



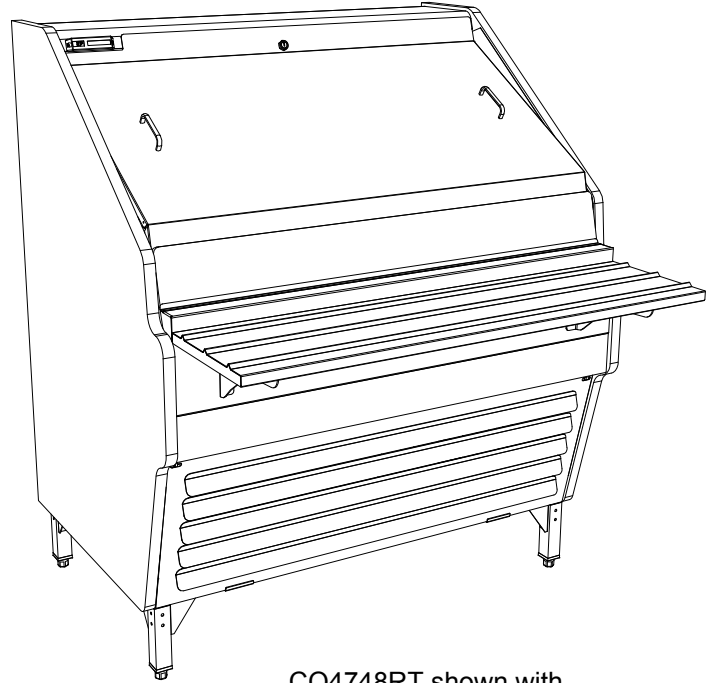
# INSTALLATION AND OPERATING MANUAL

PN 99503

## OPEN REFRIGERATED SELF-SERVICE MERCHANDISER



CO4748R



CO4748RT shown with  
Optional Security Cover



Case shown with  
Tray Slide System

Model CO4748R: 47 1/4"L\* x 38 1/8"D x 50 1/8"H  
CO4748RT: 47 1/4"L\* x 38 1/8"D x 50 1/8"H

\*Includes end panels.



**Structural**

Concepts

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**OVERVIEW**

- These Structural Concepts merchandisers are designed to merchandise packaged products at 41 °F [5 °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.

**TYPE**

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 Type 1 or Type 2, 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 and WIRING DIAGRAMS**

- See next page for **PRECAUTIONS** 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**



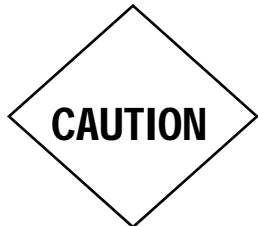
**WARNING**  
Condenser Pan is Hot!  
Disconnect and allow to cool before cleaning or removing from case.

**PRECAUTIONS**

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

**WIRING DIAGRAM**

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



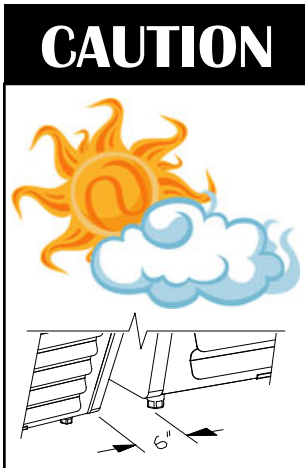
**CAUTION! LAMP REPLACEMENT GUIDELINES**  
 LED lamps reflect specific size, shape and overall design. Any replacements must meet factory specifications. Fluorescent lamps have been treated to resist breakage and must be replaced with similarly treated lamps.



**CAUTION! GFCI BREAKER USE RECOMMENDATION**  
 If N.E.C. (National Electric Code) or your local code requires GFCI (Ground Fault Circuit Interrupter) protection, the use of a GFCI breaker is strongly recommended.



**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.).
- Tile floors, low ceilings or small rooms increase noise level. Whisper Cool compressor blankets or remote units resolve noise level issues.
- Keep at least 8-inch clearance above unit for air discharge (self-contained units only).



**CAUTION! CHECK EVAPORATOR PAN POSITION AND PLUG**  
 Water on flooring can cause extensive damage!  
 Before powering up unit, check the following:

- Evaporator pan **MUST BE** positioned directly under condensate drain.
- Evaporator pan plug **MUST BE** securely plugged into receptacle.

## **1. Shipment Condition**

- Before and during unloading check all equipment for damage.

## **2. Damage Discovered During Delivery**

- 3rd Party Carrier: Describe damage on freight bill and obtain signature of driver. Carrier will supply necessary claim forms. If these steps are not taken, carrier may refuse your claim.
- Prepaid and Add: Contact carrier (and follow same procedure as with 3rd party carrier). Also contact Structural Concepts at 1-800-433-9489.

## **3. Damage Discovered After Uncrating**

- 3rd Party Carrier: Contact carrier within 10 days of delivery for their procures; retain all packaging. If these steps are not taken, carrier may refuse your claim.
- Prepaid and Add: Contact carrier (and follow same procedure as with 3rd party carrier). Also contact Structural Concepts at 1-800-433-9489 within 10 days of delivery.

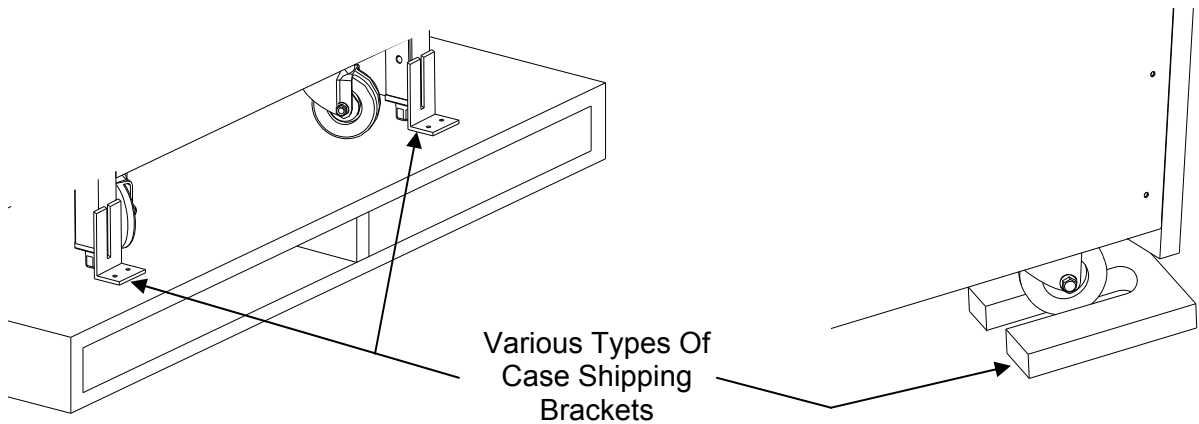
## **4. Shortages**

- If a shortage exists (and it is the responsibility of Structural Concepts) call 1-800-433-9489. Structural Concepts will acknowledge shortages within 10 days from receipt of equipment.
- If a shortage involves the carrier, notify carrier immediately and request an inspection.

## CASE REMOVAL FROM SKID [LEVELERS OR CASTERS]

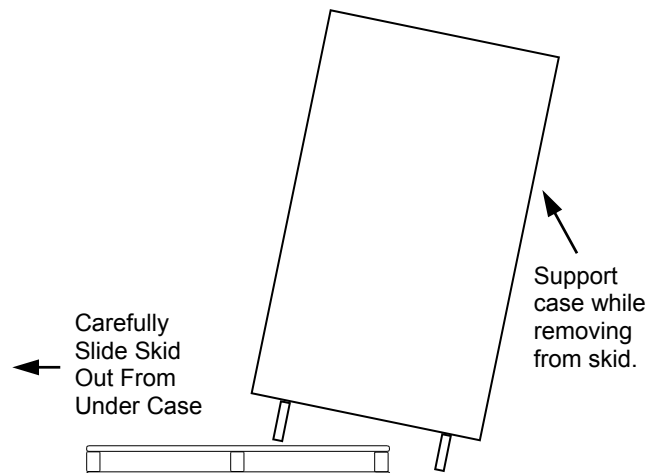
### 1. Removing Case Shipping Brackets That Are Attached To Skid

- 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.



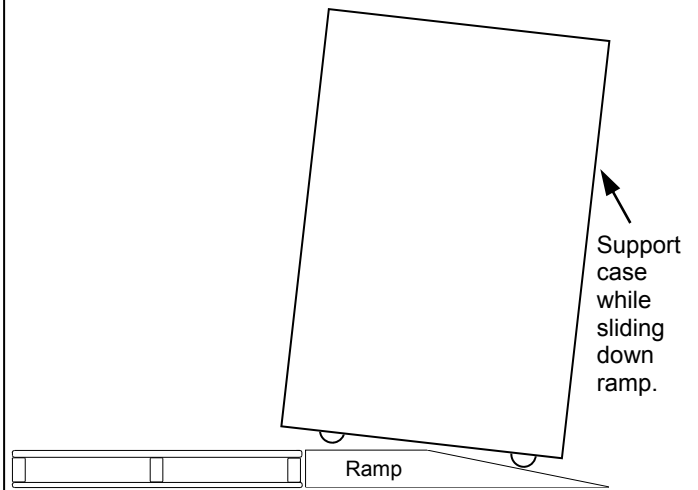
### 2. Remove Case (With Levelers) From Skid

- To prevent damage, support case while sliding it toward edge of skid.
- When case is at edge of skid, carefully lower to floor (so two levelers rest on floor).
- Carefully slide skid out from under case.
- After removal of case from skid, place into position.
- Note: Illustration below reflects general outline of sample case and does not reflect any particular model or options).



### 3. Remove Case (With Casters) From Skid

- Place ramp up against skid (to allow case to smoothly slide off from skid).
  - Maintain support of case at all times or center of gravity may cause case to fall.
  - Unlock Casters. Slide unit to rear of skid. Slide down ramp and off from skid.
- Note: Illustrations reflect general outline of sample case and may not reflect your particular model or options).

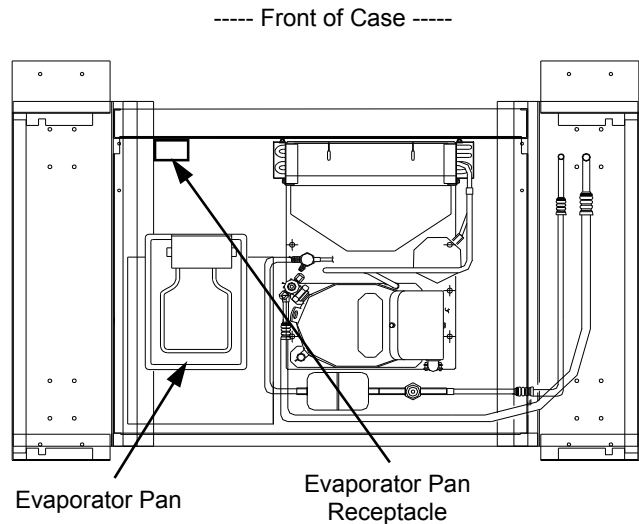


## INSTALLATION

### 1. Merchandiser Set-Up

Self Contained refrigeration units.

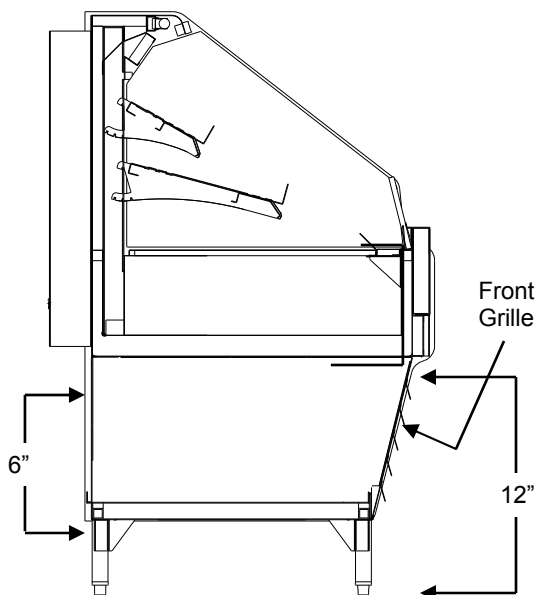
- Remove rear grille and install the manufacturer provided evaporator pan.
- Insure evaporator pan is plugged in receptacle inside base. Position pan under PVC drain and on base frame.
- Install rear grille.



Top View of Condenser Unit & Base

### 2. Ventilation and Clearance

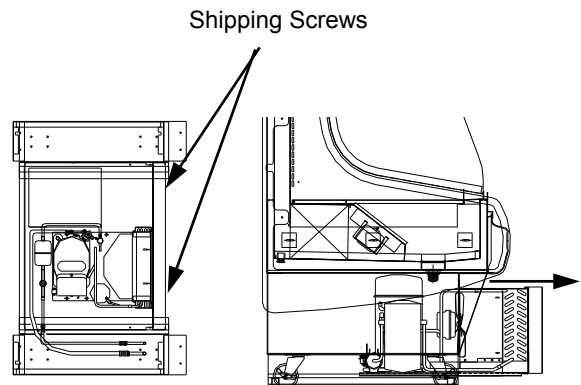
It is recommended that **Self-Contained** refrigerated cases maintain a airflow clearance of approximately 6" at the rear to 12" in the front of the case. Obstruction or restriction of air can void warranty.



### 3. Removing Shipping Screws

Plastic glides are mounted to the unit base to assist in sliding the condenser out for access.

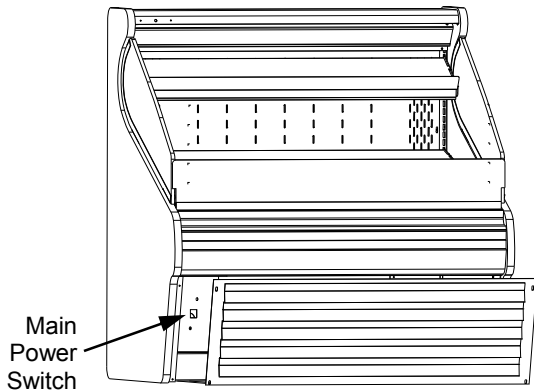
- Remove the front grille by removing the screws located in each of the corners.
- Remove the shipping screws located at base of condenser frame.



## INSTALLATION, CONTINUED

### 4. Merchandiser Start-Up

- To turn on the main power located behind the front grille. Main power switch is on left hand side of base. Replace front grille.



### Merchandiser Start-Up Continued

Supply power will start evaporator coil fans, and the compressor motor.

- From front of case, raise deck pans and check to see that the coil fans are all functioning properly.
- Replace front grille by inserting screws in locations provided.
- Check lighting.
- Light switch is in the interior of the case above and to the right side of the top shelf.

*Note: All lights should come on at the same time. First time lighting may require a short warm up period for the bulbs. Slightly dim or a flickering of new bulbs is normal. If lights do not turn on, check all of the plug connections.*

### 5. Use Butyl / Silicone To Adjoin Multiple Units

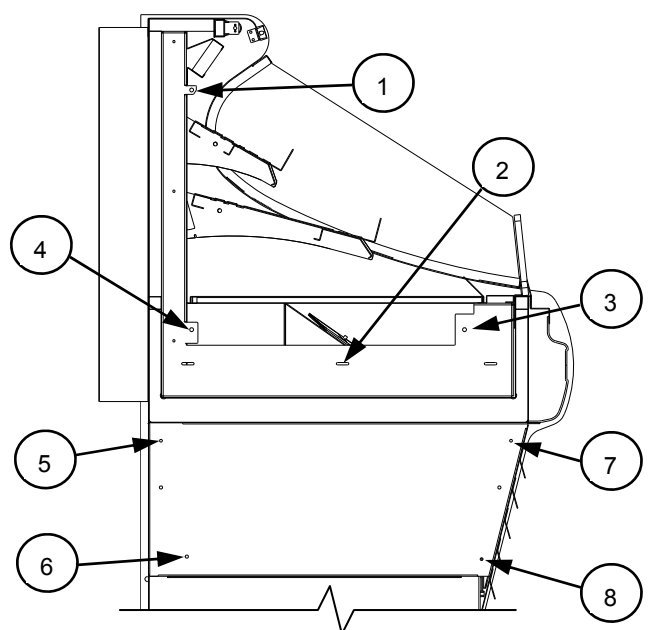
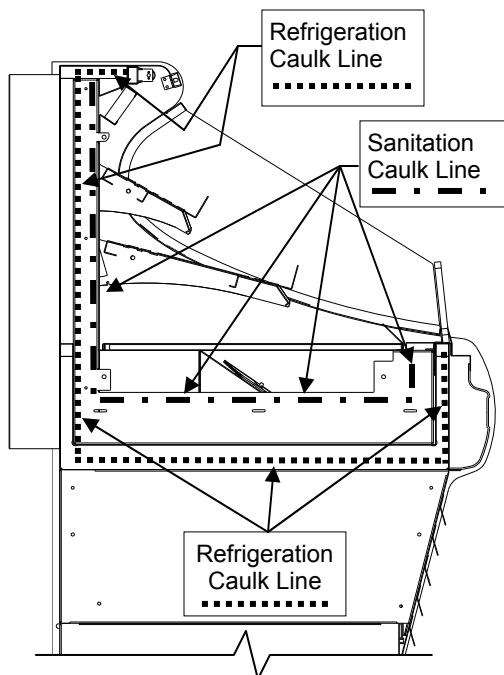
Warranty will be voided if improper sealant is used. Lay a generous bead of caulk/sealant as specified below.

- Use Industrial grade butyl caulk on all areas not visible.
- Use industrial grade silicone sealant on visible areas.
- Form Two (2) Caulk/Sealant Lines:** Sanitation and Refrigeration (see illustration below).
- Caulking/sealing tub prevents air from escaping thru seams between cases (which may cause condensation problems and reduced refrigeration efficiency).
- Caulking/sealing also prevents water from seeping between cases to the floor.
- Note: Place thicker bead of caulk around drain.

### 6. Bolting Adjoined Units

Units to be secured together indicated below. Level and align as necessary.

- Bolt Holes are at 8 locations:
- Use 1/4-20 x 1" bolts and nuts for holes 1-4.
- Use #8-32 x .37" bolts and nuts for holes 5-8.
- Remove deck pan assembly to access holes 2, 3, & 4.
- Before fully reassembling components, leak-check case-to-case joint by pouring water on seam.

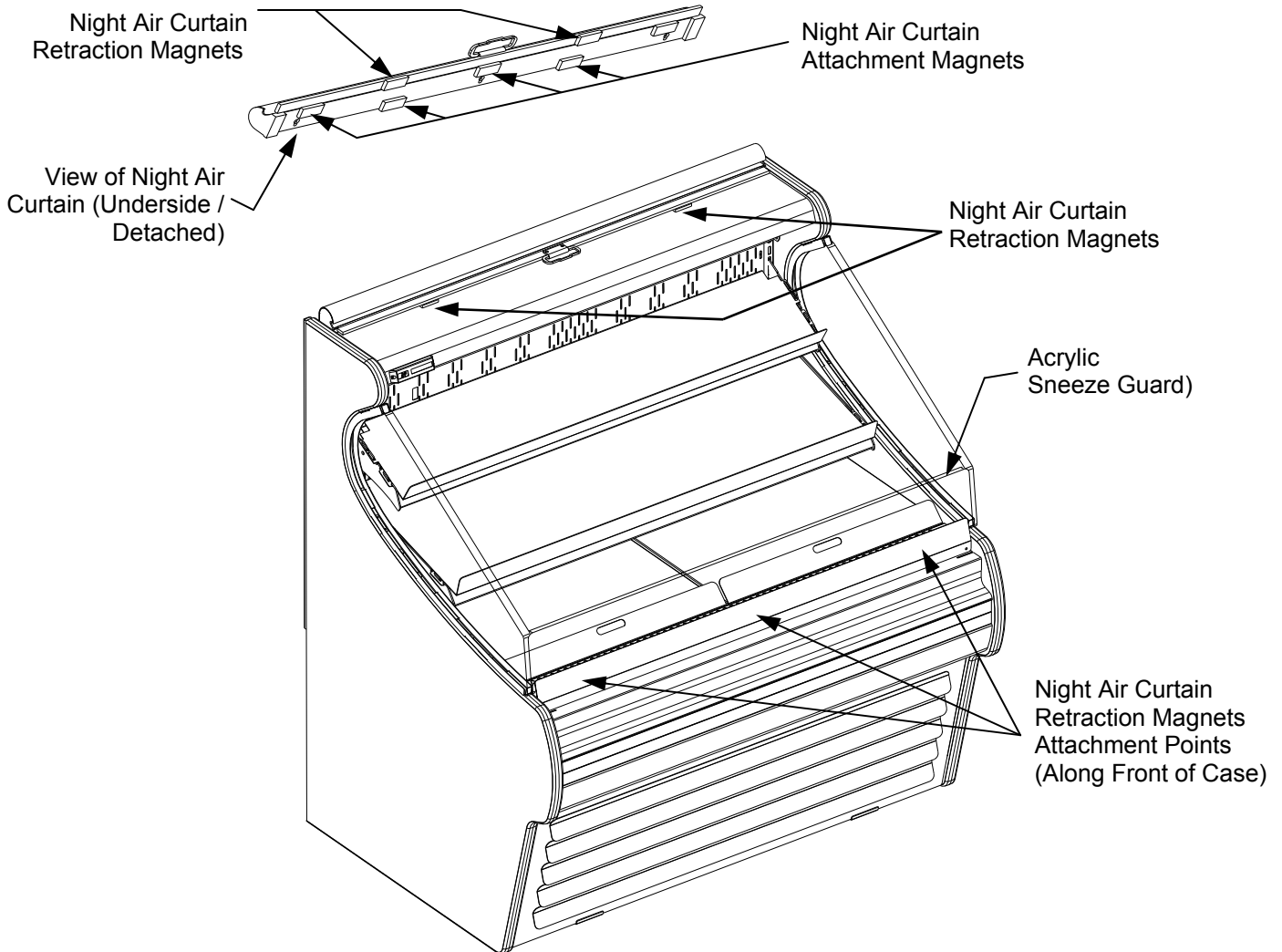


**OPTIONAL NIGHT AIR CURTAIN OPERATING INSTRUCTIONS [MODEL CO4748R SHOWN BELOW]**

**Night Air Curtain Installation & Operating Instructions**

1. Use caution when handling Night Air Curtain.
2. To attach to display case, center night curtain on top of case along rear (shown in illustration below). Attachment Magnets will hold Night Air Curtain firmly in place.
3. Grasp the handle and pull downward to desired location in front of case along outside of acrylic sneeze guard (as shown in illustration below).
4. To return Night Air Curtain to its retracted position, grasp handle, lift up and away from its magnetic attachment and carefully wind Night Air Curtain back into roll.
5. **Caution!** Do not allow spring-loaded Night Air Curtain to freely snap back into roll. Doing so can eventually destroy Night Air Curtain's tension and retractability.
6. To entirely detach Night Air Curtain from case, simply lift it upward and away from case. **Caution!** Do NOT drag Night Air Curtain along top of case or magnets may scratch or mar surface. Lift Night Air Curtain upward and away from case.
7. Store in a safe and secure space until needed again.

**NOTE: THE  
BELOW  
ILLUSTRATIO  
N MAY NOT  
EXACTLY  
REFLECT  
EVERY  
PARTICULAR  
CASE'S  
FEATURES OR  
OPTIONS.**



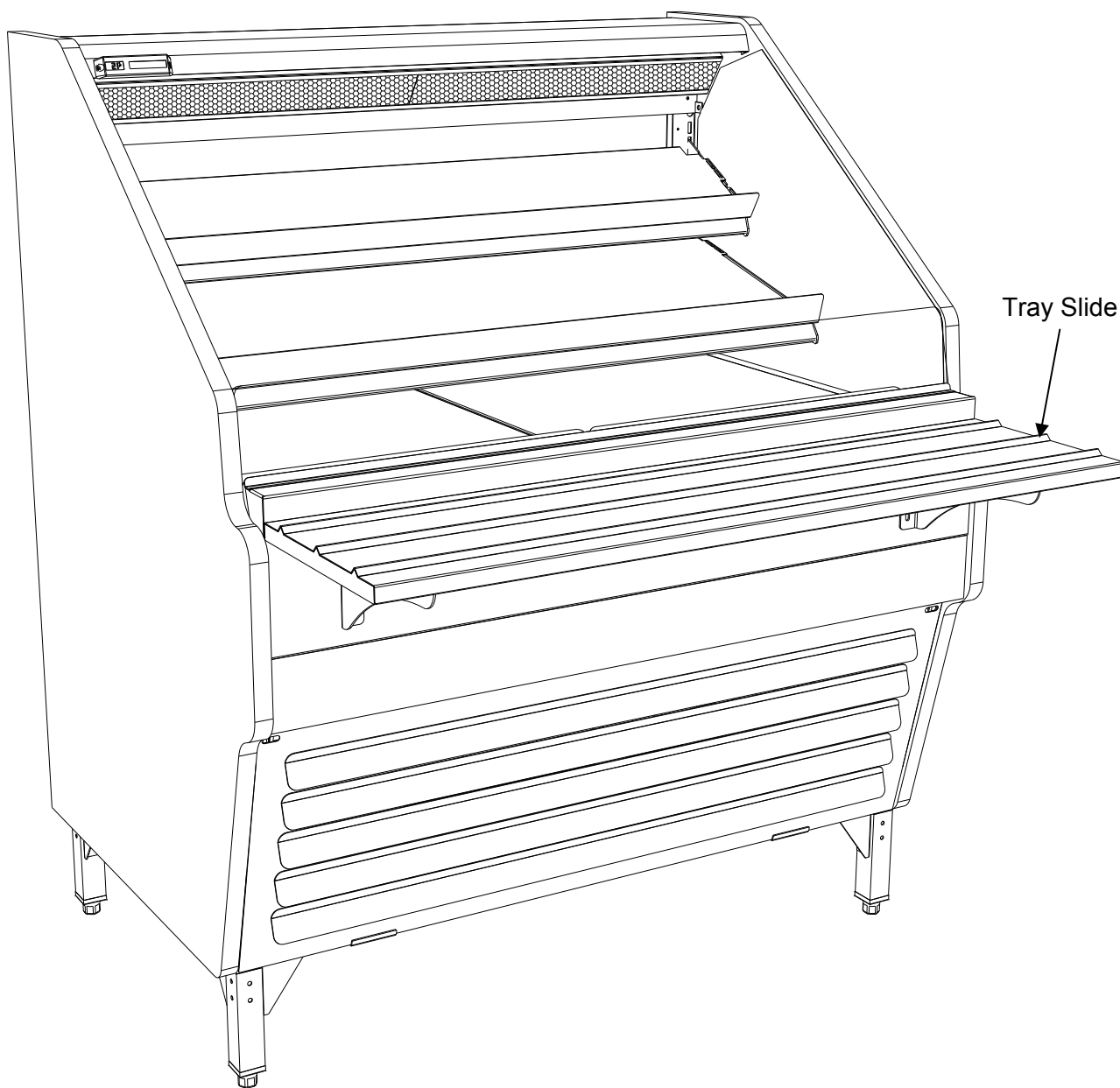
## OPTIONAL TRAY SLIDE SYSTEM [MODEL CO4748RT]

**Note 1:**

Illustration may not exactly reflect your particular case. However, general layout of optional tray slide system will be similar between all cases.

**Note 2:**

See sheet attached to tray slide for instructions on attaching tray slide to case.



## START-UP AND OPERATION

### **1. Merchandiser Set-Up**

Self Contained refrigeration units.

- Remove rear grille and insure the manufacture provided evaporator pan is installed.
- Insure evaporator pan is plugged in receptacle inside base, and positioned under PVC drain and on base frame.
- Reinstall rear grille by inserting screws in locations provided.

### **2. Merchandiser Start-Up**

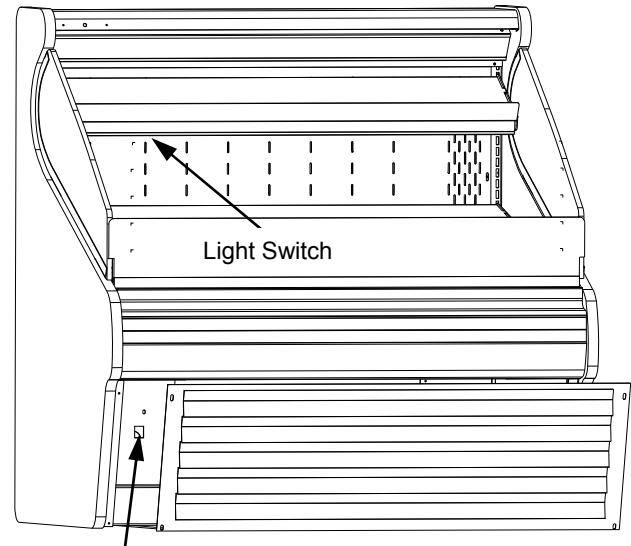
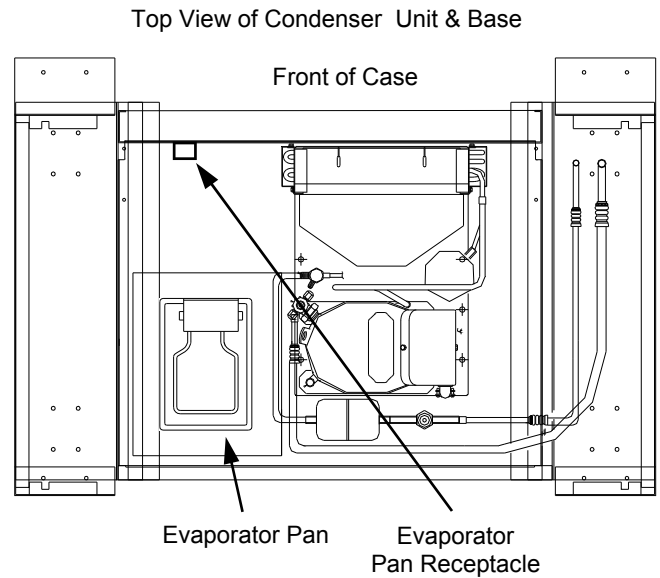
- Turn on the main power. Remove the front grille by removing the screws located in each of the corners. Switch is on the left hand side of base. Supply power will start evaporator coil fans, and the compressor motor. From the front of the case, raise the deck pans and check to see that the coil fans are all functioning properly.
- Replace front grille by inserting screws in locations provided.
- Turn on the lights. Light switch is in the interior of the case. Switch may be above or below the top shelf and to the left side. 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 all of the plug connections.

### **3. Temperature Settings**

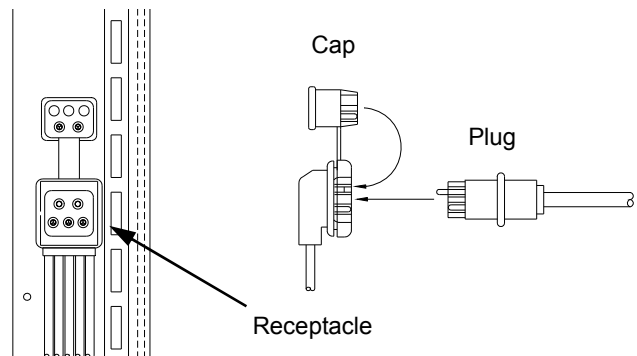
- The case temperature is set at the factory, (supply air 25 °F for a case temp of 41 °F), as determined by the case size.
- The temperature is controlled by a thermostat. If a temperature setting change is required, refer to temperature control access.

### **4. Product Rotation (Especially with Security Cover or Night Curtain)**

- To prevent freezing or spoilage of stock, product must be rotated.
- At every re-stocking, rotate old stock to front of shelves and new stock to rear of shelves.



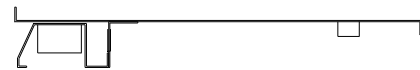
Main Power Switch



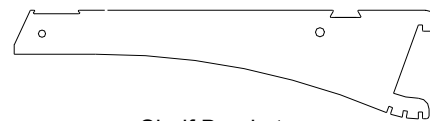
## MAINTENANCE

### 1. Shelf Assembly Removal

- Shelves can be removed for cleaning or adjustments
- For lighted shelving, unplug the light cord.
- Lift shelf straight up to separate from brackets.
- Remove brackets.
- Note: It may be necessary to remove the nylon shipping bracket retainer. Pliers will be required to accomplish this task.



Shelf Assembly



Shelf Bracket

### 2. Light Fixtures

- Light fixtures can be located on the underside of each shelf assembly and at the top inside of case.

#### Removal of lamp:

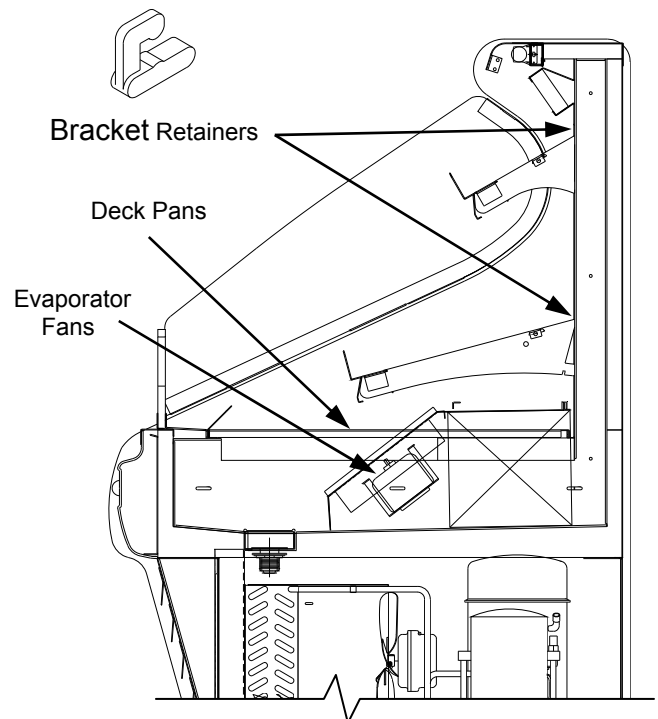
- Rotate lamp (1/4-turn) so that pins are aligned in slots and remove bulb.

#### Installation of lamp:

- Align pins with slot.
- Insert pins into socket and rotate 1/4 turn to secure pin contacts in socket.

### Ballast Access

- ***Assembly or disassembly and servicing to be accomplished by licensed electrical contractors only.***
- Remove the front grille by removing the screws located in each of the corners.
- *Refrigerant lines are flexible to facilitate front access maintenance.*
- Plastic glides are mounted to the unit base to assist in sliding the condenser out for access.
- Ensure that shipping screws have been removed.
- Slide condenser unit forward approximately twelve inches to access the light ballast.
- Ballast is located on the left side of the condenser.



**Note:** Above illustration may not exactly reflect every feature or option of your particular case.

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

### **Honeycomb Air Diffuser Removal**

*Honeycomb is located in discharge air duct.*

A. Wedge a non-metallic device of suitable strength (such as a ballpoint pen) between the honeycomb and the end panel.

**Caution!** Use care not to dislodge the heating wire (that prevents condensation on the lamp assembly).

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 (vs. suction mode).

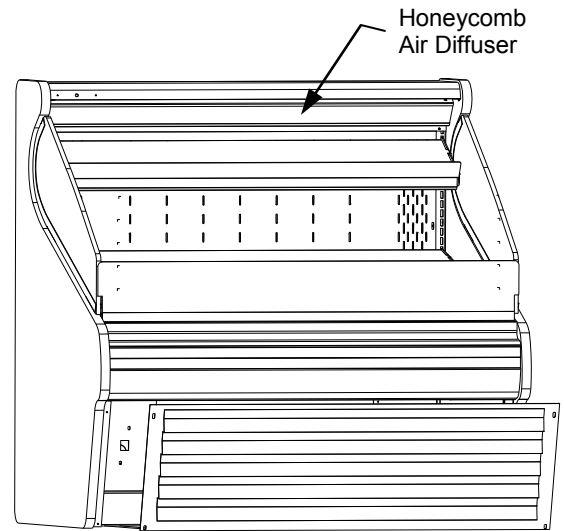
### **Honeycomb Air Diffuser Installation**

D. Squeeze honeycomb to allow it to fit into honeycomb retainer.

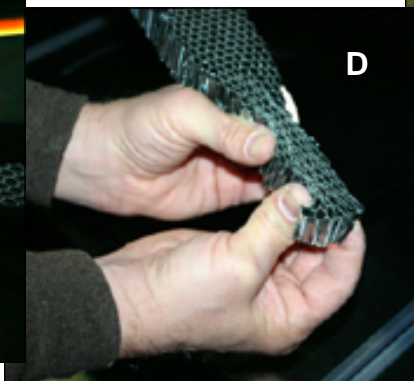
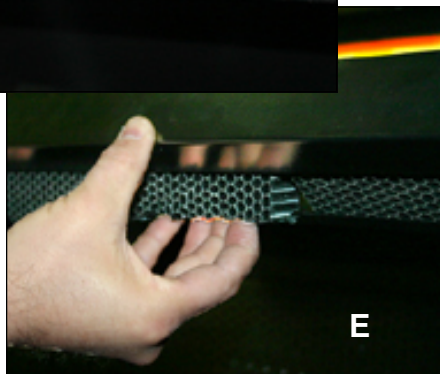
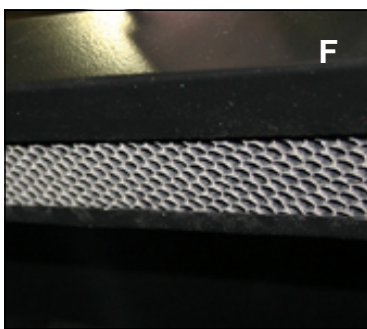
E. Carefully slide honeycomb into place.

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.

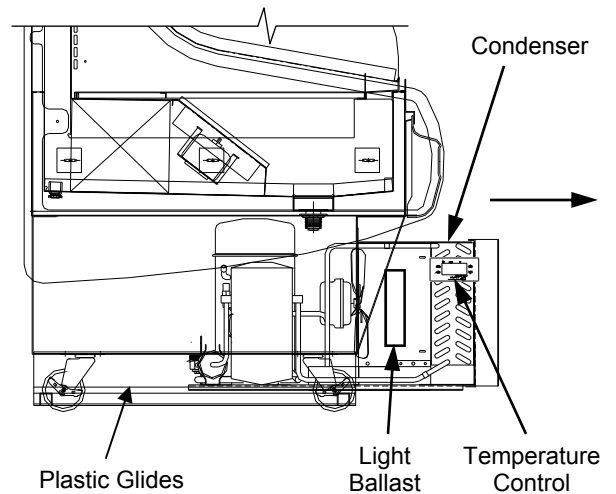


**Note:** Model features and options may vary.



### Temperature Control Access

- **Assembly or disassembly and servicing to be accomplished by licensed electrical / refrigeration contractor.**
- Remove the front grille by removing the screws located in each of the corners.
- *Refrigerant lines are flexible to facilitate front access maintenance.*
- Plastic glides are mounted to the unit base to assist in sliding the condenser out for access.
- Ensure that shipping screws have been removed.
- Slide condenser unit forward approximately twelve inches to access the temperature control module.
- Temperature control module is located to the left side of the condenser.
- Follow the **Carel® Temperature Controller** section of this manual.



Top View of Condenser Unit & Base

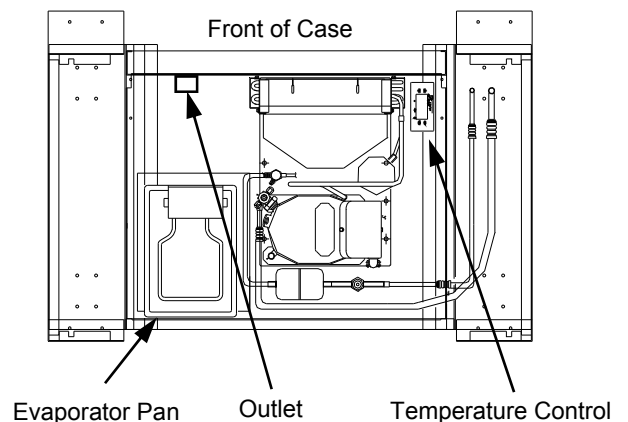
**Note:** Illustrations may not exactly reflect every feature or option of your particular case.

### Refrigeration: Access, Connections & Servicing

- **Assembly or disassembly and servicing to be accomplished by licensed refrigeration contractor.**
- Servicing refrigerant is accomplished from the rear of the case.
- Note: *Condenser unit does not slide to the rear.*
- Remove screws to rear grille and set grille aside.
- Service connections are located to the left of the compressor.

### Evaporator Pan Access and Removal

- Remove rear grille.
- Check temperature of pan prior to handling.
- Empty evaporator pan contents into a suitable container.
- Insure evaporator pan is unplugged at the receptacle inside of the base.
- Withdraw evaporator pan.

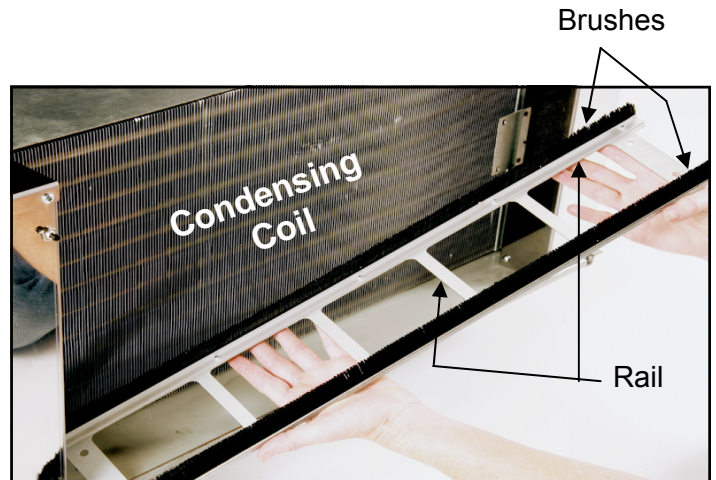
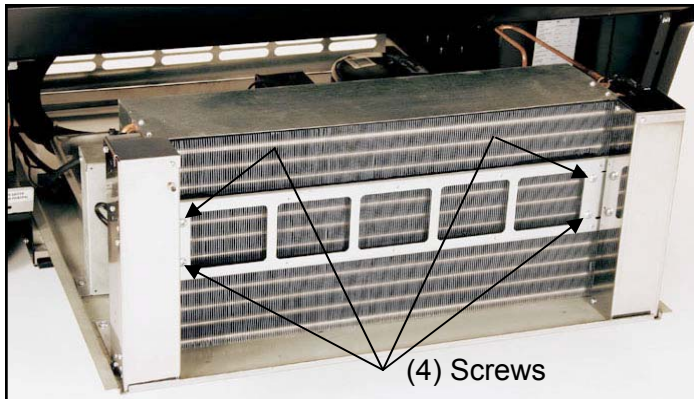




## CLEANING SCHEDULE

Cleaning	Daily	Weekly	Monthly	Task
Clean Case Exterior	X			The acrylic must be cleaned with a mild soap and water solution and a soft cloth ( <b>Never use a household cleaner on acrylic</b> ).
Clean Case Interior	X			Shelves and decks can be cleaned with a warm soap and water solution.
		X		Remove decks. Clean with soap and water.
		X		Vacuum tub under deck. Clean with soap and water. Wipe dry with clean cloth.
		X		Keep drains clean and free of debris which could clog the drain and rob the case of needed refrigeration.
			X	Clean Honeycomb. See Maintenance Fundamentals section for specifics on removal and replacing.
				<p>Clean Condensing Unit (including Evaporator Pan)</p> <p><b>Warning: Trained Mechanical/Electrical Contractors ONLY are to perform these tasks! Evaporator pan may be hot. Allow evaporator pan to cool approximately 30-minutes before cleaning.</b></p> <ol style="list-style-type: none"> <li>1. Turn off power. Disconnect case from power source.</li> <li>2. Remove front panel.</li> <li>3. Disconnect Evaporator Pan electrical connection from Receptacle Box.</li> <li>4. Remove Evaporator Pan mounting screws from Compressor Pan.</li> <li>5. Remove Evaporator Pan from unit.</li> <li>6. Thoroughly clean evaporator pan with de-scaling solution, such as <b>CLR®</b>. Rinse thoroughly. <b>DO NOT</b> submerge in water.</li> <li>7. Use clean towel dipped in soap and water solution to wipe down all fans, motor, refrigeration lines, cords, knobs, sight glass, connectors and all other surfaces.</li> <li>8. Wipe dry.</li> <li>9. Reposition Evaporator Pan on Compressor Pan.</li> <li>10. Reattach mounting screws to Evaporator Pan.</li> <li>11. Reconnect Evaporator Pan electrical connections.</li> <li>12. Slide back under case.</li> </ol>
Clean Condensing Coil		X		Clean the condenser coil.
			X	Using air pressure if available, or an industrial strength vacuum, clean the dust and dirt that collects on condenser coil. (Be careful not to damage the fins on the coil.)

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>Clean Sweep™ Condensing Coil (Optional):</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>Compressor Area:</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>Evaporator Pan:</b> Disconnect from receptacle box. Remove mounting screw(s) from base. Use a de-scaling solution (such as CLR® that will prevent corrosion, lime and rust) to clean pan. Rinse thoroughly; do not submerge in water.</p>
	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>Tub, Coil, Drain, Fan Blades, Motors, Brackets:</b> <i>Disconnect power from the case before cleaning the Tub, Coil, Fan, Motor and Drain Area!</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>• 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>Honeycomb Air Diffuser:</b> Remove the honeycomb. See <b>MAINTENANCE, CONTINUED: HONEYCOMB AIR DIFFUSERS</b> section in this manual for step-by-step instructions.</p>

## TROUBLESHOOTING

<b>Product is Drying Out</b>	Check the relative humidity in the store.
<b>Water on the Floor</b>	Check that all of the hoses are connected.
	Check that the drain trap is free of debris.
	Is the evaporator pan positioned correctly under drain?
	Is the evaporator pan plugged in and heating properly?
	Check the evaporator pan float for proper operation.
<b>Excessive Fan Noise</b>	Check that the case is aligned, level and plumb.
	Check that nothing is obstructing the blade rotation.
	Check that the fan shroud is properly secured.
<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>Fans Not Working</b>	Check that the fans are plugged in at the fan shroud.
	Determine if there is ice build up blocking the fan.
<b>Case Lights Not Working</b>	Check bulbs for proper installation and connection.
	Check for burned out bulbs.
	Clean dirt and dust from the bulbs to prevent flickering.
<b>Not Holding Temperature</b>	Check that the coil fans are working.
	Check that the discharge air is not disrupted or blocked by product.
	If a large amount of warm product was added to the case, it will take time for the temperature to adjust.
	Check the coil for ice build up.
	Check that the condenser coil is clean.
	Check that the case is not in the sun or near a heat or air conditioning vent.
	Case temperature will rise during defrost mode but will return to normal. Proper product temperature will be maintained.
	Is case located near outside doors? Wide temperature fluctuation can take place in such an environment.
<b>Condensing Unit Not Operating</b>	<i>DEF</i> flashing, Controller is in defrost mode (not an alarm). Compressor is running in a normal condition.
	Check that the power is turned on.
	Review factory time settings on the temperature controller. See the Carel® Controller section of this manual.
<b>Various Alarms Going Off</b>	See the Carel® Controller section of this manual.

# CAREL

## ir33 platform

Integrated Electronic  
Microprocessor Controller



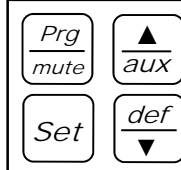
### Programming The Instrument

#### To Modify The Setpoint

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

**▲/aux** **def/▼** 2. Use arrow keys ▲ ▼ on temperature controller to increase (or decrease) the setpoint.

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



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

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

**Set** 2. Confirm by pressing “SET” key.

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

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

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

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

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

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

**Prg/mute** **Set** 1. Press and hold “Prg” and “SET” keys together for at least 5 seconds; display will show “0” (password prompt).

**Set** 2. Confirm by pressing “SET” key.

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

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

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

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

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

#### Warning! Save Your Parameter Settings!

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

**def/▼** **To Activate Manual Defrost**  
Press and hold “def” key for at least 5 seconds.

**▲/aux** **To Activate / Deactivate Auxiliary Output**  
Press and hold the “aux” key for 1 second.

**Prg/mute** **▲/aux** **To Reset Any Alarms With Manual Reset**  
Press and hold the “Prg” and “aux” key for at least 1 second.

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## User Interface - Display

ICON	FUNCTION	DESCRIPTION	Normal operation			Start up
			ON	OFF	BLINK	
	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 Celsius (°C) or Fahrenheit (°F)	flag	C	0	1	For Case Specific Defaults See Serial Label Located Near Electrical Access On Your Case.  For Additional Technical Information Call Structural Concepts Technical Service Dept. at 1(800) 433.9489
/c1	Calibration of probe 1	°C/°F	C	-20	20	
/c2	Calibration of probe 2	°C/°F	C	-20	20	
St	Temperature set point	°C/°F	F	r2	r1	
rd	Control delta	°C/°F	F	20	0.1	
dl	Interval between defrosts	hours	F	0	250	
dt1	End defrost temperature, evaporator	°C/°F	F	-50	200	
dP1	Maximum defrost duration, evaporator	min	F	1	250	
d6	Display on hold during defrost	-	C	0	2	
dd	Dripping time after defrost	min	F	0	15	
d/1	Display of defrost probe 1	°C/°F	F	-	-	

\* Unit Of Measure

STRUCTURAL CONCEPTS CORPORATION TECHNICAL SERVICE  
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 this obligations under this Agreement without prior written of SCC. This Agreement shall be binding upon and inure to the benefit of SCC and Purchaser and each of their legal representatives, successors and assigns.

SCC warrants its products to be free of defects in materials and workmanship under normal use and service for a period of one (1) year from the date of delivery.

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

**General Conditions.** All service labor and/or parts charges are subject to approval by SCC. Contact the Customer Service Department in writing or call 231-798-8888.

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

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

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

**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.