

# Reveal® USER MANUAL

**SCC P/N  
21-22964**

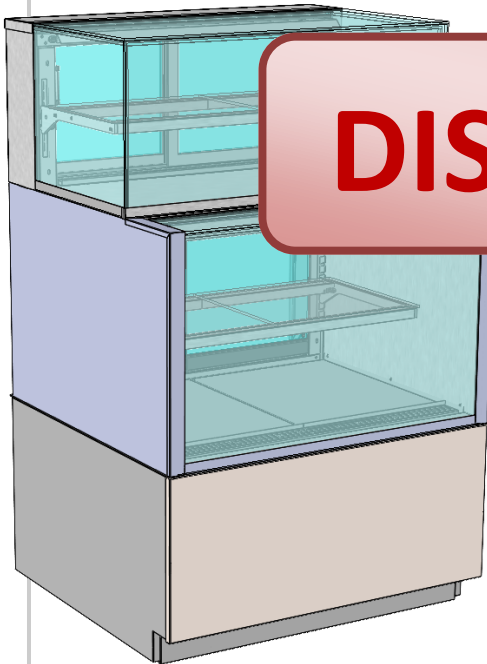
**REVEAL® FREE STANDING OVER-UNDER REFRIGERATED CONVERTIBLE MERCHANDISERS**

- > CONVERTIBLE UPPER SECTION MAY BE EITHER AMBIENT OR REFRIGERATED
- > REFRIGERATED LOWER SECTION
- > SELF-CONTAINED OR REMOTE UNITS
- > UPPER SECTION: REAR SLIDING DOORS and SINGLE SHELF
- > LOWER SECTION: REAR SLIDING DOORS WITH PERFORATED ACRYLIC PLENUMS
- > DEPENDING UPON OPTIONS CHOSEN, LOWER SECTION MAY HAVE NO SHELVING, SHELVING OR RISERS (IN LIEU OF SHELVING)

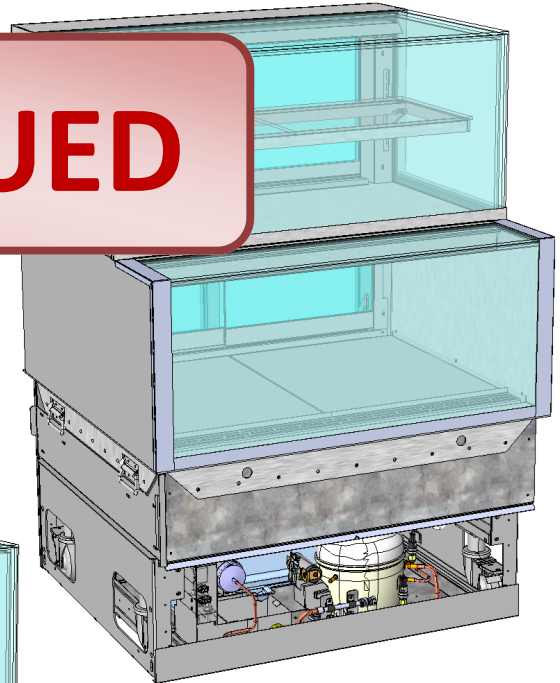
Models Are Shipped WITHOUT Panels and Cladding Attached. See Pages 10 & 11 For Component Attachment Instructions.

- 
- > **CAUTION! DO NOT PUSH OR PULL ON UPPER GLASS ENCLOSURE!**
  - > **ONLY USE HANDLES (AT EACH END OF CASE) TO PUSH OR PULL CASE INTO POSITION!**

**DISCONTINUED**

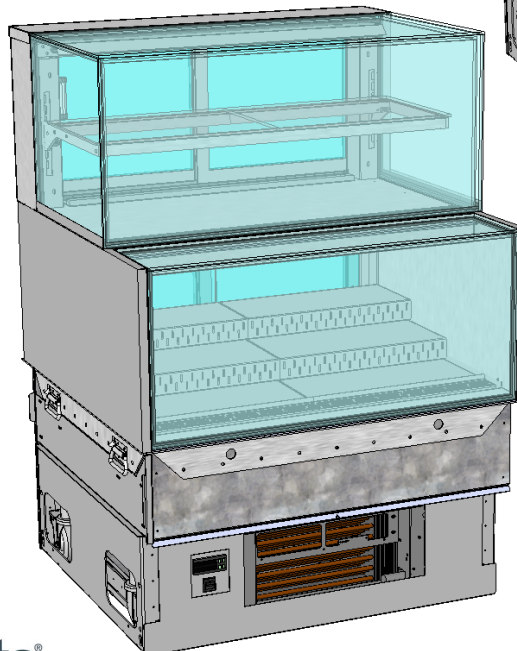


Reveal® Model NR3658RRSV  
Rear Sliding Doors and Acrylic  
Perforated Plenums / Cladding  
Shown Attached



Reveal® Model NR3651RRSV /  
Rear Sliding Doors and Acrylic  
Perforated Plenums / Shown As  
Shipped From Factory (Without  
Attached Components) / Rear Slide-  
Out Access To Condenser Package

Reveal® Model NR3651RRSV  
Rear Sliding Doors and Acrylic  
Perforated Plenums / Optional  
Product Steps / Shown As Shipped  
From Factory (Without Attached  
Components) / Front Slide-Out  
Access To Condenser Package



**Note:** Illustrations Shown May Not Reflect Every Feature Or Option Of Your Particular Model. See Page 3 Of Manual For List Of Models To Which This Manual Is Applicable.

**Structural Concepts®**

DELIVERING FRESH. ALWAYS.™

Structural Concepts Corp. · 888 E. Porter Rd · Muskegon, MI 49441 Phone: 231.798.8888 Fax: 231.798.4960 · www.structuralconcepts.com

## TABLE OF CONTENTS

<b>TABLE OF CONTENTS .....</b>	<b>2</b>
<b>REVEAL® REFRIGERATED OVER-UNDER CONVERTIBLE MODEL APPLICABILITY &amp; DIMENSIONS .....</b>	<b>3</b>
<b>OVERVIEW / DISPLAY TYPE I vs. II / COMPLIANCE / WARNINGS / PRECAUTIONS .....</b>	<b>4-5</b>
<b>INSTALLATION: TOE-KICK &amp; GRILLE REMOVAL / DISCONNECTING CASE FROM SKID .....</b>	<b>6</b>
<b>INSTALLATION, CONT'D: CASTER ADJUSTMENT / LOCK / UNLOCK / CASE REMOVAL FROM SKID .....</b>	<b>7</b>
<b>INSTALLATION, CONT'D: SHELVING ASSEMBLY COMPONENTS .....</b>	<b>8</b>
<b>INSTALLATION, CONT'D: MAIN POWER SWITCH / TOE-KICK &amp; AIR INTAKE GRILLE / PLUG-IN .....</b>	<b>9</b>
<b>INSTALLATION, CONT'D: SHIPPING BRACE / ATTACHING FRONT PANEL COMPONENTS / HANDLES .....</b>	<b>10</b>
<b>INSTALLATION, CONT'D: ATTACHING SIDE PANELS, REAR PANEL AND REAR GRILLE .....</b>	<b>11</b>
<b>CASE DESIGN: FRONT OF CASE (UNITS WITH REAR ACCESS CONDENSER PACKAGES) .....</b>	<b>12</b>
<b>CASE DESIGN, CONT'D: REAR OF CASE (UNITS WITH REAR ACCESS CONDENSER PACKAGE) .....</b>	<b>13</b>
<b>CASE DESIGN, CONT'D: CONTROLLER / DC DRIVERS / MAIN POWER SWITCH / THERMOSTAT, ETC.....</b>	<b>14</b>
<b>CASE DESIGN, CONT'D: UPPER SECTION - AMBIENT VS. REFRIGERATED STATE .....</b>	<b>15</b>
<b>CASE DESIGN, CONT'D: TUB AREA (AFTER DECK PAN REMOVAL) - 36" MODELS .....</b>	<b>16</b>
<b>CASE DESIGN, CONT'D: TUB AREA (AFTER DECK PAN REMOVAL) - 48, 60" and 72" MODELS .....</b>	<b>17</b>
<b>CASE DESIGN, CONT'D: LED LIGHT SWITCH LOCATION / LED LIGHTS / THERMOMETERS ....</b>	<b>18</b>
<b>CASE DESIGN, CONT'D: REAR SLIDING DOOR REMOVAL / REAR PERFORATED PLENUM CONTROL .....</b>	<b>19</b>
<b>CASE DESIGN, CONT'D: CONDENSER PACKAGE (SELF-CONTAINED UNITS ONLY) .....</b>	<b>20</b>
<b>PRODUCT PLACEMENT: PRODUCT PLACEMENT / LOAD LINES (NO LOWER SHELF) .....</b>	<b>21</b>
<b>PRODUCT PLACEMENT, CONT'D: PRODUCT PLACEMENT / LOAD LINES (WITH LOWER SHELF) .....</b>	<b>22</b>
<b>CLEANING SCHEDULE (TO BE PERFORMED BY STORE PERSONNEL) .....</b>	<b>23</b>
<b>PREVENTIVE MAINTENANCE (TO BE PERFORMED BY TRAINED SERVICE PROVIDER) .....</b>	<b>24-25</b>
<b>TROUBLESHOOTING (TO BE PERFORMED BY STORE PERSONNEL ONLY) .....</b>	<b>26-27</b>
<b>TROUBLESHOOTING (TO BE PERFORMED BY TRAINED SERVICE PROVIDERS ONLY) .....</b>	<b>28-31</b>
<b>TROUBLESHOOTING (TO BE PERFORMED BY TRAINED SERVICE PROVIDERS ONLY) - CONDENSING SYSTEM .....</b>	<b>32</b>
<b>TROUBLESHOOTING (TO BE PERFORMED BY TRAINED SERVICE PROVIDERS ONLY) - EVAPORATOR SYSTEM .....</b>	<b>33</b>
<b>SERIAL LABEL INFORMATION &amp; LOCATION .....</b>	<b>34</b>
<b>PROGRAMMABLE CONTROLLER INFORMATION .....</b>	<b>35</b>
<b>TECHNICAL SERVICE CONTACT INFORMATION &amp; WARRANTY INFORMATION .....</b>	<b>36</b>

**REVEAL® REFRIGERATED OVER-UNDER COMBO MODEL APPLICABILITY & DIMENSIONS**

<b>Model</b>	<b>Upper Display Height</b>	<b>Overall Height</b>	<b>Case Depth x Length</b>
NR3651RRSV	16"UDH	50 3/4"OH	33"D x 35 3/4"L
NR3658RRSV	16"UDH	57 1/2"OH	33"D x 35 3/4"L
NR4851RRSV	16"UDH	50 3/4"OH	33"D x 47 3/4"L
NR4858RRSV	16"UDH	57 1/2"OH	33"D x 47 3/4"L
NR6051RRSV	16"UDH	50 3/4"OH	33"D x 59 3/4"L
NR6058RRSV	16"UDH	57 1/2"OH	33"D x 59 3/4"L
NR7251RRSV	16"UDH	50 3/4"OH	33"D x 71 3/4"L
NR7258RRSV	16"UDH	57 1/2"OH	33"D x 71 3/4"L

## OVERVIEW

- These Structural Concepts Reveal® cases are designed to merchandise packaged products at 40 °F (4 °C) or less product temperatures.
- Cases should be installed and operated according to this operating manual's instructions to insure proper performance. Improper use will void warranty.

## NSF/ANSI TYPE I vs. II ENVIRONMENTAL CONDITIONS

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

- NSF/ANSI Type I Conditions: Product is displayed in store conditions with maximum ambient temperature of 75 °F (24 °C) and maximum relative humidity of 55%.

- NSF/ANSI Type II Conditions: Product is displayed in store conditions with maximum ambient temperature of 80 °F (27 °C) and maximum relative humidity of 55%.
- If you are unsure if your unit is classified as NSF/ANSI Type I or Type II, see tag next to serial label on your case.

## COMPLIANCE

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

## WARNINGS

- Please read the important warnings in this document carefully as they can prevent injury or death.
- See next page for **PRECAUTIONS**.



**ATTENTION  
CONTRACTORS**

**WARNING**

**ELECTRICAL  
HAZARD**



**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**

**KEEP  
HANDS  
CLEAR**

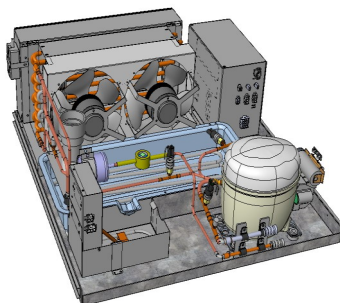


## WARNING

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.



**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).



## CAUTION! IF YOUR UNIT IS SELF-CONTAINED, YOU MUST CHECK CONDENSATE PAN POSITION & PLUG!

Water on flooring can cause extensive damage!  
Before powering up unit, check and confirm that:

- Condensate pan is **DIRECTLY UNDER** condensate drain.
- Condensate pan plug is securely plugged into receptacle.
- Overflow pan has plug connected to its box. Units with optional Clean Sweep® **MUST HAVE** two plugs connected.

**PRECAUTIONS**

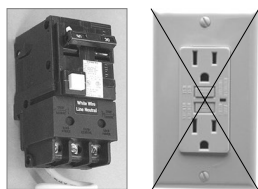
- Following are important precautions to prevent damage to unit or merchandise. Read carefully!
- See previous page for specifics on **OVERVIEW, NSF/ANSI TYPE, COMPLIANCE & WARNINGS.**

**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****CAUTION! LAMP REPLACEMENT GUIDELINES**

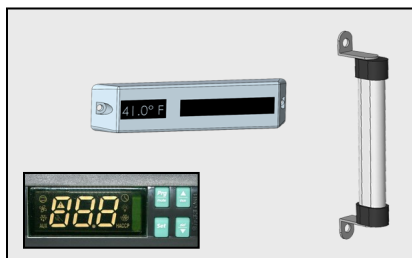
LED lamps reflect specific size, shape and overall design. Any replacements must meet factory specifications.

**CAUTION! GFCI BREAKER USE REQUIREMENT**

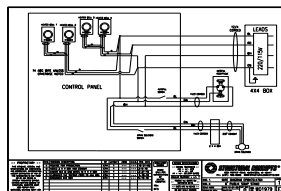
If N.E.C. (National Electric Code) or your local code requires GFCI (Ground Fault Circuit Interrupter) protection, you **MUST** use a GFCI breaker in lieu of a GFCI receptacle.

**CAUTION****CAUTION! ADVERSE CONDITIONS / SPACING ISSUES**

- Performance issues caused by adverse conditions are NOT warranted.
- To prevent damage to end panels due to condensation, apply industrial grade silicone sealant and tightly join to opposite end panels. When not adjoining cases, keep end panels at least 6" away from walls/structures. Rear panels must also be kept at least 6" from walls and structures.
- Case must not be exposed to direct sunlight or any heat source.
- To maintain proper case temperature, keep case at least 15-feet from exterior doors, overhead HVAC vents or any air curtain disruption.
- Self-contained case clearance: 6" min. air intake / 6" min. air discharge.

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

- Thermometers and thermostats reflect air temperatures **ONLY**.
- For **PRECISE** food temperatures, use calibrated food thermometers **ONLY**.

**WIRING DIAGRAM FORMAT & LOCATION**

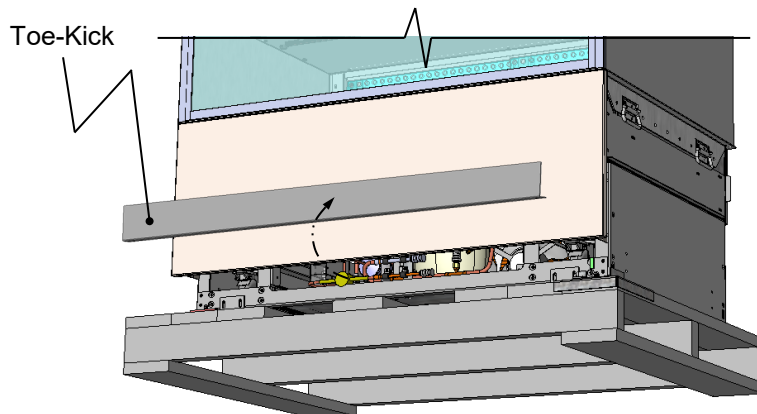
- Each case has its own wiring diagram folded & in its own packet.
- Wiring diagram placement may vary; it may be placed near field wiring box, raceway, or other related location.

**5  
LBS****CAUTION!**

- To prevent sagging or breakage, do not exceed 5 LBS (2.3 KG) weight load per top glass section (between vertical supports).
- To prevent scratching or marring, do not place **ANY** items on glass.

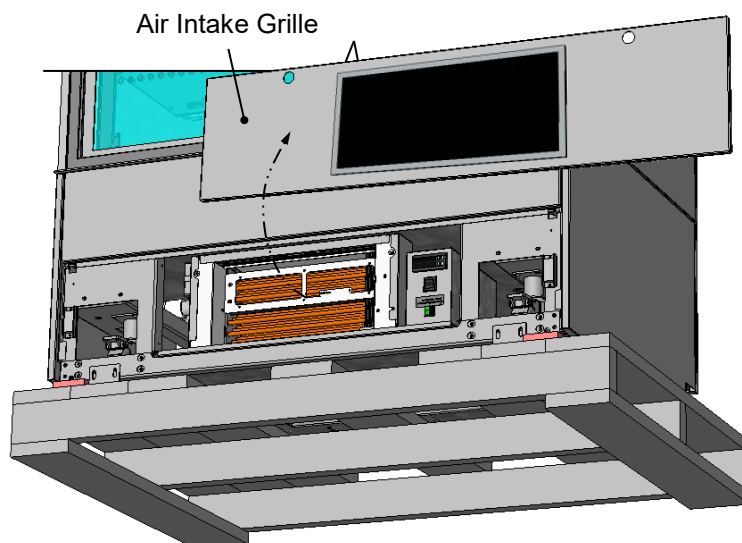
## 1. Remove Front Toe-Kick From Case

- To prevent damage to case, remove front toe-kick from case before removing from Skid.
- Toe-kick is held in place by magnets only. No screw removal is required.
- Place front toe-kick in secure location while removing case from Skid.



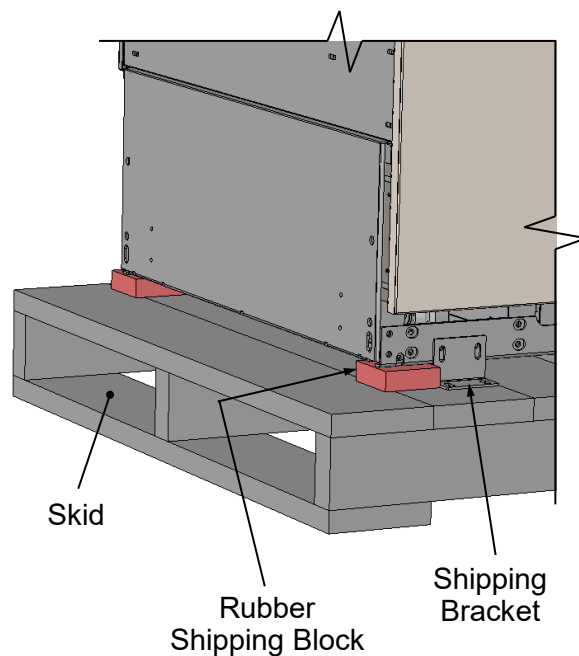
## 2. Remove Air Intake Grille From Case

- To prevent damage to case, lift air intake grille **UP and OFF** case.
- Air intake grille is held in place by magnets.
- No screw removal is required.
- Place air intake grille in secure location while removing case from Skid.



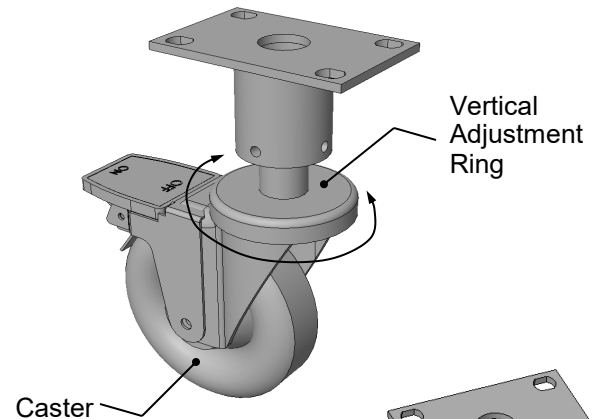
## 3. Disconnect Case From Skid

- Use Phillips driver to remove screws from shipping brackets. Remove and discard shipping brackets from Skid.
- Place J-bar/pry bar under base frame. Raise case up from Skid to take weight off casters.
- With case raised, lower casters all the way down against Skid (see next step for detailed instructions on lowering or raising casters).
- Remove rubber shipping blocks.



#### 4. Caster Height: Raising and Lowering

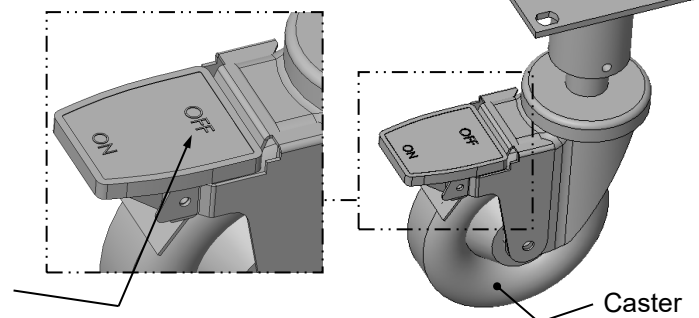
- Raise or lower casters (to adjust case height) by rotating casters' vertical adjustment rings.
  - Rotate vertical adjustment ring clockwise to lower caster (and increase height of case).
  - Rotate vertical adjustment ring counter-clockwise to raise caster (and decrease height of case).



#### 5. Caster Rolling Capability: Unlocking

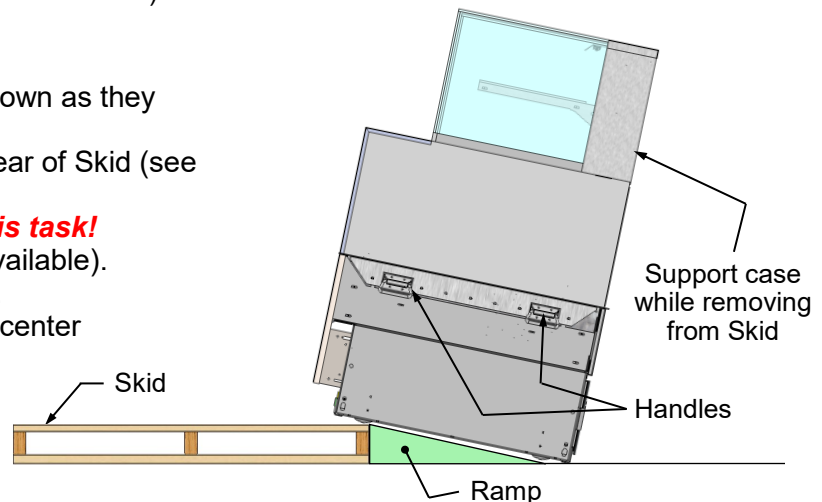
- Important! Case is shipped with caster mechanisms factory set at **ON** (locked) to prevent case from rolling.
- Unlock casters by pressing **OFF** on the caster mechanism.
- See illustration at right.

Press "OFF" Lever To Unlock Caster (And Allow Casters To Roll)



#### 6. Carefully Remove Case From Skid

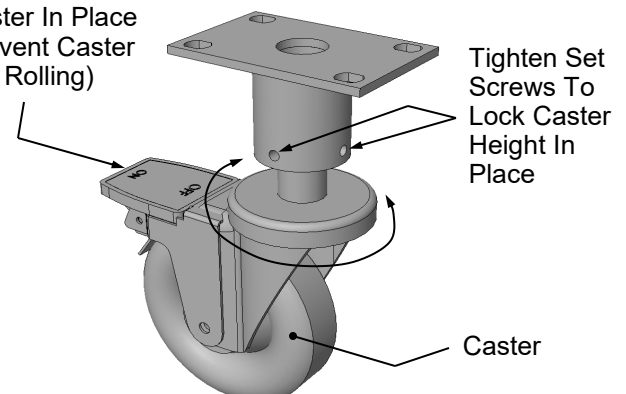
- Check that casters are lowered as far down as they will go (as instructed in step #4).
- Use handles to carefully slide case to rear of Skid (see illustration at right).
- **Caution! 4 people are required for this task!**
- Carefully lower to floor (using ramp if available).
- Slide Skid from under case as required.
- Maintain support of case at all times or center of gravity may cause case to fall.
- See illustration at right.



#### 7. Casters: Locking

- After case is at desired position (and height), use level to check that case is level and plumb.
- Readjust height as needed (as instructed in step #4).
- **Locking Height:** After proper height (and positioning) of case is attained, tighten the two (2) set screws to lock each caster's height in place.
- **Locking Movement:** Then, to prevent casters' rolling capability, lock casters by pressing ON atop the "ON" and "OFF" lever mechanism (shown at right). Case will now be secured at its new location.

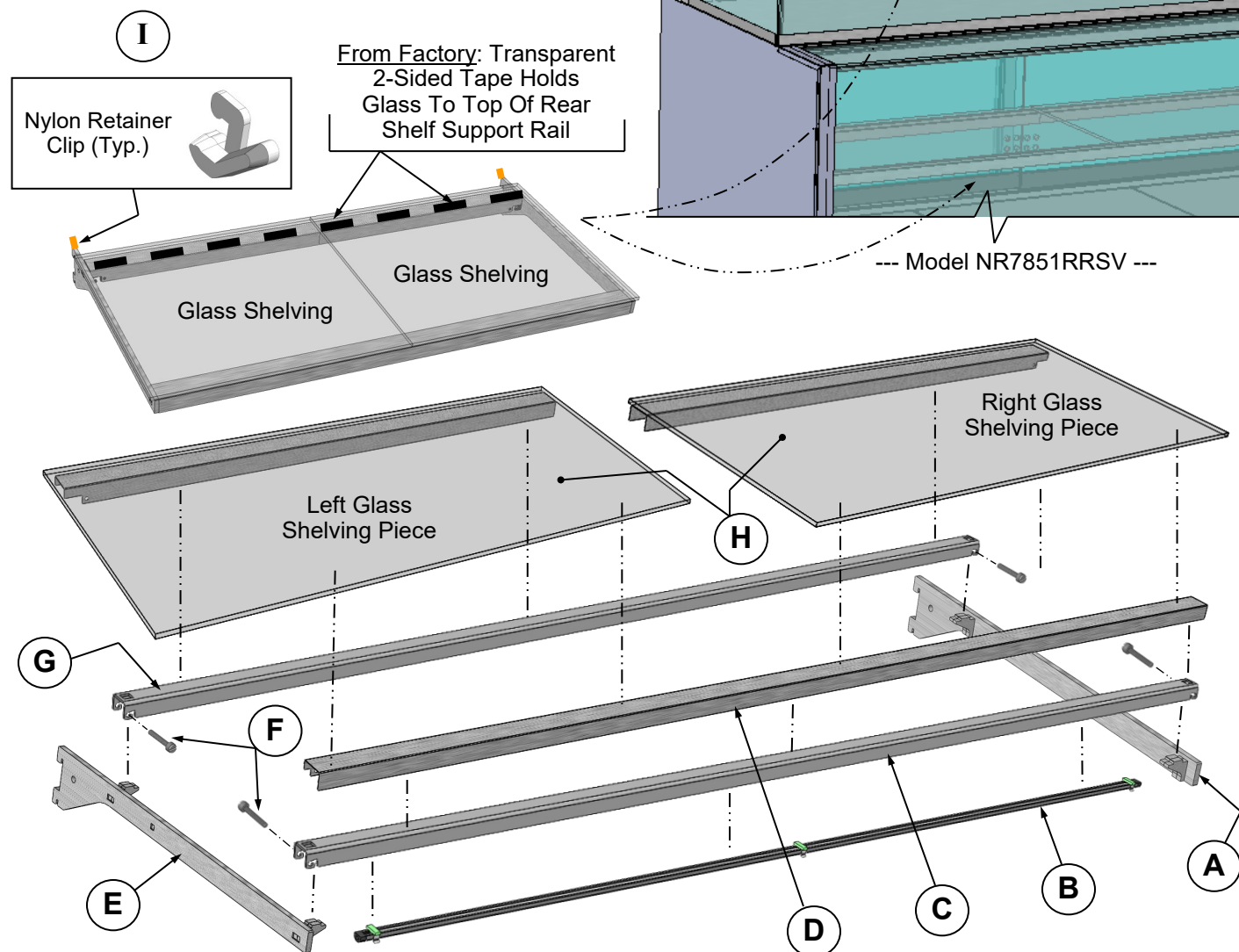
Press "ON" Lever To Lock Caster In Place (And Prevent Caster From Rolling)



## 8. Shelving Assembly Components

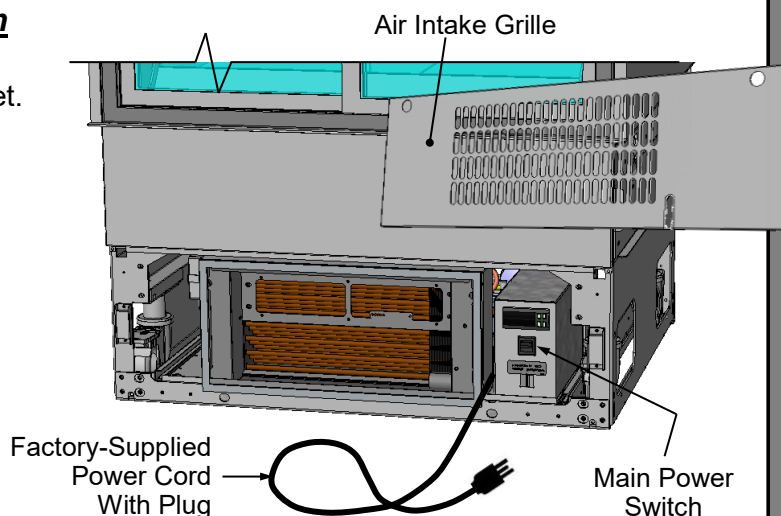
- Check that glass shelving is in proper position before placing product in case
  - Shelves may be adjusted vertically or entirely removed from merchandiser.
  - Metal shelving brackets ARE NOT able to be angled. They are at a fixed 90° position.
  - There are 12 components comprising each shelf assembly:
- Right bracket (with hooks to attach to slots in upright)
  - LED light with magnets
  - Front shelf support rail (LED light attaches to its inner cavity via magnets)
  - Cover (rests atop front shelf support rail)
  - Left bracket (hooks to attach to slots in upright)
  - Nylon thumb screws (4 per shelf) secure shelving during shipment. Note: Remove (using pliers, if necessary) and discard

- thumbscrews after case is installed so shelves can be disassembled (to clean or service).
- Rear shelf support rail
  - Left and right glass shelf/cover assemblies (glass is affixed to covers with 2-sided tape from factory). Caution! Glass pieces ARE NOT IDENTICAL! Notches on underside metal covers determine placement in case.
  - Nylon retainer clips (2 per shelf) secure brackets during shipment. Note: To adjust or remove shelves, you must remove retainers; pliers may be required to accomplish this task.



## 9. Plug Case In / Turn Main Power Switch On

- Power cord with plug is factory-supplied.
- Plug case into customer-supplied electrical outlet.
- **Note 1:** Partially-disassembled view at right is shown with casters removed for illustrative purposes only. View/location of floor receptacle is for illustrative purposes only.
- **Note 2:** Due to space constraints, it may be necessary to pull out condenser package to maneuver power cord plug around components and into receptacle.
- Turn main power switch on.
- Check that case is energized. Lift deck pans to confirm that evaporator fans are rotating.
- Turn on LED light switch (located on rear-right upright cover). See **CASE DESIGN, CONT'D: LED LIGHT SWITCH LOCATION** section in this operating manual for illustration.

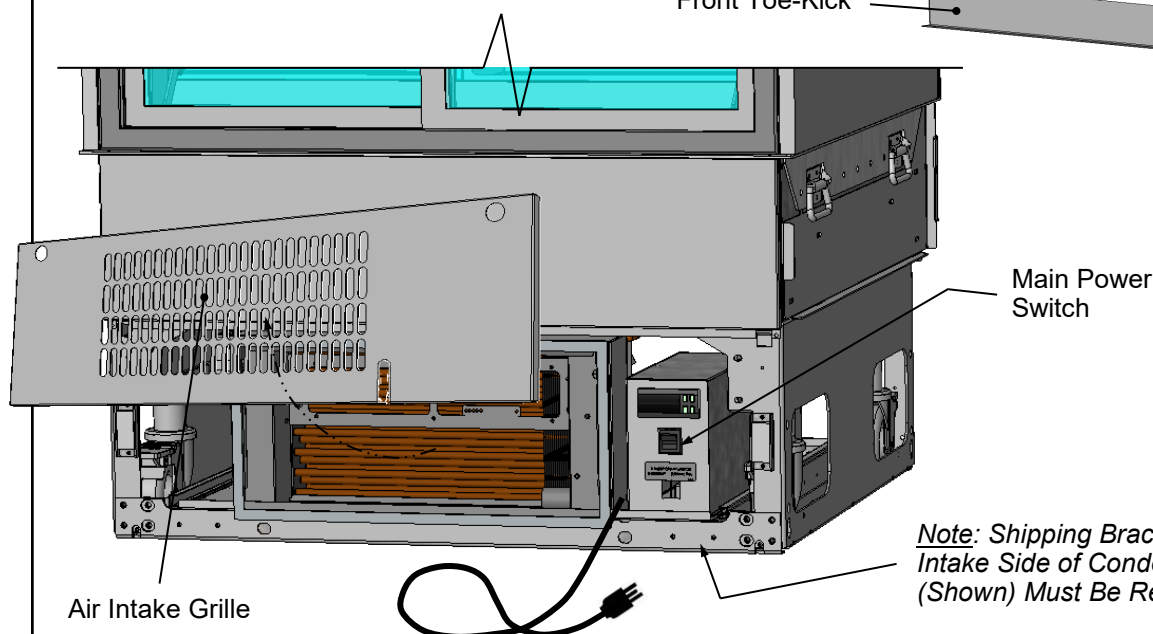
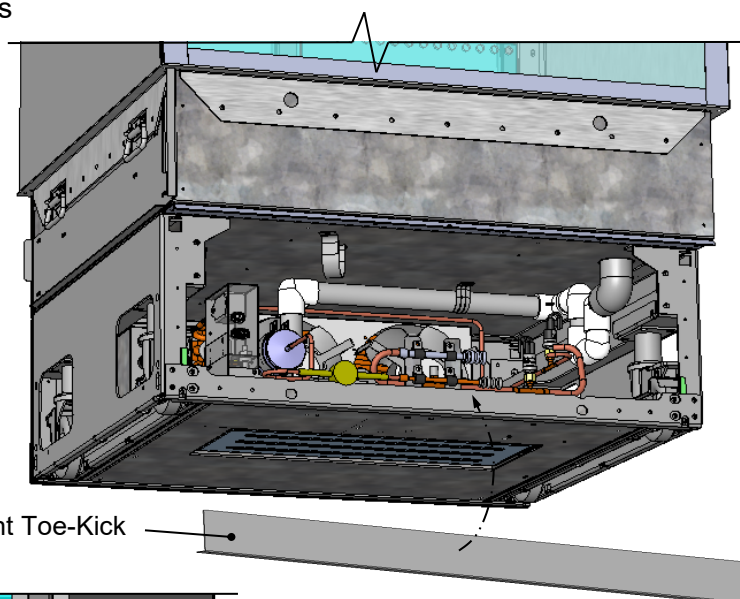


## 10. Toe-Kick To Case

- After case has been fully assembled and is in position, return toe-kick to case.
- Toe-kick is held in place by magnets only.
- No screw replacement is required.

## 11. Return Air Intake Grille To Case

- After case has been energized and main power switch has been turned on, return air intake grille to case.
- Air intake grille is held in place by magnets. Screw replacement is not required.
- See illustration below.



## 12. Shipping Brace (Air Intake Side) vs. Air Exhaust Side

- Shipping brace keeps condenser package secure during shipment & while moving case into position.
- After case is in position, remove shipping brace that is just below condenser package by removing (2) screws.
- Note:** Shipping brace that is opposite to air intake side of condenser package (shown below) is NOT to be removed.

## 13. Attaching Front Panel Components

- Carefully remove components from packaging.
- Note:** All front panel components may be attached to case via magnets (WITHOUT screw attachments).
- Attach front toe-kick to case (via lower magnets).
- Slide front panel horizontal support bracket into case's support slot (line up arrows).

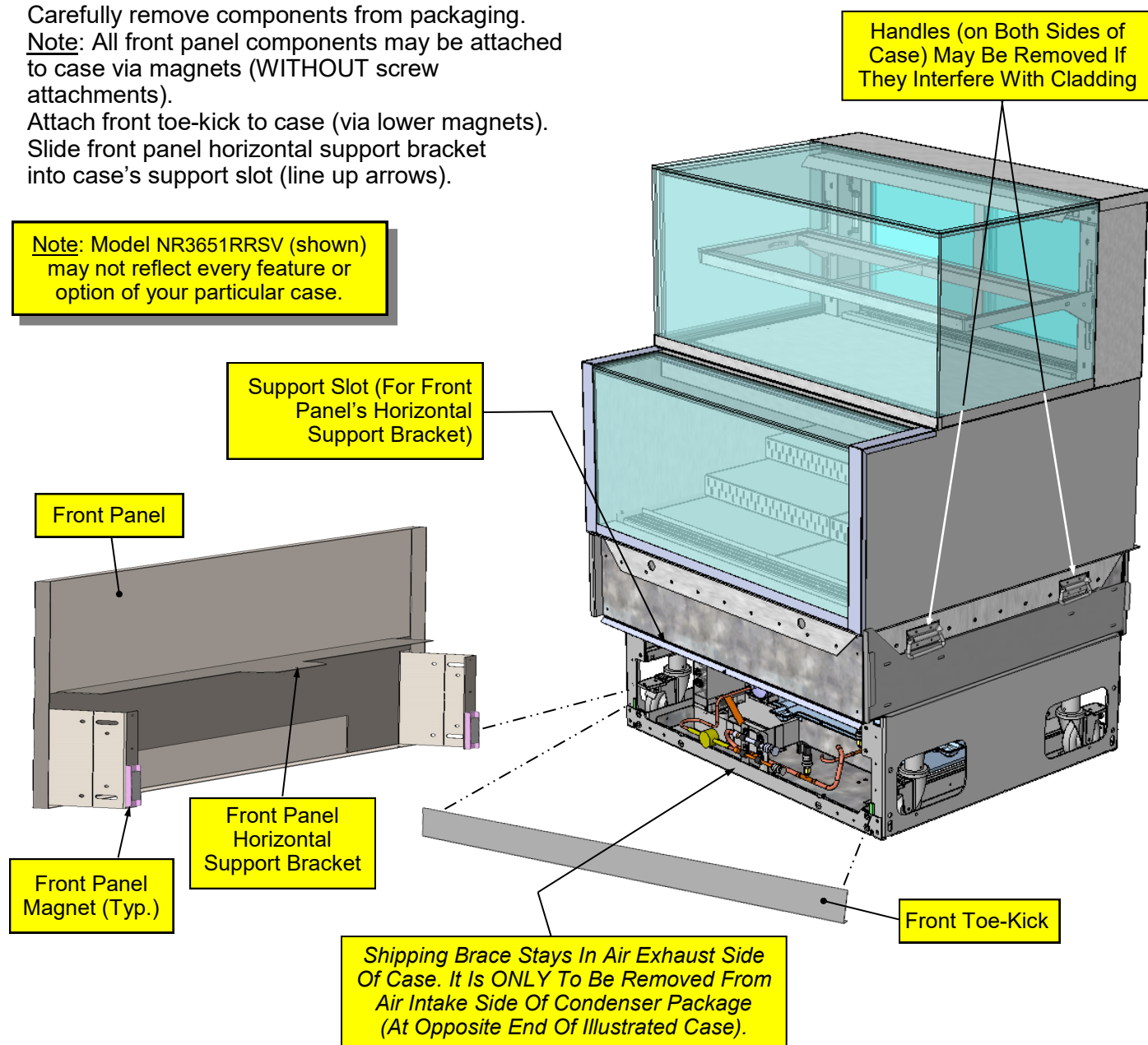
**Note:** Model NR3651RRSV (shown) may not reflect every feature or option of your particular case.

- Then, slide front panel into case until it attaches to case via lower magnets.
- See illustration below.

## 14. Handles On Sides of Case

- Handles may remain on case after it has been moved into position and cladding is attached.
- However, if handles interfere with the placement of cladding, they may be removed.

>> See Next Page For Instructions on **ATTACHING SIDE PANELS, REAR PANEL AND GRILLE.**



## 15. Attaching Side Panels

- Attach side panels to case using slot/hook method.
- Use latches at case rear to firmly attach side panels to case.
- See illustrations below.

## 16. Attaching Rear Upper Panel

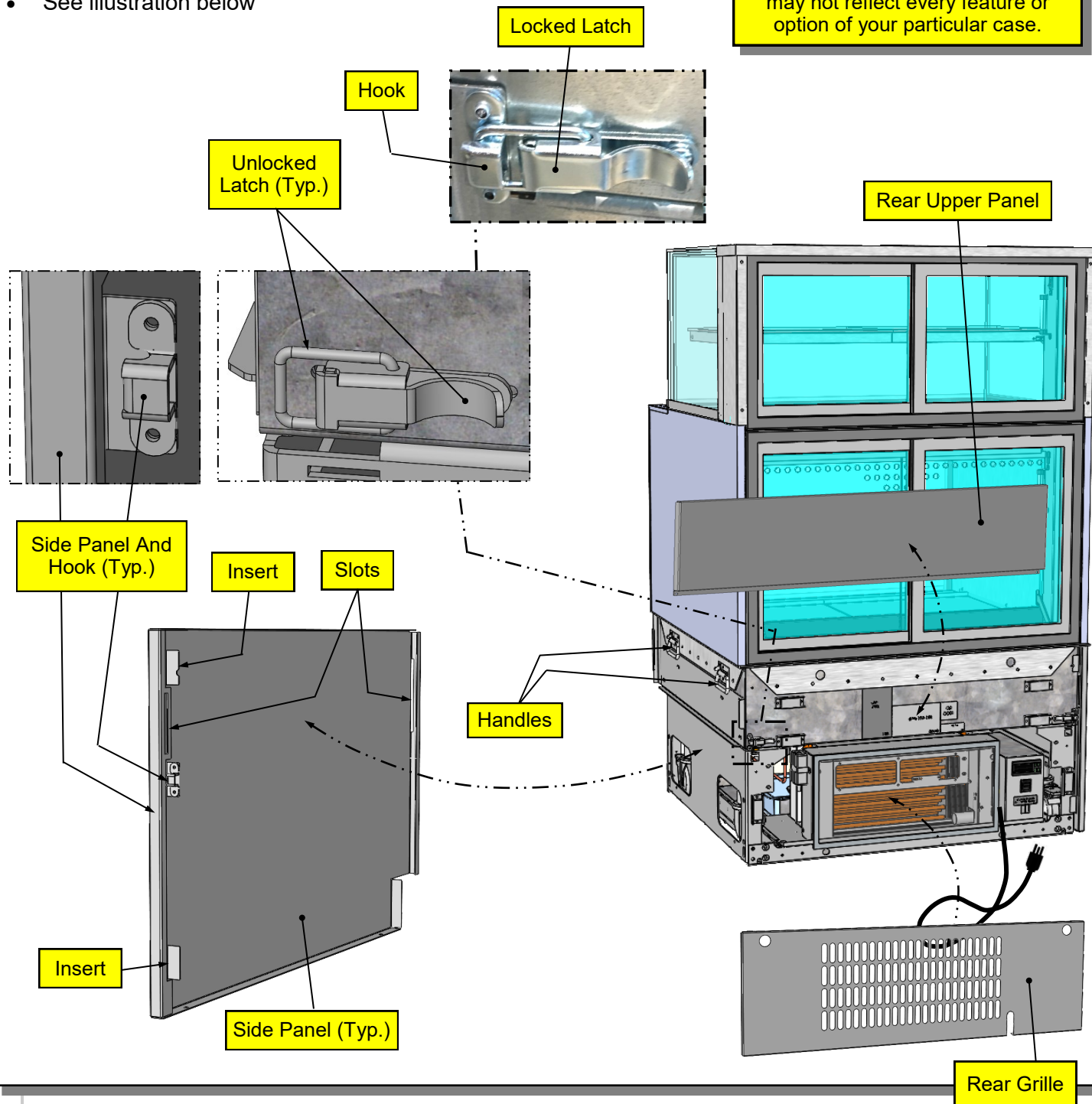
- Place rear upper panel onto care rear.
- Four (4) magnets will hold it firmly in place.
- See illustration below

## 17. Attaching Rear Grille

- Use finger holes to place rear grille's inner hooks onto case rear's lower shoulder screws.
- Snap onto case's two (2) rear vertical magnets.

>> Note: Components may be removed in reverse order they were shown being attached on this sheet.

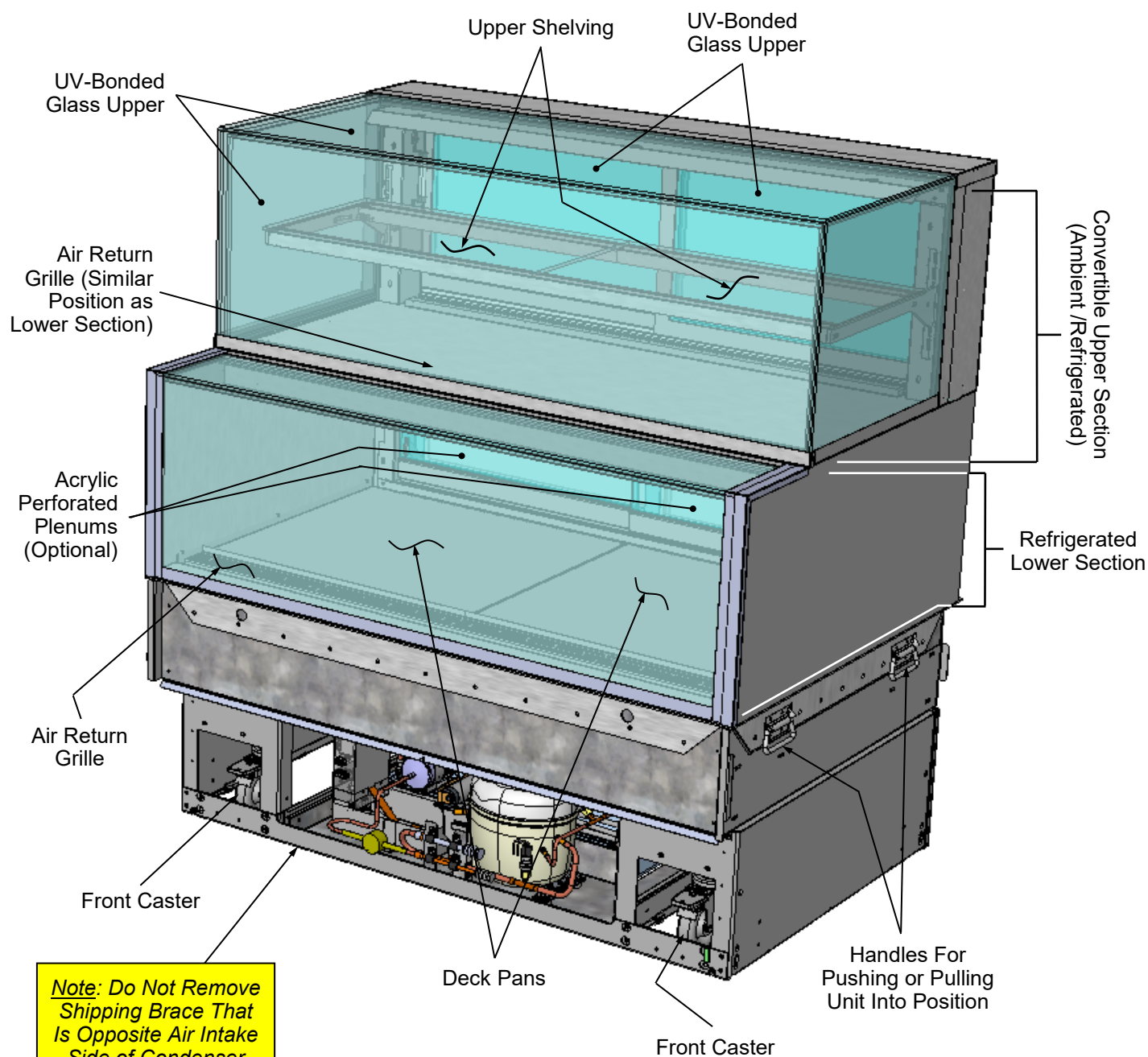
Note: Model NR3651RRSV (shown) may not reflect every feature or option of your particular case.



## CASE DESIGN: FRONT OF CASE (UNITS WITH REAR ACCESS CONDENSER PACKAGES)

### 1. Front of Case (Units With Rear Access Condenser Packages)

- Model NR4851RRSV is shown below. Your model may differ.
- Acrylic perforated plenums are controlled by rear door brackets' opening and closing action.
- See illustration below

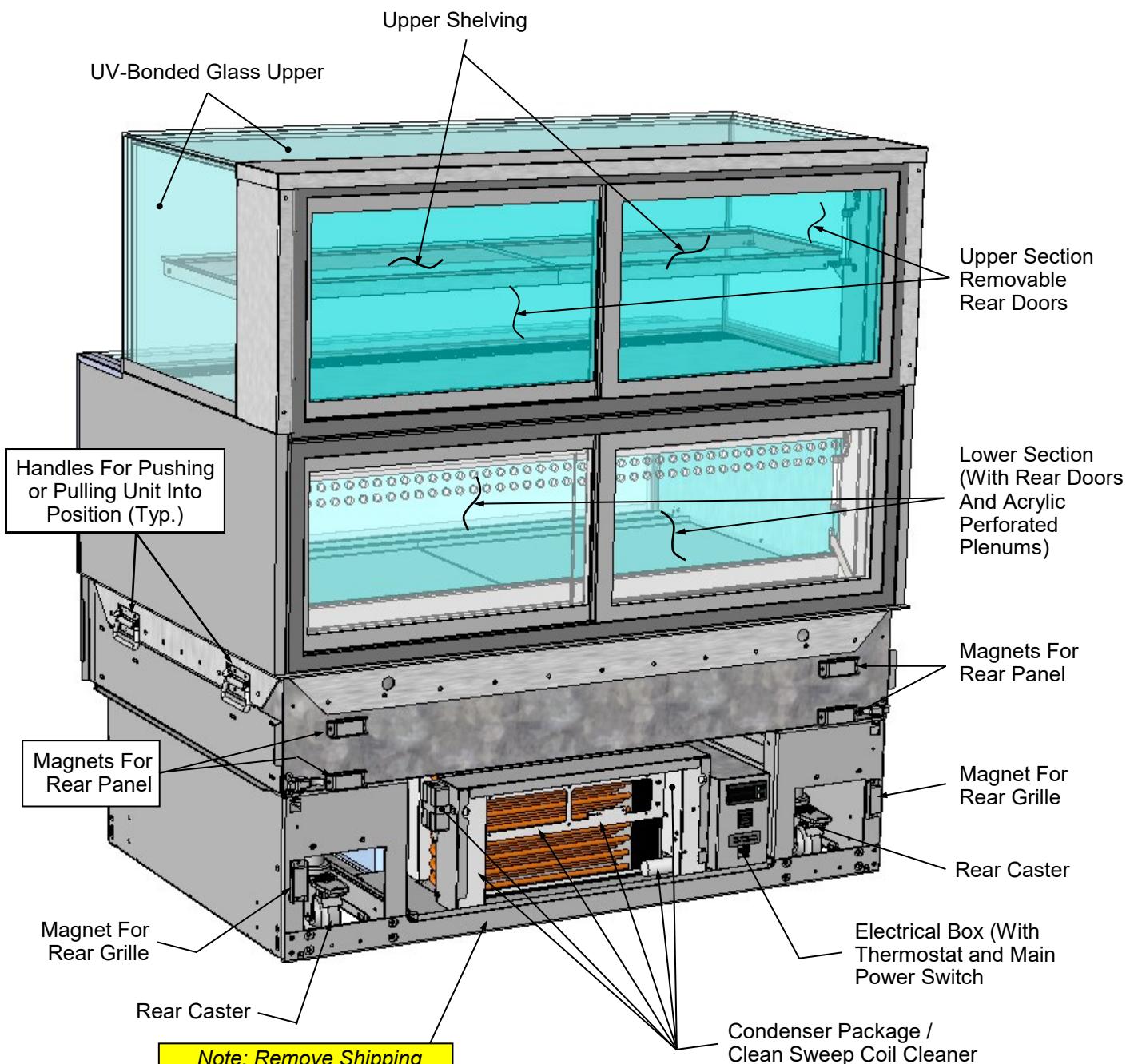


**Note:** Do Not Remove Shipping Brace That Is Opposite Air Intake Side of Condenser Package (Shown).

**Note:** Illustration shown reflects rear access condenser package. Units with front access condenser packages will have condenser package accessible at front of case.

## 2. Case Design: Rear of Case (Units With Lower Rear Doors)

- Model NR4851RRSV with lower rear sliding doors is shown below.
- Acrylic perforated plenums are in lower section.
- Power cord route may differ depending upon customer request.
- Side cladding, air intake grille, etc., has been removed for illustrative purposes only (see below).



**Note:** Remove Shipping Brace On Air Intake Side of Condenser Package.

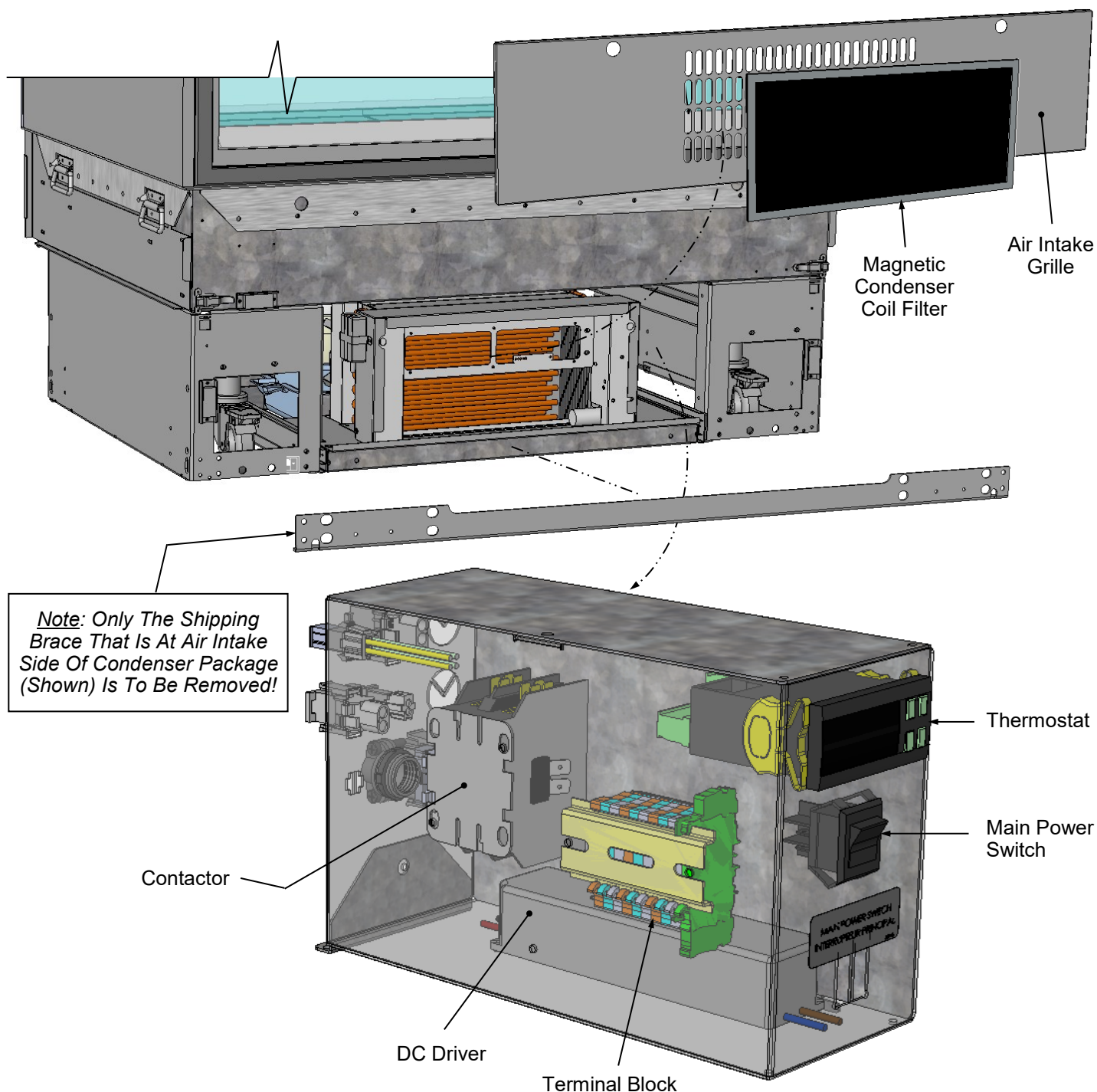
**Note:** Illustration shown reflects rear access condenser package. Units with front access condenser packages will have condenser package accessible at front of case.

### 3. Controller / DC Driver Access / Components

- Remove air intake grille with slot/hook method; no screw removal is required.
- Magnetic condenser coil filter is directly accessible.  
See **CLEANING SCHEDULE (TO BE PERFORMED BY STORE PERSONNEL)** for cleaning instructions.
- Remove base support bracket by removing 4 screws.
- Remove 4 screws from the controller/DC driver box

cover to access electrical components.

- Note: Only certified electricians are to access electrical components in case.
- After accessing controller and/or DC drivers, return components to case in reverse order they were removed.

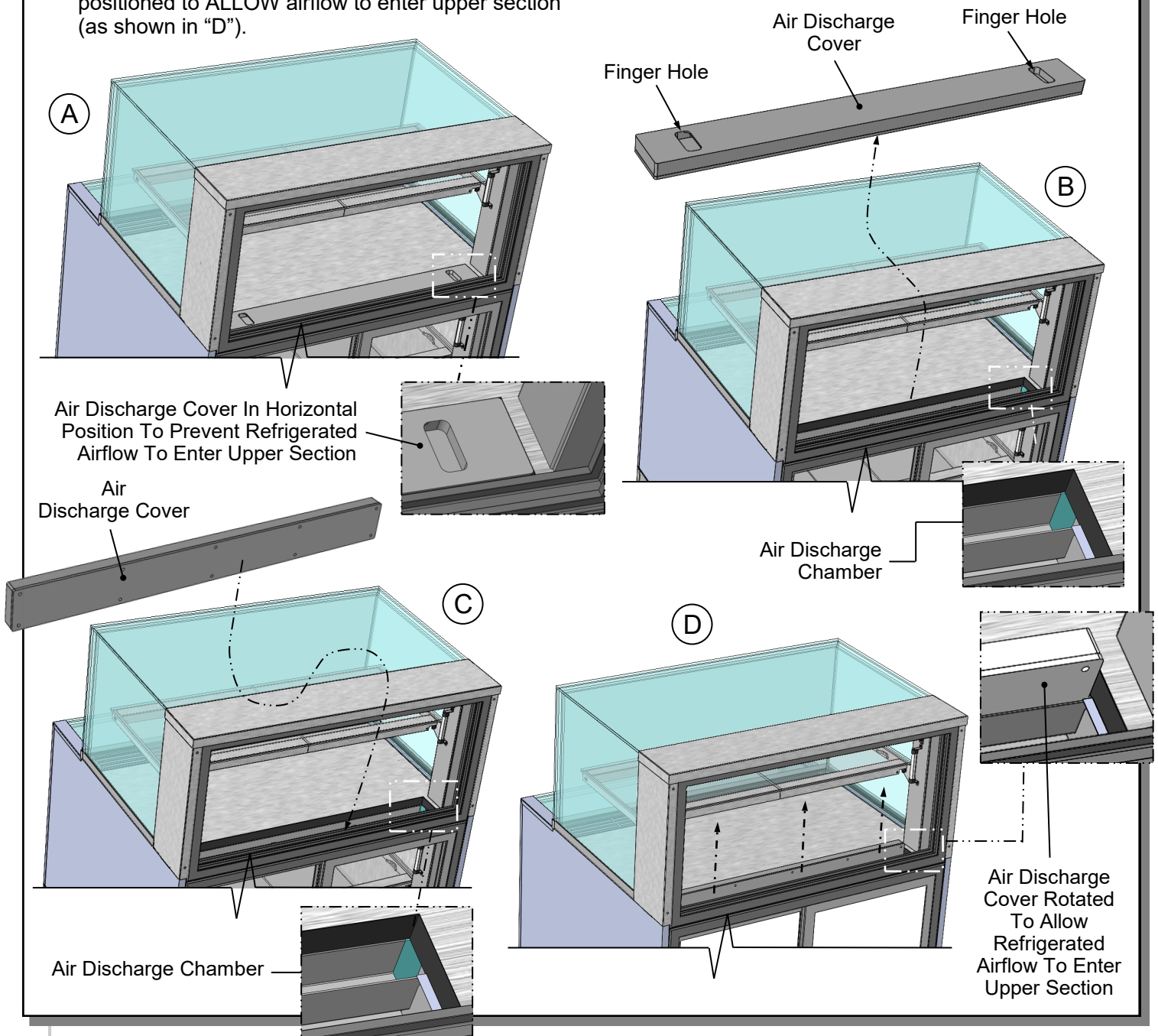


#### 4. Ambient vs. Refrigerated Upper Section

- Illustrations shown with rear sliding doors removed for illustrative purposes. **Doors do not need to be removed to access air discharge cover/baffle.**
- Upper section of case can be either ambient (room temperature) or refrigerated depending upon air discharge cover position.
- Use finger holes to remove horizontal air discharge cover from air discharge chamber.
- For upper section to be ambient, cover must be positioned to BLOCK airflow (as shown in "A").
- For upper section to be refrigerated, cover must be positioned to ALLOW airflow to enter upper section (as shown in "D").

- Upper section in ambient state (cover in horizontal position preventing airflow into upper section).
- Air discharge cover shown removed from case via finger holes (for illustrative purposes only).
- Air discharge cover shown removed from case and rotated vertically (for illustrative purposes only).
- View of upper section in refrigerated state (cover in vertical position ALLOWS refrigerated airflow into upper section).

**>> IMPORTANT! The air discharge cover MUST BE placed in the air discharge chamber (in either position) for case to properly function!**

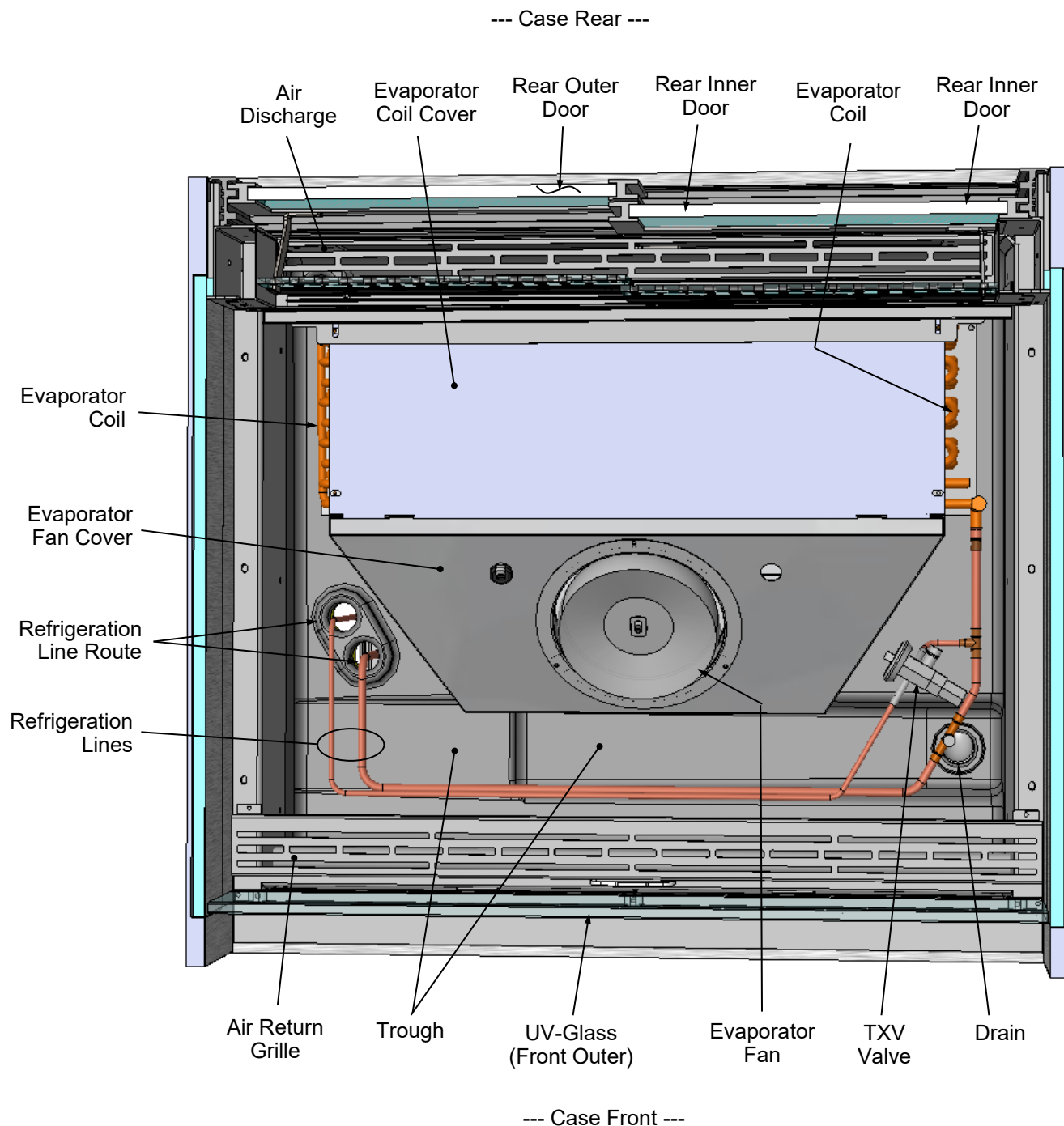


### 5. Tub Area After Deck Pan Removal

**Note:** Refrigeration service to be accomplished by refrigeration / electrical contractors only.

**Caution!** Turn main power off before accessing tub area.

- Illustration below reflects single evaporator fan (36" units). It is shown after removal of deck pans.
- After cleaning or servicing in tub area, return deck pans to case and return power to case.

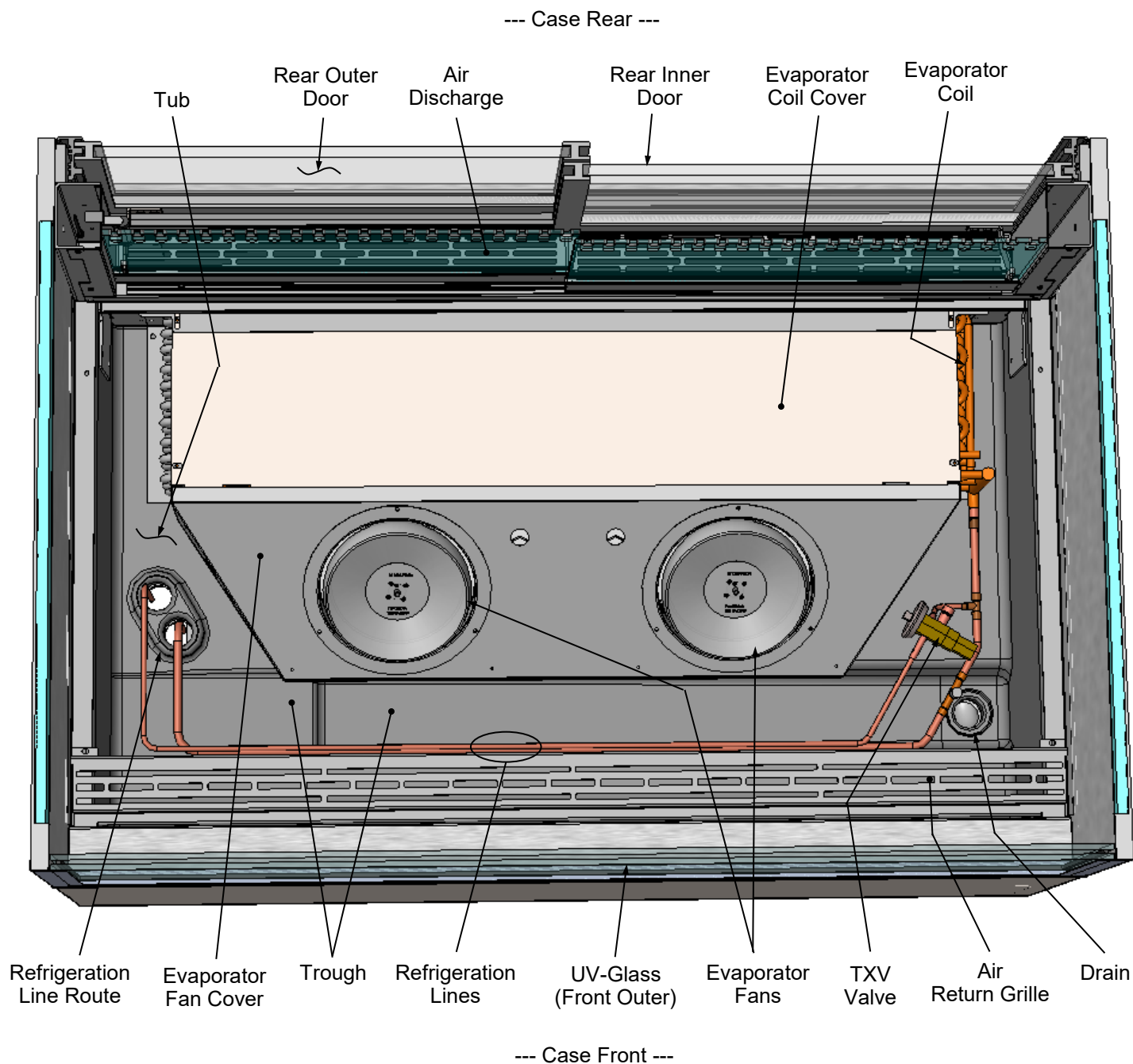


## 6. Tub Area After Deck Pan Removal

**Note:** Refrigeration service to be accomplished by refrigeration / electrical contractors only.

**Caution!** Turn main power off before accessing tub area.

- Illustration below reflects dual evaporator fan (48", 60" and 72" units) after removal of deck pans.
- After cleaning or servicing in tub area, return deck pans to case and return power to case.

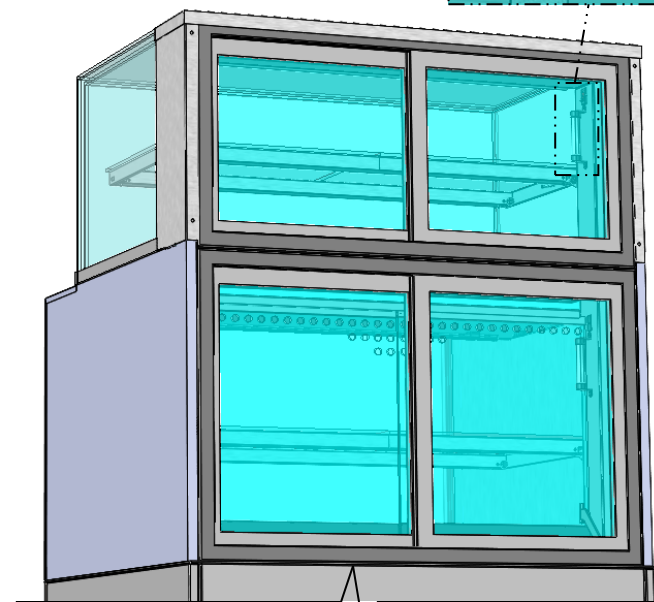
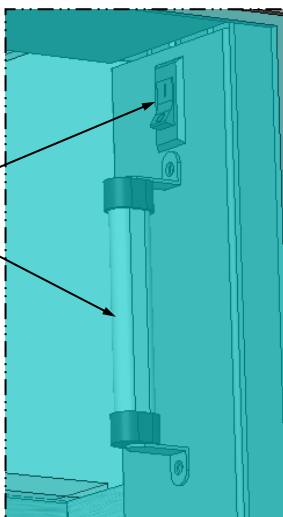


### 7. LED Light Switch Location

- LED light switch is in upper section of case (as shown below).
- See illustrations below.

### 8. LED Lights

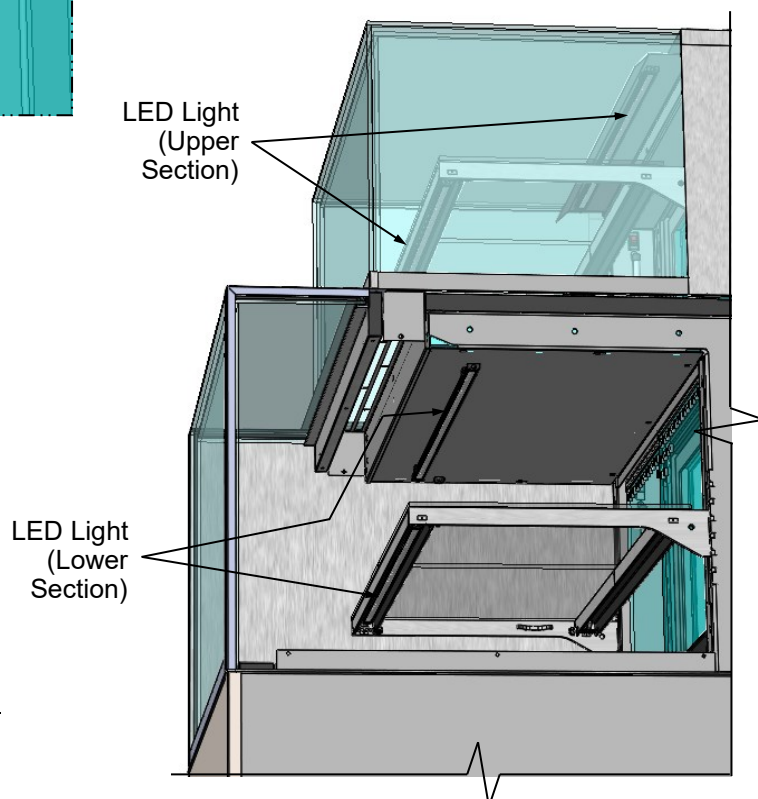
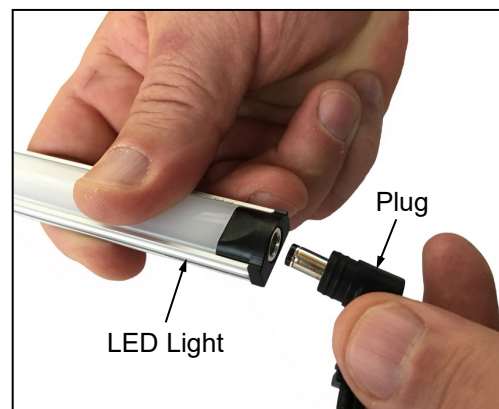
- LED lights are located at both header and shelving of case (as shown below).
- Check that ALL of the light plugs are properly connected to the LED light.
- Plug must be inserted ALL THE WAY into the LED light orifice (with no gap) to work properly.
- See **TROUBLESHOOTING (TO BE PERFORMED BY STORE PERSONNEL)** section in manual if LED lights malfunction.



--- Case With Lower Rear Sliding Doors ---

### 9. Thermometer Function & Placement

- Separate thermometers are located in both upper and lower sections of case.
- Thermometer provides temperature of refrigerated section of case.
- Thermometers reflect warmest air temperature in merchandiser. They do not provide actual food temperature.
- Use probe thermometers to determine actual product temperatures.

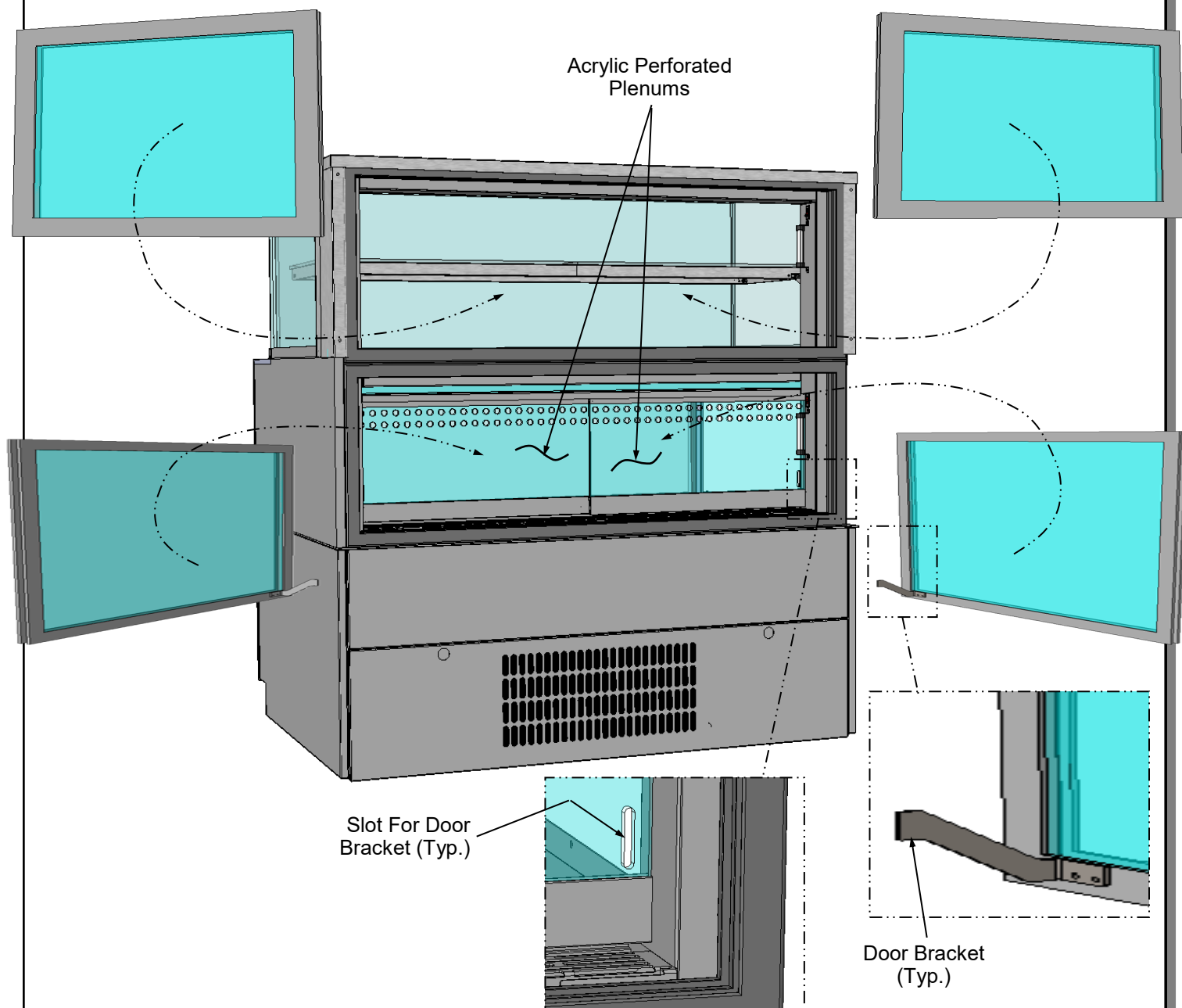


### **10. Rear Sliding Door Removal**

- Separate rear sliding doors are in both upper and lower sections of the case.
- To remove rear sliding doors, move doors toward center of the case.
- Individually lift each door up toward the top of the case; pivot the bottom of the door out.
- Return doors to case in reverse order they were removed.

### **11. Rear Perforated Plenum Control**

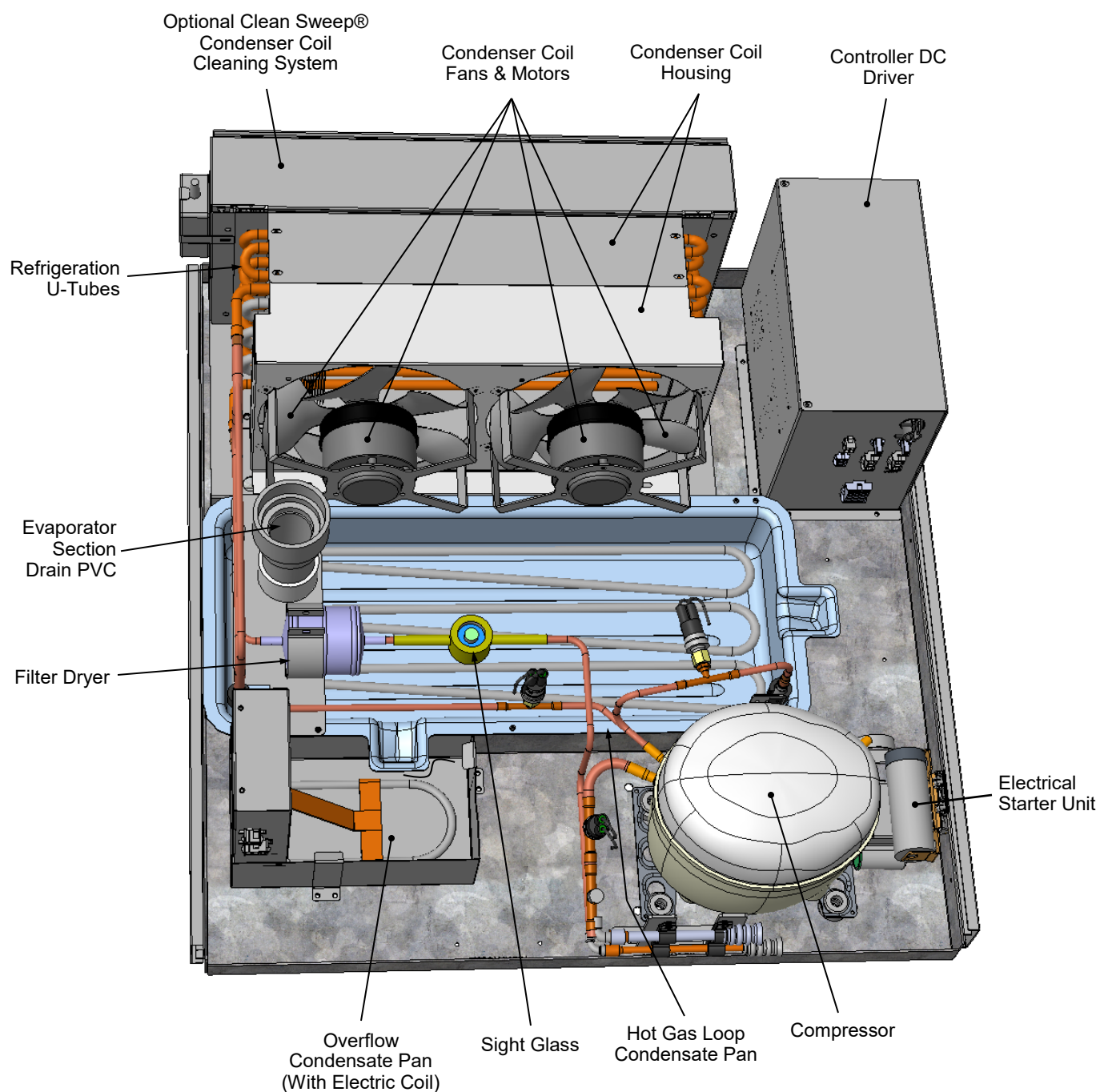
- Acrylic perforated plenums are used on all cases.
- Acrylic perforated plenums have sliding doors with angled brackets that insert into acrylic perforated plenum slots (as shown below).
- As doors open and close, acrylic perforated plenums follow.



### **11. Condenser Package (Self-Contained Units)**

**Assembly/disassembly and servicing to be performed by licensed refrigeration contractor.**  
**Condensate Package Configuration**

- Illustration shown is from model NR3658RRSSV. Your unit's component layout may slightly vary.



## PRODUCT PLACEMENT: PRODUCT PLACEMENT / LOAD LINES (NO LOWER SHELF)

### 1. Product Placement

- Product can be placed on decking or shelves within display area.
- A wide range of product may be displayed.

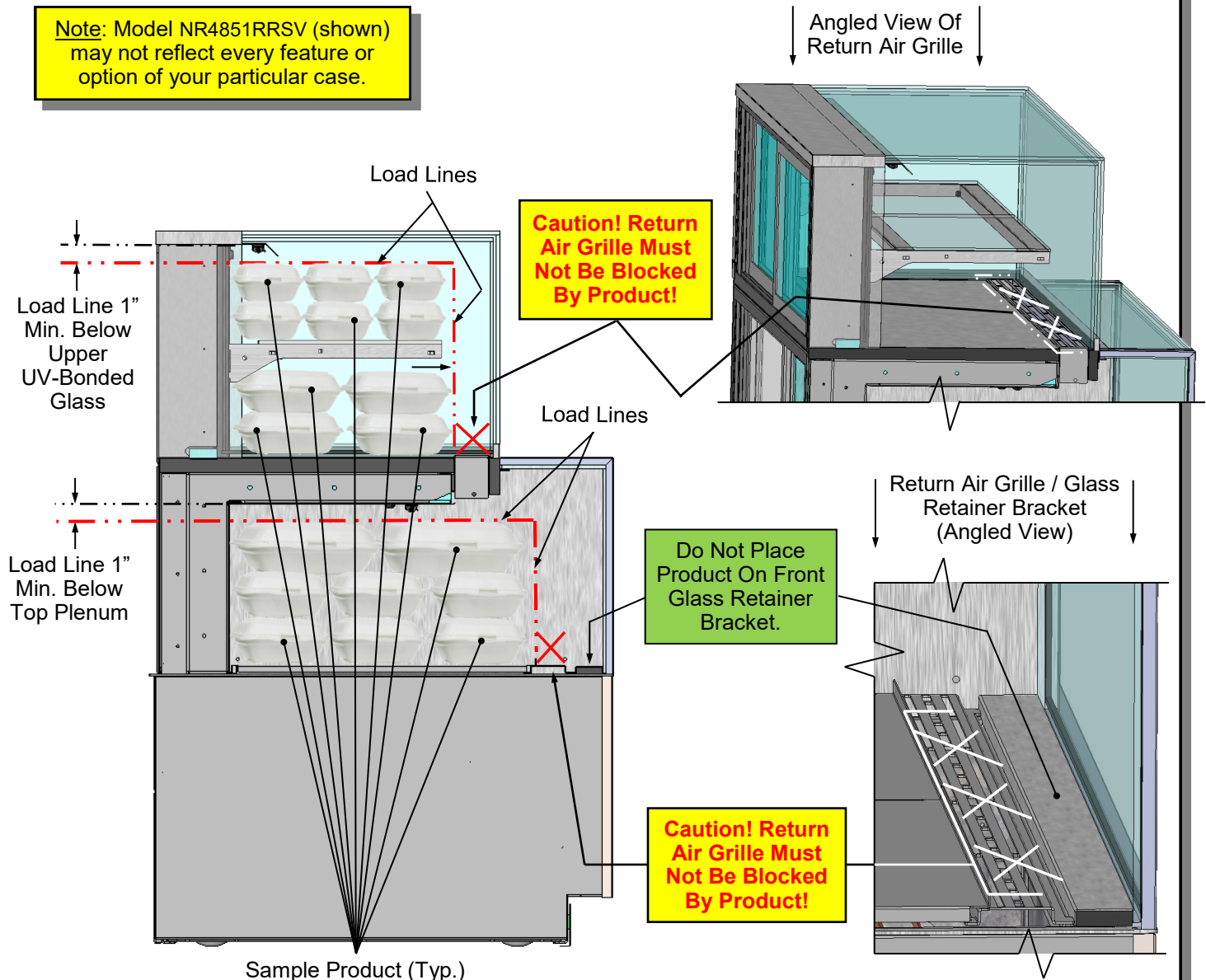
### 2. Airflow Consideration

- Product must be kept 1" from upper shelves and/or upper UV-bonded glass to enhance free airflow.
- Cool air must flow over (and around) product to return air grille at case front.
- Caution! Do not impede air diffuser's airflow route (to return air grille) with product.
- Caution! You must also keep product OFF return air grille at case front (illustrated below).

### 3. Load Lines

- Load lines represent the maximum height and/or location that product can be placed and/or stacked in case.
- Keep product at or under load lines to assure that refrigerated airflow is properly cycled from air diffuser through return air grille.
- Proper product placement will maintain acceptable product temperature.

**Note:** Model NR4851RRSV (shown) may not reflect every feature or option of your particular case.



#### 4. Product Placement

- Product can be placed on decking or shelves within display area.
- A wide range of product may be displayed.

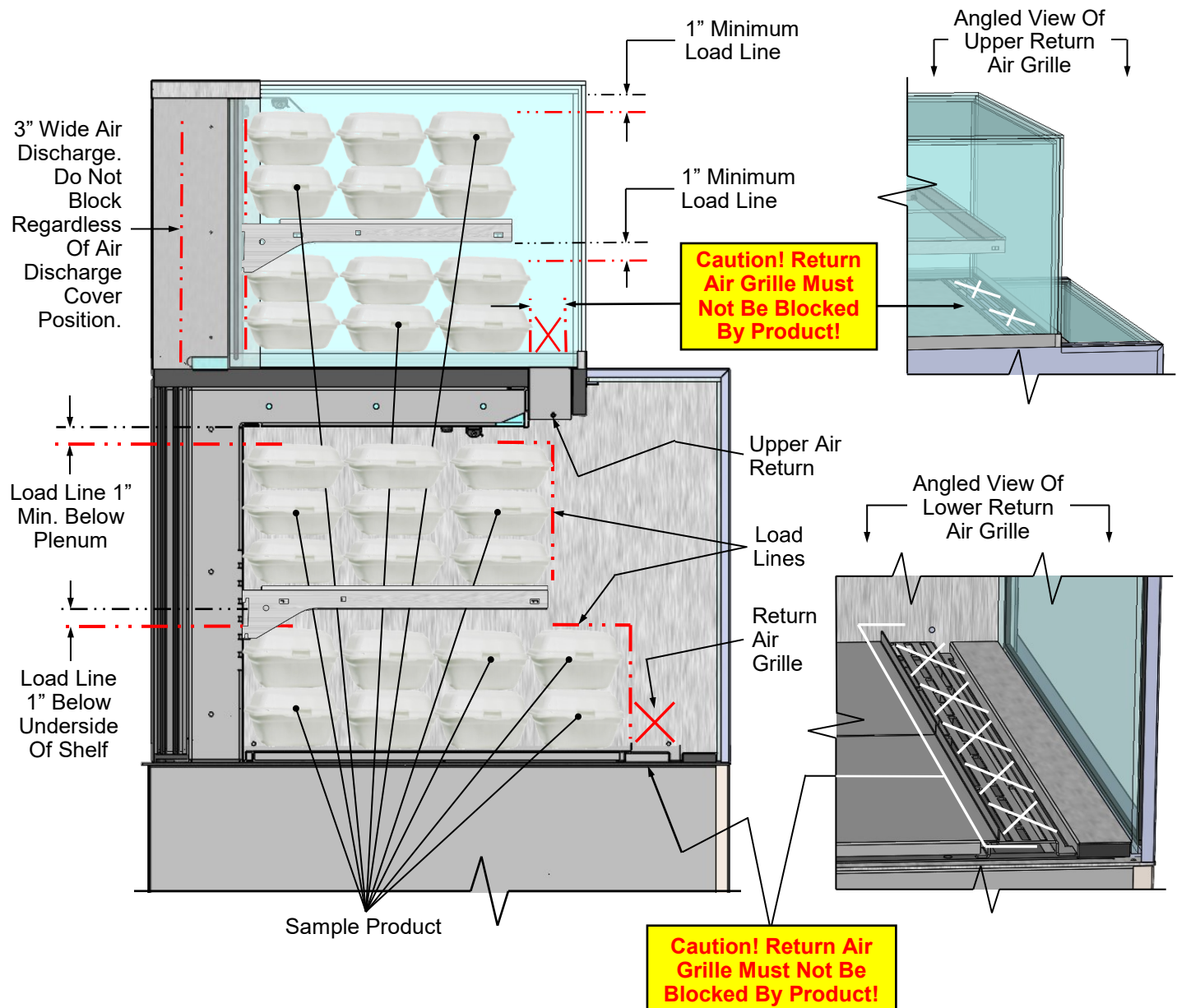
#### 5. Convertible Upper Airflow Consideration

- Upper section airflow diffuses at rear with return airflow grille at front.
- Do not block air diffuser grille or return air grille.
- Product must be kept 1" from upper shelves and/or upper glass area to enhance free airflow.

#### 6. Load Lines

- Load lines represent the maximum height that product can be placed and/or stacked in case.
- Keep product at or under load lines to assure that refrigerated airflow is properly cycled.
- Proper product placement will maintain acceptable product temperature (shown below).

**Note:** Model NR3658RRSV (shown) may not reflect every feature or option of your particular case.



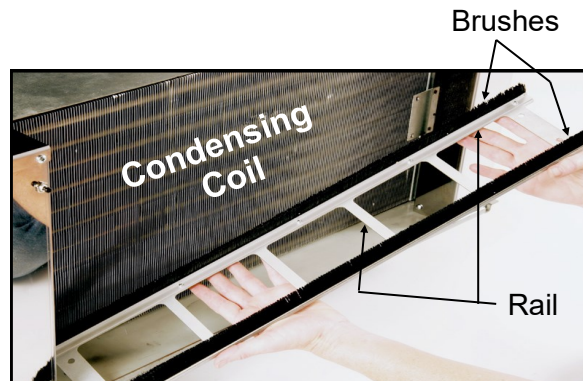
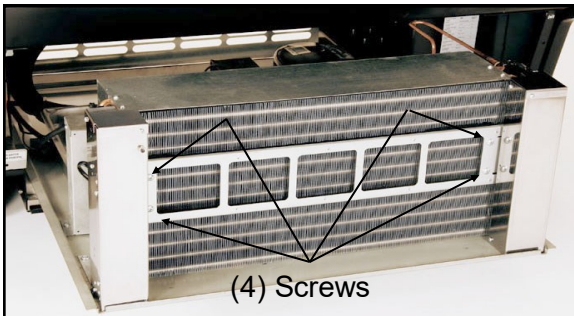
## CLEANING SCHEDULE (TO BE PERFORMED BY STORE PERSONNEL)

FQ*	CLEANING INSTRUCTIONS
D	<b>Glass Surfaces:</b> Clean glass surfaces and shelves with household or commercial glass cleaner.
D	<b>Rear Sliding Door Exterior Glass:</b> Clean with household or commercial glass cleaner. Clean out rear door track with moist cloth.
D	<b>End Panels, Front Panel, Toe-Kick, etc.:</b> Wipe off with warm water, mild soap solution & non-abrasive cloth.
D	<b>Decks:</b> Wipe off decks with moist cloth dipped in mild soap and water solution.
D	<b>Acrylic Perforated Plenums At Lower Rear:</b> <ul style="list-style-type: none"> <li>• <b>Clean:</b> Use soft, clean cloth dipped in solution of warm water and small amount of mild, liquid soap. Apply light pressure while wiping away all smudges and residue.</li> <li>• <b>Rinse:</b> Use pure water in spray bottle to rinse.</li> <li>• <b>Dry:</b> Use soft, clean cloth (rather than abrasive paper towel).</li> <li>• <b>Avoid:</b> Never use window or household cleaners such as Windex®, Formula 409®, or fantastik®. Never use scouring compounds or solvents such as acetone, gasoline, alcohol, 111 trichloroethylene, WD-40® or lacquer thinner.</li> <li>• <b>Polishing:</b> Buff with light coat of automobile paste wax or plastic cleaner/polish.</li> <li>• <b>Scratches:</b> Use high quality buffing compound. Carefully follow instructions.</li> </ul>
D	<b>Stainless Steel Surfaces:</b> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Never use scouring powders or steel wool as they will scratch stainless steel.</li> <li>• 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.</li> <li>• Remove streaks or heat stains from stainless steel by rubbing with club soda.</li> </ul>
W	<b>Magnetic Condenser Coil Filter (Self-Contained Units Only):</b> <ul style="list-style-type: none"> <li>• This filter helps prevent dust particles from entering condenser coil. It is accessible at air intake side of case. Clean magnetic condenser coil filter by following either step 1 or 2; then follow step 3:</li> <li>1. 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. Dry with soft cloth or paper towel. Return to case.</li> <li>2. If dishwasher is used, 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.</li> <li>3. Dry with soft cloth or paper towel (as shown below) or allow to air dry. Replace.</li> </ul>
M	<b>Rear Air Discharge Chamber and Rear Air Discharge Cover (Upper Section Only):</b> <ul style="list-style-type: none"> <li>• Remove rear air discharge cover from case. Wipe down cover with soft cloth dipped in mild soap and water solution OR submerge in warm soapy water and clean with bristled brush.</li> <li>• Use vacuum with soft bristled extension to clean out rear air discharge chamber. Then, wipe down chamber with soft cloth dipped in mild soap and water solution.</li> <li>• Dry both cover AND rear air discharge chamber with paper towel or clean cloth. Return rear cover to case in same position it was in before cleaning. See <b>CASE DESIGN, CONT'D: UPPER SECTION - AMBIENT VS. REFRIGERATED STATE</b> section in manual for illustrations.</li> </ul>
Q	<b>Under Case Cleaning:</b> <ul style="list-style-type: none"> <li>&gt; <b>Remote units:</b> Remove lower rear panel (and/or front panel) and clean as directed below.</li> <li>&gt; <b>Self-contained units/moving case:</b> Remove lower grille and opposite side (front or rear panel) panel. Unlock casters and lower casters to floor. See <b>INSTALLATION, CONT'D.: CASTER ADJUSTMENT / LOCK / UNLOCK / CASE REMOVAL FROM SKID</b> section in manual for instructions. Slide/roll case out of current position. Clean as directed below (in self-contained units/stationary case section).</li> <li>&gt; <b>Self-contained units/stationary case:</b> Remove lower grille (at intake side); slide condenser package out from under case. <b>Optional:</b> remove panel that is opposite lower grille. Clean as directed below.</li> <li>• Use vacuum with brush to remove all dust, dirt, food particles or residue from underside of case.</li> <li>• Replace lower grille (and/or panel that is opposite lower grille) when cleaning is complete.</li> </ul>

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

FREQ.	INSTRUCTIONS
Quarterly	<p><b><u>Condensing Coil:</u></b></p> <ul style="list-style-type: none"> <li>Remove air intake 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 air intake grille to case.</li> </ul>
Quarterly	<p><b><u>Condenser Package:</u></b> <i>Caution! Disconnect power from case before cleaning!</i></p> <ul style="list-style-type: none"> <li>See <b>CASE DESIGN, CONT'D: CONDENSER PACKAGE (SELF-CONTAINED UNITS ONLY)</b> section in manual for illustrations.</li> <li><b>Warning! Condensate pan may be HOT! Disconnect power from case and allow to cool before cleaning evaporator pan!</b></li> <li>Remove air intake grille from case (no screw removal is required).</li> <li>Slide/roll condenser 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>If electric coil overflow evaporator pan is dirty, clean it (and in same manner) while cleaning rest of condenser package.</li> <li>After thoroughly cleaning condensate 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, condensate overflow pan, etc.).</li> <li>Slide condenser package back under case.</li> <li>Return air intake grille to case (no screws required).</li> </ul>
Quarterly	<p><b><u>Under Case Cleaning:</u></b> Once refrigeration package is clear of unit, vacuum under case to remove dust and dirt that may collect under case.</p>
Quarterly	<p><b><u>Tub Area (Evaporator Coil, Drain, Fans, Brackets, Etc.):</u></b></p> <p><b>Caution! Disconnect power from case before cleaning tub, coil, fan, motor and drain area!</b></p> <ul style="list-style-type: none"> <li>See <b>CASE DESIGN, CONT'D: TUB AREA (AFTER DECK PAN REMOVAL)</b> section in manual for illustration.</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> <li>Wipe down fan blades, motors and brackets with moist cloth.</li> </ul>

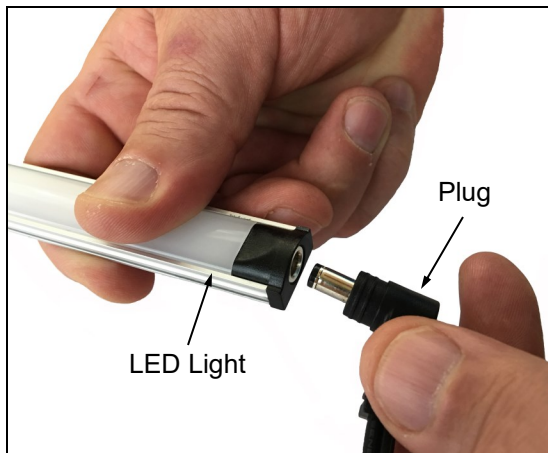
FREQUENCY	INSTRUCTIONS
Quarterly	<p><b>Optional Clean Sweep™ Condensing Coil Cleaner:</b> <i>Disconnect power from case before servicing the Clean Sweep™ Condenser Coil Cleaner!</i></p> <ul style="list-style-type: none"> <li>• Remove air intake grille (by lifting up and off); no screw removal is required.</li> <li>• Slide/roll out condensing package from underside of case assembly.</li> <li>• Remove the four (4) screws holding the Clean Sweep™ rail intact.</li> <li>• Remove the Clean Sweep™ rail.</li> <li>• Wash rails' brushes in hot water and mild soap solution.</li> <li>• If brushes are worn, they must be replaced. Call Technical Service Department to replace. Toll-Free number is listed at end of manual.</li> <li>• Clean condensing coil: Use air pressure or industrial strength vacuum; clean the dust and dirt that may collect on the condenser coil.</li> <li>• <b>Caution! Coil fins are sharp. Handle with care!</b></li> <li>• Reattach Clean Sweep™ rail to condensing unit (4 screws).</li> <li>• Slide/roll condensing package back under case.</li> <li>• Replace air intake grille to case (4 screws).</li> <li>• See photos below.</li> </ul>



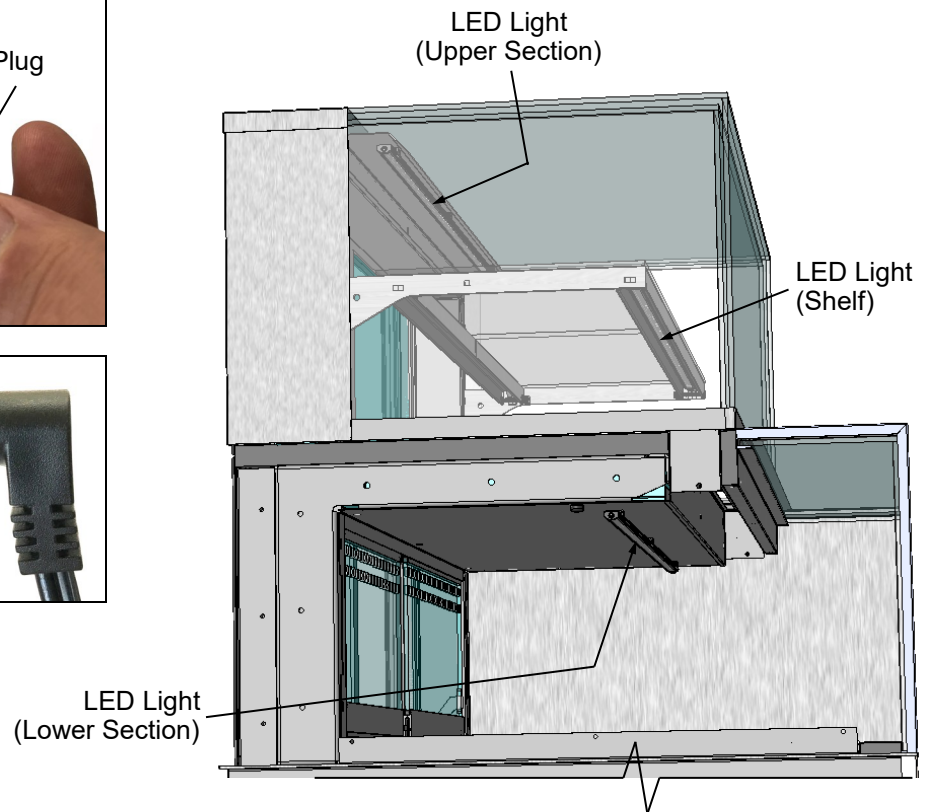
--- Above photos are taken after air intake grille has been removed from case ---

CONDITION	TROUBLESHOOTING
<b>Water Is On The Floor</b>	Call service provider.
<b>Fan Emits Excessive Noise</b>	Call service provider.
<b>Case Lights Are Not Working</b>	Check that light switch is in the <i>on</i> position.
	Check that ALL of the light cords and plugs are properly connected. See next page for step-by-step connection instructions and illustrations.
	If case lights still do not come on, call service provider.
<b>Case is Not Holding Proper Temperature</b>	If a large amount of warm product was added to the case, it will take time for the temperature to adjust. Product must be pre-chilled before placing in case.
	Check that the case is not in the sun or near a heat or air-conditioning vent. See <b>OVERVIEW / NSF® TYPE / COMPLIANCE / WARNINGS / PRECAUTIONS</b> section in this manual for specifics.
	If case is located near outside doors, temperature fluctuation can hinder unit's ability to maintain temperature.
	<ul style="list-style-type: none"> <li>• Check air return grilles (area at front of decking) for obstructions.</li> <li>• DO NOT set product on air grilles as this will prevent proper airflow!</li> </ul>
	If case still is not holding proper temperature, call service provider.

CONDITION	TROUBLESHOOTING
<b>Case Lights Not Working</b>	<p>Check that light switch is in the <b>ON</b> position.</p> <ul style="list-style-type: none"> <li>See <b>CASE DESIGN, CONT'D: LED LIGHT SWITCH LOCATIONS / LED LIGHTS / THERMOMETERS</b> section in manual for switch location (regardless of case design).</li> </ul>
	If case is not hard-wired, check that power cord is properly connected to wall outlet.
	<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>TECHNICAL SERVICE</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>



Note: Model NR4851RRSV (Shown)  
May Not Exactly Reflect Every Feature  
or Option of Your Particular Case.



--- Model NR4851RRSV Shown ---

CONDITION	TROUBLESHOOTING
<b>Water Is On The Floor</b>	<p><b>Caution!</b> Disruption of power or malfunctioning condensate pan (or electric coil overflow condensate pan) may cause water to overflow pan and seep onto flooring causing damage! Until condensate pan(s) are functioning (or are replaced), follow these procedures:</p> <ul style="list-style-type: none"> <li>• Use wet vacuum (or mop &amp; bucket) to remove standing water.</li> <li>• Use 'catch pans' for water to drain into. Swap out regularly until case has completely drained.</li> <li>• When power to case is restored, condensate pan should function properly and water will no longer overflow onto flooring.</li> </ul>
	Check that the drain trap is free of debris.
	Check that the drain PVC is correctly positioned over condensate pan.
	Check store conditions. To prevent condensation in Type I environments, maximum conditions are to be 55% relative humidity / 75° Fahrenheit. Type II environmental conditions are to be at 55% relative humidity / 80° Fahrenheit. See serial label (at case rear near main power switch) for NSF/ANSI classification of your case.
	Check that electric coil overflow condensate pan is properly plugged in or connected.

CONDITION	TROUBLESHOOTING
<b>Fans Emit Excessive Noise</b>	Check that the case is aligned, level and plumb.
	Check evaporator fans for cleanliness.
	Unplug/power off fan motors. Check motor shaft for 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.
<b>Fans Are Not Working</b>	Check that the MAIN power switch is on.
	Check that fans are plugged in at the fan shroud.
	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.
<b>System Not Operating</b>	Check that the utility power is on.
	Check that the MAIN power switch is on.
	Check the circuit breaker box for tripped circuits.

CONDITION	TROUBLESHOOTING
Case Lights Are Not Working	See <b>TROUBLESHOOTING (TO BE PERFORMED BY STORE PERSONNEL)</b> section in manual for most common troubleshooting solutions.
	<p>Check power.</p> <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>
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. 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.
	<p>Check that magnetic air filter (attached to rear grille) has been cleaned.</p> <p>See <b>CLEANING SCHEDULE (TO BE PERFORMED BY STORE PERSONNEL)</b> section in operating manual for instructions.</p>
	Check return air grilles for obstructions.
	Check sight glass for flashing and/or low charge.
	Check set point temperature; it may be adjusted too high.

CONDITION	TROUBLESHOOTING
<b>Digital Control Display Is Blank</b>	Check that the MAIN power switch is on.
	Check the circuit breaker box for tripped circuits.
<b>System Is Not Operating</b>	Check that the utility power is on.
	Check that the MAIN power switch is on.
	Check the circuit breaker box for tripped circuits.
<b>Condensing Unit Is Not Operating</b>	Check that the power is turned on.
	Determine if temperature controller settings are properly set. <i>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.</i>

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

CONDITION	TROUBLESHOOTING
<b>Head Pressure Too High</b>	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.
<b>Head Pressure Too Low</b>	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 (BY TRAINED SERVICE PROVIDERS ONLY) - EVAPORATOR SYSTEM

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 affixed at a wide range of places (on the header, near thermostat, at case rear, behind panels/toe-kicks, on electrical boxes, etc.).
- Serial labels contain electrical, temperature and refrigeration information, as well as regulatory standards to which the case conforms.

- Sample serial label shown below.
- For additional technical information and service, see the *TECHNICAL SERVICE* page in this manual for instructions on contacting Structural Concepts' Technical Service Department.

**Structural Concepts®**

888 E. Porter Rd - Muskegon, MI 49441

**Reveal**

MODEL NRS3648RXV-SAMPLE  
SERIAL NO. 12345X30DZ098765



Intertek



Intertek

**SAMPLE ONLY**

3048256  
Conforms to UL Std. 471  
Conforms to NSF/ANSI Stds. 2 & 7  
CERTIFIED TO CAN/CSA  
STD C22.2 NO 120

Super Heat Temp  
Defrost

ELECTRICAL RATING  
REFRIGERANT  
DESIGN PRESSURE  
MINIMUM CIRCUIT AMPACITY  
MAXIMUM OVERCURRENT

6-8 °F  
6 defrosts per day, 45 °F

120/1/60 16 A  
R513A AMOUNT 50 OZ  
HIGH 186 LOW 88  
20A  
20A

FOR PARTS AND SERVICE CALL  
1-800-433-9490

**SAMPLE ONLY**

**SAMPLE ONLY**

**SAMPLE ONLY**

**SAMPLE ONLY**



Sample QR Code

--- Sample Serial Label For Refrigerated Cases ---



**Determine Which Programmable Controller Is On Your Case (Controllers That Are Commonly Used By Structural Concepts Are Shown Below). Your Particular Programmable Controller May Differ.**



**Carel® PJEZ Platform**



**Carel® ir33 Platform**



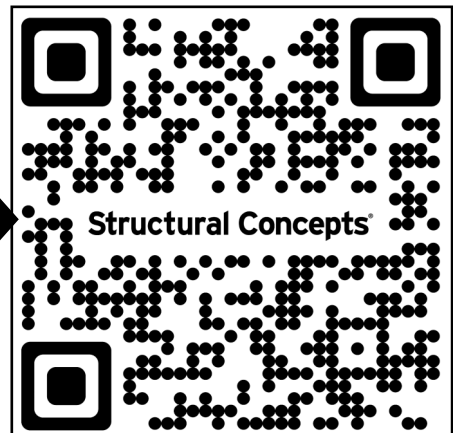
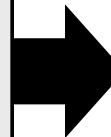
**Carel® iJF Platform**



**Dixell® XM670K-XM679K Platform**

**To Access Information About The Programmable Controller That Is Used On Your Case, Follow These Instructions:**

- > If Viewing This Document on Smart Phone, Tablet or Computer, Select/Click On The QR Code at Right.
- > If Viewing This Document In Print (Hard Copy), Scan The QR Code at Right With Your Smart Phone or Tablet.



## 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.)

**To Access The Limited Warranty To Your  
Case, Follow These Instructions:**

- > If Viewing This Document on Smart Phone, Tablet or Computer, Select/Click On The QR Code at Right.
- > If Viewing This Document In Print (Hard Copy), Scan The QR Code at Right With Your Smart Phone or Tablet.

