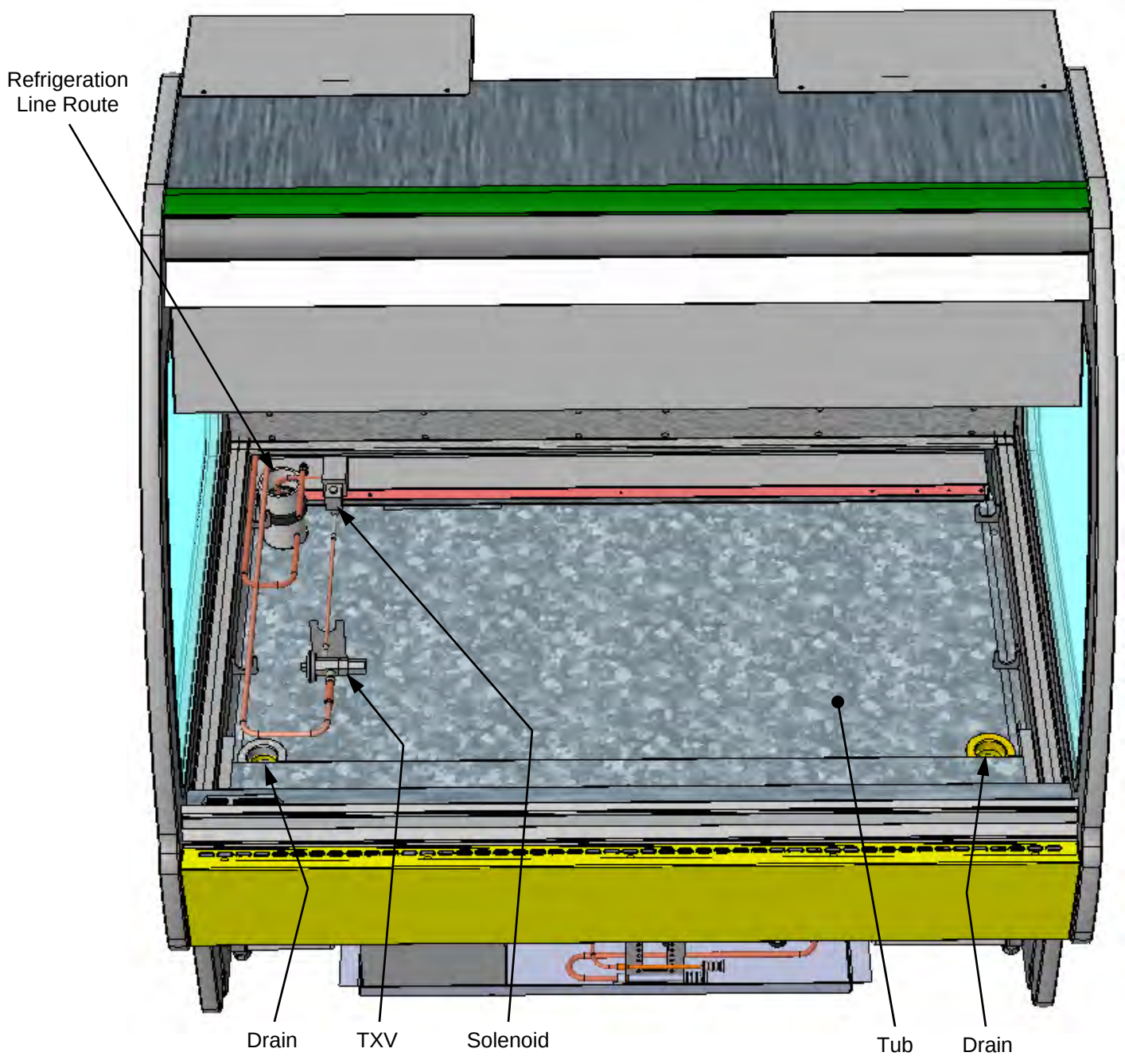
- Ice trays have handles for ease of lifting in and out of case.
- There are no separate deck pans.
- Ice trays may be removed for cleaning and service. Simply lift front glass to access.
- Ice trays are placed directly over tub (with TXV, refrigeration lines, drains, etc.). See illustration on next page for internal component breakdown.



Model GMG4 Shown Above.
Your Case May Differ

2. Internal Layout of Tub Area After Removal of Ice Trays (Seafood Cases Only)

- Ice trays are removed to show component layout.
- Illustration below shows drains, TXV, Solenoid, Tub, Refrigeration Line Route, etc.



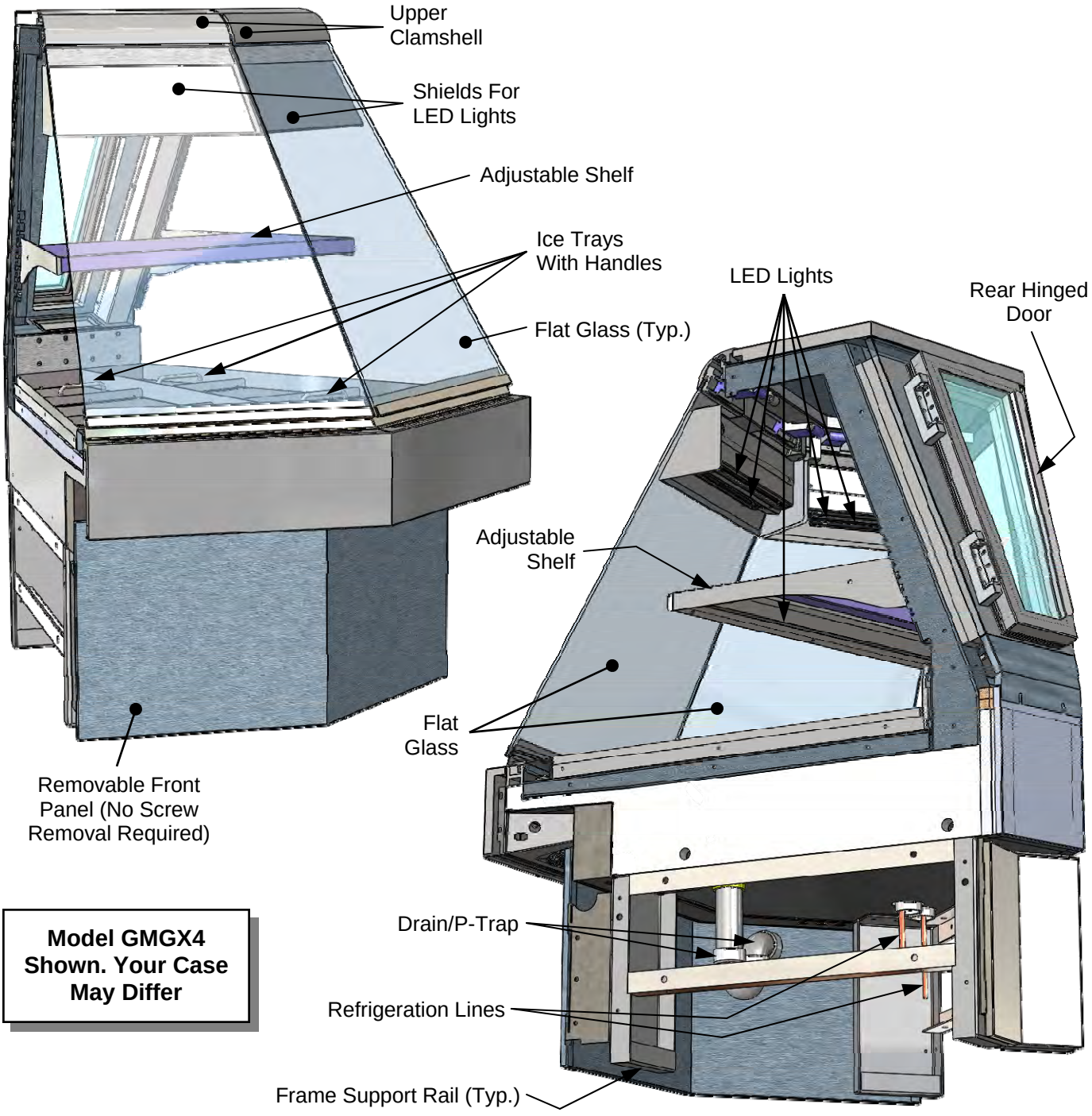
Model GMG4 Shown Above.
Your Case May Differ

1. Flat Glass / Shelf / Front Panel / Drain

- Upper gravity coil is NOT available on this model.
- ***Caution! Due to its design, only ONE flat glass piece may be raised at a time.***
- Shelf is removable (but not adjustable).
- Front panel is removable (no screw removal req'd).
- Underside of case (remote unit shown) displays drain/P-trap and refrigeration lines.

2. Humidification Feature (Optional)

- Optional humidification feature prevents the "drying effect" of refrigeration allows case to retain proper humidity levels without 'wetting' the product.
- Ultrasonic nozzles produces a fine vapor fog ("mist") that permeates product in the case .



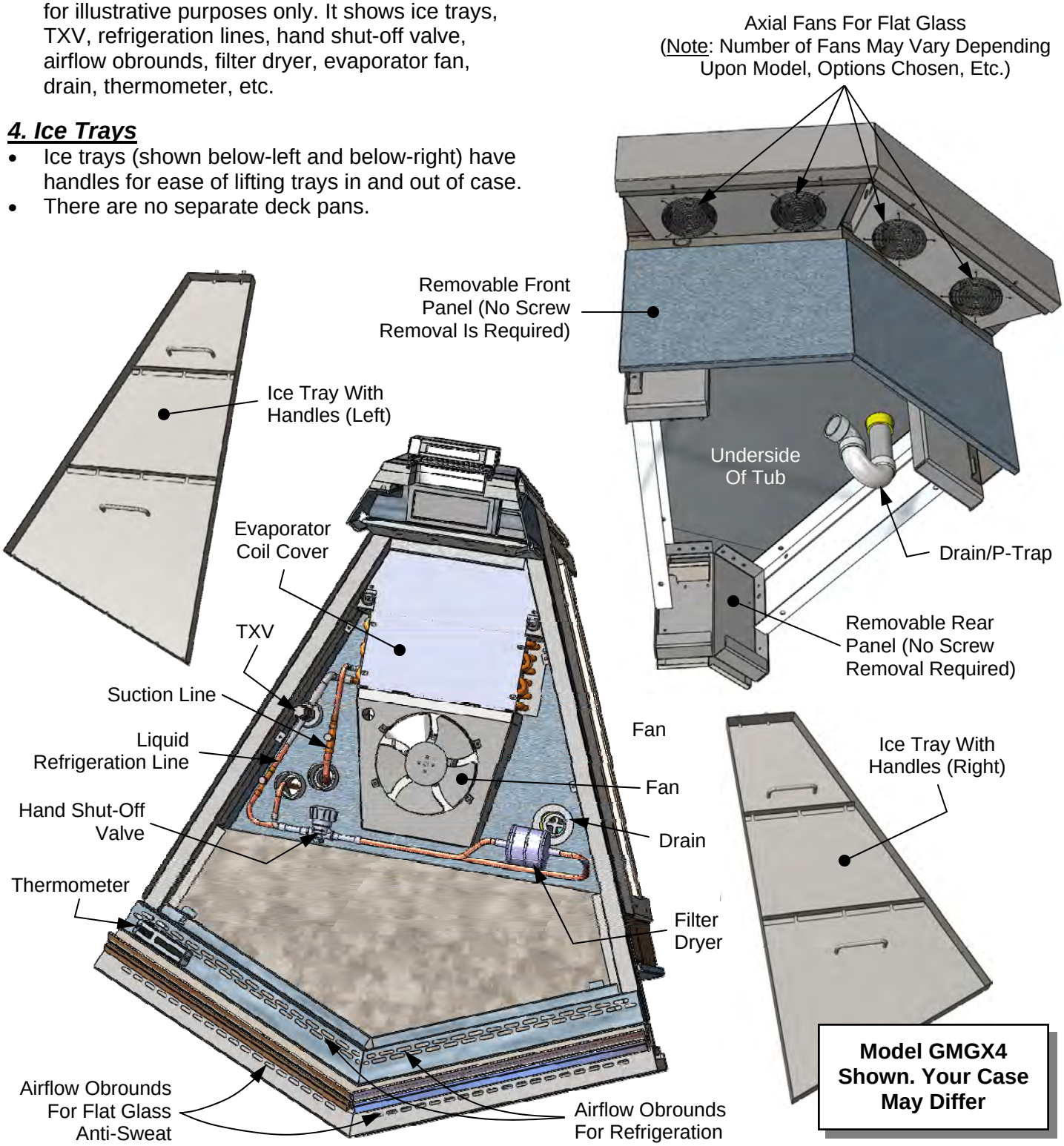
Model GMGX4 Shown. Your Case May Differ

3. Axial Fans

- Front-underside of case has axial fans to help prevent condensation from forming on outside of front flat glass (as shown at top-right).
- Below-left view is shown partially disassembled for illustrative purposes only. It shows ice trays, TXV, refrigeration lines, hand shut-off valve, airflow obrounds, filter dryer, evaporator fan, drain, thermometer, etc.

4. Ice Trays

- Ice trays (shown below-left and below-right) have handles for ease of lifting trays in and out of case.
- There are no separate deck pans.
- Ice trays may be removed for cleaning and service. Simply lift front glass to access.
- Ice trays are placed directly over tub (with TXV, refrigeration lines, drains, etc.).



1. Refrigration Line Stub-Up Connections

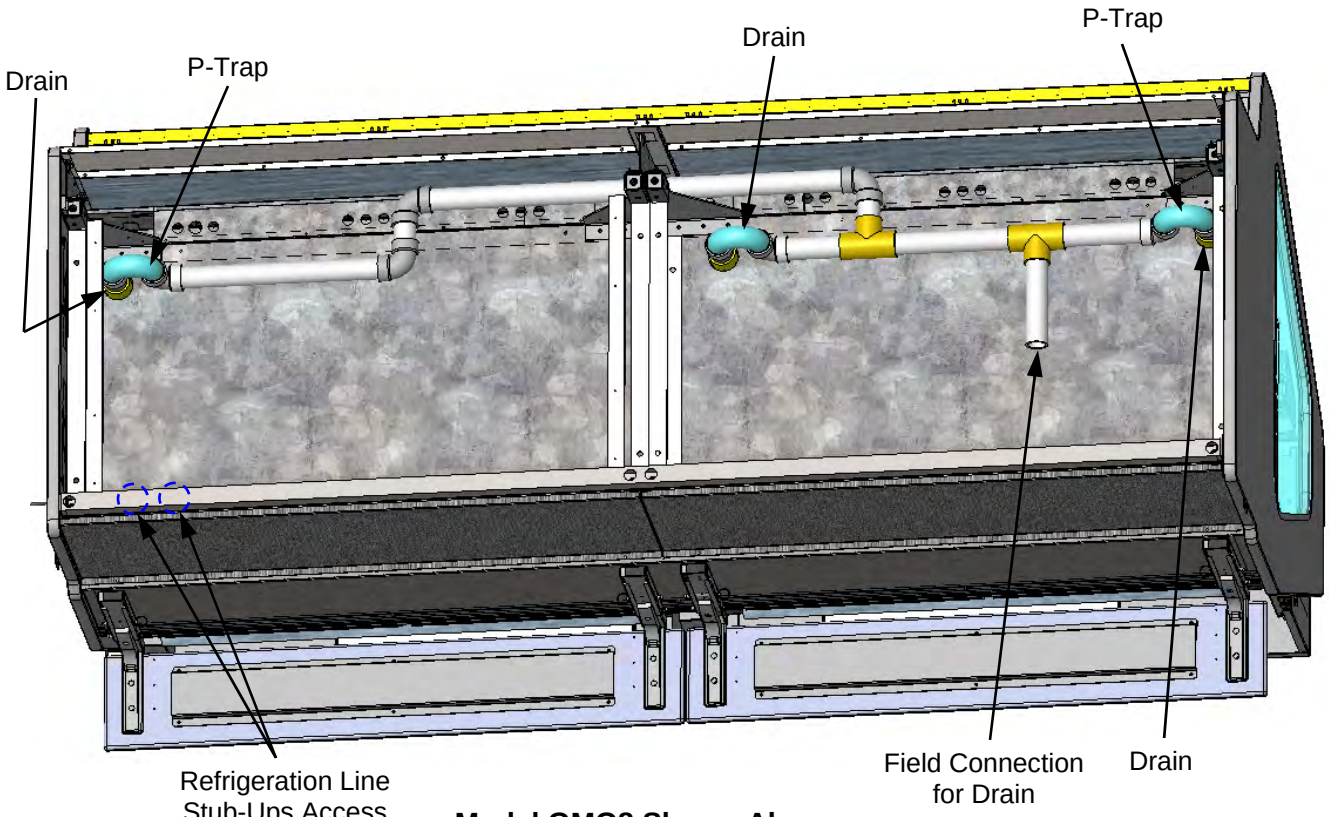
- Refrigerant stub-up access is at underside of case.
- Stub-up connections are accessed by removing rear panel (no screws required).
- Run case-to-case connections through cutouts in base.
- Sweat the high and low pressure connections.
- Fill access hole with suitable filler to insure watertight integrity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

2. Drains

- GMG8 cases have drains at left and right hand sides.
- Longer cases also have drain at case center.
- Drain field connection location is shown below.
- See ***INSTALLATION: REFRIGERATION LINES ROUTING / DRAINS / TXV VALVE (MEAT CASES)*** 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: Illustration below may not reflect every feature or option of your particular case.

3. Caution! Check Proper Drainage Before Turning on Case!

- If case runs without proper connection, water will drain onto floor causing damage!
- For remote cases, check that field connection for drain is properly connected.
- For self-contained cases, check that power cord from condensate pan is properly plugged in before turning on case.
- See ***TROUBLESHOOTING*** section in operating manual for additional information.



Model GMG8 Shown Above. Your Case May Differ

4. Refrigration Line Stub-Up Connections

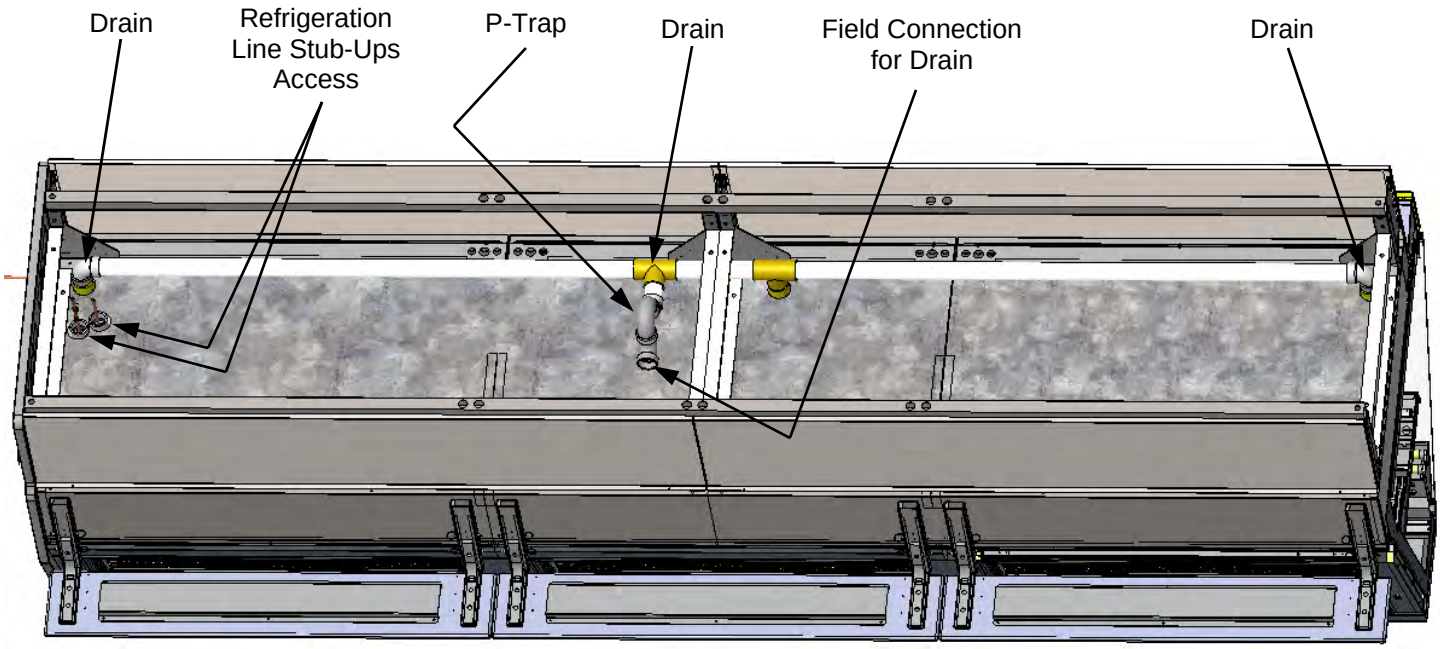
- Refrigerant stub-up access is at underside of case.
- Stub-up connections are accessed by removing rear panel (no screws required).
- Run case-to-case connections through cutouts in base.
- Sweat the high and low pressure connections.
- Fill access hole with suitable filler to insure watertight integrity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

5. Drains

- GMG12 cases have drains at left and right hand sides AND at center (see illustration below).
- Longer cases also have drain at case center.
- Drain field connection location is shown below.
- See ***INSTALLATION: REFRIGERATION LINES ROUTING / DRAINS / TXV VALVE (MEAT CASES)*** 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: Illustration below may not reflect every feature or option of your particular case.

6. Caution! Check Proper Drainage Before Turning on Case!

- If case runs without proper connection, water will drain onto floor causing damage!
- For remote cases, check that field connection for drain is properly connected.
- For self-contained cases, check that power cord from condensate pan is properly plugged in before turning on case.
- See ***TROUBLESHOOTING*** section in operating manual for additional information.



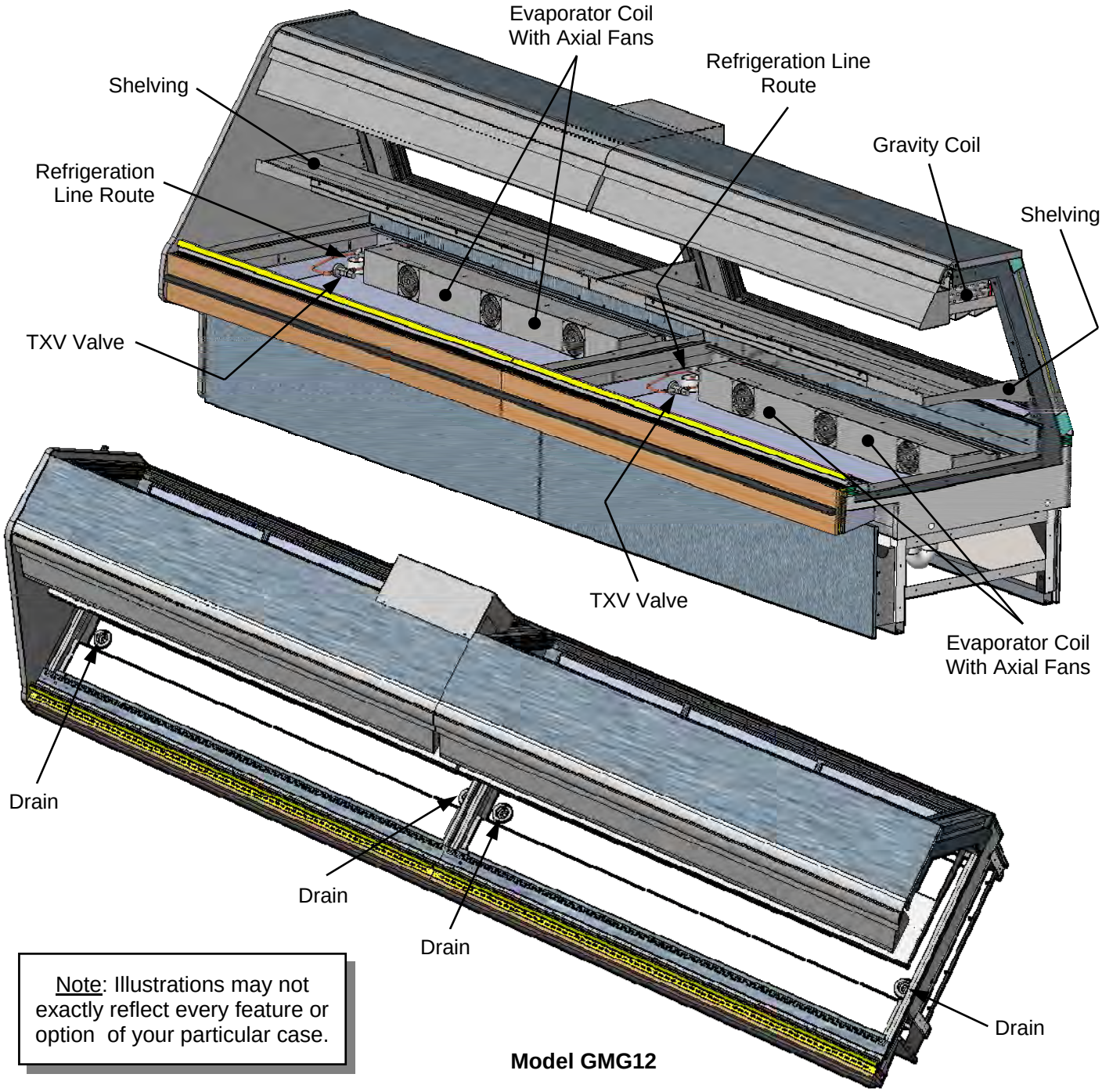
Model GMG12 Shown Above.
Your Case May Differ

1. Hybrid Cases

- Hybrid cases have gravity coils, shelving AND evaporator coils.
- Illustration below is shown partially disassembled for illustrative purposes only.

2. Hybrid Case Layout (Model GMG12 Shown)

- Each section has its own refrigerant line routes, TXVs, evaporator coils (lower section), drains and gravity coils (upper section).
- See illustrations below for general layout (your hybrid case layout may slightly differ).



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

Model GMG12

1. Rear 'Ball Valve' Drain System

Certain Self-Contained Meat units have a drain systems that routes water to a drain spout (bypassing evaporator pan) by using a drain 'ball valve' handle. This drain can flow to a bucket, hose or floor drain.

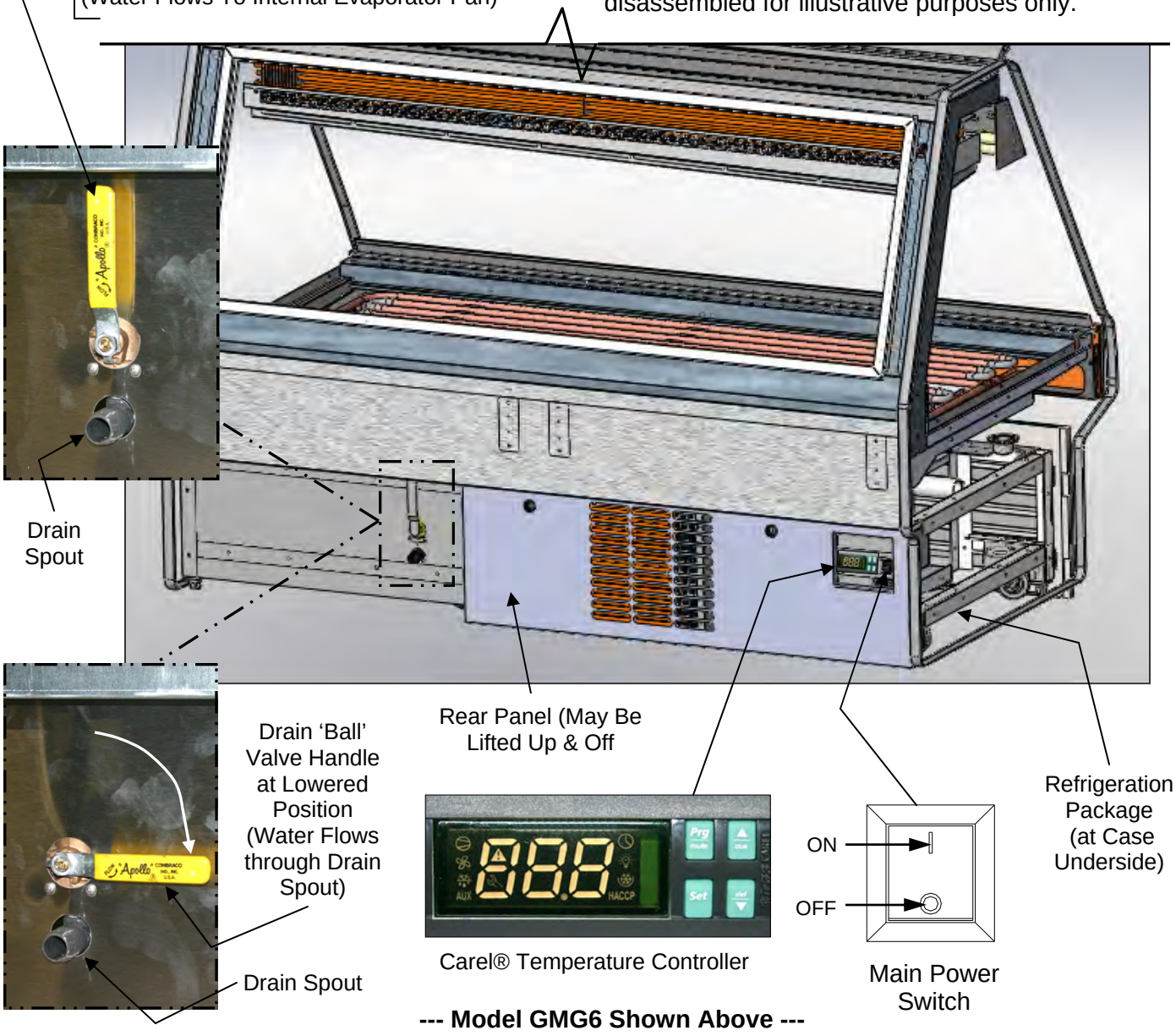
This feature allows more thorough cleaning of tub area. See ***CLEANING SCHEDULE TO BE PERFORMED BY STORE PERSONNEL*** for additional instructions on cleaning unit.

- Raised position of drain 'ball valve' handle allows water to flow to internal evaporator pan.
- Lowered position of drain 'ball valve' handle allows water to flow through rear drain spout.
- See illustrations on this page.
- ***Caution! Make certain you have a bucket or hose connected to drain (routed to floor drain) prior to re-routing water flow!***

2. Temperature Controller

- The Carel® Temperature Controller maintains proper case temperature.
- See ***CAREL TEMPERATURE CONTROLLER: PROGRAMMING/INTERFACE/ALARMS/ SIGNALS*** section in this manual for specifics.

Note: View of model shown below is partially disassembled for illustrative purposes only.



--- Model GMG6 Shown Above ---

1. Seafood Case Drain 'Handle' and Water Bin

Seafood Self-Contained units have a drain systems that routes water to a water bin by using an ice pan drain handle. This water bin can be removed (and dumped into a sink) or a hose can be connected to the bin's spout or simply routed to a floor drain.

See ***CLEANING SCHEDULE TO BE PERFORMED BY STORE PERSONNEL*** for additional instructions on cleaning unit.

- Horizontal "Open" position of PVC 'ball valve' handle (as shown in illustration below) allows water to flow to water bin.
- Vertical "Closed" position of PVC 'ball valve' handle PREVENTS water from flowing to water bin.
- When water is allowed to flow from upper section and into water bin, there are TWO WAYS to dispense the water in the bin:

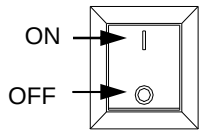
1. Slide water bin out from under unit and dump in sink or drain.
2. Connect hose to drain spout and run to floor drain.

2. Temperature Controller

- The Carel® Temperature Controller maintains proper case temperature.
- See ***CAREL TEMPERATURE CONTROLLER: PROGRAMMING/INTERFACE/ALARMS/ SIGNALS*** section in this manual for specifics.

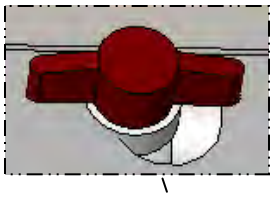
Note: View of model shown below is partially disassembled for illustrative purposes only.

Carel® Temperature Controller

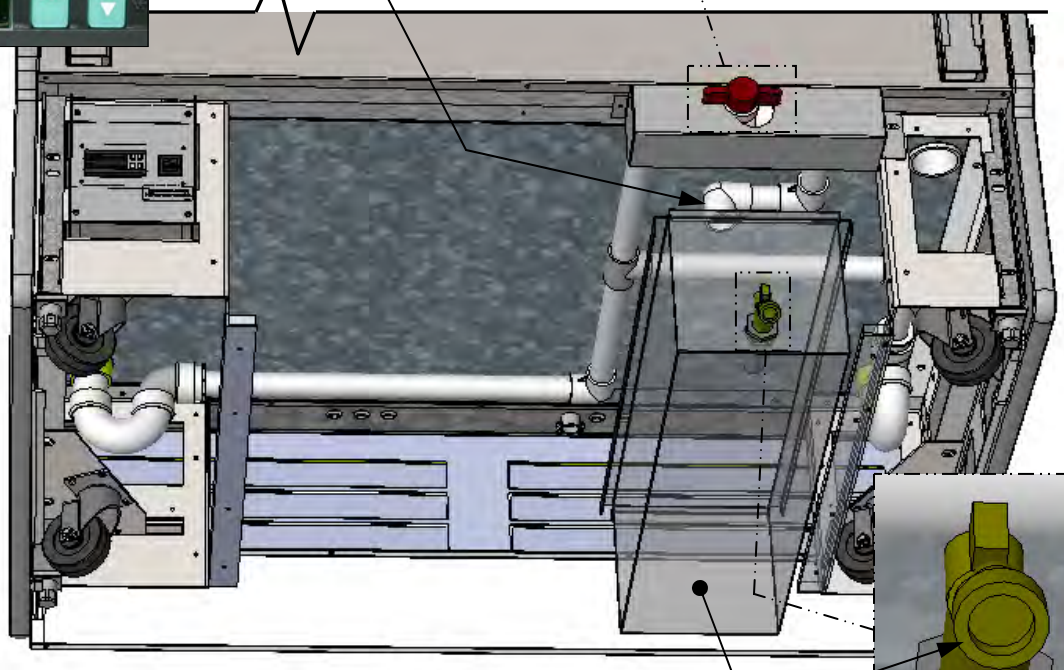


Main Power Switch

Ice Pan Drain Spout



PVC 'Ball Valve' Drain Handle Shown in Open (Flowing) Position



Water Bin And Drain Spout

--- Model GMG4 Shown Above ---

Underside of Unit Shown After Removal of Refrigeration Package (For Illustrative Purposes Only)

Display Case Start-Up

A Case

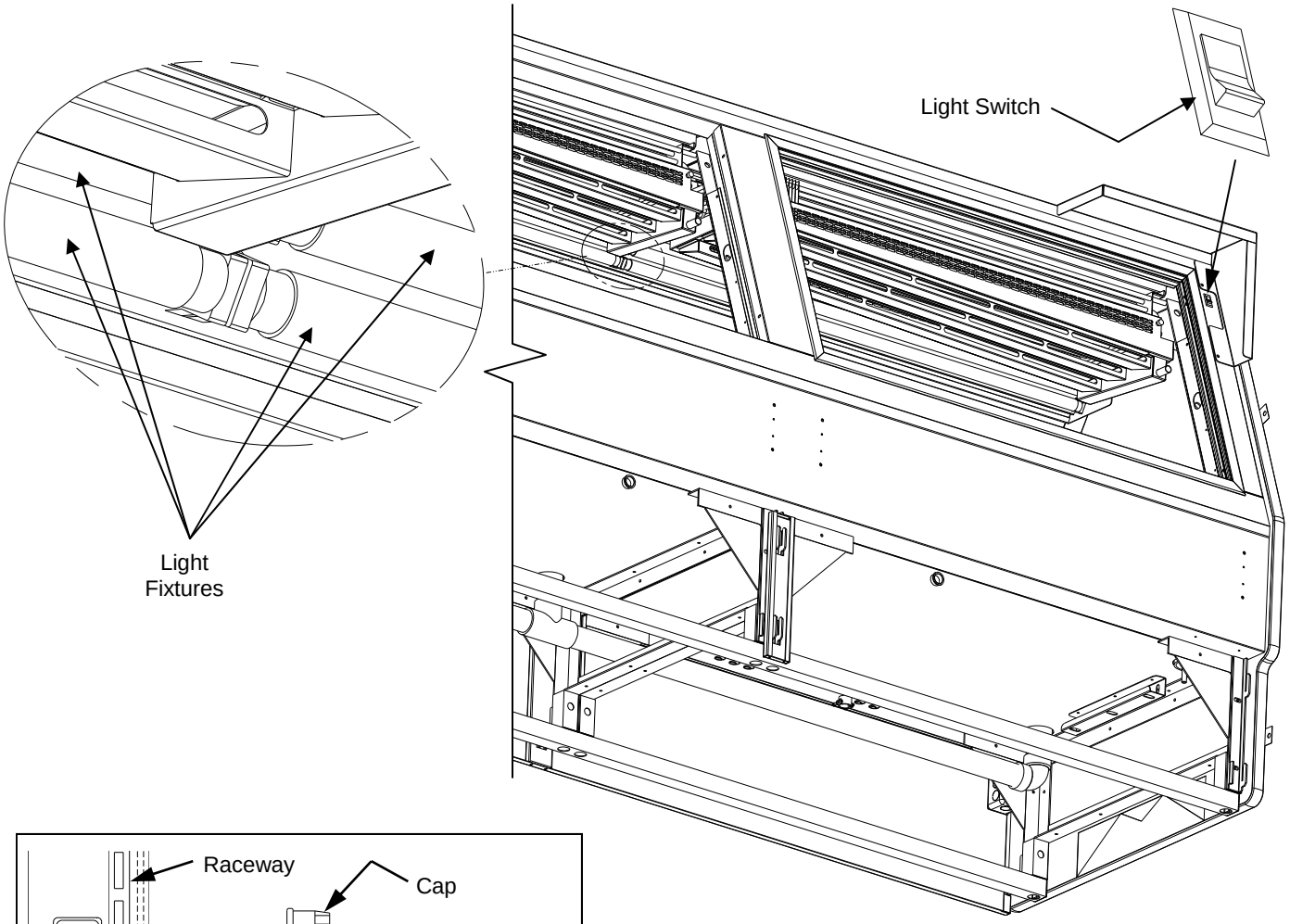
- Unit will begin operating when field wired.
- Front glass fans will begin to operate.
- Receptacle for scale stand receptacle will be energized.

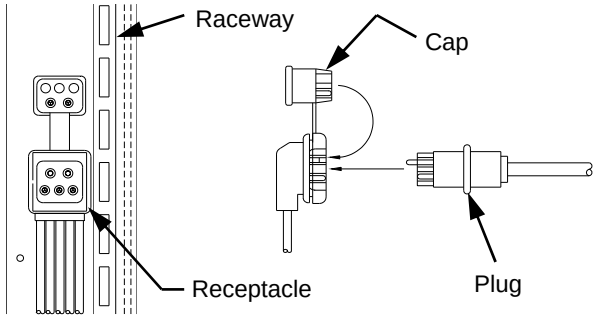
B. Light Switch

- Light switch for is at case rear on right upright (as shown in illustration below).

C. Lights

- Lights will turn on when light switch is flipped.
- All lights should come on at the same time.
- First time lighting may require a short warm-up period.
- Slightly dim / flickering of new bulbs is normal. If lights do not turn on, check raceway plugs.
- Lighting is wired in series so **all lights must be plugged in or receptacles capped** for case lights to be on. See illustration below-left.





Raceway Receptacle, Plug and Cap

A. Stocking

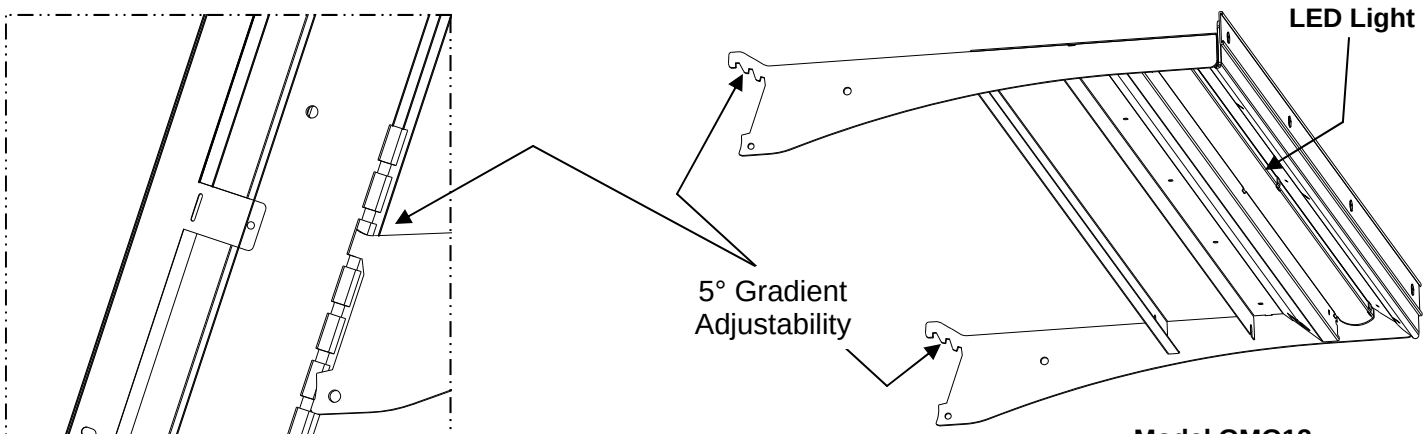
1. Product must always be maintained at a constant and proper temperature. Thus, from the time product is received, through storage, preparation and display, product temperature must be controlled to maximize life of the product.
2. These units are not “rapid cool-down cases”; they are “holding cases.” Thus, product must be in its fully-refrigerated state (at 41 °F or less) PRIOR to being placed in cases to help maintain maximum shelf life of product.
3. When stocking, never allow the product to extend beyond the recommended load limit.
4. Air discharge and return air flow must be unobstructed at all times to provide proper refrigeration.
5. Product must be consistently rotated (older product rotated to front of display) per your store’s stocking protocol.

B. Maintaining Proper Product Condition

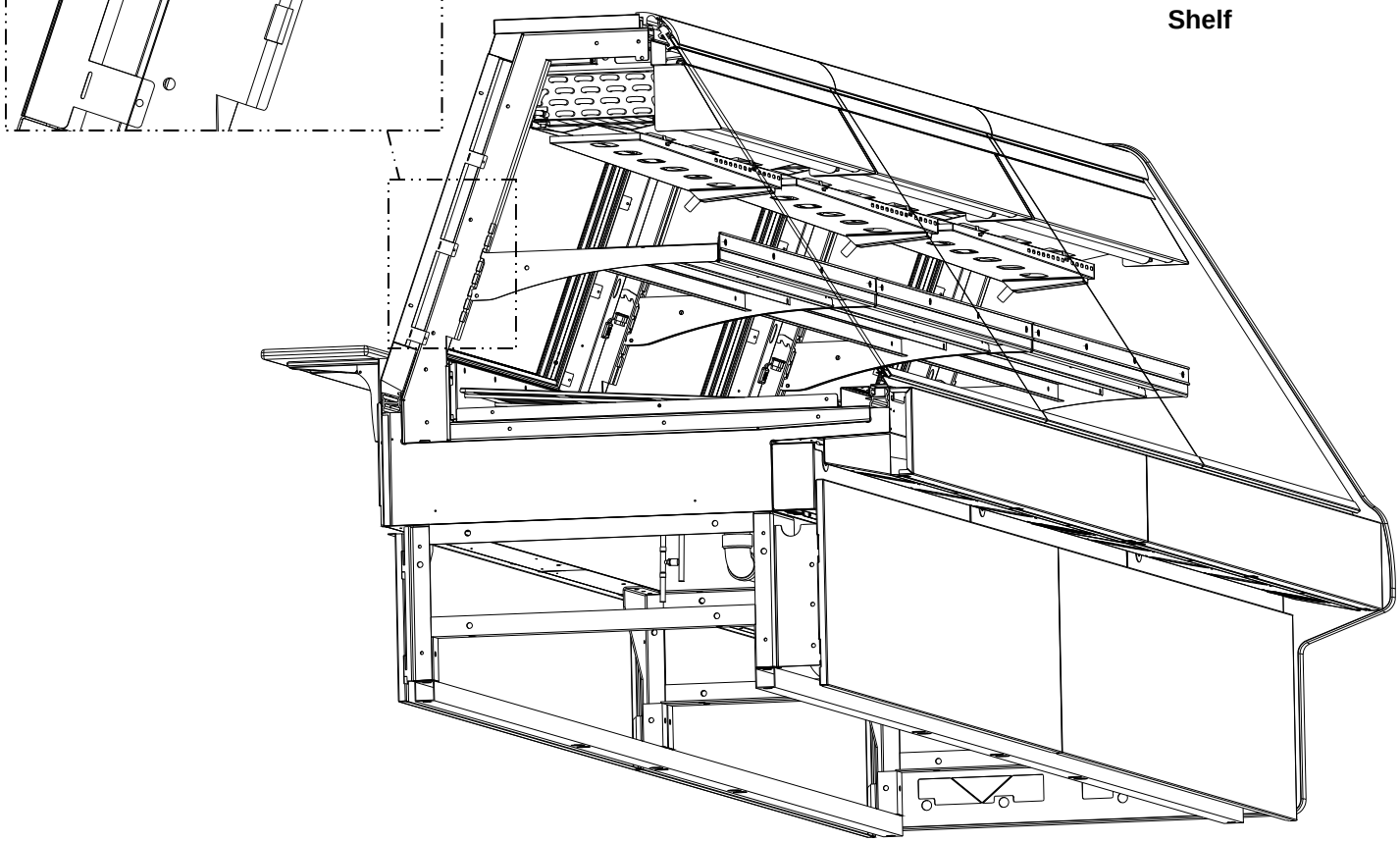
1. Improper temperature and lighting will cause serious product loss. Discoloration, dehydration and spoilage can be controlled with proper use of the equipment and handling of product.
2. To prevent product dehydration, do not allow temperature to drop below range specified in ***OVERVIEW*** section of this manual.
3. Minimize processing time to avoid damaging temperature rise to the product. Product should be kept at proper temperature.
4. Keep the air in and around the case area free of foreign gasses and fumes or food will rapidly deteriorate.
5. Do not place any product into these refrigerators until all controls have been adjusted and they are operating at the proper temperature. Allow merchandiser to operate at a minimum of 6 hours before stocking with any product.
6. There are vents located at the base of the front of the glass, just above the front rail. These vents supply a continuous, gentle flow of air across the front glass which inhibits condensation. Do not place any signs, product or other restrictive objects on the front of the refrigerator that will block these vents.
7. Keep the service doors closed (when applicable). Refrigeration performance will be seriously affected if left open for a prolonged period of time.
8. Avoid the use of supplemental flood or spot lighting. Display light intensity has been designed for maximum visibility and product life at the factory. The use of higher output fluorescent lamps (H.O. and V.H.O.), will shorten the shelf life of the product.
9. Turn off case lights at night.
10. In the deli, meat and fish cases, completely cover the product each night with a clean damp cloth or butcher paper (never use plastic, as it does not allow for proper circulation). Make sure the cloth or paper is in direct contact with the product.
11. Turn and rotate the meat fairly often. The blood (which gives the pink color) works its way downward with time.
12. Cold coils remove heat and moisture from the case and deposit this as frost onto the coil. Thus, you must thoroughly clean and defrost the upper refrigeration system/gravity coil drip tray assembly at least weekly. See ***CLEANING SCHEDULE (INTERIOR) - TO BE PERFORMED BY STORE PERSONNEL*** section in this manual for cleaning and defrosting specifics.
13. Understand product quantity and how it effects dehydration. The only other moisture within the case is that of the product itself. Thus, a single level of meat will dry out faster than a fully loaded case of 3-4 levels of meat.

Display Shelves and Brackets (Not All Cases)

- Certain models may have display shelves.
- Display shelves/brackets are adjustable to allow greater visibility of product.
- Shelves are adjustable, up or down, on 1" centers.
- Shelves are also able to be adjusted, angle-wise.
- To adjust, lift upward on brackets and rotate front of brackets downward.
- ***Caution! Do not dislodge LED plugs from light sockets while adjusting shelving.***
- Each notch the bracket is adjusted will change angle by 5°.
- See illustrations below.



Model GMG12 Shelf



Model GMG12 Shown Partially Disassembled

Warning! Disconnect power before providing maintenance and service to unit.

Caution: Lamps are treated to resist breakage and must be replaced with similarly treated lamps.

Note: Warranty will be void if claims arise from negligence, misuse of goods, extreme environmental conditions or improper maintenance. See Overview And Warnings section in manual.

1. Rear Sliding Doors

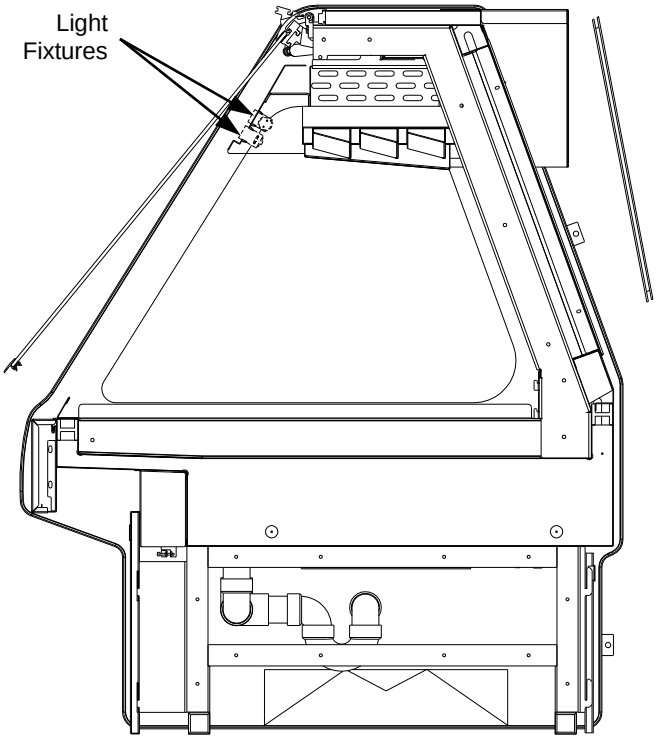
Note: Doors are not interchangeable. There is an inner and outer door. Outer door must be removed first and replaced last.

- The outer door is the right hand door (from service side or rear of 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.
- Replace rear sliding doors in reverse order they were removed.

2. Light Fixtures

Note: Depending upon model and options, light fixtures can have either single or dual lamps.

Light fixtures are located on underside of shelf assemblies and at the top inside of case. See illustration at upper right for locations.



Removal of lamps:

- Rotate lamp (1/4-turn) to disengage (upper or lower) pins/contacts from mounting sockets.
- Remove bulb by applying even pressure from back side at the bulb ends and pulling the remaining contact from sockets.
- See illustrations at mid and lower-right.

Installation of lamps:

- Align pins with slot.
- Insert pins into socket by rotating the bulb 1/4-turn to secure either the (upper or lower) pin contacts into the sockets.
- Rotate remaining bulb contacts (1/4-turn) into remaining lamp mounting socket contacts.
- See illustrations at right.

3. Supplemental Flood Lighting / Food Lighting Specifics / Cautionary Note

- Avoid using supplemental flood or spot lighting.
- Display light intensity has been designed for maximum visibility and product life at the factory.
- ***Caution! The use of higher output fluorescent lamps (H.O. and V.H.O.), will shorten the shelf life of the product, causing 'product browning.'***
- Bulbs must be replaced with similar wattage, output and design as those in which the unit was equipped with from the factory.

>> See next page for LED light fixture information.

Warning! Disconnect power before providing maintenance and service to unit.

Caution: Lamps are treated to resist breakage. Replace with similarly treated lamps.

Note: Warranty will be void if claims arise from negligence, misuse of goods, extreme environmental conditions or improper maintenance. See Overview And Warnings section in manual.

Important LED Light Guidelines

Note 1: Plug is to connect to LED light at raceway side of case.

Note 2: Before attaching LED light to case, verify that plug connects to LED properly (without doubling-back).

- *See photos/illustrations at right for proper vs. improper connections.*

LED light removal / replacement:

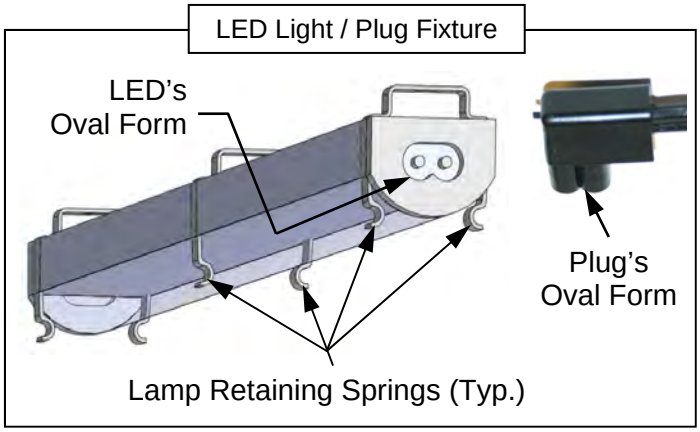
- LED lights they rarely require change-out.
- Contact Structural Concepts' Technical Service Department for replacement parts (see Technical Service section of this guide).
- To remove LED light fixture, disconnect existing LED light from its brackets & self-adhesive tape.
- Then, firmly grasp LED light while applying outward pressure to brackets.
- Twist the LED away from the bracket to release.

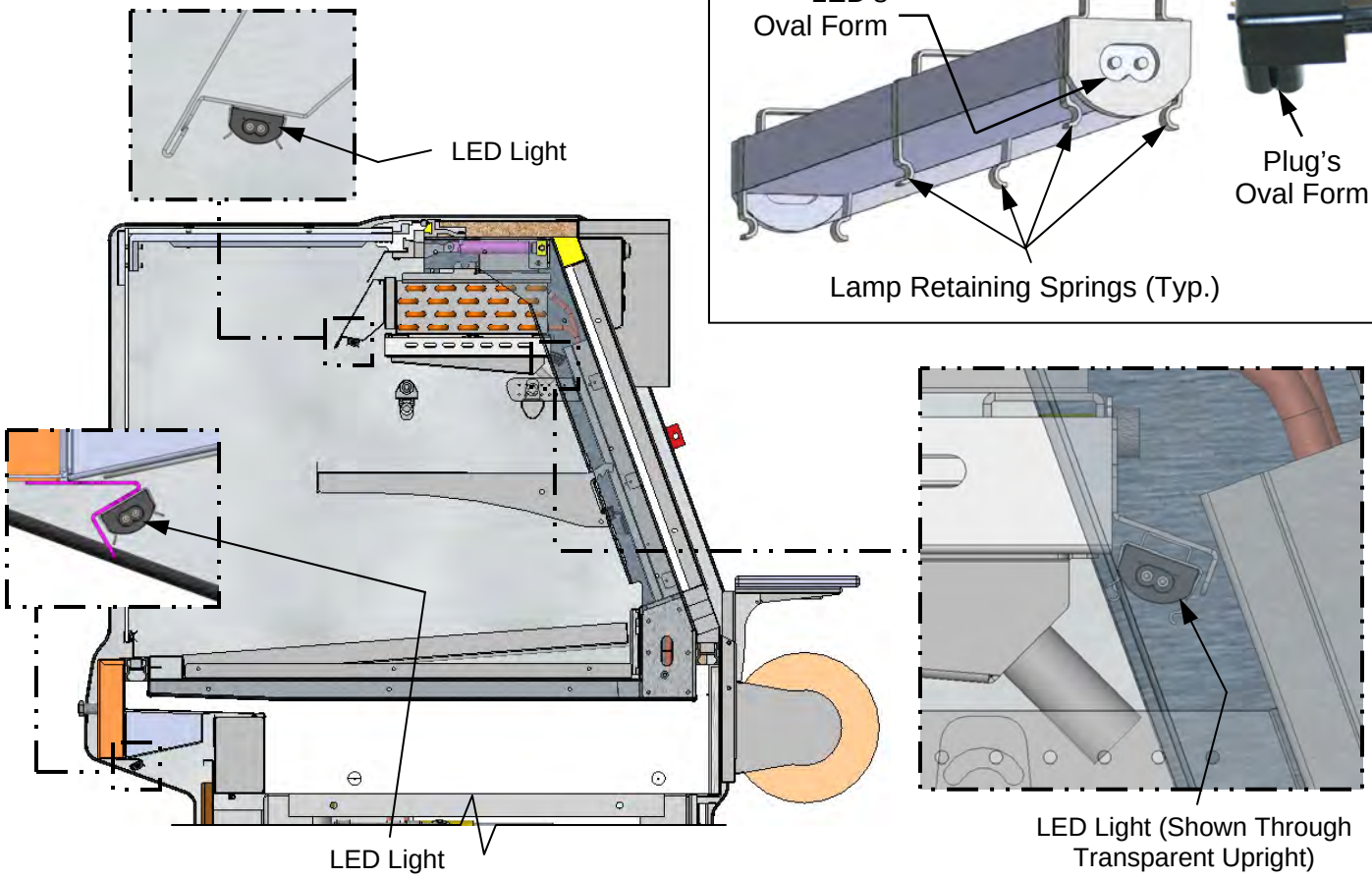
Plug and cord positioning:

- Plug is to connect to LED light at raceway side of case.
- Before attaching LED light to case, plug must connect to LED properly without cord doubling-back.
- See photos of proper vs. improper connections.

Proper plug insertion into LED light:

- Plug must be inserted into LED light properly or the LED will not light up.
- Oval form of plug is to connect to LED light oval form. See above illustration.

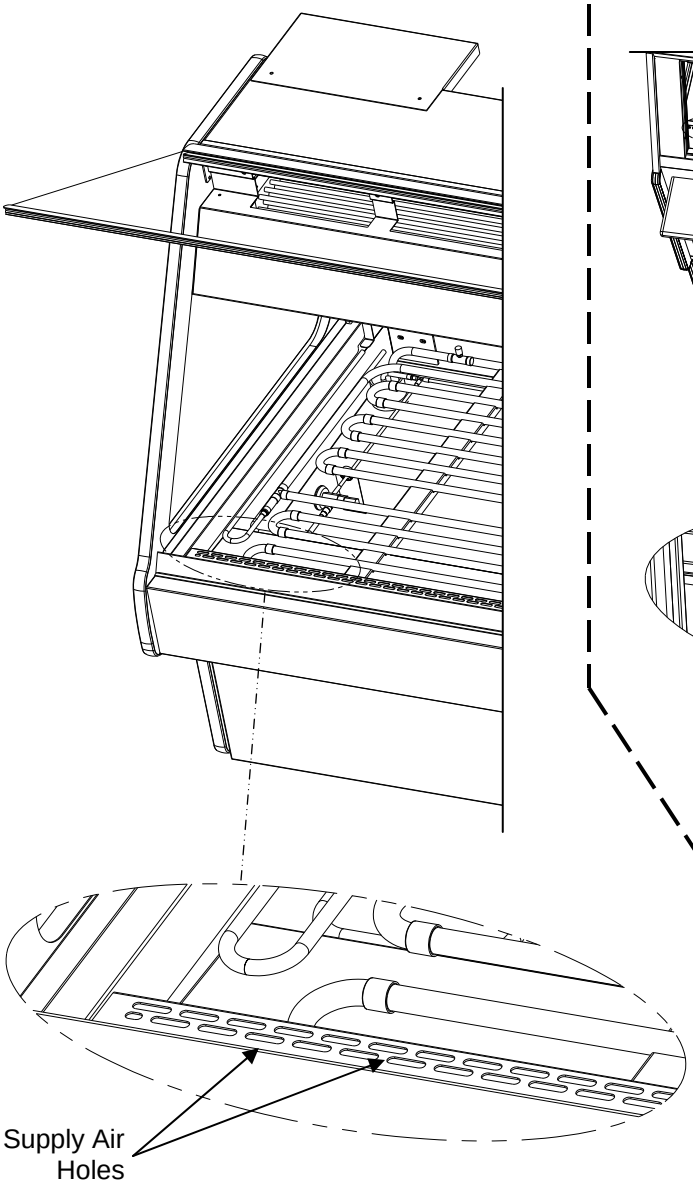




1. Prohibited Product Placement

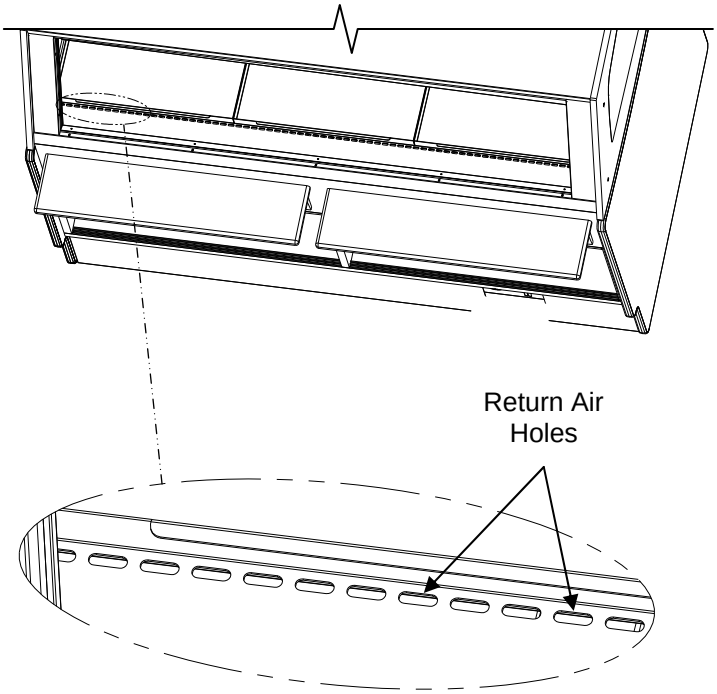
- ***Caution! DO NOT set product on supply air at case front.*** Doing so can impede proper convection air current which is required to maintain seafood and/or meat at proper color and proper condition.
- ***Caution! DO NOT set product on return air holes at case rear.*** Doing so can impede proper convection air current which is required to maintain seafood and/or meat at proper color and proper condition.
- See illustration below for locations of rear and front return air holes.

--- View of Case Front ---



***Caution! DO NOT Set
Product on Supply Air Holes!***

--- View of Case Rear ---



***Caution! DO NOT Set
Product on Return Air Holes!***

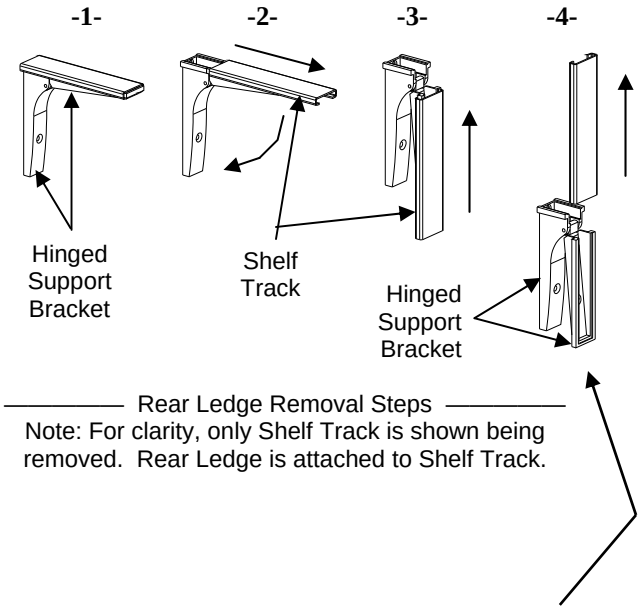
2. Cutting Board (Rear Ledge) Removal Steps

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 (cutting board) 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; attached rear ledge (cutting board) from bracket.

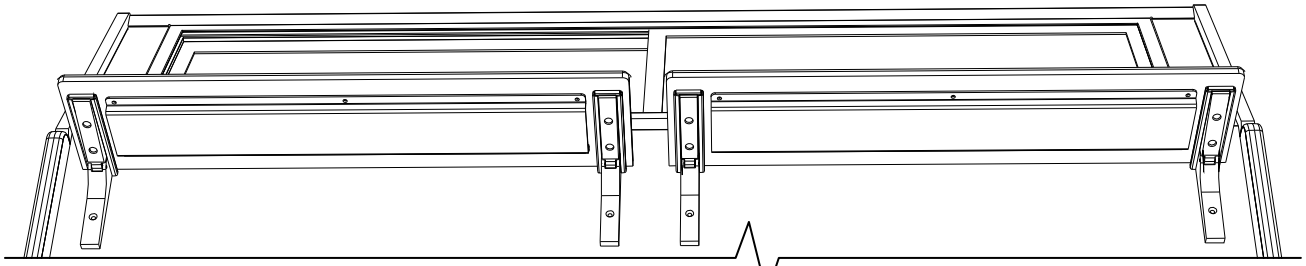


Rear Ledge Removal Steps

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

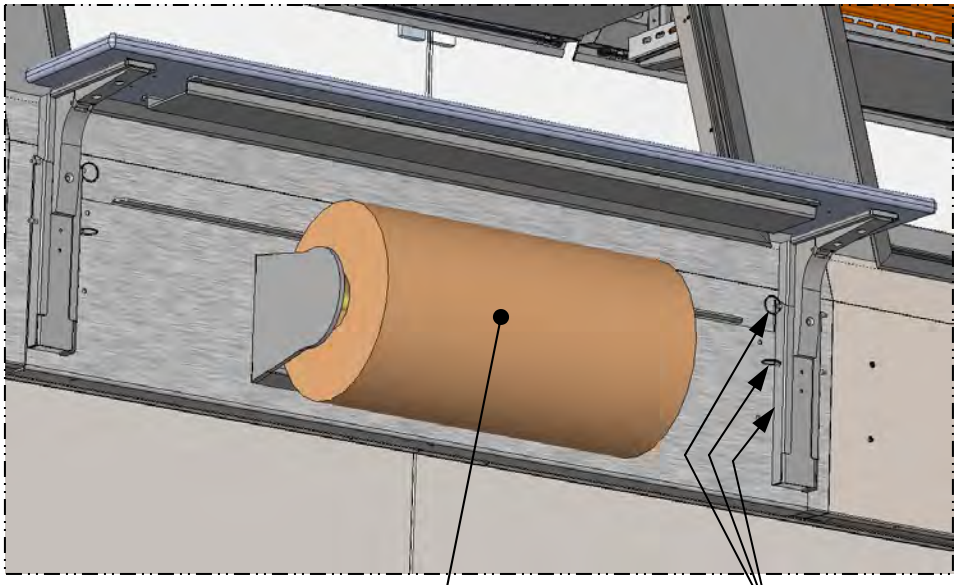
3. Rear Ledge Raising and Lowering

- Illustration below shows rails and pins at underside of rear ledge (cutting board).
- Pull pins and adjust ledge height. Replace pins.



4. Paper Rollers (Optional)

- Paper roller unit is usually positioned under rear ledge (cutting board).
- See illustration at right for general location.



CONDENSER PACKAGE (HEATER ROD EVAPORATOR PAN)

The following images show the various parts pertaining to the condenser package (that is slid directly out from under display case) to be cleaned and serviced.

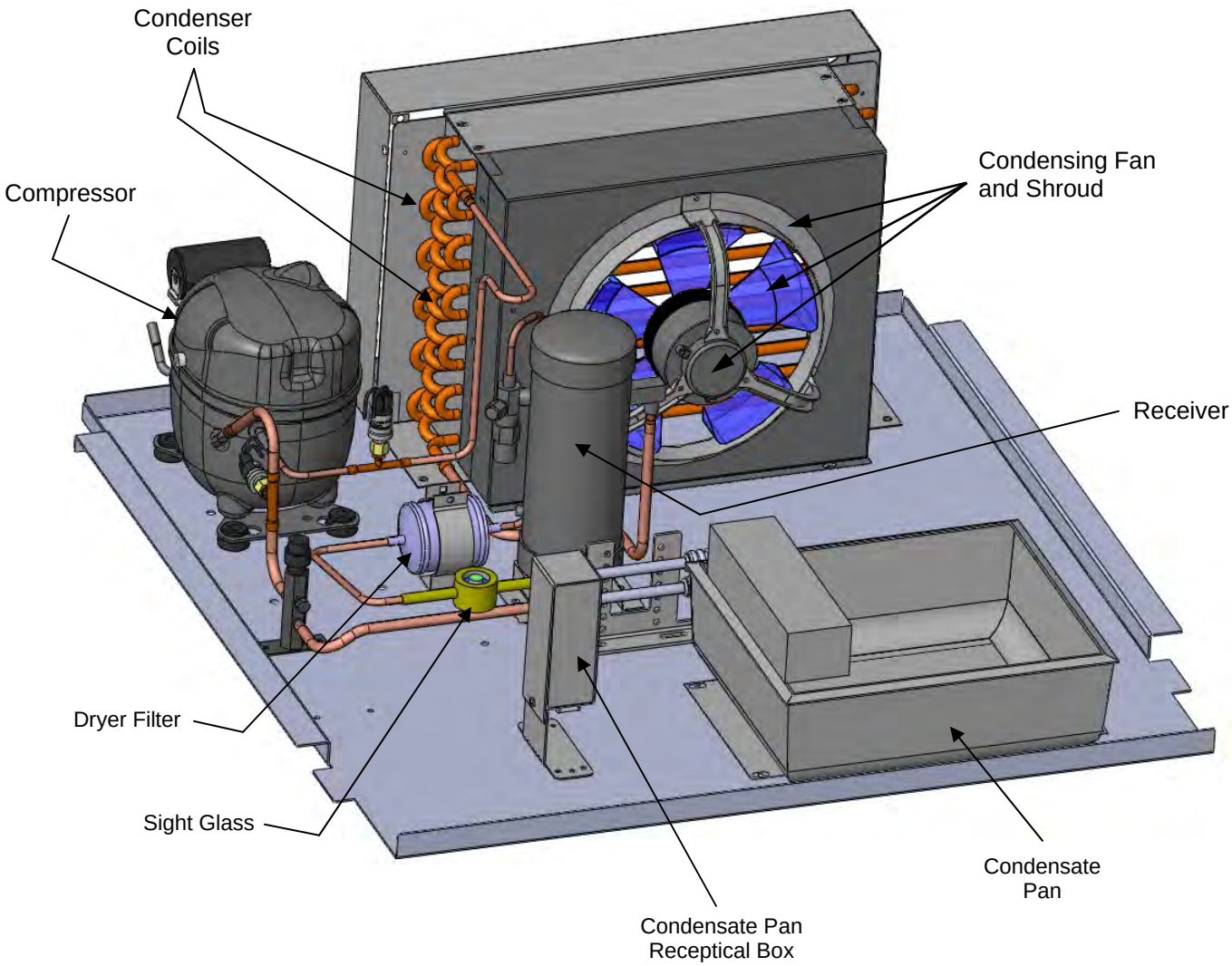


Illustration shown may not reflect every feature or option of your particular case.

CONDENSER PACKAGE (HOT GAS LOOP EVAPORATOR PAN / HEATER ROD OVERFLOW PAN)

The following images show the various parts pertaining to the condenser package (that is slid directly out from under display case) to be cleaned and serviced.

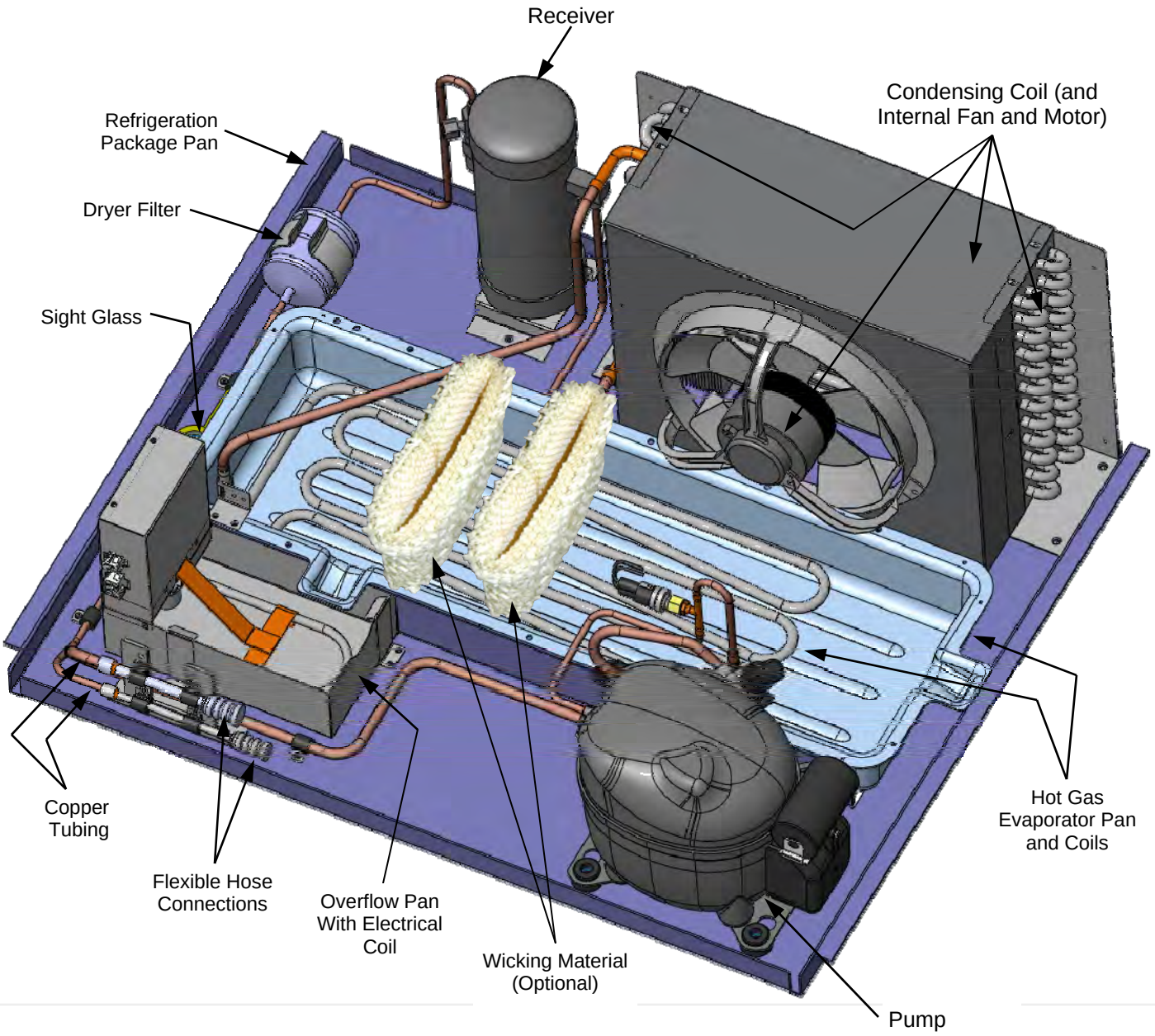
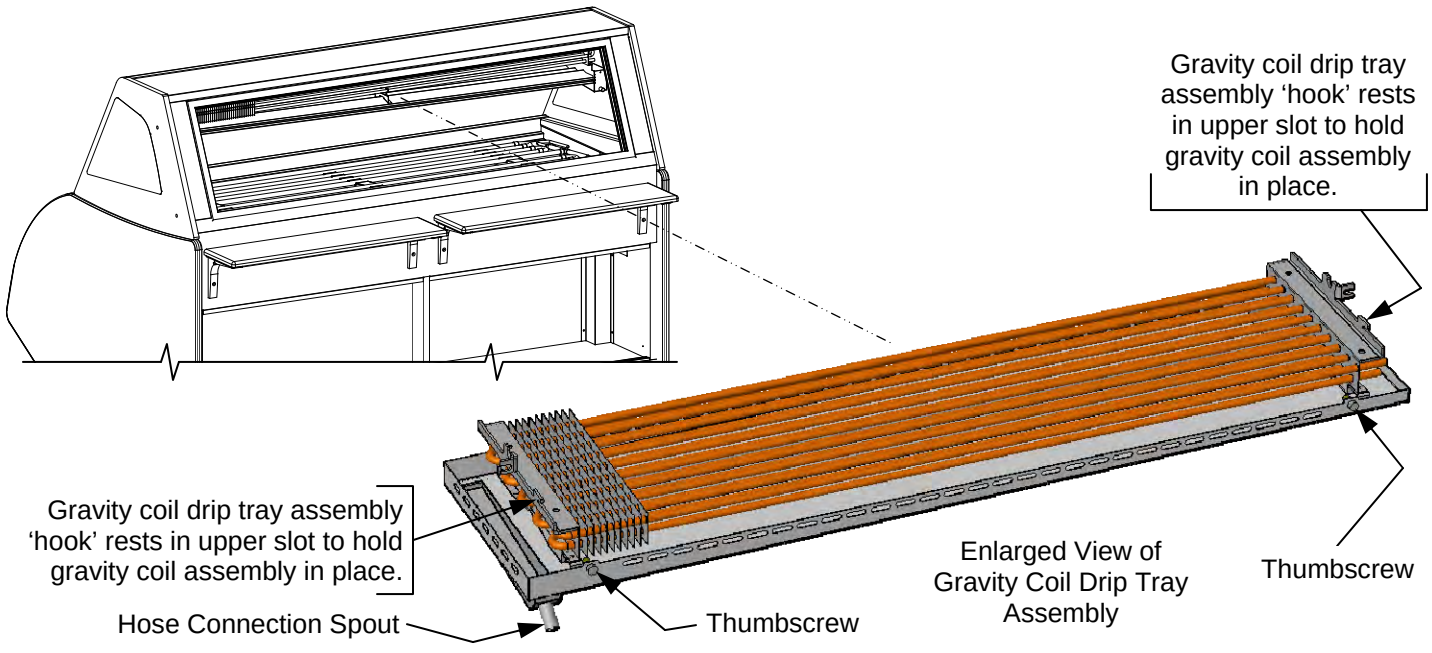


Illustration shown may not reflect every feature or option of your particular case.

CLEANING SCHEDULE (INTERIOR) - TO BE PERFORMED BY STORE PERSONNEL (PAGE 1 of 3)

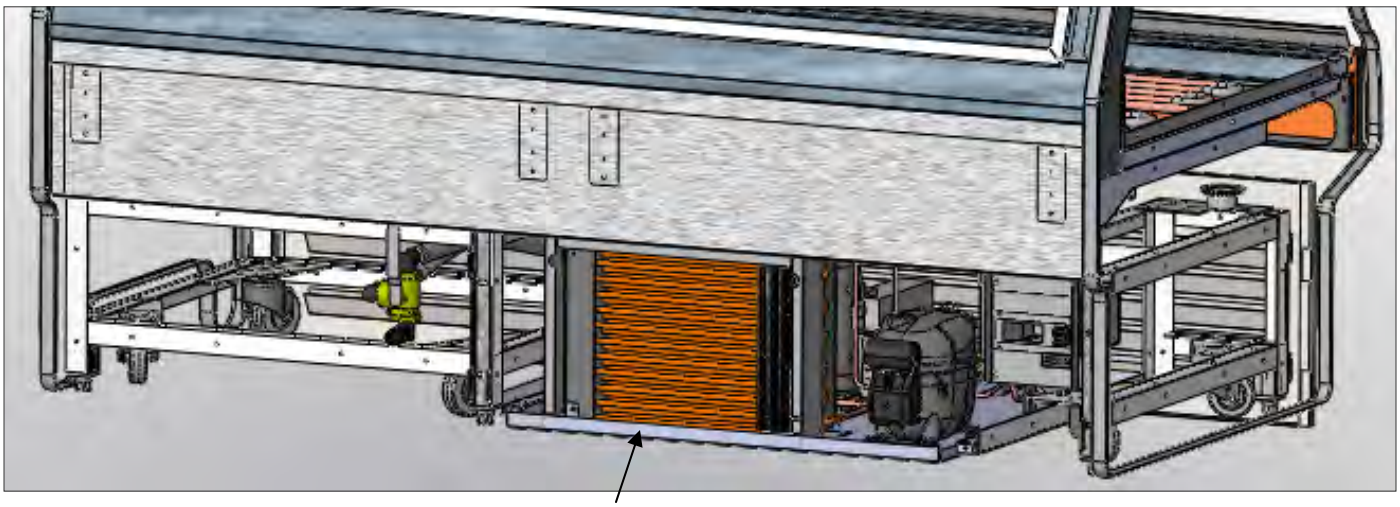
FREQ.	INSTRUCTIONS
Daily	**<u>Seafood Case: Ice Pans. Meat Case: Wire Racks</u>:** Remove from case. Submerse in hot water while using an anti-bacterial soap solution. Rinse thoroughly, dry. Return to case. For seafood case, new batch of ice required.
Daily	**<u>Open Unit Area (With Hot Gas Loops Exposed)</u>:** While pans/racks are being cleaned, wipe down open area (including copper tubing, tub and drain area) with hot water solution and anti-bacterial soap solution. Rinse thoroughly.
Daily	**<u>Hybrid Case Shelving</u>:** Reach through rear openings to clean shelves with warm water, mild detergent and soft cloth. Dry with paper towel or clean cloth when done.
Weekly	**<u>Tub, Trough and Drain (Remote Units)</u>:** >> Keep clean and free of debris which could clog tub and drain. To access drain area, remove ice pans (for seafood case) / wire racks (for meat cases). >> Remote units have drain systems that flows DIRECTLY INTO floor drain. >> To clean tub, trough and drain, follow these instructions: • Case may remain ON while performing tub cleaning process! • Use hose with warm or hot water, sponge and either a bucket with warm, soapy water or spray bottle with anti-bacterial soap. • Wipe down tub with hot water and anti-bacterial soap solution. • If cleaning a hybrid case, wipe down evaporator coil unit. Caution! Do not splash water into axial fans while cleaning! • Dry with clean cloth or chamois when done. • Return pans and dividers to case.
Weekly	**<u>Tub, Trough and Drain (Self-Contained Units)</u>:** >> Keep clean and free of debris which could clog tub and drain. To access drain area, remove ice pans for seafood case) / wire racks (for meat cases). >> Self-Contained units have drain systems that flows DIRECTLY INTO evap. pan. • DO NOT use a hose (with flowing water) to clean tub area. • This may cause water to flow through drain, into evaporator pan, and possibly overflow, damaging flooring. • Structural Concepts is not liable for such damages!. See ***TROUBLESHOOTING - GENERAL ISSUES*** section in this manual should an overflow occur. • At case rear is a drain 'ball valve' handle that may be rotated (see label on case rear for direction) to allow water to flow through drain spout (below handle). • See ***INSTALLATION: SELF-CONTAINED MODEL GMG6 MEAT CASE REAR DRAIN/ TEMP. CONTROLLER*** section in this manual for the location of the 'ball valve' handle and drain spout. • If cleaning a hybrid case, wipe down evaporator coil unit. Caution! Do not splash water into axial fans while cleaning! • Caution! Make certain you have a bucket or hose connected to drain (routed to floor drain) prior to re-routing water flow! • Remove pans and dividers from case. While pans and dividers are being cleaned, use sponge and anti-bacterial soap solution in bucket or spray bottle to wipe down tub, trough and drain with sponge or clean cloth. • Dry with clean cloth or chamois when done. • Return pans and dividers to case.

FREQ.	INSTRUCTIONS
At Least Weekly	**<u>Upper Refrigeration System/Gravity Coil Drip Tray Assembly</u>:** ***Caution! To insure proper case performance, you must thoroughly clean and defrost this merchandiser at least WEEKLY.*** • If optional humidification ("misting" system) is on unit, it must be turned off while thoroughly cleaning and defrosting! • Cleaning controls switch is NOT in unit, but it may be provided by others. If a switch is accessible, flip to "OFF" position. If not, you must contact your facility manager to turn off upper refrigeration system. Allow upper system to thoroughly defrost. • Lift rear sliding doors up and out from unit. See ***MAINTENANCE FUNDAMENTALS - REAR SLIDING DOORS*** section for these instructions. • Disconnect hose from connection spout (may require removal of hose clamp). Remove thumbscrews holding gravity coil tray drip assembly in place. Drop tray drip assembly downward. Lift 'hooks' on each end of gravity coil assembly off upper slots inside case. • Remove from unit. Submerse in hot water using an anti-bacterial soap solution. Rinse thoroughly and dry. Return to case. Reattach thumbscrews. Return rear sliding doors to case. Turn case back on. • <u>Note</u>: Depending upon unit, defrost timer MAY need to be reset.
Quarterly	**<u>Axial Fans</u>:** • ***Caution! Turn off main power switch to case and unplug from outlet before starting!*** • See ***OPERATION, CONTINUED: MODEL GMGX4 BLOWER COIL WEDGE UNIT ONLY - PAGE 2 of 2*** section in manual for axial fan location. • Remove protective grilles that may be preventing access to the axial fans. • Wipe axial fan blades with moist cloth dipped in warm, soapy water. • Wipe dry with clean cloth or paper towel. • Return protective grille to axial fans. Fasten securely.
Quarterly	**<u>Optional Humidification ("Misting") System</u>:** Clean at least quarterly to prevent malfunction and/or inferior performance. Follow your system's cleaning instructions for specifics.



CLEANING SCHEDULE (INTERIOR) - TO BE PERFORMED BY STORE PERSONNEL (PAGE 3 of 3)

FREQ.	INSTRUCTIONS
Monthly	**<u>Condenser Coil (Self-Contained Units Only)</u>:** • Note: If desired, refrigeration package may be slid out from under case. • Cleaning: Remove rear grille. Use air pressure if available (or an industrial strength vacuum), clean the dust and dirt that collects on the condenser coil. • Caution! Be careful not to damage the fins on the coil!
Quarterly	**<u>Condensing Unit (including Evaporator Pan)</u>:** • ***Condenser package may be slid out from under case for greater access.*** • ***Warning! Evaporator pan may be hot.*** • ***Allow evaporator pan to cool approximately 30-minutes before cleaning.*** 1. Turn off power. Disconnect case from power source. 2. To JUST ACCESS EVAPORATOR PAN, front toe-kick may be removed by simply lifting up and off. No screw removal required. 3. To FULLY ACCESS REFRIGERATION PACKAGE, remove rear grille by simply lifting up and off. No screw removal required. 4. Disconnect evaporator pan electrical connection from receptacle box. 5. Remove evaporator pan mounting screws from compressor pan. 6. Remove evaporator pan from unit. 7. Thoroughly clean evaporator pan with de-scaling solution, such as **CLR®**. Rinse thoroughly. *DO NOT* submerse in water. 8. Use clean towel dipped in soap and water solution to wipe down all fans, motor, refrigeration lines, cords, knobs, sight glass, connectors and all other surfaces. 9. Wipe dry. 10. Reposition evaporator pan on compressor pan. 11. Reattach mounting screws to evaporator pan. 12. Reconnect evaporator pan electrical connections. 13. Slide back under case. 14. Replace rear grille.



Refrigeration Package
(Rear Grille Removed For
Illustrative Purposes Only)

CLEANING SCHEDULE (EXTERIOR) - TO BE PERFORMED BY STORE PERSONNEL

AREA	FREQ.	INSTRUCTIONS
Exterior	**Daily**	**All Glass / Mirrors:** Clean side glass, front glass and mirrors (if any) with household or commercial glass cleaner.
	Daily	**Rear Sliding Door Exterior Glass:** • Clean rear sliding doors with household or commercial glass cleaner. • Doors can be completely removed from case for more thorough cleaning. See ***MAINTENANCE FUNDAMENTALS: REAR SLIDING DOORS / STANDARD LIGHT FIXTURES*** section in this manual for specifics. • Wipe out door tracks with mild soap solution and sponge or clean cloth. • Dry thoroughly.
	Daily	**End Panels, Front Panel / Rear Panel, Toe-Kicks, Rear Ledge Cutting Board, etc.:** Wipe off all surfaces with warm water and mild soap solution and non-abrasive cloth. Dry thoroughly.
	Daily	**Stainless Steel Surfaces:** • Wash with a solution of hand dishwashing liquid detergent and water; or a solution of baking soda and water. Rinse and polish dry with paper towel or soft cloth. • Never use scouring powders or steel wool as they will scratch stainless steel. • Brighten by polishing with a cloth dipped in vinegar or in ammonia; sprinkle baking soda on sponge and rub gently; rinse. Polish dry with paper towel. • Remove streaks or heat stains from stainless steel by rubbing with club soda.
	Weekly	**Wood, Laminate and Painted Surfaces (Including Rear Storage Area):** Clean with mild soap and water solution and a soft cloth .
	Monthly	**Under Case Cleaning:** Remove front toe-kick (or rear grille). Vacuum under case to remove all dust and dirt. Replace front toe-kick (or rear grille) when complete.

TROUBLESHOOTING - GENERAL ISSUES (PAGE 1 of 3)

CONDITION	TROUBLESHOOTING
Case Not Lining Up	Cases must be level and plumb. See **INSTALLATION: FRAME SUPPORT RAIL SHIMMING** section in this manual for instructions on properly aligning case (alongside other cases) and shimming rails.
Water Is On The Floor	***Caution!*** Water on flooring can cause much damage! Until cause is determined (and repaired), following these procedures: • Use wet-dry vacuum (or mop & bucket) to remove standing water. • Use 'catch pans' for water to drain into. Swap out regularly until case has completely drained. • Contact Structural Concepts Technical Service. See telephone number on final page in this manual.
	Check that the drain trap is free of debris.
	Check that the drain hose is correctly connected to drain piping to floor drain.
	Check store conditions. To prevent condensation in NSF® Type 1 environments, maximum conditions are to be 55% humidity / 75° Fahrenheit. For NSF® Type 2, maximum conditions are to be 60% humidity / 80° Fahrenheit. See serial label (at case rear near main power switch) for NSF® Type of your case.

TROUBLESHOOTING - GENERAL ISSUES (PAGE 2 of 3)

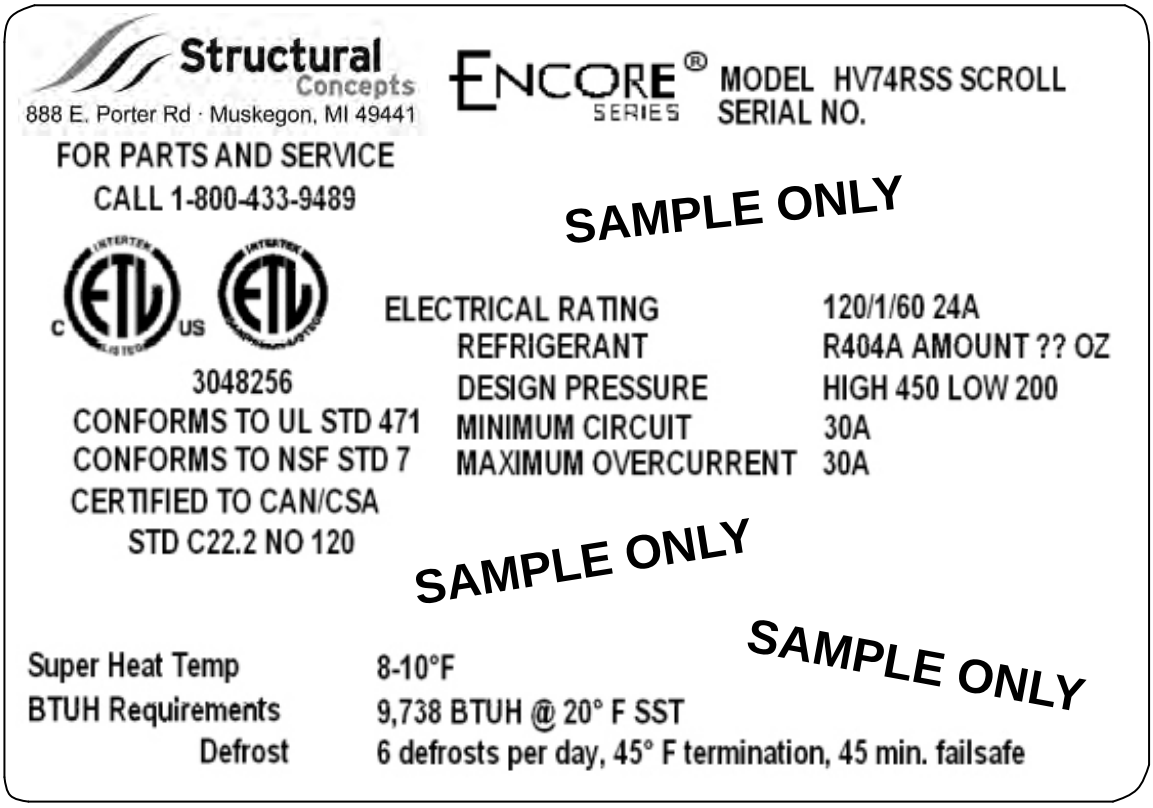
CONDITION	TROUBLESHOOTING
Fans (For Front Glass Condensation) Emitting Excessive Noise	Check that the case is aligned, level and plumb.
	Check fans for cleanliness. *Note: You must remove front panel by removing screws along lower section to access fans.*
	Unplug fan motors; check motor shaft for excessive bearing wear.
	Check that fan motors are securely mounted in brackets.
	Verify that fan blades are securely mounted to fan motor.
	Check that nothing is preventing blade rotation.
	Check that the fan shroud is properly secured.
Fans Are Not Working	Check that the MAIN power switch (if present) is on.
	Check for foreign material obstructing fan performance.
	Check that fan blades freely rotate within fan shrouds.
	Check that power is going to fans.
	Check that fan wiring is connected on terminal blocks.
System Is Not Operating	Check that the utility power is on.
	Check the circuit breaker box for tripped circuits.
Case Is Not Holding Temperature	If a large amount of warm product was added to the case, it will take time for the temperature to adjust. Product should be pre-chilled before placing in case.
	Check Carel® Temperature Controller section in this manual to confirm that proper settings are being maintained.
	Check that the case is not in the sun or near a heat or air conditioning vent.
	Check that case is not located near outside doors: ambient temperature fluctuation can hinder unit's ability to maintain proper case temperature.
	Units with upper refrigeration system/gravity coil with drip tray assembly: • Check that upper refrigeration system has been defrosted, and its gravity coil with drip tray assembly thoroughly cleaned and its interior washed. • This process must be performed at least weekly. See ***CLEANING SCHEDULE (INTERIOR) - TO BE PERFORMED BY STORE PERSONNEL*** section in this manual for step-by-step instructions.

TROUBLESHOOTING - GENERAL ISSUES (PAGE 3 of 3)

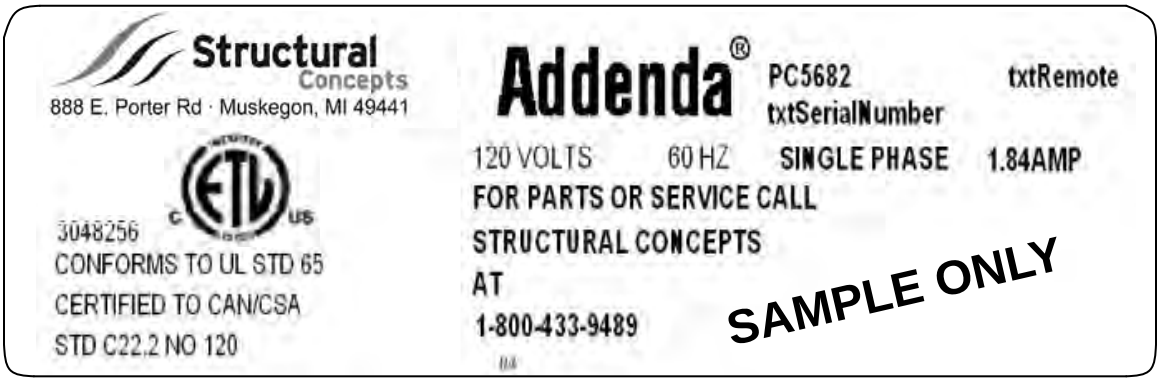
CONDITION	TROUBLESHOOTING
Case Lights Are Not Working	Check that light switch is in the ***ON*** position.
	Check bulbs for proper installation and connection.
	Check that light switch (if any) is in the *on* position.
	Check for burned out bulbs. Turn lights off & replace.
	Clean dirt and dust from the bulbs to prevent flickering.
	Certified electricians only: Check voltage flow at ballasts. If voltage is entering but not exiting the ballast, ballast is faulty.
	>> T-8 fluorescent lights: Check that **ALL** lights are connected properly and receptacles capped. See ***MAINTENANCE FUNDAMENTALS: REAR SLIDING DOORS / T-8 LIGHT FIXTURES*** section in manual for illustrations and in-depth instructions. >> LED lights: Check that LED lights are connected properly. See ***MAINTENANCE FUNDAMENTALS: LED LIGHT FIXTURES*** section in manual for illustrations and in-depth instructions.

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.



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



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

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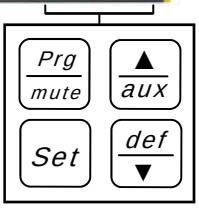
Integrated Electronic Microprocessor Controller

Programming The Instrument



To Modify The Setpoint

Set 1. Press and hold the “SET” key for at least 1 second.

▲ aux def ▼ 2. Use arrow keys ▲ ▼ on temperature controller to increase (or decrease) the set point.

Set 3. Quickly press and release the “SET” key again.

To Modify Defrost, Differential, Other Parameters

Prg mute Set 1. Press & hold “Prg” & “SET” keys together for five (5) seconds; display will flash “0”, representing password prompt.

Set 2. Confirm by pressing “SET” key.

▲ aux def ▼ 3. Press ▲ or ▼ to reach the category to be modified.

Set 4. Press “SET” to modify this selected parameter.

▲ aux def ▼ 5. Increase or decrease the value using the ▲ or ▼ button respectively.

Set 6. Press the “SET” key to temporarily save the new value and return to the display of the parameter.

Prg mute 7. Press & hold the “Prg” key for at least 5 seconds to save changes. This action will also mute the audible alarm (buzzer) & deactivate the alarm relay.

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).

Set 2. Confirm by pressing “SET” key.

▲ aux def ▼ 3. Press ▲ or ▼ until reaching the parameter “/ 5”.

Set 4. Press “SET” to modify this selected parameter.

▲ aux def ▼ 5. Press ▲ or ▼ to change value to desired setting: “0” for Celsius (°C) or “1” for Fahrenheit (°F).

Set 6. Press “SET” key to temporarily save the new value and return to the display of the parameter.

Prg mute 7. Press & hold “Prg” key for at least 5 seconds to save changes. ***Note!*** ***All values will automatically convert to new scale. No conversion is required.***

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.

def ▼ ***To Activate Manual Defrost***

Press and hold “def” key for at least 5 seconds.

▲ aux ***To Activate / Deactivate Auxiliary Output***

Press and hold the “aux” key for 1 second.

Prg mute ▲ aux ***To Reset Any Alarms With Manual Reset***

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

Oper Manuals - PUB\Templates\Carel Controller\Carel Controller IR33.pub
This data derived from Carel Material: ir33 +030220441 - rel. 2.0 - 01.05.2006

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User Interface - Display

ICON	FUNCTION	DESCRIPTION	Normal operation ON	Normal operation OFF	Normal operation 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	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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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. For Additional Technical Information Call Structural Concepts Technical Service Dept. at 1(800) 433.9489
/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

STRUCTURAL CONCEPTS CORPORATION TECHNICAL SERVICE: Call 1.800.433.9490 or For Your Master Service Agent See WWW.STRUCTURALCONCEPTS.COM/Contact/Master_Service_Agents.asp

LIMITED WARRANTY

All sales by Structural Concepts Corporation (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 warranty.

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. 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 PURCHASE 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 for or cause 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 of Goods. Notwithstanding the foregoing, any warranty with respect to such parts of 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: Retail: 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. The 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.

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 this obligations under this Agreement without prior written 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 assigns.

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 the Customer Service Department in writing or call 231-798-8888.

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. 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. unit.