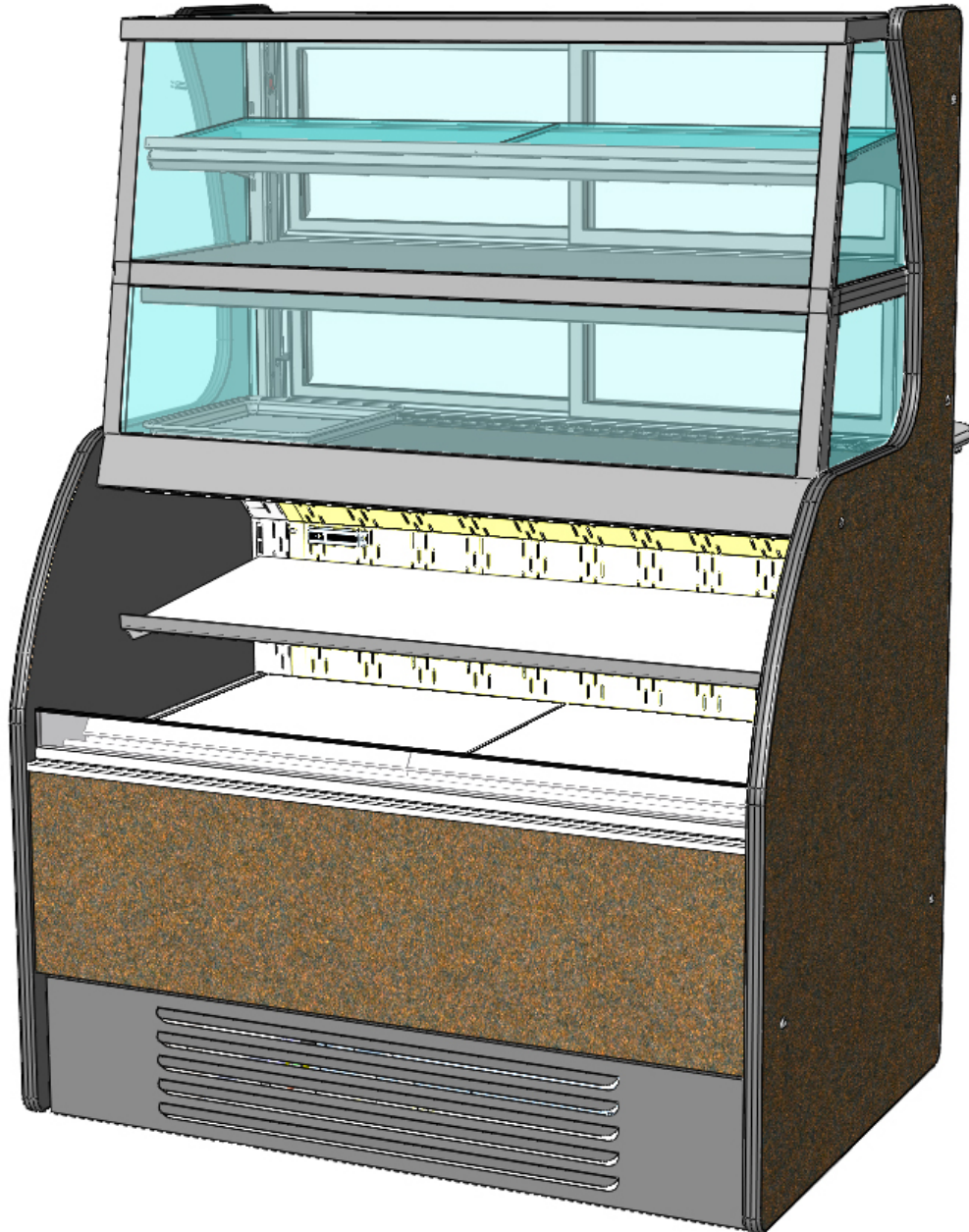




# INSTALLATION & OPERATING MANUAL

PN 99651



Model C3Z4867.5884A

**SELF-CONTAINED  
REFRIGERATED SERVICE /  
SELF-SERVICE CASE**

- Model C3Z3667.....36"L\* x 41 7/8"D\*\* x 68 5/8"H\*\*\*
- Model C3Z4867.....48 1/8"L\* x 41 7/8"D\*\* x 68 5/8"H\*\*\*
- Model C3Z4867.5884A.....48 1/8"L\* x 32 7/5"D~ x 45 5/16"H\*\*\*
- Model C3Z6067.5884B.....60 1/2"L\* x 32 7/5"D~ x 66 5/8"H\*\*\*

*\*Includes end panels.*

*\*\* Without Flip-Up Ledge Raised. 54 1/2" when Raised.*

*~ Without Flip-Up Ledge Raised. 45 3/8" when Raised.*

*\*\*\* With Levelers Extended 1 1/2" below Base Frame.*



## TABLE OF CONTENTS

<b>OVERVIEW / TYPE / COMPLIANCE / WARNINGS / PRECAUTIONS / WIRING / PLUGS .....</b>	<b>3-4</b>
<b>INSTALLATION: SHIPPING BRACKETS / SKID REMOVAL .....</b>	<b>5</b>
<b>INSTALLATION, CONT'D: POSITIONING / ALIGNING / LEVELER ADJUSTMENT .....</b>	<b>6</b>
<b>START-UP AND OPERATION .....</b>	<b>7</b>
<b>ANTI-THEFT SECURITY GRID .....</b>	<b>8</b>
<b>MAINTENANCE &amp; OPERATION .....</b>	<b>9-12</b>
<b>ELECTRICAL FUNDAMENTALS .....</b>	<b>13</b>
<b>REFRIGERATION FUNDEMENTALS .....</b>	<b>14-15</b>
<b>SERIAL LABEL LOCATION &amp; INFORMATION LISTED / TECH INFO &amp; SERVICE .....</b>	<b>16</b>
<b>CLEANING SCHEDULE - BY STORE PERSONNEL: DAILY "D" / WEEKLY "W" / MONTHLY "M" .....</b>	<b>17</b>
<b>PREVENTIVE MAINTENANCE [TO BE PERFORMED BY TRAINED SERVICE PROVIDER] .....</b>	<b>18-20</b>
<b>TROUBLESHOOTING [GENERAL OVERVIEW] .....</b>	<b>21</b>
<b>TROUBLESHOOTING: REFRIGERATION PACKAGE OVERVIEW .....</b>	<b>22</b>
<b>CAREL® CONTROLLER - PROGRAMMING THE INSTRUMENT .....</b>	<b>23</b>
<b>CAREL® CONTROLLER - USER INTERFACE, SUMMARY TABLES OF ALARMS &amp; SIGNALS ....</b>	<b>24</b>
<b>CAREL® CONTROLLER - Summary Table of Operating Parameters (After Programming Key) .</b>	<b>25</b>
<b>SCC TECHNICAL SERVICE CONTACT INFORMATION &amp; WARRANTY INFORMATION .....</b>	<b>26</b>

**OVERVIEW**

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

**TYPE 1 vs. TYPE 2 CONDITIONS**

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

- For Type 1 Conditions (most cases): ambient conditions are to be at 55% maximum humidity and maximum temperatures of 75 °F (24 °C).
- For Type 2 Conditions: ambient conditions are to be at 60% maximum humidity and maximum temperatures of 80 °F (27 °C).

- If unsure if unit is designed for Type 1 or Type 2 conditions, 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.



**ATTENTION  
INSTALLER**

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

**WARNING**

**ELECTRICAL  
HAZARD**



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

**WARNING**

**KEEP  
HANDS  
CLEAR**



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

**WARNING**

**HOT  
SURFACE**



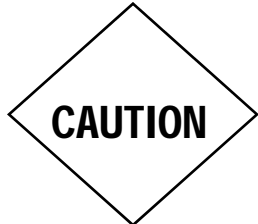
**WARNING**  
Condensate Pan (or Overflow Condensate Pan) is Hot! Electric condensate pan must be disconnected and allowed to cool before cleaning or removing from case.

**PRECAUTIONS**

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

**WIRING DIAGRAM**

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



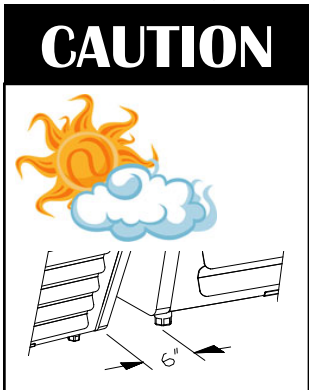
**CAUTION! LAMP REPLACEMENT GUIDELINES**  
 Fluorescent lamps have been treated to resist breakage and must be replaced with similarly treated lamps.



**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.

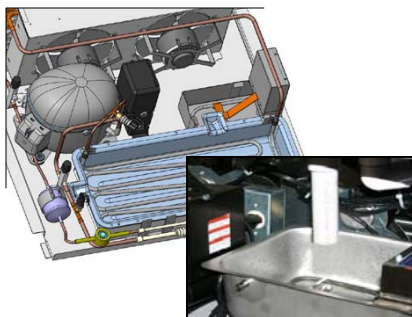


**CAUTION! POWER CORD AND PLUG MAINTENANCE**  
 Risk of electric shock. If cord or plug becomes damaged, replace only with cord and plug of same type.



**CAUTION! ADVERSE CONDITIONS / SPACING ISSUES**

- Performance issues caused by adverse conditions are **NOT** warranted.
- End panels must be tightly joined or kept at least **6-inches** away from any structure to prevent condensation.
- Unit must be kept at least **15-feet** from exterior doors, overhead HVAC vents or any air curtain disruption to maintain proper temperatures.
- Unit must not be exposed to direct sunlight or any heat source (ovens, fryers, etc.).



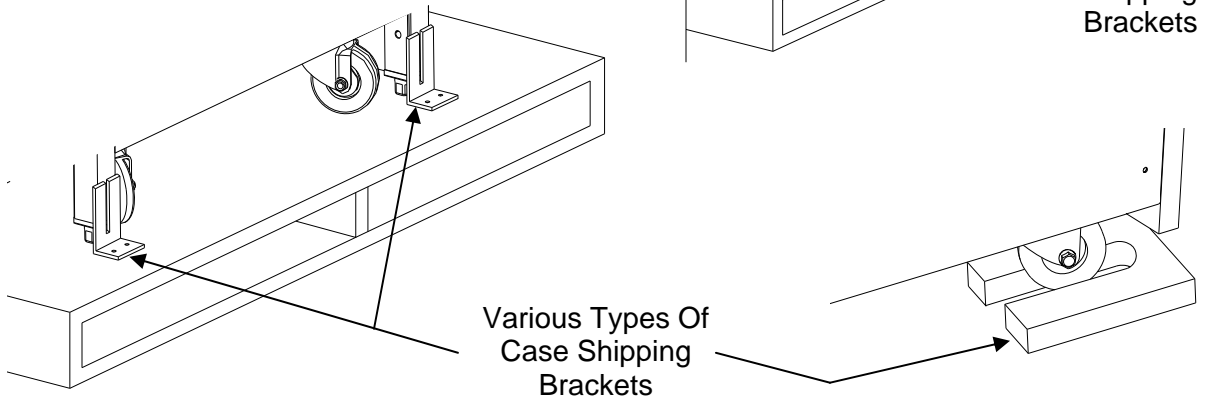
**CAUTION! CHECK CONDENSATE PAN POSITION & PLUG**  
 Water on flooring can cause extensive damage!  
 Before powering up unit, check and confirm the following:

- Condensate pan must be **DIRECTLY UNDER** condensate drain.
- Condensate pan plug must be securely plugged into receptacle.
- Overflow pan must have plug connected to its box. Units with optional Clean Sweep™ **MUST HAVE 2** plugs connected.

## INSTALLATION: SHIPPING BRACKETS / SKID REMOVAL

### **1. Removing Case Shipping Brackets That Are Attached To Skid**

- Remove screws holding Case Shipping Brackets to skid.
- Remove Case Shipping Brackets from Skid.
- See illustrations below. **Note:** Shipping Brackets will vary in size, shape, material and location depending upon case type and model.

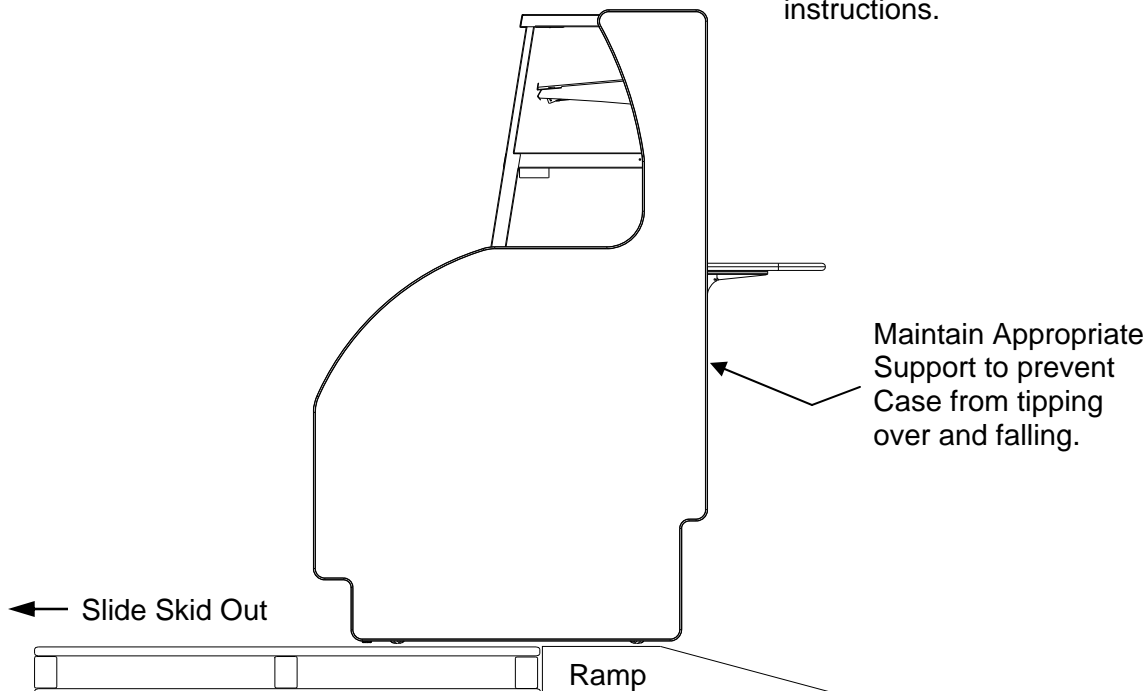


### **2. Remove Unit From Skid**

- Slide unit to rear of skid; tip backward off skid.
- Make certain to maintain appropriate support to prevent Case from tipping over and falling.

#### **Note:**

- Case can be repositioned with pallet truck when front lower panel is removed.
- Blocking may be necessary to obtain adequate height.
- Unit will have either levelers or casters.
- If unit has levelers, see next page for instructions.

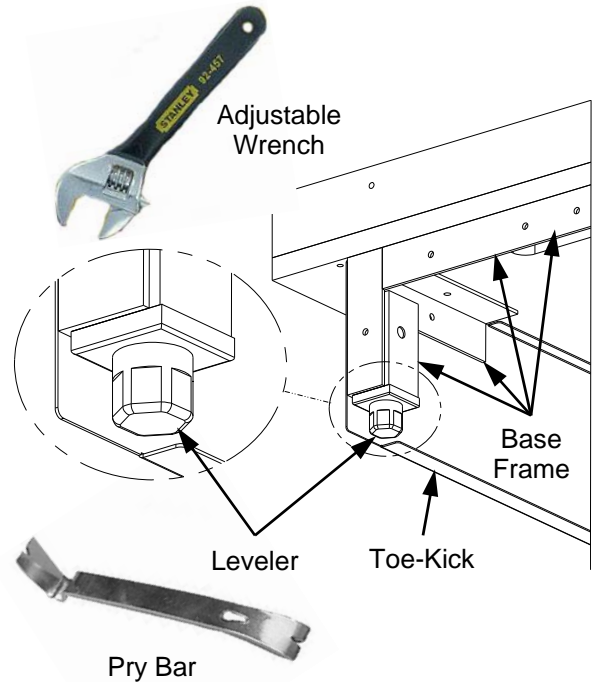


**3. Position & Align Case Alongside Other Cases**

- Before adjusting levelers, make certain that the case is in proper position and, if required, aligned with adjoining cases.
- This may require the repositioning of the case you are installing or the already positioned cases.

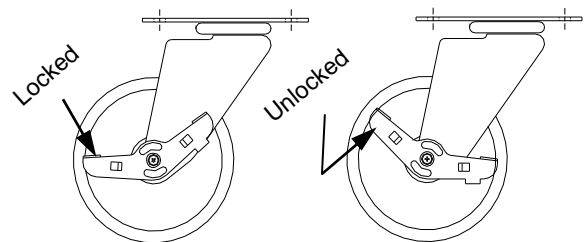
**4. Adjust Levelers**

- After case is in proper position, adjust case so it is level and plumb (see illustration at right).
- You may need to remove front and/or rear toe-kick to access levelers.
- Use adjustable wrench to adjust leveler.
- Depending upon case weight it may be necessary to use a Pry Bar to accomplish this task.
- Do not use Pry Bar on Toe-Kick as it may buckle.
- Do not use Pry Bar on End Panel as it may chip.
- Use Pry Bar ONLY on Base Frame to avoid damaging case.
- See illustration and photos at right.



**5. Cases With Casters: Lock and Unlock**

- To lock casters, press down on lever.
- To unlock casters, pull lever up.
- See illustration at right.

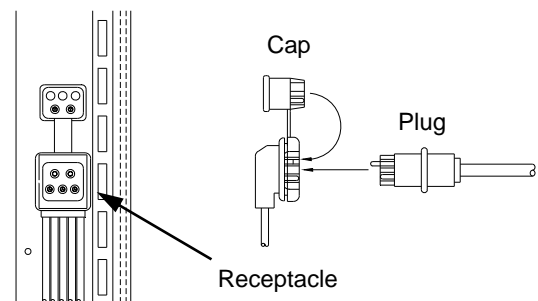
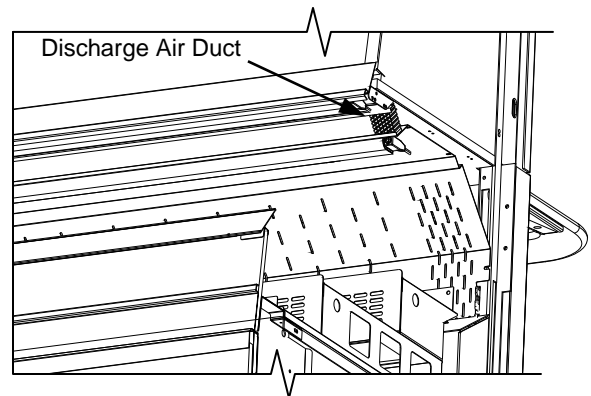
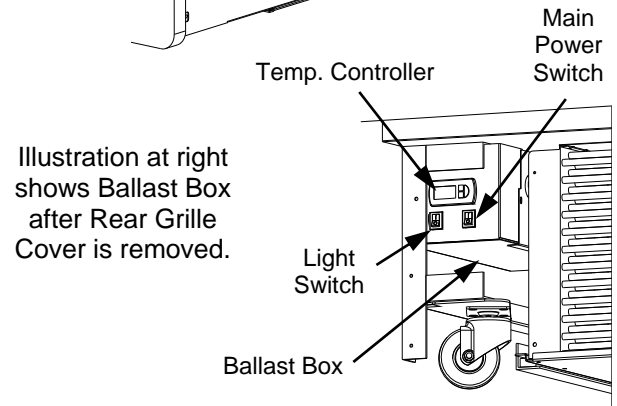
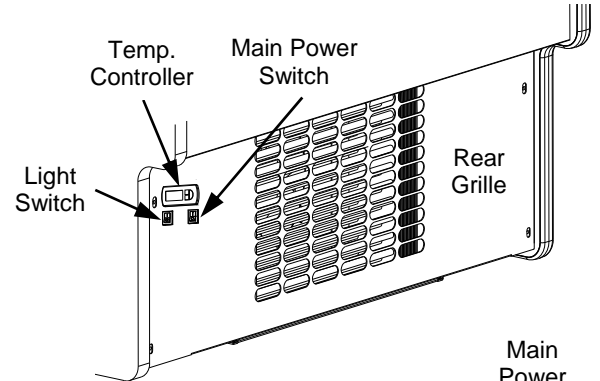
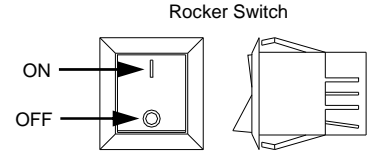


## START-UP AND OPERATION

### Merchandiser Start-Up

- Turn main power on. Switch is located at Rear Lower section of Case, next to light switch. See illustration at right.
- The temperature controller will illuminate.
- Coil fans should turn on. From inside of case, check for discharge air from front baffle, to confirm that the fans are functioning properly.
- When the case is in a start up mode or has been idle for a long period of time, the unit will require 75 minutes run-time in order to pull-down temperature.
- Turn lights on. All of the lights should come on at the same time. First time lighting may require a short warm up period for the bulbs. Slightly dim or a flickering of new bulbs is normal. If lights do not turn on, check that all of the light plugs are in. The lighting is wired in series **so all lights must be plugged in or receptacles capped** in order for the case to light.
- Be certain that nothing obstructs rear air flow. Warranty will be voided if malfunction occurs due to obstructed airflow.
- The interior case temperature reaches 2° C / 35° F to 5° C / 41°F. **Note:** The case temperature is set at the factory, as determined by the case size. The temperature is controlled by a thermostat. If a temperature setting change is required, refer to the instructions for your particular Temperature Control Programming operating section of this manual.
- *Note: Set point should be -7°C 20°F. This will maintain the product temperature range. Settings lower than 7°C / 20°F can cause food items to freeze.*

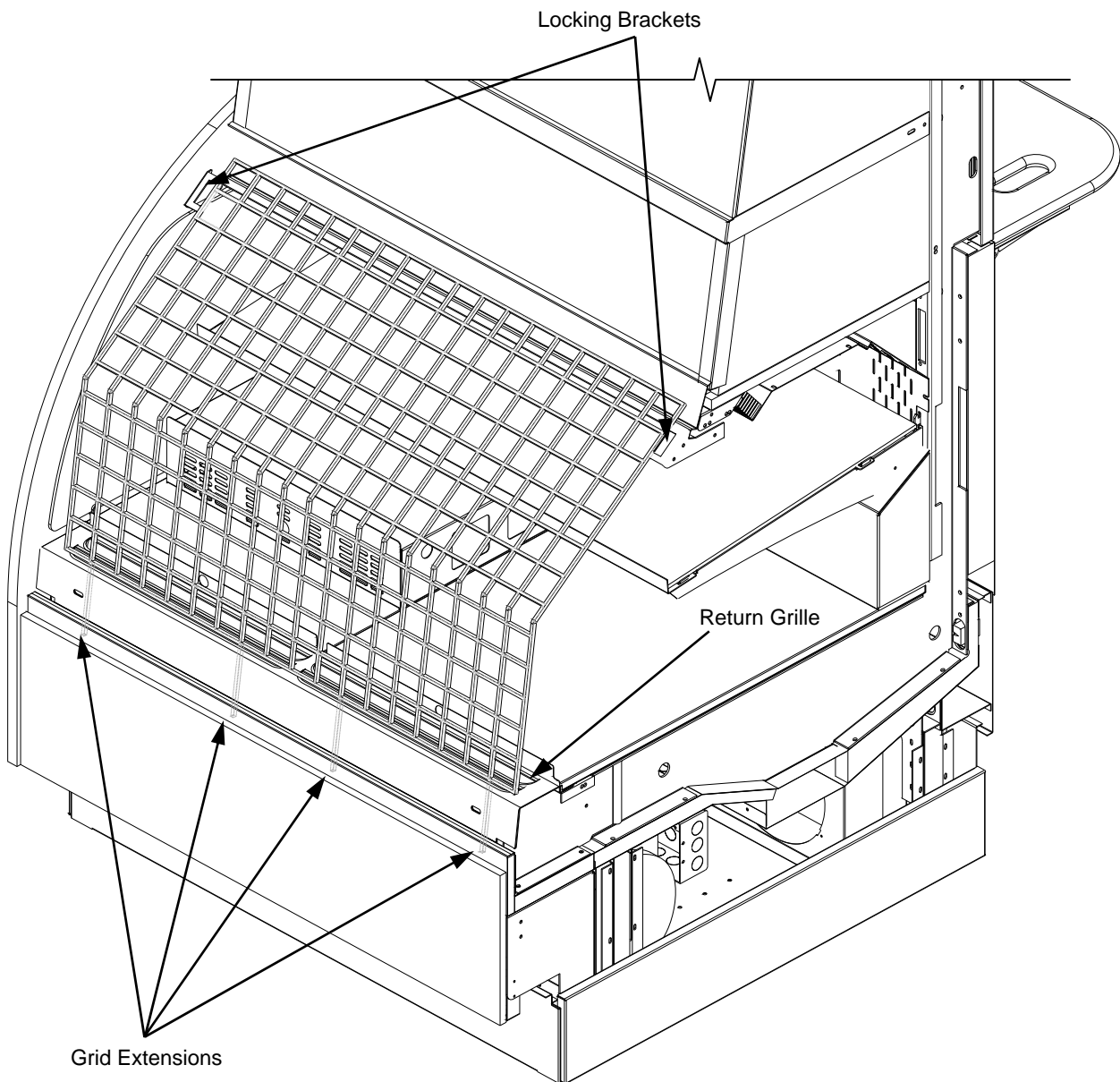
**Note:** Rocker Switch illustrated at right reflects type of Light Switch and On/Off Switch



## ANTI-THEFT SECURITY GRID

### ***Anti-Theft Grid Installation (Optional Item)***

- Position Anti-Theft Grid so that the locking rods extend down pointing towards the floor and the forming of the angled grid is pointing away from the case.
- Insert grid extensions into the forward air return lover.
- With “U” shackle released from the padlock base, insert the locking “U” of the padlocks through the stationary locking bracket.
- Rotate “U” shackle 90 degrees and pull up through the grid and secure “U” shackle into padlock base.
- Note: Illustration below may not reflect exact representation of every Case and/or Anti-Theft Grid.



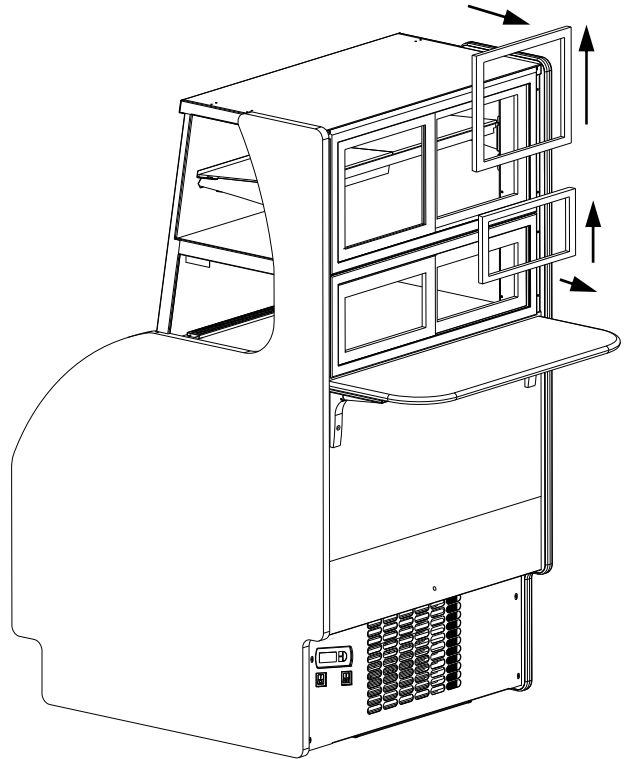


**1. Removing the Rear Doors**

- Move the rear doors toward the center of the case.
- Individually lift each door up into the upper door frame track at the top of the case.
- Pivot the bottom of the door out.
- Slip out of the upper door frame track.

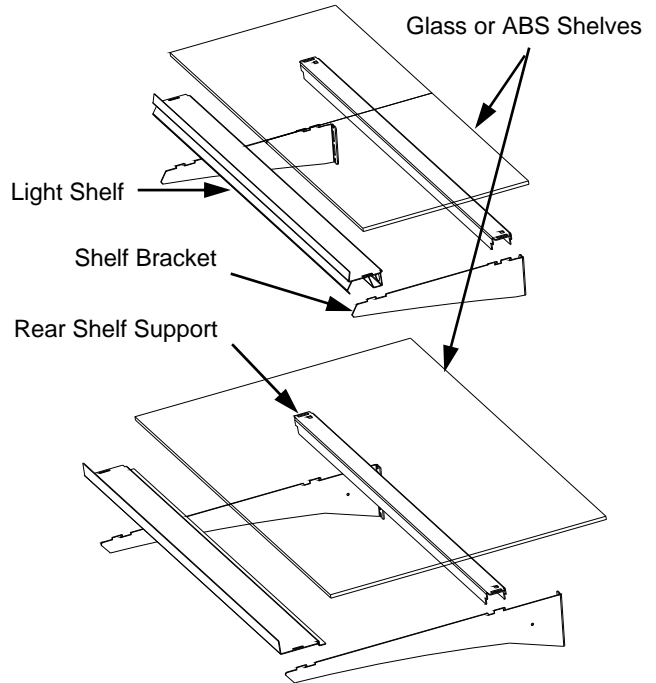
**2. Installing the Rear Doors**

- Doors are not interchangeable, and must be installed as labeled.
- **Note: Doors are labeled in the lower corners to identify their proximity to the interior of the case (inner or outer door).**
- The inner door must be installed first in the inner door track.
- Insure that the door pull handle is to the outside and to the left of the case.
- Insert the door into the upper inside track and lower door onto the inside lower track.
- Move inner door to the left.
- Install the outer door with the door pull handle to the right and the chrome door stop to the inside lower right.
- Insert the door into the upper and outer track and lower door onto the outer lower track.

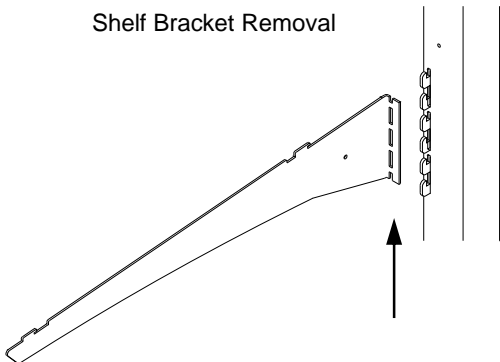


**3. Removing Interior Shelving**

- Remove the glass or ABS shelving.
- Carefully set aside.
- Unplug shelf light.
- Remove rear shelf support.
- Remove brackets.
  - Use even pressure to slide bracket up.
  - Pull forward to disengage from support pins.



Shelf Bracket Removal



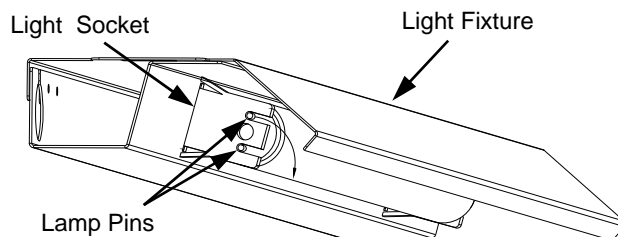
#### **4. Light Fixture**

##### Removal of lamp:

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

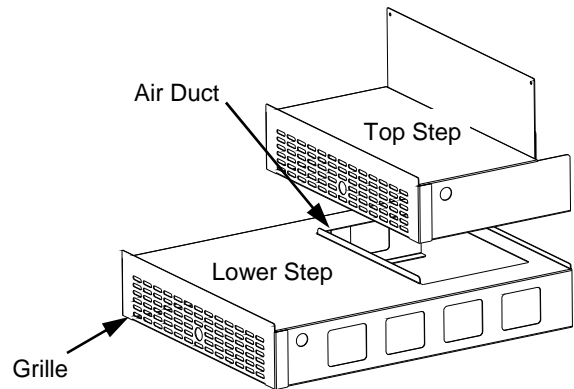
##### Installation of lamp:

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



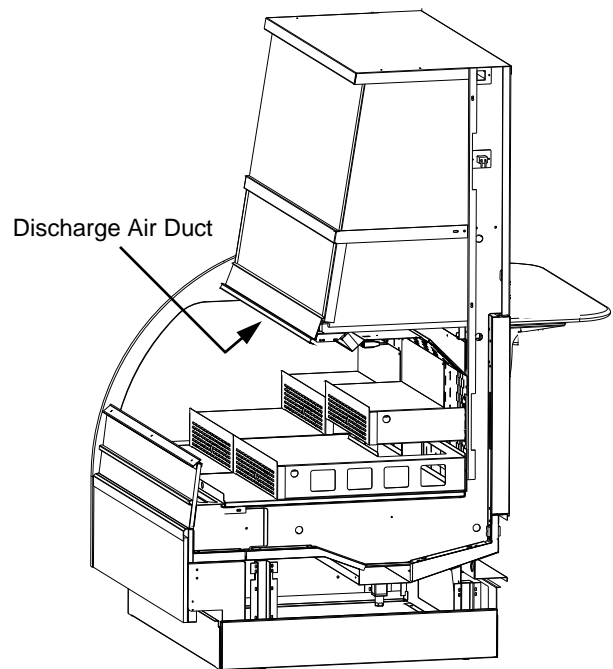
**5. Inserts Application**

- Place (large) lower step with air duct up with grill facing to the front of case.
- Place (small) top step above lower step (grille forward) and fully covering the air duct in the lower step.
- Position steps all the way to the back of case (see illustrations).



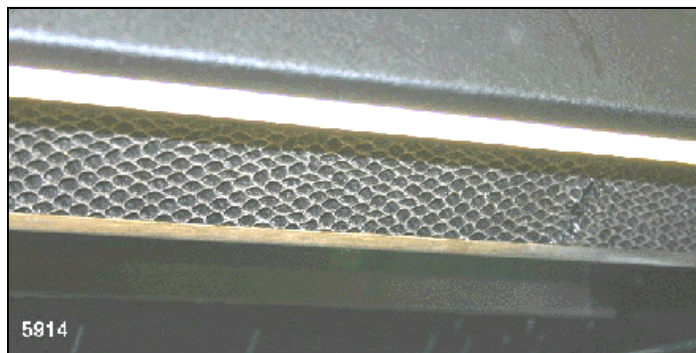
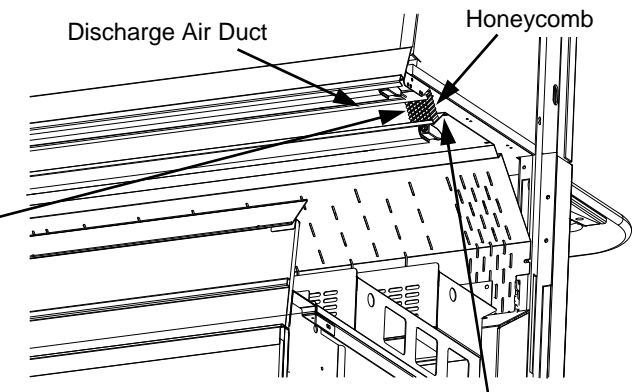
**6. Honeycomb Air Diffuser Removal**

- Honeycomb is located in discharge air duct.
- From inside the unit's lower refrigerated area, locate the two most forward screws which secure the lower light and discharge panel.
- Remove the two most forward screws and allow the panel to hang down supported by the rear screws.
- **Do not force panel lower.**
- Using long-nose pliers, pliers, wedge the instrument between the honeycomb and the end panel. Be careful to avoid scraping or marring the case.
- Apply pressure to collapse the honeycomb and pry downward and away from the lower light & discharge panel.
- Pull honeycomb out fully buy grasping with fingers and pulling downward.



**7. Honeycomb Air Diffuser Installation**

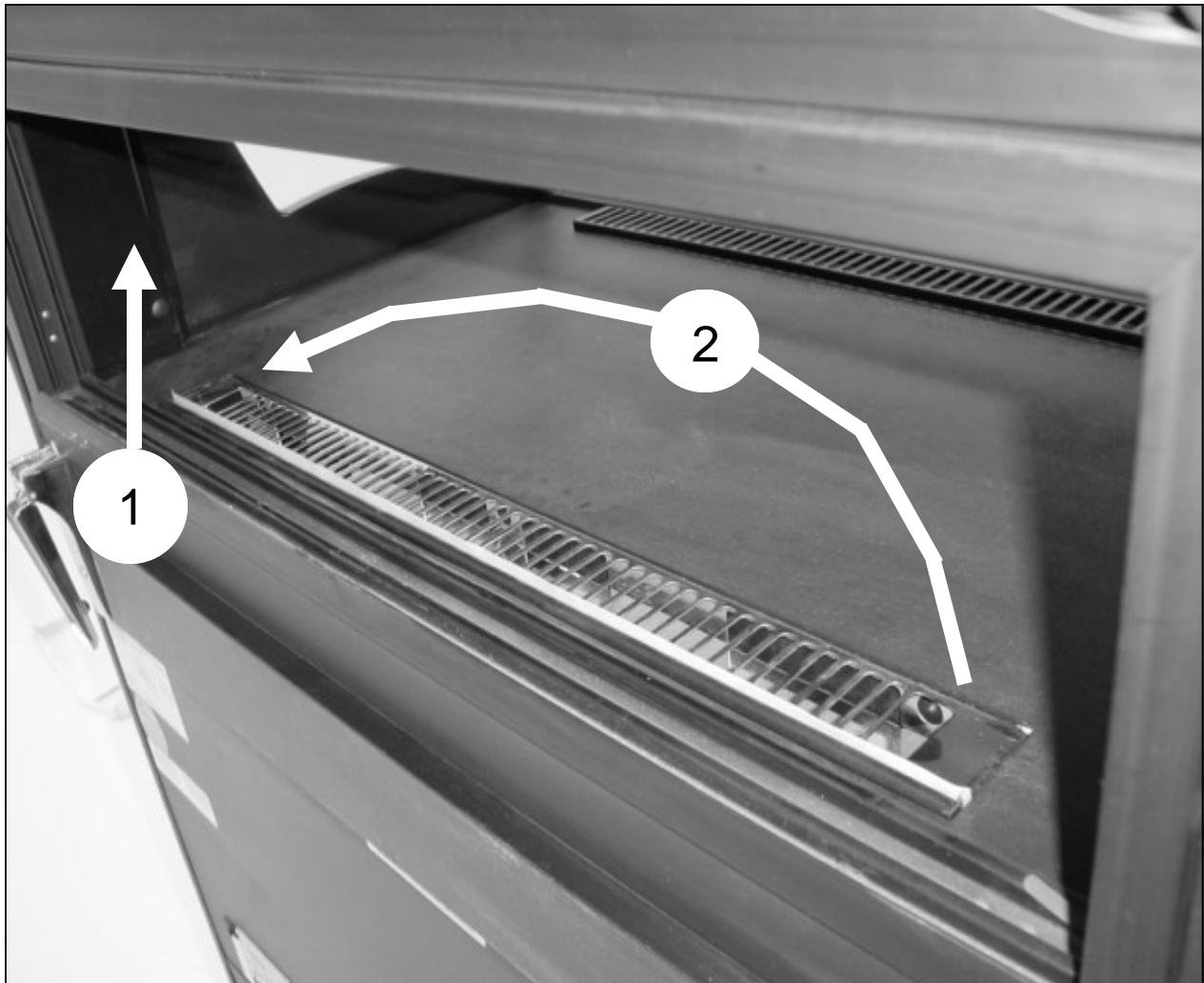
- Insert honeycomb up into honeycomb retainer first.
- Replace the two screws that secure the leading edge of lower light & discharge panel.



— Photo of Honeycomb —

**8. Middle Service Area, Ambient / Refrigerated**

- Rear baffle also serves as a collector of crumbs.
- When removing baffle, be careful to avoid tipping baffle to the degree that crumbs fall into case.
- To convert middle Service Area from Ambient to Refrigerated, follow these instructions.
  1. Lift Baffle up (out of chamber).
  2. Keeping slots upright, rotate baffle 180° (without “rolling”). See illustration below.



### **Electrical: Access and Connections**

**Warning, disconnect power before providing maintenance and service to unit.**

#### Temperature & Defrost Control

- The case temperature Set Point is set at the factory, as determined by the case size and sensor probe location.
- The temperature is controlled by a thermostat.
- If a temperature setting change is required, follow the instructions for your particular Temperature Controller in the technical information section of this operating manual.
- If service is required to the temperature control unit, call Structural Concepts Corporation. This maintenance should be performed by a certified technician.

#### Ballast access

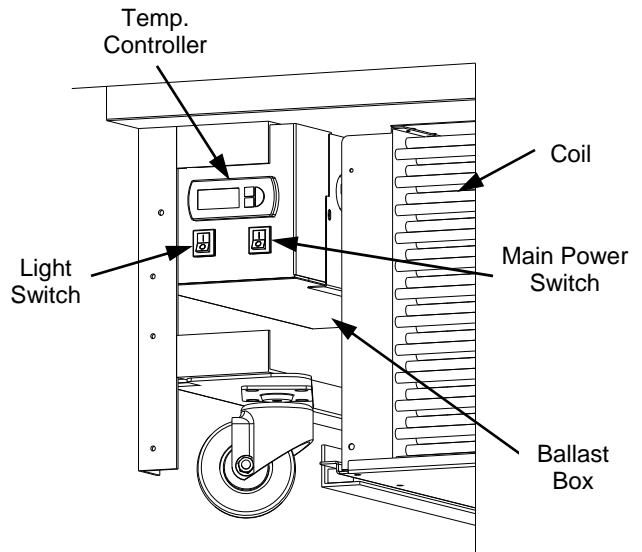
- Remove screws from rear wireway cover and slide Ballast Box out to access electrical connections and ballasts.

#### Evaporator fans and coil access

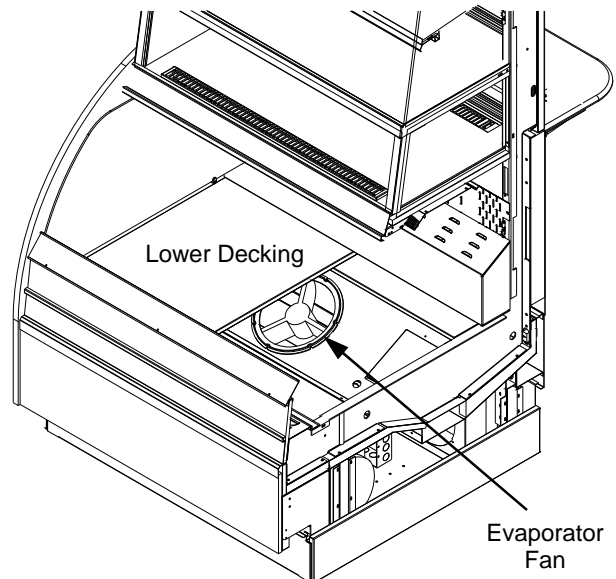
- Remove lower decking using finger hole to lift up and pulling out.

#### Removing fan assembly

- Unplug the fan.
- Remove screws from around the fan duct.



Note: Above illustration is of case rear with Rear Grille removed



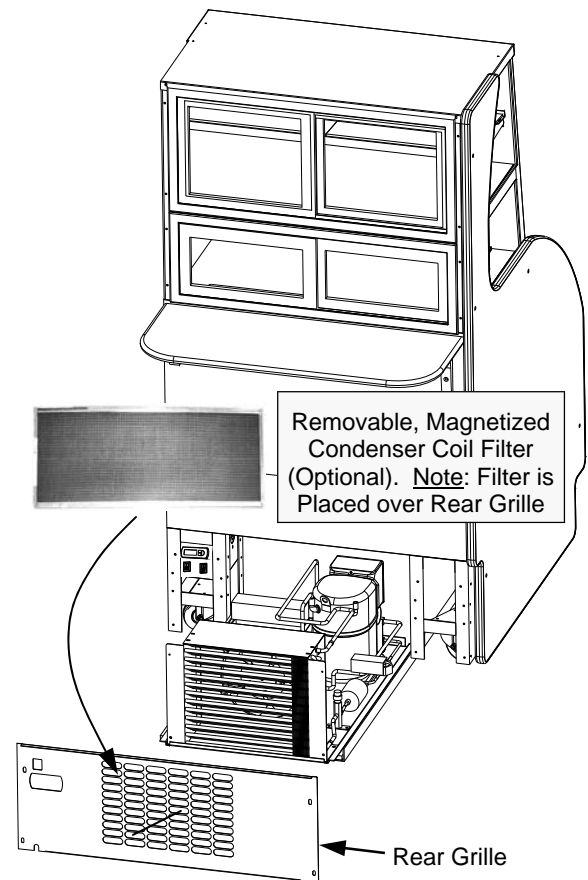
## REFRIGERATION FUNDAMENTALS

### **1. Refrigeration: Access, Connections & Removal**

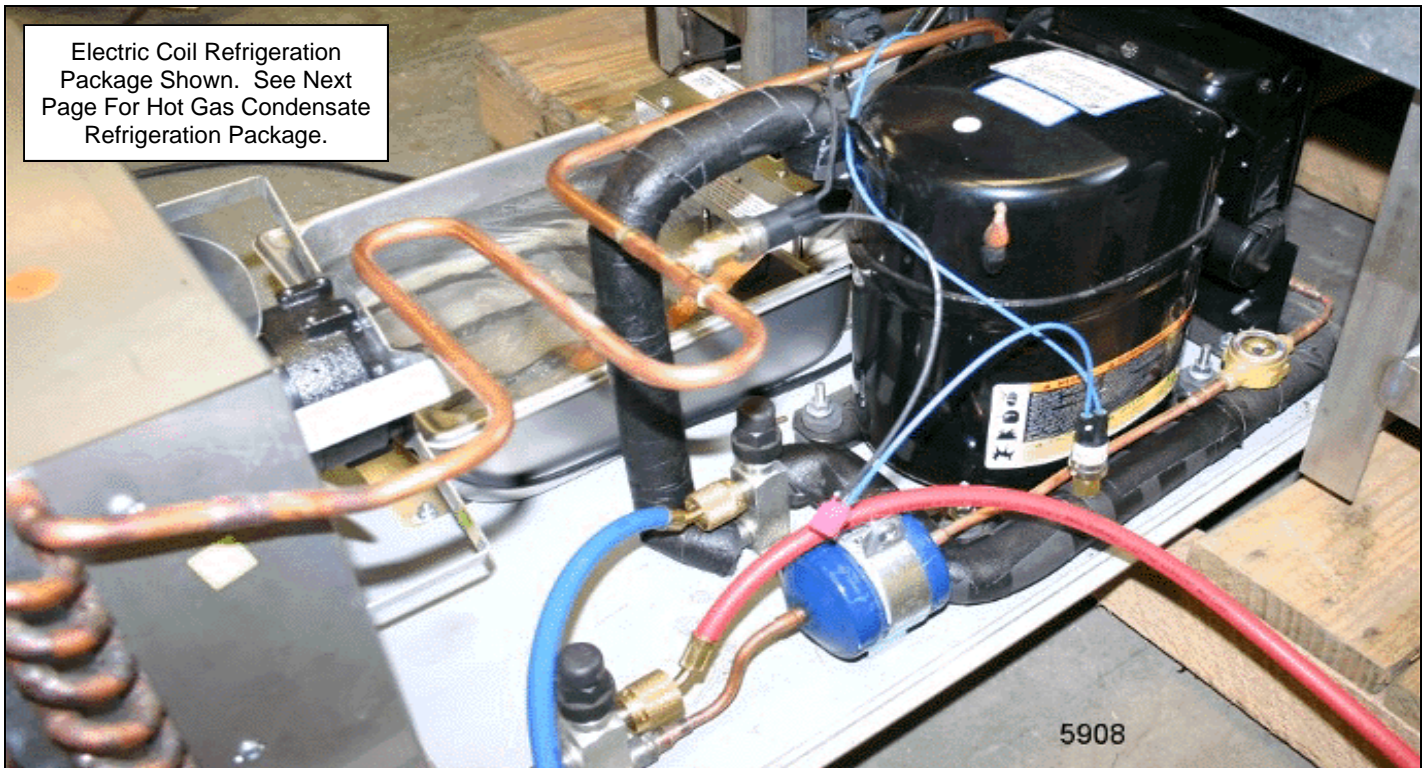
- Remove Rear Grille by removing the (4) connecting Screws .
- Insure that the flexible drain hose is guided when removed from the slot of hose support.
  - **Note: During installation** insure that the flexible drain hose is fully reinserted into the slot of hose support for proper drainage.
- **Assembly or disassembly and servicing to be accomplished by licensed refrigeration contractor.**
- The control module has “quick disconnect” electrical fittings to the LED face control and to the refrigeration unit. Insure that cords remain clear of the evaporator pans heating element.

**Warning!** While pulling or pushing unit in or out from under the case:

- Be careful to avoid damaging condensate drain.
- Use caution to avoid damage to copper refrigeration lines and hoses.
- Insure that the flexible drain hose is properly positioned for proper drainage.
- Exercise care to prevent condenser unit from dropping. There are no rollers, levelers or stops preventing condenser unit from coming entirely free from case when pulled out.

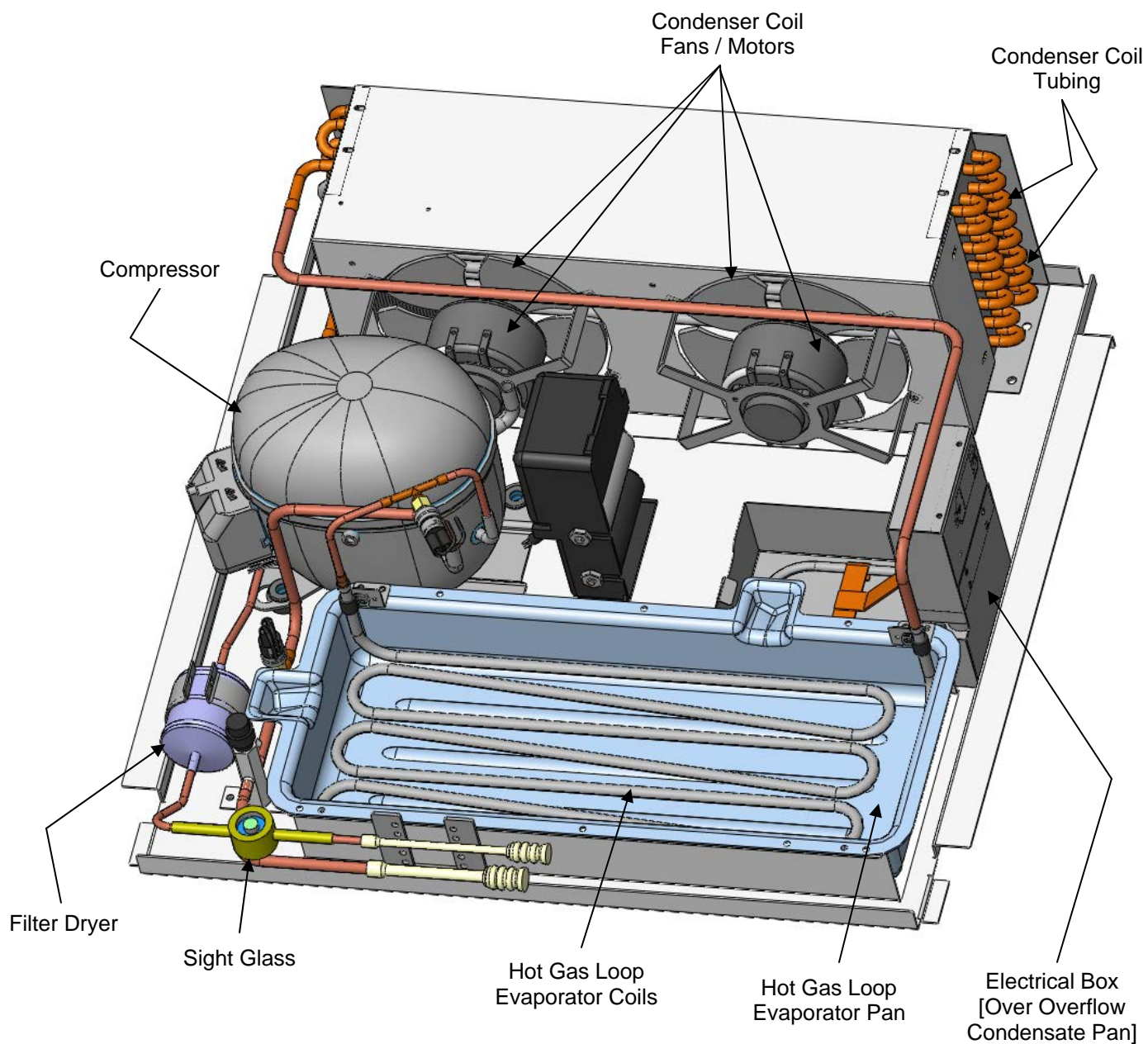


Electric Coil Refrigeration Package Shown. See Next Page For Hot Gas Condensate Refrigeration Package.




## 2. Refrigeration Package Configuration

- Refrigeration package shown below is designed for Model C3Z4867.5884A.
- Note: Your particular compressor may have slightly different refrigeration package/layout.
- See previous page for electric coil condensate refrigeration package.



**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.





888 E. Porter Rd · Muskegon, MI 49441

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

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

**SAMPLE ONLY**


  3048256 CONFORMS TO UL STD 471 CONFORMS TO NSF STD 7 CERTIFIED TO CAN/CSA STD C22.2 NO 120	ELECTRICAL RATING REFRIGERANT DESIGN PRESSURE MINIMUM CIRCUIT MAXIMUM OVERCURRENT	120/1/60 24A R404A AMOUNT ?? OZ HIGH 450 LOW 200 30A 30A
---	---	--

**SAMPLE ONLY**

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

**SAMPLE ONLY**

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




888 E. Porter Rd · Muskegon, MI 49441

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

120 VOLTS 60 HZ SINGLE PHASE 1.84AMP

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

**SAMPLE ONLY**

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

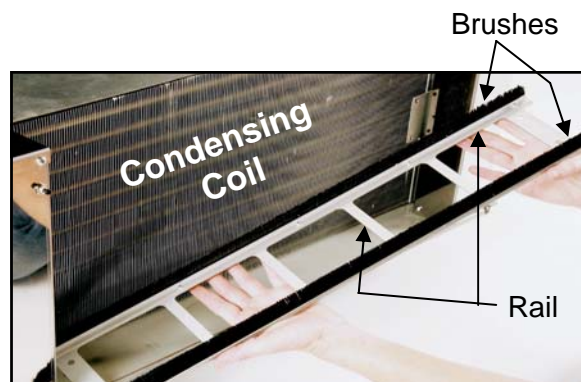
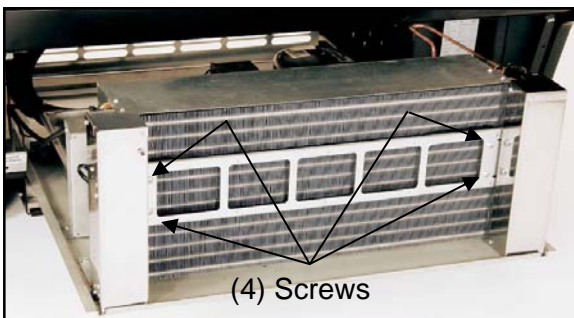
----- Sample Serial Label For Non-Refrigerated Case -----



**CLEANING SCHEDULE - BY STORE PERSONNEL: DAILY "D" / WEEKLY "W" / MONTHLY "M"**

Cleaning	D	W	M	Task
Clean Case Exterior	X			Clean side glass, front glass, top glass and sliding rear doors (glass) with household or commercial glass cleaner and soft cloth.
	X			Clean wood, laminate and painted surfaces with a warm soap and water solution and soft cloth. Never use wire cloth or abrasive cleaners on case.
		X		Removable, magnetized condenser coil filter (attached to outside of condenser coil): <ul style="list-style-type: none"> <li>• Always clean air filter AT LEAST weekly.</li> <li>• Remove from case. Submerge in warm, soapy water. Use soft-bristled brush to remove dust, grease and grime that can collect on filter. Rinse thoroughly. After filter has dried, return to case.</li> <li>• See <b>REFRIGERATION FUNDAMENTALS</b> section in this manual for illustration of magnetized condenser coil filter and its attachment location to grille.</li> </ul>
			X	Remove rear doors and clean with a household or commercial glass cleaner. Wipe down door tracks with a warm soap and water solution and soft cloth.
Clean Case Interior	X			The deck can be wiped down with a warm soap and water solution and soft cloth.
		X		Remove the deck and clean with soap and water solution and soft cloth.
		X		Clean the acrylic air deflector (at case front) with soap and water solution and soft cloth. Never use ammonia-based cleaners on acrylic or Plexi-glas.
		X		To clean crumbs and residue from upper section, remove baffle from case, brush out crumbs or residue. Wipe down with clean rag dipped in mild soap and water solution.
			X	<u>Lower Section Only</u> : Remove step assembly from unit and clean with mild soap and warm water solution and brush. Dry thoroughly and return to case. <u>Caution!</u> Remove (and return) step assembly carefully to avoid scratching or marring inside of case.
			X	<u>Condenser unit coils at case rear</u> : Remove rear panel (by sliding up and away from case). Use an industrial strength vacuum with brush. Clean dust collecting on the condenser coils. <u>Caution!</u> Do not damage fins on condenser coil while cleaning.
			X	<u>Under-case cleaning</u> : Remove front and/or rear toe-kick. Use vacuum with hose attachment to clean under case.

PREVENTIVE MAINTENANCE	FREQUENCY	INSTRUCTIONS
Case Exterior	Monthly	<p><b>Condensing Coil:</b></p> <ul style="list-style-type: none"> <li>• Remove rear grille (by removing 4 screws).</li> <li>• Use air pressure or industrial strength vacuum; clean dust and dirt that may collect on the Condenser Coil. See illustration below.</li> <li>• <b>Caution! Coil fins are sharp. Handle with care!</b></li> <li>• Replace Rear Grille to case (4 screws).</li> <li>• See illustration below.</li> </ul>
	Quarterly	<p><b>Optional Clean Sweep™ Condensing Coil:</b> <i>Disconnect power from case before cleaning Clean Sweep™ Condenser Coil!</i></p> <ul style="list-style-type: none"> <li>• Remove Rear Grille (by removing 4 screws).</li> <li>• Slide/Roll out condensing unit assembly.</li> <li>• Remove the four (4) screws holding the Clean Sweep™ rails 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 Unit Assembly back under case.</li> <li>• Replace Rear Grille to case (4 screws).</li> <li>• See photos below.</li> </ul>



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

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

PREVENTIVE MAINTENANCE	FREQUENCY	INSTRUCTIONS
Case Exterior	Quarterly	<p><b>Condensate Package:</b> <i>Disconnect power from case before cleaning Condenser Coil!</i></p> <ul style="list-style-type: none"> <li>• Slide/Roll out from under case.</li> <li>• Use moist cloth to wipe off dust &amp; debris that collects on various parts.</li> </ul>
	Quarterly	<p><b>Under Case Cleaning:</b> Once refrigeration package is clear of unit, vacuum under case to remove all dust and dirt that may collect under case.</p>
Case Interior	Quarterly	<p><b>Drain, Coil, Fan Blades, Motors, Brackets:</b></p> <p><i>Disconnect power from the case before cleaning the Drain, Coil, Fan Blades, Motors and Brackets!</i></p> <ul style="list-style-type: none"> <li>• Remove Decking, Sub-Deck and Fan Shroud.</li> <li>• Use vacuum to clean Evaporator Coils.</li> <li>• Clean Tub, Coil and Drain with warm water, clean cloth, brush and mild soap solution.</li> <li>• See below for specific tub flushing instructions.</li> <li>• Remove any debris that may clog drain.</li> <li>• Clean Fan Blades, Motors and Brackets by wiping down with moist cloth.</li> </ul>
	Quarterly	<p><b>Tub:</b></p> <p><i>Disconnect power from the case before cleaning the tub!</i></p> <p>Vacuum tub under deck or flush with water if necessary. To flush out the tub, disconnect power to the case. Remove the deck and fan shroud. Direct drain to floor drain or a bucket and hose out the tub. Run hose into the drain to flush out debris.</p>
	Quarterly	<p><b>Honeycomb:</b> Remove the honeycomb. Vacuum, then clean with warm water and soap. See instructions in case operation section of this manual. See <b>PREVENTIVE MAINTENANCE [TO BE PERFORMED BY TRAINED SERVICE PROVIDER] - Page 3 of 3</b> in this manual for specifics.</p>

**Preventive maintenance should be performed every 30 days unless conditions warrant a more frequent replacement cycle.**

**1. Honeycomb Air Diffuser Removal**

- A. Wedge non-metallic device of suitable strength (such as a ballpoint pen) between honeycomb and end panel.
- Caution!** Do not dislodge the heating wire (that helps prevent condensation).
- B. Apply pressure to collapse the honeycomb to allow it to be pulled out of honeycomb retainer.
- C. Pry downward and away from honeycomb retainer.

*Clean honeycomb with warm water and soap solution. Submerge if necessary. Use brush to dislodge stubborn or sticky residue. Dry by using vacuum's 'blow mode'.*

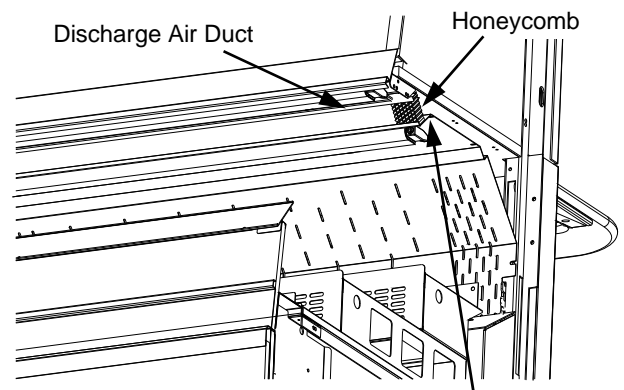
**2. Honeycomb Air Diffuser Installation**

- D. Squeeze honeycomb into the honeycomb retainer.
- E. Carefully slide honeycomb into place.
- F. Adjust honeycomb so that it fits flat against retainer. It must not be wavy or out of position.

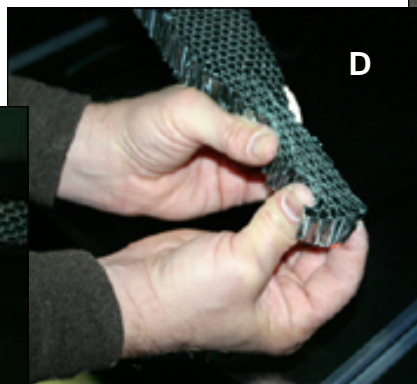
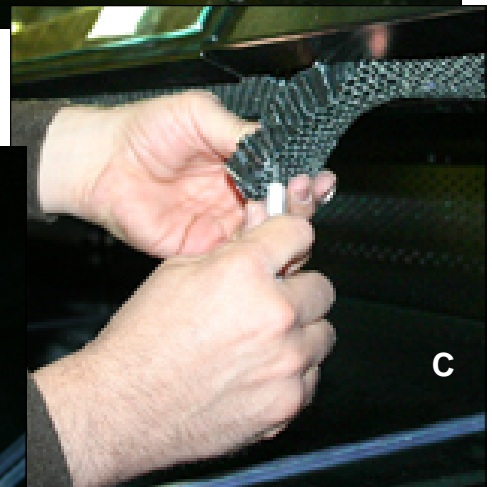
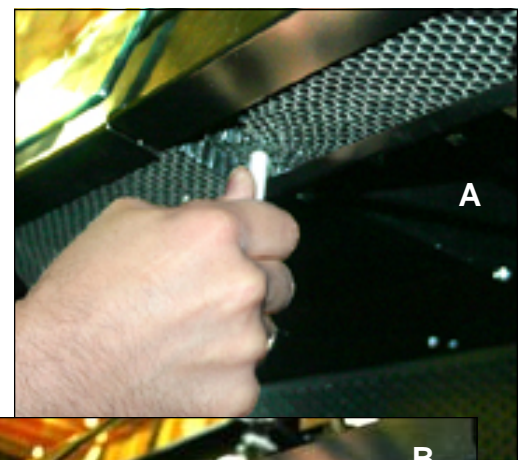
*Note: For honeycomb air diffusers in other locations, these same general instructions apply.*

**3. Air Duct - Upper Section (Top-Right Illustration)**

- Depending upon model, Upper Section Air Duct may be removable for cleaning. If so, simply lift Air Duct up and out of chamber to access area to clean.
- If Upper Section Air Duct is not removable from case, Honeycomb removal will allow access to area.
- Clean with brush or vacuum with brush attachment.
- Wipe down with moist cloth.



Remove Two Front Screws



## TROUBLESHOOTING [GENERAL OVERVIEW]

<b>Product is Drying Out</b>	TSP*: Check the relative humidity in the store.
<b>Doors/Glass Won't Shut Properly</b>	TSP*: Confirm that the case is aligned, level and plumb. Check that residue or sticky substances are not preventing proper closure.
<b>Case Not Properly Lining Up</b>	TSP*: See <b>Installation</b> section of Manual for instructions on properly aligning case and adjusting levelers (alongside other cases).
<b>System is not Operating</b>	Confirm that the utility power is on.
	Confirm that the MAIN power switch is on.
	TSP*: Check the circuit breaker box for tripped circuits.
	If cord is used, confirm that unit is properly plugged in.
<b>Condensing Unit Not Operating.</b>	Controller is in defrost mode (not an alarm). Compressor is running in a normal condition. See the Temperature Controller section of this Manual.
	Check that the power is turned on.
	TSP*: Review factory time settings on the Temperature Controller.
<b>Case Lights Not Working</b>	Be sure <b>ALL</b> lights are plugged in or receptacles capped.
	Check bulbs for proper installation and connection.
	Check for burned out bulbs.
	Clean dirt and dust from the bulbs to prevent flickering.
	After performing all other checkpoints, if lights are still not working check for faulty ballasts; this should be performed by a certified electrician.
<b>Fans Not Working</b>	TSP*: Check that fans are plugged in at the fan shroud.
	TSP*: Check for foreign material obstructing fan performance.
<b>Not Holding Temperature</b>	The temperature will change during defrost mode but will return to normal.
	Warm product may have been added to the case. <b>Note:</b> Product must be pre-chilled to 41 °F [5 °C] or less prior to being placed in merchandiser.
	Discharge air must not be disrupted or blocked by product.
	TSP*: Check that the coil fans are working.
	TSP*: Check the evaporator coil for ice build up.
	Check that the case is not in the sun or near a heat or air-conditioning vent.
	Check that case is <b>NOT</b> located near outside doors. Wide temperature fluctuation can challenge case's ability to hold internal product temperatures.
	Check that the condenser coil is clean (self contained unit).

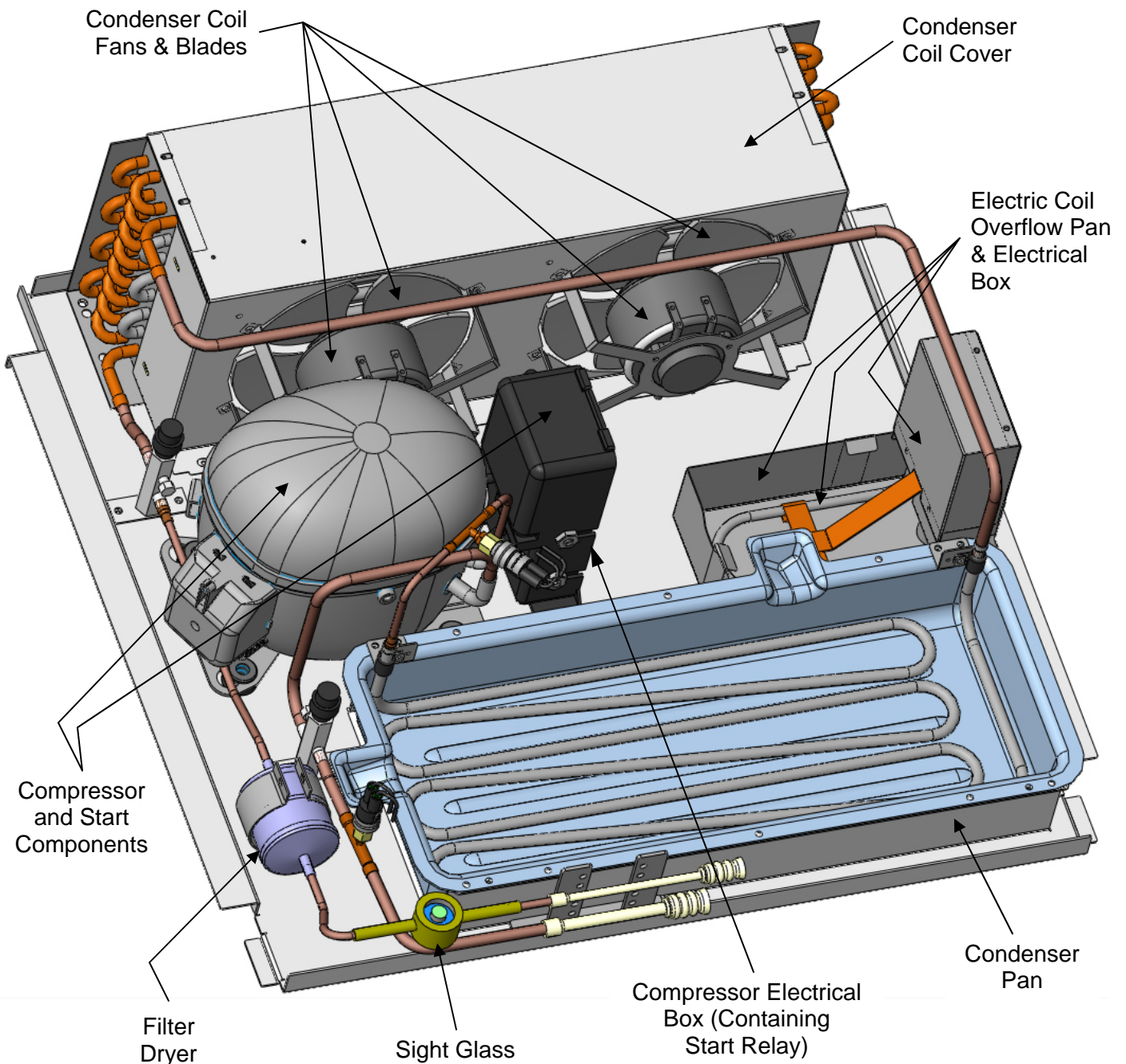
\*TSP = Trained Service Providers

## TROUBLESHOOTING: REFRIGERATION PACKAGE OVERVIEW

### Refrigeration Package / Compressor Component Locations

- Illustration below shows refrigeration package, compressor, condenser pan, fans, blades, etc.
- See pages that follow for troubleshooting instructions.
- Refrigeration unit pulls out from back of unit for service.
- Only refrigeration contractors are to access refrigeration package.

**NOTE: THE BELOW ILLUSTRATION MAY NOT EXACTLY REFLECT YOUR PARTICULAR CASE'S FEATURES OR OPTIONS.**



# CAREL

**ir33 platform**  
 Integrated Electronic  
 Microprocessor Controller



## Programming The Instrument

### How To Modify The Setpoint

**Set** Press and hold the "SET" key for at least 1 second.

### How To Modify The Defrost, Differential Or Other Parameters

**Prg mute** **Set** 1. Press & hold "Prg" and "SET" keys together for at least 5 seconds; the display will show the number "0", representing the 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.

### 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 ▼** How To Activate Manual Defrost

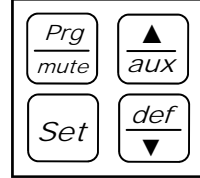
Press and hold the "def" key for at least 5 seconds.

### How To Activate / Deactivate Auxiliary Output

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

### How To Reset Any Alarms With Manual Reset

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



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

**Prg mute** **Set** 1. Press and hold "Prg" and "SET" keys together for at least 5 seconds; display will show "0", representing 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 Celcius (°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.**

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## User Interface - Display

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

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

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



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## Summary Table of Operating Parameters

CODE	PARAMETER	UOM*	TYPE	MINIMUM	MAXIMUM	DEFAULT
/5	Select Celcius (°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  
PHONE NUMBER: 1.800.433.9489 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.** SCC warrants that if any Goods are found by an authorized representative of SCC not to be of good material or workmanship within one year of the date of shipments SCC will, at its option after inspection by an authorized representative, replace any defective Good or pay the reasonable cost of replacement for any such defective Goods, provided that written notice of the defect is given to SCC within 30 days of the appearance of such defect. If notice is not given within such period, any claim for breach of warranty shall be conclusively deemed to have been waived and SCC shall not be liable under this warranty. If SCC is unable to repair or replace the defective Goods, SCC shall issue a credit to the Purchaser for all or part of the purchase price, as SCC shall determine. The replacement or payment in the manner described above shall be the sole and exclusive remedy of 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 and shall be 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.

**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 its 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.

**Limit of Liability.** The limit of liability of SCC toward the exchange cost of the original condensing unit, F.O.B. SCC, Norton Shores, MI, of each motor-compressor assembly replaced during the warranty shall not exceed manufacturer's current established wholesaler's exchange price and in no case shall the labor of removing or replacing the motor-compressor or parts thereof be the responsibility of SCC.